Regional integration and industrialisation: achieving regional economic resilience in the SADC

OR Pretorius

orcid.org 0000-0002-9353-820X

Dissertation submitted in fulfilment of the requirements for the degree Master of Art and Science in Urban and Regional Planning at the

North-West University

Supervisor: Prof JE Drewes
Co-supervisor: Ms M van Aswegen

Graduation ceremony: July 2018

23523654

PREFACE

Firstly, I could not have completed this thesis without the guidance of the Heavenly Father.

Thank you to my parents for your continuous support.

Zinaai, dankie dat jy my altyd ondersteun en ‘n konstante voorbeeld is van wat moontlik is as mens nooit opgee nie. Ek kyk op na jou. Jy’s steeds alles.

Prof Drewes and Dr Drewes, thank you for your help in the completion of this work. May it catalyse many outputs.

Ouma, ek’s uiteindelik klaar met die M … “Wat’s volgende?”

ABSTRACT

Regional economic resilience in the Southern African Development Community (SADC) can potentially be fostered through the implementation of regional policy based on regional integration and industrialisation. The interface between intra-regional trade in an integrated regional market and processes of industrial production enhances the ability of the regional economy to continuously adapt to changes in global production value chains and ensure timeous adjustment to external demand volatility. Regional integration policy interventions include trade liberalisation initiatives and efficient spatial linkages to facilitate market integration. Regional industrial policy catalyses the development of supply linkages in an integrated market, enhancing regional competitiveness in global capital flows, while scale economies stimulate industrial productivity and technology spill-overs.

Initiatives towards regional economic resilience are, however, negated by ineffective policy implementation instruments and institutions ill-equipped to drive processes of change in regional production development. This study evaluates the synergy of regional integration and industrialisation in fostering regional economic resilience through enhancing intra-regional trade and regional industrial production capabilities. Case studies of eight regional integration arrangements are investigated to determine the effect of intra-regional trade and industrial production on regional economic resilience during an external economic crisis, namely the 2008 Global Financial Crisis and subsequent recession. Results indicate that intra-regional trade and regional industrialisation accelerate a region's pre-shock growth path recovery. Recommendations include the strengthening of intra-regional trade in the SADC through renewed economic integration initiatives and targeted interventions promoting regional infrastructure linkages, and capacitating regional institutions to develop strategic economic resilience policy interventions based on adjustment and adaptation.

Key terms: Regional economic resilience; regional planning and policy; industrialisation; regional integration

OPSOMMING

Streeks ekonomiese veerkragtigheid in die Suider-Afrikaanse Ontwikkelingsgemeenskap (SADC) kan moontlik deur die implementering van streeks beleide gebaseer op streeks integrasie en industrialisering bevorder word. Die koppelvlak tussen intra-streeks handel in ‘n geïntegreerde streeksmark en prosesse van nywerheid produksie verhoog die vermoë van die streeksekonomie om voortdurend aan te pas by veranderinge in globale produksie kettings en verseker tydige aanpassings by eksterne vraag wisselvalligheid. Streeks integrasie beleid intervensies sluit in handel liberalisering inisiatiewe en doeltreffende ruimtelike skakelings om mark integrasie te fasiliteer. Die plaaslike nywerheidsbeleid kataliseer die ontwikkeling van verskaffingskoppelings in ‘n geïntegreerde mark, wat die plaaslike mededingendheid in globale kapitaal vloei verhoog, terwyl skaal ekonomieë industriële produktiwiteit en tegnologie oordrag stimuleer.

Inisiatiewe vir plaaslike ekonomiese veerkragtigheid word egter ontken deur ondoeltreffende beleidsimplementering instrumente en instellings wat swak toegerus is om prosesse van verandering in streeks produksie-ontwikkeling te bestuur. Hierdie studie evalueer die sinergie van streeks integrasie en industrialisering ter bevordering van streeks ekonomiese veerkragtigheid deur die verbetering van intra-streeks- en streekindustrieproduksievermoëns. Gevallestudies van agt streeks integrasie-reëlings word ondersoek om die effek van intra-streeks- en industriële produksie op plaaslike ekonomiese veerkragtigheid tydens 'n eksterne ekonomiese krisis, naamlik die 2008 Finansiële Krisis en die daaropvolgende resessie, te bepaal. Resultate dui daarop dat intra-streeks-handel en streeks-industrialisasie 'n streek se voorskokgroeipadherstel versnel.

Aanbevelings sluit in die versterking van intra-streeks handel in die SADC deur middel van hernieude ekonomiese integrasie inisiatiewe en geteikende intervensies wat streeks infrastruktuur verbindings bevorder en kapasiteite plaaslike instellings ontwikkel om strategiese ekonomiese veerkragtigheid intervensies te ontwikkel op grond van aanpassing

Kern terme: Streeks ekonomiese veerkragtigheid; streekbeplanning- en beleid; industrialisasie; streeksintegrasie.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 INTRODUCTION AND CONTEXTUALISATION

The increased importance of research regarding regional economic resilience is due to the growing perception of uncertainty and risk in the global economy (Christopherson *et al*., 2010:3). Globalisation and enhanced connectivity between countries and regions in the movement of goods, services, consumers, and information has increased the perception of risk of external economic shocks harming domestic economic prosperity (Hudson, 2009:12; Christopherson *et al.,* 2010:3; Dawley *et al*., 2010:650). Accordingly, the growing prominence of regional resilience studies is intrinsic to a sense of local vulnerability to economic disturbances originating in external regions. Dawley *et al*. (2010:650) support this notion through suggesting that the 2008 Financial Crisis and the resultant economic downturn catalysed interest in regional economic resilience research and that studies regarding "regional development have recently broadened from a preoccupation with growth to one which captures the notion of resilience". The study of regional economic resilience constitutes an important contribution to the pursuit of mitigating aspects and development of workable solutions through policy interventions and mechanisms to reduce the vulnerability of urban areas, national economies, and regions to external economic shocks in an ever-changing global marketplace (Pretorius *et al.,* 2017:218).

1.1 Research contextualisation and problem statement

Research regarding the regional economic resilience of developing countries is growing in prominence (Pretorius *et al.,* 2017:217). Developing economies are especially vulnerable to external economic shocks due to limited export diversification, their dependence on export demand for primary commodities, as well as burgeoning financial sectors which are increasingly interconnected with global financial systems (Massa & Te Velde, 2008:2). These vulnerabilities were brought to light in the aftermath of the 2008 Financial Crisis; an economic shock that reduced external demand for local and regional exports, reduced the value of primary commodity exports, increased balance of payment deficits, diminished inflows of foreign direct investment (FDI), severely impacted financial services sectors, and caused a downturn in the tourism sector and the inflow of aid from developed countries and regions. Subsequently, economic growth in the developing world was severely impacted by the external economic shock (Massa & Te Velde, 2008; Bakrania & Lucas, 2009).

The economic downturn that resulted from the 2008 Financial Crisis also affected regional economic growth in the SADC by exacting a profound impact the economies of the SADC region. (Economic Commission for Africa, 2009). These effects were maximised for countries with limited economic diversification in addition to substantial integration with international

markets and the global economic system (Economic Commission for Africa, 2009). A prominent open trade regime contributed to the dependence of developing countries on exporting primary commodities to developed countries. It also increased the vulnerability of the SADC and its members to an external economic shock which adversely affected networks of regional production and economic systems perpetuated by reduced regional exports and FDI (Economic Commission for Africa, 2009). The continued vulnerability of the regional economy to external shocks is harmful to the SADC achieving its development objectives over the long term, contributing to increased intra-regional economic divergence between member countries, and threatening socio-economic advancement in Southern Africa (Bank of Botswana, 2013:31).

Regional economic resilience in the SADC may be enhanced by the implementation of regional policy initiatives pillared in industrialisation and regional integration. Research regarding regional economic resilience emphasises the vulnerability of developing countries based on production integration with global value chains, the unbalanced nature of trade between developing and developed countries and regions, and regimes promoting open trade that intensify external demand shocks suffered by the Global South (Chia, 2010:11). Therefore, there is increased emphasis on resilience research on policies promoting the liberalisation of trade between developing countries through regional integration initiatives, with research focussed on the effects of increased functional interdependency between regional developing countries as a factor in reducing the vulnerability of regions to external economic shocks (Brixiová *et al*., 2015, Draper & Nene, 2015).

Green *et al*. (2010:5) and Brixiová *et al*. (2015:2) recognise the potential of regional integration in fostering regional economic resilience, noting that increased trade between member countries (intra-regional trade) within a regional integration initiative stimulates diversification of export markets and contributes to decreased vulnerability of participating countries to demand shocks originating in developed countries. Chia (2010:10) supports the notion of regional integration promoting intra-regional trade with the regionally shared benefit of reducing developing country vulnerability by decreasing "… the risks of excessive dependence on external demand" for regional exports. Bank of Botswana (2013:15) states that "… there is ample scope for strengthening trade ties in the SADC through deepening regional integration", underpinning research emphasis on the impact of regional integration on regional economic resilience. In addition, industrialisation policies are increasingly promoted as instruments to foster increased competitiveness of regional exports in the global market (Pretorius *et al*., 2017:221). Increased technology transfer, foreign direct investment, and a growing local capital stock supports manufacturing value chains and promotes economic diversification in developing countries and regions (Rosenstein-Rodan, 1943; Rostow, 1971; Todaro & Smith, 2012:112).

Therefore, industrialisation is often a central aspect of regional economic resilience studies (Di Fabbio, 2011; Boschma, 2015).

With increased vulnerability due to its overdependence on primary exports and a lack of economic diversification, the SADC lacks the needed regional economic resilience to regain the pre-shock growth path, resulting in extra-regional shock having a lasting effect on regional economic growth (Pretorius *et al*., 2017:218). Initiatives promoting regional economic resilience is annulled by ineffective policy implementation, as well as the inability of institutions to sufficiently catalyse adaptation in regional productive systems in response to external disturbances (Lenz, 2012; Pretorius *et al.*, 2017:218). While the SADC has implemented policies of regional integration and industrialisation to achieve regional economic growth, subsequent long-term growth gains are negated by the vulnerability and lack of regional economic resilience of the SADC (Bank of Botswana, 2013). Accordingly, there is a need to increase the regional economic resilience of the SADC.

1.2 Primary research questions

Based on the themes inherent to the problem statement and research contextualisation, the following guiding research questions are delineated:

- What constitutes the spatial manifestation of the “region” and the regional phenomena in which regional economic resilience is fostered?
- Which factors inherent to the regional economy influence economic productivity and regional economic growth?
- Which factors contribute to the regional economic resilience of developing regions through mitigating the initial impact of an external economic disturbance on domestic production processes?
- What are the individual roles of regional integration and industrialisation, in addition to the unique interface between said factors, in fostering regional economic resilience of developing regions?
- Which policy approaches are currently implemented in developing regions to foster regional integration and industrialisation, as well as regional economic resilience in an integrated regional market?
- What are the roles of spatial planning, regional policy, industrial policy, and supranational institutions in enhancing regional economic resilience in developing regions and SADC?

These primary research questions influence the aim and objectives of the study.

1.3 Study aim and objectives

This study seeks to contribute to research regarding economic resilience of regions on a sub-continental scale, aiming to determine the effect of regional integration and industrialisation, and the interface between said policy instruments, on enhancing the ability of the regional economy of the SADC to continuously adapt to changes in global production value chains and ensuring timeous adjustment to external demand volatility. A core theme in this investigation is determining the role of spatial planning and regional policy (on a supranational scale) in fostering industrialisation in an integrated regional market through exploiting increased spatial interaction and functional interdependency between partnering countries to enhance regional value chains and competitiveness of the regional export base. This study aims to evaluate the ability of regional integration and industrialisation to foster regional economic resilience in the SADC and recommends adjustments to regional policy, industrialisation, and regional integration objectives to meet the economic resilience needs of the SADC.

The following study objectives are inherent to this aim:

1. To determine the spatial manifestation of the “region” and the regional phenomena in which regional economic resilience is fostered.
2. To investigate the factors inherent to the regional economy that influence economic productivity and regional economic growth.
3. To determine the factors that contribute to the regional economic resilience of developing regions through mitigating the initial impact of an external economic disturbance on domestic production processes.
4. To investigate the individual roles of regional integration and industrialisation, in addition to the unique interface between said factors, in fostering regional economic resilience of developing regions.
5. To investigate current policy approaches implemented in developing regions to foster regional integration and industrialisation and regional economic resilience in an integrated regional market.
6. To investigate the role of spatial planning, regional policy, industrial policy, and supranational institutions in enhancing regional integration and industrialisation, and stimulating their cumulative effect on regional economic resilience in the SADC

1.4 Chapter division

The chapter division is as follows:

Chapter 2: Research methodology

Chapter 2 aims to illustrate the research methodology utilised in this study with regards to the purpose of the research, the research paradigm, the research design, and the proposed research methodology applied in determining the influence of regional integration and industrialisation on the regional economic resilience of developing regions.

Literature review (Chapter 3, 4, and 5):

Chapter 3 of the study investigates the structural organisation of regions. In this regard, the chapter incorporates an introduction to the region and its features to establish the theoretical basis for the chapter. In addition, this chapter seeks to investigate the planning of the region and efforts to manipulate the regional form based on recognised inadequacies in the spatial structure. Primary objectives of the chapter include illuminating the forces that catalyse the manifestation of the spatial structure inherent to the region and identifying the role of industrialisation and the interaction between regions through regional integration in moulding the regional structure. Chapter 4 investigates the regional economy with emphasis on investigating the factors internal and external to the region that influence economic productivity and output growth. An important component of Chapter 4 is the consideration of the spatial component inherent to regional economic growth by investigating the application of economic principles within the spatial milieu of the planning region. Chapter 5 investigates regional economic resilience and the aspects inherent to the concept of resilience. This investigation also identifies important endogenous and exogenous factors that influence the resilience of developing regions. An important objective of this chapter is to investigate the role of regional integration, industrialisation, and the interface between said factors in fostering regional economic resilience in developing regions.

Empirical investigation (Chapter 6 and 7):

Chapter 6, the first chapter of the empirical investigation, seeks to investigate case studies of various developing regions. This investigation is centred on analysing regional integration, industrialisation initiatives, regional planning and policy, and industrial policy in the various developing regions (with emphasis on the SADC) and to investigate the economic structure of the various regions according to certain endogenous and exogenous factors identified in the literature review. Chapter 7, incorporating quantitative research methods, utilises an equilibrium and econometric analysis to investigate the regional economic resilience of the identified

developing regions. A primary objective in this regard is to determine the factors (applied in the econometric analysis as independent variables) that influence the economic resilience of developing regions to external economic shocks.

Synopsys and recommendations (Chapter 8):

The objective of Chapter 8 of the study is to integrate the findings of the literature review and the empirical analyses to illustrate the respective roles of regional integration and industrialisation in fostering regional economic resilience in the SADC and other developing regions. In addition, the chapter makes recommendations regarding the appropriate regional integration and industrialisation objectives in SADC, and the potential role of regional policy, industrial policy, and supranational institutions in fostering developing regions' economic resilience.

CHAPTER 2 RESEARCH METHODOLOGY

The following chapter elaborates on the research methodology applied in this study and the subsequent investigation regarding the influence of regional integration and industrialisation on the regional economic resilience of developing regions. The fundamental consideration regarding the research purpose, paradigm, and proposed methodology is that this study is guided by principles inherent to a free market economic paradigm that propagates targeted government interventions to influence the nature of economic growth in regions (Barca *et al*., 2012). This may include regional policy interventions to guide the spatial distribution and long-term resilience of said economic growth (Glasson & Marshall, 2007:20). This paradigm is inherent to the problem statement and objectives of this study in that certain interventions through policy initiatives (regional policy, regional integration, and industrialisation) may contribute to achieving a predetermined objective (resilient regional economy in SADC). This study investigates the validity of the assertion that said policy initiatives foster regional economic resilience. Based on this perspective, the following sections will illuminate the research purpose, paradigm, and methodology inherent to this study.

2.1 Research purpose

The research purpose reflects the motivation inherent to conducting research, illuminating the definitive objective of the research (Thomas, 2011:512; Du Toit & Mouton, 2013:131). The purpose of research may be based on exploratory, explanatory, and descriptive motives, with each purpose influencing the objectives of the research (Neuman, 2012:16). Inherent to research guided by exploratory purposes is the exploration of a field that is unknown or new to the researcher (Baxter & Jack, 2008:552; Thomas, 2011:512; Neuman, 2012:16). The primary objective of exploratory research is to formulate research questions that will guide more comprehensive future research endeavours. Therefore, exploratory research is considered the first step in a systemic research process, one that lays the foundation for more detailed research (Stebbins, 2001). This research primarily emphasises qualitative research approaches, with limited utilisation of existing guidelines to inform the research method. The applied research steps are often undefined with limited use of existing theory to the research (Neuman, 2012:16). Due to the nature of said research, research objectives are guided by the formulation of research questions for upcoming research rather than the development of comprehensive research deliverables (Lewis-Beck *et al*., 2004).

The explanatory purpose of research, on the other hand, is motivated by the objective of determining, or explaining, the reasons why certain events or occurrences take place (Neuman, 2012:17). In contrast to exploratory research purposes, the problem statement that guides the

research is sufficiently defined and a substantial body of knowledge is available that describes phenomena relevant to the research (Lewis-Beck *et al*., 2004). The explanatory approach utilises existing research to investigate certain activities or occurrences with the primary objective of determining their respective causes by testing existing theories that describe the processes inherent to the occurrences (Ivankova *et al.*, 2006:4; Neuman, 2012:17). Evidently, the purpose of explanatory research is to construct pertinent reasons an occurrence or event takes place by utilising existing theories. An inherent theme to this research is determining whether existing theories sufficiently clarifies the occurrence of certain events (Neuman, 2012:17).

The research purpose of this study, however, is based on descriptive research. The purpose is to construct a comprehensive study with facts relating the concepts, factors, processes, and activities inherent to a specific research component (Anastas, 1999). In this approach, while the researcher has rudimentary information at their disposal, the primary objective is to undertake a detailed investigation of the relevant research topic. Accordingly, emphasis is placed on research questions regarding “how?” (how do certain factors influence processes and events?) and “who?” (who are the primary role players in this process?) (Neuman, 2012:17). Although there are similarities between the exploratory and descriptive research purpose, the point of departure of the latter is a well-defined problem statement that guides the design of subsequent detailed research. In this study the descriptive research purpose is utilised as the study seeks to comprehensively investigate the manner in which (“how?”) regional integration and industrialisation (“who?”) fosters regional economic resilience in developing regions. The well-defined problem statement in this regard is that developing regions are increasingly vulnerable to external economic shocks that influence regional economic growth, export demand, inflows of external capital, and regional production systems. This problem statement forms the point of departure for detailed research regarding factors that influence economic resilience in developing regions (Neuman, 2012:17).

2.2 Research paradigm

The research paradigm reflects the “integrated set of assumptions, models … and techniques for gathering and analysing data” in the research process (Neuman, 2012:46). These core assumptions, models, and data analysis techniques are grouped into the positivist, interpretative, and critical research paradigms (Kraus, 2005; Neuman, 2012:47). The positivist research paradigm is widely used among researchers and is based on the notion that reality is founded on certain objective facts, namely a realist ontology, that exist parallel to the subjective reality of the researcher (RWJF, 2008). Accordingly, the positivist paradigm propagates that researchers can identify and discuss these objective facts through representational epistemology (RWJF, 2008). Researchers can utilise quantitative research approaches

(including surveys, statistics, metadata) that incorporate said objective facts to test theories that seek to describe certain events (Healy & Perry, 2000:119). An important component of the positivist paradigm is thus the application of deductive logic to describe certain events through predetermined principles (Neuman, 2012:47). The positivist paradigm utilises exact quantitative measures to test relevant theories inherent to certain research topics (Kraus, 2005:760).

Neuman (2012:48) states that, while the positivist research paradigm is based on certain identifiable objective facts in the natural world, the interpretative paradigm utilises a constructionist view where measures and findings are less objective and may be unduly influenced by the unique context within which the research takes place (especially in the case of research founded on social studies). According to Neuman (2012:48), researchers apply the interpretive research paradigm due to their scepticism "of positivist attempts to produce precise quantitative measures of objective facts". The interpretative paradigm incorporates the notion that reality is fluid and may be influenced by perception and the researcher must thus seek to comprehend the context of the research (Scotland, 2012:11). Therefore, in contrast to the deductive approach of positivism, the interpretive paradigm incorporates the idiographic approach to study the context in which research findings will be relevant (Neuman, 2012:49). While the positivist and interpretive paradigm seeks to maintain objectivity within unique research contexts, the critical research approach propagates that research cannot be neutral and can be utilised to advance certain agendas and scientific standpoints (Scotland, 2012:13). As it insists that neutrality in research may mislead the researcher, the critical paradigm emphasises the praxis approach that favours putting "knowledge into action" by dissolving the abstract break between theory and empirical evidence by actively taking a subjective standpoint in the research process (Neuman, 2012:49).

This study applies the positivist research paradigm based on the notion that quantitative research approaches and deductive logic allows the researcher to reach objective conclusions regarding the ability of regional integration and industrialisation to foster regional economic resilience in developing regions. As adapted from Neuman (2012:47), the positivist research paradigm enables the utilisation of "exact quantitative measures" to test the relevant theories inherent to analysing regional economic resilience.

2.3 Research approach

The collection, analysis, and interpretation of data constitute important elements of the research process (Leedy & Ormrod, 2013:94). The descriptive purpose and positivist paradigm in which this study is situated influences the manner of data analysis and subsequent interpretation. Leedy and Ormrod (2013:94) state that data is "the link between the absolute truth and the researcher's inquiring mind". However, the data utilised by the researcher is initially in an

unprocessed state exuding limited meaning. To extract meaningful information from the unworked data, a research approach is to be applied to it (Leedy & Ormrod, 2013:94). In this regard, two research methodologies are identified, namely the quantitative and qualitative methodology (Steckler *et* al., 1992: 2; Allwood, 2012).

The quantitative research method utilises numerical data, or "quantities", of predetermined variables (Leedy & Ormrod, 2013). In this approach, the researcher seeks to measure quantities through utilising standardised measurement instruments. The purpose of quantitative research is to develop explanations regarding the current nature of phenomena and make predictions regarding the future behaviour thereof (Allwood, 2012). A primary objective in this regard is to identify and confirm associations between various relevant variables and subsequently construct generalisations to contribute to existing bodies of research (Steckler *et al*., 1992:2). Objectivity is an important characteristic of quantitative research, which allows the researcher to formulate unbiased conclusions from the data (Steckler *et al*., 1992:1). Inherent in this regard is the application of deductive reasoning on the part of the researcher through the application of programmed statistical procedures and objective variables (Leedy & Ormrod, 2013). The qualitative research method, on the other hand, investigates characteristics of phenomena that may not be able to be translated into numerical data (Allwood, 2012). Qualitative research seeks to construct an understanding of multifaceted events or phenomena, with research guided by an exploratory purpose. Through the application of qualitative methods (including observations and interviews), researchers seek to develop theories "from the ground up" (Leedy & Ormrod, 2013). In qualitative research, the data is utilised to identify variables for further exploration, as opposed to the quantitative approach where predetermined variables guide data collection (Allwood, 2012).

While there are marked differences between qualitative and quantitative research approaches, Steckler *et al.* (1992:5) and Hussain (2015:4) state that these approaches may be used in conjunction with one another through mixed-methods research design.

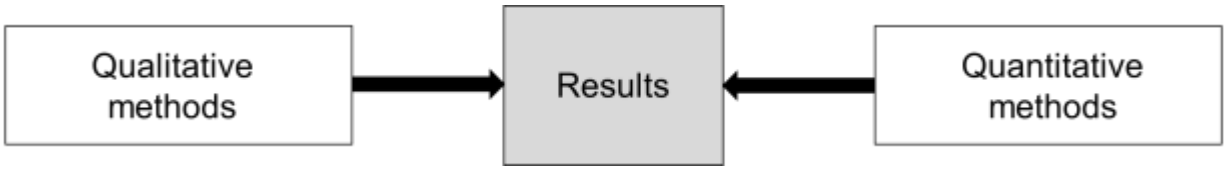


Figure 2-1: Integration of qualitative and quantitative methods

Source: Steckler *et al.* (1992:5).

As illustrated in Figure 2-1, inherent to the mixed-method research approach is collecting, analysing, and interpreting quantitative and qualitative datasets and integrating their findings to present holistic conclusions (Steckler *et al.,* 1992:5; Leedy & Ormrod, 2013:258). Due to the advantages of combining qualitative and quantitative findings to triangulate conclusions into a "single, greater whole", this study utilises the convergent mixed-method approach that places equal weight on qualitative and quantitative data analysis (Leedy & Ormrod, 2013:260). The following section seeks to illuminate the incorporation of the mixed-method approach in the research design.

2.4 Research design

This study comprises a literature review (Chapter 3,4, and 5) and an empirical analysis (Chapter 6 and 7) section, each encompassing several chapters.

2.4.1 Literature review methodology

The objective of the literature review is to investigate relevant themes inherent to the objectives of the study and to gain an understanding of important theoretical aspects. In this regard, textual and narrative research designs are implemented to investigate, describe, and interpret the predominant characteristics of relevant theories contained within the existing body of knowledge (Sandelowski, 2000:336). Illustrative of the objectives of the study, core theoretical themes in the literature review is to include aspects relating to the regional structure (c.f. 3.4), the regional economy (c.f. 4), industrialisation (c.f. 4.5.2), regional economic resilience (c.f. 5.2), regional integration (c.f. 5.5), regional planning and policy on a sub-continental scale (c.f. 5.6.2), and the role of supranational institutions (c.f. 5.6.3).

The structure of the literature review is guided by the three concepts apparent to regional economic resilience, namely the spatial characteristics of the region ("regional"), the economy of this region ("economic"), and the resilience of growth in said regional economy ("resilience"). The structure of the literature review will reflect these three concepts. Since the study investigates the role of regional integration and industrialisation (as well as their interface) in fostering regional economic resilience, these two themes are integrated in the investigation of the regional structure, the regional economy, and regional economic resilience throughout the study. This approach allows for the investigation of the importance of regional integration and industrialisation in the core theory of the regional planning research paradigm. As such, it builds the theoretical foundation in the study of the role of regional integration and industrialisation on regional economic resilience in the SADC. The structure of the literature review and the integration of core theoretical themes is illustrated in Figure 2-2.

Figure 2-2: Literature review structure and integration of theoretical themes

Source: Author's own compilation

Secondary sources will be used to achieve the objectives of the literature review, with online articles accessed through databases such as JSTOR, Google Scholar and EBSCOHost, and additional literature accessed through the North-West University's Potchefstroom Campus library catalogue.

2.4.2 Empirical research methodology

The empirical analysis included in this study utilises qualitative and quantitative research approaches characteristic of the convergent mixed-method research design (Leedy & Ormrod, 2013:260). Inherent to the qualitative research approach is the investigation of several multinational regional integration initiatives comprising developing countries seeking increased functional integration through shared initiatives of trade liberalisation and spatial linkages between member countries. In identifying appropriate case studies in this regard, non-probability sampling will be utilised. In this sampling approach, the size of the sample is not delineated in advance and case studies are selected based on its specific relevance to the investigation (Neuman, 2012: 147). Said relevance is determined through the application of the purposive sampling technique, where prior knowledge is utilised in case study selection (Vehovar *et al.*, 2016:330). Accordingly, the case study selection criteria are to be based on the findings of the literature review and the textual and narrative research undertaken in Chapter 3,4, and 5.

An important element in this qualitative research is investigating the various approaches to regional integration, regional industrialisation initiatives, regional planning and policy approaches, as well as the capacitation of supranational institutions in catalysing policy implementation and harmonisation within the integrated regional space economy. Through comparing the success of regional integration and industrialisation policies and identifying important mechanisms in their implementation in the different developing regions, a policy model based on regional integration and industrialisation may be identified to improve the

regional economic resilience of the SADC and other developing regions. An additional objective of the case study investigation is to analyse the composition of the respective regional economies, including local production functions as well as intra- and inter-regional interactions (i.e. trade between member states and between regions). This investigation will constitute the point of departure for investigating factors critical to the resilience of said regional economic growth to external economic shocks. The case study analysis informs the quantitative research section, which seeks to determine the effect of regional integration and industrial production on regional economic resilience during an external economic crisis, namely the 2008 Financial Crisis and subsequent recession. The quantitative research section is comprised of an equilibrium analysis and an econometric analysis.

2.4.2.1 Equilibrium analysis

The equilibrium approach to resilience analysis, as propagated by Briguglio *et al.* (2006) and Hill *et al*. (2008), is incorporated in this quantitative approach. The equilibrium analysis utilised in this investigation seeks to determine the effects of an external economic shock on the economic growth in developing regions through analysis of the initial impact of the shock and the time required to recover from it. In this regard, a pre-shock growth equilibrium is established for the respective developing regions that is determined by average regional economic growth within a stated period. This is also referred to as the "pre-shock growth path" of the regions. Deviation from determined equilibrium is investigated after said disturbance has taken place. The initial impact of the external shock on regional economic growth is determined by the size of the deviation of economic growth from the established pre-shock equilibrium. The impact of external shock on economic growth is indicative of the resilience of the regional economy. During the "post-shock" phase of the equilibrium analysis, the recovery of regional economic growth from the external shock is investigated.

The equilibrium analysis aims to determine the initial impact of the shock, as well as the recovery of the various regional economies to the pre-shock growth path. The various stages of the equilibrium analysis are illustrated in Figure 2-3.

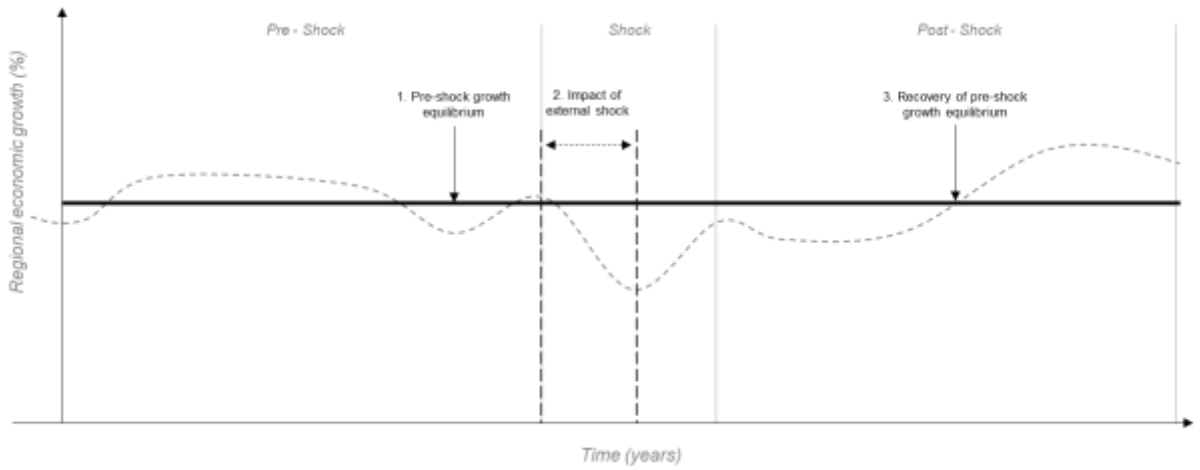


Figure 2-3: Equilibrium analysis methodology

Source: Author's own compilation

These dependent variables (namely the initial impact of the shock and the recovery time) constitute the research outputs of the equilibrium analysis.

2.4.2.2 Econometric analysis

The outputs of the equilibrium analysis, namely the initial impact of the shock and the time of recovery from the shock, are incorporated into the econometric analysis as dependent variables. Included in this analysis are certain independent variables, including elements reflective of regional integration and industrialisation, among other endogenous and exogenous factors that influence regional economic growth within the various developing regions. The aim of the econometric analysis is to determine the relationship between the dependent and independent variables, i.e. whether the identified independent variables influence the initial impact and time of recovery from the external economic shock. Accordingly, the analysis aims to identify endogenous and exogenous factors integral to the economic resilience of developing regions.

The results of the analysis, and the relationship of certain economic variables with the resilience of regional economic growth, will inform recommendations regarding the policy objectives of the SADC in terms of regional integration, industrialisation, and regional planning and policy to optimise the economic resilience of the region to external economic shocks, as per the aim of the study (c.f. 1.3). The integration of the equilibrium and econometric analysis in the empirical research is indicated in Figure 2-4

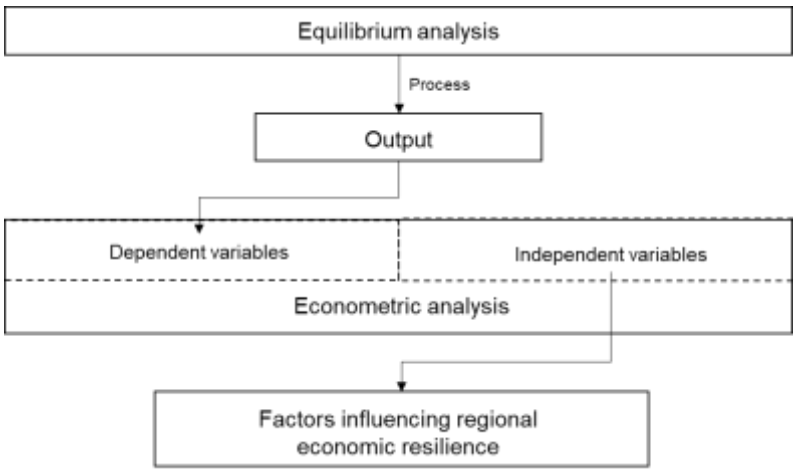


Figure 2-4: Equilibrium and econometric analysis in an empirical investigation

Source: Author's own compilation

The statistical database of the United Nations Conference on Trade and Development (UNCTADstat, 2017) is utilised in the empirical investigation, with Microsoft™ Excel™ functions applied in the analysis and interpretation of the relevant datasets.

2.5 Summary of research methodology

Figure 2-5 provides a summary of the research methodology utilised in this study.

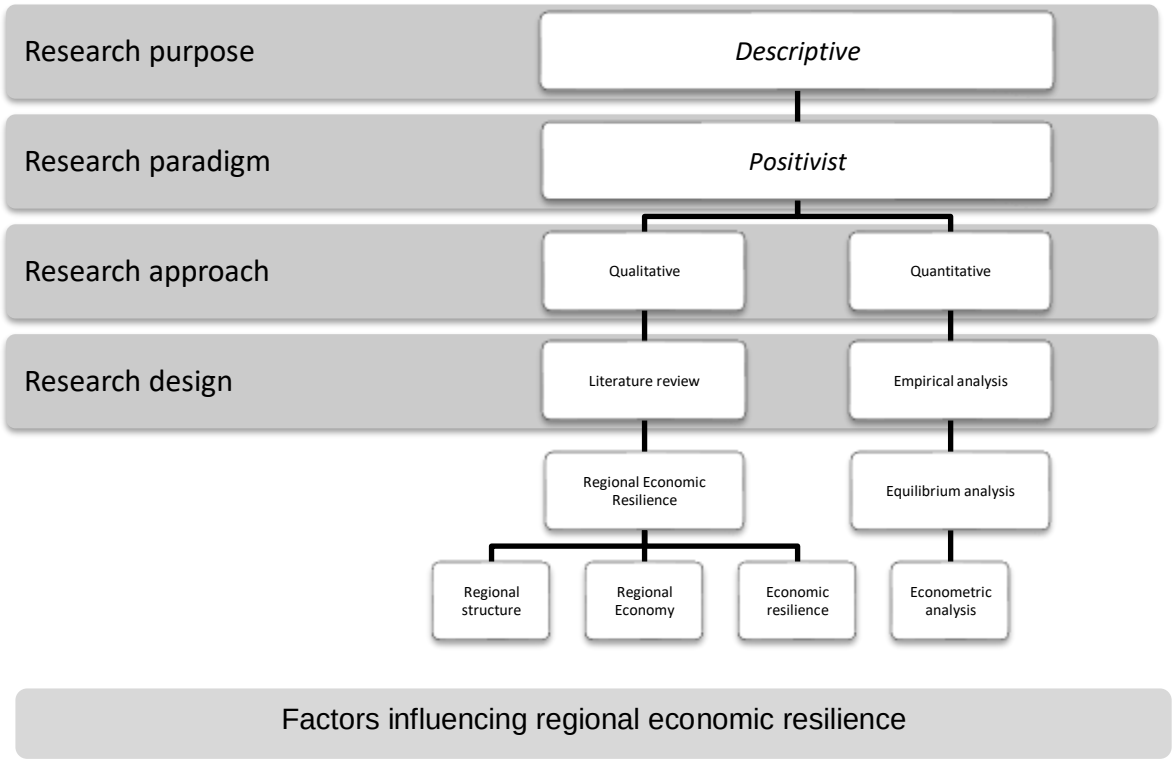


Figure 2-5: Literature review structure and integration of theoretical themes

Source: Author's own compilation

As illustrated in Figure 2-5, this study is based on the descriptive research purpose within the positivist paradigm. The research approach applied in this regard is the convergent mixed-method approach that incorporated both qualitative and quantitative research methods (c.f. 2.3). The research design includes a literature review based on textual and narrative research, as well as empirical research that consists of an equilibrium and econometric analysis (c.f. 2.4). This research methodology is applied to investigate the factors that enhance the regional economic resilience of SADC, with emphasis on regional integration and industrialisation and the interface between said policy instruments.

To follow this Chapter is, firstly, the literature review, which investigates the structural organisation of regions (Chapter 3), the regional economy (Chapter 4), and regional economic resilience (Chapter 5). The literature review is followed by the qualitative analysis (Chapter 6) and the quantitative analysis (Chapter 7).

CHAPTER 3 REGIONAL STRUCTURE

The core objective of the following chapter is to contextualise the spatial dimension which is the foundation of the study of regional economic resilience and the role of regional integration and industrialisation in fostering said resilience. The region is the principal theme of this chapter, including: what it entails, what it contains, the phenomena it incorporates within its borders, the spatial characteristics of said phenomena, mechanisms which influence said spatial characteristics, the spatial dimensions of the region, the outlining of said dimensions, organisation of regions and the planning of the region and its phenomena. As Isard (1975:11) professed, one must comprehend the regional phenomenon and the forces which guide its internal spatial manifestation if one is to influence the nature of the region and its relationship to external regions. With the spatial structure of the region at its core, this chapter firstly aims to introduce the region and its features in order to establish the theoretical basis for the chapter. Secondly, this chapter aims to investigate the planning of the region and efforts to manipulate the regional form based predetermined economic objectives, including regional economic resilience. Thirdly, this chapter aims to illuminate the forces which catalyse the manifestation of the spatial structure inherent to the region. As per the objectives of this study, this chapter aims to determine the spatial manifestation of the "region" and the regional phenomena in which regional economic resilience is fostered (c.f. 1.3).

3.1 Introduction to the region

The region, as a spatial concept, is interpreted based on the context of the discipline in which it is applied. Within the context of geography, regions represent an inherent need to organise physical space for the simplification of geographical research (McDonald, 1966:516). The demarcation of the natural region, as James (1952:195) states, is a means of describing a geographical area based on the features of the earth's surface to which it is assigned. In order to achieve the delineation of distinguishable regional units, delineation is based on identified geographical criteria, which classifies natural features into separate units. Noronha and Goodchild (1992:86) explain that regionalisation points towards the demarcation of distinguishable regions within a defined area. Regionalisation is influenced by the criteria inherent to the objectives of demarcation; as geographic features are used to delineate natural regions, social and demographic criteria can be applied to identify social regions, and sectoral or developmental criteria can be used to demarcate economic regions (Glasson, 1978:48).

In the context of the spatial planning discipline, Smith (1965) states that regions are delineated within the framework of regionalism, a movement which propagates the establishment of a regional planning level between the local and national planning spheres. According to Smith (1965), the primary objective of regionalism is the delineation of regions for economic planning

and administrative purposes. Glasson (1978:35) states that the delineation of the regional planning unit is either based on the homogenous character of the area, or the product of administrative procedures for organisational purposes. Herein lies two contrasting perceptions with regards to the regional unit, namely whether the region exists in reality or is rather a man-made instrument of spatial organisation. According to the objective regional perception, regions exist and are geographically identifiable (Glasson, 1978:36). Through the application of certain criteria, the various heterogeneous physical features of an area make it possible to group these features in the area into units, forming regions with homogeneous physical features, i.e. the natural region (Ogburn, 1936:6; Glasson, 1978:36). As per the subjective regional perception, regionalisation is an abstract instrument applied to achieve greater understanding of the world based on infinite criteria. Regions do not actually exist according to this subjective paradigm, instead, the concept of a region is merely a projection brought into existence through the simulation of anthropogenic criteria, rather than an entity in existence within physical space (Glasson, 1978:36). Within the spatial planning discipline, the subjective view of regions as products of complex criteria rather than naturally occurring phenomena is regarded as the appropriate approach to the regional manifestation (Ogburn, 1936:6; Glasson, 1978:36).

3.1.1 Formal region

In accordance with these contrasting regional perspectives, the concept underwent critical changes in how it is understood and applied within the spatial planning discipline (Glasson, 1978:37). These conceptual changes brought about the development of separate, although interrelated, notions of what constitutes a region. Initially, the concept of regions is pillared in the notion of the formal region, which was firmly situated within the objective regional paradigm in that regions were perceived as physically identifiable by forming homogeneous natural units within the framework of specific natural criteria (Berry & Hankins, 1963; Glasson, 1978:37). This natural criterion may be based on the geography, geomorphology, or climate of an area with regions being classified based on these considerations (Ogburn, 1936:6; Glasson, 1978:38). However, the delineation of the formal region is not limited to natural homogeneity, but may also be extended to the economic and social characteristics of the region (Glasson, 1978:38). A region, in this case, may be defined according to the dominant economic sector of the region, being agricultural, industrial, or service-based and varying sub-divisions within these classifications.

The objective perception of the region come to be gradually replaced by the subjective regional paradigm, signalling movement away from delineating formal regional units based on the homogeneity of features and towards delineating functional regions based in the interaction and underlying interdependence between heterogeneous features (Grigg, 1965:473; Glasson, 1978:38). Where the focus used to be on identifying groupings of features within an area and

delineating regional boundaries based on these groupings, bringing about a collection of internally homogeneous regions has moved the emphasis to identifying regions with interdependent, heterogeneous features, forming a network of linkages and ranges of influence, constituting regional territoriality (Glasson, 1978:38; Grotewold, 1987:91).

3.1.2 Functional region

Brown and Holmes (1971:387) state that a functional region comprises various economic centres which are spatially dispersed within the boundaries of the region. The delineation of the functional region is based on the functional interaction between said economic entities, which is manifested through spatial linkages which facilitate either the direct or indirect communication between centres (Dickenson, 1938:609; Brown & Horton, 1970:77; Clark, 1973:72; Hemmasi, 1980:225). Direct interaction may constitute transport movement, including inter-centre movement of goods, services, labour, and capital, while indirect interaction may constitute the flow of information between centres via telecommunications and other services. Based on these and other interactions between centres, functional regions can be delineated through the application of flow analysis, i.e. the observation and analysis of the behaviour of people in terms of their movement between centres (Glasson, 1978:43).

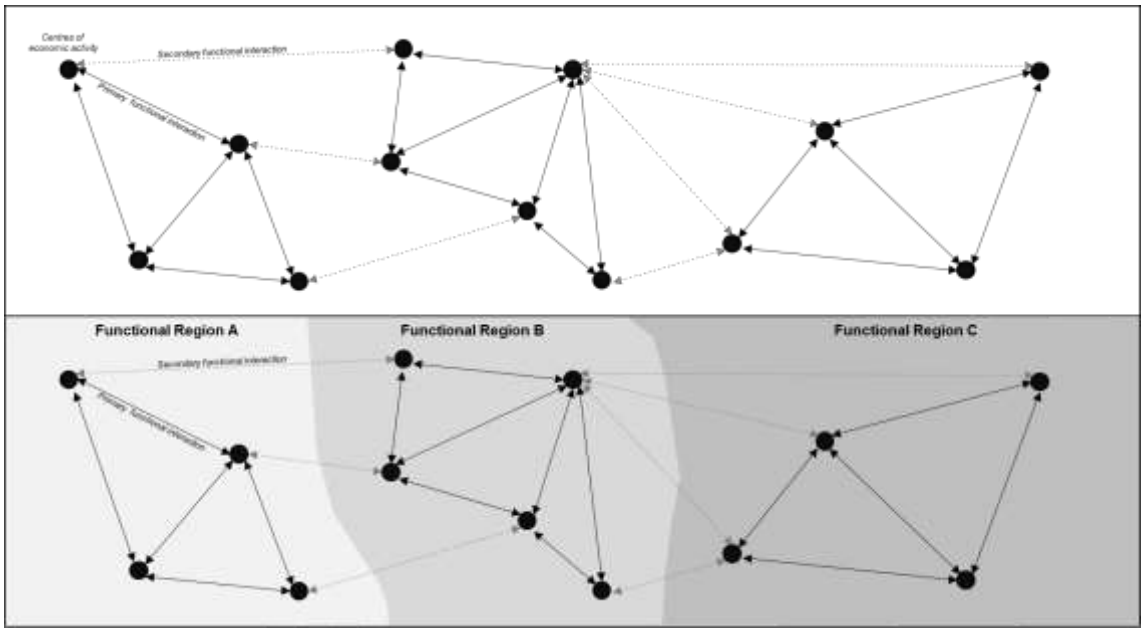


Figure 3-1: Delineation of functional regions

Source: Adapted from Antrop (2004:17).

Figure 3-1 illustrates the delineation of the functional region based on the degree of functional interaction between economic centres. An important characteristic of a functional region is that its economic centres interact with one another to a greater degree than with economic entities in other functional regions (Brown & Holmes, 1971:387). Friedmann (1956:12) refers to functional

regions as “city regions”, describing the characteristics of interlinked urban areas, or economic centres, within the functional region. Brown and Holmes (1971:387) state that numerous nodal systems may develop within a single functional region as a result of the effect of distance on the nature of interactions between centres, with various subdivisions of centres developing around respective dominant nodes. When the interactions between these various nodes eclipse the degree of interaction with external nodes, collectively they constitute a single functional region, as illustrated in Figure 3-1 (Brown & Holmes, 1971:387). These functional regions are not limited to geographic criteria, with its territoriality being anchored in its functional linkages. The functional region is polarised in nature, with dominant economic centres and various smaller nodes of differing influence forming a complex regional system (Glasson, 1978:38; Antrop, 2004:17).

3.1.3 Planning region

Herrschel (2005:59) states that regionalism, i.e. a movement which propagates the establishment of a regional planning level between the local and national spheres of planning, catalysed the region to evolve from merely being confined to its geographical classification, as propagated by the formal region narrative, into functional spatial units the centres of which illustrate a degree of interdependence – the primary criterion for their delineation. In conjunction with the formal and the functional region, Glasson (1978:39) states that there is a third classification of the region, namely the administrative, or “planning” region. The planning region can be seen as an amalgamation of the formal and the functional region and is delineated based on criteria belonging to both paradigms (Glasson, 1978:40). The planning region, according to Boudeville (1966), is a geographical delineated area which displays a similar economic stratagem, integrating features of the formal and functional region. In this regard, there are varying perceptions as to what constitutes a “planning region” and the criteria utilised in its delineation. In this regard, Keeble (1969) states that when a region can support employment of its population and enforce changes in the distribution of production factors, it constitutes a planning region. Klaassen (1965), on the other hand, believes that a “region” constitutes a “planning region” when the sectors of the economy, including agriculture, industry, and services, are sufficiently supplied with labour to ensure optimal productivity. Klaassen (1965) incorporates features of the functional region in his assessment of the planning region as he argues that a planning region should consist of a central node which acts as a growth pole, emanating outward through an interlinked economic network. Glasson (1978:40), incorporating the economic perspectives of Keeble (1969) and Klaassen (1965), summarises that the planning region is a delineated geographical area able to implement policies for the development and growth of its regional economic structure. This motivates Herrschel (2005:59)

to state that the basis of a planning region is its function as a “policy-making entity” with the ability to manage administrative agents in the planning of its regional economy.

According to Preston (1992:528), the functionality of administrative or planning regions is illustrated in their incorporation of various economic centres which are functionally complex and connected to one another “with regular rhythms in space and time” (Preston, 1992:528). Johansson *et al*. (2001:407) state that a planning region is delineated based on identified functional interdependencies between economic centres for the purposes of undertaking developmental planning of the regional economy. It is, therefore, stated that a single planning region should encompass a single functional region, to ensure efficient and precise planning of economic activity within the region (intra-regional planning) (Johansson *et al.,* 2001:407). Accordingly, planning regions are planned by governments or planning authorities which seek regional economic growth and the effective utilisation of factors of production through policy implementation (Klaassen, 1965; Keeble, 1969; Glasson, 1978:40; Preston, 1992:525).

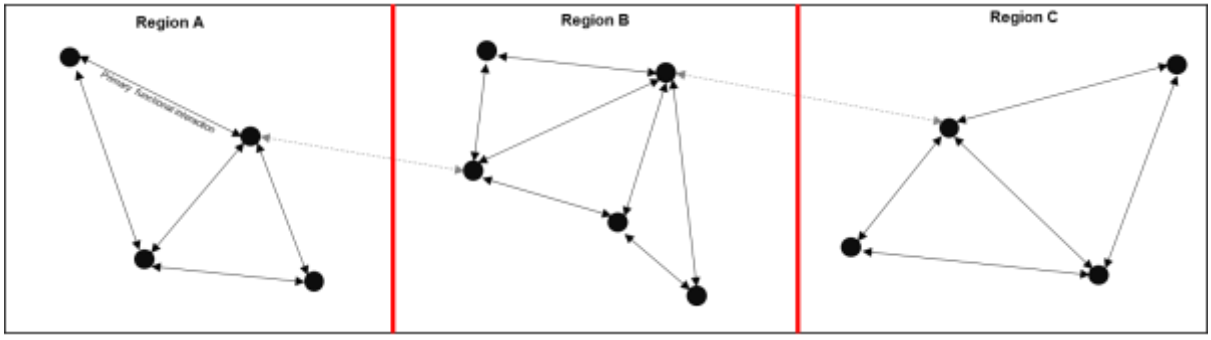


Figure 3-2: Isolated planning regions

Source: Adapted from Christaller (1933) and Herrschel (2005).

Evidently, the primary objective is administrative in nature, with the focus being placed on delineating regions which are administratively viable with region-specific policies to further the economic growth and development within the region (Smith, 1965). Each planning region is considered an insulated administrative entity, with policies focussing solely on bringing about internal development and growth (Herrschel, 2005:60). Due to this inward-focussed economic planning, delineated regional boundaries confine economic activity, with limited inter-regional connectivity and restricted linkages with external industries and economic flows (Grotewold, 1987:91; Herrschel, 2005:60).

Figure 3-2 illustrates a regional space economy with isolated planning regions. Within this paradigm, planning regions constitute various closed networks of regional systems, with limited communication corridors or interdependencies between regions. In addition, the movement of goods, services and factors of production between regions is limited due to lack of inter-regional

cooperation and underdeveloped lines of communication. Regions seek economic progress in isolation, with little appetite for greater linkages and connectivity through inter-regional partnerships (Herrschel, 2005:60).

This section introduces the regional phenomenon and its spatial characteristics. It is evident in this section that the region as a spatial entity is interpreted differently in the various disciplines in which it is applied (c.f. 3.1.1). In addition, within the context of spatial planning, the region has undergone significant changes in its delineation; from merely formal regions being descriptive tools for the grouping of geographical features, to the functional region as a territorial manifestation of complex urban systems with networks of communication and interdependent functions within a delineated area (c.f. 3.1.2). Additionally, planning regions are delineated based on characteristics of formal and functional regions, with the objective of forming "policy-making entities" to ensure efficient and precise planning of economic activity within the region (c.f. 3.1.3). Planning regions are organised to foster regional economic growth and the effective utilisation of factors of production through policy implementation. The following section seeks to investigate functions inherent to the spatial planning of economic centres in the planning region to catalyse regional economic growth.

3.2 Spatial planning

In light of the introduction to the region and the spatial manifestation of regional features, the following section provides an overview of spatial planning. This section seeks to illuminate the spatial planning actions and the various levels of spatial planning. Inherent in this section is investigating the nature of economic and spatial planning in fostering regional economic growth in the planning region. Invariably, the section aims to highlight the envisioned nature of economic growth and subsequently undertaking spatial planning to achieve predetermined economic objectives.

3.2.1 Introduction to spatial planning

Friedmann and Alonso (1964:61) explain that planning is a methodological, future-orientated approach to solving economic and social challenges through the successful implementation of planning strategy, or "policy". The interpretations of planning by Friedmann and Alonso (1964:61), Alden and Morgan (1974:2), and Glasson and Marshall (2007:3), illustrate that planning is closely linked with a spatial theme. Alden and Morgan (1974:2) and Glasson and Marshall (2007:3) describe planning as a pro-active activity which seeks to alter and guide space to achieve certain objectives through the application of spatial, economic, social and political instruments. In the context of spatial planning, the implementation of land use management and strategic planning seeks to bring about "a more even distribution of economic

development between regions that would otherwise be created by market forces, and to regulate the conversion of land and property uses" (CEC, 1997; as referenced in Glasson & Marshall, 2007:4).

This definition of spatial planning encapsulates the "regional issue", the central consideration in the planning of the regional economy and the spatial nature of its features: the phenomenon of economic activities and centres being spatially concentrated in certain locations, resulting in disparities in economic prosperity and growth within different areas of a region, as well as between regions (Kaelble & Hohls, 1987:22; Glasson & Marshall, 2007:20). The unbalanced spatial diffusion of economic activity and centres in the planning region is illustrated in Figure 3-2. The objective of spatial planning through the "policy-making" functions of planning regions is not limited to catalysing regional economic growth in the region (c.f. 3.1.3), but includes guiding the nature of said regional growth through identifying deficiencies in the regional structure that exacerbates differences in economic prosperity and presenting tangible solutions to said problems through formulating and applying appropriate policy (Hilhorst, 1971:112; Armstrong and Taylor, 2000:234).

3.2.2 Regional planning

While spatial planning seeks "a more equal distribution of economic development between regions", regional planning identifies the enduring "regional issues" and confirms the requirement for targeted interventions on a regional level to achieve spatial planning objectives (Glasson & Marshall, 2007:20). Achieving these objectives through the application of regional planning is emphasised by the United Nations (1959), which defines regional planning as an element within the spectrum of spatial planning which would constitute the most relevant reference for development projects of a spatially balanced nature to foster regionally distributed economic growth.

As explained by Glasson and Marshall (2007:20), the catalyst of these regional issues is the disparities that persist between regions: population growth, increasing urbanisation, and increased standards of living in industrialised regions, with economic decline in developing regions. According to Esmara (1975:50), the causes of said regional disparities is fundamentally based on factors influencing labour productivity: spatial differences in resource endowment and the efficient use of said resources. In response to these disparities, regional planning is focussed on two factors: regional resources and their effective utilisation for regional economic growth (Friedmann, 1956:2). According to Glasson and Marshall (2007:21) regional planning strives to eliminate economic disparities between and within regions by managing the allocation of resources within regions, i.e. intra-regional planning, and between regions, i.e. inter-regional planning. The efficient organisation of space underlines the core objective of regional planning

which seeks the balanced spatial distribution of economic activities and economic growth between regions (2007:15).

It is evident that regional planning seeks to alter the distribution of resources between regions to ensure convergence in economic prosperity between the developing regions and industrialised regions (Friedmann & Alonso, 1964:2; Isard, 1975:33; Hudson & Lewis, 1982:2; CEC, 1997:24; Ying, 1999:60; Glasson & Marshall, 2007:16). The underlying economic motive for economic and spatial planning is thus not only to catalyse regional economic growth within planning regions, but also to foster regionally balanced economic growth through regional planning (Isard, 1975:33; Hudson & Lewis, 1982:2).

3.2.3 The levels of regional planning

According to Albrechts (2004:743) and Glasson and Marshall (2007:22), regional planning can manifest across various planning levels, each influencing the nature of planning and policy implementation. The core groupings of regional planning implementation constitute inter-regional planning, i.e. regional planning concerned with ensuring convergent economic growth between industrialised and developing regions, and intra-regional planning, i.e. regional planning which seeks spatially balanced economic growth within the planning region (Glasson & Marshall, 2007:21). Inter-regional planning is applied on a supranational and national planning level, while intra-regional planning is applied on a regional and sub-regional level (Glasson & Marshall, 2007:22).

Table 3-1 illustrates the manifestation of regional planning in the various planning levels.

Table 3-1: Levels of regional planning

	Level	Features	Objectives	Intervention
Inter-regional planning	1. Supranational regional planning	Economic-centred regional policy. Spatial planning of cross-border macro-regions.	Eliminate the disparities between the countries and regions of the regional grouping.	Assistance to identified regions through funds. Investment in people, industries, and infrastructure. Harmonised regional planning policies.
	2. Inter-regional planning (National)	Top-down approach. Catalyst for supranational regional planning.	Multiple national objectives based on "economic growth, full employment and social equity". Eliminate economic disparities between regions, propagates "regional balance".	Unlocking the potential of the region by solving its social, economic, environmental, and demographic problems. Targeted investment in depressed/poorer regions.
Intra-regional planning	3. Intra-regional planning (Regional)	Social concerns (housing, facilities, amenities). Economic concerns (spatial diffusion of investment). Environmental concerns (physical environment).	Allocate resources to eliminate economic disparities within larger regions.	Regional strategic plans, regional strategies, regional spatial strategies, etc.
	4. Sub-regional planning		Allocate resources to eliminate economic disparities within sub-regions.	Strategies, plans, policies on a sub-regional level.
	5. Structure (Local)	Urban growth and development, management of local resources and stimulating peripheral, rural economies. Land-use planning and management.		

Source: Adapted from Friedmann (1963:60), CEC (1997:24), and Glasson & Marshall (2007).

In addition to Table 3-1, Figure 3-3 illustrates the spatial nature of regional planning as applied from supranational to local levels of planning.

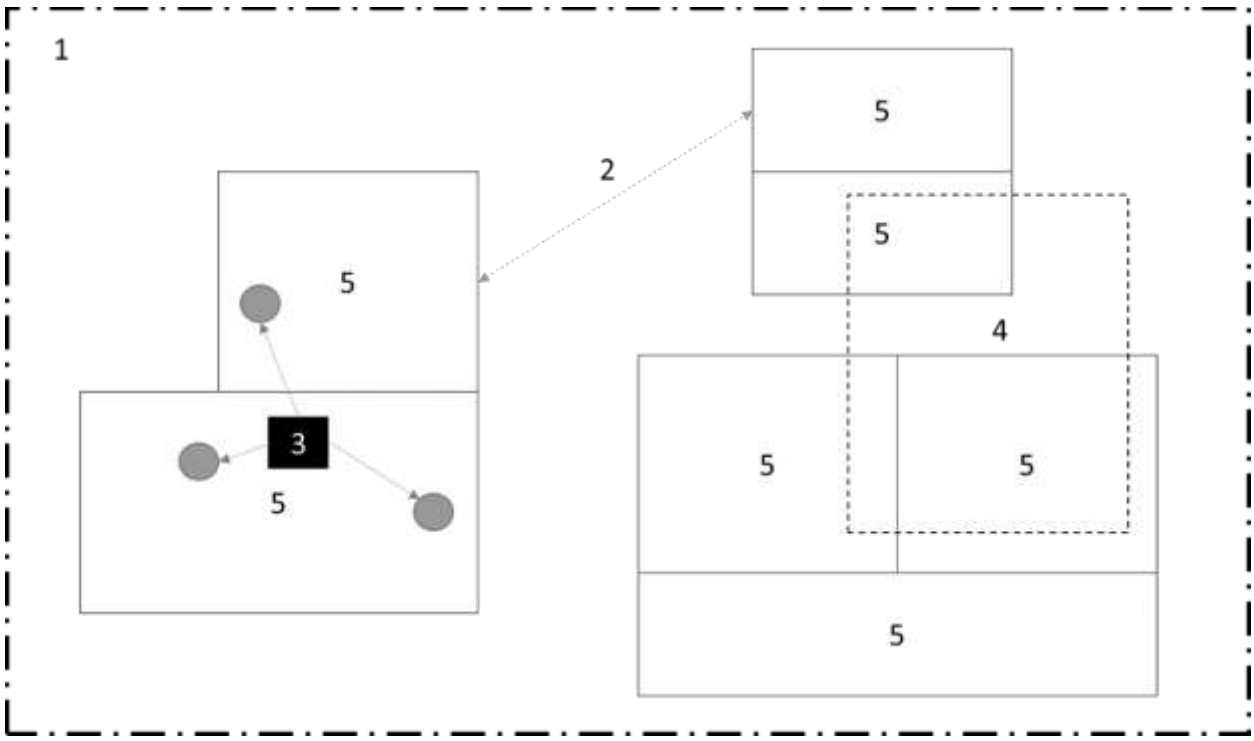


Figure 3-3: Implementation of regional planning levels

Source: Adapted from Glasson and Marshall (2007:22).

On a regional and sub-regional level, regional planning is concerned with the locality of investment within any given region with regards to the identification of the need for development projects, as well as the implementation thereof on a regional and sub-regional level (Friedmann, 1963:60). Glasson (1978:24) maintains that these regional objectives constitute intra-regional planning, i.e. regional planning which focusses on bringing about the egalitarian distribution of resources within the various regions and sub-regions of a country. The regional level (3) and sub-regional level (4) of regional planning is illustrated in Figure 3-3 as the allocation and management of resources within the various regions and sub-regions. Regional planning is applied on a local planning scale where it is concerned with urban growth and development, the management of local resources and stimulating the peripheral, rural economies (Friedmann, 1963:60). CEC (1997:24) states that spatial planning on the local level manifests itself in the planning of land-use and regulating the location of economic activities and development.

On a national planning scale, regional planning seeks sufficiently balanced economic growth and development between the various regions which constitute a given country (Glasson & Marshall, 2007:22). Glasson (1978:28) maintains that national planning objectives constitute inter-regional planning, i.e. regional planning with the objective of balancing resource allocation and economic growth and development between the respective regions of a country. According

to CEC (1997:24), national spatial planning manifests in the form of development frameworks which set guidelines for spatial development on the lower levels of planning. National guidelines are constructed to direct planning approaches on the subsequent levels. Major developmental projects are planned on a national level, seeking to influence the locational decisions of private investors and channel investment to areas prioritised on a national level (Glasson & Marshall, 2007:135). Regional planning on a national level (2) and the allocation of resources between regions is illustrated in Figure 3-3. On a supranational level, inter-regional planning seeks to eliminate disparities between countries and regions of a sub-continental regional grouping through targeted investments in developing regions and the harmonisation of regional planning approaches and implementation (Glasson, 2007:23). Figure 3-3 illustrates that supranational planning (1) encompasses the subsequent levels of national and regional planning. This supranational level of inter-regional planning focussed on the allocation of resources promoting convergence in economic prosperity between the countries and regions of a regional grouping, constitutes the basis of the regional planning scale in this study.

Regional planning, whether implemented on a supranational, national, regional, or sub-regional scale, plays a critical role in the planning for regionally balanced economic growth in regional groupings, countries, and their various sub-regions (Friedmann, 1963). This section illuminates the disparities in the regional structure and the spatial diffusion of economic activities within and between regions, as well as the role of spatial and regional planning in altering the distribution of resources within and between regions to foster egalitarian intra and inter-regional growth (c.f. 3.2.2). The following section investigates the application of regional planning through regional policy, and the role of said policy in implementing tangible solutions to negate the deficiencies in the regional structure that exacerbates differences in economic prosperity within and between regions, in addition to fostering regional economic growth.

3.3 Regional policy

The objective of spatial and economic planning is to bring about regional economic growth that is spatially diffused within and between planning regions (c.f. 3.2.1). It is, however, evident that differences in resource availability and regional variations in the efficiency of resource utilisation exacerbates differences in intra- and inter-regional economic prosperity and growth (c.f. 3.2.2). Therefore, regional planning seeks to provide solutions to regional divergence in economic growth to “create equal conditions of life” between regional populations (Glasson & Marshall, 2007:15).

3.3.1 Regional economic disparities

Armstrong and Taylor (200:234) state that regional planning objectives are brought to fruition through the implementation of regional policy that seeks to apply targeted solutions to the regional divergence issue. The desirability of finding solutions and intervening to overcome differences in regional economic growth is determined by the nature of regional disparities; when economic disparities are of a short-term nature (including the temporary effects of environmental phenomena), there is limited appetite for regional planning propagating targeted spatial and economic interventions through regional policy (Glasson & Marshall, 2007:27). However, long-term disparities and growing divergence in economic prosperity may have far-reaching impacts on the long-term economic growth within and between prosperous, industrialised regions and the poorer, developing regions (Démurger, 2001:97). In this regard, Glasson and Marshall (2007:27) state that regional policy interventions may be motivated by long-term economic, social, and political considerations. A primary economic consideration is the possibility of under-utilisation of resources in poorer, developing regions while resources are over-utilised in prosperous, industrialised regions. Evidently, regional policy is implemented to extract latent economic potential in developing regions, while aiming to sustain economic growth in industrialised regions (Démurger, 2001:96). Social and political motivations are based on growing discontent among the population in poorer regions at the divergent economic status quo, while this discontent breeds an appetite for targeted solutions through regional policy among political decision-makers (Easterly *et* al., 2006:103).

Regional differences in resource utilisation may, over the long-term, manifest in the development of divergent regional economies, ranging from poor developing economies, economically depressed regions, and congested industrialised regions (Glasson & Marshall, 2007:25). Developing regions are characterised by substantial economic potential, but inefficient resource productivity delivers limited economic growth as production factors (including labour and capital) migrate outwards to industrialised regions (Glasson & Marshall, 2007:25). Economically depressed regions display declining growth rates as once dominant industries decline over the long-term. The dated industrial structure and technology application manifests in the underutilisation of resources, limited production, and high unemployment (Glasson & Marshall, 2007:25). Congested industrialised regions illustrate contrasting characteristics to the developing and depressed regions, displaying low unemployment, high regional incomes, and inflows of production factors from other regions. However, the inflow of labour and continued economic expansion may contribute to growing congestion, rising factor prices, and environmental challenges. Accordingly, over the long-term, these prosperous industrialised regions count the “costs of success” through declining resource productivity and regional economic growth (Glasson & Marshall, 2007:25). Evidently, regional economic

convergence and regionally balanced economic prosperity is beneficial to developing and industrial regions alike, potentially extracting remaining economic potential and resource productivity in developing regions, while sustaining resource utilisation and economic growth in industrialised regions (Démurger, 2001:96; Glasson & Marshall, 2007:27). This constitutes the primary motivation for intervention in the spatial diffusion of regional economic growth through regional policy.

3.3.2 Approach to regional policy intervention

While regional policy and the objective of equally distributed economic prosperity may prove desirable over the long-term, there are two distinct approaches to regional policy that guides the nature of potential interventions, namely the free market approach to regional policy and interventionist regional policy (Armstrong & Taylor, 2000:211). The free market approach propagates that regional economic disparities are exacerbated by overbearing planning intervention that results in economic and market inefficiencies. This approach supports limited policy intervention in the function of the regional economy and supports the role of the free market and the entrepreneurial culture of the local population in catalysing regional economic growth and convergence between developing and industrialised regions (Armstrong & Taylor, 2000:211). The foundation of the free-market approach is rooted in the neoclassical economic paradigm, which proposes deregulation of markets, limited central or regional planning of the economy, and privatisation of public assets to catalyse regional economic growth and converge developing regions with industrialised regions (Richardson, 1985:22). The free market approach thus limits public expenditure on the egalitarian growth objectives of regional planning, limiting the implementation of targeted regional policy and supporting the mechanisms of the free market in the elimination of regional inequalities (Berentsen, 1978:131). The primary utilisation of regional policy in this regard is to achieve economic liberalisation and implement initiatives to increase the mobility of production factors to move to regions where the highest return on investment is accumulated, irrespective of the potential exacerbation of regional inequalities through this process (Armstrong & Taylor, 2000:2). An example in this regard is enabling labour from developing regions to migrate to industrialised regions through labour mobility policy (Glasson & Marshall, 2007:31).

The interventionist regional policy approach promotes increased public expenditure and targeted investments to purposefully alter the distribution of resources and guide movement of production factors (including capital, labour, and technology) in accordance with the objectives of regional planning (Armstrong & Taylor 2000:211). Ashcroft (1984:99) adds that interventionist regional policy propagates the notion that regionally balanced economic growth and convergence between developing and industrialised regions is to be achieved through targeted public interventions and investments. Inherent to the interventionist approach, regional policy to

mitigate divergence in economic growth between developing and industrialised regions may be based on distinct methods derived from predetermined objectives (Glasson & Marshall, 2007:28; Thomas *et al*., 2015:433). The first method in this regard is to implement policy measures to encourage economic activities – with emphasis on the employment creating abilities of industries – to move to developing regions from prosperous, industrialised regions (Boldrin *et al.,* 2001:245). The objective in this regard is to lessen congestion in industrialised regions and catalyse economic growth and employment in developing regions (Glasson & Marshall, 2007:27). In order to stimulate this industry migration, certain incentives are offered by developing regions and regional planning authorities in the form of financial assistance (subsidies, grants, loans), reducing the cost incurred by industries and maintaining their competitive advantage (Boldrin *et al*., 2001:245; Glasson & Marshall, 2007:31).

The second method of interventionist regional policy is to improve the economic (road infrastructure, industrial sites) and social (education and medical facilities) capital of developing regions through targeted public investment (Armstrong & Taylor, 2000:213). Said infrastructure investments seek to increase efficiency in intra-regional factor movements through adequate connecting infrastructure and linkages allowing accessibility between economic centres and activities within the developing region (Armstrong & Taylor, 2000:213). These policy interventions seek to catalyse economic convergence between developing and industrial regions by stimulating economic development, encouraging business efficiency, increasing investment and competitiveness, and stimulating human capital development and employment in developing regions (Glasson & Marshall, 2007:31).

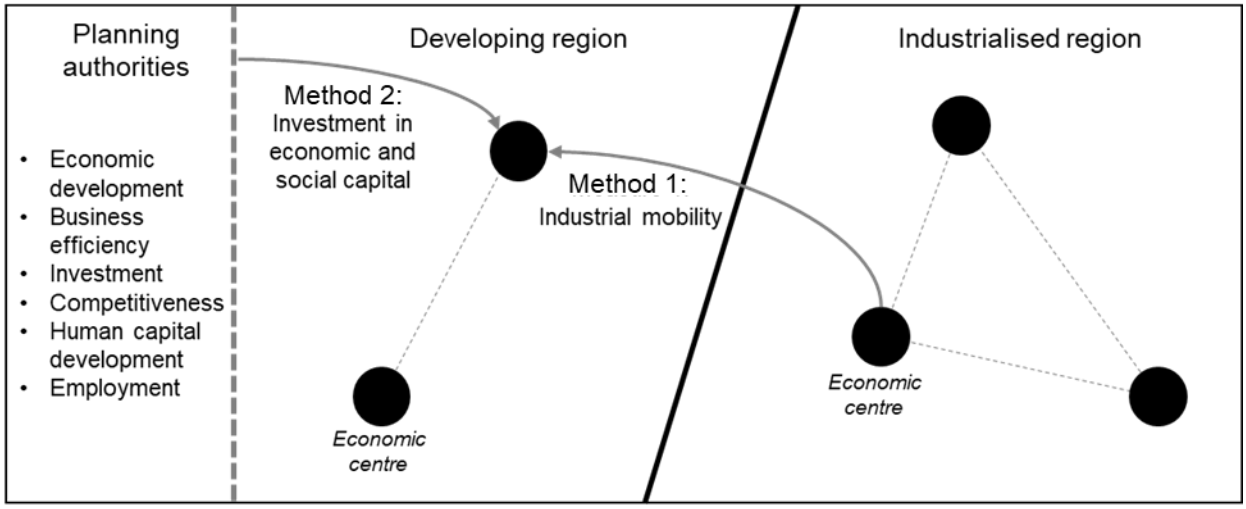


Figure 3-4: Interventionist regional policy measures

Source: Adapted from Armstrong and Taylor (2000:213), Boldrin *et al. (*2001:245), and Glasson and Marshall (2007:27).

Figure 3-4 illustrates the spatial implementation of the two interventionist regional policy methods. The industrial mobility method seeks to encourage the migration of economic activities and industries from the prosperous industrial region to the poorer developing region. In addition, public sector investment seeks to extract economic potential in the developing region (Armstrong & Taylor, 2000:213). These methods aim to foster convergence between said regions in regional economic growth and prosperity.

It is evident that spatial and regional planning seek to foster regionally balanced economic growth and prosperity between and within regions (c.f. 3.2.2). The advantage of targeted regional policy is the optimal utilisation of resources in developing and industrialised regions, fostering shared quality of life and social cohesion (c.f. 3.3.1). As the spatial dispersion of economic activities and centres differ between regions, interventionist regional policy seeks to alter the distribution of resources to guide the location of activities and industry between and within regions to achieve the egalitarian objectives of regional planning (c.f. 3.3.2). The following section aims to investigate the forces that determine the structural organisation of regions and influence regional disparities in the location of economic activities and industries.

3.4 Structural organisation of regions

The planning region, as illustrated in Figure 3-5, consists of various centres of economic activity which display elements of functional interaction and interdependency between one another through the movement of consumers, capital and information facilitated by a network of linkages (c.f. 3.1.3). The centres within a planning region interact with one another to a larger degree than with centres in other regions, constituting the basis of their demarcation into regions displaying functional interdependency (c.f. 3.1.2). In addition, the region displays intricate nodal systems consisting of various centres of activity, the development of which is influenced by the location of resources and other centres (c.f. 3.1.2).

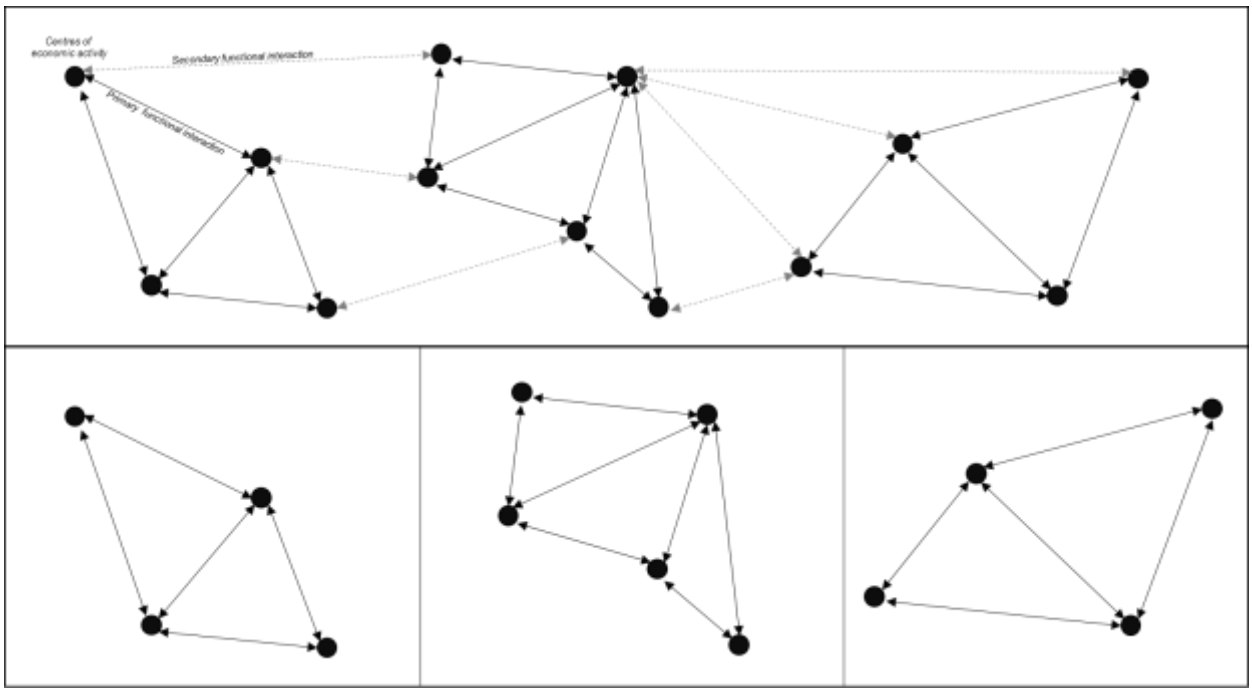


Figure 3-5: Isolated planning regions

Source: Adapted from Christaller (1933).

As regional planning is concerned with altering the spatial distribution of resources and economic activities between and within regions, understanding the forces which determine the spatial distribution of said activities and resources within the planning region (in isolation from interactions external to the region) is an essential element of regional planning, regardless of the scale of the region and level of implementation (Glasson, 1978:125). Friedmann and Alonso (1964:75) and Boudeville (1966) state that it is essential to comprehend the forces, or “laws”, that influence the structure of regions in order to envisage the effect of regional planning and the resultant regional policies on the distribution of economic activity in and between regions. Accordingly, the following section investigates the structural organisation of the region and the underlying forces and mechanisms which influence said structure. While the features of the planning region are evident, the forces which shape their distribution are investigated in the following sections of the chapter.

3.4.1 Paradigms of structural organisation

According to Derycke and Huriot (1998:6), there are three primary paradigms which influence the presiding thought and study of the regional structure, including:

1. The Von Thünen (1863) model of monocentric space, which introduces a spatial dimension to economic thought (Hite, 1997:231; Derycke & Huriot, 1998:6; Fischer 2011:494).

2. The central place theory from the perspective of Christaller (1933), which investigates the mechanisms inherent to the spatial distribution of economic centres (Derycke & Huriot, 1998:7).
3. The model of industrial location from Weber (1929). This model underlines the mechanisms and the locational decisions which influence the location of industry and economic activity within the region (Glasson, 1978:127).

These theories constitute the foundation of the investigation of the mechanisms involved in the spatial organisation of regions within this study. The abovementioned theories and models are based on a presumption of order with regards to the spatial interaction of regional features (Glasson, 1978:148). This presumption of order is based on several principles constituting the foundation of the mentioned regional models, including the following:

- Distance is a central locational determinant of centres in the region as the location of economic activity and industries seeks to overcome the effect of distance (Garner, 1967; Glasson, 1978:149). This principle is a central theme in the Von Thünen monocentric space model.
- Centres of economic activity form a hierarchy with a central node (focal centre), which is determined by accessibility and forces of agglomeration (Garner, 1967; Glasson, 1978:149). This principle is a central element in Christaller's (1933) central place theory.
- Economic activities group in certain locations to provide economies of scale and to encourage industrial specialisation (Garner, 1967). The Weber industrial location theory illustrates this principle.

In order to illuminate the laws that govern the structural organisation of the region for the purposes of regional planning and policy, the following sections investigate the abovementioned regional paradigms and organisational principles.

3.4.2 Regional space economy

Perroux (1950:27) lays the theoretical foundation of the regional space economy wherein the core regional paradigms and organisational principles are applied and the functional interaction between economic activities take place. Perroux (1950) propagates the existence of economic space containing various centres of economic activity, each emanating forces of a centrifugal nature and attraction forces of a centripetal nature. The cumulative result of said forces is that each locality has its own field of forces that either supports the concentration of economic activities and resources (capital, labour, goods and services) or repulses the concentration of said activities, with the fields overlapping. The culmination of these forces within the economic space influences the organisational structure of the economic activities and a pattern of

functional interdependency emerges (Perroux, 1950:28). These forces of attraction and dispersion are illustrated in Figure 3-6.

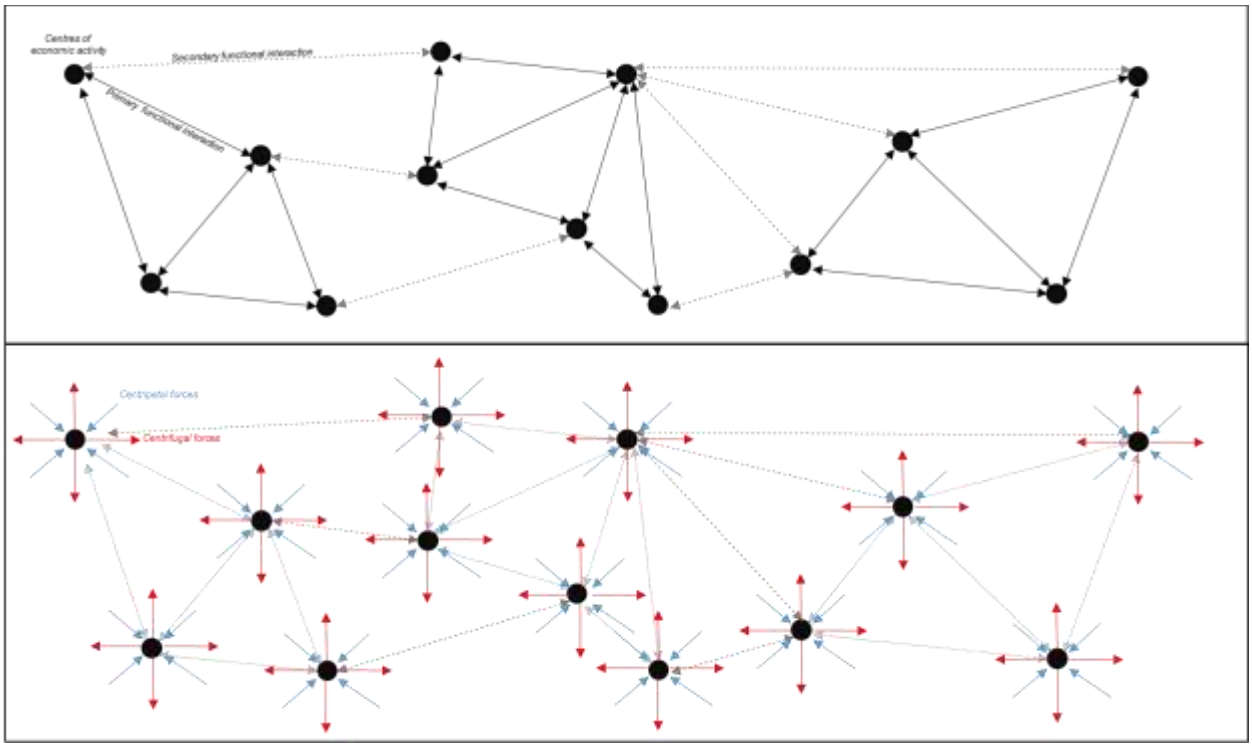


Figure 3-6: Centrifugal and centripetal forces in the planning region

Source: Adapted from Perroux (1950).

By determining interdependencies between centres based on specified demarcation criteria within this space economy, functional and planning regions may be delineated (Dickenson, 1938:609; Friedmann, 1956:12; Glasson, 1978:38). This regional space economy emanating forces of concentration and dispersion regarding economic activities forms the basis of the regional structure investigation for the purpose of effective regional planning.

3.4.3 Model of monocentric space

The monocentric space model of Von Thünen (1863) places a centre of economic activity within the regional space economy, introducing the influence of space on the location of economic activities within economic space. The model examines the spatial manifestation of an economic centre within the functional region and its influence on economic activity (agricultural land uses) in the hinterland (adjacent farmlands) (Von Thünen, 1863:7). Distance and transport cost are central elements in the model, with said factors influencing the location of crops around the centre. As farmers wish to maximise their profits by keeping transport costs to a minimum, agricultural land uses which are perishable and produce large, difficult to transport products will be located closest to the centre due to high transport cost, while crop with smaller produce are located in the periphery (Von Thünen, 1863:8). As a result of distance and transport cost, Von

Thünen (1863:8) states that concentric rings can be drawn around the centre indicating the different land uses. Each respective ring is characterised by staple products which are optimally produced at that distance from the centre, in relation to transport costs.

According to Hite (1997:231), Von Thünen introduced the idea of a space economy consisting of an economic centre with a surrounding rural hinterland, the foundation of many subsequent theories regarding the structural organisation of regions. In addition to Von Thünen's consideration of space, Fischer (2011:494) states that another important contribution is its consideration of the cost of transport and the effect thereof on the prices of goods and location of land uses. Accordingly, Fischer (2011:494) and Isard (1949:480) maintains that Von Thünen's theory made a critical contribution to the analysis of regional structure organisation, location, and spatial economics.

While Perroux (1950:27) lays the foundation of the regional space economy wherein the core regional paradigms and organisational principles are applied, and the monocentric space model illuminates the effect of distance and transport cost on the location of economic activities, the following section aims to investigate the central place theory to determine the mechanisms inherent to the spatial distribution of economic centres within planning regions.

3.5 Central place theory

The following section of the study investigates the central place theory of Christaller (1933). Described as the preeminent regional structure theory, the central place theory contributes to the regional structure investigation as it seeks to illuminate the mechanisms which determine the size and distribution of economic centres within the regional space economy (Christaller, 1933; Dacey, 1965:111; Smith, 1977:903; Glasson, 1978:149; Chen and Zhou, 2005:346; Sonis, 2005:2; Mulligan *et al.,* 2012:406). As such, the central place theory is critical in the formulation of regional policy to alter the spatial distribution of said economic activities between and within regions (Mulligan *et al*., 2012:406).

3.5.1 Introduction to the central place theory

The aim of the spatial analysis conducted within the central place theory is to determine the forces which influence the location of economic activities, i.e. "service industries", within the regional structure, and to highlight the importance of the spatial mechanisms inherent to the industrial location theories (Glasson, 1978:149). Within the central place theory, the critical function of service industries is reflected in their provision of economic services to the population of the region (Allen & Hermansen, 1968:147).

The premise for the distributional pattern of economic centres as propagated within the central place theory is that the provision of services is unequal throughout the region, with their spatial

abundance varying based on scale and economic importance (Glasson, 1978:150). Services which are considered specialised, or high-order, are less abundant in the region, while less specialised, low-order, services – and the centres which offer them – are plentiful (Christaller, 1933; Glasson, 1978:150). Accordingly, Berry and Garrison (1958:304) state that the distance the consumer is willing to travel to acquire a service is determined by its degree of specialisation. This linear distance between the location of the service and that of the consumer constitutes the range of the service, the upper limit of which is the furthest consumers will be willing the travel to acquire the service before choosing to travel to a different centre offering the same service (Berry and Garrison, 1958:304). The lower limit of the range encircles an area consisting of the minimum number of consumers needed to acquire the service for the provision of the service to be considered viable, also known as the population threshold. When the consumers in the centre are less than the population threshold of the service, the service is not provided within that centre (Berry & Garrison, 1958:306).

The range of the centre and its services determines its sphere of influence: centres with specialised, high-order functions dependent on large population thresholds attract consumers from a greater distance, illustrating a large range and sphere of influence, while centres with low-order functions depend on smaller population thresholds and attract nearby consumers (Christaller, 1933). The sphere of influence of the different order economic centres determine the spatial distribution of said centres in the regional space economy (Christaller, 1933).

3.5.2 Hierarchy of centres

Considering the sphere of influence determined by the order of services provided in the respective centres, it is possible to place the centres in a hierarchy (Hughes, 1972:121; Growe, 2012:295). Within said hierarchy, the centres with the most prominent spheres of influence and utmost order of functionality, are the largest centres, while the centres with the smallest spheres of influence and the lowest order of functionality are the lowest level in the central place hierarchy (Growe, 2012:295). A critical feature of the central place theory is that there is a positive correlation between the population of a centre and the order of function of the services provided in the centre: the highest order centre has the largest population while the lowest order centre has the lowest population (Berry & Garrison, 1958:305). The centre hierarchy within the central place theory is the product of several assumptions, including the following (Berry & Garrison, 1958; Davey, 1968:112; Beavon & Hay, 1978:98):

- The region is located on a perfectly flat geographical area and the whole of the region is naturally homogeneous with all resources equally distributed.
- There is limitless mobility between the various centres of the region with transport costs being constant in all directions.

- The price of the respected services are equal in all the centres in the region.
- The lower order centres do not provide the functions and services of the higher order centres.
- Each centre has a minimum of one function.
- High-order centres contain the same functions of the centres below them in the hierarchy, in addition to its own higher order functions.

Based on the abovementioned assumptions of the central place hierarchy, Glasson (1978:153) illustrates the development of the regional structure and the distribution of economic centres within the regional space economy, as presented in Figure 3-7.

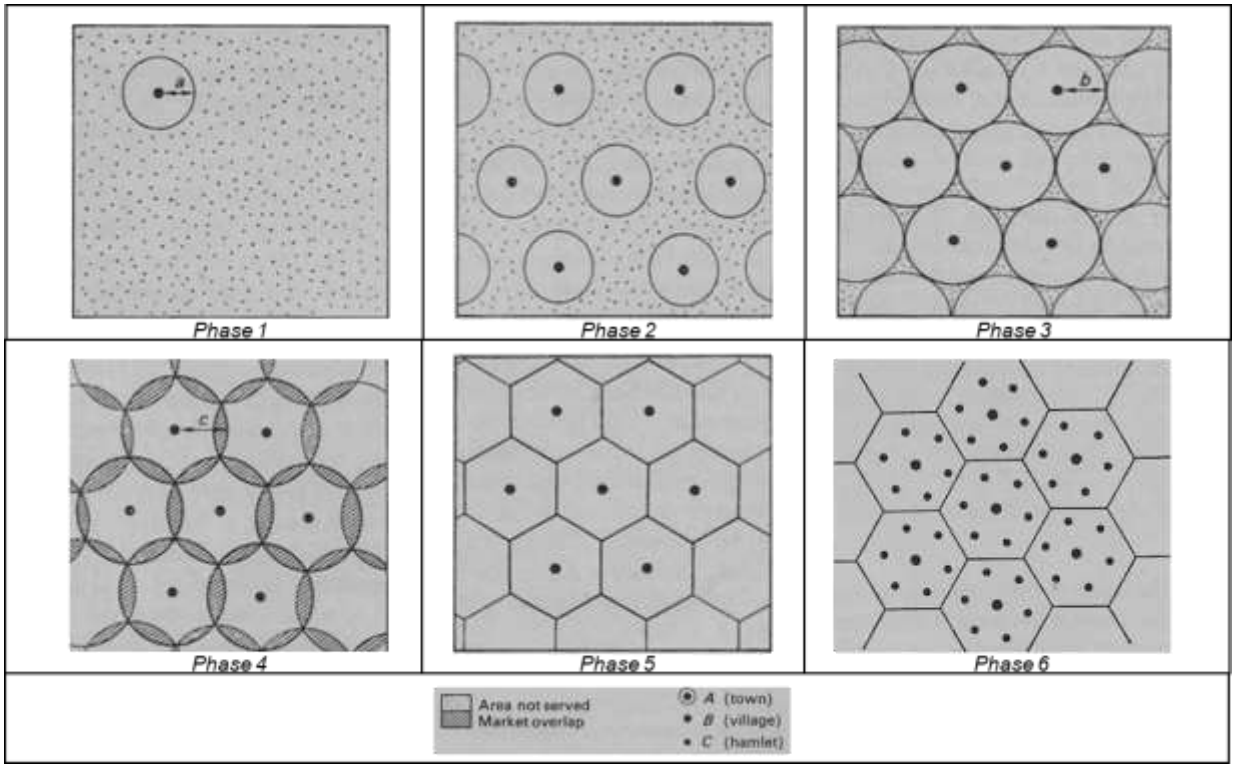


Figure 3-7: Development of central place hierarchy

Source: Glasson (1978:153).

In Figure 3-7, Phase 1 illustrates a regional structure where a single farm (hamlet) provides basic, low-order goods and services to the surrounding farms and population within its sphere of influence, with other farms excluded due to excessive transport cost. It is evident that during this structural phase of the region, a single centre serves a small hinterland with few consumers (Glasson 1978:152). During Phase 2 of the regional structure, several centres of the same size serve their respective hinterlands with the same basic, low-order services. Glasson (1978:152) states that the regional structure evolves from the single centre of Phase 1 to various centres in Phase 2 as more farmers develop retail capabilities to provide services to their respective

hinterlands. However, Philbrick (1957:312) states that interaction between these various centres are severely limited. However, in spite of the growing number of economic centres serving the regional population, a large number of consumers are left without a centre as the distance they have to travel, and the resultant transport costs are deemed too high to justify travel to acquire services (Glasson, 1978:153). During this phase of the regional structure, both the cost of transport and the cost of services, which remains high due to a lack of competition from rival centres and providers, contribute to small hinterlands, i.e. spheres of influence, of the respective centres.

In Phase 3 of the regional structure, spatial competition between regional centres increase as transport costs decline as a result of improved transport methods, easing the friction of distance and stimulating the consumer's willingness to travel greater distances (Glasson, 1978:154). In addition, it is assumed that the price of the services offered in the centres decline due to increased production efficiency and stimulated inter-centre competition. Declining transport and production cost increases the distance which the consumers are willing to travel to acquire the service (Glasson, 1978:154). The result of this is that the sphere of influence of the centres increase to encircle most of the consumers in the region. As downward pressure is applied on service prices, the hinterlands of the respective centres increase over time, leading to the regional structure characterised by overlapping spheres of influence, a structural phenomenon illustrated in Phase 4 (see Figure 3-7). Following Christaller's (1933) assumption that regional consumers are rational beings who follow the path of least friction, it is accepted that the consumers will travel to the closest centre. This behaviour results in the establishment hexagonal service areas where the hinterlands, and the spheres of influence, of the economic centres do not overlap (Parr, 2017:161). This evolution of the hinterland is illustrated in Phase 5 of the regional structure.

The regional structure illustrated in Phase 5 contains economic centres of the same functional order offering similar services, attracting the same number of consumers from a hinterland of the same size. In other words, there is no hierarchy of centres contained within the regional structure. However, as the regional structure approaches Phase 6, it is clear that a hierarchy of economic centres develops within the regional space economy. The fundamental factor in the development the regional structure characterised by said hierarchy is the "one-step, bi-polar" interaction between consumers and service-providing centres, as well as the interaction between previously isolated centres (Philbrick, 1957:310). Interaction between economic centres through the movement of goods, services, and consumers contributes to the development of functional specialisation in certain centres, attracting additional consumers, services and economic activities (Philbrick, 1957:314). This process of specialisation leads to increased clustering of higher-order services, attracting consumers from larger distances as a

result of an increase in the centres' sphere of influence (Philbrick (1957:315). The central place within the regional structure, i.e. the dominant economic centre, develops a degree of specialisation and order of function that eclipses all other centres in the region (Philbrick, 1957:315). This centre provides all the services of the preceding centres in the hierarchy, and is superior in terms of accessibility, linkages with lower order centres, and its ability to facilitate the movement of people, goods and services.

In spite of the critique levied at the central place theory by Parr (1980:141), Fujita *et al*. (1999:27), and Mulligan *et al*. (2012, 408) regarding the rigidity of its centre hierarchy and the neglect of spatial mechanisms which influence said hierarchy, Friedmann (1956:7) states that the central place theory, with its model of a region comprising several centres of human occupancy interconnected with a network of communication linkages, contributed to a greater understanding of the regional structure. Curtin and Church (2007:185) adds that the central place theory identifies mechanisms of a spatial, economic and social nature involved in an interactive capacity in the dispersion of economic activities and units of human occupancy within the regional space economy. Through the study of the central place theory, the regional planner gains an understanding of the mechanisms which influence the spatial distribution of economic centres within the regional space economy (Mulligan et al., 2012:418). In addition, the central place theory illuminates the mechanisms which drive the hierarchical development of economic centres, namely the interaction between the rural hinterland and the urban centres, mechanisms of nodal interaction, as well as the commuting patterns of the regional consumer (Mulligan et al., 2012:418). These factors are instrumental in the successful implementation of regional policy to alter the spatial structure of the region and the locational characteristics of economic activities according to objectives (Mulligan et al. 2012:418). The following section seeks to investigate the industrial location theory and the forces that guide the spatial dispersion of industries in the regional space economy.

3.6 Industrial location theory

In seeking to foster egalitarian economic growth and prosperity in developing and industrialised regions, regional policy aims to influence the location of industries within and between regions (c.f. 3.3.1). The interventionist method of regional policy, considering the regional imbalances in the distribution of industries, propagates the implementation of measures to attract additional industries to developing regions to stimulate regional economic growth and optimise productive utilisation of resources and production factors (c.f. 3.3.2). Weber (1929:1), prioritising the production sphere of the economic process and its role in regional economic growth, states that the distribution of industries constitutes a critical element in the study of the mechanisms that govern the locational distribution of centres within the planning region. Industry is a significant contributor to the aggregation of populations and the concentration of production, capital,

economic activities, and consumption within a space economy, illuminating the role of industries in garnering regional economic growth (Weber, 1929:3). According to Rostow (1971:46), industrialisation and the increased distribution of industries is a critical element in the economic growth of developing regions, fostering increased productivity and output during the take-off stage of development. Arauzo-Carod *et al.* (2010:685) support the study of industry as the production sphere of economic processes as a means of illuminating forces which influence the location of centres. Therefore, according to Glasson (1978:125) in order to effectively alter resource allocation and economic activities to foster economic convergence between developing and industrialised regions as per the objectives of regional planning and policy, the study and understanding of forces which dictate the spatial distribution of industries is of importance.

3.6.1 Least cost approach

Glasson (1978:149) states that the regional space economy is an assembly of three distinct features, namely service industries, manufacturing industries, and spatial linkages. Service industries provide financial and tertiary services to the population, including services which may be of an administrative, retail or financial nature. According to Glasson (1978:148), another feature within the regional structure is that of special industries which focus on manufacturing of goods and extraction of natural resources. These industries form agglomerations, the locality of which is influenced by the location of resources within the region (Glasson, 1978:148). Industries form spatial clusters of varying intensity at certain localities which constitutes centres of economic activity and human occupation. A prominent industrial location theory is Weber's (1929) least cost approach. In determining the factors which influence the spatial distribution of industry and economic activities within the regional space economy, Weber (1929) states that three factors are of importance: transport cost, labour cost, and agglomeration factors.

3.6.1.1 Transport cost

Weber (1929:41) states that transport cost refers to overcoming the distance associated with gathering raw materials as inputs to the production process and delivering the manufactured goods to the market, with the weight of said inputs and transport cost being directly proportional. Weber (1929:49) explains that industries will be located at the point where transport cost is at a minimum with total transport cost being the aggregate cost of transporting inputs to the industry and manufactured goods to the market. Accordingly, the comparable weight of the inputs and the manufactured goods is a central determinant to industrial location. As illustrated in Figure 3-8, when the weight of the inputs is higher than that of the final product, the industry (Industry A) will locate in close proximity to the input deposits to limit transport cost, and when the weight

the final product is higher, the industry (Industry B) will be located closer to the market place (Weber, 1929:50).

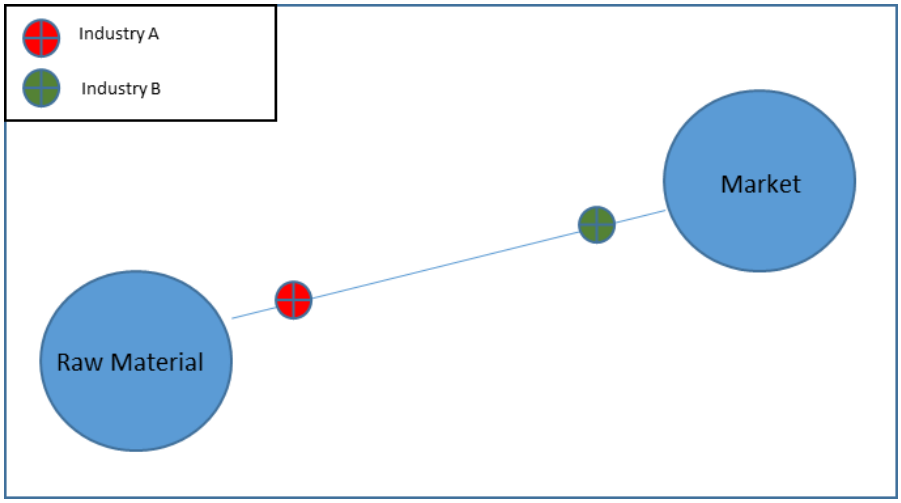


Figure 3-8: Impact of transport cost

Source: Adapted from Wood (1969:33).

As adapted from Wood (1969:33), Industry A and B will be located at the optimal location between the market and source of inputs where transport cost is at a minimum and profits are maximised. This interaction between the cost of transport of raw materials from deposits and manufactured goods to the market, and the attempt to minimise the costs of the firm forms the foundation of the theory of industrial location based on transport cost.

3.6.1.2 Labour cost

According to Weber (1929:95) and Glasson (1978:129), labour cost may influence industrial location. It is assumed that labour concentrates at certain locations within the region and that labour cost is not fixed (Weber, 1929:95). Accordingly, there is both a least-cost transport location and a least-cost labour location within the region, a feature which is illustrated in Figure 3-9 (Weber, 1929:101).

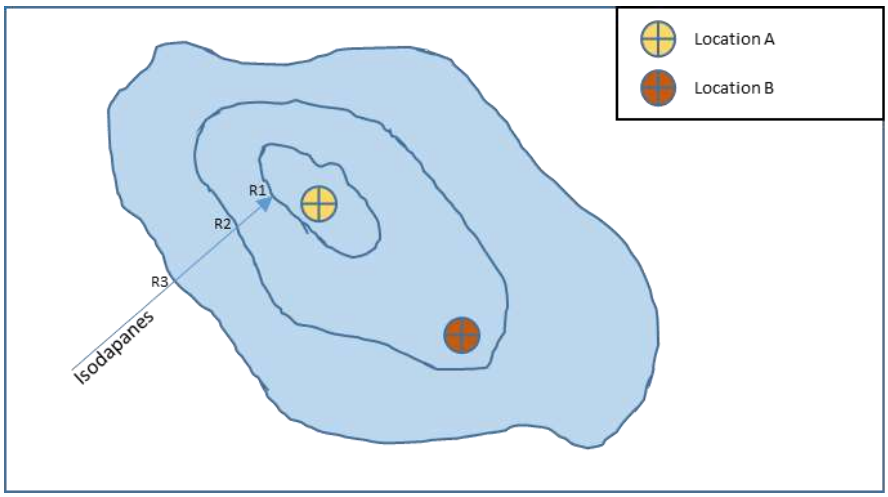


Figure 3-9: Impact of labour cost

Source: Adapted from Glasson (1978:130).

In the scenario illustrated in Figure 3-9, the industrial location is determined by both labour and transport cost. Weber (1929:103) reveals that due to the interaction between Location A (least-cost transport) and Location B (least-cost labour), the industry will only move from A to B if the additional cost of transport due to the aggravated distance is lower in relation to the savings gained as a result of lower labour cost. The isodapanes indicate the increase in transport cost per unit of production as the industry moves away from Location A. This forms the basis of an industry's decision on whether to migrate from point A to B (Weber, 1929:103; Glasson, 1978:130).

3.6.1.3 Factors of agglomeration

According to Weber (1929:121), an additional determinant of industrial location is the forces of agglomeration. As several industries settle in a location in close proximity to resources to minimise transport and labour cost, their grouping leads to the development of factors of agglomeration. These factors attract additional industries which would benefit from the cost-reducing impact of industrial grouping, including the cost-effective diffusion between industries of inputs, technology, and knowledge in the production process (Chapman, 2005:597). These factors of agglomeration contribute to the nodal concentration of industries that display linkages in the production process (Weber, 1929:125). The agglomeration of industries leads to the diversification of the range of manufactured goods, attracting consumers, and establishing centres of social agglomeration where the once isolated spheres of consumption and production merge into centres of concentration within the regional space economy (Weber, 1929:127). According to Glasson (1978:175) and Harrison (1992:110), the advantages associated with economies of agglomeration attract other economic activities to settle in close spatial proximity

to the primary and associated industries and firms, leading to polarisation and concentration of activities in identifiable economic centres within the regional space economy.

It is thus clear that the location of industries within the regional space economy is greatly influenced by the factors of transport cost, labour cost, and factors of agglomeration as a result of their clear impact on the production cost of industry (Weber, 1929).

3.6.2 Market area analysis

Glasson (1978:132) and Mulligan *et al.* (2012:409) offer a critique of the market area analysis by revealing that consumer and demand uniformity is not a reality within the space economy, explaining that consumers are dispersed and demand fluctuates, depending on locality. A market for manufactured goods exists where there is prevailing demand, while industry seeks to enter the biggest market with the highest demand for its products. The size market, i.e. the scale of demand, is thus an essential determinant of the location of industry, one which is overlooked in the least cost theory of location (Katz, 2014:164). Lösch (1940) investigates the market as a factor of the location of industry in his market area analysis.

In his market area analysis, Lösch (1940:105) seeks to determine whether the demand for a manufactured product is sufficient for it to be sold at a profit within a specific market, as well as determine the size of this market within the space economy. Ultimately, it is the goal of the producer to locate, within the largest market area, where the most profit can be extracted (Katz, 2014:164). Lösch (1940:105) assumes that the space economy is homogeneous in every aspect, including geography, raw material distribution, population density and demand. The space economy is dominated by independent farms which are isolated with no mutual interaction. In the analysis, Lösch (1940:105) explains that a single farm within this evenly distributed pattern of farms produces goods at a scale which exceeds his own needs and seeks to sell these products to the evenly distributed population. The producer seeks to determine the size of the market areas to ensure a profitable venture (Lösch, 1940:105). The demand for the manufactured products is influenced by the price of the goods, which is determined by production costs.

Figure 3-10 illustrates the demand curve for manufactured goods.

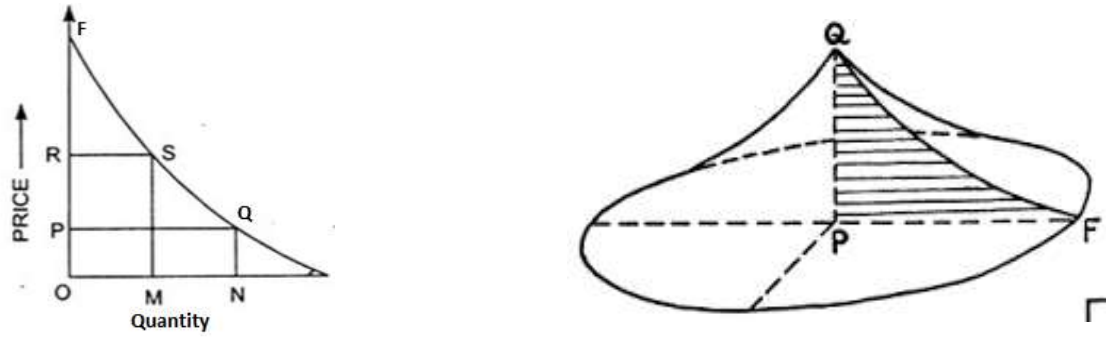


Figure 3-10: Löschian demand curve and cone

Source: Lösch (1940:106).

As illustrated in Figure 3-10, Lösch (1940:105) explains that the highest demand for manufactured goods (PQ) is in the immediate proximity of the firm when transport costs and the price of the goods are at a minimum. As distance from the firm increases, so does the price of the goods. As a result of this interaction between distance and price, demand for goods decrease the further away from the firm. As illustrated in Figure 3-10, at an intermediate distance from the firm (OR) the demand for goods (RS) is lower than at a close proximity of the firm and declines as distance and transport costs affect inflation. As distance from the firm increases, a point (OF) is reached where the price of the goods is deemed excessive, which results in consumer demand being zero (F). This point represents the maximum distance from the firm at which the goods are sold, constituting the outer border of the firm's market. The demand curve, as illustrated in Figure 3-10 may be spatially reinterpreted in the form of a demand cone, also illustrated in Figure 3-10.

The base of the cone represents the market area of the firm's produced goods, with demand (PQ) being highest closer to the firm (P) and declining as demand decreases with increasing prices until there is no demand (F). The height of the cone represents the quantity of goods sold at a particular location within the market, while the volume of the cone represents the total revenue generated by the firm within this market (Lösch, 1940:106; Smith, 1966:96). In the context of industrial location, industry will settle in the market where the demand is highest, revenue maximised and the market area for the relevant goods are the largest (Glasson, 1978:133). The size of the market for specific manufactured goods based on consumer demand is illuminated by the market area analysis of Lösch. Optimal industry locations are determined by market considerations and varying market sizes in the space economy, influenced by the uneven distribution of demand (see Figure 3-10). This is the market influence in the locational distribution of industries in the regional space economy (Glasson, 1978:132).

Weber (1929:1) states that the distribution of industries constitutes an important part of the study of the locational distribution of economic activities within the regional space economy. Glasson (1978:143) adds that the mechanisms which constitute the foundation of industrial

location decisions within the regional space economy, namely markets and related market forces, labour in production, transportation costs, and factors of agglomeration, are contained and highlighted within these industrial location theories. As Smith (1966:99) explains, these factors and the underlying spatial interactions offers insight into the explanation of locational choices of industries in the region. Glasson (1978:143) and Arauzo-Carod *et al. (*2010:685) is of the opinion that understanding mechanisms which influence the optimal location of industry within the regional space economy is fundamental in regional planning, as well as the formulation and implementation of appropriate regional policy. Industrial location theory sheds light on the mechanisms which influence the underlying structure of the regional space economy and affords the regional planner valuable information on planning future industry locations in the region and factors which attract industries to the region (Glasson, 1978:143).

3.7 New regionalism

The theories pertaining to the structural organisation of regions illuminate the forces and factors that determine the spatial distribution of economic activities and industries within a planning region. The regional space economy of Perroux (1950), and the monocentric space model of Von Thünen (1863) investigates the underlying spatial forces which shape the region (c.f. 3.4). The central place theory and theories relating to industrial location illuminate the mechanisms guiding the spatial distribution of regional phenomena (Weber, 1929:1; Glasson, 1978:143; Arauzo-Carod *et al*., 2010:685). Determining these mechanisms are important in undertaking effective regional planning and policy with the objective of stimulating regional economic convergence between developing and industrialised regions (c.f. 3.4).

3.7.1 Evolution of planning region

The aforementioned concepts are adhered to by the “policy-making” agents of isolated planning regions that seek to stimulate internal regional economic growth inherent to the “in-ward looking” growth paradigm (c.f. 3.1.3). Within these isolated planning regions there are limited interaction with external regions, with economic growth focussed on stimulating internal growth processes (c.f. 3.1.3). However, the notion of regions achieving economic growth in isolation was gradually replaced by the idea of regions being increasingly connected and economically interdependent beyond their delineated borders, with policy makers and administrators seizing a broader understanding of the regional economy, seeking greater inter-regional coordination and linkages while rejecting “inward-looking” regional economic policies (Väyrynen, 2003:26; Fawcett, 2004:437; Herrschel, 2005:63). Increased inter-regional interaction is propagated, seeking to eliminate the rigidity of the regional structure which separates economic and political considerations of regions (Fawcett, 2004:433; Warleigh-Lack, 2006:753). New regionalism seeks to foster increased cooperation between regions in different fields, being economic,

social, political or otherwise (Väyrynen, 2003:26; Herrschel, 2005:59). Where the mobility of economic activity and factors of production were previously limited to the outlines of the regions, new regionalism liberalised the movement of goods, services, capital, and labour between regions (c.f. 3.1.3). The basis of the regional structure inherent to new regionalism is the formation of regional groupings consisting of previously isolated regions, the objective of which is achieving greater functional interaction and increased inter-regional movement of information, goods and consumers (Marchand *et al.,* 1999:900; Fawcett, 2004:432). Accordingly, new regionalism propagates "dissolving" of isolated planning regions through their integration into a larger region (Zimmerbauer & Paasi, 2013:31). Figure 3-11 illustrates regional structure and the functional interaction between previously isolated regions, as propagated by new regionalism.

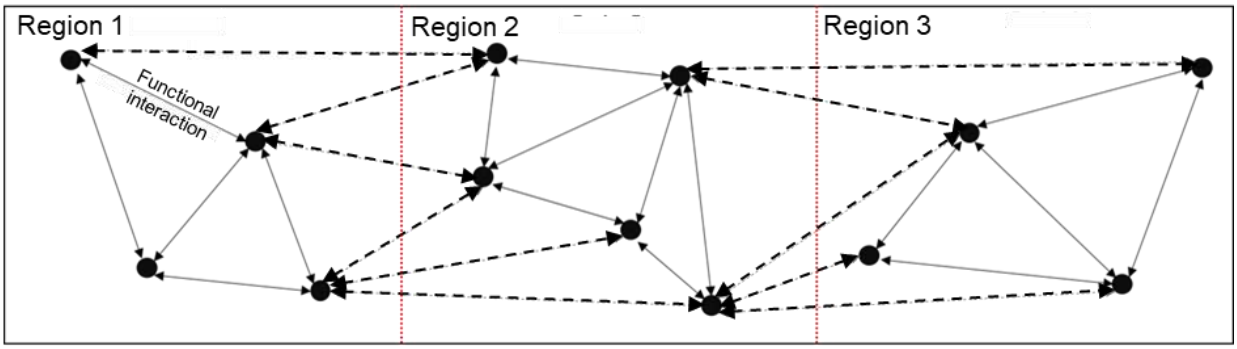


Figure 3-11: New regionalism

Source: Adapted from Christaller (1933) and Herschel (2005).

Harrison (1992:312) investigates the nature of the regional structure and functional interaction between regions, as identified in Figure 3-11, stating that "a series of place-sensitive nodes of dense economic and social activity" constitute the basis of inter-regional connectivity. In addition, Harrison (1992:312) states that new regionalism creates "regional states of political-economic governance, organised and aligned around a series of globally interlinked city-based economies". Therefore, interaction between regions in new regionalism is manifested by increased connectivity between the economic centres of said regions. According to Harrison (1992:312), the scale of interaction between regions in new regionalism is on a supranational scale, and can be considered the "post-national phase in the territorial development". With the dawn of new regionalism, countries seek increased economic cooperation and spatial connectivity between one another by eliminating restrictions on trade and the movement of goods, services, and people (Ethier, 1998:1150, Väyrynen, 2003:43; Fawcett, 2004:432). Regional integration is a central element in new regionalism, as it strives to eliminate tariff and non-tariff barriers to trade, increasing political, social, spatial, and economic interaction and interdependency between countries and regions (Zimmerbauer & Paasi, 2013; Pretorius & Drewes, 2016). Through regional integration, regional groupings are formed, confirming the

supranational regional structure inherent to new regionalism and this study (Zimmerman & Paasi, 2012).

3.7.2 "Old" to "new" regionalism

Regionalism underwent conceptual changes and, subsequently, a distinction can be made between "old" and "new" regionalism, with old regionalism prioritising the growth and development of the individual planning region through "inward-looking" policies and new regionalism symbolising regional integration of economic functionality and interdependent growth and development (Ethier, 1998:1149; Väyrynen, 2003:26; Herrschel, 2005:59; Warleigh-Lack, 2006:753). Fawcett (2004:432) explains that new regionalism not only brought about radical changes in the way regions interact with one another, but also resulted in changes in how the region is perceived in scale, and describes the "region" as a grouping of smaller countries within a single, large multinational region, the formation of which is brought about by increased regional integration. The needed degree of regionalism is determined by specified objectives with so-called "soft regionalism" being implemented to foster regional economic partnerships and "hard regionalism" cementing greater cooperation in various regional policy fields and increased regional integration (Fawcett, 2004:432). Regionalism can thus be considered the movement which propagates regional planning and creation of an alternative level of planning of the space economy other than the local and national levels (Smith, 1965). Accordingly, regional planning on a supranational scale is centred on cross-border economic planning in regional groupings, with the objective of eliminating disparities between countries participating in the regional integration initiative (c.f. 3.2.3). Based in the interventionist regional planning approach (c.f. 3.3.2), supranational regional planning seeks to assists regions through targeted investment in economic and social infrastructure to bolster convergence in regional economic growth (c.f. 3.2.3).

3.8 Conclusion

The regional structure constitutes the core theme of this chapter, which illuminates the spatial structure of regions, as well as the mechanisms which influence the location of economic activities within the regional space economy (c.f. 1.3). This chapter describes the evolution of the regional structure, from formal regions delineated based on homogeneous features, to functional regions defined by the functional interdependency between economic centres, and planning regions delineated for policy-making purposes and overseeing economic growth and development (c.f. 3.1). Planning regions evolved from being defined within the inward, isolated economic growth framework to the integrated regions of new regionalism with liberalised trade stimulating the movement of goods, services, and people between functionally interdependent

economic centres (c.f. 3.7). The role of regional integration in fostering increased cooperation and functional interaction between economic centres is investigated in this chapter (c.f. 3.7).

By understanding the changes in the regional structure and investigating the mechanisms which influence the spatial distribution of economic centres within the regional space economy, regional planning seeks to alter the spatial distribution of economic activities and resources between and within regions (c.f. 3.4). Inter-regional planning, which seeks regionally balanced growth between regions, is applied on a national and supranational level, while intra-regional planning, which fosters an equal distribution of economic growth within regions, is applied on a regional and sub-regional level (c.f. 3.2.3). Regional planning, through the implementation of regional policy, propagates eliminating the economic disparities between regions and fostering regional economic convergence (c.f. 3.3). Regional policy approaches include the free market approach and interventionist regional policy. While the free market approach propagates the liberalisation of regulations and movement of production factors, interventionist policy aims to guide the location of economic activities and industries in the regional space economy by availing certain financial incentives and investing in the economic and social capital of developing regions (c.f. 3.3.2). The objective in this regard is to foster regional economic convergence between developing and industrialised regions (c.f. 3.2.1). On a supranational level, regional planning seeks to foster regional integration, industrial policy and targeted investments in altering the regional distribution of economic activities and achieving spatial planning objectives (c.f. 2.2.2).

While the regional structure evolved, the mechanisms which influence the spatial distribution of economic centres within the regional space economy are illuminated in Perroux's (1950) theories of economic space, Von Thünen's (1863) model of monocentric space, Weber (1929) and Lösch's (1940) industrial location theories , as well as Christaller's (1933) central place theory. Perroux (1950) illustrates the economic forces which shape the regional space economy, with Von Thünen (1863) introducing the spatial dimension and the effect of distance and transport cost on the location of economic activities within the region. In addition, the central place theory of Christaller (1933) accentuates the interaction and interdependency between economic centres within the regional space economy, as well as the mechanisms which influence the spatial distribution and development of economic centres within the region (c.f. 3.5). Weber (1929) illustrates the influence of transport cost, labour cost, and factors of agglomeration in the location of industries in the regional space economy, while Lösch (1940) identifies the role of the market in the spatial diffusion of industries. As industrial development is an important factor in the long-term economic growth of developing regions (Rostow, 1971:47), determining the factors that influence the spatial distribution of industries in the regional space economy is an important component of effective regional planning and policy (c.f. 3.6). As economic considerations are central to the regional structure and the spatial organisation of

centres within the region, the following chapter of the study investigates the regional economy and the spatial manifestation of economic growth within the regional space economy.

CHAPTER 4 REGIONAL ECONOMY

Understanding the factors which influence regional economic productivity and output is just as important to effective regional planning as is understanding why economic activities are located in certain areas (c.f. 3.4). Accordingly, Chapter 4 (part of the literature study) investigates the regional economy, and factors which influence economic productivity and output growth in the planning region, as per objective 2 of this study (c.f. 1.3). By understanding the factors which fundamentally influence the regional economic growth and prosperity of the region, effective regional planning and policy can be formulated to ensure convergence in economic prosperity within and between regions (Friedmann & Alonso, 1964:75).

Based on functional interactions between economic centres (as illustrated in Chapter 3), planning regions are delineated as “policy-making entities” to bring about internal regional economic growth (c.f. 3.1.1). However, economic considerations encourage regional integration among previously isolated administrative regions into supranational groupings, wherein goods, services, and production factors move freely between regions (c.f. 3.7). Accordingly, inward-looking economic policies were replaced by initiatives fostering increased interaction among regions. Reflecting on the supranational scale of this study, the isolated planning region refers to an isolated national economy or country, while regional integration constitutes increased interaction between national economies (c.f. 3.2.3).

This chapter incorporates this evolution of regional interaction and its impact on the economy by aiming to, firstly, investigate the factors internal to the region (or national economy) which influence economic productivity and output growth. In determining these internal growth factors, the planning region is assumed to be isolated from external regions, with economic growth solely determined by internal mechanisms and interactions as per the paradigm of the isolated administrative region (c.f. 3.1.1). Secondly, this chapter investigates external factors which contribute to economic growth in the planning region within the paradigm of new regionalism, removing the assumption of the isolated region and determining the effect of interactions with external regions on internal growth mechanisms within the paradigm of regional integration and new regionalism (c.f. 3.7). This approach, which investigates the internal and external growth factors, seeks to provide a holistic investigation into the factors which influence the productivity and output of the regional economy. This investigation considers the spatial component inherent to regional economic growth, propagating the application of economic principles within the spatial milieu of the functional region. This approach avoids investigating the mechanisms of economic growth in isolation from the spatial manifestations of these mechanisms in the economic centres of the functional region. As such, a central objective of this chapter is to place economic theory within the spatial context of economic growth in the planning region. The

following section of the investigation provides an overview of the regional economy, providing a platform for further investigation.

4.1 Spatial basis of economic growth

Production and consumption activities, the foundation of the regional economy, take place in economic space where forces of attraction and dispersion dictate the concentration of resources and activities in certain locations (c.f. 3.4.3). Perroux (1950:28) states that these forces influence the spatial organisation of economic centres and their relationship to one another. Planning regions are characterised by spatial imbalances of resources and economic activity, with some areas displaying an abundance of production factors, production and consumption activities, and economic output, while other areas are economically deprived (c.f. 3.2.1).

Economic considerations are at the heart of the regional form, with resource proximity being fundamental to the location of economic activity in the regional space economy (c.f. 3.2.2). This is apparent in industrial location theory, which states that the availability of resources, including labour and capital, as well as demand for industrial produce, are important factors in industrial production occurring in one place instead of another (c.f. 3.6.1). Maximising profit by decreasing transport and labour costs inherent to the production process is fundamental to industry location (c.f. 3.6.1). Resource abundance increases industry concentration as agglomeration economies develop (c.f. 3.6.1.3). Szirmai (2013:58) adds that industrial production is spatially polarised as the concentration of production processes increases industrial productivity and output. This process of continued industrial concentration perpetuates economic divergence within and between regions (c.f. 3.6.1.3). It is within these activity centres, in which productive processes are entrenched, that resources and production factors are utilised, and productivity and industrial production is stimulated to bring about regional economic growth (Dawkins, 2003:140). In order to apply the mechanisms of economic growth in the spatial context and investigate the forces that perpetuate regional inequalities and polarise economic activity, the following section investigates the growth pole theory to create a spatial framework in which the mechanisms inherent to the regional economy is applied. This framework constitutes the spatial foundation for the subsequent investigation of the regional economy.

4.1.1 Growth pole theory

According to Moseley (1974:1), the growth pole theory (applied in this section to illustrate the spatial manifestation of economic growth within the economic centre and between centres and regions) is a wide-ranging theory of regional development and growth. Moseley (1974:1) states that the theory has “the elements of the elusive, all-embracing general theory of regional development and growth”, propagating that the theory embraces theories of regional structure,

such as the urban hierarchy models of the central place theory and industrial location theory, as well as economic growth theories, including multiplier analysis. Elements of these theories are applied in the growth pole theory to illustrate the nature of regional development, with key centres initially harbouring means of production, the effects of which emanate outward toward smaller centres to stimulate region-wide, spatially balanced economic growth (Moseley, 1972:3). In addition to illustrating the development of the functional regional structure, the theory illuminates the underlying economic factors which influence the uneven spatial diffusion of economic activities between and within regions, as well as the formation of clusters of economic activities (Moseley, 1972:2). As the core theme of regional planning is intervening in the forces which dictate the spatial diffusion of activities (c.f. 3.2.2), the growth pole theory may be of significant value to the investigation of the regional economy.

4.1.2 Spatial industrial linkages

The growth pole theory supports the notion of economic activity being unevenly diffused throughout regions, stating that productive processes are concentrated in certain economic centres in the region (Hirschman, 1958:183; Moseley, 1972:1; Semple *et al*., 1972:591; Meardon, 2001:39; Dawkins, 2003:140). These centres, or growth poles, are conducive to productive activities and economic output due to the presence of resources and prominent industries (Semple *et al.,* 1972:591; Dawkins, 2003:140). Production processes are undertaken in propulsive firms, which forms part of the primary industry, constituting the dominant economic activity in the centre (Glasson, 1978:173; Chapman, 2005:598; Loebel & Zambaldi, 2011:3). Figure 4-1 illustrates the growth pole within the functional region and its interaction with other economic centres. It further illustrates the spatial manifestation of propulsive industries and firms, as located in the centre of the growth pole (Terluin, 2003:330).

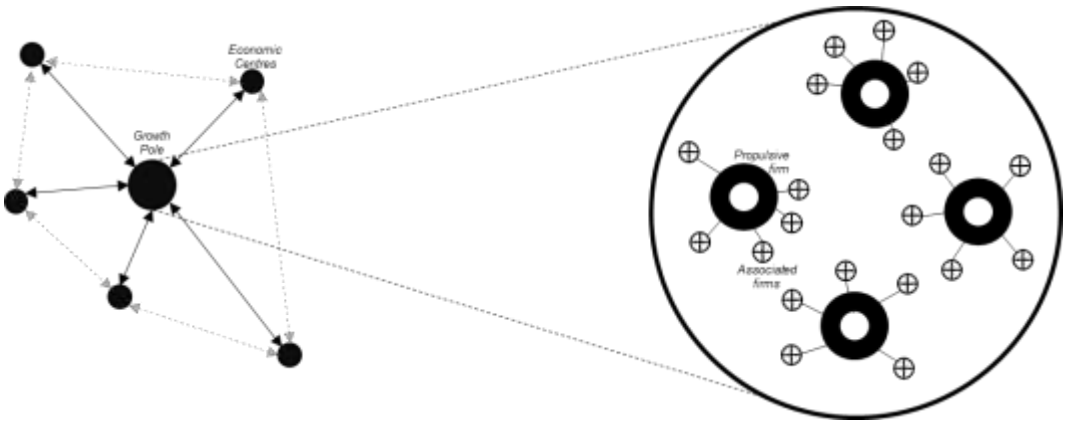


Figure 4-1: Propulsive and associated firms in the growth pole

Source: Adapted from Hirschman (1958:100) and Terluin (2003:330).

An additional feature of the growth pole is the development of associated industries and firms. As illustrated in Figure 4-1, Hirschman (1958:100) states that functional linkages exist between primary industries, and firms and their associated industries, constituting industrial interdependence. Hirschman (1958:99), investigating the spatial manifestation of this interdependence, states that primary industries and firms develop as a result of local or external demand for the particular goods this industry and these firms provide. It is assumed that the existence of demand is the sole determinant of the initial development of a new industry, assuming that the inputs needed in the production process are readily available, being either locally abundant or imported from external regions (Hirschman, 1958:99). Consequently, demand for primary industry goods (and their resultant production) creates demand for inputs to the production of said goods, creating a market for locally produced inputs and intermediate goods (Hirschman, 1958:99). This stimulates the development and growth of associated industries, together with the industrial linkages inherent to its supply of inputs to the primary industry. Hirschman (1958:101) and Terluin (2003:330) argue that industrial linkages constitute a critical element within the growth pole theory and regional economic growth due to the inherent multiplier effect: as the production output expands within the primary industries and firms, increased output is induced in associated industries and firms supplying production inputs. Industrial linkages constitute the basis of economic growth within the growth pole theory (Hirschman, 1958:101).

4.1.3 Economies of agglomeration

According to Weber (1929:125) and Puga and Venables (1999:309), an additional element to the growth pole theory is the agglomeration of industries fostered through industrial and functional linkages. Factors of agglomeration attract additional industries to establish themselves in close proximity to existing industries, reducing the cost associated with input and technology diffusion between associated industries (c.f. 3.6.1.3). According to Chapman (2005:597), this diffusion of technology, inputs, and know-how between spatially concentrated industries fosters a competitive advantage in industrial production as it lowers associated production costs. Agglomeration factors are established at a location in two distinct stages, with the first stage being the expansion of a single firm seeking to increase production in order to benefit from economies of scale and lower production cost per unit (Weber, 1929). The acquisition of advanced technology fosters the development of economies of scale, catalysing production expansion, the development of a skilled pool of labour, and improved economic organisation (Weber, 1929:124). These agglomeration factors lead to the concentration of firms and industries within one location, which constitutes the second stage of agglomeration (Weber, 1929:125). Specialised technology and machinery is incorporated into the production process of the highly specialised industries, increasing productivity, lowering costs and leading to the

development and concentration of associated firms and industries, which enters a relationship of interdependence with the propulsive industries (Weber, 1929; Hirschman, 1958).

Figure 4-2 illustrates the growth pole and the agglomeration of industries.

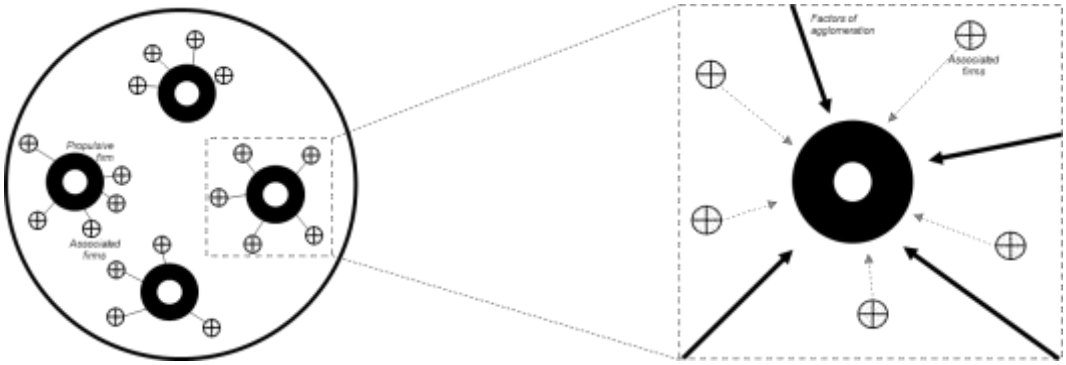


Figure 4-2: Agglomeration of industries

Source: Adapted from Moseley (1974).

As a result of the prevailing specialisation in the production process and the interaction between primary (propulsive) and secondary (associated) industries, a skilled labour pool develops leading to more efficient production and lower manufacturing costs (Weber, 1929:126). The agglomeration of industries leads to the diversification of the range of manufactured goods, attracting consumers, and establishing centres of social agglomeration where the once isolated spheres of consumption and production merge into centres of concentration within the regional space economy (Weber, 1929:127). According to Glasson (1978:175) and Harrison (1992:110), a consequence of economies of agglomeration is the polarisation and concentration of activities in identifiable economic centres within the regional space economy. This is indicative of the spatial forces and processes causing and perpetuating the unbalanced diffusion of economic activities within and between regions (c.f. 3.2.1).

4.1.4 Spatial diffusion of economic growth

The central mechanism for regional economic growth in the growth pole theory is the multiplier effect of increased demand for goods produced by propulsive firms, and, due to industrial linkages, stimulated production in associated firms (Hirschman, 1958:100; Harrison, 1992:109; Terluin, 2003:330). The continued agglomeration of industries stimulates industrial expansion, perpetuating growth and specialisation in dominant centres of economic activity (c.f.3.1.3). A key contribution of the growth pole theory is its illumination of the spatial diffusion of growth emanating from the growth pole to other economic centres in the region, which constitutes the "environment of the diffusion" (Gritsai & Treivish, 1990:65). This was first noted by Hirschman (1958:184) who states that economic growth tends to emanate outward from the limits of the

growth pole, explaining that “an advance at one point sets up pressures, tensions and compulsions toward growth at subsequent points” in the region. Additionally, Hirschman (1958:188) and Richardson (1985:28) state that growth may emanate from the growth pole towards surrounding economic centres by means of networks of connecting infrastructure, increasing the spatial diffusion of growth throughout the whole regional space economy through inter-centre interaction (see Figure 4-3).

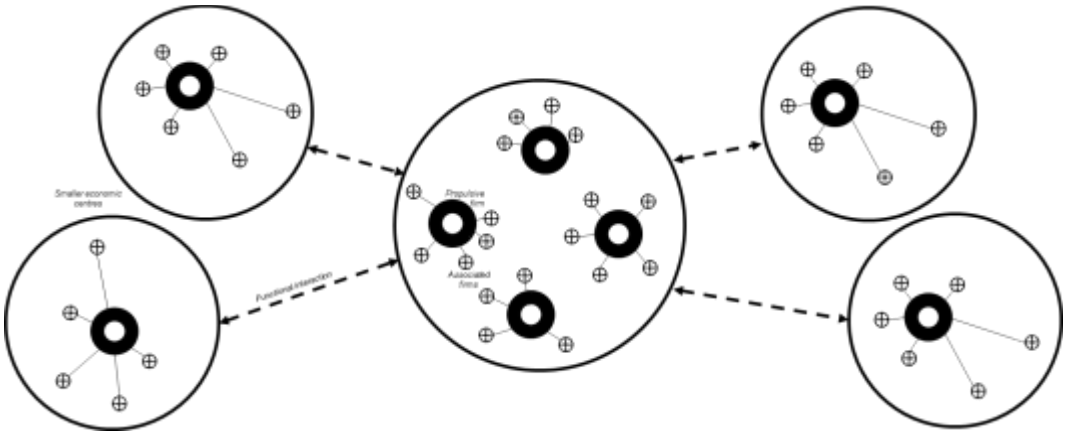


Figure 4-3: Spatial diffusion of economic growth

Source: Adapted from Moseley (1974).

According to Friedmann (1956:513), transportation holds the key to the diffusion of growth, as it “will influence both the structure and the efficient functioning of the city region as a centre of economic development”. The spread of economic growth may manifest in increased demand from the growth pole for the agricultural and manufactured goods from the centres of activity in the hinterland (Myrdal, 1957:31; Richardson, 1985:28). The diffusion of technology and information from the prosperous region contributes to growth in developing regions (Dawkins, 2003:139). Through other means, such as direct investment from the growth pole to other centres within the region, as well as the growth pole absorbing excess rural labour, economic growth may spread. Hirschman (1958:187) explains that as the mechanisms which influence growth in the growth pole is initiated, this growth “sets in motion certain forces that act on the remaining parts”. However, Myrdal (1957:32) insists that while spread effects may stimulate growth in surrounding economic centres, possible backwash effects counteract the diffusion of growth throughout the region. This may include the transfer of production factors, such as skilled labour and capital from the smaller centres to the dominant growth centres, where return on investment is greater (Myrdal, 1957:28; Ohlin, 1967:40).

4.1.5 Systems of regions

While different forces perpetuate either the spatial polarisation or dispersion of economic growth throughout the region, Friedmann (1956:7) states that the spatial diffusion of growth between

economic centres through “economic flows” constitutes a central factor in the development of an apparent “hierarchical pattern of cities” in the functional region (c.f. 3.1.2). Through this process of spatial diffusion and supply linkages, smaller economic centres develop functional interdependencies with the larger economic centre; this constitutes the foundation of functional and planning region delineation (c.f. 3.1.3). Accordingly, as industrialisation drives expanded production in larger centres, functional linkages between centres are strengthened through the inter-centre movement of inputs, production factors, and consumers (c.f. 3.1.3). However, according to Friedmann (2001:388), these functional interactions transcend the functional region, with interdependencies developing between centres of previously isolated regions. Friedmann (2001:388) explains that these inter-regional interactions culminate in the development and integration of regions into a system of functional interdependency, eclipsing the initial scale of interaction in the city-region. As interactions between centres and regions are fostered, systems of national and supranational space economies develop, with functional interdependency between national economies underlining regional economic activity (Friedmann, 2001:388). Figure 4-4 illustrates a supranational system of previously isolated functional regions with underlying functional interdependencies.

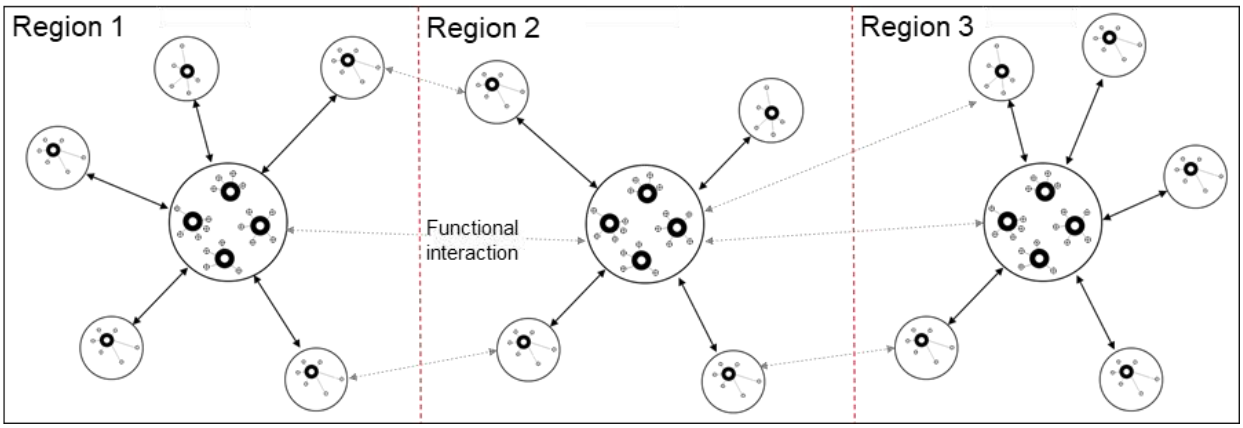


Figure 4-4: System of regions

Source: Adapted from Friedmann (1956) and Moseley (1974).

The growth pole theory illustrates the development of systems of functional interdependency through interaction between regions, as well as illuminates important factors in regional economic growth in the isolated planning region. The role of dominant industries, industrial linkages, and increased demand in fostering industrial expansion and economic growth is illustrated, in addition to the role of the diffusion of production factors and increased levels of productivity (c.f. 4.1.2). The theory spatially illustrates the cost-reducing effects of agglomeration and the importance of economies of scale in fostering industrial specialisation and a competitive advantage (c.f. 4.1.3). In addition to illuminating the spatial manifestation of industrialisation, the growth pole theory illustrates the spatial diffusion of economic growth and the development of

the functional regional structure (c.f. 4.1.4). Interaction between economic centres and functional regions through connecting infrastructure and supply linkages constitutes an important theme in the theory, highlighting the development of a system of regions which transcends the initially isolated functional region (c.f. 4.1.5). This chapter further investigates the themes of the regional economy illuminated in the growth pole theory. The following section provides an overview of the regional economy structure.

4.2 Regional economic structure

Production processes in the regional economy are grouped into primary, secondary, and tertiary sectors (Mohr & Fourie, 2008:29). The primary sector yields raw materials through agriculture and mining activities, extracting the natural resources of the region (Wiedmann *et al*., 2015:6271). Secondary sector activities utilise extracted raw materials and other inputs in the manufacturing of goods. This may include processing of primary products, the production of consumer goods (including consumer electronics and clothes), and the production of capital goods (including infrastructure and machinery) (Mohr & Fourie, 2008:29). The secondary sector is also referred to as the industrial or manufacturing sector of the regional economy (Mohr & Fourie, 2008:29). The tertiary sector, or the service sector, includes the delivery of services with activities including communication services, financial services, and public services (Joshi, 2004:4175). The cumulative goods and services produced in these sectors constitute the total economic output of the region (UNCTADstat, 2017).

While these activities produce different goods and services for different markets, the interaction between sectors illustrates an important mechanism in regional economic output, namely the regional multiplier effect (Supple, 1972:20; Glasson, 1978:80). The regional multiplier theory states that economic output from primary, secondary, and tertiary activities can be grouped into basic and non-basic activities (Roy *et al.,* 2009:675). Basic activities include the production of goods and services that are exported and consumed in external regions, while non-basic activities consist of the production of goods and services consumed in the local market (Glasson, 1978:81). The premise of the theory is that increased basic activity production stimulates non-basic production, cumulatively increasing regional economic output (Glasson, 1978:80; Mookherjee & Ray, 2001:4). The primary factor in stimulating this multiplier effect of inter-sectoral interaction and regional economic growth, is increased demand for basic activities, i.e. more demand in external regions for locally produced goods (Glasson, 1978:81). When demand increases and basic activity production is stimulated, the multiplier effect is stimulated as illustrated by the following:

- As more basic goods and services are sold in outside regions, more revenue streams flow into the local economy, allowing basic industries to expand production, increasing regional output (Glasson, 1978:81).
- As locally produced, non-basic goods and services are also used as inputs in the production of goods meant for external consumption, any increase in basic activity production will lead to increased demand and production of non-basic activities (Roy *et al.,* 2009).
- Increased regional income allows local consumers to acquire local goods and services, increasing demand and production of non-basic activities.

While the primary factor is external demand, the underlying internal *mechanism* driving increased production and regional economic growth is inter-sectoral interaction, which stimulates a multiplier effect based on increased demand for locally produced goods and services (Mulugeta, 2008:9). The regional multiplier effect is illustrated in Figure 4-5.

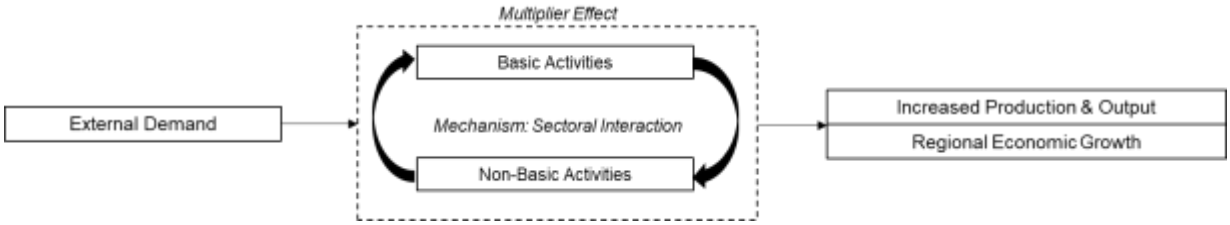


Figure 4-5: Regional multiplier effect

Source: Adapted from Glasson (1978:81) and Mohr and Fourie (2008:6).

The regional multiplier theory, and the inter-sectoral interaction at the root of regional economic growth, is confirmed by Supple (1972:20) and Glasson (1978:80), who state that productive output is a result of interactions between various activities, sectors, and industries in the regional economy. In addition, the spatial manifestation of the multiplier effect is illustrated in the growth pole theory and its investigation of industrial linkages (c.f. 4.1.2). As indicated by the regional multiplier theory, these interactions create a multiplier effect where growth in one sector of the economy stimulates growth in another through economic impulses (Tiebout, 1956:160; Glasson, 1978:80; Mookherjee & Ray, 2001:4; Mulugeta, 2008:9; Roy *et al.,* 2009:675).

It must be noted, however, that regional productivity and output is a dynamic process influenced by a range of factors and mechanisms. Although the regional multiplier theory illuminates an important mechanism inherent to growth in production and regional income based on external demand (in order to appropriately alter the distribution of resources and increase regional productivity), the regional planner must possess a holistic view of the regional economy and factors influencing its growth over time (Glasson, 1978:87). The following section provides an overview of the importance of productivity in resource utilisation in regional economic growth.

4.3 Productive resource utilisation

Szirmai (2013:58) states that the fundamental factor influencing the extent of economic output is the abundance of resources in the region, attributing regional economic disparities to differences in resource endowment. Regional disparities may be measured in different ways, including levels of economic growth, employment, productivity, economic output, and income per capita (Glasson & Marshall, 2007:63). The importance of resource endowment is amplified by Mohr & Fourie (2008:4), who state that economics is the study of how regions utilise their scarce resources to satisfy the unlimited consumption needs of the regional population. In order to meet consumption needs, goods and services are produced by utilising resources available in the region. These resources include naturally occurring resources (minerals and agriculture land), as well as entrepreneurial skills, human resources (labour), capital, and technology (Mohr & Fourie, 2008:4). The latter (labour, capital, and technology), are also referred to as production factors (c.f. 3.3.1). The availability of said resources and production factors determines what can be produced in the local economy, and, as there is a limited supply of these resources, a limited amount of goods and services can be produced in the industries and economic centres of the regional economy (Mohr & Fourie, 2008:21). The maximum amount of goods is produced when all the available resources have been optimally utilised.

When available resources are limited or not optimally utilised in the production process, the amount of goods and services produced internally is below the production potential of the region (Mohr & Fourie, 2008:21). The quantity of goods produced internally may be stimulated by either increasing the amount of resources available, or increasing productivity in the utilisation of the current available resources, i.e. producing more goods and services while using less resources as inputs (Easterly & Levine, 2001:178; Mohr & Fourie, 2008:21). Increased productivity amounts to more efficient resource utilisation and, subsequently, to increased regional economic output (Easterly & Levine, 2001:178; Mohr & Fourie, 2008:22). Disparities in resource endowment and production efficiency may highlight factors perpetuating disparities in economic output and prosperity between and within regions. This finding depicts the relevance of an important objective of regional planning, which is to increase regional productivity as a means of ensuring economic convergence between regions (c.f. 3.2.2). The following section investigates the dynamic nature of the regional economy, as well as the various factors influencing production, as illustrated in the Rostow (1971) stages of regional economic growth.

4.4 Stages of economic growth

It is evident that regional economic growth is influenced by the productive use of available resources and production factors, driven by underlying interactions between economic sectors and industrial linkages (c.f. 4.3). The structure of the regional economy, however, as well as the

interaction between the sectors change over time. According to Mohr and Fourie (2008:29), the regional economy is initially dominated by the primary sector and its agricultural activities. As industrial development takes place, the primary sector is usurped by the manufacturing activities of the secondary sector. As the regional economy approaches maturity, the tertiary sector dominates economic output. Rostow (1971) illuminates the factors and mechanisms which influence regional economic growth by studying the changes to the sectoral composition and nature of production in the economy. According to Rostow (1971:4) the regional economy develops in five distinct stages, namely the traditional society, the pre-condition to take-off, the take-off stage, the drive to maturity, and the age of high mass-consumption.

Initially, as portrayed in the traditional society stage, the agricultural sector dominates the regional economy, with manufacturing industries and services constituting a small portion of production (Rostow, 1971:5). Resources available in the region are underutilised with the application of outdated and ineffective technology (Rostow, 1971:5). During this stage of development, inter-regional trade is limited. In the pre-condition for take-off stage, increased domestic savings and investment increases the local capital stock, allowing for the acquisition of advanced technology (Rostow, 1971:6). Improved technology, in the form of machinery and improved production techniques, stimulates productivity in the agricultural, as well as the industrial sector with increased small-scale manufacturing (Rostow, 1971:6). More goods are produced through more efficient utilisation of resources, stimulating regional output (c.f. 4.3). While inter-regional trade remains limited, the basis for continued long-term growth is formed in this development stage (Rostow, 1971:6).

When the preconditions for economic growth are met, i.e. the availability of capital through domestic savings and investment, agricultural and industrial productivity, and a catalytic environment, accelerated economic growth takes place (Rostow, 1971:37). Evident in the take-off stage of development is the increased prominence of the industrial sector as the catalyst of economic growth (Rostow, 1971:46). Industrial productivity is increased through continued capital investment and the acquisition of advanced technology. According to Rostow (1971:37), in addition to domestic savings and investment, external capital through foreign direct investment may increase the local capital stock. Trade is an important component in the acquisition of advanced technology and inflow of capital from external regions to stimulate local industrial production capacity (Rostow, 1971:48). Furthermore, growth in the services sector is stimulated as industrial expansion increases the demand for diverse service provision (Rostow, 1971:52).

A fundamental characteristic of the take-off regional economy is the role of the primary, supplementary, and derived-growth sectors in economic development (Rostow, 1971:52). The primary growth sector is characterised by high growth rates stimulated by innovation, the

development of new products, the extraction and utilisation of previously quiescent resources, and the effective application of production factors, i.e. technology, capital and labour (Rostow, 1971:52). Growth in the primary sector increases demand for supplementary goods and services used as inputs in primary sector activities, creating a multiplier effect as the primary sector fuels supplementary activities, stimulating economic output and regional economic growth (Rostow, 1971:52). This relationship between primary and supplementary industries is similar to the multiplier effect perpetuated by industrial linkages between propulsive and associated firms in the growth pole theory (c.f. 4.1.2).

In the drive to maturity stage, modern technology and production functions are wholly integrated in the economic fabric, with sustained economic growth exceeding population growth. Since alterations in the structure of the economy are a constant, new technologies are incorporated, and new industries come to the fore while others cease to exist (Rostow, 1971:9). In the process of continuous industrialisation and the expansion of manufacturing productivity inherent to the take-off and drive to maturity stage of development, there is a constant transfer of labour from the agricultural sector to the growing opportunities offered by the industrial sector (Rostow, 1971:71). During the age of high mass-consumption, Rostow (1971:73) states that focus shifts towards the supply of consumer products; a characteristic of a post-maturity economy. A core theme throughout Rostow's (1971) development stages is the continuous structural evolution of the regional economy; from one characterised by a dominant agricultural sector, to the prominence of the industrial sector, and resultant growth in service provision and the tertiary sector. The nature of what is produced in a region, and the sectoral origin of production, thus changes over time.

The primary factors driving change in the regional economy in the Rostow (1971) stages theory include the following:

- The application of outdated technology leads to economic unproductivity and underutilisation of scarce resources. With the acquisition of updated techniques and technology, economy-wide productivity is increased, stimulating agricultural and manufacturing production, as well as more effective resource utilisation (Rostow, 1971:6).
- Capital formation through domestic savings and investment is imperative in increasing the capital stock and the means to invest in technology and improved productivity. The local capital stock can also be increased through trade with external regions (Rostow, 1971:37).
- Industrialisation, or the growth of manufacturing industries as a proportion of regional economic output, is an important component of changing regional production. Although initially dominated by the agricultural sector, the adoption of technology and increased

capital investment stimulates improved productivity in manufacturing activities and industrial output (Rostow, 1971:46).

- While initially isolated, with little trade with other regions, inter-regional trade increases as productivity growth stimulates the competitiveness of exports in external regions (Rostow, 1971:48). With increased external demand, an economic multiplier effect is stimulated, fostering economic growth (c.f. 4.2). Additionally, increased trade stimulates the inflow of revenue and capital from external regions, increasing the ability of industries to acquire technology and expand production (Rostow, 1971:37).
- Inter-sector interaction between primary and supplementary growth sectors, as well as the growth-derived sectors is an important component of regional production. Growth in primary sectors increases demand for supplementary goods and services used as inputs in primary sector activities, creating a multiplier effect of economic output as the primary sector fuels supplementary and growth-derived activities (Rostow, 1971:52).

The Rostow (1971) stages of development thus highlights internal and external factors which contribute to regional economic growth. Internal factors include productivity growth, capital formation, industrialisation, and sectoral interaction, while inter-regional trade and capital inflows constitute important external growth factors. Throughout the various stages, several important factors of economic growth are identified: sectoral evolution, industrialisation, inter-regional trade, diversification, industrial and sectoral linkages, production factors (including capital and technology), socio-political transformation, savings and investment (Rostow, 1971 & Parr, 2001:16). Despite its value, the stages theory has been subject to critique (Parr, 2001:2). Supple (1972:30) mentions the notion of identifiable stages of growth and emphasising the high level of generalisation of the process of economic growth as a core point of critique of the stages theory, stating that the nature of growth varies between regions. Additionally, Smith (2015) states that some aspects and mechanisms within respective stages overlap.

However, in spite of the criticism of the stages format of the theory, its illumination of critical factors in regional economic growth underlines its value to this investigation, constituting the theoretical basis and point of departure regarding the study of the regional economy. Smith (2015:1) highlights the important contribution of the Rostow (1971) stages theory to the illumination of factors and mechanisms that drive economic growth in developing regions and the role of industrialisation in stimulating long-term economic convergence with industrialised regions. Evidently, the stages theory and the process inherent to economic growth in developing regions is an important consideration for regional planners seeking to implement regional policy to catalyse regionally balanced economic growth and regional convergence. In conjunction with the growth pole theory, the stages theory forms part of the theoretical basis of the study of the regional economy with the following sections aiming to further investigate

internal and external factors to economic growth as illuminated by Rostow (1971). The following section further investigates the internal, or endogenous, factors to regional economic growth in the isolated planning region.

4.5 Endogenous growth factors

As identified in Rostow's (1971) stages theory, the regional economy is influenced by endogenous factors internal to the region, i.e. the abundance of production factors, such as capital, labour and technology and the availability of other resources, and exogenous factors external to the region, including the external demand for the region's goods and services, and the region's interaction with external markets (Siebert, 1969:24; Glasson, 1978:102). While the cumulative effect of these factors influences regional economic growth, they constitute two distinctive strands of theories regarding growth: one strand highlighting the endogenous factors to regional economic growth, and another highlighting exogenous factors. Endogenous factors have long been highlighted as critical determinants of the economic potential of a region and its growth in the long term (Hirschman, 1958:1). The premise of studying endogenous growth factors is the isolated planning region, one with non-existent trade or functional interaction with external regions (Siebert, 1969:24). Growth in this planning region is solely dependent on resources in the form of production factors found in the region, with no inter-regional mobility of inputs and production factors (Siebert, 1969:24). It is in this regional milieu that the internal growth factors of the regional economy are investigated within the framework of the neoclassical growth theory.

4.5.1 Neoclassical growth theory

This section investigates the neoclassical growth theory in order to comprehend the role of an endogenous factor at the centre of the stages theory: production factors (c.f. 4.4). According to Siebert (1969:24), the contribution of the neoclassical growth theory is the underlying production function which illuminates the optimum productivity and economic output of a region based on the inputs and factors of locally available production. Production factors of note in the neoclassical theory is the capital stock, labour, land, transport resources, technology, and the prevalent social system (Solow, 1956; Siebert, 1969:25). This production function reflects an aggregate model of economic growth in which the cumulative effect of the various production factors determines regional economic output (Siebert, 1969). With the assumption that the prevalent social system, land availability and transport resources are constant, the neoclassical model illuminates the role of capital, labour, and technology in fostering regional economic growth (Siebert, 1969).

According to Gundlach (2007:26), the neoclassical model seeks to illuminate the factors which influence regional economic disparities, thus contributing to the investigation of the regional economy. The motive in investigating the neoclassical growth theory in this section is to determine the role of production factors in regional economic growth, and the possible incorporation of mechanisms inherent to the theory to bring about regionally balanced economic growth and convergence between developing and industrialised regions through regional planning and policy implementation (c.f. 3.3).

4.5.1.1 Capital stock

As in the Rostow (1971) stages of regional economic growth, the availability of capital is a central determinant of regional economic growth and an important production factor (c.f. 4.4). Capital primarily stimulates production capacity and efficient resource utilisation through the acquisition of advanced technology (Rostow, 1971:37; Todaro & Smith, 2012:112). Domestic savings and investment is an important endogenous contributor to the capital stock (c.f. 4.4). This relationship is confirmed by the Harrod-Domar model inherent to the capital component of the neoclassical theory, which states that as domestic savings and investment increase, so does the capital stock (Todaro & Smith, 2012:113). Siebert (1969:31) propagates that the amount of capital as a production factor has a significant impact on regional economic output. As capital increases through more domestic savings and investment, so does regional economic output, albeit at a diminished rate (Solow, 1955; Siebert, 1969).

4.5.1.2 Labour availability

Another endogenous factor in regional economic growth is the supply of labour (Siebert, 1969:35). An increase in the supply of regional labour leads to an increase in productivity and regional output, albeit at a declining rate (Siebert, 1969:36). This is similar to the declining rate of growth inherent to capital formation. With the continued increase in the supply of labour as a production factor, a point is eventually reached where the marginal productivity of labour is zero and an increase in the labour supply is ineffectual to growth in regional economic output. Nevertheless, the internal supply of labour is a significant endogenous determinant of regional economic growth (Siebert, 1969:36).

4.5.1.3 Technology

As illustrated in the growth pole and stages of economic growth, the central importance of capital is the acquisition of advanced technology and improved production techniques in order to stimulate productivity (c.f. 4.4). In this regard, technology is imperative in stimulating growth in regional economic output (Solow, 1955:66; De La Grandville, 2009:55; Todaro & Smith, 2012:126). Technological progress refers to the integration of advanced techniques and

machinery in the production process, resulting in greater efficiency and enhanced productivity. Investigating the effect of technology incorporation into production processes, Mohr and Fourie (2008:23) illustrates a regional economy where the available resources are not optimally utilised due to archaic production techniques stymieing productivity. In this region, real production is inferior to potential production, possibly manifesting in regional unemployment as production factors are underutilised (Mohr & Fourie, 2008:23). With the incorporation of advanced technology, however, resources and production factors are more efficiently utilised, producing more goods and services while stimulating regional productivity (Mohr & Fourie, 2008:23).

It is evident in the endogenous neoclassical growth theory that production factors, i.e. capital, technology, and labour, are vital to regional productivity and economic growth (Siebert, 1969). An increase in capital and labour fosters economic output growth, while technology increases productivity. In addition, there is an important interdependency between capital formation through domestic savings and investment, and the acquisition of advanced technology for increased production efficiency (c.f. 4.5.1.1). While the neoclassical growth theory illustrates the importance of production factors, the following section investigates another endogenous factor in regional economic growth, as per the Rostow (1971) stages theory: industrialisation.

4.5.2 Industrialisation and structural transformation

Inherent to the stages theory and the neoclassical growth theory is the importance of production factors and their productive utilisation as an endogenous factor of regional economic growth (c.f. 4.5.1). Despite their importance, endowment of production factors alone is insufficient in stimulating regional economic growth and production increases (Abramowitz, 1956; Islam & Yokota, 2008:363; Todaro and Smith, 2012:115). Instead, these production factors need to be applied for the regional economy to undergo a so-called “structural transformation” and bring about industrialisation in developing regions (Todaro & Smith, 2012:115). This structural transformation through industrialisation is vital to the pre-condition for take-off stage of regional economic growth (c.f. 4.4). Therefore, Glasson (1978:103) states that the internal evolution of the regional economy associated with industrialisation, constitutes an additional endogenous factor influencing regional economic growth.

According to Syrquin and Chenery (1989), as the regional economy expands, there is a fundamental shift in production: Primary sector production declines while the secondary sector achieves economic prominence. Szirmai *et al.* (2013:3) affirm this sectoral shift, stating that this forms part of a structural transformation of the regional economy over time. This transformation in production is also evident in the stages theory, where the traditional society is replaced by a modern economy driven by the manufacturing sector on the back of advanced technologies wholly integrated with the region’s production system (c.f. 4.4). The catalyst of this structural

transformation is industrialisation, i.e. the evolution of the regional economy where the manufacturing sector expands to eventually contribute the majority share of the aggregate economic output of the region (Syrquin & Chenery, 1989). The primary contributor to the shift in production is changes in domestic demand: as the economy and manufacturing industries initially expand, the demand for primary inputs in the production process is substituted for manufactured inputs, in reaction to alterations in prices due to improved production techniques (Syrquin & Chenery, 1989). This has a multiplier effect on industrial output, while also being detrimental to primary sector output as a share of regional economic production (Syrquin & Chenery, 1989). A key contributor to industrialisation and structural transformation is thus the application of advanced, industrial technology in manufacturing industries, stimulating industrial productivity and secondary sector output (Szirmai *et al.* (2013). The structural evolution is of immense importance in stimulating regional economic growth and convergence, with Rosenstein-Rodan (1943:202) stating that industrialisation presents the optimal policy instrument in ensuring growth in regional economic output and bridging the income disparities between developing and prosperous regions. Industrialisation, and the growth of the manufacturing sector as a proportion of the regional economy, is a fundamental factor in stimulating regional economic output and regional income (Szirmai *et al.*, 2013). The following section investigates the manifestation of industrialisation within the region, with reference to the role of production factors in ensuring increased productivity in the manufacturing sector.

4.5.2.1 Labour transfer and industrialisation

The two-sector theory of Lewis (1954) considers the fundamental role of labour in the structural transformation of the regional economy in stimulating productivity and output in the industrial sector. By investigating the structural transformation of a developing region over time, Lewis (1954) illustrates the interaction between labour movements, industrialisation, and regional economic growth. The premise of the two-sector model is the initial underutilisation of production factors within the developing region, primarily in the form of a labour surplus and low marginal labour productivity in the agricultural sector, as well as the economy-wide application of outdated technology (Rosenstein-Rodan, 1943:202; Lewis, 1954:402). This developing economy consists of two sectors, i.e. an agricultural (traditional) sector, and an industrial (modern) sector (Lewis, 1954:407; Fields, 2004:724; Szirmai *et al*., 2013:3). The regional economy is initially characterised by an agricultural sector contributing the majority share of aggregate regional economic output, with ineffective technology application stymieing industrial sector output. The sectoral division of labour reflects the economic status quo: The majority of regional labour is active within agriculture (Lewis, 1954:402). This, however, results in a traditional sector labour surplus and a decline in labour productivity.

This sectoral division of output and labour changes as initial regional economic expansion takes place (Kuznets, 1957, as referenced in Syrquin & Chenery, 1989). As per the stages theory, economic expansion and an increase in domestic savings and investment takes place simultaneously, resulting in capital formation (c.f. 4.4). The acquisition of advanced technology timely integrated within the industrial production process stimulates manufacturing output. Continuous savings and reinvestment of profits lead to industrial expansion, and unceasing productivity and output surges (c.f. 4.4). According to Lewis (1954:412), this industrial expansion has a substantial impact on the sectoral division of labour: In sustaining considerable growth in manufacturing, there is an increasing demand for labour within the production process (Lewis, 1954:412; Todaro & Smith, 2012:117). As assumed in the theory, agricultural labour has a marginal productivity of zero, meaning that surplus labour can react to demand in the industrial sector while maintaining existing agricultural output (Lewis, 1954:406). This creates the optimal environment for the transfer of labour from the agricultural sector to the industrial sector, constituting changes to the sectoral division of labour (Lewis, 1954:407). A cycle of labour transfer ensues: Industrial profits are reinvested, stimulating industrial productivity and demand for labour (Todaro & Smith, 2012:117). Industrial expansion inherent to industrialisation is dependent on the availability and acquisition of labour to underpin increased output (Fields, 2004:724). This process of profit reinvestment, labour transfer, and industrial expansion continues until the agricultural labour surplus is eliminated, at which point the further extraction of labour from agriculture will lead to a decline in agricultural production (Lewis, 1954:412; Islam & Yokota, 2008:360; Todaro & Smith, 2012:117). Labour, and the sectoral evolution in the division of labour, thus constitutes a critical element in increasing the share of the industrial sector in the aggregate economic output of this region (Lewis, 1954:412). The following section investigates the role of technology and capital in fostering industrialisation.

4.5.2.2 Technology and industrialisation

The prominent role of technology in stimulating productivity is evident in the stages theory, as well as the endogenous neoclassical theory (c.f. 4.5.1.3). In this regard, Rostow (1971:6) states that “modern growth is rooted in the progressive diffusion of new technologies on an efficient basis”, explaining that productivity is dependent on incorporating advanced technology in the production process. Rosenstein-Rodan (1943) confirms increased productivity through technology acquisition, stating that the application of “industrial” technology is “the main aspect of industrialisation”. The technology that drives industrial expansion may be physical, i.e. industrial machinery, or non-physical, i.e. technical know-how (Lütkenhorst, 1989:127). These differing applications increase production efficiency, contributing to declining prices of manufactured produce (Lütkenhorst, 1989:127). In this regard, Syrquin and Chenery (1989:158) add that the importance of technology in industrialisation is reflected in its effect on input prices during manufacturing: Primary sector goods are replaced by manufactured inputs in the

production process, a change which is directly attributed to decreasing prices of manufacturing produce. In addition, the incorporation of advanced technology increases the ability of the industrial production process to adapt to changes in market demand, fostering flexibility in production (Lütkenhorst, 1989:127).

The growth pole theory illustrates the gradual improvement of industrial output with increased incorporation of technology in industrial production (c.f. 4.1.3). Syrquin and Chenery (1989:156) utilise this relationship between the upward movement of industrial productivity (and the share of the industrial sector to aggregate output) and the incremental application of technology to correlate technology application, industrialisation, and the structural transformation over time. Early industries in the initial stages of the structural transformation utilise modest technology to produce essential consumer goods with a low-income elasticity to demand, contributing little to aggregate output (Syrquin & Chenery, 1989:156). Through increased incorporation of ever-improving technology, middle industries develop in the region, the expansion of which sees an increasing share of aggregate output attributed to the manufacturing sector (Syrquin & Chenery, 1989:156). The development of late industries signals the latter stages of the structural transformation, solidifying the prominence of the industrial sector in regional economic output. In this stage, advanced technology is utilised to produce machinery, intermediate goods, as well as durable consumer goods (Syrquin & Chenery, 1989:156). The application of advanced technology is central to the incremental development of industries that oversee the structural transformation inherent to industrialisation, stimulating industrial productivity and output (c.f. 4.5.2.2). The following section investigates capital and its role in technology acquisition and industrialisation.

4.5.2.3 Capital as catalyst of industrialisation

As indicated by the neoclassical growth theory, the primary contributory factor to the importance of capital is its utilisation in the acquisition of advanced technology (c.f. 4.5.1.1). As Rostow (1971:46) explains, an increase in capital ensures greater investment in industries, resulting in improved production capacity as new technologies are acquired and integrated into the production process. While the process of industrial expansion generates profit and contributes to capital formation, the initial catalyst of increased industrial productivity is a sufficient local capital stock to stimulate the needed structural transformation (c.f. 4.5.1.1). According to Todaro and Smith (2012:112), local savings and investment is pivotal in ensuring that the needed capital is available for investment in technology and productive labour. However, according to Rosenstein-Rodan (1943:208) solely relying on domestic savings may delay industrialisation merely due to the limited scale of savings of the domestic population. Accordingly, Rosenstein-Rodan (1943) identifies the potential role of external regions in contributing to the local capital stock. Through increased direct foreign investment and exports as part of trade flows, external

regions may make important contributions to capital formation in industrialising regions. It is evident that capital is an important cog in the drive for industrial take-off, stimulating the marginal productivity of labour and increasing the share of industrial production to aggregate output (c.f. 4.4). The following section illustrates regional economic growth through industrialisation within the framework of production factor utilisation.

4.5.2.4 Industrialisation and regional economic growth

As illustrated in the growth pole theory, industrial linkages and the resultant multiplier effect of increased demand for propulsive industry produce and associated industry inputs, constitutes a critical factor in industrialisation and regional economic growth (Hirschman, 1958:100). According to Szirmai (2013:54), a correlation exists between a region's degree of industrialisation and the extent of the regional economic output. The reason for this correlation is attributed to the "structural change bonus" inherent to industrialisation and the resultant transfer of resources from the minimal productivity of the agricultural sector, to the highly productive industrial sector (Szirmai, 2013:58). To this end, it is evident that the industrial sector provides a higher rate of growth in labour productivity compared to the agricultural sector. In addition, Szirmai (2013:58) compares the spatial attributes of the sectors, stating that, unlike the diffused nature of agriculture, the industrial sector is spatially concentrated, allowing for the polarisation of capital, driving up productivity and industrial output.

From theories regarding endogenous factors to regional growth, it is evident that production factors and mechanisms of sectoral interaction in the economy are critical components of industrialisation and the structural transformation it entails (c.f. 4.5). As per the endogenous neoclassical growth theory, the readily available and productive utilisation of production factors such as labour, capital and technology stimulates productivity and regional output at a marginal rate (c.f. 4.5.1). Their prominence is highlighted in industrialisation, with increased labour productivity through sectoral transfer and the procurement of advanced technology through the capital stock constituting central elements of the structural transformation (c.f. 4.5.2.2). Their effective application constitutes the basis of regional economic growth, increasing productivity and industrial output to contribute the majority share of regional output (Szirmai, 2013:54). These endogenous theories illuminate important internal factors to regional economic growth in the functional region. For the regional planner seeking to foster convergence in economic prosperity within and between regions, understanding the role of production factor endowments, sectoral interaction, productivity, and industrialisation in regional economic growth is of critical importance.

4.6 Exogenous factors in regional economic growth

In the investigation of the endogenous factors of regional economic growth, it is assumed that the regional economy is isolated from external influence, with non-existent inter-regional movement of factors of production and inter-regional trade (c.f. 4.5). Internal factors are the sole determinants of economic growth within endogenous growth theory, providing insight into the internal mechanisms and factors that influence growth (Glasson & Marshall, 2007:63). In reality, regions are not isolated; they form vast regional systems and inter-regional trade networks with substantial movement of production factors such as capital, labour and technology between regions (c.f. 4.1.5). Interactions with external regions constitute a core factor influencing the nature and extent of regional economic growth (c.f. 3.7). Inward-looking development approaches were replaced by regional integration and initiatives to increase interaction between previously isolated regional and national economies within the paradigm of new regionalism (c.f. 3.7). While mechanisms and factors illuminated in the endogenous growth theory, such as the multiplier effect and structural transformation, remain internal to the region, exogenous factors, such as interactions with external regions through inter-regional factor mobility and trade fundamentally, influence these mechanisms (Glasson & Marshall, 2007:63). Accordingly, the following section investigates exogenous growth factors in an open regional economy, within the paradigm of new regionalism and interaction between functional regions (c.f. 3.7).

4.6.1 Neoclassical growth theory in open economies

The neoclassical growth theory can be adapted to illustrate the effect of external influences on production factors and their role in regional economic growth (Ghali *et al*., 1978:78). While the endogenous neoclassical theory illustrates the importance of locally available production factors, the neoclassical growth theory in open economies determines the effect of inter-regional production factor mobility on regional economic productivity and output (Siebert, 1969:49; Ghali *et al*., 1978:80). As determined by the endogenous neoclassical theory, increased local labour supply stimulates regional economic output at a diminished rate (c.f. 4.5.1.2). According to Siebert (1969:64) and Ghali *et al*. (1978:80), when labour is free to move from one region to another, productivity is increased in the recipient region, while the labour-forfeiting region experiences decreased productivity. According to Siebert (1969:68), inter-regional capital transfer has similar effects to inter-regional labour transfer, affecting regional productivity and economic growth of both regions. The recipient region can channel additional capital to technology acquisition and enhancing regional productivity, while the production capabilities of the outflow region is reduced. With the transfer of technical know-how and technology, however, the productivity of the recipient region is stimulated, while productivity in the region of origin remains unchanged as no resources are forfeited (Siebert, 1969:75).

While the inflow of production factors through inter-regional flows has the potential to stimulate increased regional productivity and output, in reality, the mobility of production factors between regions is severely limited due to distance friction and transport cost, as well as barriers erected to the free movement of factors between regional economies (Siebert, 1969:49). Accordingly, as the inter-regional mobility of production factors is not always ensured, factor movements are substituted by inter-regional trade in commodities (Darity & Davis, 2005:142). With the effect of inter-regional factor mobility on regional growth and convergence being illuminated, the following section investigates inter-regional trade as a substitute for factor flows and its effect on regional economic growth and convergence.

4.6.2 Inter-regional trade and regional economic growth

According to Glasson (1978:107), inter-regional trade and external demand constitute an important exogenous factor influencing regional economic growth. The importance of external demand for locally produced goods and services in stimulating regional economic growth is illustrated in the growth pole and regional multiplier theory, as exports stimulate a multiplier effect through inter-sectoral and industrial linkages (c.f. 4.2). Siebert (1969:79) and Darity and Davis (2005:142) explain that the catalyst of inter-regional trade in commodities is the very notion that inter-regional mobility of production factors is limited and varies between regions. As a result, trade takes place when demand exists for a commodity within a region unable to produce said commodity due to unfavourable factor endowments; the commodity simply cannot be competitively produced within the region based on the available resources (Ohlin, 1967:12; Siebert, 1969:76; Lewis, 1972:15). Accordingly, an inter-regional flow of commodities based on internal and external regional demand ensues. Inter-regional trade and its impact on regional economic growth and economic convergence between regions is illuminated in the export base theory of North (1955), which is investigated in the following section.

4.6.2.1 Export base theory

The export base theory investigates the role of exports in stimulating regional economic output for regions participating in inter-regional trade (Lewis, 1972:15). As such, this theory seeks to illuminate the importance of external demand for internally produced goods and services as an exogenous factor stimulating regional economic growth (Lewis, 1972). In investigating regional economic growth over time, North (1955:245) states that economic production and output growth is stimulated through the extraction and export of internal natural resources for which demand exists in external regions. The exportability of the primary goods or commodities produced or extracted within the region as the regional “staple”, determines the strength of the export base for the regional economy (North, 1955:247). The fact that certain goods or commodities are considered the regional staple and perceived as exportable, signifies the

presence of a comparative advantage in the production or extraction of this staple within the region compared to production in other regions (North, 1955:248). Comparative advantage is an important theme in the export base theory, stipulating that the cost associated with the production (including transport cost) of certain goods or commodities is lower compared to production cost of the same goods or commodities in other regions, resulting in cost advantages, higher demand, and increased exportability (Ohlin, 1967:12; Kitson *et al*., 2004:992). The presence of a competitive advantage in the production of certain goods is the result of the unique factor and resource endowments of the region (Ohlin, 1967:12; Kitson *et al*., 2004:992). As a result of the lower comparative production cost and price, demand exists in the markets of external regions for said commodity (Ohlin, 1967:13; Siebert, 1969:76). Propelled by the competitive advantage and external demand, North (1955:250) explains that export industries exercise a profound influence on the regional economy. The primary role of export industries in regional economic growth is illustrated in Figure 4-6.

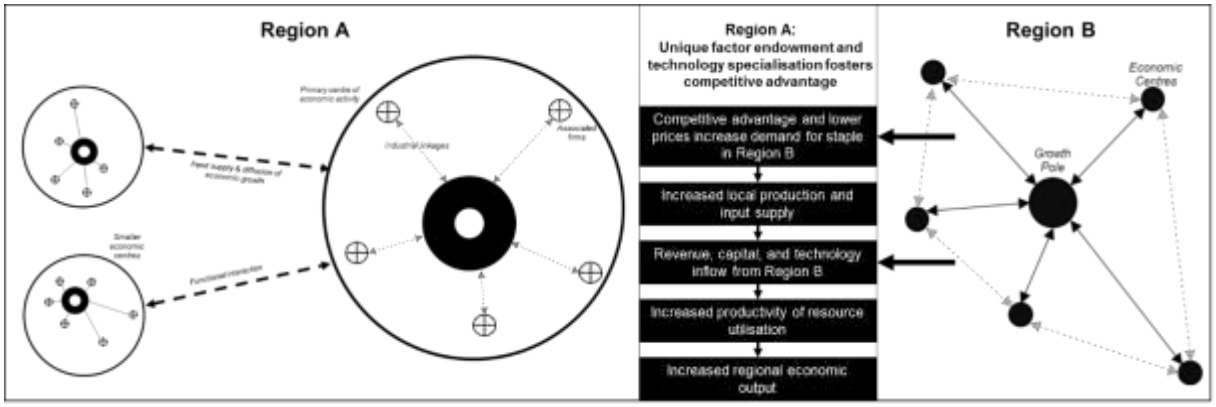


Figure 4-6: Export base theory and economic growth

Source: Adapted from North (1955:255).

As is evident in Figure 4-6, when a region possesses a comparative advantage in the production of certain goods, an external demand for it develops (North, 1955:255). Subsequently, the staple will be exported to external markets where demand exists. According to North (1955), increased export through demand stimulates the inflow of revenue and income from external regions, developing the ability of local industries to invest in the production process, refining productivity and efficiency in resource utilisation. This drives down production cost and solidifies the comparative advantage of the regional staple, while increasing external demand. Through profit reinvestment and capital formation, advanced technology and labour is acquired by local industries to increase productivity and expand production, developing a regional specialisation in the production of the staple (North, 1955:255). However, with an initially limited capital stock, developing regions are dependent on foreign capital inflows (FDI) for the initial expansion and technology acquisition for the export industries (North, 1955:255).

To maximise investment returns, this capital is initially invested in the export base (North, 1955:255).

Expanding production through increased external demand results in an upsurge in domestic demand for inputs in the production process, stimulating economy-wide impetus for increased regional economic output (North, 1955). Inherent to the growth derived from exports is the multiplier theory, as increased exports stimulate the inflow of income from external regions through basic activities (c.f. 4.4). This inflow of income stimulates production in non-basic activities, including increased demand for goods and services consumed in the local market and specialised services (c.f. 4.4). According to North (1955) and Agosin (2008:130), the effect of the inter-sectoral interaction between growth in the export base, and the resultant growth in supplementary and residentiary industries (which provide inputs in the industrial production process), constitutes a fundamental aspect in increased regional economic output through exports to external regions. The cycle of increased external demand, capital investment, and export industry expansion, regional economic stimulates growth (see Figure 4-6).

4.6.2.2 International trade model

While the export base theory illustrates the importance of exports in stimulating regional economic growth, the Heckscher-Ohlin international trade model seeks to investigate whether trade between regions, especially between a developing and industrialised region, contributes to regionally balanced economic growth (Glasson, 1978:109; Dawkins, 2003:135). The premise of the Heckscher-Ohlin model is inter-regional trade between Region A and Region B:

- Region A has competitive advantage in capital goods, while Region B has a competitive advantage in labour goods. This competitive advantage is reflected in abundance, and therefore lower cost, of capital (Region A) and labour (Region B) in the respective regions (Ohlin, 1967:29; Dawkins, 2013:135).
- Due to their respective competitive advantages, Region A exports capital goods, while importing labour goods. Additionally, Region B exports labour goods, while importing capital goods from Region A (Ohlin, 1967:16).
- Increased export stimulates demand for capital and labour in the respective countries, increasing the prices of said production factors. As exports increase, there is convergence between the cost of capital in Region A, and the cost of labour in Region B (Ohlin, 1967:35).
- In addition, as trade between the regions take place, regions optimise the utilisation of resources in which they have a comparative advantage. This results in the convergence of economic productivity between the participating regions (Ohlin, 1967:42).

The export base theory of North (1955) emphasises the critical importance of demand in external regions for locally produced goods and services (culminating in exports) in stimulating regional economic growth. Through increased export demand and capital inflows from external regions, advanced technology can be acquired to further stimulate productivity and industrialisation processes – an important contributor to economic growth in developing regions. By applying the concepts of the regional multiplier theory, it becomes apparent that exports fundamentally influence the output of the regional economy, affecting production in basic and non-basic activities (c.f. 4.2). While the export base theory illustrates the stimulating effect that exports exercise on regional economic production and output, the Heckscher-Ohlin model propagates that as inter-regional trade and the resultant flow of commodities between various regions increase, the regional differences in the price of respective production factors decrease and the economic productivity of the regions converge. Accordingly, the Heckscher-Ohlin model propagates that, over time, differences in the economic prosperity of regions diminish and growth converges on the back of inter-regional trade (Glasson, 1978:115).

4.7 Regional economic divergence

The notion, however, that exports, inter-regional trade, and FDI foster unabridged, long-term regional economic growth for developing regions to ultimately converge with the economic prosperity of industrialised regions, contrasts with empirical evidence which presents a conflicting view of the trajectories of developing region growth and that of prosperous, industrialised regions (Rodriguez-Pose, 1999:364; Dawkins, 2003:139; Todaro & Smith, 2012:573). Contrasting to theories propagating regional economic convergence (including the export base theory, the Heckscher-Ohlin model, and the neoclassical growth theory in open economies), Glasson (1978:116) and Rodriguez-Pose (1999:36) explain that divergent growth theories propagate that regional economic disparities are exacerbated over time and are not self-correcting. According to Dawkins (2003:139), divergent theories developed as a result of considerable critique of the notion of economic convergence, critique which is based on the idea that inter-regional trade and exports does not foster long-term economic growth and convergence, but rather that the economic chasms between regions have widened with increased inter-regional trade between prosperous and developing regions. Accordingly, the following section investigates factors inherent to inter-regional trade and factor flows, as well as endogenous processes which may influence sustained and long-term economic growth in developing regions and their economic convergence with industrialised regions.

4.7.1 Long-term resource transfer

Like the Heckscher-Ohlin model, the cumulative causation theory illuminates the importance of regional factor endowment and comparative advantage in inter-regional trade (Myrdal, 1957:26;

Ohlin, 1967). However, the development of the cumulative causation theory is based on the rejection of the self-righting imbalance brought about through trade between regions as propagated within the Heckscher-Ohlin model (Dawkins, 2003:139). Similar to the Heckscher-Ohlin model, Myrdal (1957:26) states that certain regions are endowed with certain factors of production and natural resources. Due to locational decision, industries settle at locations where the quantities of production factors are prominent. According to Myrdal (1957:26) and Puga and Venables (1999:292) market forces dictate that economic activities cluster at certain locations and in certain regions. Prominent activities may include service functions and industrial production. Additional internal and external economies develop, including a skilled labour force and advanced service provision. Due to the location advantages, Myrdal (1957:26) and Puga and Venables (1999:292) posit that industrialisation takes place, with the region possessing a comparative advantage in the production of manufactured goods and industrial products. With prosperous regions possessing a comparative advantage in the production of manufactured goods, developing regions are dependent on labour-intensive, agricultural commodities (Myrdal, 1957:29; Dawkins, 2003:139).

The importance of industrialisation is emphasised in the cumulative causation theory (Myrdal, 1957:29). The Prebisch-Singer Hypothesis propagates that, due to the high-income elasticity of demand for primary commodities, in the long term, regions dependent on primary goods receive less income from exports, impacting sustainability of regional economic output and long-term growth (Todaro & Smith, 2012:573). Due to the comparative advantage that prosperous regions possess in the production of manufactured goods, attempts at industrialisation and development of manufacturing industries within developing regions are fruitless, as these developing industries cannot compete with the low-cost manufactured goods produced in the prosperous region (Myrdal, 1957:29). Subsequently, developing regions remain dependent on the export of primary commodities. Due to the long-term decline in income received from primary commodity exports, developing regions need to export more commodities over the long term to maintain a healthy payment balance and receive the required manufactured goods from prosperous regions (Todaro & Smith, 2012:573). Over the long term, there is a transfer of resources and production factors from the developing region to the prosperous region, as more primary commodities are exported in the exchange for a proportionally decreasing amount of manufactured goods (Todaro & Smith, 2012:573).

The prosperous regions benefit the most from inter-regional trade, as resources and production factors are drained from developing regions and transferred to prosperous regions (Myrdal, 1957:28). Within these terms of trade, growth in developing regions lag behind growth in prosperous regions, to the detriment of regional economic convergence (Myrdal, 1957:29). There is no regional convergence in the price of production factors and regional productivity as

propagated in the Heckscher-Ohlin model (Myrdal, 1957; Todaro & Smith, 2012:573). Rather, the terms of trade between prosperous and developing regions dictate the transfer of resources and factors of production to prosperous regions (Myrdal, 1957). The cumulative causation theory thus propagates that regional economic inequalities are not self-righting and that economic growth in developing regions may decline over the long term, due to unbalanced trade with industrialised regions (Glasson, 1978:116; Todaro & Smith, 2012:573).

4.7.2 External economic shocks

Demand for locally produced goods and services in external regions constitutes a fundamental exogenous factor in regional economic growth, stimulating exports and trade in commodities between regions (Siebert, 1969:49; Glasson, 1978:102; Darity & Davis, 2005;142). Due to the importance of exports in stimulating productivity and economic output, possible fluctuations in external demand represents an important consideration in regional economic growth (North, 1955:250). In addition to unbalanced trade perpetuating the long-term transfer of resources from developing to industrialised regions, economic downturns in export markets may impact economic growth in developing regions (c.f. 4.7.1). Such economic disturbances are described as external economic shocks as they are events in external regions that influence local economic growth, constituting a sudden downturn in local economic output, i.e. an economic shock (Simmie & Martin, 2010:28).

4.7.2.1 Economic downturns in export markets

Economic downturns in external markets may be caused by several factors internal to the regional economy, including imbalances in the financial, non-financial, asset market, and public sectors (Röhn *et al*., 2015:6).

Table 4-1 illustrates the role of the respective imbalances in catalysing endogenous economic downturns.

Table 4-1: Factors in economic downturns

Contributing factors	Effect on regional economy
Financial sector imbalances (Röhn *et al*., 2015:7)	The financial sector is comprised of lenders (financial institutions) and borrowers (households and firms). In an economic upturn, the balance sheets of borrowers improve, improving the value of offered collateral and increasing the willingness of lenders to provide them with more capital. However, in a cyclical downturn, the balance sheets of borrowers worsen, decreasing the value of collateral as well as the willingness of lenders to provide more capital. This impairs the ability of households and firms to smooth the influence of the cyclical downturn, as they have decreased access to capital as means of consumption and investment. This spills over into the wider economy as production and output is reduced and investments declines.
Non-financial sector imbalances (Röhn *et al*., 2015:11)	When an economic upturn is predominantly catalysed by growth in private sector credit, the subsequent period of downturn is mostly characterised by "deeper recessions and slower recoveries" (Röhn *et al*., 2015:12). The higher the growth of private sector debt before an economic downturn, the greater the subsequent recession. In economic downturns, high levels of credit may maintain the ability of households and firms to consume and invest through the availability of capital. However, with high levels of private sector debt, capital availability is reduced, and the decreased revenues of households and firms cannot be offset by increased credit.
Asset market imbalances (Röhn *et al*., 2015:14)	As the price of real estate and equity increases, households and firms gain access to increased credit as the value of collateral increase for lenders (financial institutions). Increased credit and capital availability boosts consumption, investment, and economic growth. However, when prices in the asset market declines through over-supply, credit availability declines, while borrowers remain saddled with debt and financial institutions impose stricter lending standards. Deleveraging continues to take place in the private sector as consumption declines, investment drops, and economic output stalls.
Public sector imbalances (Röhn *et al.*, 2015:16)	Rising public debt may exert influence on the regional economy. As debt increases, and the risk of perceived government default on this debt increases, investors may demand increased "risk premia" to continue to invest in the economy. According to Röhn *et al*. (2015:16), increased risk premia may place upward pressure on interest rates and challenge the ability of financial institutions to avail capital and the consumption and investment of households and firms.

Source: Röhn *et al.* (2015).

While various factors contribute to economic downturns in export markets, the financial sector is often described as the source of economic uncertainty, catalysing downturn in regional economic output, as well as decreased availability of capital for consumption and investment in these economies (Reinhart & Rogoff, 2008; Schularick & Taylor, 2012; Röhn *et al*., 2015:7). This is reiterated by Hudson (2009:11) who states that volatility in the financial sector may be transferred to other sectors in the economy, amounting to "a generalised crisis of accumulation". Despite various possible factors pertaining to economic downturns in export markets, it is evident that these factors all negatively impact economic growth in the regional economy, influencing the availability of capital for investment and consumption while the revenue and income of economic agents decline (Röhn *et al*., 2015). Impact of external economic downturns

The factors illuminated in Table 4-1 may stimulate economic downturns in industrialised, as well as developing regions (Gurtner, 2010:189). In the past, however, the prevalent theory was that economic disturbances originates in developing regions and spreads to the financial institutions of industrialised countries and other developing regions, subsequently affecting the global economy (Gurtner, 2010:189). Developing regions are increasingly vulnerable to economic downturns originating in industrialised countries and regions, with the economic effects of these shocks constituting external economic shocks in developing regions (Pretorius *et al*. (2017:218). Lin (2008:10) and Todaro and Smith (2012) state that this is evident in the far-reaching impact of the 2008 Financial Crisis of 2008, an economic disturbance which originated in the United States of America, but quickly spread to other industrialised countries and eventually decimated economic output in developing countries and regions, as illustrated by the following process:

1. When these economic disturbances, catalysed by factors illustrated in Table 4-1, occur in industrialised regions, economic growth in said regions are stunted as credit restrictions impede the availability of capital for consumption and investment by consumers and firms.
2. With lower economic output, there is less revenue and regional income that can be utilised for importing inputs, goods, and intermediate products from developing regions. As economic production has declined, otherwise critical imported manufacturing inputs in the production process are imported at decreased quantities. In addition, consumer imports from developing regions decline as revenues decline and the economic downturn continues.
3. Additionally, according to Lin (2008:10), capital investment in the form of FDI, aid, and tourism from industrialised regions in developing regions decline due to risk-averse investors seeking stable investment environments and consumers experiencing declined income.

When an economic downturn is experienced in developing regions' export markets, i.e. industrialised regions, it translates into an external economic shock in developing regions, as exports to external regions decline due to falling income and export demand in export markets, the outflow of FDI from developing regions, and declining aid and tourism revenues as consumer spending in industrialised regions decline (Lin, 2008:10; Todaro & Smith, 2012).

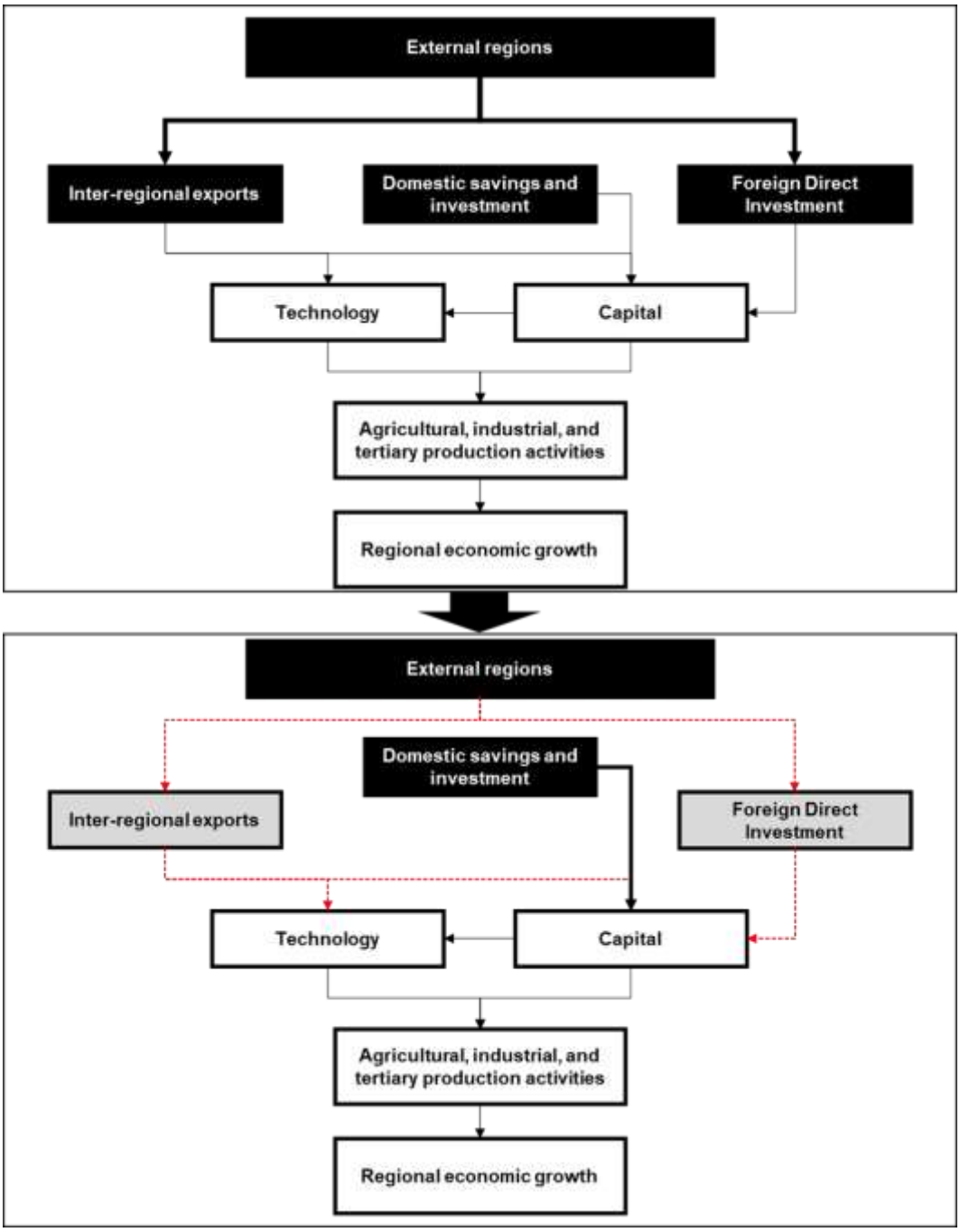


Figure 4-7: External economic shock and economic growth

Source: Author's own compilation

This process of an economic disturbance in industrialised regions translating into an external economic shock in developing regions is illustrated in Figure 4-7, with decreased exports and

FDI impacting the domestic capital stock and ability to acquire advanced technology to increase productivity and regional economic growth (Lin, 2008:10).

4.7.2.2 Developing region vulnerability

As illustrated in the export base theory, North (1955:250) illuminates certain factors which may increase the vulnerability of regional economies to "cyclical sensitivity" induced by fluctuations in revenues from inter-regional exports. North (1955:250) states that fluctuations in regional economic output is directly attributable to the income elasticity of regional staple demand, stating that regions with single staples, subject to low-income elasticity of demand, are more vulnerable to fluctuations in economic output. Low-income elasticity of demand means that the demand in external regions for the regional staple changes dramatically, based on income fluctuations in these regions (Bahmani-Oskooee & Kara, 2005:169). Accordingly, when incomes in external regions decline, there will be a decline in the demand for locally-produced goods and services, negatively affecting production in the export industry and associated residentiary industries, and adversely impacting regional economic growth and output (Bahmani-Oskooee & Kara, 2005:169). North (1955:250) states that regions dependent on the export of a single staple with a low-income elasticity of demand are particularly vulnerable to fluctuations in external demand and regional economic growth.

In this regard, developing regions are considered increasingly vulnerable to the effects of external economic shocks as they are predominantly characterised by their limited export diversification, dependence on primary commodity exports, and growing financial sectors integrated with the global economy (Massa & Te Velde, 2008). The 2008 Financial Crisis exposed the inherent vulnerabilities of developing regions as export demand to industrialised regions declined; FDI inflows slowed, outputs from financial sectors declined, and tourism revenue and the inflow of foreign aid (Todaro & Smith, 2012) decreased. Accordingly, the 2008 Financial Crisis constituted a prominent external economic shock in developing regions (Bakrania & Lucas, 2009; Massa & Te Velde, 2008). The need exists for developing regions to increase the resilience of their economies to external economic shocks, and to foster the ability of developing regions to reduce the initial impact of the shock, as well as to timeously recover reduced output in the post-shock period.

4.7.2.3 Regional export diversification

North (1955) and Agosin (2008:130) explains that export diversification through developing additional export industries is of cardinal importance in reducing vulnerability to external demand fluctuations, ensuring that the region is not dependent on a single staple (North, 1955; Agosin, 2008:130). Therefore, regions seek to implement two types of diversification to

overcome threats of demand fluctuation, namely horizontal and vertical diversification (Agosin, 2008:124):

- Horizontal diversification involves developing additional exports within the same sector as the regional staple, utilising the region's favourable factor endowments and comparative advantage in the sector to broaden the export base.
- Vertical diversification entails the broadening of the export base from being situated within a single economic sector, to export industries being based in multiple sectors in the regional economy (Agosin, 2008:124). For developing economies, vertical diversification entails extending the primary sector dominated export base to the industrial sector and the export of manufactured goods (Giljum & Eisenmenger, 2004:81)

Industrialisation, and increased manufacturing sector capacity to produce exportable goods, is a central theme in economic diversification, as manufactured goods are characterised by high income elasticity to demand compared to their primary commodity counterparts (Giljum & Eisenmenger, 2004:81; Todaro and Smith, 2012:572). Therefore, in addition to industrialisation stimulating the productive utilisation of resources and driving regional economic growth, a region with a well-developed manufacturing export base has less dramatic fluctuations in demand and production. Industrialisation is thus a primary objective for developing regions dependent on primary commodity exports to ensure sustained economic growth resilient to external demand fluctuations.

4.7.2.4 Barriers to industrialisation

While industrialisation is identified as a key component in both negating the long-term transfer of resources from developing regions to industrialised regions (c.f. 4.7.2.4), as well as decreasing developing region vulnerability to external economic shocks, significant challenges remain for developing region industrialisation, some of which are enshrined in the nature of inter-regional trade with industrial regions. These challenges include the comparative advantage of prosperous regions in manufactured goods, the income elasticity of demand for primary exports, and small domestic markets in developing regions.

4.7.2.4.1 Comparative advantage in manufactured goods

In contrast to the Heckscher-Ohlin model, the cumulative causation theory of Myrdal (1957) states that factor endowment fosters unbalanced trade between regions by perpetuating the comparative advantage in the production of manufactured goods in certain regions. As per the industrial location theory, Myrdal (1957:26) and Puga and Venables (1999:292) add that market forces dictate that economic activities cluster at certain locations and in certain regions, based on factor availability. Industrial activities develop in certain regions on the back of favourable

factor endowment, as well as the development of internal and external economies, including a skilled labour force and advanced service provision (c.f. 3.1). These factors perpetuate differences in productive capabilities in developing and industrialised regions, with developed regions possessing a comparative advantage in the production of manufactured goods products (Myrdal, 1957:26; Puga & Venables, 1999:292). Developing regions are dependent on the export of labour intensive, agricultural commodities, unable to compete with the productive capabilities of prosperous regions (Myrdal, 1957:29; Dawkins, 2003:139).

4.7.2.4.2 Income elasticity of demand for primary exports

In addition to primary commodity exports being vulnerable to external demand fluctuations, primary commodity goods experience a long-term decline in prices, according to the Prebisch-Singer Hypothesis (Todaro & Smith, 2012:573). Due to the decline in revenue from primary exports, developing regions need to export more commodities over the long term to maintain a positive payment balance to import technology and capital goods from prosperous regions to catalyse manufacturing industry expansion (Todaro & Smith, 2012:573). Over the long term, more primary commodities are exported from developing regions in exchange for a proportionally decreasing amount of manufactured goods (Todaro & Smith, 2012:573). Consequently, it is the prosperous regions that benefit most from inter-regional trade, as primary resources are drained from developing regions and transferred to prosperous regions (Myrdal, 1957:28; Todaro & Smith, 2012:573).

4.7.2.4.3 Small domestic markets

According to Murphy *et al*. (1988:33), an additional challenge to industrialisation in developing regions is the relatively low domestic demand for manufactured goods as a result of small local markets. Developing regions are dependent on the local market to stimulate sufficient demand to establish economies of scale and place downward pressure on the cost of manufactured goods; all to be able to compete with the manufactured staples of industrialised regions (Murphy *et al*., 1988). In this process, Murphy *et al*. (1988:33) states that small markets and limited local demand represents a problem in industrialisation efforts, as insufficient revenue is generated to profitably acquire and integrate advanced technologies within the industrial production process.

It is evident that certain factors perpetuate the concentration of industrial productivity and comparative advantage in certain regions, while other developing regions are confined to the export of primary commodities (Myrdal, 1957). In addition, the low-income elasticity of demand for primary goods lead to fluctuations in external demand and local economic growth (c.f. 4.7.2.5.2). These factors are detrimental to developing regions' payment balance and the acquisition of technology to improve industrial productivity for economic diversification of the

export base. This unbalanced nature of trade between regions perpetuates resource transfers and external economic shocks in developing regions, catalysing divergence in regional economic growth between developing and industrialised regions and contributing to increased economic disparities over time (Myrdal, 1957:29).

There is increased policy emphasis in developing regions regarding the nature of their trade with external regions, including elements pertaining to their primary export markets and the products being exported to these markets (Hudson, 2009:17). Motivated by the unbalanced nature of inter-regional trade in primary commodities with industrial regions, developing regions are increasingly altering their global trading relationships and fostering closer functional interaction with regional partners to decrease their dependence on industrialised regions as their primary export markets (Todaro & Smith, 2012:617). The following chapter investigates changing approaches to inter-regional trade and the role of increased developing region interaction in countering the unbalanced nature of trade between developing and industrialised regions and mitigating external economic shocks inherent to heightened dependence on the export markets of the latter regions. Integral to this investigation is determining the effect of regional integration in overcoming the challenges limiting industrialisation in developing regions, and how the interface between regional integration and industrialisation may contribute to decreased vulnerability and increased economic resilience of developing regions to external economic shocks.

4.8 Conclusion

Chapter 3 sought to determine the mechanisms which foster the spatial distribution of economic activities in the regional space economy (c.f. 3.4). Understanding these mechanisms is important for the regional planner seeking to alter the distribution of economic activities between and within regions for a more egalitarian dispersal of regional economic growth (c.f. 3.2.2). In achieving this objective of regional planning, understanding the factors that influence regional economic growth is of considerable importance in order to alter its diffusion in the regional space economy (c.f. 4). Accordingly, the primary objective of Chapter 4 of the literature investigation are to determine the factors internal and external to the region, which may influence regional economic growth. The growth pole theory, seeking to provide a spatial framework for the manifestation of economic growth and productive functions within individual centres and larger systems of regions, illustrated the role of industrial linkages in fostering production expansion, as well as the importance of production factors and agglomeration in catalysing the concentration of industries in certain locations. An important contribution of the growth pole theory is its illustration of mechanisms inherent to the diffusion or polarisation of economic growth within regions (c.f. 4.1).

The regional multiplier theory expands on the importance of inter-industry and inter-sectoral interaction in stimulating regional economic growth, as first illuminated in the growth pole theory (c.f. 4.1.2). Accordingly, the regional multiplier theory finds that a multiplier effect is stimulated when demand increases for locally-produced goods. Inherent to this multiplier effect is the subsequent increased demand for inputs in the manufacturing process, stimulating economy-wide output increase and regional economic growth (c.f. 4.2). The stages theory of Rostow (1971) illuminates the importance of capital formation, technology acquisition, industrial productivity growth, and efficient utilisation of resources in stimulating regional economic growth, and the economic transformation needed for sustained industrialisation (4.4). The neoclassical theory expands on the role of production factors and their efficient utilisation, as introduced by the stages theory, by stating that increased labour and capital in the local economy stimulates growth at a diminishing rate, while technology application increases productivity and the effective use of endowed resources (4.5.1).

Industrialisation is a central component of regional economic growth, with the Lewis two-sector model illustrating the role of excess labour transfer from the agricultural sector to the industrial manufacturing sector of the economy, increasing labour productivity, and catalysing increased industrial output (c.f. 4.5.2). The relationship between capital and technology in fostering industrial productivity is apparent, as increased local savings and investment stimulates capital formation and the subsequent acquisition of advanced technology to increase production in industries and raise economic output. (c.f. 4.5.2). While industrialisation and local production factor endowment constitute important endogenous factors in regional economic growth, regions and countries are not isolated, but rather form part of complex systems of interaction with external regions (c.f. 4.1.5). Therefore, the influence of exogenous factors in regional economic growth must be considered. The export base theory of North (1955), investigating trade interactions between countries, illustrates the importance of inter-regional trade in fostering increased demand for local manufactured goods and stimulating regional economic growth (c.f. 4.6.2.1). The Heckscher-Ohlin model investigates the role of competitive advantage in inter-regional trade and illustrates the convergence between factor prices and productivity between developing and industrialised regions as inter-regional trade takes place (c.f. 4.6.2.2).

In contrast to theories propagating regional economic convergence, divergent growth theories posit that regional economic disparities are exacerbated over time and are not self-correcting. The cumulative causation theory further claims that, over the long term, resources are transferred from developing regions to industrialised regions as developing regions remain dependent on the export of primary commodities to industrialised countries; products that are susceptible to long-term price fluctuations, as per the Prebisch-Singer Hypothesis (c.f. 4.6.2.2). In addition, the unbalanced nature of trade between developing and industrialised regions

contribute to external economic shocks in developing regions due to economic downturns and demand fluctuations in industrialised regions catalysing the outflow of FDI and stunted economic growth in developing regions (c.f. 4.7.2.2). These regions' dependence on primary commodity exports characterised by low-income demand elasticity, contributes to their vulnerability to demand fluctuations and external economic shocks as demand for primary commodities decline with the decline of revenue in export markets (c.f. 4.7.2.3). Therefore, increasing emphasis is placed on industrialisation in developing regions to export more manufactured goods with high-income elasticity of demand to external markets, mitigating sudden downturns in demand and subsequent external economic shocks (c.f. 4.7.2.4).

Citing challenges to industrialisation, developing regions are propagating increased functional interaction through trade and inter-regional factor movements to decrease their dependence on industrialised regions as primary export markets and mitigate external economic shocks that accompany this unbalanced inter-regional trade (c.f. 4.7.2.5). Accordingly, the following chapter investigates regional integration and its role in overcoming the barriers to industrialisation in developing regions, and the way the interface between regional integration and industrialisation may foster regional economic resilience in developing regions.

CHAPTER 5 REGIONAL ECONOMIC RESILIENCE

5.1 Introduction

Chapter 4 of this study investigated the endogenous and exogenous factors in regional economic growth and the contribution of these factors to the divergence and convergence of economic prosperity between developing and industrialised regions. Regional convergence is an important objective of regional planning and influences the nature of regional policy (c.f. 3.3.2), which seeks to alter the distribution of resources within and between regions to foster equally distributed economic prosperity and growth. In the investigation regarding the regional economy, it has been found that exogenous factors (what is being exported to which regions) have a pronounced influence on the long-term economic growth of developing regions (c.f. 4.6). As a result of the substantial influence the export industries exert on the regional economy, determining the factors influencing growth and possible fluctuations in these industries is of cardinal importance in ensuring sustained economic growth (North 1955:254). Accordingly, developing regions' unbalanced trade with industrialised regions, centred on their dependence on primary commodity exports to these markets, increase developing regions' vulnerability to external economic shocks and demand fluctuations (c.f. 4.7.2.3). In addition, resources are transferred from developing to industrialised regions due to the unbalanced nature of inter-regional trade (c.f. 4.7.1). This inherent vulnerability to external economic shocks thus invariably influences long-term regional economic growth and developing regions' convergence with industrialised regions (c.f. 4.7.2.3).

This chapter investigates factors pertaining to the economic resilience of developing regions to external economic shocks and the role of regional integration and increased developing region trade and factor flows in decreasing their dependence on export demand in industrialised regions, overcoming the challenges to industrialisation in developing regions, and fostering regional economic resilience. Firstly, the chapter defines regional economic resilience and the aspects inherent to the concept of resilience. Secondly, this chapter investigates the classifications of economically resilient regions, and determines the criteria which establishes a region's resilience to external economic shocks. Thirdly, important endogenous and exogenous factors inherent to resilient regional economies are investigated. Included in this section of the chapter is an investigation into the role of regional integration, industrialisation, and the interface between said instruments in fostering regional economic resilience. The objective of identifying endogenous and exogenous factors is to inform the nature of potential regional policy interventions that may catalyse regional economic resilience. Accordingly, the fourth section of this chapter investigates the role of regional policy in stimulating the economic resilience of developing regions and their respective member countries.

5.2 Regional economic resilience

Research concerning the regional economic resilience of developing countries is becoming increasingly prominent. According to Christopherson et al. (2010:3) this increase is due to the expanded perception of uncertainty and risk in the global economy. The perception of risk among external economic shocks that negatively impact domestic economic prosperity is significantly increased by globalisation and enhanced connectivity between countries and regions in the movement of goods, services, consumers and information (Christopherson et al. 2010:3, Dawley et al. 2010:650, Hudson, 2009:12). The increasing eminence of regional resilience studies has to be analysed to establish an improved understanding of local vulnerability to economic disturbances initiating in external regions. This conception is further underlined by Dawley *et al.* (2010:650) states that the 2008 Financial Crisis and the subsequent economic recession drew awareness to regional economic resilience research and studies concerning "regional development [which] have recently broadened from a preoccupation with growth to one which captures the notion of resilience". The study of regional economic resilience is imperative in the pursuit of justifying aspects and development of functional solutions through policy mediations and instruments to lessen the vulnerability of urban areas, national economies and regions to external economic shocks in an ever-changing global marketplace.

5.2.1 Defining regional economic resilience

Resilience research is diffused among a multitude of disciplines, contributing to a wide range of “discipline-specific” definitions and applications (Hudson, 2009:12). Prominent strands of resilience research are found in the paradigms of political and social sciences, ecology, biology, engineering, psychology, business studies, geography, economic studies, and spatial planning (Holling, 1973; Gunderson, 2000; Hudson, 2009:12; Pretorius *et al*., 2017), contributing to distinctive research themes, including regions’ resilience to political shifts (regime changes), environmental disasters (global warming and natural disasters), and economic disturbances (including external demand shocks) (Christopherson *et al.,* 2010). While academically widely dispersed, the study of ecological systems’ resilience to disturbances originating from outside the respective systems, forms the theoretical basis of resilience research as adopted in other research fields (Pendall *et al*., 2009:72). Inherent to the ecological paradigm, a resilient system is seen as one that is sufficiently capacitated to rearrange itself while maintaining its original functionality amid the risk of external disturbances affecting components within the system (Walker *et al*., 2004). The capability of the system to catalyse the appropriate restructuring, in addition to its ability to adapt to the risks presented in the environment in which its functions, emphasises its resilience to external disturbances (Hudson, 2009:12). Resilience entails the

capacity of systems to “retain” and “regain” its functional capacity in the event of an external disturbance (Hudson, 2009:12).

Christopherson *et al*. (2010), referencing the resilience of ecological systems, transfers the concept of resilience to the framework of economic and spatial planning. In this framework, a region is characterised as “resilient” when it sustains economic prosperity despite potential downturns in output growth over the long term (Christopherson *et al.*, 2010). In addition to this long-term perspective of sustained prosperity, Hill *et al*. (2008) emphasise the ability of the regional economy to withstand the impact of sudden external economic shocks on production and consumption networks, and to recover possible reduced output resulting from the shock in the post-shock period, as the primary characteristics of resilient regions. While long-term prosperity and sustainability in economic output is an important theme in studying regional economic resilience (Hill *et al*., 2008:2), key emphasis is placed on the impact of short-term economic disturbances on the “developmental trajectories” of regional economies (Hudson, 2009:13). Therefore, regional economic resilience is determined by a region’s ability to (i) resist the initial impact of an external economic shock on the regional economy, and to (ii) timely recover from said impact (Briguglio *et al.,* 2009:233; Christopherson *et al*., 2010; Dawley et al., 2010:651), as illustrated in the following discussion:

1. Resisting the initial impact of the shock reflects the ability of the regional economy to absorb the shock and its effects on regional production systems and output, and render the lasting effects of the shock negligible. Briguglio *et al*. (2009:233) state that a prerequisite for “shock absorption” is the development and implementation of certain mechanisms reducing the impact of the shock. This requires, among other regionally internal and external shock-absorbing mechanisms, a “flexible, multi-skilled labour force” (Briguglio *et al*., 2009:233).
2. Timely recovery from economic shocks refers to the capacity of the regional economy to reclaim economic impetus after the shock has taken place (Pretorius *et al*., 2017:223). Briguglio *et al*., (2009:233) argue that this ability reflects the flexibility of the regional economy and its inherent production networks, a characteristic that enables the economy to “bounce back” after production output (or other relevant predetermined measures) has been impacted by the economic shock (Briguglio *et al*., 2009:233).

According to Christopherson *et al.* (2010) and Dawley *et al.* (2010:651), the abilities of the regional economy to resist and recover from economic shocks are mutually dependent: when the initial impact of the shock is rendered negligible, economic recovery will accelerate.

5.3 Analysis of regional economic resilience

As indicated in studies on regional economy, analyses of regional economic resilience in developing regions necessitate the application of predetermined criteria to effectively inform research deliverables. Included in said criteria may be economic output, employment, measurements of quality of life, living standards, and economic growth rates. In this regard, Christopherson *et al*. (2010) state that, in the study of regional economic resilience, the primary objective is associated with investigating the long-term trends of regional growth, as this is instrumental in determining the capacity of the region to resist the initial impact of and recover from external economic disturbances. Therefore, in the same vein as Brixiová *et al*. (2015), this study utilises economic growth rates and related trends as the primary criterion in analysing the economic resilience of regions to external economic disturbances.

5.3.1 Classification of regional economic resilience

Pretorius *et al*. (2017:219) highlight the extrapolative nature of analysing regional economic resilience "as [a] significant challenge", stating that "… resilience can only be determined after an economic shock …" has occurred and lessons have been extracted. Nevertheless, this methodology is supported by Christopherson *et al*. (2010:6), who suggests that the basis of resilience analysis comprises investigating regional economies that demonstrated significant resilience to external disturbances in the past, with the objective of identifying lessons and factors specific to said regional economies that contribute to their resilience. A central factor in this methodology is to identify regions that have displayed resilience in the past, and to determine the criteria of this resilience. In this regard, Hill *et al.* (2008:3) developed a classification of regions and their response to external economic disturbances, stating that "regions that experience negative economic shocks may exhibit three different kinds of responses", namely economic resilience, resistance to shocks, and non-resilience to disturbances.

Table 5-1 elaborates on this resilience classification.

Table 5-1: Regional responses to economic disturbances

Regional classification	Definition
1. Economically resilient	• Economically resilient regions absorb the initial impact of the shock, and recover (or exceed) their pre-shock economic growth path in a timely manner. • Economic resilience is determined by investigating the economic performance of regions in a given period. • The nature of the economic disturbance, and its effect on the regional economy can be analysed by determining the pre-shock economic growth equilibrium for the region and, subsequently, to determine the deviation from this equilibrium in the post-shock timetable. • Accordingly, a region is considered economically resilient when the post-shock rate of growth is equal to or exceeds the pre-shock equilibrium, and that the initial deviation from the equilibrium is recovered in a timely manner (the duration of which is predetermined).
2. Shock-resistant	• A shock-resistant region is characterised by its absorption of the initial impact of the economic disturbance, suffering limited decline in economic growth. • The post-shock growth rate thus displays severely limited deviation from the pre-shock growth equilibrium.
3. Non-resilient	• As is the case in an economically resilient region, the effect of the external disturbance on regional economic growth can be investigated by determining a pre-shock equilibrium for each region, as well as the deviation from equilibrium recovery after the shock has recurred. • A region can be considered non-resilient when the post-shock rate of growth is below the pre-shock equilibrium and the initial deviation from the equilibrium is not recovered within a predetermined span of time.

Source: Adapted from Hill *et al*. (2008)

This classification of Hill *et al*. (2008) can be utilised to classify developing regions according to their resilience to external economic shocks and associated downturns in external economic demand and the outflow of FDI.

5.3.2 Approaches to economic resilience analysis

When categorising developing regions and their economic resilience, based on their response to external economic shocks, certain research methodologies can be applied (Christopherson *et al*., 2010). Four distinct research approaches have been identified in this regard, namely the equilibrium approach (Ahern, 2011; Desouza & Flanery, 2013); the multiple equilibria, or "path-dependence" approach (Lhomme *et al*., 2013; Lu & Stead, 2013); a systems perspective (Pendall *et al*., 2007); and a long-term perspective (Hill *et al*., 2008:2). The following section investigates these approaches to resilience analysis and identifies the different concepts of regional economic resilience inherent in each approach.

5.3.2.1 Equilibrium approach

To identify economically resilient, shock-resistant, and non-resilient regions, Hill *et al.* (2008:1) apply the equilibrium approach to resilience analysis. Inherent to the equilibrium approach is the notion that "resilience is the ability of a regional economy to maintain a pre-existing state", or an "equilibrium state" during an external economic disturbance (Hill *et al*., 2008:1). As illustrated in Table 5-1, the resilience of a region is determined by its ability to resist disturbances to the pre-shock growth equilibrium, and the subsequent recuperation of "lost" growth to regain the pre-shock equilibrium in the post-shock period (Briguglio *et al*., 2006; Hill *et al.,* 2008).

Analysing resilience through the equilibrium approach includes determining the ability of the regional economy to prevent deviation from the pre-shock growth equilibrium, despite its productive processes being subjected to external disturbances (Pretorius *et al*., 2017). Briguglio *et al*. (2006) and Hill *et al*. (2008:2) add that this may include the regional economy (i) entirely avoiding the shock, or (ii) severely limiting the impact of the shock on economic output and growth. When the shock influences economic output, it also influences the regional economy's ability to "dampen" this initial impact (Hill *et al*., 2008:2), and mitigate extreme swings in economic output (or other dependent variables) (Duval *et al*., 2007; Hill *et al*., 2008:2).

5.3.2.2 Multiple equilibria approach

Another approach to regional economic resilience analysis is the multiple equilibria approach (Lhomme *et al*., 2013; Lu & Stead, 2013). Similar to the equilibrium approach, this approach determines several growth paths in the post-shock period, with the respective growth trajectories influenced by policy-makers and institutional agents implementing changes in the economic system and regional production networks in reaction to economic risks and external disturbances (Pretorius *et al*., 2017). Lu and Stead (2013) explain that the evolution of the equilibrium approach to the multiple equilibria, or non-equilibrium, approach is indicative of spatial planning's progression from adopting a linear perspective of resilience (the existence of

a single equilibrium that is to be regained in the post-shock period), to embracing a more distinct perspective where choices are not definitive. Therefore, regions' response to external shocks – and thus regional economic resilience – may fluctuate along the trajectories of various equilibria (Pretorius *et al*., 2017).

The notion of multiple equilibria wherein regional economies experience different trajectories of growth, output, and productivity based on economic and policy decisions over the long term, is similar to the concept of "path-dependence" as described by Hill *et al*. (2008:2). Path-dependence refers to the "lock-in" of a region's growth trajectory and long-term growth equilibrium, a trajectory directly influenced by amassed policy decisions impacting production systems and economic growth within the region (Hill *et al*., 2008:2). Depending on policy and economic structuring decisions, the regional economy may be "locked into" a marginal growth path with limited productivity; a growth trajectory which may prohibit resilience from external economic disturbances (Chinitz, 1961). Therefore, based on the multiple equilibria approach, Hill *et al.* (2008:2) suggest that an added component of a resilient region is one that ensures it becomes "locked into" a high-level growth equilibrium, and, if not, is sufficiently geared to enable structural changes and attain a sufficient growth equilibrium. Inherent to the multiple equilibria approach is the importance of economic policy and planning decisions in guiding long-term growth and fostering the ability of regions to resist and recover from external economic disturbances.

5.3.2.3 Systems approach

The equilibria and multiple equilibria approaches utilise a single economic variable to analyse regional economic resilience (in this study, regional economic growth) limiting insight into the components of the regional economy, which fosters its resistance to and recovery from external economic disturbances (Hill *et al*., 2008:2). This negates the study approach of Christopherson *et al*., (2010) which entails extracting lessons and identifying factors which catalyse resilience in regions resilient during past disturbances. Hill *et al*. (2008:2) propose utilising a "systems approach" to highlight networks of functional interaction between several economic variables, providing a long-term perspective on the institutional components, political agents, social conditions, and economic factors that catalyse a status of economic resilience within identified regions. This approach to resilience analysis is extracted from the study of the long-term structural changes undergone in national economies as highlighted by Retch (1997), investigating the networks of social, economic, political, and institutional agents in fostering sustained economic growth over an extended period of time. These networks, referred to as the social structures of accumulation (Retch, 1997), are in a continuous state of evolution; changes that fluctuate in the efficiency and output of regional productive systems, affecting regional economic growth in the long term. Retch (1997) suggests that once a social structure decays,

and substantially inhibits economic expansion, this structure, after substantial endogenous examination constituting a period of increased institutional fluidity, is replaced by a more favourable structure.

In the systems approach, Hill *et al.* (2008:2) propose that the notion of a social structure decaying to negatively affect economic growth over the long term be transferred to the analysis of regional economic resilience. As per Hill *et al.* (2008:2) the resilience of a regional economy is influenced by the "rise, stability, and eventual decay" of the economic, socio-political, and institutional networks that stimulate economic expansion. The resilient region is characterised by the stability of its social structure and capacity to develop and timely transition to a new, more favourable, or resilient social structure in the face of changes in global production networks. Hudson (2009:12) supports this systems approach to resilience analysis, stating that a resilient region, or "system", remains on a stable trajectory of development over the long term, while retaining the ability to transition to a new trajectory in response to economic disturbances or when the existing trajectory "becomes locked into an undesirable state". Inherent to a region's ability to transition to what Hill *et al*. (2008:2) refer to as a new "social structure" that fosters resilience and continued economic expansion, is the capacity of the regional economy to adapt and adjust its social structure "in ways that do not damage or jeopardise effective functioning" (Hudson, 2009:12). Relevant in this regard is evolutionary regional resilience where regions not only recover their pre-shock growth path in the event of an external economic shock, but where the post-shock growth trajectory eclipses that of the previous growth path (Simmie & Martin, 2010). Accordingly, regions utilise disturbances to existing production systems to develop new, more favourable growth paths (Davoudi, 2012).

The concepts of adaptability and adaptation, as referenced by Grabher (1993), Christopherson *et al.* (2010), and Dawley *et al*. (2010), are central to the region's ability to change the social structure and catalyse the development of a new growth trajectory for the region; one that is more favourable for economic expansion and resilient to external economic shocks (Godschalk, 2003; Ahern, 2011; Pickett *et al.*, 2004; Leichenko, 2011; Desouza & Flanery, 2013). According to Pretorius *et al*. (2017:220), adaptation "is a continuous process a resilient region undertakes to ensure economic success in the long term", a process during which the social structure is continuously reshaped to optimise the development trajectory and support the region's resistance to economic disturbances. Folke *et al.* (2010) state that adaptability is the ability of the social structure of the region to transition to a new growth path in direct response to economic disturbances and immediate downturns in regional output and growth. Adaptability, as such, is crucial in the period succeeding the economic disturbance to bring about a recovery from the initial shock and subsequent economic downturn (Simmie & Martin, 2010:29).

The notions of “adaptation” and “adaptability” inherent to the systems approach to resilience analysis can be transferred to the concepts of “resistance” and “recovery” as referenced in the equilibrium approach, where adaptation fosters resistance to the initial impact of the shock, and adaptability supports the timely recovery of the regional growth path in the face of external economic disturbances (Pretorius *et al*., 2017:220). Figure 5-1 illustrates the role of adaptation and adaptability in fostering regional economic resilience within the joint framework of the systems perspective and the equilibrium approach to resilience analysis.

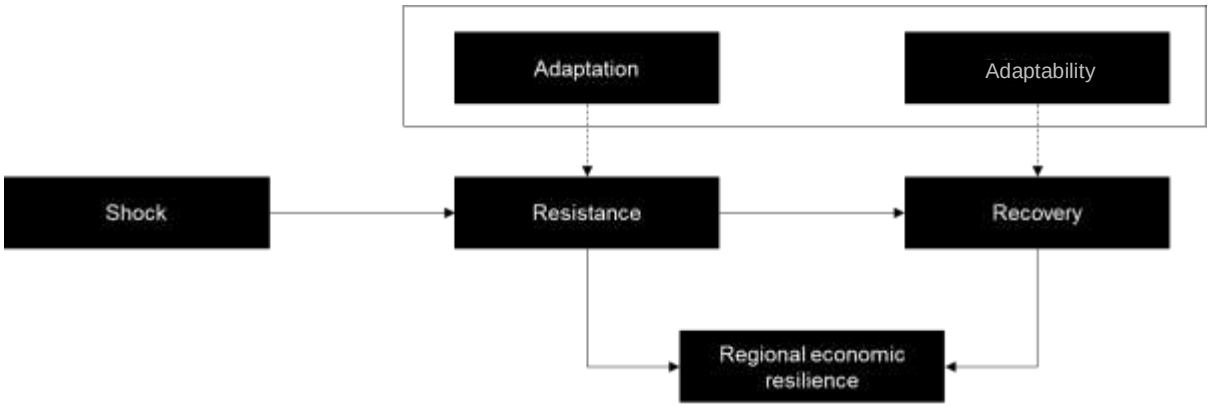


Figure 5-1: Adaptation and adaptabilty

Source: Adapted from Christopherson *et al*. (2010), Dawley *et al*. (2010), and Pretorius *et al*. (2017).

According to Hudson (2009:12), the adaptation and adaptability of the regional economy is based on its capacity to facilitate “social learning” and “[use] human capacities and knowledge to reduce vulnerability” inherent to the dominant social structure. The social structure, and the networks of socio-political, economic, and institutional interaction which conditions its existence, must be able to “create and sustain the capacity to learn and adapt” – a characteristic fundamental to the regional economic resilience of developing regions (Hudson, 2009:12).

5.4 Towards regional economic resilience

An important component of resilience is the ability of a system to “resist” and “recover” from an external disturbance and rearrange itself while maintaining its original functionality (c.f. 5.2.1). According to Hudson (2009:12), the system’s capability to catalyse the appropriate restructuring, in addition to its ability to adapt to the risks presented in the environment in which its functions, emphasises its resilience to external disturbances. Economic production systems in planning regions are based on local resources and demand, as well as external export demand and capital inflows (c.f. 4.2). The function of this system of regional production is illuminated in the growth pole theory that illustrates the intra-industry and inter-sectoral interaction pivotal to growth in prominent economic centres – attracting additional industries,

economic activities and functions (Terluin, 2003:330). Export demand increases, and capital inflows are stimulated, catalysing regional economic growth (Weber, 1929; Hirschman, 1958). Industrial linkages transfer growth to other centres in the planning region, constituting the regional production system (c.f. 4.1.5).

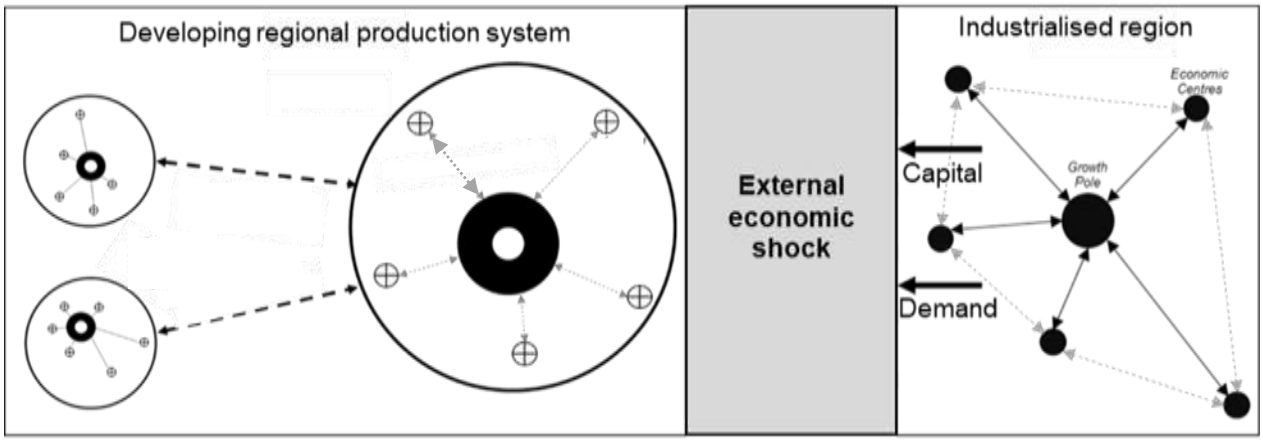


Figure 5-2: Regional production systems disturbances

Source: Adapted from North (1955:255).

As illustrated in Figure 5-2, in the event of an external economic shock in developing regions, exports to external regions and capital inflows from industrialised regions decline (Lin, 2008:10; Todaro & Smith, 2012). Decline in these factors exacerbate disturbances in the regional production systems of developing regions, adversely affecting economic growth (c.f. 4.7.2.2). Incorporating the notions of adaptability and adaptation from Christopherson *et al*. (2010), regional economic resilience in developing regions, which are vulnerable to external economic shocks due to their dependence on primary commodity exports to industrialised regions, is based on the ability of the regional economy to resist the initial impact of a shock in terms of decreased export demand, FDI outflows, and reduced economic growth, in addition to its ability to recover lost output in a timely manner in the post-shock period (c.f. 5.2). Therefore, a primary objective in this regard is to determine the factors that foster the ability of the developing regional economy to "resist" and "recover" from an external disturbance to its production system and enhance its capacity to rearrange itself while maintaining its original functionality (c.f. 5.2.1). Inherent to said objective is instructing "planning entities" at the appropriate regional planning scale (c.f. 3.2.3) to implement effective regional policy to improve developing economies' resilience to external economic shocks, and contribute to fostering convergence with industrialised regions, as per the objectives of regional planning. As noted by Hill *et al.* (2008:2), economic policy and planning decisions is pivotal in guiding long-term growth and fostering the ability of regions to resist and recover from external economic disturbances. Therefore, the following section investigates the role of development decisions in fostering regional economic resilience.

5.4.1 Development decisions

As illustrated in the path-dependence approach (c.f. 5.3.2.2), economic decisions and planning policies significantly influence the development trajectory and long-term economic resilience of regions. While adaptation and adaptability are identified as vital concepts in fostering resilience, Majoor (2015:261) emphasises the importance of appropriate policy initiatives and implementation to optimise the effect thereof on a region's capacity to resist and recover from economic disturbances. Majoor (2015:261) adds that, when policy disproportionately emphasises adaptation (prioritising productivity and efficiency), a so-called "performance trap" may develop, with ensuing economic inertia, institutional inflexibility, and limited innovation in production systems limiting its capacity to adapt. When policy disproportionately emphasises adaptability (institutional flexibility, emphasis on adoption of innovative technology and ideas, adjustment), Simsek *et al*. (2009) state that a failure trap may develop due to several insufficiently developed ideas diffusing institutional capital and limiting adequate implementation to foster adaptability.

The importance of adaptation and adaptability is a prominent theme in resilience analysis (Grabher, 1993; Grabher & Stark, 1997; Pike *et al.,* 2010). When policy successfully integrates these concepts to support one another, regional economic resilience can be achieved (Pike *et al*., 2010; Miller *et al*., 2010). According to De Weijer (2013) and Turok (2014), this resilience is based on sustained economic expansion on a single growth trajectory (through the effects of sufficient adaptation) while networks of interaction between socio-political, economic, and institutional agents change and adjust (through the effects of adaptability) this growth trajectory onto courses which support the resistance of the regional economy to external economic shocks. Pretorius *et al*. (2017:220) state that this inferred "dynamic stability" protects to regional economy from severe deviation from its growth trajectory, while simultaneously stimulating its ability to recover from future external disturbances. Accordingly, an important theme is to identify the factors which contribute to developing regions being "learning regions" able to sufficiently adapt to external economic shocks to foster regional economic resilience.

5.4.2 Factors pertaining to regional economic resilience

The role of policy intervention in creating "learning regions" to foster increased regional economic resilience is emphasised by Hassink (2010:46) and Martin (2011:10). Hudson (2009:17) adds that "the capacity of regions to devise strategies for greater resilience will critically depend upon changes in modes of regulation and governing", changes which will require "increased state involvement in the economy". Explaining the nature of change regions require for increased economic resilience, Hudson (2009:17) states that decision-makers and policy should reflect an increasingly pro-active approach in "learning how to create" more

resilient economies and subsequently implementing the regionally appropriate measures to counter the effects of external economic shocks on regional economic growth.

Douglas (2002:60) illuminates the core factors that enhance regions' ability to continuously adapt and adjust over the long term. While these factors differ in importance between regions, the following are identified based on their effectiveness in stimulating resilience in regions during previous external economic shocks:

- Prominent systems of innovation in the presiding social structure (Douglas, 2002:60; Simmie & Martin, 2010)
- Modern infrastructure (Pant *et al.* 2014), which increases adaptability in production networks
- A regional workforce that is highly skilled and innovative, with a strong entrepreneurial tradition (Martin & Sunley, 2015:11)
- A financial system (Anand *et al.* 2013), which provides steady access to capital for economic agents (including households and firms) to spur continuous consumption, investment, and innovation
- A regional economy that is characterised by a diverse economic base, not reliant on a single economic sector (Dissart, 2003; Gibson-Graham, 2008)

While these factors may enhance the adaptation and adaptability of regional economies in anticipation of external economic shocks, Christopherson, *et al*. (2010) note that "the most effective strategies for regional resilience rely on acquired levels of civic capital" and the "capacity of regional institutions to chart new paths forward". Bristow (2010) and Christopherson *et al.* (2010) explain that this capacity of regional institutions is reflected in their ability to enhance regional specialisation based on the inherent uniqueness of its factor endowment (including research and innovation infrastructure; and unique labour force composition); and the capability of economic agents (firms and entrepreneurs) to adjust and adapt their production networks based on changing global and local economic conditions (adjustment and adaptation regarding export markets, input suppliers, and value chain positioning).

According to Christopherson *et al*. (2010:7), "regions make their own resilience, but they do not make it as they please". The economic resilience of developing regions is thus determined by economic decisions and subsequent policy implementations which influence their long-term path dependence (Simmie & Martin, 2010). While growth-paths of regions are substantially influenced by economic and policy decisions of the past, fostering resilience to external economic shocks necessitates proactive decision-making by economic agents and regional institutions (Hudson, 2009:17).

5.4.3 Industrialisation in developing regions

The nature of the regional economy and regional exports primarily influence the resilience of regions to external economic shocks (North, 1955; Giljum & Eisenmenger, 2004:81; Agosin, 2008:130; Briguglio *et al*., 2009:232). Christopherson *et al*. (2010) mention the importance of diversification of economic sectors and activities endogenous to the regional economy in decreasing the inherent vulnerability of regional output that is exceedingly being attributed to a single economic sector. North (1955) and Briguglio *et* al. (2009:232) illuminate the importance of diversification of the regional export base to decrease regional vulnerability to demand fluctuations in the dominant staple. An important element in diversification of the regional economy and the export base, is stimulating increased productivity in the secondary sector of the regional economy – with emphasis on industrial productivity (c.f. 4.7.2.3). The importance of industrialisation in developing regions is reflected in its role of diversifying regional exports; decreasing the export of low-income elasticity of demand goods such as primary commodities proportionally to total exports; increasing the export of high-income elasticity of demand goods, such as manufactured products; and decreasing demand fluctuations in export markets (c.f. 4.7.2.3). Evidently, industrialisation is vital in fostering regional economic resilience in developing regions (Giljum & Eisenmenger, 2004:81; Agosin, 2008:13). However, several challenges remain to industrialisation in these regions, including the unbalanced nature of trade between developing and industrialised regions, the comparative advantage of industrialised regions in manufactured goods, the income elasticity of demand for primary exports, and small domestic markets in developing regions. Due to these challenges, developing regions seek to alter the unbalanced nature of trade with industrialised regions, which perpetuates their dependence on primary commodity exports and vulnerability to external demand fluctuations (c.f. 4.7.2.5.3). Two divergent approaches to industrialisation is considered, namely import substitution (Puga & Venables, 1999:292) and regional integration (Todaro & Smith, 2012:617).

5.4.3.1 Industrialisation through import substitution

In response to terms of trade which foster regional economic divergence and developing region vulnerability to external economic shocks, developing regions may seek to alter their trading relationship with industrialised regions by establishing barriers to trade with these regions and implementing a policy of import substitution (Puga and Venables, 1999:292; Todaro & Smith, 2012:599). Through this policy, developing regions seek to “make their own resilience” to external economic shocks through deliberate economic and developmental policy, i.e. decreasing dependency on export demand in external regions (c.f. 5.3.2.3). Invariably, the motive for implementing such policy is to minimise the importance of exports to external regions in stimulating industrialisation, with regions aiming to develop their secondary sectors and

manufacturing industries based on local technological development and demand (Lyne, 2015; Belini, 2017; Epshtein, 2017).

With import substitution, substantial tariffs are imposed on imports from external regions, raising their prices and reducing import demand (Bruton, 1998:912; Galiani & Somaini, 2017). Through import substitution, inefficient local industries would be better able to compete with the raised prices of imported goods, stimulating local demand for local manufactured goods (Athukorala & Sen, 2015:4). Growth in local demand fosters revenue generation for local industries, allowing internal technology development and industrial expansion (c.f. 4.2). It is envisioned that the tariff wall protecting local industries will be removed once technology application has sufficiently decreased production cost and increased the competitiveness of domestic manufactured goods in external markets (Todaro & Smith, 2012:599). The policy seeks to initially protect domestic industries from external competition, and eventually increase manufactured exports to drive domestic industrialisation and diversification once locally manufactured goods are competitive in external markets (Rosenstein-Rodan, 1943:203; Todaro & Smith, 2012:594). A characteristic of industrialisation through import substitution is the notion of "inward-looking" regional development within the framework of the isolated planning region with limited interaction with external regions (c.f. 3.1.3).

While this policy approach seeks to decrease dependence on export demand in external regions to foster regional economic resilience, Todaro and Smith (2012:602) state that this policy is subject to substantial critique due to its perpetuation of inefficiencies in local industries, protecting manufacturers from external competition while local production cost remains high. Additionally, the construction of tariff barriers on imports may have a detrimental effect on regional exports as other regions construct retaliatory tariffs (Baldwin, 2016:103). As industrial expansion is predominantly dependent on local demand (as tariffs reduce the competitiveness exports in external regions) for manufactured goods, the limited size of the domestic market in stimulating economies of scale and reduced production cost is a challenge to the inward-looking development policy (Murphy *et al*., 1988:33). In addition, Rosenstein-Rodan (1943) states that inward-looking policies prolong the process of industrialisation, due to reliance on limited domestic savings and investment, while limiting the inflow of foreign capital.

5.4.3.2 Regional integration among developing regions

It is evident that developing regions seek to decrease their vulnerability to external demand fluctuations through implementing policies which actively reduced trade with industrialised regions (Todaro & Smith, 2012:617). While developing regions' dependence on external export markets may decline, the limited size of domestic markets fail to stimulate sufficient capital formation and economies of scale for firms to acquire advanced technology to propel

productivity and industrialisation (Murphy *et al*., 1988:33; Myrdal, 1957). While import substitution has the potential to shield developing regions from external economic shocks, it cripples the ability of developing regions to undergo the needed structural transformation to stimulate long-term economic growth through industrialisation (c.f. 5.4.3.1). Although it is apparent that developing regions must seek to decrease dependence on export demand in industrialised regions to foster regional economic resilience (Economic Commission for Africa, 2009), the need remains to actively participate in inter-regional trade to unlock the potential of exports in terms of industrialisation (North, 1955; Agosin, 2008) and regional economic growth (Pretorius & Drewes, 2016).

Alternatively, developing regions may seek to overcome challenges presented by unbalanced trade with developed regions and the inward-looking development policy of import substitution, by pro-actively channelling trade to other developing regions to foster mutual industrialisation and stimulating regional economic resilience through regionalising export demand as opposed to channelling exports to industrialised regions (Chia, 2010:10; Green *et al*. 2010:5; Brixiová *et al*., 2015; Draper & Nene, 2015). Through regional integration, unbalanced trade with industrialised regions can be reduced without forfeiting the advantages associated with trade and exports (Todaro & Smith, 2012:617). A program of regional integration, which propagates eliminating barriers to trade which exists between regions, may be implemented to foster developing region interdependency (Todaro & Smith, 2012:617). Accordingly, developing regions move away from inward-looking growth policies, seeking to foster interaction with other developing regions and stimulate the movement of goods, services, factors of production between regions within the paradigm of new regionalism (c.f. 3.7.1). The following section investigates regional integration and its interface with trade stimulation and catalysing industrialisation to foster resilient regional economic growth.

5.5 Regional integration

Regional integration, and the “voluntary linking in the economic and political domain of two or more formerly independent states” is playing an increasingly important role in international trade and the global flow of capital and production factors (Mattli, 1999:1). Regional integration is considered an important mechanism in strategies for economic growth and development, receiving support from various industrial and developing countries and regions (Hartzenberg, 2011:2). Regional integration signifies the rejection of the notion of industrialisation through import substitution, and an individual national economy achieving sustained economic growth in isolation from external economies (Vamvakidis, 1998). New regionalism, and increased interaction between participating countries, replaced the notion of economic growth in the planning region through “in-ward looking” economic policies (c.f. 3.7). An important consideration in this regard is the institutional scale of development decisions and appropriate

level of regional planning and policy (c.f. 3.2.3). Harrison (1992:312) states that the scale of interaction between regions in new regionalism is on a supranational scale, describing it as the "post-national phase in the territorial development". Accordingly, new regionalism and regional integration posits "dissolving" of isolated planning regions through their integration into a larger region (Zimmerbauer & Paasi, 2013:31). The scale of the "developing region" in the subsequent sections reflects the supranational trade grouping of various participating developing countries. Accordingly, supranational regional planning and policy is the relevant level of development decision-making (c.f. 3.2.3)

According to Hudson (2009:17), regional integration is increasingly attributed with regionalising export demand of member developing countries, stimulating intra-regional trade between participating countries while decreasing dependence on industrial region export demand. Regional integration is, as such, considered an instrument in fostering regional economic resilience and decreased vulnerability of developing regions to external economic shocks through strengthening regional production networks (Hudson, 2009:17). An abundance of regional trading blocs has been established, especially between neighbouring developing countries, the primary motive of which is the liberalisation of trade between countries, eliminating potential barriers to trade to stimulate interaction between member states and catalysing increased intra-regional trade (Hartzenberg, 2011:2; Todaro & Smith, 2012:617). The following section investigates regional integration between developing countries in response to the unbalanced nature of trade between developing and industrialised regions, which fosters developing region vulnerability to external economic shocks (c.f. 4.7.2.3).

5.5.1 Overview of regional integration

Regional integration is the voluntary action undertaken by sovereign countries to increase cooperation among one another, often resulting in collective decision-making through supra-national institutions in the areas of trade, policy, shared development, and interaction with extra-regional communities (Mattli, 1999:2). Regional integration schemes are customarily motivated by varying economic and socio-political ideals, with objectives often based on extracting economic gain from reducing trade transactional costs between member states to increase functional interdependency (Hartzenberg, 2011:3). Objectives of integration dictate the desired degree of interaction (c.f. 3.7.2), affecting the movement of goods and services, production factors, and linkages in production processes between member states (Pretorius & Drewes, 2016). Regional integration is primarily achieved through the linear market integration approach, integrating markets for goods, labour, and capital, as well as harmonising monetary and fiscal policy (Hartzenberg, 2011:2). Regional integration is also dependent on physical infrastructure linkages to connect member states and facilitate trade flow (Pretorius & Drewes, 2016).

Inherent to market integration and physical infrastructure is the need to eliminate trade barriers between formerly isolated countries to achieve the objectives of regional integration (Pretorius & Drewes, 2016). Barriers to trade limit interaction between countries and may affect trade flows within a regional trading bloc (Lakshmanan, 2001:6). Table 5-2 illustrates the various trade barriers between countries.

Table 5-2: Barriers to trade between countries

Trade barrier	Description	Alleviating factor
Import tariffs	Taxes and restrictions placed on imports from other countries to generate revenue and protect local industries	Economic integration
Non-tariff trade barriers	Limitations to access and mobility between countries due to physical environment and missing infrastructure linkages. Burdensome border and customs processes and administrative requirements constitute additional trade barriers	Spatial integration

Source: Adapted from De Boe et al. (1999:37); Dorrucci et al. (2005:225); and Pretorius and Drewes (2016).

As illustrated in Table 5-2, tariff barriers, including import taxes, and non-tariff barriers, i.e. infrastructure gaps, restrict trade between countries (De Boe *et al*., 1999:37; Dorrucci *et al*., 2005:225). Hartzenberg (2011:3) states that these trade barriers add to the transactional cost of trade between countries as import taxes and high transport cost on inefficient infrastructure linkages contribute to an expensive business environment. In addition, regulatory policies add to cost inefficiencies through burdensome border and customs processes, administrative requirements, and divergent technical standards. Lack of modern communication networks between countries limit the dissemination of information to regional consumers and firms, contributing to inefficiencies in the regional market (Hartzenberg, 2011:12). These factors are central to high transactional trade costs between regions, affecting the ability of domestic firms to expand their markets and foster a competitive advantage in neighbouring countries (Hartzenberg, 2011:12).

As illustrated in Table 5-2, regional integration is dependent on two crucial pillars, namely economic integration and spatial integration. Economic integration, seeking to eliminate tariff barriers to trade, stimulates trade and economic interaction between member countries and

their activity centres (Pretorius & Drewes, 2016). Spatial integration, which supports the development of cross-country infrastructural linkages, is necessary to facilitate the physical movement of traded goods and consumers between countries – a result of economic integration (De Boe *et al*., 1999:37; Lakshmanan, 2001:8). As regional integration results in the formation of trade groupings between countries, a supranational region constituting all participating countries is created. Trade between participating countries in the regional grouping is referred to as intra-regional trade. Supporting both economic and spatial integration is important for developing countries aiming to foster trade and increased interaction between one another within the framework of regional integration (Lakshmanan, 2001:33). The following sections investigate the implementation of economic and spatial integration between developing countries.

5.5.2 Regional economic integration

Regional economic integration propagates a systematic approach to eliminating trade barriers between participating countries (c.f. 5.5.1). The resultant trade liberalisation is envisioned to foster regional economic growth as member countries reap the benefits of increased intra-regional trade through the lowering of tariff barriers (Pretorius & Drewes, 2016). Hartzenberg (2011:2) states that economic integration involves linear stages of trade liberalisation, policy harmonisation, and initiatives promoting intra-regional factor mobility. These stages represent the gradual elimination of trade barriers and grouping of the smaller developing markets into an integrated regional market. Peters-Berries (2010:34) cites the importance of the neo-classical stages model of regional integration in illustrating the gradual manifestation of economic integration between member countries. This model of regional integration highlights several stages of economic integration, including the establishment of a free trade area (FTA), the customs union, creation of a single market, and the economic and monetary union (Peters-Berries, 2010:34).

Peters-Berries (2010:30) envision the first stage of economic integration, i.e. establishment of an FTA, removing all tariff barriers to trade between the signatory countries. In many cases, however, a Preferential FTA is initially signed to remove tariffs on selected imports, gradually allowing complete trade liberalisation (Clausing, 2001). While the countries in the FTA undertake measures to liberalise trade among themselves, participating regions retain sovereignty over trade policy with non-FTA regions, allowing them to construct and retain tariffs charged on imports from third-party countries not part of the agreement (Krishna, 2005:2). An additional aspect of FTAs is enforcing so-called “rules of origin” to counter countries outside the FTA manipulating variations in customs tariffs between members of the FTA to gain access to the regional market (Peters-Berries, 2010). Despite its necessity, rules of origin present administrative challenges in the implementation and regulation of FTAs, placing a regulatory

and administrative burden on member countries during enforcement (Krishna, 2005:1). The subsequent establishment of a customs union necessitates the harmonisation of tariffs charged on imports from third-party countries, with member countries agreeing on a common external tariff (Mattli, 1999:32). Through these common tariffs, rules of origin are obsolete as there are no tariff disparities and dangers of non-member country opportunism (Peters-Berries, 2010). The removal of rules of origin lightens the regulatory burden of their enforcement on member countries, decreasing administrative costs associated with trade in an FTA (Mattli, 1999:32). An additional characteristic of customs unions is member countries harmonising trade policy and forming a single trading entity on the global stage (Krueger, 1999; Peters-Berries, 2010). In this process, member countries forfeit a degree of policy-making ability to regional planning agents on a supranational level (Caporaso, 1998).

In the neo-classical model of regional integration, the customs union is a prelude to establishing a single market (Dorrucci *et al*., 2005:220). Also referred to as the common market, this stage of regional integration entrenches trade liberalisation measures of previous stages, while emphasising the freedom of movement for production factors between member countries (Lloyd, 2005; De Frahan & Vancauteren, 2006). With the establishment of the single market, the mobility of capital and labour between countries is encouraged, in addition to goods and services (Peters-Berries, 2010:33). As with the customs union, the creation of a single market necessitates considerable policy harmonisation in several policy areas, including economic policy, trade, and transportation (Mattli, 1999:36). The drive for economic integration culminates in the establishment of the economic and monetary union (Feldstein, 1997). This union signifies comprehensive policy harmonisation, transcending fiscal policy. Deep economic integration is illustrated through the creation of a single regional currency, eliminating fluctuations in exchange rates of member states and their effect on intra-regional trade (Mattli, 1999:36). The economic and monetary union extends the trade liberalising measures of the FTA, the common external tariff of the customs union, and the free movement of production factors inherent to the single market, to form an economically and politically integrated regional market (Peters-Berries, 2010). As policy harmonisation is key to accomplishing comprehensive economic integration, relevant policy-making functions of member states are absorbed by regional supranational institutions overseeing the integration process (Pretorius & Drewes, 2016).

Regional economic integration thus eliminates tariff barriers to trade between countries, fostering increased intra-regional trade and movement of goods, services, labour, and capital (c.f. 3.7.1). An inherent theme of economic integration is the harmonisation of various national policies and substantial centralisation of policy formulation and decision-making to supranational institutions (Caporaso, 1998). Depending on the objectives and desired level of economic integration, this process may culminate in the formation of an integrated regional

market where the mobility of goods, services, consumers, capital, and labour transcends the national boundaries of member countries and local markets, encouraging functional interdependencies between economic centres (Peters-Berries, 2010). However, in order to facilitate increased interaction and mobility of traded goods and factors of production, physical infrastructure linkages through spatial integration is necessitated (Pretorius & Drewes, 2016).

5.5.3 Spatial integration

Spatial integration through connecting infrastructure is a pivotal element in successful regional integration, as it fosters increased interaction and intra-regional trade and factor mobility. Infrastructure linkages overcome accessibility problems between member states, connecting centres of economic activity. The first component of spatial integration is physically connecting infrastructure that facilitates the movement of production factors and goods between the various member countries (Anderson, 2001a:40). While economic integration seeks to eliminate tariff-based barriers to trade, the primary objective of these infrastructure links are to remove spatial barriers to trade and intra-regional interaction, including transport bottlenecks and gaps in the existing regional infrastructure network (Lakshmanan, 2001:8). Development corridors, which are prominent connecting infrastructure on a regional scale, may constitute vehicle transport routes, water transport infrastructure or railway lines, in addition to lines of telecommunication (Anderson, 2001b:73). While these linkages seek to facilitate movement, effective transport infrastructure may stimulate additional intra-regional movement of goods and consumers (De Boe et al., 1999:35).

In addition to physical corridor infrastructure, non-physical infrastructure, including elements of interoperability and market access, are important aspects of the trade-facilitation function of development corridors (Lakshmanan, 2001:8). Interoperability is the ability of vehicular transport utilising development corridors to move freely between the member countries of the regional trading bloc. Factors that would hinder interoperability include divergent road infrastructure design stands, logistical and vehicular safety standards, freight transport and licensing regulations (Anderson, 2001a:45; Lakshmanan & Anderson, 2001:28) Inherent to efficient facilitation of traded goods between member countries, and to negate time-consuming border and administrative operations, is the standardisation of the legal and regulatory framework guiding infrastructure design standards and freight transportation regulations (Lakshmanan, 2001:8; Lakshmanan & Anderson, 2001:29). An additional aspect of non-physical corridor infrastructure is ensuring market access for external competitors in domestic markets of member states (Lakshmanan & Anderson, 2001:22; Lakshmanan, 2001:63). Market deregulation may stimulate external investment and competition in domestic markets, contributing to the expansion of physical development corridor infrastructure and increased intra-regional trade facilitation and functional interaction (Lakshmanan & Anderson, 2001:33).

Evidently, regional integration is dependent on both economic integration and spatial integration to foster increased interaction between the economic centres of member countries (De Boe *et al.,* 1999:37). The trade liberalising effects and factor mobility initiatives of economic integration may stimulate intra-regional trade and economic movements along development corridors, which facilitate intra-regional interaction. According to Pretorius and Drewes (2016), there is an "element of interdependence between regional economic integration and spatial integration", as comprehensively exploiting the trade-stimulating benefits of trade liberalisation depends on spatial linkages eliminating barriers to accessibility. It is regional integration based on economic and spatial integration that developing regions seek to implement in response to the unbalanced nature of trade between developing and industrialised regions, which fosters developing region vulnerability to external economic shocks (c.f. 4.7.2.3).

5.5.4 The economic effects of regional integration

Henrekson *et al*. (1997:1555), investigating the effect of regional integration on economic growth of member states in the European Union (EU), state that there is a positive relationship between regional integration and economic growth, and "that regional integration can have economically and statistically significant growth effects". Sharma and Chau (2000:167) add that regional integration has constituted in a larger regional economy in certain regions. The growth effects of economic integration are, however, not homogenous between regional integration arrangements. Tumwebaze & Ijjo (2015:74) add that empirical evidence suggests that there is little significance in the correlation between regional integration and increased regional economic growth in the selected regional integration initiatives. Tumwebaze & Ijjo (2015:74) do, however, state that regional integration may enhance other growth-inducing factors, such as capital formation and inflows, which may contribute to regional economic growth. Schiff and Winters (1998:184) note that while evidence suggesting regional integration directly leads to economic growth is "rather weak", regional integration's effect on market enlargement, capital formation, and industrialisation constitutes a significant contribution to regional economic growth. The following section investigates the effect of regional integration in terms of its influence on factors which may contribute to regional economic growth and developing regions' resilience to external economic shocks.

5.5.4.1 Regional integration and intra-regional trade

Regional integration, and the elimination of tariff and non-tariff trade barriers, may stimulate trade between members of the regional integration arrangement. The significance of intra-regional trade in stimulating economic growth through sectoral and industrial multiplier effects is illuminated in the export base and regional multiplier theories (c.f. 4.2). Pretorius and Drewes (2016), exploring the relationship between increased regional integration and intra-regional

trade in the EU and SADC, finds that intra-regional trade increases as economic integration deepens. The increase in intra-regional trade is, however, not homogenous across the stages of integration, with intra-regional trade growth slowing after the formation of the single market and economic and monetary union, stages which emphasise production factor mobility and policy harmonisation after the trade liberalisation initiatives of the FTA and customs union (Pretorius & Drewes, 2016). In addition, Devlin and Ffrench-Davis (1990:263) explain that substantial growth in intra-regional trade has accompanied the formation of regional integration arrangements in South America. Trade liberalisation has had a particularly stimulating effect on exports between member countries (Devlin & Ffrench-Davis, 1990:263). Sharma and Chua (2000:167), on the other hand, state that intra-regional trade has stalled after trade liberalisation initiatives were implemented in the ASEAN region, referencing low levels of intra-regional trade between member countries before economic integration continued despite liberalisation efforts. This finding illustrates unique factors inherent to individual regional integration initiatives, such as pre-integration trade levels, influencing the subsequent effects of regional integration (Sharma & Chua, 2000:167).

5.5.4.2 Trade creation and trade diversion through regional integration

Rivera-Batiz and Romer (1991) state that, in addition to its potential effect on intra-regional trade, regional integration may bring about certain static effects which influence the productivity of resource utilisation in the regional integration arrangement. Accordingly, trade liberalisation and increased intra-regional trade may have negative or positive production effects on member countries (Krueger, 1999). The impact of trade liberalisation and the establishment of an FTA and customs union is illustrated in the following:

- Region A and Region B produce Commodity 1, while Region B is the least-cost producer. As tariffs between Region A and B are eliminated, Region A will import from Region B. Additional trade takes place between Region A and B, leading to so-called “trade creation”. Accordingly, regional integration has a positive effect on production efficiency as the source of supply moves away from high-cost domestic producers towards cheaper sources of supply from participating members (Balassa, 1961:23).
- Region B shields its producers of Commodity 1 by means of import tariffs; Region C is the least-cost producer, while Region A imports said commodity from Region B. Through integration between Region A and B, a common tariff is placed on imports from Region C. When the cost of importing Commodity 1 from Region C exceeds the sum total of its production cost in Region B and the common import tariffs, the source of supply of Commodity 1 to Region A moves from the least-cost producer (Region C) to the higher-cost producer (Region B). As a result, trade between Region A and Region C declines, leading to so-called “trade diversion”. Through regional integration between Region A

> and Region B, the supply source moves from low-cost producers in non-participating countries to higher-cost producers in member countries, resulting in less effective utilisation of resources within the arrangement (Balassa, 1961:23)

Viner (1955) explains that when the trade created is greater than the trade diverted, regional integration and the establishment of a Customs Union is considered a positive effect on production efficiency and the improvement in resource utilisation. It is thus clear that the removal of tariff barriers to trade and regional integration may either have a beneficial or harmful effect on production efficiency in member countries (Balassa, 1961:29).

5.5.4.3 Dynamic effects of regional integration

In addition to the static productivity effects of regional integration, Schiff and Winters (1998:179) state that regional integration may also bring about certain dynamic effects which influence, either directly or indirectly, economic growth of countries participating in regional integration initiatives. These dynamic effects are thus of considerable importance in studying the potential economic effects of regional integration on regional economic resilience.

5.5.4.3.1 Capital formation and investment

An important dynamic effect of regional integration is its tendency to stimulate investment and capital formation, with Schiff & Winters (1998:179) explaining that regional integration may bring about a “medium term growth bonus” by stimulating the accumulation of capital within the regional economy. The prominent role of capital formation in regional economic growth is illuminated in the neoclassical growth theory (c.f. 4.5.1). As trade barriers are eliminated through regional integration, intra-regional trade is stimulated due to lower transaction cost (c.f. 5.5.1). As more goods are traded between regions, the returns on factors used in the production of traded goods increase. Increasing returns are more pronounced with deeper integration, during which the real cost of trade is extensively minimised (Fernández & Portes, 1998:202; Schiff & Winters, 1998:179). In the initial stages of integration (pre-single market), however, increasing returns may be negated by taxes remaining on the intra-regional movement of production factors, including labour and capital (Schiff & Winters, 1998:179). Therefore, should additional taxes be avoided and economic integration deepened, intra-regional trade will increase the rate of return on capital, and, in return, foster capital accumulation and increase the capital stock of participating countries and the larger regional economy (Schiff & Winters, 1998:179; Devlin & Ffrench-Davis, 1999:277; Johnson, 2016:105).

In applying the Heckscher-Ohlin international trade model, Schiff and Winters (1998:179) state that, as the rate of return decreases for the domestically scarce factor during trade, developing countries’ capital stock may decrease as trade is fostered with industrialised partners (c.f.

4.7.1). Schiff and Winters (1998:179), referencing the critique of the Heckscher-Ohlin model, i.e. its assumption of homogenous products and availability of production factors, state that economic integration may nonetheless stimulate return on capital in participating countries, both industrialised and developing. This is due to regional integration eliminating tariffs and reducing transaction costs for traded goods in relation to non-traded goods. Therefore, when the manufacture of traded goods is more capital intensive than non-traded goods, increased trade through integration will stimulate capital demand and induce increased capital returns (Schiff & Winters, 1998:179). Decreased import tariffs may, additionally, reduce the cost of importing capital goods from industrialised partners, aiding the application of advanced technology in industrialisation efforts. In addition, Johnson (2016:105) states that deeper economic integration may liberalise the financial sectors of participating countries, leading to market access to regional competitors, increasing competition and inducing efficiency in the sector. This, in turn, may reduce the cost of funds and increase the availability of capital in the local market (Schiff & Winters, 1998:180; Johnson, 2016:105).

According to Devlin & Ffrench-Davis (1999:277), regional integration fosters an economic environment conducive to foreign direct investment, as increased integration illustrates the willingness of public entities to pursue liberalised policies. Developing regions are heavily dependent on investment from external countries to stimulate capital accumulation for increased productivity (Rosenstein-Rodan, 1943). However, the inflow of foreign direct investment is influenced by confidence in the economy and public sector policies. Fernández & Portes (1998) and Schiff and Winters (1998:180) add that economic integration, which merely fosters trade liberalisation, may decrease the movement of FDI between member states, as decreased transaction costs increase the attractiveness of trade relative to investment. Deeper integration, on the other hand, may stimulate capital inflows as external regions seek to extract opportunity from an integrated regional market, with foreign entities often having a presence in one member country while servicing the entire regional grouping (Fernández & Portes, 1998; Schiff & Winters, 1998:190). While economic integration may be attractive to FDI, comprehensive public sector policy is necessary to sustain investment inflows. However, developing countries regularly have capacity constraints in the planning and implementation of sound policy frameworks, often limiting the prospects of sustained capital inflows through inconsistent and unpredictable policy (Robinson & Thierfelder, 2002:592). The “lock-in” trade reforms inherent to regional integration may bolster investor confidence as developing countries commit to liberalised policy positions and integration fosters investor access to the regional market (Robinson & Thierfelder, 2002:592). Often, however, the promise of trade liberalisation and market access is negated by sluggish implementation of integration directives and the lack of institutional mechanisms to enforce policy harmonisation and liberalisation on the part of member countries (Winters, 1998:181; Lenz, 2012; Pretorius *et al.*, 2017:218).

It is, nonetheless, evident that regional integration has the potential to foster increasing factor returns through trade and stimulate the local capital stock and regional economic growth in the medium term. In addition, regional integration initiatives may bolster foreign investor confidence in the regional policy environment, stimulating capital inflows (Fernández & Portes, 1998; Schiff & Winters, 1998:179; Robinson & Thierfelder, 2002:592).

5.5.4.3.2 Regional integration and industrialisation interface

Regional integration is increasingly seen as an important instrument in fostering industrialisation in the larger, integrated market of formerly isolated developing economies (Hartzenberg, 2011:3; Todaro & Smith, 2012:617). Therefore, Balassa (1961:118) states that the significance of regional integration dynamic effects is most pronounced in developing countries with smaller economies seeking to encourage industrialisation. It is widely acknowledged that small domestic markets inhibit productivity growth and industrialisation due to limited domestic savings and investment, as well as insufficient demand to foster economies of scale through the acquisition of advanced technology (c.f. 4.7.2.5.3). However, Balassa (1961:118) states that integration, and the subsequent "widening of the market", may provide ample opportunity for growth in industrial productivity and output, overcoming the limitations of smaller, isolated economies.

An important element in determining the effect of regional integration on industrialisation, is studying the relationship between market size and productivity growth (Melitz & Ottaviano, 2008). Krueger (1998:1518) contributes to the understanding of the interface between said elements, stating that a country's market size is an important factor in determining the effectiveness of its industry. Harris (1980:78) studies the relationship between market size and economic growth, stating that an increase in production volume stimulates internal and external economies, which manifests in increasing returns for an economy. Accordingly, market size is an important contributor to economic disparities between countries in terms of productivity, especially with regards to production in the industrial manufacturing sector (Krueger, 1998). This relationship between market size and productivity prompts Balassa (1961:108) to proclaim that "if the level of productivity depends on the size of the market, widening of the market through integration will contribute to productivity growth".

The primary mechanism inherent to regional integration which supports productivity growth is the manifestation of large-scale economies in larger, integrated markets (Balassa, 1961:103; Melitz & Ottaviano, 2008). Large-scale economies contribute to the reduction of input costs and an increase in productivity due to economies of scale and external economies. The development of these large-scale economies is supported by the larger demand in an integrated regional market, which justifies the acquisition of advanced technology to increase production efficiency and output (Balassa, 1961:103; Kutan & Yigit, 2007). The effect of regional integration

in catalysing economies of scale for the technology acquisition required to increase industrial productivity is important in this regard (Hartzenberg, 2011:12). Balassa (1961:103) and Muendler (2004) explain that there is a causal relationship between an integrated market, technology application, productivity growth, and industrialisation: The fusion of national markets through economic integration fosters increased industrial productivity through the stimulation of development in large-scale economies. This increases the output of manufacturing industries, either directly through an increase in demand, or indirectly through increased demand for manufactured intermediate goods (Balassa, 1961:103).

It is evident that market size has a crucial impact on productivity, and that regional integration may therefore increase productivity and foster industrialisation in participating developing countries (Melitz & Ottaviano, 2008). The interface between regional integration and industrialisation is clear: increased capital stock through FDI and increasing factor returns enables local manufacturers to attain advanced technology to increase productivity and industrial output (Balassa, 1961; Melitz & Ottaviano, 2008; Hartzenberg, 2011). Acquiring advanced technology, however, is only feasible when the market is large enough to drive up demand and catalyse the development of economies of scale, which firms seek to exploit to increase productivity and lower production cost (Balassa, 1961; López, 2005). Therefore, regional integration fosters the development of external economies through establishing a larger, integrated market, ensuring the possibility of capital formation, technology attainment, increased productivity, and industrialisation in developing regions (Balassa, 1961).

Through this interface between regional integration and industrialisation, developing regions can achieve increased productivity in the industrial sector of the regional economy, ensuring vertical and horizontal diversification of the regional export base to decrease regional vulnerability to demand fluctuations in the dominant staple (North, 1955; Balassa, 1961; Melitz & Ottaviano, 2008; Hartzenberg, 2011). The importance of industrialisation in developing regions is reflected in its role of diversifying regional exports; decreasing the export of low-income elasticity of demand goods, such as primary commodities proportionally to total exports; increasing the export of high-income elasticity of demand goods, such as manufactured products; and decreasing demand fluctuations in export markets (c.f. 4.7.2.4). Evidently, the interface between regional integration and industrialisation is considered an important factor in fostering regional economic resilience in developing regions.

In addition, an important element in this regard is to inform “planning entities” at the appropriate regional planning scale (c.f. 3.2.3) to implement effective regional policy to catalyse the interface between regional integration and industrialisation in fostering developing economies’ resilience to external economic shocks and contribute to realising convergence with industrialised regions, as per the objectives of regional planning. Economic policy and planning

decisions is important in developing the ability of regional groupings to resist and recover from external economic shocks (c.f. 5.4). The following section investigates the role of regional planning in in fostering regionally balanced and resilient regional economic growth.

5.6 Regional integration and regional planning

While regional integration has the potential to foster industrialisation and regional economic resilience in developing regions, the diffusion of this growth throughout the region is significant to regional planners seeking a more egalitarian distribution of economic prosperity within and between countries of an integrated, supranational market (c.f. 3.2.2). Therefore, although regional integration is implemented based on its ability to increase the competitiveness of developing countries in international trade and globalised production supply chains (Austria, 2001), enhanced factor mobility and transnational communication systems may influence the dispersion of economic growth within and between countries participating in a regional integration arrangement (Beckfield, 2006), impacting the nature of regional planning and policy in the supranational region (c.f. 3.2.3). This section analyses the need for relevant regional planning and policy in catalysing regional industrialisation and fostering regional economic resilience in developing regions.

5.6.1 Diffusion of growth in regions

Venables (2003:759) states that the advantages of regional integration, and potential economic convergence, are maximised for developing countries when integration arrangements are undertaken with industrialised countries. Much like positive growth diffusion inherent to the growth pole theory (c.f. 4.1.4), Schiff and Winters (1998:182) state that this maximisation is due to the developing country gaining both lower import cost of inputs in the production processes, and obtaining access to the market of the industrialised country. Vamvakidis (1998:254) explains that lower trade barriers stimulating technology spill-overs from industrialised countries to their developing partners is an additional incentive for developing-industrial country integration. Therefore, the benefits of regional integration between a developing and industrial country possibly outweighs the integration effects of two developing countries (Schiff & Winters, 1998:182; Vamvakidis, 1998:265; Venables, 2003:759). This is possibly due to the integrated regional market of developing countries remaining insufficient in size to foster external economies and industrialisation (Schiff and Winters, 1998:182). It is evident that regional integration between developing and industrial countries, and the ensuing knowledge and technology spill-overs, may constitute regional economic convergence between member countries.

However, as illustrated in the interaction between smaller and larger economic centres and the resultant spatial diffusion of growth inherent to the growth pole theory (c.f. 4.1), increased interaction between economic centres and regions often result in the concentration of economic activities and industrial productive functions in certain locations in the regional space economy, fostering increased economic divergence between regions (c.f. 3.2.1). Yeyati *et al*. (2003:19) seek to portray this spatial concentration of advantages associated with integration by illuminating the uneven diffusion of FDI inflows into member countries, stating that countries already attractive to external investment constitute the primary recipients of capital inflows that result from regional integration. This divergence in capital inflows between member states prompts Yeyati *et al.* (2003:19) to note that "there may be winners and losers in the integration process".

According to Brülhart (2001:215), regional integration stimulates trade liberalisation and production factor mobility, phenomena which "inevitably produce a reorganisation of economic activity and employment across geographical space". In this regard, Brülhart (2001:215) states that, with the lowering of transactional cost associated with trade between countries through integration initiatives, industries will tend to agglomerate in certain locations within the integrated regional market. While previous tariff regimes limited the mobility of production factors, deeper integration eliminates factor restrictions, culminating in factors transferring to locations where the highest returns can be generated: in the established industrial cores of the regional market (Puga & Venables, 1997:364). Accordingly, disparities in industrial productivity may be perpetuated by regional integration, enabling the development of a "core-periphery" economic structure, which consists of a limited number of dominant industrial centres (Puga & Venables, 1997:364). This economic structure fosters divergence in economic prosperity between countries within regional integration arrangements. The divergent economic effect of factor transfer is illuminated in the exogenous neoclassical growth theory, where the spatial transfer of capital, labour and technology stimulates productivity in the recipient region, while decreasing productivity in the region of origin, with the exception of technology (c.f. 4.6.1).

Despite the motive for developing country regional integration, creating an integrated regional market may increase economic disparities between member countries (Puga & Venables, 1997:364). In this regard, supranational regional planning through capacitated regional institutions is needed to promote resilient regional economic growth which is characterised by greater spatial balance than promoted by forces of industrial concentration, through the allocation of resources which promote convergence in economic growth between member countries (c.f. 3.3).

5.6.2 Supranational regional policy

The movement towards increased regional cooperation, as propagated by new regionalism, stems from changes in the global economy: globalised markets and value chains, production factor mobility, and the economic power of transnational corporations erodes the competitiveness of the economically isolated and in-ward looking regions (Zimmerbauer & Paasi, 2013:33; Glasson & Marshall, 2007:7). Through increased regional integration within the framework of new regionalism, larger markets for goods and services are created and trade between regions are stimulated, with increased competition and mobility of economic activities and production factors between previously isolated regions (Grotewold, 1987:91; Herschel, 2005:59). It is thus clear that the movement towards new regionalism and increased regional integration is based on underlying economic objectives. Included in this regard, is the propagation of regional integration with the objective of fostering industrialisation and regional economic resilience in developing regions (c.f. 5.5.4.3.2).

Glasson and Marshall (2007:256) state that a level of planning which supersedes national administration is needed for balanced regional economic growth in the regional bloc in light of increased mobility of economic activities and production factors. Accordingly, regional planning on a supranational level is needed to alter the distribution of resources between the countries of the regional grouping (Friedmann, 2001:388; Glasson & Marshall, 2007:256). New regionalism thus propagates inter-regional planning on a supranational planning level (c.f. 3.2.3). Where inter-regional planning on a national scale in old regionalism seeks balanced growth between the various regions and sub-regions of a country, inter-regional planning within new regionalism seeks harmonised regional planning of countries, cross-border macro-regions, and regions to eliminate disparities between said regions (c.f. 3.2.3). Accordingly, an interventionist regional policy approach is predominantly implemented, which includes targeted investment in people, industries, and infrastructure in poorer, developing countries (Glasson & Marshall, 2007:17).

Regional planning and policy is influenced by supranational regional planning objectives regarding the location of investment and economic activities within the regions of the multinational space economy (Glasson & Marshall, 2007:17). The core supranational planning objectives include the fostering of increased cooperation, such as trade and the movement of people, services, and capital between member countries through regional integration; the coordination of an industrialisation policy for increased region-wide industrial competitiveness; and targeted interventions in the regional space economy to support an egalitarian inter-regional and intra-regional distribution of economic growth and resources in the regional grouping (European Commission, 2018). Within this context of regional integration, industrialisation, and interventionist regional policy in the regional space economy, inter-regional

planning is implemented on a supranational scale in the regional groupings (European Commission, 2018).

5.6.3 Regional institutions

Supranational institutions oversee increased regional integration and guides regional planning according to shared “political, economic, and strategic interests” (Schmitt-Egner, 2002:190; Glasson & Marshall, 2007:16). While harnessing the interface between regional integration and industrialisation is an important element of regional planning on a supranational scale to ensure regional economic growth, appropriate regional policy must be practiced to ensure an egalitarian distribution of the benefits of said policies (European Commission, 2018). As industrialisation is a central component of regional economic growth within an integrated regional economy, policy relating to industrial development may be applied to develop regional supply chains, on which economic growth is diffused between regions (European Commission, 2018). In this process of strengthening resilience, Hudson (2009:12) states that the region’s human capital must be utilised alter regional production systems toward a more resilient growth path. Supranational institutions have a primary role in the development of innovation systems, growth-supporting infrastructure, capacitating the workforce, and supporting a financial system that avails capital to economic entities to catalyse the diversification of the regional economy (c.f. 5.3.1). The responsibility of supranational institutions, as illustrated in Figure 5-3 is to oversee the enhancement of regional production systems to resist and recover the effects of an external economic shock on regional output (c.f. 5.2.1).

5.7 Conclusions

Regional economic growth in developing regions are vulnerable to external economic shocks, which is exacerbated by their unbalanced trade with industrialised regions and their dependence on the export of predominantly primary commodities (c.f. 4.7.1). Accordingly, regional production systems are impacted by decreased external demand for exports and decreased capital inflows (c.f. 5.4). While industrialisation is earmarked as an important factor in fostering regional economic resilience, small domestic markets, and the income elasticity of demand for primary exports are substantial barriers toward vertical and horizontal diversification in developing regions (c.f. 4.7.2.5). In order to overcome these barriers and foster regional economic resilience, developing regions may seek to implement policies of import substitution that seek to protect local industries from external competitors by erecting trade tariffs (c.f. 5.4.3.1). However, due to the limited domestic capital stock and small domestic markets, increases in technology acquisition and industrial productivity is limited (c.f. 5.4.3.1). In order to overcome challenges presented by unbalanced trade with developed regions and the inward-looking development policy of import substitution, developing countries seek to pro-actively

channel trade to one another to foster mutual industrialisation and stimulate regional economic resilience through regionalising export demand, as opposed to channelling exports to industrialised regions (c.f. 5.4.3.2). Figure 5-2 illustrates fostering regional economic resilience through regional integration and industrialisation.

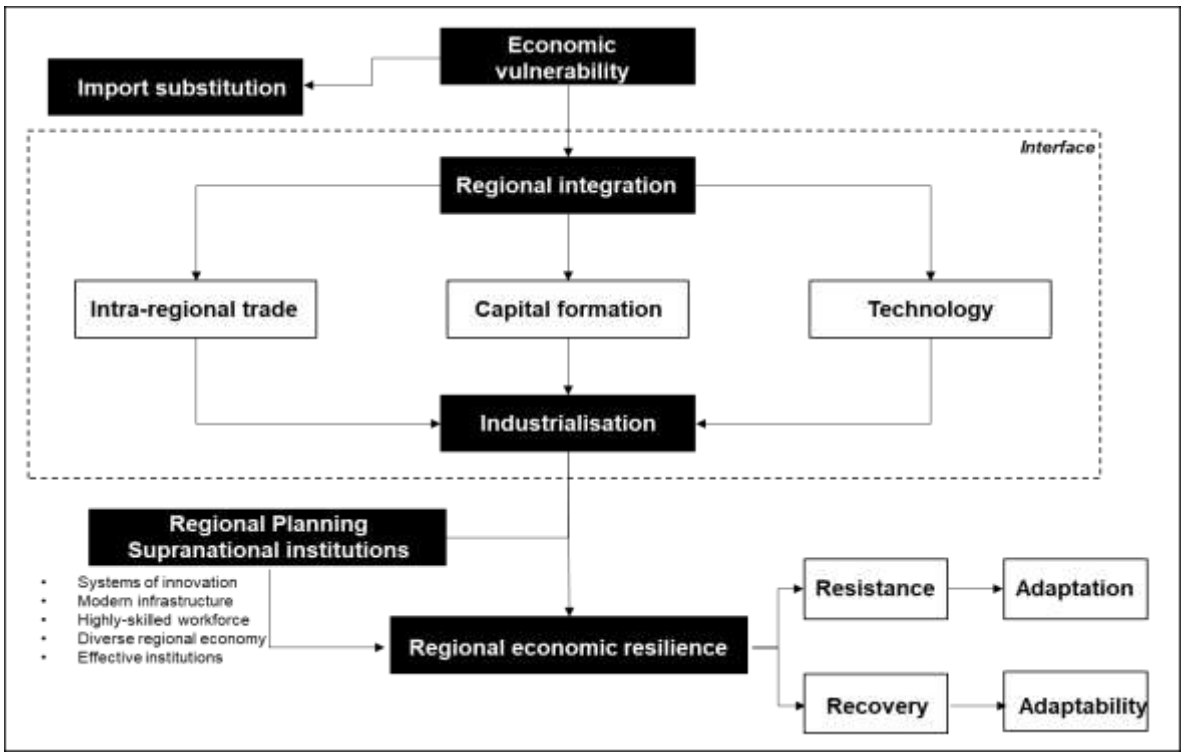


Figure 5-3: Integration, industrialisation, and resilience

Source: Author's own compilation.

According to their ability to resist and recover from external economic shocks, developing regions can be classified as economically resilient, shock-resistant, and non-resilient (c.f. 4.2.1). The resilience of regions can be determined by applying various approaches to resilience analysis, including the equilibrium approach, the multiple equilibria approach, a systems approach and long-term perspectives (c.f. 4.2.2). In these approaches, the concepts of adaptability and adaptation is central to the region's ability to change the structure of the regional economy and catalyse the development of a new growth trajectory for the region, one that is more favourable for economic expansion and resilient to external economic shocks (c.f. 4.2.2). Analysing aspects relating to adaptability and adaptation, Christopherson *et al*. (2010) state that regional economic resilience in developing regions is based on the ability of the regional economy to resist the initial impact of the shock in terms of decreased export demand, FDI outflows, and reduced economic growth, in addition to its ability to recover lost output in a timely manner in the post-shock period (c.f. 5.2).

Regional integration, pillared in economic and spatial integration, has the potential to strengthen interaction between participating developing countries, creating an economic and policy environment conducive to industrialisation (c.f. 5.5.4.3). Hence, the increased appeal of regional integration and forming larger regional markets to foster intra-regional trade, capital returns and FDI inflows, economies of scale, and industrialisation (c.f. 5.5.4.3). It is evident that developing countries seek to exploit the interface between regional integration and industrialisation to both bolster industrial production and decrease dependency on trade with industrialised countries for sustained economic growth over the long term (c.f. 5.5.4.3.2). Evidently, the interface between regional integration and industrialisation is propagated as an important factor in fostering regional economic resilience in developing regions, as illustrated in Figure 5-2. Supranational regional planning constitutes an important component of stimulating regionally shared economic growth and fostering mutual industrialisation through targeted economic and social investments to bolster regional economic growth – inherent to the interventionist regional planning approach (c.f. 5.6.2). Additionally, supranational institutions guide regional policy, regional integration, and industrialisation initiatives (c.f. 5.6.3). Christopherson *et al*. (2010:7), describe the importance of supranational institutions in implementing change in the economic structure to enhance regional economic resilience.

CHAPTER 6 REGIONAL INTEGRATION CASE STUDIES

This chapter provides an overview of regional integration, including initiatives for economic and spatial integration, in SADC and identified developing country integration initiates. It further investigates the role of regional planning and development decisions in manifesting an integrated regional market that fosters industrialisation and regional economic resilience from external economic shocks. The literature investigation highlights the growing prominence of regional integration and developing countries “dissolving” into larger supranational regions to stimulate functional interaction through intra-regional trade and production factor movements (c.f. 3.7.1). Implemented through varying degrees of economic and spatial integration, an objective of regional integration is to lower developing country dependence on imbalanced trade with industrialised countries and regions through developing industrial capabilities within an integrated market of previously isolated countries (c.f. 5.5.4). Situated in the framework of regionalism, integrated developing regions implement supranational spatial and economic planning with regional policy propagating targeted investment interventions to stimulate balanced regional economic growth and catalyse regional industrial development (c.f. 5.6.2). Developing regions seek to bolster the interface between regional integration and industrialisation to foster regional economic resilience in the regional economy based on mutual industrialisation and decreased vulnerability to external demand fluctuations and capital inflows (c.f. 5.4.3). The following chapter investigates case studies of regional integration between developing countries and explores active attempts to foster functional interaction among previously isolated administrative units within the framework of new regionalism.

6.1 Introduction

This chapter objective is derived from the fifth objective of the study, namely to investigate current policy approaches implemented in developing regions to foster regional integration and industrialisation and regional economic resilience in an integrated regional market. Firstly, this chapter provides and overview of the identified regional integration initiatives, including their respective spatial contexts, member countries, and formation objectives. Secondly, this chapter investigates the implementation of regional integration in the respective regional integration initiatives. Inherent to this objective is investigating efforts of economic integration through trade liberalisation, and spatial integration through physical connecting infrastructure. Thirdly, this chapter provides an overview of the endogenous and exogenous factors in regional economic growth in SADC and the respective regional integration initiatives. The objective in this regard is to outline the construct of the various developing regional economies, and to identify the prominent factors that influence regional economic growth in the various regions. The fourth aim of this chapter is to analyse regional and industrial policy implementation in SADC and identified

developing country regional integration initiatives, and to investigate the role of policy in strengthening regional integration initiatives and efforts to foster industrialisation in developing regions.

6.2 Research methodology

This chapter utilises a qualitative research approach inherent to examining regional integration arrangements between developing countries (c.f. 2.4.2). An important element in this qualitative research is investigating the various approaches to regional integration, regional industrialisation initiatives, regional planning and policy approaches, as well as the capacitation of supranational institutions in catalysing policy implementation and harmonisation within the integrated regional space economy (c.f. 2.4.2).

6.2.1 Applied criteria for case studies

In the selection of the case studies, non-probability sampling is utilised, with case studies selected based on their relevance to the investigation (c.f. 2.4.2). In this qualitative analysis, case studies are selected through the application of findings from the textual and narrative research conducted in the literature study (c.f.). In this regard, the purpose sampling technique is utilised. Accordingly, the following criteria were identified in the literature review (Chapters 3,4, and 5) and utilised in identifying case studies relevant for investigation in this study:

Table 6-1: Case study selection criteria

1.	Participating countries that actively implement policies relating to regional integration and increasing functional integration among one another (c.f. 3.7.1)
2.	Member countries of the regional integration initiatives are developing countries (c.f. 1.3)
3.	Regional integration initiatives seek to implement trade liberalisation to remove tariff-barriers to trade between member countries (c.f. 5.5.2)
4.	Regional integration initiatives at differing levels of economic integration according to the neoclassical stages of regional integration (c.f. 5.5.2)
5.	Regional integration initiatives seek to implement policies relating to spatial integration and developing physical transnational infrastructure to facilitate intra-regional trade (c.f. 5.5.3)
6.	Regional integration initiatives that implement measures of economic planning and regional development decision-making through regional planning and industrial development planning (c.f. 5.6.2)
7.	The presence of supranational institutions which seek to guide the integration process and programmes of policy harmonisation (c.f. 5.6.3)

Source: Author's own compilation.

6.2.2 Investigated case studies

By applying said criteria, the following case studies are identified for further investigation in this chapter (listed alphabetically):

1. ASEAN – Association of Southeast Asian Nations
2. CACM – Central American Common Market
3. CAN – Andean Community
4. CARICOM – Caribbean Community
5. CEMAC – Central African Economic and Monetary Union
6. EAC – East African Community
7. MERCOSUR – Mercado Común del Sur
8. SAARC – South Asian Association for Regional Cooperation
9. SADC – Southern African Development Community
10. WAEMU – West African Economic and Monetary Union

The following section provides an overview of the various developing countries' regional integration initiatives. This includes spatial context, member countries, formation objectives, and regional integration approaches, economic planning, and supranational institutions. Firstly, as the primary study area, SADC is investigated in the following section.

6.3 Southern African Development Community

The following section provides an overview of the Southern African Development Community. Inherent in this overview is investigating SADC regional integration, including economic and spatial integration initiatives, economic policies implemented in the region, and regional institutions.

6.3.1 SADC overview

SADC comprises several southern African countries, constituting a regional trading bloc that seeks increased trade liberalisation and functional interdependency between participating countries (African Development Bank, 2011). The predecessor of SADC is the Southern African Development Coordination Conference (SADCC) created in 1980 (SADC, 2012a), which functioned as a "Memorandum of Understanding" among participating countries with limited legal footing, binding them to trade liberalisation. However, together with the inclusion of South Africa in 1992 and the renaming of the regional grouping to Southern African Development Community, the legal standing of the agreement between participating countries was solidified to enhance the implementation of trade liberalisation policies and economic integration (SADC, 2012a; SADC, 2012b). Fifteen southern African countries are included in SADC, including

Zimbabwe, Angola, Zambia, Botswana, Tanzania, Democratic Republic of Congo, Seychelles, Lesotho, Swaziland, Madagascar, South Africa, Malawi, Namibia, Mozambique, and Mauritius (Peters-Berries, 2010:40; SADC, 2012c). Figure 6-1 illustrates the regional context of SADC.

Figure 6-1: Regional context of SADC

Source: SADC (2012a).

With economic growth and employment constituting the foundation of the SADC's objectives, the following are related regional objectives:

- Increase regional economic growth to stimulate social development in the region (SADC, 2001:5)
- Capacitate regional institutions to guide trade liberalisation, regional integration, and the needed standardisation of regional economic policies (SADC, 2001:5)
- Enhance "self-sustaining development" in the region by fostering "interdependence" between member countries (SADC, 2012d)
- Stimulate productivity in natural resource and factor utilisation

Figure 6-2 provides an overview of the SADC regional economy.

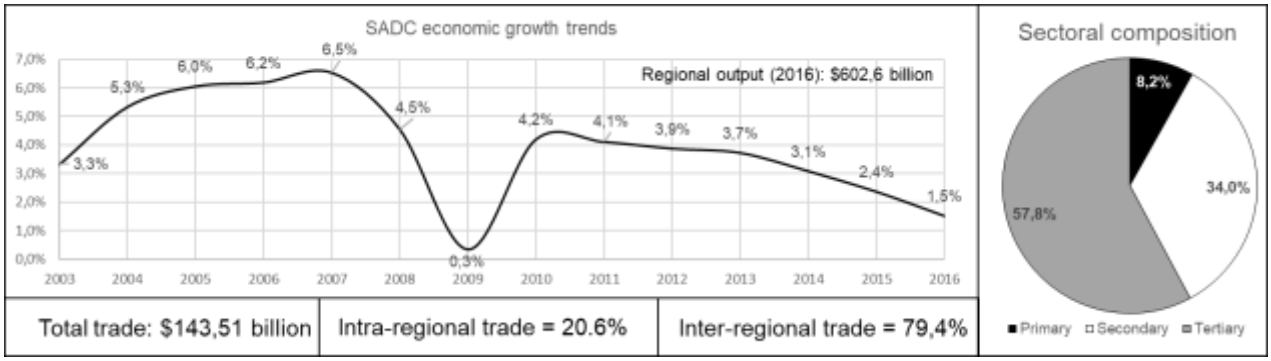


Figure 6-2: SADC regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-2, in the period between 2010-2016, annual regional economic growth has experienced a sustained decline, with 1.5% growth in 2016. Total economic output in 2016 amounts to $606,6 billion (current US dollar prices). The tertiary sector constitutes the larger sector of the regional economy, contributing to 57.8% of total output. The secondary (34%) and primary (8.2%) are the second and third-highest sectors in the economy. SADC trade in 2015 totals $143,51 billion, with 20.6% of total trade between regional partners (intra-regional trade), and 79.4% with external regions (UNCTADstat, 2017). The following section provides an overview of regional integration initiatives in SADC.

6.3.2 Regional integration in SADC

The SADC seeks to liberalise trade between participating countries with integration objectives based on the linear integration approach inherent to the neoclassical stages of integration (SADC, 2012b). The regional integration framework of SADC is outlined in the SADC Treaty and the Common Agenda, which provides the guidelines to integration and the role of regional institutions in driving liberalisation and policy harmonisation (Peters-Berries, 2010:81). Accordingly, the economic integration objectives of SADC include the creation of the partial free trade agreement in 2000, an FTA in 2008, customs union in 2010, single market in 2015, and an economic and monetary union in 2016 (SADC, 2011a; SADC, 2012b). Despite these objectives, the trade liberalisation in SADC equates to its function as a partial free trade agreement (SADC, 2012e), with tariffs eliminated for selected goods traded intra-regionally (c.f. 5.5.2).

In terms of spatial integration, SADC propagates the development of regional connecting infrastructure, or “development corridors”, that ensure increased access between member countries for better trade and factor movements (Anderson, 2001b, 73; SADC, 2012f:8). Inherent to said spatial integration initiative, the efficient function of the development corridors are dependent on important infrastructure, including physical and non-physical (c.f. 5.5.3). Figure 6-3 illustrates the location of prominent development corridors in SADC.

Figure 6-3: SADC development corridors

Source: SADC (2012f).

In terms of physical infrastructure, increased trade facilitation through physical networks of movement (including road and rail infrastructure) is important in a region with multiple landlocked countries and limited intra-regional mobility of traded goods and production factors. Therefore, physical development corridor infrastructure enhances trade facilitation between these isolated member countries, extracting the potential of trade liberalisation (Anderson, 2001b:72). The Protocol on Trade prioritises the further development of said development corridors and identifies the important role of targeted investment in infrastructure projects to enhance the function of the physical infrastructure (SADC, 2011b:31).

In addition to physical infrastructure, SADC seeks to implement various forms of non-physical infrastructure to improve the function of the development corridors and their role in the spatial integration of the region (Pretorius & Drewes, 2016). Non-physical corridor infrastructure may include aspects relating to market access on operability between national markets (c.f. 5.5.3). Increased market access is propagated by the Protocol on Trade, which supports increased access to national transport market for regional partners to increase investment in regional transport infrastructure to improve trade facilitation (SADC, 2011b:31). Attempts to increase market access have, however, been stymied by the pronounced role of national planning

authorities and national transport sectors, negating investment and physical infrastructure development (Lakshmanan & Anderson, 2001:23; SADC, 2001:31). Anderson (2001b:80) confirms that limited market access constitutes a substantial barrier to economic integration and trade facilitation in SADC. Improving interoperability is prioritised by the Protocol on Trade, which supports the development of a regional network of transport networks seamlessly connecting SADC member countries (SADC, 2011b:31). It is proposed that such an integrated transport network depends on standardised regulations and procedures regarding transport infrastructure, as well as the movement of traded goods between member countries (SADC, 2011b:31). However, interoperability has been stifled by differing freight transport regulations, logistical procedures, road safety standards, and transport policies, limiting the effective function of the development corridors in enabling trade between regions under the guise of regional integration (SADC, 2012e:8).

6.3.3 Economic policy in SADC

In addition to implementing economic and spatial integration initiatives to foster functional interaction, regional integration initiatives seek to implement shared policies to coordinate economic planning and decision-making and drive cumulative regional economic growth (c.f. 5.6). Accordingly, regions may seek to implement policies pertaining to extracting the shared growth potential of the member countries in the region and increase the efficiency of resource utilisation in the region (c.f. 3.3.2). Therefore, regions may aim to implement policies focussed on mutual industrial development and implement regional policy to drive regionally-balanced economic growth where members share equally in the advantages of trade liberalisation and increased functional interaction (c.f. 5.6).

Policies for mutual industrialisation in SADC is portrayed in the Action Plan for SADC Industrialisation Strategy and Roadmap, a strategy which propagates the objectives of regional economic transformation through structural changes, increased economic growth and improved living standards, and fosters convergence in economic growth between member countries and external industrialised countries (Entholzner & Reeve, 2016:3). The three strategic pillars of this "industrial policy" in the SADC is stimulating industrial production, increasing competitiveness, and fostering regional integration. The primary mechanism in industrial policy and achieving the stated objectives is enhancing regional value chains and regional supply linkages (Entholzner & Reeve, 2016:3). Accordingly, SADC's industrial policy is associated with stimulating competitiveness and productivity by harnessing regional supply chains and developing intra-industry industrial linkages in order to drive region-wide industrialisation. This industrial policy seeks to increase public and private sector investment in industrial production networks in member countries, especially in "high value-adding industries" (Entholzner & Reeve, 2016:4). This investment will be gained through the "strategic use of tariffs", availing incentives and

financing to selected industries, targeted FDI, and harmonised standards and regulations (Entholzner & Reeve, 2016:4). It will also be catalysed by member countries cooperating in the formation of an operational free trade agreement, heightened competitiveness, deeper regional integration, public-private partnerships in investment, the development of regional value chains, regional investment in infrastructure, and sufficiently capacitated supranational institutions to drive this process of region-wide industrialisation (Entholzner & Reeve, 2016:7). Several definitive actions are identified for member countries in fostering regional industrialisation, including the following (Entholzner & Reeve, 2016:11):

1. Stimulate industrial development through improving the policy environment
2. Catalyse participation in regional value chains
3. Stimulate competitiveness through regional integration initiatives
4. Develop regional industrial clusters

SADC's regional policy is detailed in the Regional Indicative Strategic Development Plan (RISDP), which describes development objectives and priorities to bring about regionally balanced economic growth (SADC, 2011b:75). A primary objective of regional policy is to develop and enhance regional infrastructure linkages to enable intra-regional mobility of traded goods (SADC, 2011b:30). Therefore, the SADC Secretariat is provided with the institutional responsibilities to formulate regional transport policies and ensure the development of physical and non-physical development corridor infrastructure (SADC, 2012e:8). An important task of regional policy and the relevant supranational institutions is to determine potential deficiencies in the integrated transport network and develop targeted investment projects to improve infrastructure linkages (SADC, 2012e:4), illustrating the interventionist nature of regional policy in SADC (c.f. 5.6.2).

A primary challenge in enhancing spatial integration and regional interconnectivity is limitations to funding for identified infrastructure projects (SADC, 2011b:82). The primary sources of funding for regional planning interventions are national governments and the private sector. However, limited resources of national governments limit their potential expenditure on infrastructure projects propagated for regional connectivity, restricting investment in physical corridor infrastructure (SADC, 2011b:75). Pretorius and Drewes (2016) emphasise the need to create a regional development fund to finance regional policy and associated infrastructure projects and overcome the challenge relating to limited national and private sector participation in infrastructure projects.

6.3.4 SADC regional institutions

The three most important supranational institutions in SADC is the Summit, the Council of Ministers, and the Secretariat (Peters-Berries, 2010:74). The primary function of the Summit,

reflecting its importance to regional integration and regional policy in SADC, is to approve recommended resolutions and policy harmonisation initiatives that advance trade liberalisation in the region (Peters-Berries, 2010:74). Additionally, the Council of Ministers fulfils the policy formulation functions in SADC, overseeing institutional budget formulation; developing policies to enhance policy harmonisation, economic and spatial integration; as well as developing regional and industrial policy (Peters-Berries, 2010:74). Evidently, the Council of Ministers is an important institution overseeing the ongoing development and enhancement of SADC development corridor infrastructure and transport policy in the region (Peters-Berries, 2010:76). The SADC Secretariat, on the other hand, is referred to as "the implementation-arm of the Community" (Pretorius & Drewes, 2016), with its core function constituting the implementation of policies advancing regional integration, regional industrialisation, and integrated transport networks. In addition, a primary function of the Secretariat is to oversee the implementation of corridor infrastructure projects and targeted regional interventions to achieve regional trade access and balanced regional economic growth (Peters-Berries, 2010:77).

While said institutions are fundamental to the integration and industrialisation objectives of the Community, current challenges prevent sufficient capacitation of the institutions to successfully fulfil their delineated policy formulation and implementation functions (Anderson, 2001a:79). In this regard, a lack of funding and resource provision from member countries and partners has inhibited the ability of supranational institutions to foster policy harmonisation and achieve regional policy and integration objectives (African Development Bank, 2011). In support, Anderson (2001b:79) states that regional integration in the Community is stifled by a lack of commitment from national governments to policy harmonisation, trade liberalisation initiatives, and sufficient capacitation of its institutions inherent to the objectives of SADC. The primary reason for this is the emphasis of national governments on local economic development in isolation of regional objectives and SADC, suspending the advancement of regional integration and regional policy implementation (African Development Bank, 2011). Supranational institutions in the SADC are pivotal to the formulation and implementation of policies relating to economic and spatial integration, regional industrialisation through "industrial policy", and interventionist regional policies seeking regional infrastructure and trade facilitation (Pretorius & Drewes, 2016).

6.4 Association of Southeast Asian Nations (ASEAN)

6.4.1 ASEAN overview

The following section seeks to investigate the Association of South East Asian Nations, or ASEAN. This regional grouping was established in 1967, constituting a regional integration arrangement between ten countries in southeast Asia. While originally comprising the five

"Founding Fathers", namely Indonesia, Malaysia, the Philippines, Singapore, and Thailand, the ASEAN has since expanded to include Brunei Darussalam (ascended 1984), Vietnam (1995), Lao PDR, Myanmar (both 1997), and Cambodia (1999) (ASEAN, 2018a). The addition of Cambodia to ASEAN in 1999 achieved a central objective of the bloc since its founding in 1967, namely to include all ten countries in southeast Asia (Desker, 2015). Figure 6-4 illustrates the regional context of ASEAN.

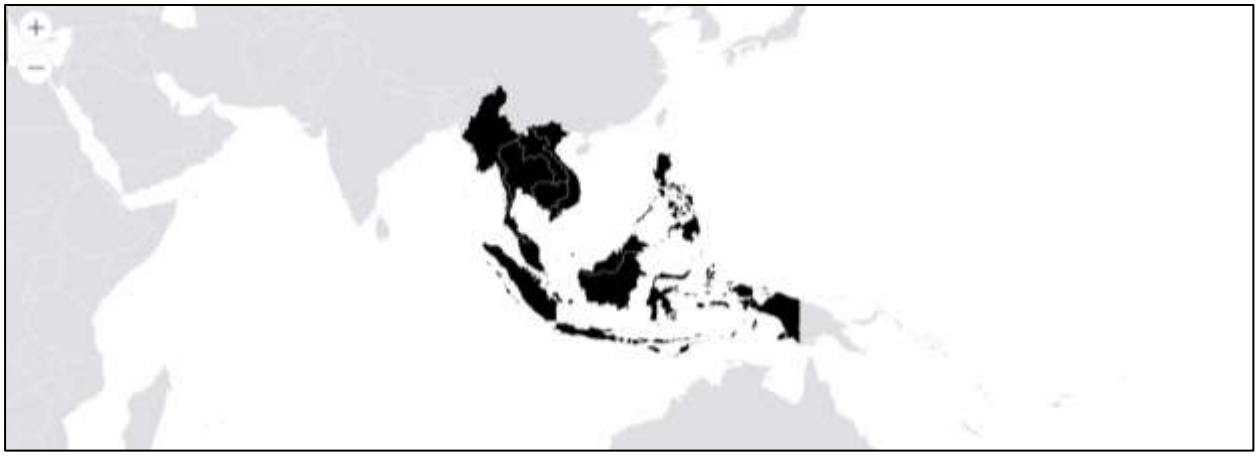


Figure 6-4: Regional context of ASEAN

Source: ASEAN (2018b).

Objectives of ASEAN and its inherent regional integration initiatives include accelerating regional economic growth; ensuring regional peace, security, and stability; providing economic, social, technical and administrative assistance to member countries; and expanding intra-regional trade and regional infrastructure provision (ASEAN, 2018c).

Figure 6-5 provides an overview of the ASEAN regional economy.

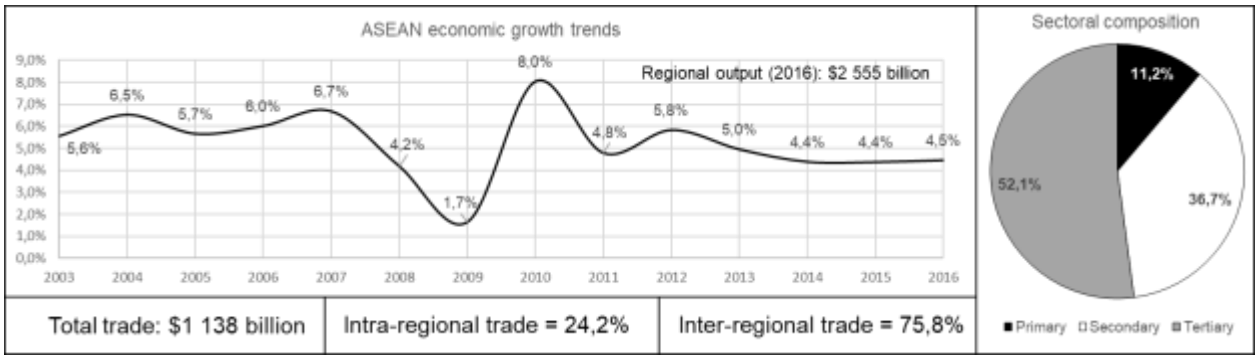


Figure 6-5: ASEAN regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-5, regional output in 2016 in ASEAN was $2 555 billion (current US dollar prices), with economic growth of 4.5% for the same year. The tertiary sector constitutes

52.1% of the regional economy, followed by the secondary sector (36.7%) and the primary sector (11.2%). Total trade in ASEAN (2016) is valued at $1 138 billion, with 24.2% of total trade being intra-regional, and 75.8% inter-regional (UNCTADstat, 2017).

6.4.2 Regional integration in ASEAN

Economic integration in ASEAN is motivated by several objectives, including increased competitiveness and innovation within an integrated regional market, increased connectivity and inter-sectoral interaction, and resilience in regional economic growth (ASEAN, 2018d). In this regard, a preferential free trade agreement was established in 1993 with the aim of liberalising trade between member countries (ASEAN, 2017:5). In 2015, the ASEAN Economic Community (AEC) was established to encourage increased functional integration between the member countries within a single ASEAN market, easing the movement of traded goods and production factors in the region (ASEAN, 2018e). Spatial integration through physical and non-physical infrastructure is highlighted in the regional integration objectives of ASEAN. The ASEAN Connectivity directive seeks to enhance functional interaction between member countries by enhancing physical networks, institutional connectivity, and "people-to-people" linkages (ASEAN, 2018f). There are five strategic areas included in the spatial integration initiatives of the region. This includes the following (ASEAN, 2018e):

- Sustainable infrastructure: Develop physical infrastructure within and between member states to efficiently facilitate the movement of traded goods and factors of production. This is considered pivotal in increasing competitiveness of regional producers.
- Digital innovation: Increase the region-wide adoption of advanced communication technologies to enhance digital connectivity.
- Efficient logistics: Decrease the administrative burden of regional producers by streamlining logistical processes. This strengthens regional supply chains by lowering transport cost.
- Harmonised regulations: Harmonise technical regulations and safety standards to increase intra-regional trade and factor movement efficiency. Harmonised regulations are part of critical non-physical infrastructure for successful spatial integration.
- Regional mobility of people: Support initiatives to ease the movement of labour and consumers between the member states of ASEAN.

6.4.3 Economic policy in ASEAN

Industrial policy seeking to support industrialisation in ASEAN was first implemented in the region through the ASEAN Industrial Projects (AIP) policy of 1977. This policy proposes "large scale regional industrial projects" which encourage efficient resource utilisation and economic

growth in the region (Lowitt, 2011: 14). It recommends that each of the member countries (five at the time) are allocated an industrial project which would partly be financed by the host country with additional financing provided by other member countries. The respective industries are granted access to the regional market to promote the development of economies of scale and technology acquisition (Lowitt, 2011:14). However, challenges regarding the partial access to the regional market for selected industries located in specific member countries, as well as challenges regarding the guarantee of protection for the industries from regional and external competitors, proved the downfall of AIP (Lowitt, 2011:14). The ASEAN Industrial Complementation Scheme (AIC) replaced the AIP in 1981 as primary industrial policy in the region. The purpose of this policy was to promote complementarity between regional firms to stimulate economies of scale and specialisation, ensuring competitiveness of regional firms. However, the success of the policy was negated by unbalanced implementation throughout the region and the inability to attract investors.

The limited success of industrial policy to stimulate industrialisation and the competitiveness of regional manufacturers contributed to a paradigm shift towards increase trade liberalisation and economic integration between member states, a shift which culminated in the formation of the ASEAN Free Trade Area (AFTA) in 1992 (Lowitt, 2011:15). Within the regional integration framework, the ASEAN Industrial Cooperation Scheme was implemented to oversee increased industrial production in the region within an integration regional market. Regional industrialisation is thus based on the premise of increased intra-regional trade, capital inflows, and technology accumulation within the aspiring single market of ASEAN (ASEAN, 2018g). With the expansion of ASEAN to include Brunei Darussalam (ascended 1984), Vietnam (1995), Lao PDR, Myanmar (both 1997), and Cambodia (1999), there was substantial divergence in economic prosperity between member countries, raising concerns regarding the development of a so-called “two-tier ASEAN” with large disparities in the region (ASEAN, 2018h). There were notable disparities in economic prosperity, capacity of national institutions, human resources, infrastructure, and competitiveness. Regional planning and policy was implemented in the form of Initiatives for ASEAN Integration (IAI), which supports the provision of assistance between member states through developmental and technical cooperation to fully extract the potential of integration for all the member states of the region (ASEAN, 2018h). The IAI Work Plan III, implemented in 2016, seeks to catalyse convergence in economic prosperity through assisting peripheral member countries in five strategic areas, including facilitating efficient trade facilitation, agriculture development, human resource development, health service development, and support SMME development (ASEAN, 2018h).

6.4.4 ASEAN regional institutions

The implementation of regional policy, furthering regional integration through economic and spatial integration, and the required policy harmonisation inherent to regional integration initiatives in ASEAN require strong implementation mechanisms and national, as well as regional, institutions (ASEAN, 2018h). In regional policy implementation, the IAI Task Force which comprises the Permanent Representatives in ASEAN (the ten member countries) contributes to guiding regional policy and developing directives for the development path of the region. A critical institution in the region is the ASEAN Secretariat, a supranational body which "assists in the monitoring and coordination" of the IAI and regional planning and policy implementation (ASEAN, 2018h).

6.5 Central American Common Market (CACM)

6.5.1 CACM overview

The following section seeks to investigate the Central American Common Market, or CACM. This region constitutes a regional integration arrangement between Costa Rica, Nicaragua, El Salvador, Honduras, and Guatemala. CACM was established in 1960; Costa Rico became a permanent member of the arrangement in 1960. Panama currently has observer status (Genna, 2017:166). Figure 6-6 illustrates the spatial context of CACM.

Figure 6-6: Regional context of CACM

Source: WorldData (2018).

The objectives of CACM include fostering regional security, building regional institutions, developing the regional financial system and functioning as an economic unit in international trade (MEA, 2012:1).

Figure 6-7 provides an overview of the CACM regional economy.

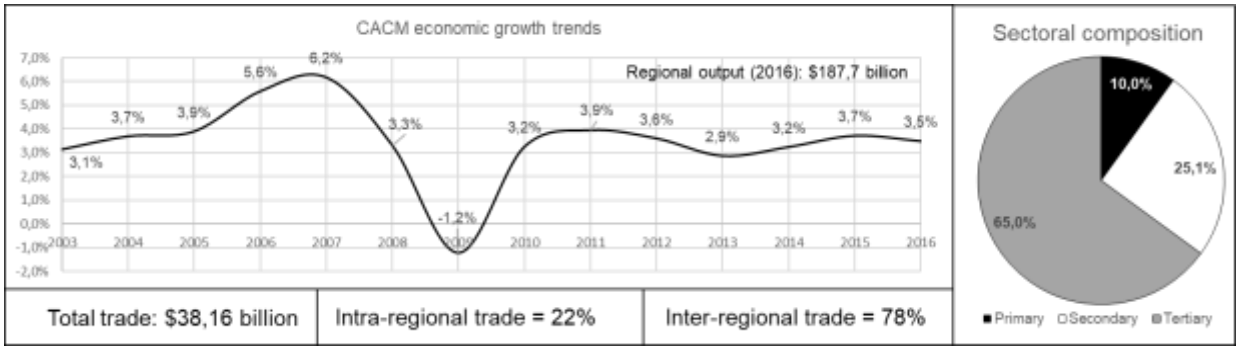


Figure 6-7: CACM regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-7, regional output in 2016 in CACM was $187,7 billion (current US dollar prices), with economic growth of 3.5%. The tertiary sector constituted 65% of the regional economy, followed by the secondary sector (25%) and the primary sector (10%). Total trade of CACM (2016) is valued at $38,16 billion, with 22% of total trade being intra-regional, and 78% to external regions (UNCTADstat, 2017).

6.5.2 Regional integration in CACM

While established in 1960, formal integration initiatives were delayed due to conflicts between member countries. Accordingly, more than two decades later, in 1986, a customs union was formed between participating countries. This customs union was characterised by unbalanced implementation of the common external tariff, with limited trade liberalisation, and partial removal of intra-regional trade barriers (Genna, 2017:166). In addition, capital flows and investment were partially restricted in the region, while the intra-regional mobility of labour is limited to certain sectors (Genna, 2017:167). There are various integration programmes in CACM, including programmes on trade between regions, extra-regional trade, increased intergovernmental cooperation, as well as infrastructure and physical integration (Saurugger & Terpan, 2016:106). The Economic and Trade Direction is responsible for efficient transnational infrastructure coordination to stimulate intra-regional trade (Saurugger & Terpan, 2016:106). Accordingly, the Central American Regional Framework Policy on Mobility and Logistics creates a framework within which various regional transport modes is regulated and monitors the efficiency of their function and logistical nature (SIECA, 2018a). Monitored transport modes include national road networks, railways, and air transport. This Framework Policy promotes intra-regional trade, regional labour mobility, cooperation in managing national borders, as well as provides guidelines, objectives, and prioritisation of transnational infrastructure coordination in the region (SIECA, 2018a).

6.5.3 Economic policy in CACM

The Central American Competitiveness Initiative was the predominant economic programme of the 1990s in CACM (Ketelhöhn *et al*., 2015:560). The primary objective of the Regional Competitiveness Initiative is to identify the sector in which the region has a competitive advantage, determine important economic clusters, and investigate factors which constrain their continued growth. In this regard, various priority policy areas are identified, including regional infrastructure and aspects relating to regional logistics, the capability of the region to attract investment, and operation regarding customs (Ketelhöhn *et al*., 2015:560). The following elements were identified as key elements in continued economic growth in all sectors of the regional economy (Ketelhöhn *et al*., 2015:561):

- Elimination of barriers to investment and trade
- Stimulation of competition and efficiency gains in the region
- Protection local and external investors
- Harmonisation of policies, with emphasis on macroeconomic policy
- Formulation of guidelines to promote investment
- Development of physical infrastructure
- Capacitation of regional institutions

Inherent to economic policy in CACM and further regional economic growth is various regional projects (SEICA, 2018b). These regional projects predominantly seek to increase the competitiveness of industries and sectors in the region, by focussing on improving the facilitation of intra-regional trade, modernising regional connectivity, strengthening regional institutions, and deepening economic and spatial integration in the region (SEICA, 2018c). Financiers of these regional projects include the World Bank, the Inter-American Development Bank, the European Union, and the U.S. Agency for International Development (USAID) (SEICA, 2018c).

6.5.4 CACM regional institutions

CACM forms part of the institutional framework of the Central American Integration System (SICA), a system of governmental arrangement and supranational institutions that promote and oversee different aspect of integration between member countries (Genna, 2017:167). CACM is the economic integration sphere of SICA; political, environmental, and social aspects constitute additional policy spheres. These supranational institutions, with emphasis on the summit meetings of sitting presidents of member countries, are responsible for policy formulation, decision-making, protocols, and accords within the region (Genna, 2017:167). These supranational institutions and intergovernmental arrangements contribute to regional integration

in CACM through their advisory roles in policy and information gathering capabilities that inform decision-making. However, these institutions and arrangements have had limited success in fostering deeper economic integration in the region as there has been limited coordination and harmonisation of monetary and fiscal policy between member countries (Genna, 2017:167).

6.6 Andean Community (CAN)

6.6.1 CAN overview

The following section investigates the Andean Community, or CAN. This region constitutes an integration arrangement between four countries, including Peru, Colombia, Bolivia, and Ecuador. CAN was formed in 1969 through the creation of the Andean Pact, which stated the intention to eventually create a customs union and a single market between the member countries (MEA, 2016:1).

Figure 6-8 illustrates the spatial context of CAN.

Figure 6-8: Regional context of CAN

Source: Andean Community, 2015.

Objectives of regional integration in CAN include balancing regional economic growth, reducing the vulnerability of the regional economy to external economic shocks, and improving the living standards of the regional population (EENI, 2018).

Figure 6-9 provides an overview of the CAN regional economy.

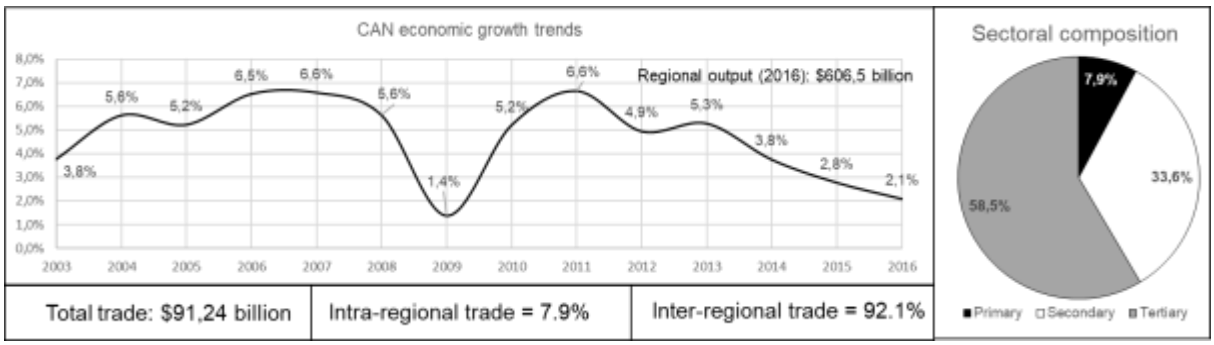


Figure 6-9: CAN regional economy

Source: UNCTADstat (2017).

It is evident from Figure 6-9 that there is a downward economic growth trend in CAN, with 2.1% growth registered in 2016. For the same year, regional economic output totalled $606,5 billion (current US dollar prices). The sectoral composition of the regional economy is as follows: 58.8% for the tertiary sector, 33.6% for the secondary sector, and 7.9% for the primary sector. Total annual trade in 2015 was $91.24, of which 7.9% was intra-regional trade and 92.1% was inter-regional trade (UNCTADstat, 2017).

6.6.2 Regional integration in CAN

The first step toward increased economic integration and functional interaction between the members took place in 1993 when a free trade area was created between Colombia, Bolivia, and Ecuador (Peru was suspended from the arrangement at the time) (MEA, 2016:1). The second step of economic integration was achieved in 1995 when the common external tariff was created, effectively promoting CAN to the status of a customs union (MEA, 2016:1). Finally, in 2005, the CAN single market became operational as trade and factor mobility between member countries were enhanced through visa-free regional travel. In addition, 2006 saw Peru wholly incorporated into the free trade area first conceived in 1993 (MEA, 2016:1).

There are several challenges to spatial integration in CAN, including the limited capacity of connecting infrastructure, poor infrastructure, physical barriers in the mountainous region, divergent infrastructure policies in the various member countries, and a lack of public funds to invest in infrastructure (Rojas *et al.,* 2005:10). With increased economic integration and the formation of the single market, the importance of an efficient transnational infrastructure network is gaining traction in the region (Rojas *et al.,* 2005:10). Emphasising its effect on the competitiveness of regional exports, increasing importance is placed on member countries adopting “common provisions” on transport infrastructure, including deregulating transport and communication services and upgrading intra-regional road systems (Rojas *et al.,* 2005:10).

6.6.3 Economic policy in CAN

Industrial policy in CAN has made a “slow return” in recent years (Peres & Primi, 2009:34). Policies for industrial development is primarily the concern of national governments in the member countries, with policy focus being placed on increasing the competitiveness of industries in the respective national economies. In this competitiveness approach, the cluster methodology is utilised where governments support clusters (especially of small and medium enterprises) to ensure agglomeration of industrial activities (Peres & Primi, 2009;34). In this approach, national agencies support, or “catalyse”, the development of regional value chains. Emphasis is placed on the importance of technology acquisition to improve the competitiveness of clustering industries. This approach supports the notion of improving the competitiveness of the current industries rather than promoting the development of new activities (Peres & Primi, 2009:34).

6.6.4 CAN regional institutions

CAN has several important institutions that guide regional integration initiatives (MEA, 2016). This includes the CAN General Secretariat, the Andean Parliament, the Andean Court of Justice, the Latin American Development Bank (CAF), and Latin American Reserve Fund (FLAR). While servicing other countries as well, CAF is an important contributor to regional investment and capital (MEA, 2016), since it contributes financing to projects promoting regional integration. FLAR, on the other hand, acts as a regional reserve fund to promote member country stability in the face of external economic disturbances. As with CAF, FLAR represents countries outside the regional sphere of CAN (MEA, 2016).

6.7 Caribbean Community (CARICOM)

6.7.1 CARICOM overview

The following section seeks to investigate the Caribbean Community, or CARICOM, which is a regional integration arrangement between twenty countries (fifteen full members and five associate members) in Central America and the Caribbean Islands.

Table 6-2 lists these member countries (GlobalEdge, 2018).

Table 6-2: CARICOM member countries

Full members	Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago
Associate members	Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Turks and Caicos

Source: GlobalEdge (2018).

Figure 6-10 illustrates the regional economy of CARICOM.

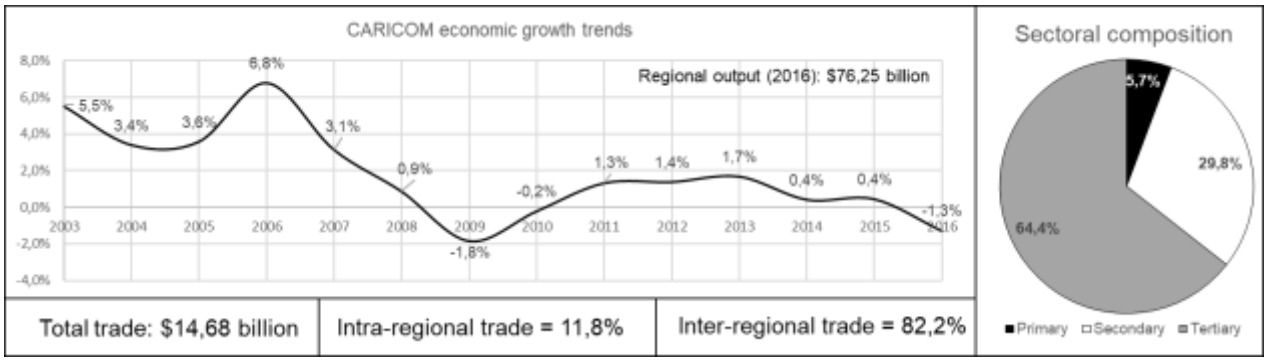


Figure 6-10: CARICOM regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-10, economic growth in CARICOM is stagnant, with regional output contracting by 1.3% in 2016 to $76,25 billion (current US dollar prices). The sectoral composition of the regional economy is the following: 64.4% for the tertiary sector, 29.8% for the secondary sector 5.7% for the primary sector. Total annual trade in 2015 was $14,68 billion, 11.8% of which was intra-regional trade and 82.2% of which was inter-regional trade (UNCTADstat, 2017).

6.7.2 Regional integration in CARICOM

Increased functional interaction is a long-standing objective of the predominantly small island economies of the region, with the first attempt of economic integration and trade liberalisation taking place in 1958 with the formation of the West Indies Federation, a regional integration initiative which prioritised the formation of a political union between participating countries (CARICOM, 2018a). In 1965, the Caribbean Free Trade Association (CARIFTA) was established to usher in “deeper and more structured engagements” and policy directives between countries. With the creation of CARICOM in 1973, and amendment of the founding treaty in 2002, the objective of regional economic integration was the formation of a single

market between member countries, wherein trade and production factors can operate with perfect mobility between participating countries in an integrated regional economy (CARICOM, 2018a). The objective of the CARICOM Single Market and Economy (CSME) is to increase investment, competitiveness of regional manufacturers, economies of scale, the regional economy's growth, and enhance the economic prosperity of the regional population. The single market is to "provide the foundation for growth and development" in the region (CARICOM, 2015:175).

To facilitate increased interaction between member countries of the single market, CARICOM seeks to implement the Transport Policy to facilitate spatial integration, connectivity, and mobility within the region (CARICOM, 2018b). The objective of this policy is to create "an efficient transport system on land, in the air, and by the sea". Due to the region predominantly comprising isolated islands, emphasis in the regional Transport Policy is placed on enhancing air transport between member countries through the CARICOM Multilateral Air Services Agreement (MASA) (CARICOM, 2018b). This agreement focuses on developing non-physical infrastructure for spatial integration in CARICOM, establishing common operational rules regarding air travel. This includes the standardisation of licensing requirements, transit rights and regulations, safety guidelines, market access, and insurance requirements. This non-physical infrastructure is paramount in facilitating the efficient mobility of goods, services, and production factors between the member countries of the CSME (CARICOM, 2018b).

6.7.3 Economic policy in CARICOM

Industrial policy in CARICOM seeks to enhance the efficient utilisation of natural resources and production factors in the region (CARICOM, 2018b). A central theme inherent to industrial policy and the envisioned efficiency is avoiding the replication of goods produced by the various member countries in the region. The CARICOM Interactive Marketplace and Suspension Procedure (CIMSUPRO) is vital to regional industrial policy. CIMSUPRO requires regional manufacturers to acquire production inputs from within the region, rather than obtaining intermediate products from abroad (CARICOM, 2018b). This encourages the development of regional supply chains and industrial linkages between primary and supplementary industries within and between member countries, and discourages dependence on external supply markets (CARICOM, 2018b). An additional industrial policy instrument which seeks to foster industrialisation in CARICOM is the Industrial Programming Scheme. As part of this Scheme, the development of specific industries are assigned to respective member countries based on their unique factor endowment and competitive advantage as a means of enhancing efficiency and negating production duplication in the region (CARICOM, 2018b). To further develop the allocated industries in the member countries, certain incentives are availed, including access to capital through loans, fiscal incentives, and protection from external industries and similar

industries in other member countries that have not been allocated to the country in which they operate. Additional requirements for said incentives include the ownership of the industries by residents, and industries acquiring inputs from regional suppliers. Industrial policy in CARICOM emphasises the development of regional supply chains and production linkages to enhance industrialisation by avoiding production duplication, and availing incentives (CARICOM, 2018b).

Regional planning and policy are key to balanced economic growth between the various member countries of CARICOM (CARICOM, 2018c). It is accepted that the formation of the single market between the small neighbouring countries may stimulate unbalanced economic growth where the polarisation of growth mechanisms in selected member countries are exacerbated by trade liberalisation and the intra-regional mobility of production factors (CARICOM, 2018c). In this regard, the CARICOM Development Fund (CDF) has been created to ensure that regionally balanced economic growth takes place through the provision of "financial or technical assistance" to potentially disadvantaged member countries participating in the single market (CARICOM, 2018c). Inherent to the mandate of the CDF is funding regional policy programmes which ensure economic growth in peripheral member countries (CARICOM, 2015:1). An important programme of the CDF is the Country Assistance Programme (CAP) with aims to (i) reduce disparities in economic growth, (ii) promote investment in disadvantaged member countries, and (iii) enhance competitiveness (CARICOM, 2015:4). The Capital Fund is the primary resource of the CDF and is funded by mandatory member country contributions (CARICOM, 2015:2). The CDF drives regional investment through targeted investments in member countries, with the objectives of developing businesses, human capital, physical infrastructure inherent to effective spatial integration, loans and capital accessibility for small businesses, regional development projects, and research and advisory functions (CARICOM, 2015:31).

6.7.4 CARICOM regional institutions

There are various supranational institutions critical to the effective functioning of the single market and implementation of regional programmes in CARICOM (CARICOM, 2018c). These institutions include the Conference of Heads of Government, the Community Council of Ministers, Council for Finance and Planning (COFAP), the Council for Trade and Economic Development (COTED), and the CARICOM Secretariat (CARICOM, 2015:203). Supranational institutions are important "implementing partners of the Community Strategic Plan" and must be sufficiently capacitated "to create an enabling environment for coordinated management across the Regional Integration Architecture" of CARICOM (CARICOM, 2018c). However, due to capacity constraints and uncertainty in their role implementing regional policies, a lack of institutional clarity has seen the CARICOM Secretariat being the sole agent of policy implementation in the region (CARICOM, 2015:203). Additional challenges include ineffective

decision-making processes, lack of performance monitoring and evaluation, weak institutional linkages, limited implementation functions, and weak institutional frameworks (CARICOM, 2015:203).

6.8 Central African Economic and Monetary Union (CEMAC)

6.8.1 CEMAC overview

The following section seeks to investigate the Central African Economic and Monetary Community (CEMAC), which was formally established in 1999. Its integration predecessors included the Union Douanière Équatoriale (formed 1959) and the Douanière et Économique de l'Afrique Centrale (UDEAC), which was established in 1965 (Leke, 2012:74). Member countries of CEMAC include Equatorial Guinea, Cameroon, Gabon, the Central African Republic (CAR), the Republic of Congo, and Chad (Leke, 2012:64).

Figure 6-11 illustrates the spatial context of CEMAC.

Figure 6-11: Regional context of CEMAC

Source: Business Cameroon (2016).

Objectives of CEMAC include the reduction of trade barriers between member states through policy harmonisation and regulation standardisation, establishment of a common external tariff as part of a customs union and ensuring the intra-regional mobility of traded goods and production factors (Leke, 2012:78).

Figure 6-12 provides an overview of the CEMAC regional economy.

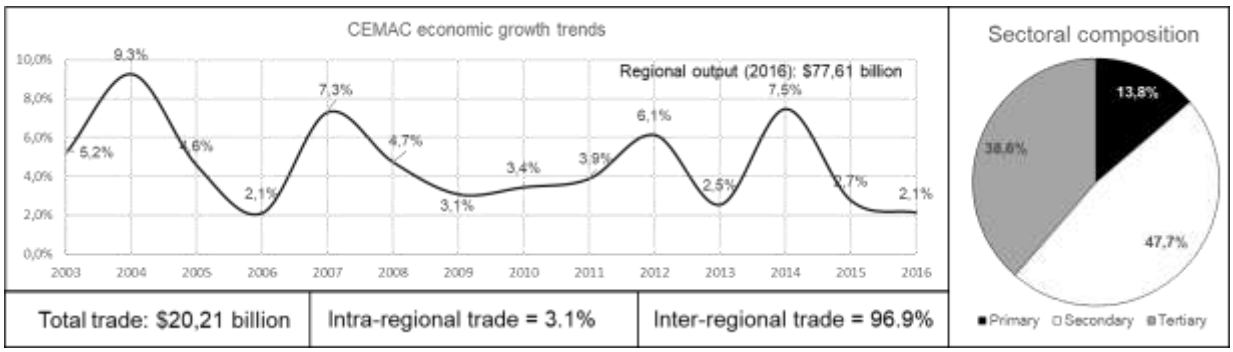


Figure 6-12: CEMAC regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-12, regional output in 2016 in CEMAC was $77.61 billion (current US dollar prices), with economic growth of 2.1% for the same year. The tertiary sector constitutes 38.6% of the regional economy, followed by the secondary sector (47.7%) and the primary sector (13.8%). Total trade of CEMAC (2016) is valued at $20,21 billion, with 3.1% of total trade being intra-regional, and 96.9% inter-regional (UNCTADstat, 2017).

6.8.2 Regional integration in CEMAC

The economic integration objectives of CEMAC include intra-regional trade stimulation to harness increased investment and economic growth in the region (Leke, 2012:74). CEMAC's preceding regional integration arrangements succeeded in creating a customs and monetary union, wherein a common external tariff was created and a single regional currency utilised. However, the freedom of movement of production factors was not guaranteed in the customs and monetary union (Leke, 2012:74). Accordingly, CEMAC created an economic and monetary union in 1994 (ratified in 1999), constituting a single, integrated market with a shared currency (Leke, 2012:74). Spatial integration initiatives are gaining policy emphasis this region, which is characterised by substandard and inefficient physical transport infrastructure (ICA, 2018). As such, the CEMAC Transport and Trade Facilitation projects were created to increase the efficiency of transport, while lowering transportation cost (ICA, 2018). The CEMAC Trade Corridor project initiated in 2006 sought to achieve the stated objectives of providing physical transnational infrastructure in the region, as upon completion the project will provide ample connectivity between member countries and provide additional access to international markets (ICA, 2018).

6.8.3 Economic policy in CEMAC

The CEMAC Regional Economic Programme (2013-2025) provides economic guidance to the region (Byiers, 2017; UNECA, 2018). Emphasis for development is placed on the agricultural sector, energy provision, agro-industry, the mining sector, and forestry (Byiers, 2017:5).

Investment in and development of physical infrastructure and transnational transport to facilitate intra-regional labour and factor mobility, together with the efficient movement of traded goods in the customs union is emphasised in the Economic Programme (Byiers, 2017:5). Integration objectives transcend policy harmonisation and seek to guide region-wide economic growth and development (Byiers, 2017; UNECA, 2018:5). In addition to funding from international agencies and financiers, CEMAC charges a Community Integration Tax (CIT) to finance regional development policies and supranational institutions. However, adequate funding remains a sizable challenge to CEMAC achieving its regional integration and development objectives (Byiers, 2017:10).

6.8.4 CEMAC regional institutions

In CEMAC, separate institutions are created to administrate the functions of the monetary union (UMAC) and the economic union (UEAC). In addition, the CEMAC Secretariat has been entrusted with increased executive powers by upgrading to a Commission (Byiers, 2017). These institutions drive policy formulation and decision-making in the region. Included among the supranational institutions of CEMAC is the Council of Ministers, which participates in regional programmes related to finance, intra-regional trade, and foreign affairs. The funding of these institutions is aided by the Bank of Central African States (BEAC) and the Development Bank of Central Africa (BDEAC) (Byiers, 2017:7). Institutional capacity, however, remains a challenge in CEMAC, with substantial constraints to policy implementation mechanisms (Byiers, 2017:8).

6.9 East African Community (EAC)

6.9.1 EAC overview

The objective of the following section is to investigate the East African Community (EAC), a regional integration initiative between six countries, including Rwanda, Uganda, Burundi, South Sudan, Kenya, and Tanzania (EAC, 2018a). Established in 2000 between Tanzania, Kenya, and Uganda, the EAC expanded to include Rwanda and Burundi in 2007, with South Sudan joining in 2016.

Figure 6-13 illustrates the spatial context of the EAC.

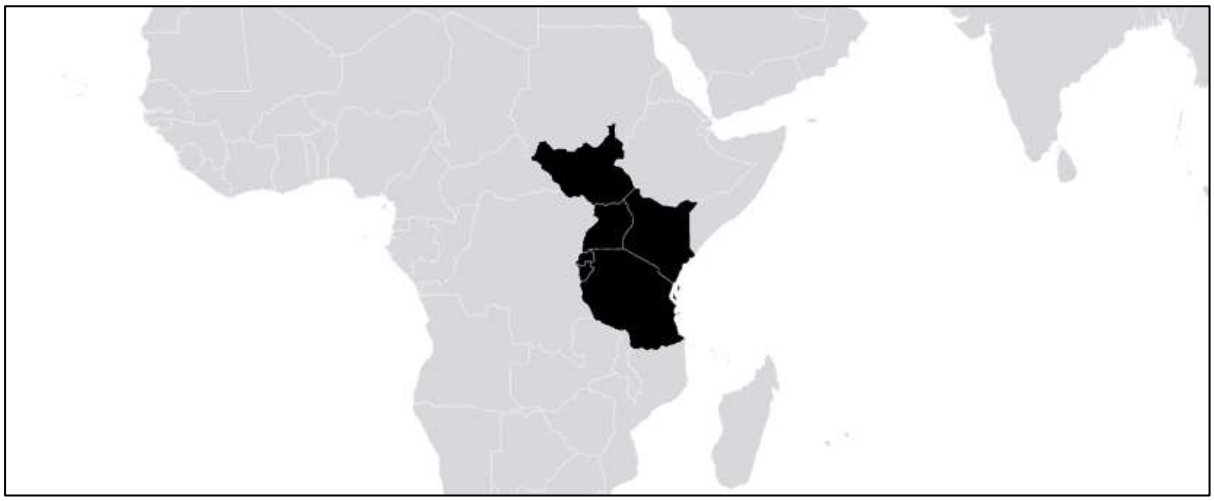


Figure 6-13: Regional context of EAC

Source: EAC (2018a).

Figure 6-14 provides an overview of the CEMAC regional economy.

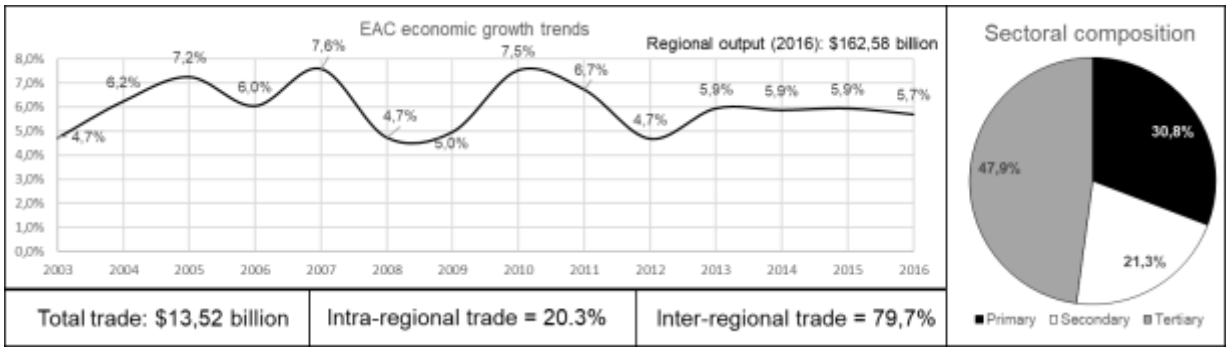


Figure 6-14: EAC regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-14, there has been substantial economic growth in EAC, with regional output increasing by 5.7% in 2016 to $162,58 billion (current US dollar prices). The sectoral composition of the regional economy is the following: 47.9% for the tertiary sector, 21.3% for the secondary sector, and 30.8% for the primary sector. Total annual trade in 2015 is $13,52 billion, 20.3% of which is intra-regional trade and 79.7% of which is inter-regional trade (UNCTADstat, 2017).

6.9.2 Regional integration in EAC

The first economic integration objective reached by the EAC is the establishment of the EAC Customs Union in 2005 (EAC, 2018b). This customs union eliminated tariffs on trade between member countries and created a common external tariff for imports from countries outside the union. Accordingly, strict rules of origin have been developed in the EAC to ensure countries

abide by the regulations inherent to the common external tariff (EAC, 2018b). The second economic integration objective was reached in 2010 with the establishment of the single market, or the EAC Common Market (EAC, 2018b). This common market ensures various freedoms and rights for residents of member countries, including the freedom of movement for labour, goods, services, capital, and people within the regional market, and the right of establishment and residence for the region's residents. The common market was established with the objective of accelerating regional economic growth through increased functional interaction and intra-regional trade (EAC, 2018b).

The objectives of spatial integration in the EAC include (i) harmonising and standardising communication and transport policies in the respective member countries, (ii) improving and further developing physical transport linkages in the region, and (iii) developing additional instruments to improve spatial integration countries (EAC, 2018c). The objective in this regard is to improve intra-EAC trade and factor movements. Transnational transport development is an important "Operational Principle of the Community", with emphasis placed on enhancing regional railways, waterways, roads, and communication infrastructure (EAC, 2018c). In addition to physical infrastructure, EAC transport objectives include developing non-physical infrastructure for efficient trade facilitation, prioritising the standardisation of regulations and rules which govern transport safety, and technical requirements of road transport in the respective member countries (EAC, 2018c).

6.9.3 Economic policy in EAC

The objectives for industrial development in the EAC include stimulating industrial competitiveness and increasing intra- and extra-regional trade in industrial produce (EAC, 2018c). In achieving these objectives, the EAC promotes cooperation between member countries through industrial policy harmonisation and limiting restrictions on industry development and market access. Industrial policy in the EAC emphasises the development of "leverage elements", or elements which contribute to the unique competitive advantage of each member country, to stimulate national industrialisation (EAC, 2018c). Regional interventions in the industrial development of the EAC include the following (EAC, 2018d):

- Identification of regional value chains and construction of plans to support their development
- Creation of a framework for increased partnership between the public and private sector to fund national projects of industrial development
- The EAC is in the process of creating an "industrial promotion scheme" to support industrial investment on a regional level

- Increase of the capacity of national and regional institutions to plan for industrial development and implement strategies
- Creation of a “Sectoral Council on Industrialisation” to oversee industrial development in the EAC
- The EAC supports the creation and further capitalisation of regional development banks which support investment and funding of industrial projects and regional interventions in the region. Said development banks are to be funded by contributions from individual member countries (EAC, 2018e)

Regional planning and policy in the EAC is centred on regional infrastructure interventions with the objective of attracting regionally balanced investment and capital inflows, to increase competitiveness, and stimulate intra-EAC trade to include all the member countries (EAC, 2018c). Several transport subsectors are prioritised in this regard, including maritime transport, railways, roads, the administration of freight transport, and transport of a multi-nodal nature. In achieving this regional objective, various Tripartite Agreements have been reached to promote the development of mechanisms to regulate infrastructure development in parts of the EAC (EAC, 2018c). Policy priority is placed on developing the physical transport linkages in Kenya and Tanzania and their connectivity with other landlocked member countries in the EAC, including Burundi, Rwanda, Uganda, South Sudan, Ethiopia, and the Democratic Republic of Congo. These regional transport linkages are essential in ensuring that the economic benefits of economic integration in the EAC is shared by all member countries, creating convergence in economic development between its members (EAC, 2018c).

6.9.4 EAC regional institutions

The EAC Secretariat is the dominant institution of the region, responsible for the implementation of directives, policies, and regulations by the member countries, and provision of possible recommendations on the strategic direction of EAC (EAC, 2018f). It is the Secretariat which offers directives on spatial planning and infrastructure, trade and customs matters, issues of regional integration and cooperation, and administration and finance of regional activities (EAC, 2018f). Increasing emphasis is, however, placed on increasing the institutional capacity of the EAC, its Secretariat, and other supranational organs, especially with regards to the coordination of industrial development and strategic interventions in the region (EAC, 2018d).

6.10 Mercado Común del Sur (MERCOSUR)

6.10.1 MERCOSUR overview

The following section seeks to investigate MERCOSUR. a regional integration arrangement between four countries located in South America, including its founding members of Argentina

and Brazil, as well as Paraguay and Uruguay (Moncarz, 2016:361). Venezuela, an additional full member of MERCOSUR, was suspended in 2016.

Figure 6-17 illustrates the spatial context of the EAC.

Figure 6-15: Regional context of MERCOSUR

Source: Moncarz (2016).

Figure 6-16 provides an overview of the CEMAC regional economy.

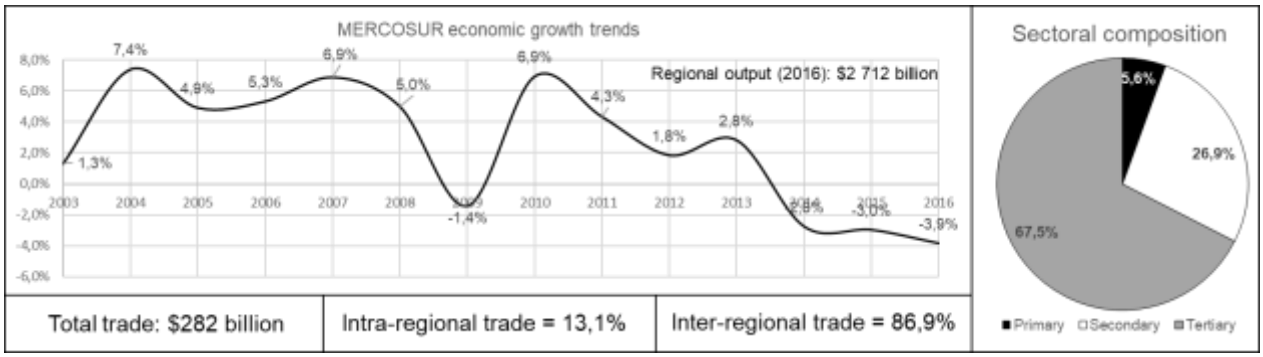


Figure 6-16: MERCOSUR regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-16, in the period between 2010-2016, annual regional economic growth has experienced a sustained decline, with -3.9 growth in 2016. Total economic output in 2016 amounts to $2 712 billion (current US dollar prices). The tertiary sector constitutes the larger sector of the regional economy, contributing to 67.5% of total output. The secondary (26.9%) and primary (5.6%) are the second and third-highest sectors in the economy. SADC trade in 2015 totals $143,51 billion, with 20.6% of total trade between regional partners (intra-regional trade), and 79.4% with external regions (UNCTADstat, 2017). The following section provides an overview of regional integration initiatives in SADC.

6.10.2 Regional integration in MERCOSUR

MERCOSUR is the product of various regional integration initiatives in South America, including the Latin America Free Trade Agreement (LAFTA) established in 1960, and the Latin American Integration Association (LAIA) established in 1980. Finally, in 1991, MERCOSUR was created to form a customs union between member countries (Moncarz, 2016:361; CWF, 2018). In terms of spatial integration, joint infrastructure is a primary concern in MERCOSUR, incorporating regional decision-making with regards to physical connectivity and trade facilitation. Spatial integration is a core objective of the region, as the "improvement of weak transport links is seen as vital for economic integration to proceed" (Tussie & Vásquez, 2000:193). In addition, the Paraná-Paraguay infrastructure project is integral in stimulating intra-regional trade, as well as ensuring connectivity with global trade flows (Tussie & Vásquez, 2000:194).

6.10.3 Economic policy in MERCOSUR

Achieving regional industrialisation through trade preferences is a primary economic policy guiding trade liberalisation and policy harmonisation (Moncarz, 2016:361). While industrial policy is guided by national government objectives, regional trade liberalisation, elimination of tariff trade barriers, and the harmonisation of policies relating to trade seeks to stimulate intra-regional trade and factor flows, directly contribution to the more efficient utilisation of resources, increased regional consumption, and stimulating production (Leipziger *et al*., 1997:585). Accordingly, MERCOSUR implements initiatives relating to regional integration to eliminate barriers to competition and stimulate increased productivity in member countries, with emphasis on industrial production. Through this approach, which seeks to maximise regional welfare and resource utilisation, regional industrialisation objectives are achieved (Leipziger, 1998:586).

6.10.4 MERCOSUR regional institutions

Unlike other regional integration initiatives, the creation of MERCOSUR did not coincide with the establishment of supranational institutions with policy formulation and implementation functions and responsibilities (Kaltenthaler & Mora, 2002:76). In MERCOCUR, economic decision-making lies with national governments, with presidents and economic ministers retaining the power to implement targeted policies in their respective countries. The economic ministers of the various member countries are incorporated into the Common Group Council, where policy recommendations are made (Kaltenthaler & Mora, 2002:76). In addition, MERCOSUR has two important institutions, including the Joint Parliamentary Commission and the Advisory Forum on Economic and Social Matters. These institutions, however, are limited to policy monitoring and subsequent recommendations to national implementation entities (Kaltenthaler & Mora, 2002:76).

6.11 South Asian Association for Regional Cooperation (SAARC)

6.11.1 SAARC overview

The following section seeks to investigate the South Asian Association for Regional Cooperation, or SAARC. This region was established in 1985 with member countries including Sri Lanka, Pakistan, Nepal, Maldives, India, Bhutan, Bangladesh, and Afghanistan (SAARC, 2018a).

Figure 6-17 illustrates the spatial context of SAARC.

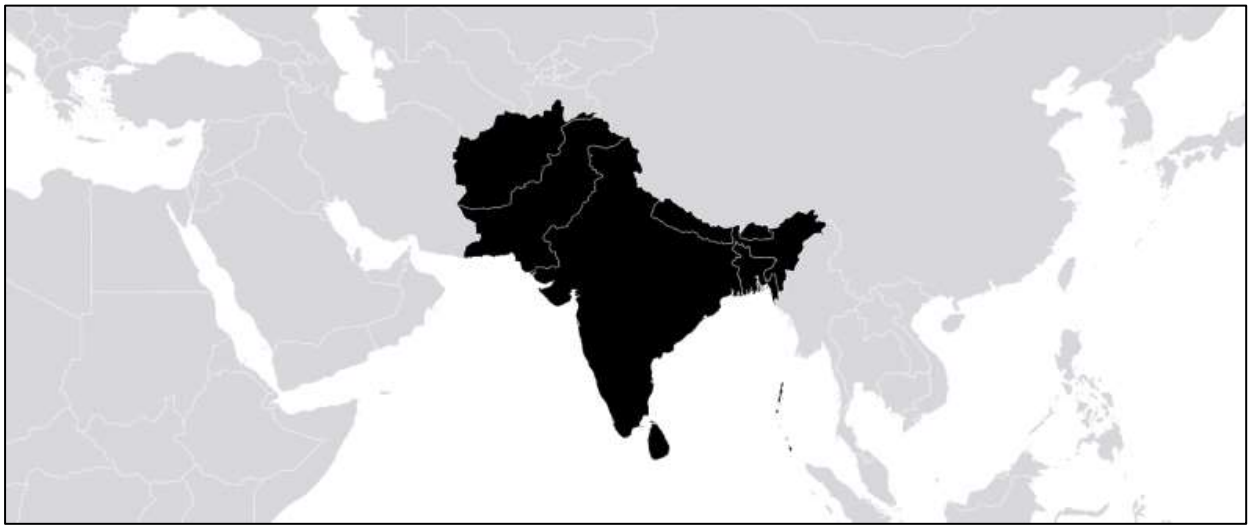


Figure 6-17: Regional context of SAARC

Source: Quora (2017).

Figure 6-18 provides an overview of the SAARC regional economy.

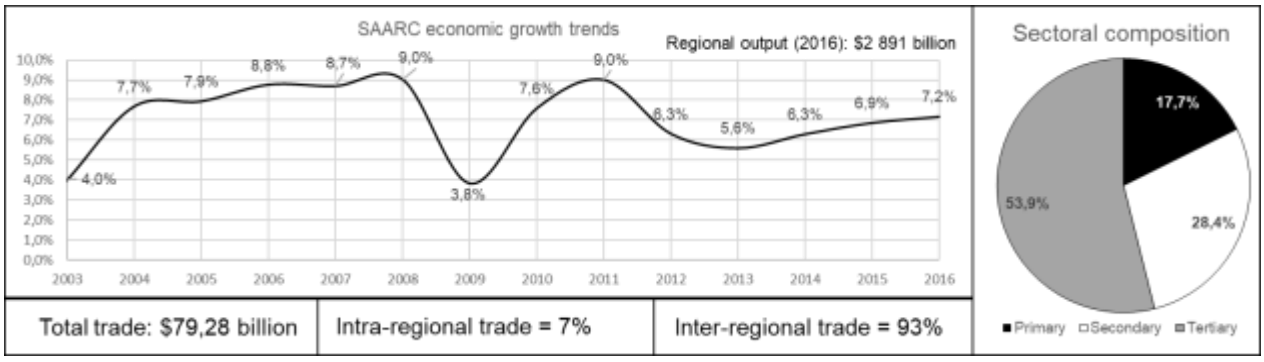


Figure 6-18: The SAARC regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-18, regional output in 2016 in SAARC was $2 891 billion (current US dollar prices), with economic growth being 7.2% for the same year. The tertiary sector

constitutes 53.9% of the regional economy, followed by the secondary sector (28.4%) and the primary sector (17.7%). Total trade in SAARC (2016) is valued at $79,28 billion, with 7% of total trade being intra-regional, and 93% inter-regional (UNCTADstat, 2017).

6.11.2 Regional integration in SAARC

The objective of regional integration in SAARC is to increase functional interaction to foster stability, peace, and economic growth in the member countries of the South Asian region (SAARC, 2018b). Objectives of cooperation include areas of trade, infrastructure, investment, and linkages between countries. SAARC seeks to implement various policies and programmes to further this integration (SAARC, 2018b). The formation of an Economic Union (SAEU) is the final objective of SAARC, which is to be preceded by establishing a free trade area, a customs union, and a single market (IDW, 2012). The first steps of economic integration and trade liberalisation were achieved within the formation of the South Asian Preferential Trading Arrangement (SAPTA) in 1995 and the South Asian Free Trade Area (SAFTA) in 2006 (IDW, 2012).

Spatial integration is prioritised by the member countries of SAARC as they seek to improve regional connectivity and physical infrastructure development. Spatial integration in SAARC emphasises the development and upgrading of transnational railways, road systems, waterways, communication networks, and infrastructure (SAARC, 2018b). The SAARC Motor Vehicles Agreement and the SAARC Regional Railways Agreement is illustrative of the progress made on transport policy harmonisation (i.e. non-physical connecting infrastructure) and infrastructure investment in the region (SAARC, 2018b).

6.11.3 Economic policy in SAARC

With increased integration in SAARC, emphasis is placed on aiding the participation of the developing and landlocked countries in terms of intra-regional trade and the benefits of increased trade liberalisation in the region (SAARC, 2018b). The primary objective of regional planning in SAARC is to assist developing member countries in overcoming structural limitations to economic growth and increase their productivity and competitiveness. Regional planning thus seeks to ensure balanced regional economic growth in SAARC (SAARC, 2018b). In this regard, SAARC supports investment in several sectors of member countries, including economic development (initiative toward industrialisation), regional infrastructure and connectivity, small businesses, and social development (SDFSEC, 2016a). To oversee investment and achieve regional development objectives, the SAARC Development Fund (SDF) was created in 2005 (SAARC, 2018c). The SDF seeks to invest and fund regional projects relating to infrastructure, economic development, and industrialisation. The SDF's funding mechanisms in support of

regional balanced economic growth includes offering financing for projects through direct loans, financial advice and assistance, and access to external capital markets (SDFSEC, 2016b). Through this initiative, regional policy and industrialisation in SAARC is supported by the capacitation of the SDF by member states (IDW, 2012).

6.11.4 SAARC regional institutions

In SAARC, operating within the regional free trade area, the most important policy-making institution in the region is the SAFTA Ministerial Council (SMC) (SAARC, 2018d). This institution is responsible for the planning and implementation of policies, programmes, and activities on a supranational scale. Other institutions in SAARC includes the Standing Committee (approving investment projects and proposals), the Programming Committee (administrative organisation), and the Technical Committees (including committees on transport, development, social development, among other committees regarding matters of regional development (SAARC, 2018d; SAARC, 2018e; SAARC, 2018f).

6.12 West African Economic and Monetary Union (WAEMU)

6.12.1 WAEMU overview

The following section seeks to provide an overview of the Western African Economic and Monetary Union, or WAEMU. The member countries of WAEMU include Togo, Benin, Senegal, Burkina Faso, Niger, Ivory Coast, Mali, and Guinea-Bissau (USTR, 2018).

Figure 6-19 illustrates the regional context of WAEMU.

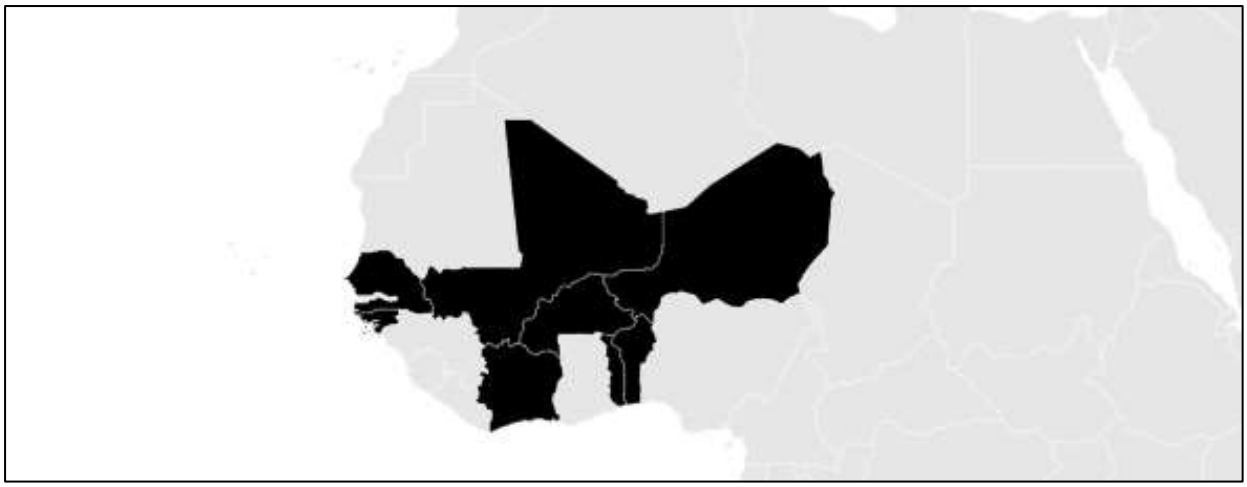


Figure 6-19: Regional context of WAEMU

Source: USTR (2018).

Figure 6-20 provides an overview of the WAEMU regional economy.

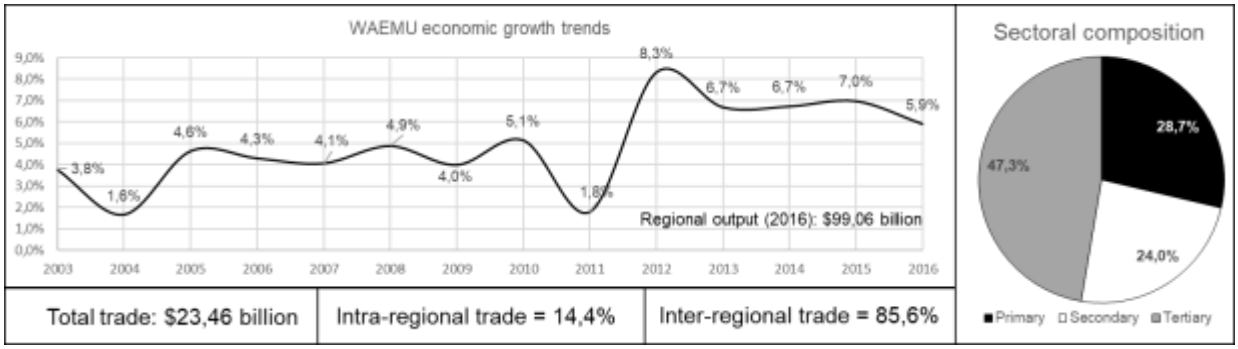


Figure 6-20: The WAEMU regional economy

Source: UNCTADstat (2017).

As illustrated in Figure 6-20, regional output in 2016 in WAEMU was $99,60 billion (current US dollar prices), with economic growth being 5.9% for the same year. The tertiary sector constitutes 47.3% of the regional economy, followed by the secondary sector (24%) and the primary sector (28.7%). Total trade in WAEMU (2016) is valued at $23,46 billion, with 14.4% of total trade being intra-regional, and 85.6% inter-regional (UNCTADstat, 2017).

6.12.2 Regional integration in WAEMU

A regional common currency is operation in WAEMU, with the objective of creating an economic union between the member countries (Thiam, 2014:2047). In this regard, while a common currency is in place, WAEMU is seeking increased trade liberalisation and the establishment of a common external tariff inherent to a customs union (Thiam, 2014:2047). Currently, there is a substantial deficiency in national and regional transport infrastructure to enhance trade facilitation in WAEMU, with Thiam (2014:2047) identifying said infrastructure gaps as important to address in order to achieve improved regional economic integration and growth.

6.12.3 Economic policy and regional institutions in WAEMU

There is a lack of economic planning in WAEMU, as is reflected by the lack of economic impact made by increasing public expenditure and national government investment. According to Thiam (2014:2043), improper allocation of resources perpetuates ineffective government expenditure, with no coherent regional development policy to guide economic decision-making and subsequent investment. Reflecting inefficient economic planning, the primary supranational institution, the WAEMU Commission, has been ineffective in catalysing policy harmonisation between member countries, inhibiting progress in economic planning and growth (IMF, 2016:4).

6.13 Chapter summary

This chapter provided an overview of regional integration, planning, and industrial development policies implemented in developing country regional integration initiatives Accordingly, Table 6-3 provides a summary of the regional integration initiatives

Table 6-3: Regional integration initiatives summary

Region	Economic integration	Spatial integration	Industrial policy	Regional policy
SADC	Preferential free trade agreement	Regional development corridors (physical)	Action Plan for SADC Industrialisation Strategy and Roadmap	Regional Indicative Strategic Development Plan
ASEAN	Preferential free trade agreement	ASEAN Connectivity (physical and non-physical infrastructure)	ASEAN Industrial Complementation Scheme (AIC)	IAI Work Plan III
CACM	Customs union	Central American Regional Framework Policy (non-physical)	Central American Competitiveness Initiative	Catalyse regional value chains and supply linkages
CAN	Single market	“Common provisions” in transport (non-physical)	Competitiveness policy through stimulating regional supply linkages	n/a
CARICOM	Single market	CARICOM Transport Policy (non-physical)	Industrial Programming Scheme	Country Assistance Programme (financed by CARICOM Development Fund)
CEMAC	Economic and monetary union	CEMAC Transport and Trade Facilitation (physical and non-physical)	CEMAC Regional Economic Programme	
EAC	Single market	Important “Operational Principle of the Community” (physical and non-physical)	Industrial competitiveness through trade liberalisation	Regional infrastructure interventions
MERCOSUR	Customs Union	Joint infrastructure projects	Industrialisation through trade liberalisation	
SAARC	Free trade area	SAARC Motor Vehicles Agreement and SAARC Regional Railways Agreement (non-physical)	SAARC Development Fund finances industrial projects and regional infrastructure initiatives	
WAEMU	Currency union	n/a	Limited supranational economic planning	

Source: Author’s own compilation.

The following findings were made regarding regional integration initiatives in developing countries:

- Regional integration is being widely implemented as an active measure to eliminate barriers to intra-regional trade in order to stimulate trade between regional developing country partners and share in the economic benefits of increased functional interaction.
- There is substantial policy emphasis on eliminating physical barriers to intra-regional trade. The majority of the developing countries' regional integration initiatives seek to implement policies to improve spatial integration – in addition to economic integration – between member countries. This primarily manifests in the implementation of transport-orientated policies and (i) supporting national authorities in developing improved physical infrastructure, as well as (ii) seeking to develop transnational transport systems for increased intra-regional trade facilitation. A prominent example of such a transport policy is the development corridors in SADC (c.f. 6.3.2).
- In addition to physical infrastructure, emphasis is also placed on developing non-physical trade facilitating infrastructure. This includes coordinating transport policies between the member countries, harmonising regulations relating to transnational transportation, and standardising safety and technical standards of the respective participating countries. Non-physical infrastructure contributes to the stimulation of intra-regional trade.
- Ambitious objectives have been set in many developing countries' regional integration initiatives, some of which have not been achieved by the relevant authorities and implementing agents. An example thereof is the economic integration in SADC, where the aim has been to form a fully functional customs union in 2010 and a common market by 2015. The reality, however, is that the SADC is primarily characterised as a preferential free trade agreement, with various tariff barriers to trade still in place. In addition, CACM was established in 1960 with the central objective of creating an economic union, while still being characterised as an imperfect customs union, six decades after its formation (c.f. 5.2.2.1).
- Developing regions may seek to implement policies pertaining to extracting the shared growth potential of the member countries in the region and increasing the efficiency of resource utilisation. In addition, certain regions aim to implement regional policy to drive regionally balanced economic growth where members share equally in the advantages of trade liberalisation and increased functional interaction.
- Regions may aim to implement industrial policies, and policies associated with stimulating competitiveness and productivity by harnessing regional supply chains and developing intra-industry industrial linkages to drive region-wide industrialisation.

The process of regional integration through economic and spatial integration sets in motion a process where previously isolated countries increase functional interaction with one another, with the process culminating in the formation of single, integration regional economies.

CHAPTER 7 QUANTITATIVE REGIONAL ANALYSIS

Regional integration initiative case studies have found that developing countries recognise the potential of regional integration and industrialisation – and the importance of their interface – in stimulating the development of regional production linkages and economic growth (c.f. 6.12). Various initiatives supporting regional integration and industrialisation is apparent between developing countries (c.f. 6.12), supporting the aforementioned finding. Implementation is supported by economic and spatial integration initiatives, fostering trade liberalisation and facilitating the intra-regional movement of goods, services, and production factors (c.f. 6.12). In addition, industrial policy supports the development of transnational production networks and industrial linkages, while regional policy envisions shared benefit and economic prosperity with functional interaction through targeted spatial and policy interventions (c.f. 6.12). Regional integration and industrialisation initiatives are, however, limited in certain case studies, including that of SADC, due to deficiencies in regional infrastructure, limited trade liberalisation, and insufficiently capacitated supranational institutions. In the identified case studies, there is a lack of policy directives specifically emphasising regional economic resilience and negating member countries' vulnerability to external economic shocks (c.f. 6). Certain regions highlight the importance of increasing functional interaction by decreasing their shared dependence on external markets for regional exports and economic growth, and, subsequently, supporting regional economic resilience to external economic shocks (c.f. 6.13). This chapter contributes to the investigation of the manner in which regional integration and industrialisation may foster regional economic resilience in developing countries and their associated regional integration initiatives, as per objective 4 of the study (c.f. 1.3). The objective of this chapter is to determine the factors inherent to regional integration and industrialisation, which enables their enhancement of economic resilience.

7.1 Outline of quantitative analysis

To achieve said analysis objectives, quantitative research approaches were utilised in the form of an (i) equilibrium analysis and an (ii) econometric analysis (c.f. 2.4.2). These respective analyses constitute the two primary components of this chapter, and cumulatively seek to identify factors inherent to the regional economy – with emphasis on regional integration and industrialisation – that strengthens regional economic resilience (c.f. 1.3).

The equilibrium analysis, as propagated by Briguglio, *et al.* (2006) and Hill, *et al*. (2008), constitutes the foundation of analysing the regional economic resilience of developing regions. As suggested and utilised by Brixiová*, et al*. (2015) and Pretorius, *et al*. (2017) in their

respective resilience analyses, this investigation utilises regional economic growth trends to analyse regional economic resilience.

Dawley, *et al.* (2010) state that resilience is measured by determining an entity's ability to resist and recover from external influences. By analysing regional economic growth trends, the equilibrium analysis seeks to determine the following:

- The initial impact of an external economic shock on regional economic growth. This illustrates the ability of the regional economy to "resist" the effects of the external economic shock. In addition, the ability of the regional economy to resist the shock is representative of the adaptability of the regional economy (c.f. 5.3.2.3).
- The time it takes for regional economic growth to recover its pre-shock growth path, thus illustrating the capacity of the regional economy to "recover" from an external economic shock. The ability to timely recover from an external shock is illustrative of the regional economy's ability to foster adaptation in its production networks (c.f. 5.3.2.3)

The outputs of the equilibrium analysis, namely the initial impact of the shock and the time needed to recover from the shock, are incorporated into the econometric analysis as dependent variables. This analysis includes certain independent variables, such as elements reflective of regional integration and industrialisation, as well as other endogenous and exogenous factors that influence regional economic growth within the various RIAs. The basis of the econometric analysis is to determine the relationship between the dependent and independent variables, i.e. whether the independent variables influence the initial impact and time of recovery from the external economic shock. Accordingly, the analysis aims to identify endogenous and exogenous factors integral to the economic resilience of RIAs. The results of the analysis, and the relationship between certain economic variables and the resilience of regional economic growth, will inform recommendations regarding the policy objectives of SADC in terms of regional integration, industrialisation, and regional planning and policy to optimise the economic resilience of the region to external economic shocks. The equilibrium analysis is conducted in the following section.

7.2 Equilibrium analysis

The primary objective of the equilibrium analysis is to determine the effect of an external economic shock on regional economic growth (c.f. 2.4.2.1). This includes determining the ability of the regional economy to resist the initial impact of the shock and recover its pre-shock growth path. The following steps are inherent to the equilibrium analysis:

1. Determining the pre-shock growth path: Analysing the resistance of the regional economy necessitates establishing a pre-shock growth path, or "equilibrium". This allows

the measurement of the deviation of regional economic growth from the equilibrium as a result of the external economic shock.

2. Measuring the resistance of regional economic growth: the initial impact of the external shock on regional economic growth is determined by the extent of the deviation of economic growth from the established pre-shock equilibrium. The impact of external shock on economic growth is indicative of the resistance of the regional economy to external disturbances.
3. Determining the post-shock growth path and growth recovery: During the "post-shock" phase of the equilibrium analysis, the recovery of regional economic growth from the external shock is investigated. Once post-shock growth rates are equal to or eclipse the pre-shock growth equilibrium, the regional economy is said to have recovered its pre-shock growth path. The time between the impact of the external shock on regional economic growth and the recovery of the pre-shock growth path is an additional indication of the economic resilience of the region.

7.2.1 The 2008 Financial Crisis

The 2008 Financial Crisis had a significant impact on the economic prosperity of developing countries and regions, threatening to overturn the sizable economic progress said countries have made in terms of convergence with industrialised countries (Lin, 2008:1). While the origins of the 2008 Financial Crisis can be traced to the housing and financial markets in the United States and other advanced economies, the effect of the economic downturn constitutes a significant economic shock in developing countries (Lin, 2008:1; Griffith-Jones, 2009:9).

During this crisis in the financial sector of advanced economies and the subsequent economic downturn, the balance sheets of firms and households worsened, decreasing the availability of capital for consumption and investment (c.f. 4.7.2.2). This spilled over into the wider economy as production and output was reduced and investments declined. This disturbance in industrialised economies spread to the financial institutions of industrialised countries and other developing regions, and subsequently affected the global economy (c.f. 4.7.2.2). The impact on developing countries and regions were exacerbated due to declining exports to industrialised countries and decreased inflows of FDI as capital availability declined abroad (Griffith-Jones & Ocampo, 2009:2). Therefore, while the 2008 Financial Crisis was characterised by its initial effect on financial markets, the subsequent economy-wide downturn in industrialised regions translated into an external economic shock in developing regions (Lin, 2008:1; Griffith-Jones & Ocampo, 2009:2). This underlines the relevance of analysing the effect of the 2008 Financial Crisis in investigating the economic resilience of developing regions.

7.2.2 Developing regions' economic growth trends

As per the research objectives of the study, the following section analyses the economic growth trends of developing regions to determine the effect of the 2008 Financial Crisis on output growth, and to subsequently analyse the economic resilience of the respective regions. Figure 7-1 illustrates the economic growth trends for the various regional integration initiatives for the period 2003-2016.

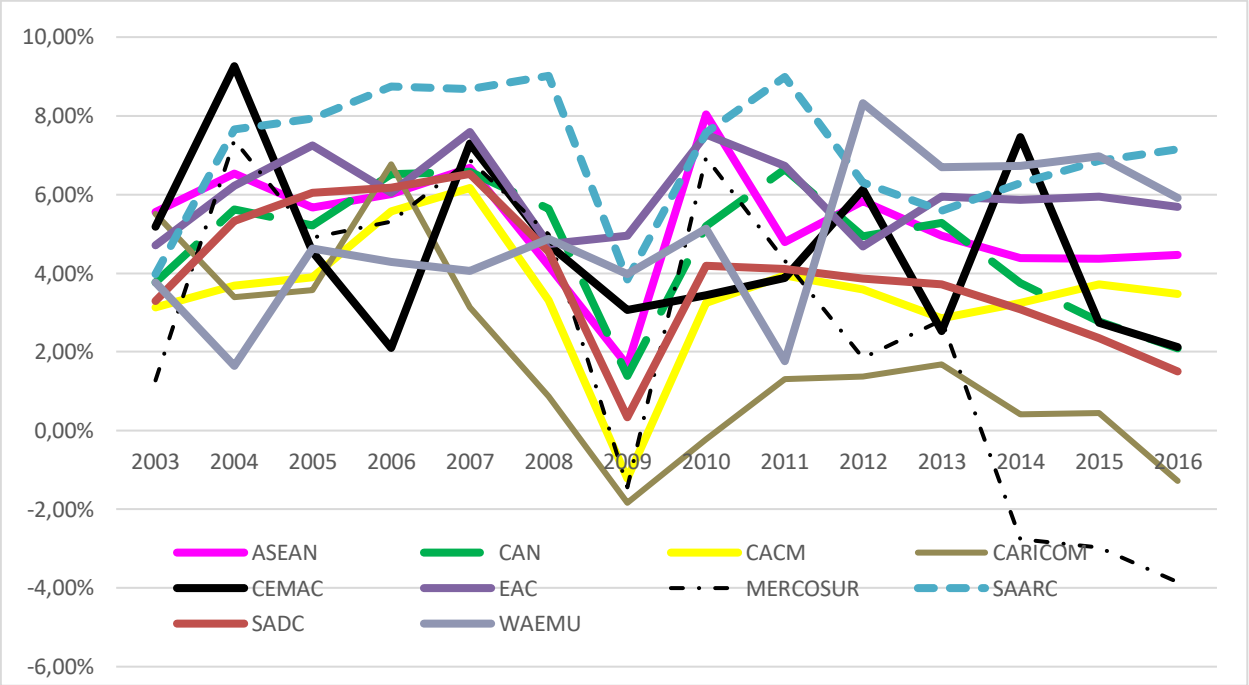


Figure 7-1: Regional economic growth trends

Source: UNCTADstat (2017).

As illustrated in Figure 7-1 the following growth stages are delineated when analysing the economic growth trends of the various regions:

- Pre-shock stage (2003-2007): This stage illustrates the economic growth for the regions in the period before the Financial Crisis. The pre-shock growth path ("equilibrium") for each region is based on the average annual regional economic growth in this period.
- Shock stage (2008-2009): This stage indicates the initial impact of the external shock on economic growth. The impact of the shock is quantified by calculating the deviation of economic growth from 2007 (pre-shock growth) to 2009 (apex of shock impact). The degree of deviation from the pre-shock growth path illuminates the ability of regional economies to resist shocks and the level of adaptation of regional production networks.
- The post-shock stage (2010-2016): This stage indicates the ability of regional economies to recover and adjust their production networks post-shock. A region is deemed to have recovered in the year the pre-shock growth equilibrium is equalled or exceeded.

As apparent in Figure 7-1 developing regions experienced significantly reduced economic growth between 2008 and 2009 (UNCTADstat, 2017). This downturn in economic output reflects the impact of the Financial Crisis, with growth significantly reduced in 2008 and the impact of the Crisis reaching its apex in 2009. Evidently, the Financial Crisis constituted an external economic shock for the identified developing regions. While the negative effects of the shock are apparent, additional considerations are the varying degrees of growth fluctuation between the regions and differing years of recovery. The growth trends illustrated in Figure 7-1 are adapted in Table 7-1 to illuminate the initial impact of the shock and the year of recovery from the shock. Included in Table 7-1 is the level of economic integration in each region (c.f. 5.5.2).

Table 7-1: Economic growth trends for developing regions

Level of integration	RIA	Initial impact	Recovery
Economic and monetary union	CEMAC	4,23%	2012
	WAEMU	0,07%	2009
Single market	CAN	5,18%	2011
	EAC	2,63%	2010
Customs union	CACM	7,38%	Not recovered
	CARICOM	4,97%	Not recovered
	MERCOSUR	8,32%	2010
Free trade area	SAARC	1,44%	2010
Preferential free trade agreement	ASEAN	5,02%	2010
	SADC	6,19%	Not recovered

Source: UNCTADstat (2017).

It is apparent that there is regional divergence in the initial impact of the shock, and that economic growth deviations vary considerably between regions. In addition, there is limited correlation between the degree of regional integration and the influence of the external economic shock. Most regions display a significant decline in economic growth from 2008 to 2009, as the impact of the Crisis affected regional output. Regions that experienced the most pronounced downturn include SADC, CAN, MERCOSUR, ASEAN, CACM, and CARICOM. The latter region, however, experienced a pre-shock economic downturn. The decline in economic growth in CEMAC coincides with the Financial Crisis, albeit less severe than other regions. Economic growth in SAARC and WAEMU initially illustrate limited deviation from 2007 rates. However, in 2009, SAARC experienced a sharp decline while WAEMU remained resistant to the

effects of the shock. Growth in the EAC declined in 2008, but rebounded in 2009 when all other regions experienced a decline.

In addition to the initial impact of the shock, substantial variations are apparent in the recovery of the pre-shock growth paths of the various regions, indicating divergence in adaptation of regions as a result of the external shock. As shown in Figure 7-1 and Table 7-1, seven of the ten developing regions have recovered from the external shock (equalling or exceeding their respective pre-shock growth equilibriums). WAEMU demonstrates the shortest recovery time (2009), although the limited initial impact of the shock contributed to the timely recovery of the regional economy. The EAC, MERCOSUR, SAARC, and ASEAN recovered their pre-shock growth equilibrium in 2010, while CAN and CEMAC recovered in 2011 and 2012, respectively. CACM and CARICOM are yet to recover from the effect of the Financial Crisis. SADC, although displaying a less pronounced decline in growth (6.19%) compared to MERCOSUR (8.32%), has not recovered from the external shock; MERCOSUR recovered in 2010.

The latter finding, in addition to divergence in the impact of the shock and regions' recovery time, illustrates that developing regions display varying degrees of regional economic resilience in the face of the external economic shock with some regions illustrating a limited growth deviation from the pre-shock growth equilibrium, while others have yet to recover from the initial impact of the Crisis. Utilising the classification of Hill, *et al.* (2008:3), based on the findings illustrated in Figure 7-1, the developing regions are classified according to their economic resilience in Table 7-2.

Table 7-2: Classification of regional economic resilience

Classification	Region	Motivation
Economically resilient	CEMAC CAN EAC MERCOSUR ASEAN	While experiencing an initial deviation from the pre-shock growth path, recovery of the equilibrium is achieved within the identified period.
Shock-resistant	WAEMU SAARC	Regions display limited deviation from the pre-shock growth path.
Non-resilient	CACM CARICOM SADC	The shock impacts regional economic growth and regions are yet to recover the growth equilibrium in the post-shock period.

Source: Hill *et* al. (2008:3) and UNCTADstat (2017).

Five of the regions in question (CEMAC, CAN, EAC, MERCOSUR, and ASEAN) are classified as economically resilient, based on their ability to recover their pre-shock growth path within the stipulated post-shock timeframe (2010-2016). WAEMU and SAARC are classified as shock resistant due to the limited effect of the Crisis on their regional economic growth. Three regions, including CACM, CARICOM, and SADC, are classified as non-resilient regions due to their inability to foster recovery and adaptation in the face of the external economic shock in the stated time period.

The findings on regional economic resilience and subsequent regional classification raises questions about the factors that influence the diverging resistance, recoveries, and resultant economic resilience of the various developing regions to the external economic shock. As such, the following econometric analysis seeks to investigate the divergence of regional economic resilience between developing regions by analysing the relationship between regions' ability to resist and recover from an external shock and various regionally endogenous and exogenous factors (with emphasis on regional integration and industrialisation) inherent to regional economic growth. This econometric analysis allows for the identification of important variables that influence the resilience of regional economic growth in the presence of a substantial external shock. The objective in this regard is to identify factors that foster increased regional economic resilience to inform appropriate regional and economic policy decisions in the SADC.

7.3 Econometric analysis

The findings of the equilibrium analysis constitute the basis of the econometric analysis included in this section. The reason for this is the utilisation of the primary variables of the equilibrium analysis, namely the quantified (i) impact and (ii) recovery from an external economic shock for the various regions, as the dependent variables in the econometric analysis. Determining the relationship between said dependent variables and various predetermined independent variables, encapsulates the objective of this analysis. While the dependent variables cumulatively inform the economic resilience of regions, the identified independent variables reflect several factors inherent to the growth of the regional economy, including endogenous and exogenous growth factors. Endogenous factors include functions internal to the region that stimulate economic growth (such as the availability of production factors) (c.f. 4.5), while exogenous factors are elements external to the region that contribute economic growth (such as trade and capital inflows) (c.f. 4.6). As the external economic shock disrupts the production network of regions, including the factors that induce economic growth (c.f. 5.4), the econometric analysis seeks to evaluate the influence of various growth factors in stimulating the resilience of economic growth. Analysing the nature of the relationship between the dependent variables and the selected independent variables may highlight factors that influence the economic resilience of regions. Three categories of independent variables are delineated based on the findings of

the literature review, namely capital and export flows (c.f. 7.3.1), endogenous growth factors (c.f. 7.3.2), and exogenous growth factors (c.f. 7.3.3). Table 7-3 illustrates the categories of independent variables.

Table 7-3: Categories of independent variables

Category	Independent variable
Capital and export flows	1. Export trends 2. FDI inflow trends
Endogenous growth factors	3. Economic diversity 4. Industrialisation 5. Production factor availability 6. Degree of regional integration 7. Diversity of intra-regional exports 8. Intra-regional exports of manufactured goods 9. Intra-regional exports of primary commodities
Exogenous growth factors	10. Degree of inter-regional exports 11. Exports to industrialised regions 12. Diversity off inter-regional export staples 13. Inter-regional exports of primary commodities 14. Inter-regional exports of manufactured goods

Source: Author's own compilation

These categories constitute the primary sections of the econometric analysis. The following section investigates the relationship between capital and export flows and regional economic resilience.

7.3.1 Capital and export flows

Capital and export flows, while constituting exogenous economic growth factors, are emphasised in this analysis due to their direct influence on transferring the effects of an economic downturn in external regions to local production network and economic growth (c.f. 4.7.2.2). Decreased capital inflows and export outflows are consequences of an economic downturn in external regions and manifests in an external economic shock in developing regions (c.f. 4.7.2.2). Therefore, the following section investigates the effect of the economic shock on total export and capital inflows, and determines the relationship between regional

economic resilience, export outflows, and capital inflows in developing regions. The following section seeks to investigate the relationship between regional economic resilience and export flows during the Financial Crisis.

7.3.1.1 Export trends during the Financial Crisis

The independent variable utilised in this section is developing regions' export trends between 2003-2016, with emphasis on the decline of exports to external markets during the shock stage of the Financial Crisis. Said export growth trends are illuminated in

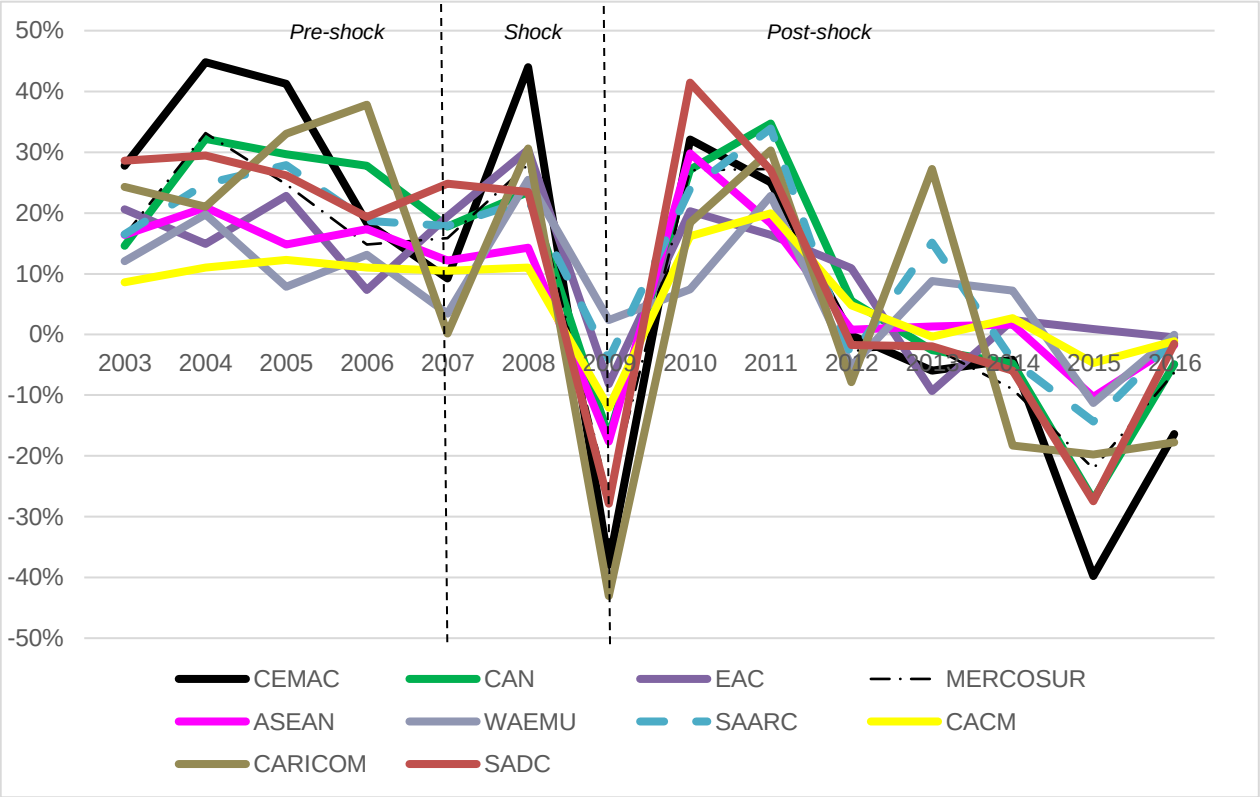


Figure 7-2: Regional export growth (2003-2016)

Source: UNCTADstat (2017).

As per Figure 7-2, exports to external regions declined substantially in the delineated shock stage (2008-2009) as the Financial Crisis caused declining import demand in developing regions' export markets. Like economic growth trends (illustrated in Figure 7-1), the developing regions illustrate varying effects of the external economic shock on export trends. Table 7-4 illustrates the independent variable (export decline from 2008-2009), and the two dependent variables extracted from the equilibrium analysis, including the initial impact of the shock on economic growth (dependent variable 1) and the recovery of the pre-shock growth equilibrium in the post-shock stage (dependent variable 2).

Table 7-4: Export trends and regional economic resilience

Classification	Region	Independent variable (export decline 2008-2009)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	37,88%	4,23%	2012
	CAN	16,78%	5,18%	2011
	EAC	8,16%	2,63%	2010
	MERCOSUR	26,54%	8,32%	2010
	ASEAN	17,64%	5,02%	2010
Shock-resistant	WAEMU	-2,32%	0,07%	2009
	SAARC	4,06%	1,44%	2010
Non-resilient	CACM	12,09%	7,38%	Not recovered
	CARICOM	43,05%	4,97%	Not recovered
	SADC	27,87%	6,19%	Not recovered
		Correlation	0,55777	0,81414

Source: UNCTADstat (2017).

As illustrated in Table 7-4, the majority of the regions experienced a substantial decline in exports during the Financial Crisis. CARICOM, CEMAC, MERCOSUR, and SADC experienced the highest degree of decline, as exports decreased by 27.87% in the SADC from 2008-2009. WAEMU, on the other hand, experienced a growth in exports during this period, while limited export decline was experienced in SAARC (4.06%) and EAC (8.16%). The export trends indicated in

Figure 7-2 and Table 7-4 illustrate that exports to external markets decline significantly during an external economic shock.

Table 7-4 illuminates the relationship between export trends and the (1) impact of the shock on regional economic growth, and the (2) recovery of the pre-shock growth path. There is a strong positive relationship between the decline in exports to external regions and the initial impact of the economic shock (correlation of 0.55777). This means that as the impact on exports increases (represented by declining growth) by one basis point as a result of decreased import demand in external regions, the initial impact of the shock increases by 55.7%. There is a strong relationship between the impact on exports and the time needed to recover the growth

equilibrium (correlation of 0.81414). As the impact on exports increases (represented by declining growth) by one basis point as a result of decreased import demand in external regions, the period of recovery increases by 81.4%. It is evident that the larger the impact on exports exerted by the economic downturn in external markets, the larger the impact of the subsequent economic shock on regional economic growth and the longer the time needed to regain the pre-shock growth path. Exports have a substantial influence on regions' economic resilience, confirming the notion that the impact on developing countries and regions of an economic downturn in external regions are exacerbated by declining exports that may manifest in external economic shocks (c.f. 4.7.2.2).

7.3.1.2 Capital inflow trends

This section analyses the relationship between regional economic resilience and external capital inflows during the peak of the Financial Crisis. The independent variable utilised is FDI inflows as the proportion of total capital formation in the respective developing regions (UNCTADstat, 2017). This will enable investigation of the trends of external capital inflows into the regions and the impact of the external economic crisis on said capital inflows. Figure 7-3 illustrates the trend of FDI as a proportion of total capital formation in the developing regions for the period 2003-2015 (latest data available).

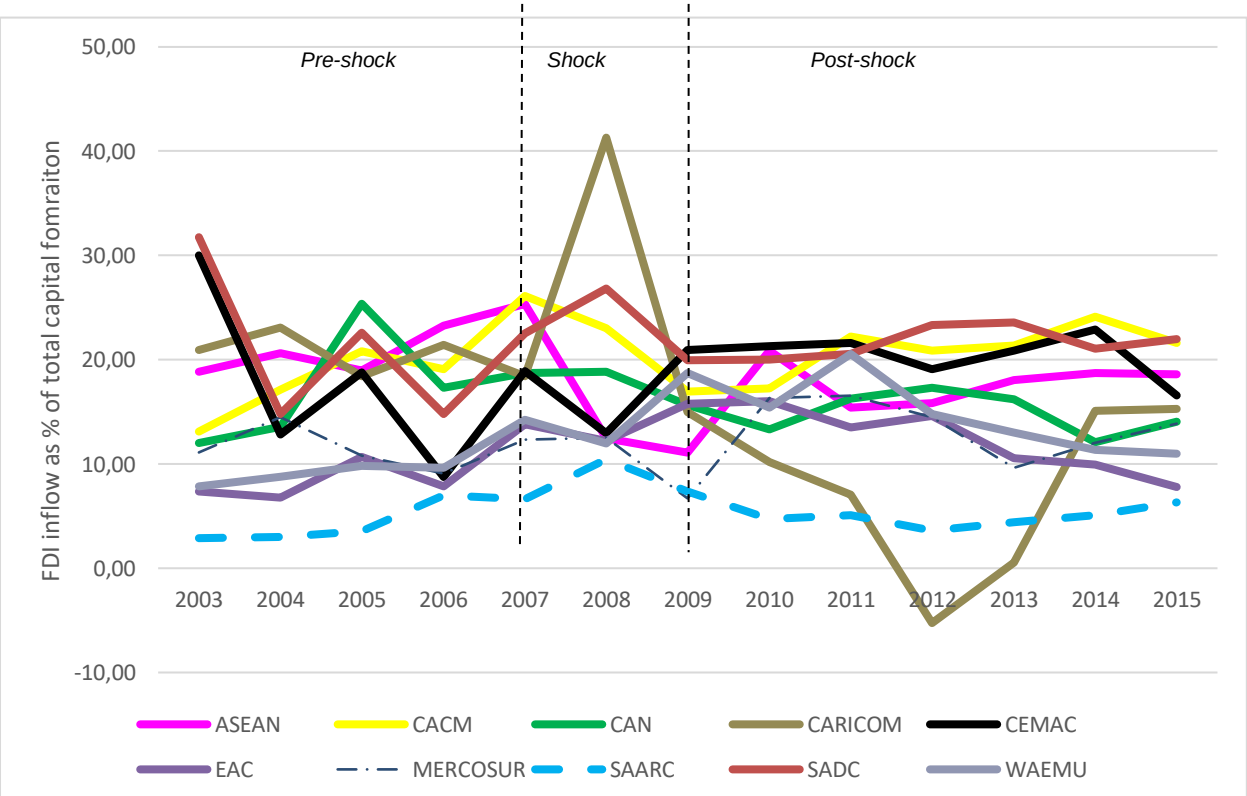


Figure 7-3: FDI inflow trends (2003-2015)

Source: UNCTADstat (2017).

As illustrated in Figure 7-3, FDI as proportion of total capital formation in developing regions, declined during the shock stage – the apex of the Financial Crisis. While less apparent than export and economic growth declines in the same period, the various regions display divergent FDI trends and reactions to the external economic shock. Most regions experienced a decline in FDI as proportion of total capital formation. However, ASEAN, SAARC, and EAC experienced growth in the proportion of FDI in this regard.

Table 7-5 illustrates the independent variable (decline in FDI as proportion of total capital formation between 2008 and 2009), and the two dependent variables, including the initial impact of the shock on economic growth and the recovery of the pre-shock growth equilibrium.

Table 7-5: FDI trends and regional economic resilience

Classification	Region	Independent variable (decline of FDI as % of capital formation between 2008 and 2009)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	1,34	4,23%	2012
	CAN	6,07	5,18%	2011
	EAC	3,15	2,63%	2010
	MERCOSUR	26,30	8,32%	2010
	ASEAN	-7,98	5,02%	2010
Shock-resistant	WAEMU	-3,57	0,07%	2009
	SAARC	5,81	1,44%	2010
Non-resilient	CACM	3,12	7,38%	Not recovered
	CARICOM	6,91	4,97%	Not recovered
	SADC	-6,74	6,19%	Not recovered
		Correlation	0,41159	0,05513

Source: UNCTADstat (2017).

Divergence in the decline of FDI as a portion of total capital formation during the Financial Crisis is apparent in Table 7-5. MERCOSUR sustained substantial losses in external capital inflows, with the FDI (as percentage of capital formation) declining by 26.3%. CAN, SAARC, and CARICOM sustained some losses during this period, with the relevant proportion of FDI declining by 6.07%, 5.81%, and 6.91%, respectively. ASEAN, WAEMU, and SADC experienced

a gain of FDI as proportion of capital formation, with respective increases of 7.98%, 3.57%, and 6.74% between 2008 and 2009.

An additional element highlighted in Table 7-5 is the relationship between FDI as a proportion of total capital formation and the two dependent variables. There is a substantial correlation between the decline in FDI as a proportion of capital formation and the severity of the initial impact of the shock (correlation of 0.41159). Accordingly, severity of the economic shock increases as the degree of lost FDI increases. While there is a positive relationship between FDI outflows and the recovery period in the post-shock stage (as FDI outflows increase, so does the time needed to foster recovery in the regional economy), a correlation of 0.05513 affects the statistical significance of the relationship. The findings derived from Table 7-5 may be indicative of the causal relationship between regional economic resilience and FDI as proportion of total capital formation: As an economic downturn in external regions decrease investment in developing regions, reduced external capital investment increases the severity of the initial impact of the external economic shock on regional economic growth in developing regions. This highlights the potential impact of FDI outflows in the manifestation of an external economic shock in developing countries (c.f. 4.7.2.2). Analysing trends relating to capital and export flows in developing regions during external economic shocks, it is evident that exports and FDI have a substantial influence on the (i) impact of the shock and (ii) recovery time from the shock. The following section investigates endogenous factors that may influence the economic resilience of developing regions.

7.3.2 Endogenous factors in economic resilience

The econometric analysis seeks to determine the factors inherent to regional economic growth that influence the economic resilience of the identified developing regions. The emphasis in this regard is placed on endogenous and exogenous growth factors, including the role of regional integration and industrialisation in fostering regional economic resilience. The objective is to provide inputs into economic policy relating to regional and industrial policy, in addition to economic and spatial integration initiatives. The section regarding capital and export flows illustrates the influence said factors have on regional economic resilience (c.f. 6.3.1). The following section investigates endogenous growth factors and their role in fostering regional economic resilience (c.f. 4.5). The endogenous factors to be investigated in this analysis are divided into two categories, namely (1) the sectoral composition of the regional economy and (2) regional integration and intra-regional trade. Table 7-6 illustrates the various factors and independent variables inherent to these categories.

Table 7-6: Endogenous independent variables

Category	Factor	Independent variable (UNCTADstat, 2017)
A. Sectoral composition of regional economy	1. Economic diversity	a. Tress index
	2. Industrialisation	b. Manufacturing sector as a percentage of GDP
	3. Production factor availability	c. Gross capital formation as a percentage of GDP
B. Regional integration	4. Degree of regional integration	d. Intra-regional trade as a percentage of total trade
	5. Diversity of intra-regional exports	e. Product concentration index
	6. Intra-regional exports of manufactured goods	f. Intra-regional manufactured goods exports as % of total intra-regional exports
	7. Intra-regional exports of primary commodities	g. Intra-regional primary commodity exports as % of total intra-regional exports

Source: UNCTADstat (2017).

The categories of sectoral composition (c.f. 4.2) of the regional economy and regional integration seek to encapsulate the primary endogenous factors of regional economic growth. As illustrated in Table 7-6, the category encompassing sectoral composition of the regional economy includes endogenous factors such as economic diversity, industrialisation, and production factor availability. Regional integration constitutes the second category of endogenous growth factors in the econometric analysis. Elements included in regional integration, including intra-regional trade and factor mobility, while exogenous for the respective member countries, are endogenous to the region (c.f. 5.5.2). The regional integration category includes endogenous factors, such as the degree of regional integration, product concentration of intra-regional trade, intra-regional exports of manufactured goods, and intra-regional exports of primary commodities (see Table 7-6).

7.3.2.1 Sectoral composition of the regional economy

The following section analyses the relationship between the endogenous factors that form part of the sectoral composition of the regional economy.

7.3.2.1.1 Variable 1: Economic diversity

Economic diversity is highlighted as vital to regional economic resilience (c.f. 4.7.2.4). Economic diversity negates the possibility of a downturn in an individual sector manifesting in a region-wide economic downturn (c.f. 4.7.2.4). Therefore, the following section investigates the relationship between economic diversity and the economic resilience of developing countries. In this regard, the tress index is utilised as the independent variable of economic diversity (UNCTADstat, 2017). The tress index measures the sectoral composition of economic activity in a region. The index value is between 0-100, with increased diversity as the value approaches 0 (UNCTADstat, 2017). Table 7-7 illustrates the relationship between economic diversity and regional economic resilience.

Table 7-7: Economic diversity and resilience

Classification	Region	Independent variable (Tress index value 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	34,99	4,23%	2012
	CAN	48,47	5,18%	2011
	EAC	30,74	2,63%	2010
	MERCOSUR	55,26	8,32%	2010
	ASEAN	38,87	5,02%	2010
Shock-resistant	WAEMU	23,81	0,07%	2009
	SAARC	28,27	1,44%	2010
Non-resilient	CACM	48,75	7,38%	Not recovered
	CARICOM	56,07	4,97%	Not recovered
	SADC	52,72	6,19%	Not recovered
		Correlation	0,88299	0,31478

Source: UNCTADstat (2017).

As indicated in Table 7-7, the various developing regions differ substantially in terms of economic diversity. WAEMU (23.81), SAARC (28.27), and EAC (30.74) display the highest degree of diversity regarding the sectoral composition of their economies. In addition, the CARICOM (56.07) and MERCOSUR (55.26) display substantial economic concentration in limited sectors. The average value of economic diversity in the regions is 41.80. SADC displays a higher degree of economic sectoral concentration than the region average, with a tress index value of 52.72.

The econometric analysis finds that there is a strong positive relationship between increased economic concentration and the initial impact of the shock. As the value of the tress index increases, and economic concentration increases, so too may the initial impact of the shock (with a correlation of 0.88299). With increased sectoral diversification, the initial impact of the shock may decline. There is a positive relationship sectoral concentration and the recovery of the pre-shock growth equilibrium (correlation of 0.31478). This means that, as economic diversification decreases, the equilibrium recovery time may increase. Based on the findings of the econometric analysis, it is apparent that economic diversification constitutes an important endogenous factor in achieving regional economic resilience, with the degree of sectoral diversification possibly increasing the severity of the initial impact of an external economic shock on regional economic growth, as well as increasing the required recovery period.

7.3.2.1.2 Variable 2: Industrialisation

While economic sectoral diversity has been found to increase regional economic resilience, the following section seeks to investigate the importance of a specific sector in the regional economy, namely the manufacturing sector (c.f. 4.2). The importance of industrialisation, and growth of the manufacturing sector as percentage of total regional output, is apparent in stimulating regional economic growth (c.f. 4.5.2). Based on this finding, the following section investigates the role of industrialisation in fostering the resilience of said economic growth. Industrialisation is analysed in terms of catalysing the resilience of this growth. The independent variable utilised is the manufacturing sector as a percentage of GDP (UNCTADstat). The objective of this section is to analyse the relationship between regional economic resilience and industrialisation during an external economic shock, i.e. the Financial Crisis.

Table 7-8 illustrates the independent variable (the average percentage of manufacturing as a percentage of GDP during the pre-shock stage), and the two dependent variables, including the initial impact of the shock on economic growth and the recovery of the pre-shock growth equilibrium.

Table 7-8: Industrialisation and resilience

Classification	Region	Independent variable (manufacturing sector as % of GDP 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	9,99	4,23%	2012
	CAN	16,18	5,18%	2011
	EAC	10,60	2,63%	2010
	MERCOSUR	17,57	8,32%	2010
	ASEAN	24,04	5,02%	2010
Shock-resistant	WAEMU	15,12	0,07%	2009
	SAARC	17,53	1,44%	2010
Non-resilient	CACM	19,62	7,38%	Not recovered
	CARICOM	11,48	4,97%	Not recovered
	SADC	14,94	6,19%	Not recovered
		Correlation	0,27835	-0,39423

Source: UNCTADstat (2017).

The respective developing regions display varying degrees of industrialisation (see Table 7-8). ASEAN is the most industrialised region, with manufacturing constituting 24.04% of the GDP in the pre-shock stage. CAN (16.18%), MERCOSUR (17.57%), SAARC (17.53%), and CACM (9.62%) indicate substantial degrees of industrialisation. CEMAC displays the least amount of industrialisation with manufacturing constituting 9.99% of the regional GDP in the pre-shock stage. In the case of SADC, 14.94% of regional output is attributed to manufacturing activities; the SADC trails industrialisation in other developing regions.

While there is a positive relationship between industrialisation and the impact of the external economic shock (as industrialisation increases, so too may the initial impact of the shock), with a correlation of 0.27835, the statistical significance of the relationship is limited. However, with a correlation of -0.39423, there is a negative relationship between industrialisation and the recovery of the pre-shock equilibrium. As industrialisation increases, it is possible that the recovery time from the external economic shock suffered by the developing countries may decrease. By stimulating recovery time, industrialisation may contribute to the economic resilience of developing regions.

7.3.2.1.3 Variable 3: Production factor availability

The availability of production factors is an important endogenous growth factor, influencing local production output (c.f. 4.3). As capital enables the acquisition of other production factors

(especially advanced technology) (c.f. 4.5.1.1), this analysis utilises the availability of capital (determined through gross capital formation as percentage of the GDP) as the independent variable for production factor availability (UNCTADstat, 2017). The following section determines the relationship between production factor availability and regional economic resilience. Table 7-9 illustrates the independent variable (the average percentage of gross capital formation as a percentage of GDP during the pre-shock stage), and the two dependent variables of the analysis.

Table 7-9: Production factor availability and resilience

Classification	Region	Independent variable (gross capital formation as % of GDP 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	23,34	4,23%	2012
	CAN	19,98	5,18%	2011
	EAC	22,85	2,63%	2010
	MERCOSUR	18,56	8,32%	2010
	ASEAN	24,53	5,02%	2010
Shock-resistant	WAEMU	17,66	0,07%	2009
	SAARC	33,09	1,44%	2010
Non-resilient	CACM	21,17	7,38%	Not recovered
	CARICOM	25,44	4,97%	Not recovered
	SADC	20,42	6,19%	Not recovered
		Correlation	-0,32818	0,11097

Source: UNCTADstat (2017).

As illuminated in Table 7-9, production factor availability ranges from 17.66% in WAEMU to 33.09% in SAARC. SADC displays 20.24% of regional output, which is attributable to gross capital formation during the pre-shock stage. The average factor availability between the developing regions is 22.7%.

Despite the positive relationship between production factor availability and the impact of the external economic shock (as factor availability increases, so does recovery period), with a correlation of 0.11097, the statistical significance of the relationship between said variables is limited. With a correlation of -0.32818, there is a negative relationship between production factor availability and the initial impact of the external economic shock. This means that as factor availability and gross capital formation, as percentage of the GDP increases, the initial impact of

the shock may decrease. Accordingly, factor availability through gross capital formation may be an important contributor towards achieving regional economic resilience.

7.3.2.2 Regional integration and resilience

The following section seeks to analyse the relationship between regional integration and regional economic resilience. Analysing the relationship between the degrees of regional integration and regional economic resilience in the econometric analysis enables considerations to be made regarding the efficacy of increased regional integration in fostering said economic resilience in developing regions. The following section investigates the nature of increased functional interaction through intra-regional trade and its influence on economic resilience. The objective is to inform regional integration policies in developing regions and the SADC to foster regional economic resilience.

7.3.2.2.1 Variable 4: Intra-regional trade and resilience

Intra-regional trade is frequently utilised in assessing the degree of regional integration between member countries (Brixiová *et al*., 2015). Therefore, the independent variable of regional integration is intra-regional trade as a percentage of total trade (average in the pre-shock stage per region) (UNCTADstat, 2017). This variable illustrates the degree of functional interdependency between member countries (c.f. 5.5.2) – the primary objective of regional integration. Table 7-10 indicates the independent variable in this regard and the two dependent variables of the analysis.

Table 7-10: Intra-regional trade and resilience

Classification	Region	Independent variable (intra-regional trade as % of total trade 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	1,80	4,23%	2012
	CAN	8,83	5,18%	2011
	EAC	18,09	2,63%	2010
	MERCOSUR	12,02	8,32%	2010
	ASEAN	24,60	5,02%	2010
Shock-resistant	WAEMU	14,34	0,07%	2009
	SAARC	6,34	1,44%	2010
Non-resilient	CACM	17,47	7,38%	Not recovered
	CARICOM	13,09	4,97%	Not recovered
	SADC	11,40	6,19%	Not recovered
		Correlation	0,11907	-0,61059

Source: UNCTADstat (2017).

There are substantial variations in the degree of intra-regional trade between the developing regions (see Table 7-10). CEMAC displays intra-regional trade at 1.8% of total trade, while intra-regional trade in SAARC and CAN are 6.34% and 8.83%, respectively. ASEAN (24.6%), EAC (18.09%), and CACM (17.74%) display the highest degree of intra-regional trade as a proportion of total trade. Based on the identified relationship between intra-regional trade and regional integration by Brixiová *et al*. (2015), the level of intra-regional trade may be indicative of the degree of regional integration and functional interdependency between participating countries in the various regions.

While there is a positive relationship between intra-regional trade (or regional integration) and the initial impact of the external economic shock (as intra-regional trade as percentage of total trade increases, so does the initial impact of the shock), a correlation of 0.11907 illustrates the limited significance of this relationship. However, there is a substantially negative relationship between regional integration and the recovery period of the pre-shock growth equilibrium. Therefore, with a correlation of -0.61059, as intra-regional trade (and regional integration) increases, the recovery period may decrease. Through decreased recovery time, increased regional integration may increase the regional economic resilience of developing regions. It is evident that intra-regional trade and regional integration may stimulate regional economic resilience. The following sections seek to investigate the impact of the nature of intra-regional trade (i.e. intra-regional export diversity, and the intra-regional export of manufactured goods and primary commodities) on regional economic resilience with the objective of informing regional integration initiatives and policy relating to intra-regional trade and resilience. It will further analyse the relationship between intra-regional export diversity and regional economic resilience.

7.3.2.2.2 Variable 5: Intra-regional export concentration

Diversity in exports is said to positively influence regional economic resilience as this decreases the dependence on a single export staple (c.f. 4.7.2.4). Accordingly, in analysing the diversity of intra-regional exports, the product concentration index for the respective developing regions are utilised as the independent variable. The product concentration index indicates the diversity of product exported within the region: the value of intra-regional export diversity is displayed between 0 and 1; exports are concentrated among a few staples as the value nears 1 (UNCTADstat, 2017). Table 7-11 illustrates the independent variable (the average concentration index value for the respective regions in the pre-shock stage), and the two dependent variables of the analysis.

Table 7-11: Intra-regional export concentration and resilience

Classification	Region	Independent variable (concentration index 2003 - 2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	0,741	4,23%	2012
	CAN	0,190	5,18%	2011
	EAC	0,155	2,63%	2010
	MERCOSUR	0,167	8,32%	2010
	ASEAN	0,155	5,02%	2010
Shock-resistant	WAEMU	0,232	0,07%	2009
	SAARC	0,119	1,44%	2010
Non-resilient	CACM	0,159	7,38%	Not recovered
	CARICOM	0,257	4,97%	Not recovered
	SADC	0,227	6,19%	Not recovered
		Correlation	-0,04155	0,75026

Source: UNCTADstat (2017).

As illustrated in Table 7-11, CEMAC displays the highest degree of intra-regional export concentration at 0.741. This means that intra-regional exports are concentrated in a small number of staples. ASEAN and EAC, on the other hand, exhibit intra-regional export concentration values of 0.155, reflecting a large amount of intra-regional export staples. Intra-regional export concentration in SADC is pegged at 0.227. The average export concentration for the developing regions is 0.240. Intra-regional export concentration in SADC is thus more diverse than the average developing region (UNCTADstat, 2017). The correlation of -0.04155 between intra-regional export concentration and the initial impact of the shock signifies limited significance in the relationship between said variables. However, there is a strong positive relationship between intra-regional export concentration and the recovery time of the pre-shock growth equilibrium. With a substantial correlation of 0.75026, it is apparent that as the product concentration of intra-regional exports increase, so too may the recovery period from the external economic shock. This finding illustrates that resilience in regional economic growth may be increased through a more diverse range of regional staples, with intra-regional exports not concentrated in a small number of products.

7.3.2.2.3 Variable 6: Intra-regional manufactured goods exports and resilience

While it is apparent that diversity in intra-regional staples fosters regional economic resilience, it remains unclear which type of staple optimises resilience. The following section investigates the relationship between intra-regional manufactured exports and regional economic resilience. An

additional consideration in this regard is the notion that the export (either intra or inter-regional) of manufactured goods decreases fluctuations in export demand and therefore supports resilience in regional economic growth (c.f. 4.7.2.4). In this section, the relationship between the intra-regional export of manufactured goods and regional economic resilience is investigated by utilising the independent variable of the average manufactured goods exported as a percentage of total intra-regional exports (within the pre-shock stage) (UNCTADstat, 2017). Table 7-12 indicates said independent variable and the two relevant dependent variables of the analysis.

Table 7-12: Intra-regional manufactured goods exports and resilience

Classification	Region	Independent variable (manufactured goods exports as percentage of total intra-regional exports)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	34,52	4,23%	2012
	CAN	50,89	5,18%	2011
	EAC	44,42	2,63%	2010
	MERCOSUR	62,68	8,32%	2010
	ASEAN	72,51	5,02%	2010
Shock-resistant	WAEMU	37,69	0,07%	2009
	SAARC	50,76	1,44%	2010
Non-resilient	CACM	61,31	7,38%	Not recovered
	CARICOM	24,61	4,97%	Not recovered
	SADC	52,62	6,19%	Not recovered
		Correlation	0,46043	-0,24378

Source: UNCTADstat (2017).

Table 7-12 illustrates that manufactured goods exports, as a percentage of total intra-regional exports, vary substantially between the developing regions. The range in this regard is from 24.61% in CARICOM, to 72.51% of intra-regional trade in ASEAN. The average proportion of intra-regional exports attributed to manufactured goods exports is 49.2%. Manufactured goods constitute 52.62% of total intra-regional exports in SADC. Despite the negative relationship between manufactured goods exports as a percentage of intra-regional trade and the recovery time of the pre-shock growth equilibrium (as manufactured exports as proportion to intra-regional trade increases, the recovery time decreases), with a correlation of -0.24378, the statistical significance of the relationship between said variables is limited. However, with a correlation of 0.46043, there is a positive relationship between manufactured goods as a

percentage of intra-regional trade and the initial impact of the shock. This means that as manufacturing exports as a percentage of intra-regional exports increases, so too may the severity of the initial impact of the external economic shock. Accordingly, increased manufactured goods as proportion of intra-regional trade may contribute to increased vulnerability of developing regions to external economic shocks.

7.3.2.2.4 Variable 7: Intra-regional primary commodity exports

It is evident that intra-regional trade in manufactured goods increases the initial impact of an external economic shock and subsequently decreases regional economic resilience. The following section seeks to investigate the effect of intra-regional trade in primary commodities on the economic resilience of developing countries (c.f. 4.7). Accordingly, the relationship between intra-regional primary commodity exports and regional economic resilience is investigated through the independent variable of the average primary commodity exports as a percentage of total intra-regional exports (within the pre-shock stage) (UNCTADstat, 2017). The objective of this section is to illuminate the effect of intra-regional exports on regional economic resilience.

Table 7-13 illustrates the relationship between said independent variable and relevant independent variables.

Table 7-13: Intra-regional primary commodity exports and resilience

Classification	Region	Independent variable (primary commodity exports as percentage of total intra-regional exports)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	1,19	4,23%	2012
	CAN	6,16	5,18%	2011
	EAC	14,66	2,63%	2010
	MERCOSUR	7,23	8,32%	2010
	ASEAN	25,21	5,02%	2010
Shock-resistant	WAEMU	12,33	0,07%	2009
	SAARC	12,41	1,44%	2010
Non-resilient	CACM	17,92	7,38%	Not recovered
	CARICOM	14,46	4,97%	Not recovered
	SADC	8,77	6,19%	Not recovered
		Correlation	-0,04747	-0,60404

Source: UNCTADstat (2017).

As apparent in Table 7-13, primary commodity exports as proportion of intra-regional trade is substantially lower than the proportion of intra-regional exports attributed to manufactured goods. The regions displaying the highest proportion of primary commodity exports in this regard is ASEAN with 25.21%, CACM with 17.92%, and EAC with 14.66%. Primary commodities constitute a mere 1.19% of intra-regional exports in CEMAC. In SADC, 8.77% of intra-regional exports is primary commodities. It is apparent that a correlation of -0.04747 between primary commodity exports as a percentage of total intra-regional exports and the initial impact of the shock signified limited significance in the relationship between said variables. There is, however, a strong negative relationship between the independent variable and the recovery time of the pre-shock growth equilibrium. With a substantial correlation of -0.60404, it is apparent that as the primary commodity exports as a percentage of total intra-regional exports increases, the recovery time from the external economic shock may decline. This finding illustrates that resilience in regional economic growth may potentially be fostered through increased primary commodity exports between regional partners.

7.3.2.3 Summary of endogenous econometric analysis

The findings of the endogenous econometric analysis are illustrated in Table 7-14.

Table 7-14: Finding of endogenous econometric analysis

Endogenous factor	Alleviate initial impact of the shock	Reduce recovery time of pre-shock equilibrium
1. Economic diversity	✓	✓
2. Industrialisation	x	✓
3. Production factor availability	✓	x
4. Degree of regional integration	x	✓
5. Diversity of intra-regional exports	x	✓
6. Intra-regional exports of manufactured goods	x	x
7. Intra-regional exports of primary commodities	x	✓

Source: UNCTADstat (2017).

As illustrated in Table 7-14, various endogenous factors potentially influence the economic resilience of developing regions. These factors will either alleviate the initial impact of the shock

or reduce the recovery time of the pre-shock growth equilibrium. The initial impact of the shock may be alleviated through increased economic diversity and production factor availability. In addition, a reduction in recovery time is possibly precipitated by industrialisation, increased regional integration, increased diversity of intra-regional exports, and improved primary commodity exports as a percentage of total intra-regional trade. Economic diversity may foster reduced recovery time and a less severe initial impact of the external economic shock. Intra-regional trade in manufactured goods, however, reduces neither the impact of the shock nor the recovery time. The findings of the endogenous econometric analysis illustrate that regional integration may contribute toward attainment of regional economic resilience. The findings further suggest that the nature of intra-regional export staples substantially influences regional economic resilience: intra-regional trade in primary commodities may foster resilience in economic growth.

7.3.3 Exogenous factors in economic resilience

In addition to analysing the role of endogenous factors in fostering regional economic resilience, the econometric analysis seeks to investigate the effect of exogenous factors on the initial impact of the external economic shock and the recovery time of the pre-shock growth equilibrium. While endogenous factors may foster regional economic resilience through increased industrialisation, capital availability, and regional integration that stimulates diverse primary commodity trade between member countries (c.f. 7.3.2), exogenous factors are essential components in stimulating internal growth process and regional economic growth (c.f. 4.6). Exogenous factors include exports to external markets (inter-regional exports) and capital inflows (FDI) (c.f. 4.6). The econometric analysis has found that declining exports to external markets and capital inflows exacerbate the effects of the external economic shock in developing regions (c.f. 7.3.1.1). Demand fluctuations in exports may have a substantial influence on regional economic resilience (c.f. 4.7.2.2). A primary consideration in this regard is investigating the nature of inter-regional exports regarding trading partners and the nature of regional export staples to analyse their influence on regional economic resilience by decreasing regional vulnerability to demand fluctuations in external markets. Therefore, in addition to the endogenous growth factors, the following section investigates the role of exogenous factors in fostering regional economic resilience; inter-regional exports are an important theme in investigating these factors. Table 7-15 illustrates the various factors and independent variables included in the consideration of inter-regional exports (c.f. 4.6).

Table 7-15: Exogenous independent variables

Category	Factor	Independent variable
C. Exogenous economic growth factors	8. Degree of inter-regional exports	a. Inter-regional exports as % of total exports
	9. Exports to industrialised regions	b. Exports to upper-middle and high-income countries (as % of total inter-regional exports)
		c. Exports to low- and low-middle income countries (as % of total inter-regional exports in the pre-shock stage).
	10. Diversity of inter-regional export staples	d. Diversification index
	11. Inter-regional exports of primary commodities	e. Primary commodity exports as % of total inter-regional exports
		f. Specialisation in primary commodity inter-regional exports
	12. Inter-regional exports of manufactured goods	g. Manufactured goods exports as % of total inter-regional exports
		h. Specialisation in manufactured goods inter-regional exports

Source: UNCTADstat (2017).

In investigating the role of inter-regional exports in regional economic resilience, certain exogenous factors are identified (see Table 7-14), including the degree of inter-regional exports, exports to industrialised regions, diversity of inter-regional export markets, inter-regional exports of primary commodities, and inter-regional exports of manufactured goods. The objective of identifying said exogenous factors for investigation in the econometric analysis is to illuminate the influence inter-regional exports, the markets of these exports, and the goods being exported have on the economic resilience of developing regions.

7.3.3.1 Variable 8: Degree of inter-regional exports and resilience

The first exogenous factor in the analysis, namely the degree of inter-regional exports, seeks to illuminate the influence inter-regional exports exert on the resilience of a regional economy (c.f. 4.6.2.1). Inter-regional exports are identified as an important factor in stimulating internal growth processes (c.f. 4.6.2.1). The question remains, however, how the resilience of regional growth is affected by exports to external markets. While the econometric analysis found that a decline in total exports (inter-regional and intra-regional) may negatively affect the economic resilience of regions (c.f. 7.3.1.1), the following section investigates the role of inter-regional exports in the

severity of the initial impact and recovery time of the developing regional economies. The independent variable utilised in this regard is the average inter-regional exports as a percentage of total exports in the pre-shock stage (UNCTADstat, 2017).

Table 7-16 illustrates said independent variable and the two dependent variables, including the initial impact of the shock on economic growth and the recovery of the pre-shock growth equilibrium.

Table 7-16: Degree of inter-regional exports and resilience

Classification	Region	Independent variable (inter-regional exports as a percentage of total exports 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	98,20	4,23%	2012
	CAN	91,17	5,18%	2011
	EAC	81,91	2,63%	2010
	MERCOSUR	87,98	8,32%	2010
	ASEAN	75,40	5,02%	2010
Shock-resistant	WAEMU	85,66	0,07%	2009
	SAARC	93,66	1,44%	2010
Non-resilient	CACM	82,53	7,38%	Not recovered
	CARICOM	86,91	4,97%	Not recovered
	SADC	88,60	6,19%	Not recovered
		Correlation	-0,11911	0,61059

Source: UNCTADstat (2017).

The degree of inter-regional exports ranges from 75.4% of total exports of ASEAN, to 98.2% in CEMAC (see Table 7-16). Inter-regional exports constitute 88.6% of total exports in SADC, above the developing region average of 87.2%. In addition to ASEAN, EAC (81.91%) displays the lowest proportion of inter-regional exports to total exports. It is apparent that a correlation of -0.11911 between inter-regional exports as a percentage of total exports and the initial impact of the shock signifies limited significance in the relationship between said variables. However, there is a strong positive relationship between the independent variable and the recovery time of the pre-shock growth equilibrium. With a substantial correlation of 0.61059, it is apparent that as inter-regional exports as a percentage of total exports increases, so too may the recovery time from the external economic shock. This finding illustrates the possibility that increased inter-regional exports as a percentage of total exports may contribute to the vulnerability of developing regions to external demand shocks and reduce their regional economic resilience.

7.3.3.2 Variable 9: Inter-regional exports to industrialised and developing regions

While it is apparent that increased inter-regional exports as a percentage of total exports may contribute to the vulnerability of developing regions, the following section investigates the market for inter-regional exports, and whether the nature of said market (the destination of inter-regional exports from developing regions), influences the impact of inter-regional exports on regional economic resilience (c.f. 4.7). In this regard, it is evident that developing regions' exports to industrialised regions may be prone to demand fluctuations which influence the resilience of regional economic growth, indicating the potential role of specific export markets in increasing the vulnerability of developing regions (c.f. 4.7). Therefore, in the following section, developing regions' exports to upper-middle and high-income countries (as % of total inter-regional exports in the pre-shock stage) is investigated to determine the influence of export markets on said regions' economic resilience (UNCTADstat, 2017). The findings of this econometric analysis are illustrated in Table 7-17.

Table 7-17: Inter-regional exports to industrialised regions and resilience

Classification	Region	Independent variable (exports to upper-middle and high-income countries 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	95,46	4,23%	2012
	CAN	96,50	5,18%	2011
	EAC	59,76	2,63%	2010
	MERCOSUR	92,75	8,32%	2010
	ASEAN	86,77	5,02%	2010
Shock-resistant	WAEMU	62,89	0,07%	2009
	SAARC	85,38	1,44%	2010
Non-resilient	CACM	83,63	7,38%	Not recovered
	CARICOM	96,98	4,97%	Not recovered
	SADC	87,12	6,19%	Not recovered
		Correlation	0,60433	0,67713

Source: UNCTADstat (2017).

As per Table 7-17, there is a strong positive relationship between developing regions' exports to upper-middle and high-income countries as a percentage of total inter-regional exports and the initial impact of the shock (correlation of 0.60433). This illustrates the potential of exports to upper-middle and high-income countries (as a percentage of total inter-regional exports increases) in increasing the vulnerability of developing regions to the impact of the shock.

Additionally, with a substantial correlation of 0.67713, increased exports to upper-middle and high-income countries (as a percentage of total inter-regional exports) may increase the recovery time from the external economic shock. This finding suggests that increased inter-regional exports to industrialised regions may influence the vulnerability and economic resilience of developing regions, potentially increasing the severity of external economic shocks, and increasing the recovery period of the pre-shock growth equilibrium from said shock.

To further the analysis regarding the influence of inter-regional export markets on regional economic resilience, Table 7-18 illustrates developing regions' exports to other developing regions as opposed to industrialised regions. The independent variable in this regard is developing regions' exports to low and low-middle income countries (as % of total inter-regional exports in the pre-shock stage).

Table 7-18: Inter-regional exports to developing regions and resilience

Classification	Region	Independent variable (inter-regional exports as a percentage of total exports 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	4,48	4,23%	2012
	CAN	2,59	5,18%	2011
	EAC	39,13	2,63%	2010
	MERCOSUR	5,79	8,32%	2010
	ASEAN	13,09	5,02%	2010
Shock-resistant	WAEMU	35,15	0,07%	2009
	SAARC	14,37	1,44%	2010
Non-resilient	CACM	16,37	7,38%	Not recovered
	CARICOM	2,30	4,97%	Not recovered
	SADC	11,81	6,19%	Not recovered
		Correlation	-0,60610	-0,66346

Source: UNCTADstat (2017).

There is a strong negative relationship between developing regions' exports to low and low-middle income countries as a percentage of total inter-regional exports and the initial impact of the shock (correlation of -0.60610) (see Table 7-18). This may indicate that as exports to low and low-middle income countries (as a percentage of total inter-regional exports) increase, the severity of the initial impact of the external economic shock may decline. In addition, there is a strong negative relationship between the independent variable and the recovery period from the economic shock. With a substantial correlation of -0.66346, it is apparent that as developing

regions' exports to low and low-middle income countries (as a percentage of total inter-regional exports) increase, recovery time from the external economic shock may decrease.

The findings in Table 7-17 and Table 7-18 indicate that increased inter-regional exports to developing regions, as opposed to industrial regions, may affect the regional economic resilience of developing countries, potentially decreasing the severity of external economic shocks, as well as the recovery period of the pre-shock growth equilibrium from said shock. In addition to inter-regional exports (as a percentage of total trade) affecting regional economic resilience, the nature of the export market possibly influences the severity of the impact of the external shock as well as the recovery from the shock.

7.3.3.3 Variable 10: Diversity of export staple and resilience

It is apparent that the export market substantially influences the economic resilience of developing regions. The following section constitutes an investigation into the influence of export staples on the regional economic resilience of developing regions (c.f. 4.7.1). Accordingly, this section seeks to investigate the diversity of export staples of the various regions, and how said diversity influences the initial impact of the shock and the recovery time of the pre-shock growth equilibrium. The independent variable utilised in this analysis is the diversification index, which indicates the similarity of each region's export staples compared to the global trade structure (UNCTADstat, 2017). The values of the index range from 0-1, with a value of 1 indicating greater diversification of regional export staples compared to other regions. Table 7-19 illustrates the relationship between the independent variable and the relevant dependent variables.

Table 7-19: Diversity of exports staple and resilience

Classification	Region	Independent variable (diversification index 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	0,822	4,23%	2012
	CAN	0,622	5,18%	2011
	EAC	0,711	2,63%	2010
	MERCOSUR	0,488	8,32%	2010
	ASEAN	0,358	5,02%	2010
Shock-resistant	WAEMU	0,726	0,07%	2009
	SAARC	0,576	1,44%	2010
Non-resilient	CACM	0,624	7,38%	Not recovered
	CARICOM	0,687	4,97%	Not recovered
	SADC	0,556	6,19%	Not recovered
		Correlation	-0,41338	0,34634

Source: UNCTADstat (2017).

As illustrated in Table 7-19, the export staples of the various developing regions display divergent similarities to the global export structure. The highest degree of export staple diversification is in CEMAC, with an index value of 0.822, with the lowest index value displayed in ASEAN (0.358). SADC displays a staple diversification value of 0.556 (UNCTADstat, 2017).

There is a negative relationship between export staple diversification and the initial impact of the external economic shock. With a correlation of -0.41338, it is indicative that as export staple diversification increases, the initial impact of the shock may possibly decrease. There is, however, a positive relationship between the independent variable and the recovery time from the impact of the shock. With a correlation of 0.34634, as export staple diversification increases, the time needed to recover the pre-shock growth equilibrium may increase. This indicates that there is a possible trade-off between the impact of said diversification in potentially ensuring a less severe impact of the external economic shock, while the recovery period needed in the post-shock stage is possibly longer. It is, however, evident that there is a strong relationship between the independent variable and the initial impact of the shock. This means that increased export staple diversification may contribute to the decreased severity of the external economic shock despite the potentially longer recovery time. Accordingly, it is found that diversity of export staples may contribute to increased economic resilience in developing regions.

7.3.3.4 Variable 11: Inter-regional primary commodity exports

While diversification of export staples is found to decrease the impact of the external economic shock on regional economic growth, a remaining consideration is the type of export staple that maximises regional economic resilience (c.f. 4.7.1). The objective of this section is to analyse the relationship between inter-regional primary commodity exports and resilience of economic growth in the developing regions. The independent variable utilised in this section is primary commodity exports as a percentage of total inter-regional exports (average for the pre-shock growth period).

Table 7-20 illustrates the relationship between the independent variable and the relevant dependent variables.

Table 7-20: Inter-regional primary commodity exports

Classification	Region	Independent variable (primary commodity exports as a percentage of total inter-regional exports 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	94,48	4,23%	2012
	CAN	70,22	5,18%	2011
	EAC	68,15	2,63%	2010
	MERCOSUR	61,24	8,32%	2010
	ASEAN	24,97	5,02%	2010
Shock-resistant	WAEMU	71,53	0,07%	2009
	SAARC	25,19	1,44%	2010
Non-resilient	CACM	37,45	7,38%	Not recovered
	CARICOM	67,16	4,97%	Not recovered
	SADC	57,65	6,19%	Not recovered
		Correlation	-0,07837	0,47138

Source: UNCTADstat (2017).

As illustrated in Table 7-20, there is a negative relationship between primary commodity exports as a percentage of total inter-regional exports and the initial impact of the external economic shock. However, with a correlation of -0.0784, the significance of this relationship is limited. Furthermore, there is a strong positive relationship between the independent variable and the recovery time of the post-shock growth equilibrium. With the relationship underpinned by a correlation of 0.47138, it may be an indication that as primary commodity exports (as a percentage of total inter-regional exports) increase, the potential exists for the recovery period to increase. Therefore, increased primary commodity exports may increase the vulnerability of developing regions to external economic shocks.

To add to the investigation regarding the influence of primary commodity inter-regional exports, Table 7-21 illustrates the relationship between specialisation in the inter-regional export of primary commodities and economic resilience in developing regions. The independent variable in this regard is developing regions' specialisation in inter-regional primary commodity exports. Exports are more specialised in primary commodities as the value nears 1 (UNCTADstat, 2017). Table 7-21 highlights the relationship between the independent variable and the relevant dependent variables.

Table 7-21: Specialisation in inter-regional primary commodity exports

Classification	Region	Independent variable (primary commodity trade specialisation index 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	0,760	4,23%	2012
	CAN	n/a	5,18%	2011
	EAC	0,029	2,63%	2010
	MERCOSUR	0,604	8,32%	2010
	ASEAN	0,084	5,02%	2010
Shock-resistant	WAEMU	0,175	0,07%	2009
	SAARC	-0,285	1,44%	2010
Non-resilient	CACM	-0,068	7,38%	Not recovered
	CARICOM	0,071	4,97%	Not recovered
	SADC	0,387	6,19%	Not recovered
		Correlation	0,37909	0,58664

Source: UNCTADstat (2017).

As apparent in Table 7-21, there is a positive relationship between developing regions' specialisation in inter-regional primary commodity exports and the initial impact of the shock (correlation of 0.37909). This may indicate that increased specialisation in inter-regional primary commodity exports may increase the severity of the initial impact of the external economic shock. In addition, there is a strong positive relationship between the independent variable and the recovery period from the economic shock. With a substantial correlation of 0.58664, it is indicative that as developing regions' specialisation in inter-regional primary commodity exports increase, recovery time from the external economic shock may increase.

The findings in Table 7-20 and Table 7-21 illustrate that specialisation and increased inter-regional primary commodity exports may possibly influence the regional economic resilience of developing countries, potentially increasing the severity of external economic shocks, as well as the recovery period of the pre-shock growth equilibrium. It is clear that the nature of the inter-regional export staple may influence the severity of the impact of the external shock, as well as the recovery from the shock.

7.3.3.5 Variable 12: Inter-regional manufactured exports

Considering the finding regarding inter-regional exports of primary commodities and its negative effect on regional economic resilience, the following section investigates the influence of inter-

regional manufactured goods exports on the initial impact of and recovery from an external economic shock in developing regions (c.f. 4.6.2.1). The independent variable utilised in this section is manufactured goods exports as a percentage of total inter-regional exports (average in the pre-shock stage) (UNCTADstat, 2017). Table 7-22 illustrates the relationship between the independent variable and the relevant dependent variables in this econometric analysis.

Table 7-22: Inter-regional manufactured exports

Classification	Region	Independent variable (manufactured exports as a percentage of total inter-regional exports 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	4,00	4,23%	2012
	CAN	22,04	5,18%	2011
	EAC	21,26	2,63%	2010
	MERCOSUR	36,76	8,32%	2010
	ASEAN	72,42	5,02%	2010
Shock-resistant	WAEMU	22,26	0,07%	2009
	SAARC	64,56	1,44%	2010
Non-resilient	CACM	60,24	7,38%	Not recovered
	CARICOM	27,62	4,97%	Not recovered
	SADC	32,47	6,19%	Not recovered
		Correlation	0,15949	-0,43226

Source: UNCTADstat (2017).

While there is a positive relationship between manufactured goods exports as a percentage of total inter-regional exports and the initial impact of the external economic shock (as manufactured goods exports as a percentage of total inter-regional exports, the initial impact of the shock potentially increases), a correlation of 0.15949 illustrates the limited significance of this relationship. However, there is a substantial negative relationship between the independent variable and the recovery period of the pre-shock growth equilibrium. Therefore, a correlation of -0.43226 potentially indicates that as manufactured goods (as a percentage of total inter-regional exports) increase, the recovery period may decline, indicating the possible effect of said variable on regional economic resilience.

To further the analysis regarding the influence of inter-regional manufactured goods exports, Table 7-23 illustrates the relationship between specialisation in the inter-regional export of manufactured goods and economic resilience in developing regions. In the following analysis,

the independent variable is developing regions' specialisation in inter-regional manufactured goods exports (average in the pre-shock stage) (UNCTADstat, 2017). Exports are more specialised in manufactured goods as the value nears 1 (UNCTADstat, 2017). Accordingly, Table 7-23 illustrates the relationship between the independent variable and the relevant dependent variables in this econometric analysis.

Table 7-23: Specialisation in inter-regional manufactured exports

Classification	Region	Independent variable (specialisation in inter-regional manufactured goods exports 2003-2007)	Dependent variable 1 (initial impact of shock)	Dependent variable 2 (recovery in post-shock stage)
Economically resilient	CEMAC	-0,767	4,23%	2012
	CAN	n/a	5,18%	2011
	EAC	-0,708	2,63%	2010
	MERCOSUR	-0,140	8,32%	2010
	ASEAN	0,044	5,02%	2010
Shock-resistant	WAEMU	-0,494	0,07%	2009
	SAARC	-0,081	1,44%	2010
Non-resilient	CACM	-0,300	7,38%	Not recovered
	CARICOM	-0,477	4,97%	Not recovered
	SADC	-0,380	6,19%	Not recovered
		Correlation	0,27303	-0,40224

Source: UNCTADstat (2017).

As illustrated in Table 7-23, there is a positive relationship between developing regions' specialisation in inter-regional manufactured goods exports and the initial impact of the shock. However, with a correlation of 0.27303, the significance of this relationship is limited. There is a negative relationship between specialisation in inter-regional manufactured goods export and the recovery of the pre-shock growth equilibrium. A correlation of -0.40224 indicates that an increase in specialisation in manufactured goods exports may reduce the post-shock recovery time. Accordingly, regional economic resilience of developing regions may be fostered through increased specialisation in the inter-regional export of manufactured goods.

7.3.3.6 Summary of exogenous econometric analysis

The findings of the exogenous econometric analysis are illustrated in Table 7-24.

Table 7-24: Findings of exogenous econometric analysis

Exogenous factor	Alleviate initial impact of the shock	Reduce recovery time of pre-shock equilibrium
Degree of inter-regional exports	x	x
Exports to industrialised regions	x	x
Export to developing regions	✓	✓
Diversity of inter-regional export staples	✓	x
Inter-regional exports of primary commodities	x	x
Specialisation in primary commodity inter-regional exports	x	x
Inter-regional exports of manufactured goods	x	✓
Specialisation in manufactured goods inter-regional exports	x	✓

Source: UNCTADstat (2017).

As illustrated in Table 7-24, various exogenous factors may influence the economic resilience of developing regions. Said factors may either alleviate the initial impact of the shock or reduce the recovery time of the pre-shock growth equilibrium.

The initial impact of the shock is potentially alleviated through increased exports to developing regions and greater diversity of inter-regional export staples. In addition, a reduction in recovery time may be precipitated by increased exports to developing regions, inter-regional exports of manufactured goods, and specialisation in manufactured goods for inter-regional export. Exports to industrialised regions, the inter-regional export of primary commodities, as well as the specialisation in the inter-regional export of primary commodities have the potential to increase the economic vulnerability of developing regions to external economic shocks. The findings of the exogenous econometric analysis illustrate that, in addition to the export market, the nature of the inter-regional export staple may substantially influence regional economic resilience: i inter-regional trade in manufactured goods contributes to the attainment of resilience in economic growth for developing regions.

7.4 Status quo of the SADC

Similar to the majority of developing regions in this analysis, the 2008 Global Financial Crisis had a significant impact on regional economic growth in SADC. Figure 7-4 illustrates the economic growth trends of SADC in the period 2003-2016, illuminating the impact of the shock on regional productive systems.

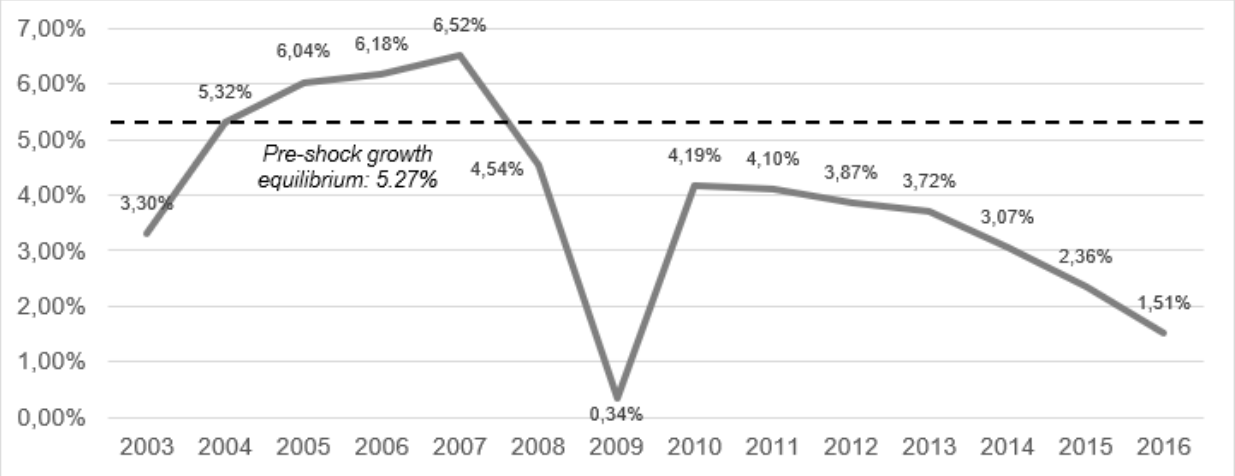


Figure 7-4: SADC and the external economic shock

Source: UNCTADstat (2017).

As illustrated in Figure 7-4, regional economic growth in the SADC decreased from 6.52% in 2007, to 4.54% in 2008, and 0.34% at the apex of the Financial Crisis in 2009. In addition, regional economic growth is yet to recover to the pre-shock growth equilibrium of 5.27% in the post-shock stage. Growth trends indicate that 2010 reflects a substantial recovery of growth lost due to the shock, with economic output growth increasing with 4.19% from the 2009 low. However, the pre-shock equilibrium was never reached and in the subsequent years annual growth has decreased substantially.

Table 7-25 compares the regional economic growth trends of the SADC with the average indicators of the developing regions included in the analysis.

Table 7-25: Developing regions and SADC growth trends

Classification	Region	Initial impact of shock	Recovery in post-shock stage
Economically resilient	CEMAC	4,23%	2012
	CAN	5,18%	2011
	EAC	2,63%	2010
	MERCOSUR	8,32%	2010
	ASEAN	5,02%	2010
Shock-resistant	WAEMU	0,07%	2009
	SAARC	1,44%	2010
Non-resilient	CACM	7,38%	Not recovered
	CARICOM	4,97%	Not recovered
Developing region average		4,36%	2011
SADC		6,19%	Not recovered

Source: UNCTADstat (2017).

Table 7-25 indicates that SADC experienced an above average economic shock compared to other developing regions, with the initial impact of the Financial Crisis totalling 6.19%, as growth declined from 2007-2009. Only MERCOSUR and CACM experienced a more severe initial impact from the shock. In terms of recovery time, while the average year of recovery for the developing regions is in 2011, the SADC is yet to recover its pre-shock growth path. In addition to the CACM and CARICOM, the SADC is the only developing region still to recover from the economic reverberations of the Financial Crisis.

In investigating the source of the heightened vulnerability of SADC to external economic shocks in comparison to other developing regions, Table 7-26 compares the average value for each of the independent variables utilised in the econometric analysis for developing regions and the SADC.

Table 7-26: Independent variables comparison

Endogenous factors	Developing region average (2003-2007)	SADC (2003-2007)
1. Economic diversity	40,58	52,72
2. Industrialisation	15,79%	14,94%
3. Production factor availability	22,96%	20,42%
4. Degree of regional integration	12,95%	11,4%
5. Diversity of intra-regional exports	0,242	0,227
6. Intra-regional exports of manufactured goods	48,82%	52,62%
7. Intra-regional exports of primary commodities	12,40%	8,77%
Exogenous factors	**Developing region average (2003-2007)**	**SADC (2003-2007)**
8. Degree of inter-regional exports	87,05%	88,6%
9. Exports to industrialised regions	84,46%	87,12%
Export to developing regions	14,81%	11,81%
10. Diversity of inter-regional export staples	0,624	0,556
11. Inter-regional exports of primary commodities	57,82%	57,65%
Specialisation in primary commodity inter-regional exports	0,171	0,387
12. Inter-regional exports of manufactured goods	36,79%	32,47%
Specialisation in manufactured goods inter-regional exports	-0,365	-0,380

Source: UNCTADstat (2017).

For all the independent variables highlighted in Table 7-26, the SADC displays a value that reflects a more vulnerable position with regards to resilience to external economic shocks, either through exasperating the initial impact of the shock or increasing the recovery time of the pre-shock growth equilibrium.

7.5 Conclusion

This chapter seeks to illuminate the endogenous and exogenous factors that influence regional economic resilience to inform policy decisions and catalyse resilience in developing regions and the SADC. With emphasis on variables relating to regional integration, the nature of intra and inter-regional trade, as well as processes relating to industrialisation, an equilibrium and

econometric analysis is undertaken to assess the economic resilience of developing regions. Adopting the resilience analysis approach by Briguglio, *et al.* (2006) and Hill, *et al*. (2008), the equilibrium analysis finds that the Financial Crisis had a severe impact on economic growth in the developing regions (c.f. 7.2.2). However, divergent effects were apparent in terms of the initial impact of the shock and the recovery of pre-shock growth equilibrium (c.f. 7.2.2). Limited correlation is found in the equilibrium analysis with regards to the effects of the shock and the level of regional integration (c.f. 7.2.2). Therefore, to effectively analyse the factors that influence the divergent resilience of regional economic growth to the external economic shock, an econometric analysis is conducted (c.f. 7.3). In the process various independent variables are utilised in this analysis, categories into endogenous and exogenous growth factors.

The econometric analysis regarding endogenous factors and their relationship with fostering regional economic resilience found that factors relating to the composition of the regional economy may potentially contribute to reduced recovery time of the pre-shock growth equilibrium (increased economic diversity and industrialisation) and reduce the initial impact of the external economic shock (increased production factor and capital availability) (c.f. 7.3.2.3). In analysing regional integration as a process endogenous to regional economic growth, it is found that regional integration and increased functional interaction through intra-regional trade may substantially influence the recovery time of the developing regions: the higher the degree of intra-regional trade as a percentage of total trade the more likely is that recovery time of the pre-shock growth equilibrium will decline (c.f. 7.3.2.3). While regional integration may contribute to regional economic resilience, an important consideration in this regard is the effect of the nature of intra-regional trade on the benefits of regional integration. Results of the analysis indicate that the concentration of intra-regional trade in a select few staples potentially increases recovery time and regional vulnerability to external economic shocks (c.f. 7.3.2.3). Accordingly, increased diversity of intra-regional exports is highlighted as possibly beneficial to regional economic resilience. In addition, the analysis seeks to identify regional staples most likely to increase the resilience of economic growth. Results indicate that the larger the percentage of manufactured goods as percentage of intra-regional trade, the larger the potential impact of the external economic shock will be on regional economic growth (c.f. 7.3.2.2.3). However, should intra-regional staples be grounded in a diverse range of primary commodities, the analysis indicates substantial decreases in recovery time from the effects of the shock as a possible result (c.f. 7.3.2.2.4). Accordingly, results indicate that industrialisation and capital availability may contribute to regional economic resilience, in addition to regional integration that supports the export of a diverse range of primary commodities between member countries (c.f. 7.3.2.2.4).

The econometric analysis regarding various exogenous factors highlight that certain factors may influence the initial impact of the shock (including exports to developing regions and greater diversity of inter-regional export staples) and others may affect the recovery time of the pre-shock growth equilibrium (including increased exports to developing regions, inter-regional exports of manufactured goods, and specialisation in manufactured goods for inter-regional export) (c.f. 7.3.3.6). However, exports to industrialised regions, the inter-regional export of primary commodities, as well as the specialisation in the inter-regional export of primary commodities may increase the economic vulnerability of developing regions to external economic shocks (c.f. 7.3.3.6). The findings of the exogenous econometric analysis illustrate that, in addition to the export market, the nature of the inter-regional export staple may substantially influence regional economic resilience (c.f. 7.3.3.6)..

An important finding inherent to the econometric analysis is the composition of the regional export structure that foster regional economic resilience: namely increased regional integration that prioritises the intra-regional export of diverse primary commodities, and inter-regional trade emphasising and specialising in the export of manufactured goods to external markets (c.f. 7.3.2.3). These findings have repercussions for the nature of regional integration, regional production linkages, and industrial policy in developing regions and the SADC. Regional economic growth in the SADC, similarity to other developing regions, was substantially influenced by the external economic shock.

CHAPTER 8 SYNOPSYS AND RECOMMENDATIONS

The increased importance of regional economic resilience is founded on local vulnerability to economic downturns in external markets which influence regional economic growth, long-term development objectives, and economic convergence between regions (c.f. 1.1). In the post-2008 global economic climate, there is a growing awareness of economic instability and the risks associated with fluctuations in the flows of traded goods and production factors between and within regions (Christopherson, *et al*., 2010:3). There is, therefore, a growing sense that local economic prosperity and upward growth trends are vulnerable to external economic shocks (c.f. 1.1). One such external economic shock, the 2008 Global Financial Crisis, severely impacted economic growth and regional production systems in developing regions, with the effect of the Crisis subverting the progress made by said regions with regards to economic convergence with industrialised regions (Lin, 2008:1). While several factors may contribute to an economic downturn, including asset market and public sector imbalances, the Financial Crisis is the manifestation of financial sector imbalances impacting capital availability, investment, and consumption in selected industrialised regions (c.f. 4.7.2.2). In this synopsys, the spatial organisation is discussed, followed by discussions regarding the regional economy, fostering resilience in developing regions, economic resilience in SADC, and recommendations in achieving said resilience.

8.1 Synopsys

Although the origin of the 2008 Global Financial Crisis is ascribed to the housing and financial markets of developed countries and regions, the economic downturn in these regions manifested in a substantial economic shock in the sample developing regions, including SADC (c.f. 7.2.2). The primary reasons for the transfer of an economic downturn in selected industrialised regions to developing regions is the decline in capital investment (FDI) from industrialised to developing regions, in addition to decreased exports from developing to industrialised regions (c.f. 7.3.1). Figure 8-1 illustrates the relationship between regional economic growth trends in developing regions and declining exports and capital investment as an effect of the Financial Crisis. The declines experienced in FDI and exports of developing regions is attributed to declining expenditure capabilities in industrialised regions due to the economic downturn associated with the Financial Crisis (c.f. 4.7.2.1). Furthermore, decreased capital availability limits investment in and imports from developing regions.

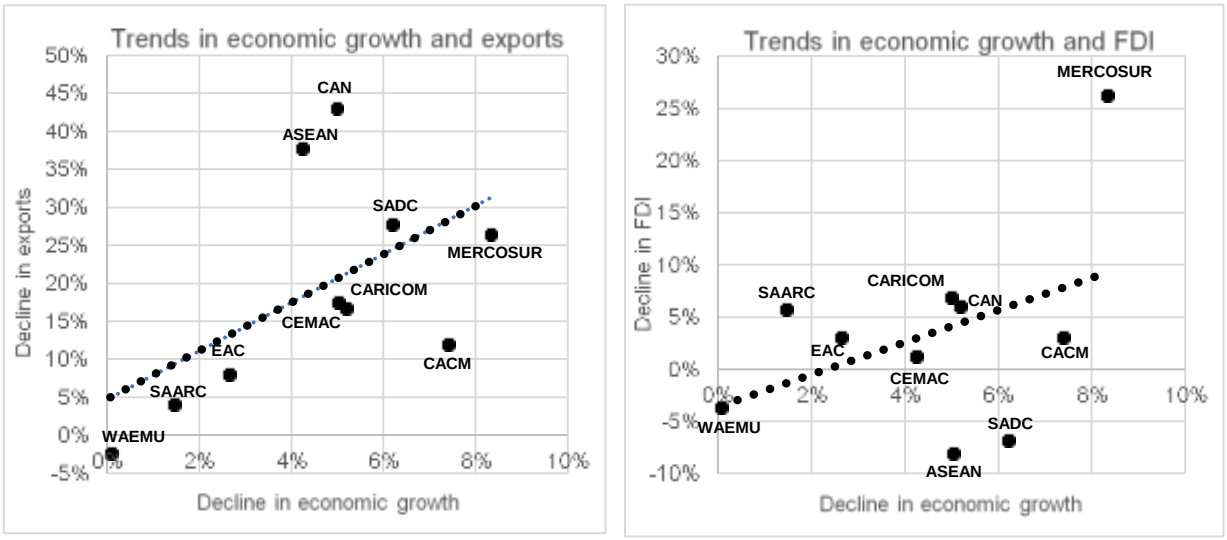


Figure 8-1: Developing regions and the external economic shock

Source: UNCTADstat (2017).

As illustrated in Figure 8-1, there is a substantial relationship between declining exports (correlation of 0.55582) and investment (correlation of 0.41184) and declining economic growth in developing regions. Therefore, these factors may perpetuate the detrimental effects of the external economic shock on economic growth in developing regions (c.f. 7.3.1). In line with the predominant developing region trend, the Financial Crisis and the subsequent decline in exports and FDI, substantially influenced regional economic growth in SADC (c.f. 6.4).

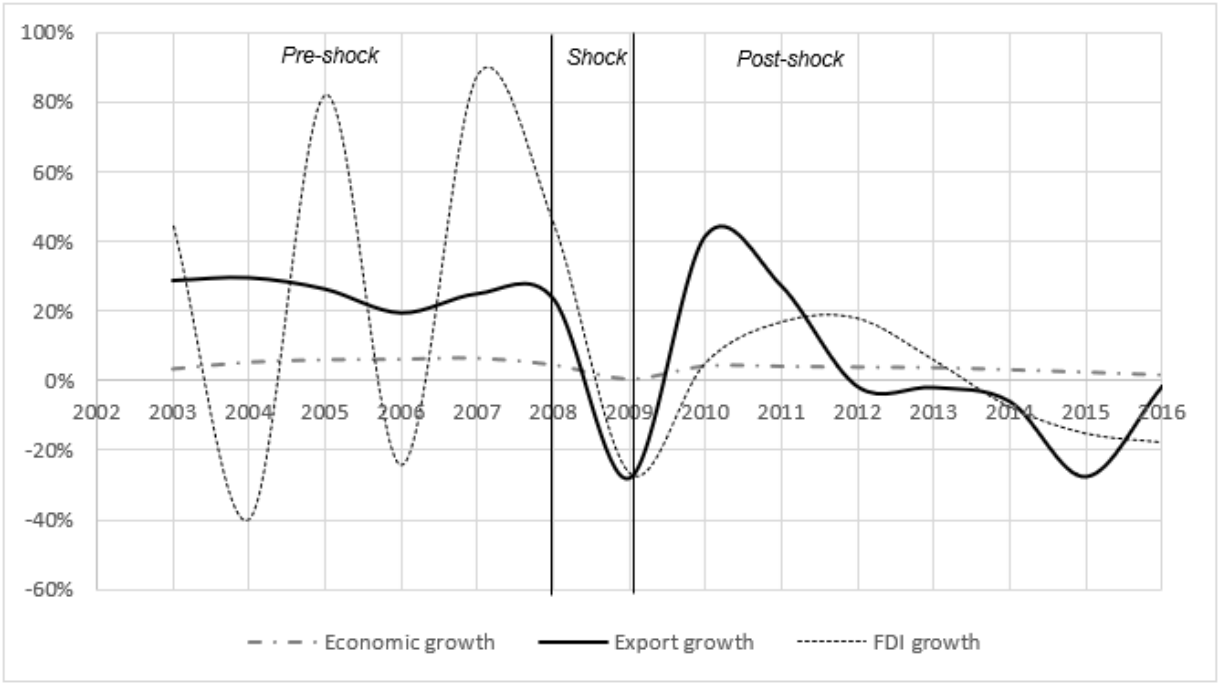


Figure 8-2: SADC economic growth, exports, and FDI trends

Source: UNCTADstat (2017).

The impact of the shock in terms of economic growth, exports and FDI is illustrated in Figure 8-2. Evidently, the external economic shock resulted in reduced exports, FDI, and regional economic growth in the SADC. Therefore, according to the Economic Commission for Africa (2009), the resultant economic downturn inflicted “serious effects on many economies of the SADC region” (c.f. 1.1). Open trade contributed to the dependence of developing regions, including the SADC, on exports to industrialised countries and increased the vulnerability of the SADC to external economic shocks which may adversely affected regional production systems and the regional economy through reduced regional exports and FDI (c.f. 1.1). Continued vulnerability of the regional economy to external shocks is detrimental to the development objectives of SADC over the long term (Bank of Botswana, 2013). Accordingly, this may contribute to increased intra-regional economic divergence between member countries and threaten socio-economic development in Southern African countries (c.f. 1.1).

Apparent in Figure 8-2 is that the external economic shock impacted economic growth trends in the sample developing regions (c.f. 7.2.2). The various regions illustrate divergent reactions to the shock, reflected in differences in reductions to economic growth, exports and FDI inflicted by the Financial Crisis (c.f. 7.3.1). Therefore, it is evident that the ability to resist and recover from the external economic shock is unequally distributed between developing regions, and that economic resilience of selected regions are superior to others (c.f. 7.3). Regional economic resilience in developing regions is based on (i) the ability of the regional economy to resist the initial impact of decreased export demand, (ii) FDI outflows, and (iii) reduced economic growth in addition to its (iv) ability to recover lost output in a timely manner in the post-shock period (c.f. 3.7.2). Christopherson, *et al*. (2010), adapts the resilience concept to the economic and spatial planning paradigm, characterising a resilient region as one that sustains economic prosperity in spite of potential downturns in output growth over the long term (c.f. 5.2.1). Hill *et al*. (2008) highlight the ability of the regional economy to withstand the impacts of sudden, or “short-term”, external economic shock on networks of production and consumption as instrumental to economic resilience, and to recover possible reduced output resulting from the shock in the post-shock period (c.f. 5.2.1). Resistance to the initial effects of the economic shock highlights the long-term adaptation of the regional economy to changes in global trade and its inherent risk, while adaptability enables regional production systems to react to the post-shock economic reality and adjust accordingly to recover pre-shock growth levels (c.f. 5.3.2.3). Based on said differences, Hill *et al*. (2008:3) formulate regional categories reflecting economic resilience, including economically resilient, shock resistant, and non-resilient regions (c.f. 5.2.1).

In considering the illustrated differences in economic resilience between the regions, it is apparent that certain factors influence the ability of the developing region’s economy to resist and recover from the external economic shocks. In investigating said factors contributing to

regional economic resilience, Christopherson, *et al*. (2010) emphasise endogenous characteristics in a region that fosters regional economic resilience through adaptation and adaptability, including (i) prominent systems of innovation in the presiding social structure, (ii) modern infrastructure which increases adaptability in production networks, (iii) regional workforce which is highly skilled, innovative, with a strong entrepreneurial tradition, (iv) financial system which provides steady access to capital for economic agents (including households and firms) to spur continuous consumption, investment, and innovation, and (v) a regional economy that is characterised by a diverse economic base, not reliant on a single economic sector (c.f. 4.3.1). The potential importance of a diverse regional economy is highlighted in the quantitative analysis (c.f. 7), with findings illustrating that increased sectoral diversity may potentially enhance the ability of regional production systems to resist the initial impact of the shock and to recover in a timely manner (c.f. 7.3.2.1.1). In this regard, economic diversity may contribute to adaptation and adaptability in the regional economy and move closer to resilience in regional economic growth (c.f. 5.3.2.3).

In addition to economic diversity, regional integration and industrialisation are increasingly emphasised as important factors in fostering economic resilience in developing regions (c.f. 5.5.4.3.2). Regional integration seeks to influence the nature of the regional space economy and interactions between regions (c.f. 3.7), while industrialisation aims to alter the nature of production in economic centres (c.f. 4.5.2) to increase the resilience of regional production systems (c.f. 5.5.4.3.2). The nature of regional economic resilience manifests in the ability of regional economic entities, centres of activity, and production networks to resist and recover from disturbances in their productivity and output (c.f. 5.2.1). Economic entities that are tasked with absorbing the impact and recovering from the shock is located within a space economy, with various spatial forces determining the location, size, and function of said regional entities (c.f. 3.4). It is in this regional milieu that the nature of economic resilience is determined and influenced by the functional interdependencies within and between centres of economic activity (c.f. 3.1.2). Regional integration and industrialisation seek to enhance the ability of said regional entities to resist disturbances to their production networks through altering their internal functional interdependencies and the nature of their interactions with other centres in a space economy (c.f. 3.7.1), as well as changing the parameters of the space economy itself (c.f. 3.7.2).

Considerations that arise in this regard are the forces that influence the spatial organisation of economic functions within space economies and the subsequent criteria of delineating regional units (c.f. 3.4). Throughout classical regional growth and development theories, Von Thünen (1863) introduces the spatial dimension and the effect of distance and transport cost on the location of economic activities within the region. Furthermore, Weber (1929) illustrates the

influence of transport cost, labour cost, and factors of agglomeration in the location of industries in the regional space economy. The central place theory of Christaller (1933) accentuates the interaction and interdependency between economic centres within the regional space economy, as well as the mechanisms that influence the spatial distribution and development of economic centres within the region (c.f. 3.4). Lösch (1940) identifies the role of the market in the spatial diffusion of economic centres, while Perroux (1950) illustrates the economic forces which shape the regional space economy. Through the application of the central place theory, the prominent role of industrialisation in stimulating the concentration of economic activities in certain localities in the region is illustrated (c.f. 3.5.2). Friedmann (1956:7) states that the central place theory illuminates the role of economic activity and industry in the evolution of the regional structure. As industrial production increases and industries develop in resource rich locations, the cumulative effect of industrial agglomeration fundamentally alters the regional structure (c.f. 3.5.2). The nodal concentration of industries stimulates industrial expansion, or industrialisation, in certain economic centres, attracting additional labour and consumers. The functional interaction and connecting links between centres strengthen as industrialisation continues and the intra-regional movement of inputs, goods, consumers, and services increase (c.f. 3.5.2). Friedmann (1956:8) thus highlights a fundamental factor in the spatial organisation of economic activities; the development of the regional structure is related to economic changes within the region. The spatial distribution of activities in the region is determined by the nature of the regional economy and its growth characteristics. The role of industrialisation in the development of the regional structure and spatial organisation of economic activities within the regional space economy is confirmed (Friedmann, 1956:10).

The regional structure and what constitutes a “region” has undergone a multitude of paradigm shifts (c.f. 3.1). From the delineation of formal regions based on homogenous regional characteristics, to the delineation of functional regions based on the functional interdependency between economic centres, and the delineation of planning regions with policy-making functions and economic decision-making within the region (c.f. 3.1). The evolution of the regional structure is illustrated in Figure 8-3.

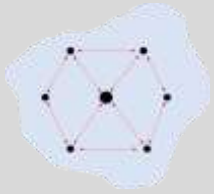
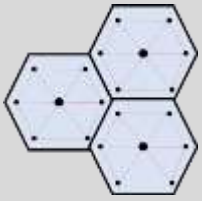
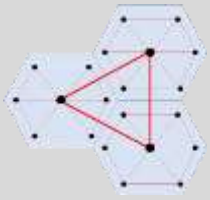
1.Formal Region	2. Functional Region	4. Isolated planning region	5. New Regionalism
			
Delineated based on homogeneity of features, irrespective of underlying interdependency of economic centres.	Delineated based on the functional interdependence and interaction between economic centres.	Isolated planning regions with “inward-looking” planning and policies, with limited inter-regional trade.	Integrated planning regions with functional interdependence of economic centres and inter-regional trade

Figure 8-3: Evolution of the regional structure

Source: Author’s own composition.

Regional integration seeks to alter the nature of planning regions (c.f. 3.7) that are isolated economic entities seeking to bring about internal regional economic growth through inward-looking economic and spatial planning (c.f. 3.1.3). Planning regions have limited interaction with external planning regions: economic activity is confined within the borders of the region with limited movement of goods, services, and factors of production between centres in external regions due to lack of inter-regional cooperation and underdeveloped lines of communication (c.f. 3.1.3).

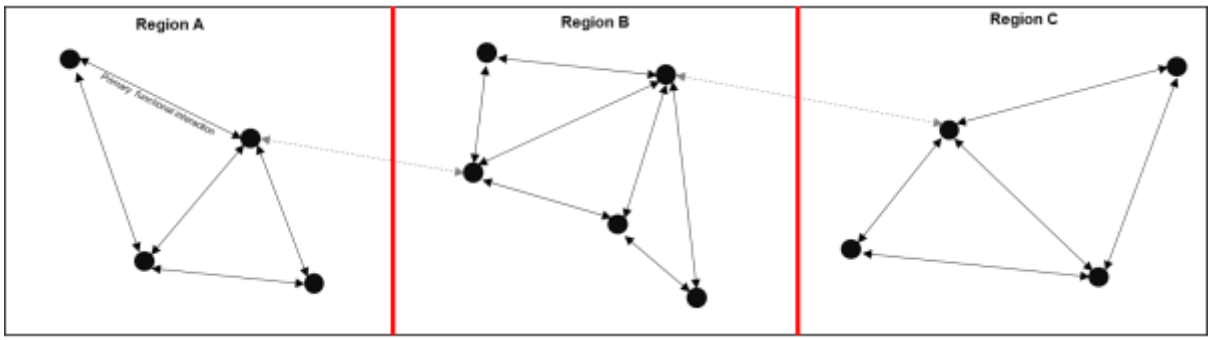


Figure 8-4: Isolated planning regions

Source: Adapted from Christaller (1933) and Herrschel (2005).

A primary component of the planning region is the organisation of its “planning entities” to ensure inward-looking economic planning stimulates regionally balanced economic growth (c.f. 3.2.1). Overcoming the unbalanced spatial diffusion of economic activities and centres within and between planning regions is a central objective of spatial and regional planning (c.f. 3.2). Accordingly, by analysing the factors and mechanisms that influence the spatial dispersion of economic activities, regional planning seeks to alter the distribution of resources and activities within and between planning regions to foster regional convergence in economic prosperity (c.f.

3.4). Inter-regional planning, with the objective of regionally balanced growth between regions, is utilised on a national and supranational scale. Intra-regional planning that aims stimulate balanced economic growth within the boundaries of a planning region, is utilised on a regional and sub-regional planning level (c.f. 3.2.3). Regional planning, either inter- or intra-regional, is implemented through regional policy. Said policies may be based either the free market or interventionist approach, the former of which propagates liberalisation of production factor movements, while the latter seeks to guide the location of economic activities and industries in the regional space economy through availing certain financial incentives and investing in the economic and social capital of developing regions (c.f. 3.3.2). The objective in this regard is to foster regional economic convergence between developing and industrialised regions through spatially balanced growth in productivity and effective utilisation of available resources (c.f. 3.2.1).

Within this planning region that seeks to bring about local economic growth through “inward-looking economic planning” (c.f. 3.1.3), several factors contribute to catalysing growth in the regional economy, including the availability of local factors of production (including capital, technology, and supply of labour), the productive utilisation of said production factors and resources, and stimulating the economic transformation needed for sustained industrialisation. The neoclassical growth theory illustrates the importance of labour, capital, and technology in stimulating output productivity and catalysing regional economic growth (c.f. 4.5.1). In addition, the Lewis two-sector model illustrates that industrialisation is a central component of regional economic growth, identifying the role of excess labour transfer from the agricultural sector to the industrial manufacturing sector of the economy, increasing labour productivity, and catalysing increased industrial output (c.f. 4.5.2). The interrelationship between capital and technology in fostering industrial productivity is apparent, as increased local savings and investment stimulates capital formation and the subsequent acquisition of advanced technology to increase production in industries and raise economic output. (c.f. 4.5.2). Accordingly, the regional multiplier theory finds that a multiplier effect is stimulated when demand increases for locally produced goods. Inherent to this multiplier effect is subsequent increased demand for inputs in the manufacturing process, stimulating economy-wide output increase and regional economic growth (c.f. 4.2). This process of regional economic growth through endogenous growth mechanisms is illustrated in Figure 8-5.

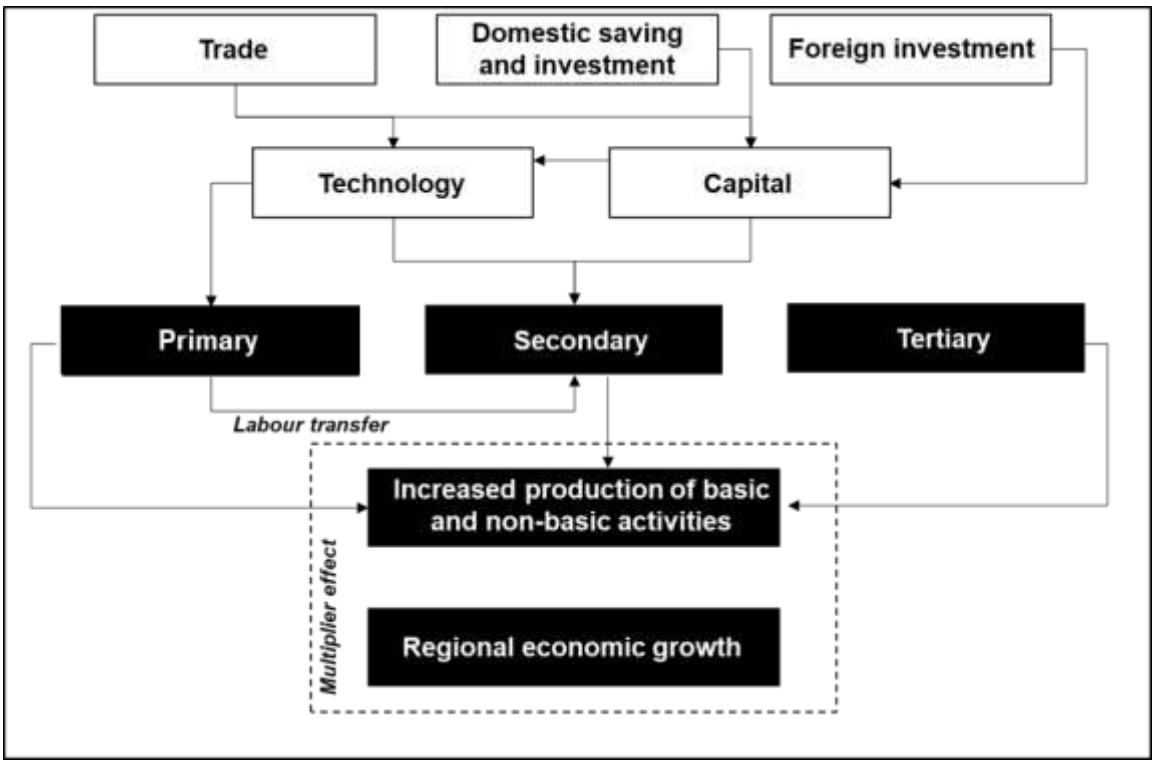


Figure 8-5: Regional economic growth processes

Source: Adapted from Rostow (1971).

In addition to fulfilling an important role in stimulating regional economic growth, production factor availability and industrialisation both potentially contribute to the resilience of economic growth in developing regions (c.f. 7.3.2.1). As per the findings of the quantitative analysis, production factor availability (with emphasis on the local capital stock) may enhance the ability of developing regions to recover from external economic shocks, possibly indicative of the role of capital in catalysing adaptability in regional production systems during post-shock periods (c.f. 7.3.2.1.3). In addition, industrialisation may foster improved recovery from external economic shocks and their impact on regional production systems, potentially stimulating the adaptability of developing regional economies in the aftermath of disturbances to economic output (c.f. 7.3.2.1.2).

While endogenous factors, including industrialisation and resource endowment, are important in stimulating regional economic growth in isolated developing regions, the additional importance of exogenous growth factors external to the region is illustrative that planning regions are not isolated and are part of complex systems of interaction with external regions (c.f. 4.1.5). According to the export base theory, exports to external regions may stimulate demand for locally produced goods, catalysing the regional multiplier effect and increased economic output (c.f. 4.6.2.1). As illustrated in Figure 8-5, the inflow of capital (FDI) from external regions is an additional exogenous factor in regional economic growth (c.f. 4.4). Accordingly, the export base

theory investigates trade interaction between countries and regions and indicates the importance of inter-regional trade in fostering increased demand for local manufactured goods and stimulating regional economic growth (c.f. 4.6.2.1).

While exports and inter-regional trade is illuminated as an important component of economic growth, it is evident, however, that the nature of trade and exports – including the goods being exported to which regions – may potentially influence the nature of subsequent regional economic growth and developing regions' resilience to external economic shocks (c.f. 7.5). In this regard, the cumulative causation theory states that economic divergence takes place between developing and industrialised regions over the long term due to the transfer of resources from the former to the latter through inter-regional trade (c.f. 4.6.2.2). This resource transfer is perpetuated by developing regions' continued dependence on the export of primary commodities to industrialised countries and regions, products that are vulnerable to price fluctuations over the long term, as illustrated in the Prebisch-Singer Hypothesis (c.f. 4.6.2.2). Additionally, primary commodity exports by developing regions are characterised by low income elasticity of demand, which contributes to their vulnerability to demand fluctuations and external economic shocks as demand for primary commodities decline (c.f. 4.7.2.3).

This inherent vulnerability of developing regions to external economic shocks due to the nature of their exports and source of export demand is confirmed in the qualitative (c.f. 6) and quantitative analysis (c.f. 7). An important finding in this regard suggests that increased dependence on the export of primary commodities by developing regions may potentially induce vulnerability in regional production systems to external economic shocks through potentially prolonging recovery time from said shocks (c.f. 7.3.3.4). In addition, the quantitative analysis finds that increased dependence by developing regions on exports to industrialised regions may potentially increase the initial impact of an external economic shock on regional production systems, and possibly lengthen the time required to recover pre-shock economic growth (c.f. 7.3.3.2). These findings suggest that the nature of inter-regional trade and the regional staple may potentially influence the adaptability of developing regional economies in response to disturbances of regional production systems through external economic shocks (c.f. 7.5).

A potentially resilience-inducing factor, as illuminated in the quantitative analysis, is the diversity of regional staples: increased variety of inter-regional exports may possibly contribute to alleviating the initial impact of an external economic shock on developing economies. Export staple diversity may thus negate the excessive impact of a downturn in demand for a dominant staple on region-wide economic growth (c.f. 4.7.2.2). In addition, findings inherent to the quantitative analysis illustrate the potential importance of the inter-regional export of manufactured goods in enhancing the adaptability of developing region economies through shortening the recovery time of economic growth in the post-shock period (c.f. 7.3.2.2.3). The

resilience advantages associated with manufactured goods exports is an additional indication of the potential importance of industrialisation in improving the adaptability of developing regional economies and contributing to regional economic resilience (c.f. 7.5).

Based on these findings in the quantitative analysis, and the noted importance of horizontal and vertical economic diversification in negating vulnerability to external demand fluctuations (c.f. 4.7.2.4), increasing emphasis is placed on advancing industrialisation in developing economies to extract the potential resilience advantages associated with sectoral and export diversification, in addition to the increased export of manufactured goods (c.f. 7.3.2.2.3). However, despite the accepted importance of industrialisation in negating long-term resource transfer from developing regions to industrialised regions, as well as decreasing developing region vulnerability to external economic shocks, sizable challenges remain for industrialisation in developing regions relating to the nature of inter-regional trade with industrial regions and factor endowment in developing regions (c.f. 4.7.2.5). This includes (i) the comparative advantage of industrialised regions in the production and export of manufactured goods (c.f. 4.7.2.5.1); (ii) the income elasticity of primary commodity exports that negate the acquisition of advanced technology for increased industrial productivity (c.f. 4.7.2.5.2); and (iii) small domestic markets of developing regions that inhibits the development of economies of scale that allows for the acquisition of advanced technology to catalyse industrialisation (c.f. 4.7.2.5.3). Therefore, developing regions remain vulnerable to external economic shocks as industrialisation is limited (c.f. 4.7.2.5).

In order to negate the barriers to industrialisation, developing regions may seek to impose policies relating to import substitution where sizable tariffs are constructed on imports (with emphasis on manufactured goods) from external regions (c.f. 5.4.3.1). However, while this policy approach seeks to decrease dependence on export demand in external regions to foster regional economic resilience, it may precipitate inefficiencies in local industries, protecting manufacturers from external competition. Additionally, while import substitution may negate the advantages of inter-regional trade as other regions construct retaliatory tariffs, limited local demand and a small capital stock may inhibit industrialisation (c.f. 5.4.3.1). Accordingly, in an attempt to negate the barriers to industrialisation inherent to unbalanced trade with industrialised regions and through import substitution, developing countries increasingly sought to pro-actively increase trade among one another through regional integration and increased functional interaction to catalyse regional industrialisation, as well as sectoral and export diversification that may potentially foster economic resilience in developing countries and regions (c.f. 5.4.3.2).

Regional integration, pillared in the paradigm of new regionalism, seeks to replace the notion of “inward-looking” economic planning and regional economic growth in isolation of external regions, an inherent characteristic of import substitution policies (c.f. 5.4.3.1). The objective of

regional integration is to alter the nature of previously isolated developing economies by propagating for increased connectivity and economic interdependence between planning regions beyond their delineated borders (c.f. 3.7).

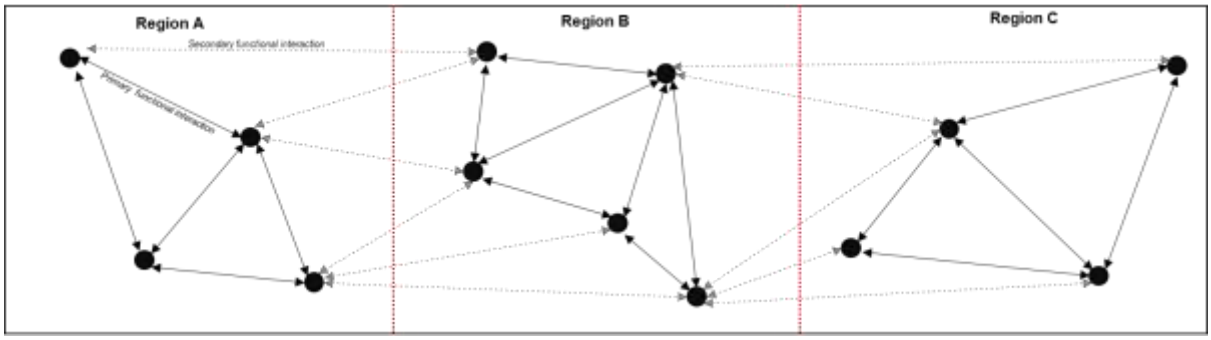


Figure 8-6: Regional structure in new regionalism

Source: Adapted from Christaller (1933) and Herrschel (2005).

Incorporating the advantages of trade in stimulating regional economic growth inherent to the export base theory (c.f. 4.6.2.1), the objective of regional integration is to increase economic cooperation and spatial connectivity between previously isolated countries and regions, culminating in the formation of supranational regional groupings consisting of various developing member countries (c.f. 5.5.1). This integration is achieved by eliminating restrictions on trade and the movement of goods, services, and people between one another, striving to eliminate tariff and non-tariff barriers to trade, increasing political, social, spatial, and economic interaction and interdependency between countries (c.f. 5.5.2). In addition, spatial integration through physical and non-physical infrastructure is an important component in stimulating intra-regional trade (c.f. 5.5.3). Regional integration and increased functional interaction is illustrated in Figure 8-6.

An important motive for regional integration is to decrease developing regions' dependency on unbalanced trade with industrialised regions by purposefully channelling trade among each other (c.f. 5.5). In this regard, based on the findings of the quantitative analysis, increased trade between developing countries may contribute to mitigating the severity of the initial impact of an external economic shock as well as potentially reducing the recovery time from said economic shock (c.f. 7.3.3.2). After the formation of regional groupings with various participating developing countries, increased regional integration and intra-regional trade between developing countries may enhance the adaptability of regional production systems to recover from the impacts of external economic shocks (c.f. 7.3.2.2.1). Accordingly, regional economic resilience may be advanced by increased regional integration and functional interdependency between participating countries in regional integration initiatives.

Regional integration, through economic integration and spatial integration initiatives, may increase trade interactions between participating developing countries and create a policy environment that is inducive of industrialisation (c.f. 5.5.4.3.1). In addition to catalysing intra-regional trade, the creation of large, integrated markets allows for the development of economies of scale that enables the acquisition of advanced technology to increase industrial productivity (c.f. 5.5.4.3.2). The linear integration process illuminates a clear guide to policy harmonisation and increased functional integration, attracting risk-averse capital inflows and FDI into the integrated developing regions, stimulating capital formation and technology acquisition (c.f. 5.5.4.3.1). Developing countries seek to exploit this interface between regional integration and industrialisation to both bolster industrial production and decrease dependency on trade with industrialised countries for sustained economic growth over the long term (c.f. 5.5.4.3.2). Regional integration may enhance the following factors that may contribute to regional economic resilience in developing regions:

- Increased industrialisation catalysed through capital inflows and the development of economies of scale to acquire advanced technology to bolster industrial productivity (c.f. 5.5.4.3.2)
- Increased availability of factors of production (c.f. 7.3.2.1.3)
- Economic diversification catalysed through industrialisation (c.f. 4.7.2.4)
- Decreased dependence on exports to industrialised regions (c.f. 7.3.3.2)
- Increased intra-regional trade (c.f. 7.3.2.2.1) and trade between developing countries (c.f. 7.3.3.2)

Evidently, the interface between regional integration and industrialisation is propagated as a potentially important factor in fostering regional economic resilience in developing regions. Investigating the interface between regional integration and industrialisation in fostering regional economic resilience in developing regions constitutes the fourth objective of this study (c.f. 1.3). Figure 8-7 illustrates the interface between regional integration and industrialisation and its influence on fostering regional economic resilience in developing regions.

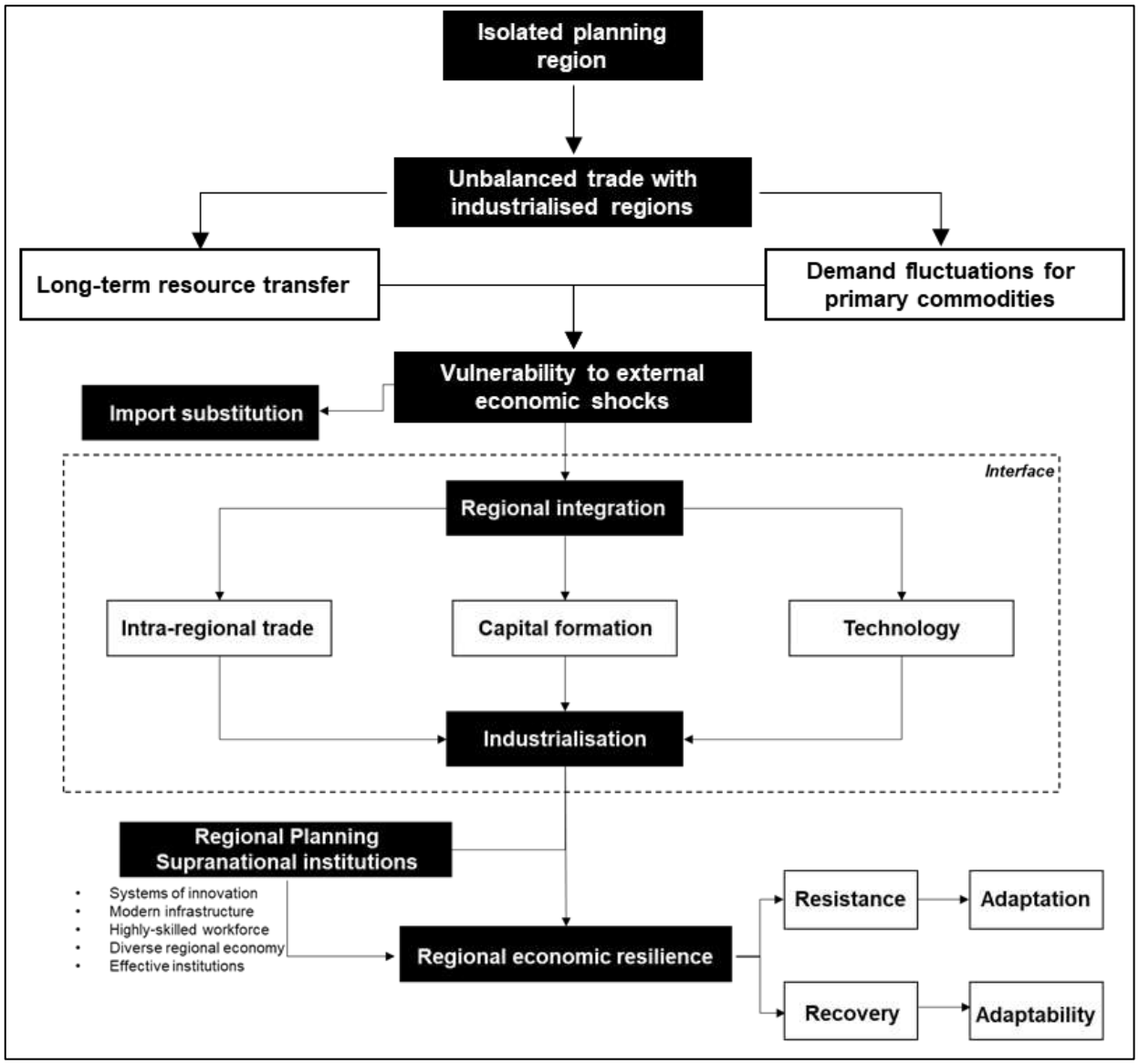


Figure 8-7: Fostering regional economic resilience in developing regions

Source: Author's own composition

Accordingly, to extract regional economic resilience through regional integration and increased intra-regional trade, industrialisation, and the interface between said factors, various developing country regional integration initiatives have been undertaken (c.f. 6.1). Economic planning through regional policy, policies relating to regional industrialisation, and capacitated regional institutions are important components to guide processes relating to economic and spatial integration and to extract the growth and resilience advantages inherent to regional integration and industrialisation (c.f. 6.3.3). Supranational regional planning is a significant factor in ensuring regionally balanced economic growth and fostering mutual industrialisation through targeted economic (DPA – Direct Productive Activities) and social investments (SOC – Social Overhead Capital) to bolster regional economic growth – a characteristic of the interventionist regional planning approach (c.f. 5.6.2). Developing regions, including SADC, seek to implement

policy, i.e. “industrial policy” (c.f. 6.3.3), to stimulate industrial development to increase competitiveness of industrial productivity through developing regional supply chains and enhancing intra-regional industrial linkages to stimulate regional industrialisation. Said industrial policies may seek to influence the nature of intra- and inter-regional trade, including the goods being exported and the destination of inter-regional exports (c.f. 6.4.3).

While SADC seeks to foster regional integration and mutual industrialisation, there are several challenges that inhibit efforts to increase functional interaction in the region. This includes (i) ineffective economic integration and trade liberalisation, (ii) incomplete spatial integration with large regional infrastructure gaps inhibiting trade facilitation, (iii) limited non-physical corridor infrastructure, and (iv) insufficiently capacitated supranational institutions that hinder policy harmonisation and regional policy implementation (c.f. 6.3). Initiatives promoting regional economic resilience is annulled by ineffective implementation of policy in addition to institutions insufficiently capacitated to catalyse adaptation in regional productive systems in response to external disturbances (c.f. 1.1). While the SADC has implemented policies of regional integration and industrialisation in order to achieve regional economic growth, subsequent long-term growth gains are negated by the vulnerability and lack of regional economic resilience of SADC (c.f. 1.1). The following recommendations are made to enhance regional economic resilience in SADC.

8.2 Recommendations

Based on the findings of the quantitative analysis, it is apparent that intra-regional trade, based on the regional export of primary commodities, may potentially enhance the adaptability of regional production systems to external economic shocks, reducing the period for the recovery of the pre-shock growth path (c.f. 7.3.2.2.4). In addition, findings indicate that inter-regional trade, i.e. trade between integrated developing regions and other regions, may contribute to reduced recovery periods for the developing regional economy when said regional exports are manufactured goods as opposed to primary commodities (c.f. 7.3.3.4). This finding highlights the potential importance of regional industrialisation in catalysing the increased export of manufactured goods to external regions to mitigate the vulnerability of regional production systems to external demand fluctuations and economic shocks (c.f. 7.5).

Based on the findings of the quantitative analysis, the following composition of intra- and inter-regional trade may foster optimal regional economic resilience in integrated developing regions:

Table 8-1: Trade and regional economic resilience

Trade area	Toward optimal regional economic resilience
Intra-regional trade	• Increase intra-regional trade (as % of total trade) • Diverse intra-regional exports • Intra-regional exports of primary commodities
Inter-regional trade	• Exports to developing regions • Diverse inter-regional export staples • Inter-regional export of manufactured goods • Specialisation in manufactured goods inter-regional exports

Source: UNCTADstat (2017).

It is thus apparent that the nature of intra- and inter-regional trade, in addition to the composition of the regional economy, may contribute to the regional economic resilience of developing regions (c.f. 7.5). An important factor that guides regional and industrial policy formulation and implementation, while overseeing regional integration initiatives, is supranational institutions (c.f. 5.6.3). Said institutions contribute substantially to fostering regional economic resilience through administering "processes to plan and implement change" (Wolfe, 2010, as cited in Christopherson *et al.*, 2010:7), and to utilise institutional and human capital to mitigate the vulnerability of the regional economy and its production systems (c.f. 5.6.3). Evidently, supranational institutions seek to enable the adaptation and adaptability of the regional economy to ensure it resists and recovers from potential external economic shocks (c.f. 5.2.1).

In order to foster regional economic resilience in SADC, recommendations are delineated into four categories, namely proposals pertaining to the (i) regional institutions, (ii) regional policy, (iii) economic and sectoral composition, (iv) and regional integration.

8.2.1 Proposal pertaining to regional institutions

Firstly, it is *recommended that the supranational institutions of SADC be sufficiently capacitated to oversee the process of policy harmonisation and trade liberalisation* inherent to economic and spatial integration. Regional planning and policy interventions require significant investments in institutional infrastructure and capital, illustrating the importance of member countries committing to policy harmonisation and the elimination of tariff-based barriers to trade in SADC. Supranational institutions oversee the creation of an integrated regional market with resilient regional production systems in SADC.

8.2.2 Proposal pertaining to regional policy

Secondly, it is *recommended that supranational interventionist regional policy is implemented in SADC.* The objective in this regard is to facilitate targeted spatial interventions in the region to ensure region-wide dispersion of resilient economic growth. An important function of interventionist regional policy is to undertake targeted infrastructure projects to overcome capacity deficiencies in existing development corridors and enable improved trade facilitation in the integrated regional market of SADC. Improved trade facilitation and spatial integration enables effective intra-regional trade and enhances the development of industrial supply linkages between member countries, constituting an important contribution to fostering regional economic resilience in SADC through regional integration and industrialisation. In addition, it is *recommended that regional policy in SADC emphasises targeted investments in the social and economic infrastructure of member countries* to foster convergence in economic growth and resilience of regional production systems in SADC and its various member countries.

8.2.3 Proposals pertaining to regional integration

Thirdly, it is *recommended that intra-regional trade be strengthened between the member countries of SADC.* As illustrated in the findings of the quantitative analysis, increased intra-regional trade (as proportion of total trade) decreases dependence on exports to industrialised regions and extracts the region-wide benefits of increased trade and exports (c.f. 7.3.2.2.1). Intra-regional trade has the potential to enhance the recovery of regional production systems from external economic shock and may improve regional adaptability to foster regional economic resilience in SADC.

Fourthly, in order to sustain and improve levels of intra-regional trade in SADC and contribute to the creation of an integrated regional market, it is *recommended that economic integration be deepened in the region*. Trade liberalisation to eliminate tariff barriers to trade, as well as policy harmonisation to negate non-tariff trade barriers is imperative to stimulate intra-regional trade and the movement of traded goods between member countries (c.f. 5.5.1). Based on the limited capacity of supranational institutions in overseeing the policy harmonisation and trade liberalisation process in SADC (c.f. 6.3.4), it is recommended that the formation of a fully functional free trade agreement be implemented in the region. Deeper integration, including the formation of a customs union and single market requires substantial institutional capacity and political will-power from member countries. As deeper linear economic integration, i.e. shared external tariffs and production factor mobility, has limited impact on the potential resilience of developing regions in the event of an external economic shock (c.f. 7.2.2), it is recommended that the objective of deeper economic integration is founded on stimulating trade liberalisation and intra-regional trade.

Fifthly, to facilitate the creation of an integrated regional market and enable increased movement of traded goods and intra-regional trade, it is *recommended that spatial integration in SADC be improved.* While economic integration and trade liberalisation stimulate functional interaction between member countries, intra-regional trade is dependent on factors pertaining to spatial integration, including physical and non-physical corridor infrastructure (c.f. 5.5.3). The regional network of development corridors is characterised by substantial infrastructure gaps that limit sufficient intra-regional trade in SADC (c.f. 6.3.2). In this regard, it is *recommended that targeted infrastructure projects are implemented* to improve physical trade facilitation and ensure efficient functioning of the integrated regional market. In addition, the need exists for the development of regional non-physical corridor infrastructure that facilitates increased regional interoperability and market access to national transport systems. Through increased spatial integration, intra-regional trade adaptability of productive systems is enhanced to potentially foster resilience of economic growth in SADC.

8.2.4 Proposals pertaining to economic / sectoral composition

Sixthly, it is *recommended that intra-regional trade in SADC emphasise the regional export of primary commodities.* While diversity in intra-regional export staples may decrease the vulnerability of the regional economy to demand fluctuations, regional trade in primary commodities may contribute to enhanced adaptability of regional production systems in SADC to changes in international demand. This advanced adaptability may contribute to shorter post-shock recovery time (c.f. 7.3.2.2.4). Inherent to intra-regional primary commodity trade is efficient trade liberalisation within an integrated market, highlighting the importance of appropriate economic and spatial integration. An additional component in stimulating diverse primary commodity trade in SADC is the active development of unique national competitive advantages in primary commodities through strategic regional interventions to support the development of region-wide commodity trade linkages and the balanced diffusion of subsequent resilient regional economic growth.

Seventhly, it is *recommended that the basis of inter-regional trade in SADC be the export of manufactured goods to external regions.* The primary motive in this regard is that manufactured goods have a high income elasticity of demand and are less vulnerable to external economic demand fluctuations (c.f. 4.7.2.4). The finding of the quantitative analysis indicates that inter-regional exports of manufactured goods may enhance the adaptability of regional production systems in response to external economic shocks and may potentially contribute shortened recovery periods for SADC (c.f. 7.3.2.2.4). Quantitative analysis findings support regional specialisation in the inter-regional export of manufactured goods (c.f. 7.3.2.2.4). To achieve said specialisation, it is *recommended that regional value chains and industrial supply linkages be identified and supported through regional industrial policy* that seeks to increase the

competitiveness of industrial production in SADC. Regional industrial linkages may contribute to regional industrialisation as inter-regional trade in manufactured goods is emphasised.

Eighthly, it is *recommended that economic diversification – with emphasis on industrialisation – be prioritised in SADC.* Limited economic diversity may increase the vulnerability of regional production systems to external economic shocks due to the dominant contribution of selective sectors to regional economic output (c.f. 7.3.2.1.1). Accordingly, industrialisation, and the increased prominence of the secondary sector in the sectoral composition of the economy and the export of manufactured goods, may contribute to economic diversification (c.f. 4.7.2.4) and enhance the adaptability of the regional economy to external economic shocks (c.f. 7.3.2.1.2). This may be brought about through shortened recovery periods of the pre-shock growth path (c.f. 7.3.2.1.2). An important aspect in this regard is catalysing the interface between regional integration and industrialisation in SADC (c.f. 5.5.4.3.2). A sufficiently integrated regional market, through economic and spatial integration, is imperative in stimulating FDI and technology acquisition for industrialisation (c.f. 5.5.4.3.1). In addition, targeted spatial interventions through regional policy is required to stimulate industrial productivity and ensure region-wide industrialisation and sectoral diversification in SADC. Proposal pertaining to chronology of implementation

Ninthly, it is recommended that the proposals pertaining to the regional structure, regional policy, sectoral composition, and regional integration be implemented in the chronological order illustrated in Figure 8-8 to foster increased regional economic resilience in SADC.

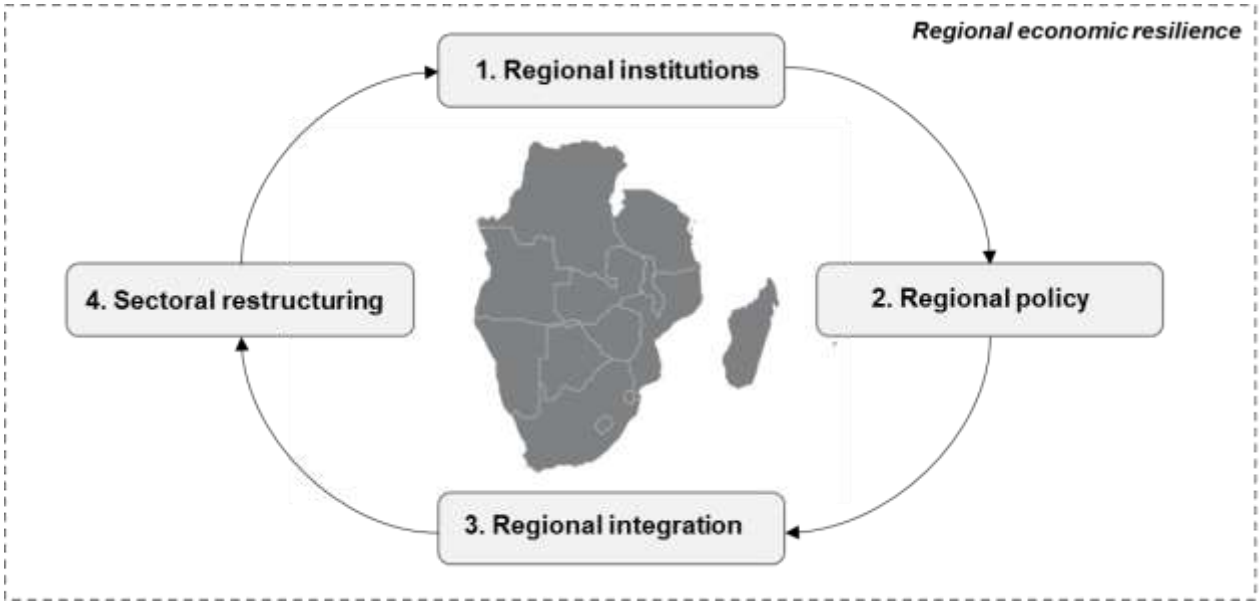


Figure 8-8: Chronology for regional economic resilience in SADC

Source: Author's own compilation

As illustrated in Figure 8-8, the recommended first phase of implementation is the sufficient capacitation of supranational institutions to oversee the processes inherent to trade liberalisation and policy harmonisation (8.2.1). The second implementation phase is the formulation and implementation of regional policy that guide development decisions in SADC (c.f. 8.2.2). Regional policy assists in making spatial interventions through infrastructure projects or social and economic investments in member countries. Regional institutions and regional policy are prerequisites for effective economic and spatial integration necessary for increased intra-regional trade (c.f. 8.2.2). Accordingly, regional integration constitutes the third implementation phase (c.f. 8.2.3). Through economic integration, said trade is stimulated while spatial integration (supported by regional policy) facilitates trade within an integrated regional market. Intra-regional trade increases the adaptability of regional production systems and contributes to regional economic resilience in SADC (c.f. 7.3.2.2.1.).

The fourth implementation phase concerns sectoral restructuring (c.f. 8.2.4). The integrated regional market is a prerequisite for stimulating the interface between regional integration and industrialisation (c.f. 5.5.4.3.2). This interface stimulates the capital inflows and increased industrial productivity in the region. Industrialisation brings about economic diversification, both factors contributing to regional economic resilience in SADC (c.f. 8.2.4). Within this integrated regional market, increased industrialisation supports the development of regional value chains and industrial supply linkages that support the inter-regional export of manufactured goods (c.f. 8.2.4). In addition, regional policy may contribute to the development of unique competitive advantages in member countries to support intra-regional trade in primary commodities that contribute to the adaptability of the regional economic and economic resilience in SADC. Through this chronological implementation process, the regional economy's adaptation and adaptability is enhanced to foster regional economic resilience in SADC in response to future external economic shocks.

8.3 Conclusion

As Christopherson *et al*. (2010) state, the notions of adaptation and adaptability inherent to the resilience of regional economies in the face of external economic shocks is determined by the "capacity of regional institutions to chart new paths forward". These paths should be built on regional integration and industrialisation to foster regional economic resilience in SADC in the face of external economic shocks. While small local markets precipitate the continued export of primary commodities to industrialised regions, leading to long-term resource transfer and vulnerability of SADC to demand fluctuations, increased regional integration catalyses industrialisation within an integrated regional market in SADC. This enables adaptation and adaptability in regional production systems to external disturbances and regional economic prosperity. This interface between regional integration and industrialisation has the potential to

mitigate the influence of external factors on the development trajectory of SADC member countries, enabling resilient regional economic growth to achieve the socio-economic objectives of SADC. This includes increased regional economic growth to stimulate social development in the region; initiating self-sustaining development in the region by fostering interdependence between member countries; and stimulating productivity in natural resource and factor utilisation (c.f. 6.3.1). Table 8-2 illustrates the achieved objectives of the study.

Table 8-2: Trade and regional economic resilience

Objective	Achieved
To determine the spatial manifestation of the "region" and the regional phenomena in which regional economic resilience is fostered.	✓
To investigate the factors inherent to the regional economy that influence economic productivity and regional economic growth	✓
To determine the factors that contribute to the regional economic resilience of developing regions through mitigating the initial impact of an external economic disturbance on domestic production processes.	✓
To investigate the individual roles of regional integration and industrialisation, in addition to the unique interface between said factors, in fostering regional economic resilience of developing regions.	✓
To investigate current policy approaches implemented in developing regions to foster regional integration and industrialisation and regional economic resilience in an integrated regional market.	✓
To investigate the role of spatial planning, regional policy, industrial policy, and supranational institutions in enhancing regional integration and industrialisation, and stimulating their cumulative effect on regional economic resilience in the SADC	✓

Source: Author's own compilation.

This study regarding regional integration, industrialisation, and regional economic resilience is applicable to international research and other case studies regarding regional groupings and regional integration initiatives. Similar studies can be conducted in other regions with the expectation of attaining similar results, as this study is founded on economic and regional theories. Therefore, despite its focus on developing countries and SADC, this study is of value to an international audience. This study achieved its aim of contributing to research regarding economic resilience of developing regions on a sub-continental scale by determining the effects of regional integration and industrialisation and the interface between said factors in enhancing

the ability of the SADC regional economy to continuously adapt to demand volatility and external economic shocks. This study achieves its aim of determining the spatial manifestation of the “region” and the regional phenomena in which regional economic resilience is fostered. This is achieved by investigating the factors inherent to the regional economy that influence economic productivity and regional economic growth and determining the factors that contribute to the regional economic resilience of developing regions by mitigating the initial impact of an external economic disturbance on domestic production processes, as well as investigating the individual roles of regional integration and industrialisation. In addition to the unique interface between said factors in fostering regional economic resilience of developing regions, this study also investigated current policy approaches implemented in developing regions to foster regional integration; industrialisation and regional economic resilience in an integrated regional market; and the role of spatial planning, regional policy, industrial policy, and supranational institutions in enhancing regional integration and industrialisation, and stimulating their cumulative effect on regional economic resilience in the SADC.

8.4 Limitations of study

The following limitations to the study are identified:

- This study utilises the 2008 Global Financial Crisis in determining the impact, recovery, and eventual resilience of developing regions by analysing the effect of said disturbance on economic growth. The size of the developing region sample utilised in this study, limited data availability, and the incomparable international impact of the 2008 Global Financial Crisis do, however, impede the comparison of research findings and the effect of regional integration and industrialisation in fostering regional economic resilience during other external economic shocks.
- This study analyses the regional economy – an aggregate function of the individual economies of the member countries – and does not investigate the individual resilience of member countries and the effect of their interaction with external countries on economic resilience. However, the latter is considered to be outside the study scope as the objective of this study is to determine the effect of increased interaction between member countries and how it may increase shared economic resilience within an integrated developing region.
- The inclusion of industrialised countries and regions in this analysis of regional economic resilience may add value by comparing factors that determine resilience in both developing and industrialised regions – with emphasis on the influence of regional integration and industrialisation. However, the inclusion of industrialised regions is outside the scope of this study.

- The exclusion heterogenous political contexts – and their potential impact on the economies of member countries and their resilience to external disturbances – may be an additional study limitation.

8.5 Areas of future research

The research outputs of this study illuminate the following areas of future research:

- Additional future research areas include the development of a regional economic resilience model for developing countries and regions that highlights the influences of various endogenous and exogenous growth factors in determining the economic resilence of individual countries and regional groupings. An additional objective in this regard is the simulation of the potential impact of future external economic shocks to regional economic growth in developing regions to influence policy formulation and future development decisions.
- Future research may also explore the development of “resilience thresholds” of different economic variables that may foster increased resilience through decreasing the severity and caltalusing a timelous recovery of the SADC regional economy from future external economic shocks.
- Additional research may be undertaken with regards to the influence of individual member countries and how their interactions with external countries and regions may influence region-wide resilience in SADC.
- This research may contribute to future research regarding the development of an SADC Industrialisation and Resilience Policy that interprets the selective implementation of trade liberalisation, policy harmonisation, and spatial integration in the development of regional value chains and industrial supply linkages to catalyse industrialisation and regional economic resilience in the region.

BIBLIOGRAPHY

Abramovitz, M., 1956. Resource and output trends in the United States since 1870. *Resource and output trends in the United States since 1870*, 52: 1-23.

African Development Bank. 2011. Southern Africa regional integration strategy paper 2011-2015.http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/2011-2015%20-%20Southern%20Africa%20-%20Regional%20Integration%20Strategy%20Paper.pdf. Date of access: 14 July 2016.

Agosin, M.R. 2008. Export diversification and growth in emerging economies. *Revista de la Cepal,* 97: 115–131.

Ahern, J. 2011. From fail-safe to safe-to-fail: sustainability and resilience in the new urban world. *Landscape and urban planning,* 100(4): 341-343.

Albrechts, L. 2004. Strategic (spatial) planning re-examined. *Environment and planning B: Planning and design,* 31(5): 743-758.

Alden, J. & Morgan, R. 1974. Regional planning: a comprehensive view. Great Britain: Pitman Press. 364 p.

Allen, K. & Hermansen, T. 1968. Economic growth—regional problems and growth centres. EFTA regional policy in EFTA: an examination of the growth centre idea. Scotland, Oliver and Boyd.

Allwood, C.M. 2012. The distinction between qualitative and quantitative research methods is problematic. *Quality & Quantity,* 46(5): 1417-1429.

Anand, K., Gai, P., Kapadia, S., Brennan, S. & Willison, M. 2013. A network model of financial system resilience. *Journal of economic behavior & organization,* 85: 219-235.

Anastas, J.W. 1999. Research design for social work and the human services. United States of America: Columbia University Press.

Anderson, W.P. 2001a. Transport integration in the European Union. (*In* Subramanian, U., *ed*. Integration of transport and trade facilitation: selected regional case studies. Washington: The World Bank. p. 35-48).

Anderson, W.P. 2001b. Southern African Development Community: the Maputo corridor. (*In* Subramanian, U., *ed*. Integration of transport and trade facilitation: selected regional case studies. Washington: The World Bank. p. 71-79).

Antrop, M. 2004. Landscape change and the urbanization process in Europe. *Landscape and urban planning,* 67(1-4): 9-26.

Arauzo-Carod, J., Liviano-Solis, D. & Manjón-Antolín, M. 2010. Empirical studies in industrial location: an assessment of their methods and results. *Journal of regional science,* 50(3): 685-711.

Armstrong, H. & Taylor, J. 2000. Regional economics and policy. 3rd Ed. United States of America: Blackwell Publishers Inc. 437 p.

ASEAN, 2017. AEIB. http://asean.org/storage/2017/11/AEIB_2nd-edition.pdf Date of access: 6 March 2018.

ASEAN. 2018a. Overview. http://asean.org/asean-economic-community/initiative-for-asean-integration-iai-and-narrowing-the-development-gap-ndg/overview-2/ Date of access: 20 May 2017.

ASEAN. 2018b. ASEAN member states. http://asean.org/asean/asean-member-states/ Date of access: 4 April 2017.

ASEAN. 2018c. About ASEAN. http://asean.org/asean/about-asean/. Date of access: 14 April 2017.

ASEAN. 2018d. ASEAN economic community. http://asean.org/asean-economic-community/ Date of access: 2 July 2017.

ASEAN. 2018e. ASEAN economic community. http://asean.org/asean-economic-community/. Date of access: 4 July 2017.

ASEAN. 2018f. ASEAN connectivity. http://asean.org/asean/asean-connectivity/ Date of access: 30 September 2017.

ASEAN. 2018g. ASEAN industrial cooperation scheme. http://asean.org/?static_post=asean-industrial-cooperation-scheme Date of access: 5 May 2016.

ASEAN. 2018h. Initiative for the ASEAN integration IAI and narrowing the development. http://asean.org/asean-economic-community/initiative-for-asean-integration-iai-and-narrowing-the-development-gap-ndg/overview-2/ Date of access: 10 July 2016.

Ashcroft, B., 1984. An assessment of regional policies and programs in Western Europe. *Regional development: Problems and policies in Eastern and Western Europe*, p.99-133.

Athukorala, P. & Sen, K. 2015. Industrialisation, employment and poverty. (*In* Tribe, M. & Weiss, J., *eds*. Routledge handbook of industrial development. United Kingdom: Routledge, p. 109-118).

Austria, M.S. 2001. *Liberalization and regional integration: the Philippines' strategy to global competitiveness.* PIDS Discussion Paper Series, No. 2001-09.

Bahmani-Oskooee, M. & Kara, O. 2005. Income and price elasticities of trade: some new estimates. *The international trade journal,* 19(2): 165-178.

Bakrania, S. & Lucas, B. 2009. The impact of the financial crisis on conflict and state fragility in sub-Saharan Africa. Governance and Social Development Research Centre. University of Birmingham.

Balassa, B. 1961. The theory of economic integration. United States of America: Richard D. Irwin.

Baldwin, R. 2016. The world trade organization and the future of multilateralism. *Journal of economic perspectives,* 30(1): 95-116.

Bank of Botswana. 2013. Integrated paper of recent economic developments in SADC, September 2013. https://www.sadcbankers.org/Lists/News%20and%20Publications/Attachments/186/SADC%20Intengated%20paper%20on%20RED%20%202013%20Final.pdf. Date of access: 15 July 2017.

Barca, F., McCann, P. & Rodríguez-Pose, A. 2012. The case for regional development intervention: place-based versus place-neutral approaches. *Journal of regional science,* 52(1): 134-152.

Baxter, P. & Jack, S. 2008. Qualitative case study methodology: study design and implementation for novice researchers. *The Qualitative Report,* 13(4): 544-559.

Beavon, K. & Hay, A. 1978. Long run average cost, price and Christaller's concepts of range: an explanatory note. *Geography, 63(2):* 98-100.

Beckfield, J. 2006. European integration and income inequality. *American sociological review,* 71(6): 964-985.

Belini, C. 2017. The rise of the textile district of Buenos Aires and the limits of import substitution industrialization in the first half of twentieth century. *Revista de historia industrial,* 26(66): 159-190.

Berentsen, W.H. 1978. Austrian regional development policy: the impact of policy on the achievement of planning goals. *Economic geography,* 54(2): 115-134.

Berry, B.J.L. & Garrison, W.L. 1958. A note on central place theory and the range of a good. *Economic geography,* 34(4): 304-311.

Berry, B.J.L. & Hankins, T.D. 1963. A bibliographic guide to the economic regions of the United States: issues 87-89. United States of America: University of Chicago. 101 p.

Boldrin, M. & Canova, F. 2001. Inequality and convergence in Europe's regions: reconsidering European regional policies. *Economic policy,* 16(32): 205-253.

Boschma, R. 2015. Towards an evolutionary perspective on regional resilience. *Regional Studies,* 49(5): 733-751.

Boudeville, J. 1966. Problems of regional economic planning. Great Britain: Edinburgh University Press.

Briguglio, L., Cordina, G., Farrugia, N. & Vella, S. 2006. Conceptualizing and measuring economic resilience. https://secure.um.edu.mt/__data/assets/pdf_file/0013/44122/resilience_index.pdf. Date of access: 11 December 2016.

Briguglio, L., Cordina, G., Farrugia, N. & Vella, S. 2009. Economic vulnerability and resilience: concepts and measurements. *Oxford development studies,* 37(3):229-247.

Bristow, G. 2010. Resilient regions: Re-'place'ing regional competitiveness. *Cambridge journal of regions, economy and society,* 3(1): 153-167.

Brixiová, Z., Meng, Q. & Ncube, M. 2015. Can intra–regional trade act as a global shock absorber in Africa? IZA Discussion Paper 9205, IZA.

Brown, L.A. & Holmes, J. 1971. The delimitation of functional regions, nodal regions, and hierarchies by functional distance approaches. *Journal of regional science,* 11(1): 57-72.

Brown, L.A. & Horton, F.E. 1970. Functional distance: an operational approach. *Geographical analysis,* 2(1): 76-83.

Brülhart, M. 2001. Evolving geographical concentration of European manufacturing industries. *Weltwirtschaftliches Archiv*, *137*(2): 215-243.

Bruton, H.J. 1998. A reconsideration of import substitution. *Journal of economic literature,* 36(2): 903-936.

Business Cameroon. 2016. Growth in CEMAC. http://www.businessincameroon.com/public-management/2303-6085-according-to-beac-the-growth-in-the-cemac-area-fell-by-2-in-2015-and-will-drop-back-to-2-in-2016 Date of access: 1 October 2016.

Byiers, B. 2017. Understanding regional economic policies in central Africa. http://ecdpm.org/wp-content/uploads/ECCAS-CEMAC-Background-Paper-PEDRO-Political-Economy-Dynamics-Regional-Organisations-Africa-ECDPM-2017.pdf Date of access: 17 March 2017.

Caporaso, J. 1998. Regional integration theory: Understanding our past and anticipating our future. *Journal of European public policy,* 5(1): 1-16.

CARICOM. 2015. Strategic plan for the Caribbean Community 2015-19: repositioning CARICOM. https://caricom.org/documents/11265-executive_plan_vol_1_-_final.pdf, Date of access: 31 October 2017.

CARICOM. 2018a. Who we are. http://caricom.org/about-caricom/who-we-are Date of access: 31 October 2017.

CARICOM. 2018b. Other support mechanisms and structure. http://caricom.org/other-support-mechanism-and-structures/. Date of access: 16 March 2017.

CARICOM. 2018c. CARICOM development fund. http://caricom.org/about-caricom/who-we-are/institutions1/caricom-development-fund 14 December 2016.

CEC. 1997. The EU compendium of spatial planning and policies. http://commin.org/upload/Glossaries/European_Glossary/EU_compendium_No_28_of_1997.pdf . Date of access: 1 May 2016.

Chapman, K. 2005. From ‘growth centre’ to ‘cluster’: Restructuring, regional development, and the Teesside chemical industry. *Environment and planning A,* 37(4):597-615.

Chen, Y. & Zhou, Y. 2006. Reinterpreting central place networks using ideas from fractals and self-organized criticality. *Environment and planning B: Planning and design,* 33(3): 345-364.

Chia, S.Y. 2010. Regional trade policy cooperation and architecture in East Asia. ADBI working paper series 191.

Chinitz, B. 1961. Contrasts in agglomeration: New York and Pittsburgh. *The American economic review,* 51(2): 279-289.

Christaller W (1933) Die zentralen orte in Süddeutschland: Eine ökonomisch-geographische untersuchung über die gesetzmässigkeit der verbreitung und entwicklung der siedlungen mit städtischen funktionen. Wissenschaftliche Buchgesellschaft, Darmstadt

Christopherson, S., Michie, J. & Tyler, P. 2010. Regional resilience: theoretical and empirical perspectives. *Cambridge Journal of Regions, Economy and Society,* 3(1): 3-10.

Clark, D. 1973. The formal and functional structure of wales. *Annals of the association of American geographers,* 63(1): 71-84.

Clausing, K.A. 2001. Trade creation and trade diversion in the Canada–United States free trade agreement. *Canadian journal of Economics/Revue Canadienne d'économique,* 34(3): 677-696.

CWF. Currents: western trade with South America's common market. http://cwf.ca/news/currents/currents-western-trade-with-south-americas-common-market/. Date of access: 14 February 2018.

Curtin, K.M. & Church, R.L. 2007. Optimal dispersion and central places. *Journal of geographical systems,* 9(2): 167-187.

Dacey, M.F. 1965. The geometry of central place theory. *Geografiska annaler. Series B, human geography,* 47(2): 111-124.

Darity Jr, W. & Davis, L.S. 2005. Growth, trade and uneven development. *Cambridge journal of economics,* 29(1):141-170.

Davoudi, S. 2012. Resilience: a bridging concept or a dead end? *Planning Theory & Practice,* 13(2): 299-333.

Dawkins, C.J. 2003. Regional development theory: conceptual foundations, classic works, and recent developments. *Journal of planning literature,* 18(2): 131-172.

Dawley, S., Pike, A. & Tomaney, J. 2010. Towards the resilient region? *Local economy,* 25(8): 650-667.

De Boe, P., Grasland, C. & Healy, A. 1999. Study programme on European spatial planning - Strand 1.4: spatial integration. http://www.mcrit.com/SPESP/SPESP_REPORT/spatial_integration.pdf. Date of access: 15 April 2017.

De Frahan, B.H. & Vancauteren, M. 2006. Harmonisation of food regulations and trade in the single market: evidence from disaggregated data. *European review of agricultural economics,* 33(3): 337-360.

De La Grandville, O. 2009. Economic growth: a unified approach. 1st Ed. United Kingdom: Cambridge University Press.

De Weijer, F. 2013. Resilience: A trojan horse for a new way of thinking? European centre for development policy management. ECDPM discussion paper 139.

Démurger, S. 2001. Infrastructure development and economic growth: an explanation for regional disparities in China? *Journal of comparative economics,* 29(1): 95-117.

Derycke, P. & Huriot, J. 1998. A brief history of spatial economics. *Recherches économiques de Louvain/Louvain economic review,* 64(1): 3-10.

Desker, B. 2015. ASEAN Integration remains an illusion. RSIS commentaries, 46.

Desouza, K.C. & Flanery, T.H. 2013. Designing, planning, and managing resilient cities: a conceptual framework. *Cities*, 35: 89–99.

Devlin, R. & French-Davis, R. 1999. Towards an evaluation of regional integration in Latin America in the 1990s. *The world economy,* 22(2): 261-290.

Dickinson, R.E. 1938. The economic regions of Germany. *Geographical review,* 28(4): 609-626.

Dissart, J.C. 2003. Regional economic diversity and regional economic stability: research results and agenda. *International regional science review,* 26(4): 423-446.

Dorrucci, E., Firpo, S., Fratzscher, M. & Mongelli, F.P. 2005. The path of European institutional and economic integration: what lessons for Latin America? *Journal of economic integration,* 20(2): 217-251.

Douglass, M. 2002. From global intercity competition to cooperation for liveable cities and economic resilience in pacific Asia. *Environment and urbanization,* 14(1): 53-68.

Draper, P. & Nene, M.M.B. 2015. Rethinking the (European) foundations of sub-Saharan African regional economic integration. (*In* Dosenrode, S., *ed*. Limits to regional integration. United Kingdom: Ashgate Publishing. p. 109-118).

Du Toit, J.L. & Mouton, J. 2013. A typology of designs for social research in the built environment. *International journal of social research methodology,* 16(2): 125-139.

Duval, R., Elmeskov, J. & Vogel, L. 2007. Structural policies and economic resilience to shocks. OECD working paper, 567.

EAC. 2018a. Overview of EAC. https://www.eac.int/overview-of-eac Date of access: 9 June 2017.

EAC. 2018b. Common market. https://www.eac.int/common-market Date of access: 25 September 2017.

EAC. 2018c. Infrastructure. https://www.eac.int/infrastructure Date of access: 27 December 2017.

EAC. 2018d. Planned interventions to achieve industrialisation objectives. https://www.eac.int/industry/eac-and-industrialisation/strategic-interventions Date of access: 23 January 2017.

EAC. 2018e. Financing mechanisms for industrialisation programmes. https://www.eac.int/industry/eac-and-industrialisation/financing-mechanisms Date of access: 8 November 2016.

EAC. 2018f. The secretariat. https://www.eac.int/the-secretariat Date of access: 6 November 2016.

Easterly, W. & Levine, R. 2001. What have we learned from a decade of empirical research on growth? It's not factor accumulation: stylized facts and growth models. *The world bank economic review,* 15(2): 177-219.

Easterly, W., Ritzen, J. & Woolcock, M. 2006. Social cohesion, institutions, and growth. *Economics & politics,* 18(2): 103-120.

Economic Commission for Africa. 2009. Impact of the Global Financial Crisis and recession on the SADC mining sector. https://www.uneca.org/publications/impact-global-financial-crisis-and-recession-sadc-mining-sector. Date of access: 25 August 2017.

EENI. 2018. Andean community. http://en.reingex.com/Andean-Community.shtml. Date of access: 17 March 2017.

Epshtein, D. 2017. Import substitution and neo-industrialization: What must be done. *Problems of economic transition,* 59(1-3): 186-201.

Esmara, H. 1975. Regional income disparities. *Bulletin of Indonesian economic studies,* 11(1): 41-57.

Ethier, W.J. 1998. The new regionalism. *The economic journal,* 108(449): 1149-1161.

Entholzner, A. & Reeve, C. 2016. Building climate resilience through virtual water and nexus thinking in the Southern African Development Community. Switzerland: Springer Publishing.

European Commission. 2018. EU Funding for TEN-T. https://ec.europa.eu/transport/themes/infrastructure/ten-t-guidelines/project-funding_en Date of access: 9 January 2018.

Fabbio, M.D. 2011. Taranto and its steel production. *Regional Insights,* 2(1): 21-23.

Fawcett, L. 2004. Exploring regional domains: a comparative history of regionalism. *International affairs,* 80(3): 429-446.

Feldstein, M. 1997. The political economy of the European economic and monetary union: Political sources of an economic liability. *Journal of economic perspectives,* 11(4): 23-42.

Fernandez, R. & Portes, J. 1998. Returns to regionalism: an analysis of non-traditional gains from regional trade agreements. *The World Bank economic review,* 12(2): 197-220.

Fields, G.S. 2004. Dualism in the labor market: A perspective on the Lewis model after half a century. *The Manchester school,* 72(6): 724-735.

Fischer, K. 2011. Central places: the theories of von Thünen, Christaller, and Lösch. (*In* Eiselt, H & Marianov, V., *eds.* Foundations of location analysis. United States of America: Springer Publishing, p. 471-505).

Folke, C., Carpenter, S., Walker, B., Scheffer, M., Chapin, T. & Rockström, J. 2010. Resilience thinking: integrating resilience, adaptability and transformability. *Ecology and society,* 15(4): 20-29.

Friedmann, J.R. & Alonso, W. 1964. Introduction: regional development as a policy issue. (*In* Friedmann, J. & Alonso, W., *ed*. Regional development and planning: a reader. Massachusetts: The MIT Press. p. 1-13).

Friedmann, J.R. 1956. The concept of a planning region. *Land economics,* 1-13.

Friedmann, J.R. 1963. Regional planning as a field of study. (*In* Friedmann, J. & Alonso, W., *ed*. Regional development and planning: a reader. Massachusetts: The MIT Press. p. 59-72).

Friedmann, J. 2001. Regional development and planning: the story of a collaboration. *International regional science review,* 24(3): 386-395.

Fujita, M., Krugman, P.R., Venables, A.J. & Fujita, M. 1999. The spatial economy: cities, regions and international trade. Massachusetts: The MIT Press.

Galiani, S. & Somaini, P. 2018. Path-dependent import-substitution policies: the case of Argentina in the twentieth century. *Latin American economic review,* 27(1): 1-53.

Garner, B. 1967. Models of urban geography and settlement location. *Models in geography,* 303-360.

Genna, G.M. 2017. Measuring integration achievements in the Americas. (*In* De Lombaerde, P. & Saucedo, A.E., *eds*. Indicator-based monitoring of regional economic integration. United Nations University series on regionalism. United States of America: Springer Publishing. p. 159-182.

Ghali, M., Akiyama, M. & Fujiwara, J. 1978. Factor mobility and regional growth. *The review of economics and statistics,* 60(1): 78-84.

Gibson-Graham, J.K. 2008. Diverse economies: performative practices for other worlds. *Progress in human geography,* 32(5): 613-632.

Giljum, S. & Eisenmenger, N. 2004. North-south trade and the distribution of environmental goods and burdens: a biophysical perspective. *The Journal of Environment & Development,* 13(1): 73-100.

Glasson, J. 1978. An introduction to regional planning. 2nd Ed. London: UCL Press. 434 p.

Glasson, J. & Marshall, T. 2007. Regional planning. United States of America: Routledge. 316 p.

GlobalEdge. 2018. Introduction. https://globaledge.msu.edu/trade-blocs/caricom Date of access: 4 March 2018.

Godschalk, D.R. 2003. Urban hazard mitigation: Creating resilient cities. *Natural hazards review,* 4(3): 136-143.

Grabher, G. & Stark, D. 1997. Organizing diversity: Evolutionary theory, network analysis and postsocialism. *Regional studies,* 31(5): 533-544.

Grabher, G. 1993. The embedded firm: on the socio-economics of industrial networks. United Kingdom: Yale University Press.

Green, D., King, R. & Miller-Dawkins, M. 2010. The global economic crisis and developing countries. *Oxfam policy and practice: Agriculture, Food and Land*, 10(1): 67-138.

Grigg, D. 1965. The logic of regional systems. *Annals of the association of American geographers,* 55(3): 465-491.

Gritsai, O. & Treivish, A. 1990. Stadial concept of regional development: the dynamics of core and periphery - a theoretical discussion. *Geographische zeitschrift,* 65-77.

Grotewold, A. 1987. Nations as economic regions. *Geojournal,* 15(1): 91-96.

Growe, A. 2012. Emerging polycentric city-regions in Germany - regionalisation of economic activities in metropolitan regions. *Erdkunde,* 295-311.

Gunderson, L.H. 2000. Ecological resilience—in theory and application. *Annual review of ecology and systematics,* 31(1): 425-439.

Gundlach, E. 2007. The Solow model in the empirics of growth and trade. *Oxford review of economic policy,* 23(1): 25-44.

Gurtner, B. 2010. The financial and economic crisis and developing countries. *International development policy| revue internationale de politique de développement,* 1(1): 189-213.

Harris, D.J. 1980. Market size, industrialisation, and regional integration. *Social and economic studies,* 29(4): 76-84.

Harrison, B. 1992. Industrial districts: old wine in new bottles? *Regional studies,* 26(5): 469-483.

Hartzenberg, T. 2011. Regional Integration in Africa. World Trade Organization Economic Research and Statistics Division. Staff working paper 2011-14.

Hassink, R. 2010. Regional resilience: a promising concept to explain differences in regional economic adaptability? *Cambridge journal of regions, economy and society,* 3(1): 45-58.

Healy, M. & Perry, C. 2000. Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm. *Qualitative market research: An international journal,* 3(3): 118-126.

Hemmasi, M., 1980. The identification of functional regions based on lifetime migration data: a case study of Iran. *Economic geography*, *56*(3): 223-233.

Henrekson, M., Torstensson, J. & Torstensson, R., 1997. Growth effects of European integration. *European Economic Review*, *41*(8): 1537-1557.

Herrschel, T. 2005. Competing regionalisation through territory and cluster networks: experiences from post-socialist eastern Germany. *Geojournal,* 62(1-2): 59-70.

Hilhorst, J.G.M. 1971. Regional planning: a systems approach. Netherlands: Rotterdam University Press. 151 p.

Hill, E., Wial, H. and Wolman, H., 2008. Exploring regional economic resilience. Institute of Urban and Regional Development. Working paper 2008-04.

Hirschman, A.O. 1958. The strategy of economic development. United States of America: Yale University Press.

Hite, J. 1997. The Thünen model and the new economic geography as a paradigm for rural development policy. *Review of agricultural economics,* 19(2): 230-240.

Holling, C.S. 1973. Resilience and stability of ecological systems. *Annual review of ecology and systematics,* 4(1): 1-23.

Hudson, R. & Lewis, J.R. 1982. Regional planning in Europe. London: Pion Limited. 202 p.

Hudson, R. 2009. Resilient regions in an uncertain world: wishful thinking or a practical reality? *Cambridge Journal of Regions, Economy and Society,* 3(1): 11-25.

Hughes, J.C. 1972. Central place theory and intra-metropolitan distributions. *Transactions of the Kansas academy of science (1903),* 121-127.

Hussein, A. 2015. The use of triangulation in social sciences research: can qualitative and quantitative methods be combined? *Journal of comparative social work,* 4(1): 1-12.

ICA. 2018. The CEMAC trade corridor project https://www.icafrica.org/en/topics-programmes/case-studies/transport-the-cemac-trade-corridor-project/ Date of access 2 February 2018.

IDW. 2012. South Asian association for regional cooperation. http://www.internationaldemocracywatch.org/index.php/south-asian-association-for-regional-cooperation- Date of access: 6 March 2017.

Isard, W., 1949. The general theory of location and space-economy. *The Quarterly Journal of Economics*, *63*(4): 476-506

Isard, W. 1975. Introduction to regional science. United States of America: Prentice-Hall. 506 p.

Islam, N. & Yokota, K. 2008. Lewis growth model and china's industrialization. *Asian economic journal,* 22(4): 359-396.

Ivankova, N.V., Creswell, J.W. & Stick, S.L. 2006. Using mixed-methods sequential explanatory design: from theory to practice. *Field methods,* 18(1): 3-20.

James, P.E. 1952. Toward a further understanding of the regional concept. *Annals of the association of American geographers,* 42(3): 195-222.

Johansson, B., Karlsson, C. & Stough, R.R. 2001. Theories of endogenous regional growth: lessons for regional policies. Germany: Springer.

Johnson, O.E. 2016. Economic diversification and growth in Africa: critical policy making issues. United States of America: Springer Publishing.

Joshi, S. 2004. Tertiary sector-driven growth in India: Impact on employment and poverty. *Economic and political weekly,* 39(37): 4175-4178.

Kaelble, H. & Hohls, R. 1987. The regional structure of employment in Germany, 1895-1970. *Historische Sozialforschung, (44):* 5-35.

Kaltenthaler, K. & Mora, F.O. 2002. Explaining Latin American economic integration: the case of MERCOSUR. *Review of international political economy,* 9(1): 72-97.

Katz, H. 2014. Poverty and other factors affecting the location of nonprofit human service organizations. *International journal of social work and human services practice,* 2(5): 163-172.

Keeble, L.B. 1969. Principles and practice of town and country planning. United Kingdom: Estates Gazette.

Ketelhöhn, N., Artavia, R., Arce, R. and Umaña, V., 2015. The central American competitiveness initiative. *Competitiveness Review*, *25*(5): 555-570.

Kitson, M., Martin, R. & Tyler, P. 2004. Regional competitiveness: an elusive yet key concept? *Regional studies,* 38(9): 991-999.

Klaassen, L. 1965. Area social and economic redevelopment: guidelines for programmes. Paris: Organisation for Economic Cooperation and Development.

Krauss, S.E. 2005. Research paradigms and meaning making: a primer. *The qualitative report,* 10(4): 758-770.

Krishna, K. 2005. Understanding rules of origin. National Bureau of Economic Research. Working paper 11150.

Krueger, A. 1998. Why trade liberalisation is good for growth. *The economic journal,* 108(450): 1513-1522.

Krueger, A.O. 1999. Trade creation and trade diversion under NAFTA. National Bureau of Economic Research. Working paper 7429.

Kutan, A.M. & Yigit, T.M. 2007. European integration, productivity growth and real convergence. *European economic review,* 51(6): 1370-1395.

Kuznets, S. 1957. Quantitative aspects of the economic growth of nations: Industrial distribution of national product and labour force. *Economic development and cultural change,* 5(S4): 1-111.

Lakshmanan, T.R. 2001. Transport and trade facilitation: an overview. (*In* Subramanian, U., *ed*. Integration of transport and trade facilitation: selected regional case studies. Washington: The World Bank. p. 1-10).

Lakshmanan, T.R., & Anderson, W.P. 2001. Transport and trade in the North American free trade agreement. (*In* Subramanian, U., *ed*. Integration of transport and trade facilitation: selected regional case studies. Washington: The World Bank. p. 13-32).

Leedy, P.D. & Ormrod, J.E. 2013. Practical research. 10th ed. United States of America: Pearson Custom.

Leichenko, R. 2011. Climate change and urban resilience. *Current Opinion in Environmental Sustainability*, 3(3): 164–168

Leipziger, D.M., Frischtak, C., Kharas, H. & Normand, J.F. 1997. Mercosur: integration and industrial policy. *The world economy,* 20(5): 585-603.

Leke, S.K. 2012. The history and structure of CEMAC http://wiredspace.wits.ac.za/jspui/bitstream/10539/11740/6/Chapter_4.pdf

Lenz, T. 2012. Spurred emulation: the EU and regional integration in MERCOSUR and SADC. *West European Politics,* 35(1): 155-173.

Lewis, W.A. 1954. Economic development with unlimited supplies of labour. *The Manchester school,* 22(2): 139-191.

Lewis, W.C. 1972. A critical examination of the export-base theory of urban-regional growth. *The annals of regional science,* 6(2): 15-25.

Lewis-Beck, M., Bryman, A.E. & Liao, T.F. 2003. The sage encyclopedia of social science research methods. United States of America: Sage Publications.

Lhomme, S., Serre, D., Diah, Y. &, Laganier, R. 2013. Urban technical networks resilience assessment. (*In* Laganier, R., *ed*. Resilience and urban risk management. United Kingdom: CRC Press).

Lin, J.Y. 2008. The impact of the financial crisis on developing countries. http://hdl.handle.net/10986/26129. Date of access: 18 December 2017.

Lloyd, P.J. 2005. What is a single market? An application to the case of ASEAN. *ASEAN economic bulletin,* 251-265.

Loebel, E. & Zambaldi, F. 2011. How much does the interaction between firm and industry matter. http://www.anpad.org.br/admin/pdf/ESO2742.pdf Date of access: 10 January 2017.

Lösch, A. 1940. Die Raeumliche Ordnung der Wirtschaf. Deutchland.

Lowitt, S. 2011. Examples of industrial policy approaches within regional integration initiatives – some reflections for the South African Customs Union (SACU). http://www.tips.org.za/files/examples_of_industrial_policy_approaches_within_regional_integration_initiatives_sandy_lowitt.pdf. Date of access: 14 January 2018.

Lu, P. & Stead, D. 2013. Understanding the notion of resilience in spatial planning: a case study of Rotterdam, the Netherlands. *Cities,* 35: 200-212.

Lütkenhorst, W. 1989. Industrial development and industrial policy in the republic of Korea—with special emphasis on engineering industries. (*In* Klenner, W., *ed.* Trends of economic development in East Asia. Berlin: Springer. p. 475-492).

Lyne, M. 2015. Rethinking the political economy of import substitution industrialization in brazil: A clientelist model of development policymaking. *Latin American politics and society,* 57(1): 75-98.

Majoor, S. 2015. Resilient practices: a paradox-oriented approach for large-scale development projects. *Town planning review,* 86(3): 257-277.

Marchand, M.H., Boas, M. & Shaw, T.M. 1999. The political economy of new regionalisms. *Third world quarterly,* 20(5): 897-910.

Martin, R. & Sunley, P. 2015. On the notion of regional economic resilience: conceptualization and explanation. *Journal of economic geography,* 15(1): 1-42.

Martin, R. 2011. Regional economic resilience, hysteresis and recessionary shocks. *Journal of economic geography,* 12(1): 1-32.

Massa, I. & Te Velde, D.W. 2008. The global financial crisis: Will successful African countries be affected? Overseas Development Institute Background Note, 8 December. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/3486.pdf. Date of access: 15 January 2018.

Mattli, W. 1999. The logic of regional integration: Europe and beyond. Cambridge University Press: United Kingdom. 205 p.

McDonald, J.R. 1966. The region: its conception, design, and limitations. *Annals of the association of American geographers,* 56(3):516-528.

MEA. 2012. Foreign relation. http://mea.gov.in/Portal/ForeignRelation/sica-august-2012.pdf Date of access: 28 November 2016.

MEA. 2016. Andean community. https://www.mea.gov.in/Portal/ForeignRelation/Andean_Community_09_02_2106.pdf Date of access: 4 August 2017.

Meardon, S.J. 2001. Modelling agglomeration and dispersion in city and country: Gunnar Myrdal, Francois Perroux, and the new economic geography. *American journal of economics and sociology,* 25-57.

Melitz, M.J. & Ottaviano, G.I. 2008. Market size, trade, and productivity. *The review of economic studies,* 75(1): 295-316.

Miller, F., Osbahr, H., Boyd, E., Thomalla, F., Bharwani, S., Ziervogel, G., Walker, B., Birkmann, J., Van der Leeuw, S. & Rockström, J. 2010. Resilience and vulnerability: complementary or conflicting concepts? *Ecology and society,* 15(3): 11-36.

Moncarz, P., Olarreaga, M. & Vaillant, M. 2016. Regionalism as industrial policy: evidence from MERCOSUR. *Review of development economics,* 20(1): 359-373.

Mookherjee, D. & Ray, D. 2001. Readings in the theory of economic development. United States of America: Wiley. 500p.

Moseley, M.J. 1974. Growth centres in spatial planning. United Kingdom: A. Wheaton & co. 189 p.

Mohr, P. & Fourie, L. 2004. Economics for South African students. 4th ed. Pretoria: Van Schaik.

Muendler, M. 2004. Trade, technology and productivity: a study of Brazilian manufacturers 1986-1998. CESIFO working paper 1148.

Mulligan, G.F., Partridge, M.D. & Carruthers, J.I. 2012. Central place theory and its re-emergence in regional science. *The annals of regional science,* 48(2): 405-431.

Mulugeta, S. 2008. The economic base of Ethiopian urban centers. *Journal of Ethiopian studies,* 9-25.

Murphy, K.M., Shleifer, A. & Vishny, R.W. 1988. Income distribution, market size, and industrialization, *The Quarterly Journal of Economics,* 537-564.

Myrdal, G. 1957. Economic theory and underdeveloped countries. London: Duckworth.

Nelson, R.R. & Winter, S.G. 1974. Neoclassical vs. evolutionary theories of economic growth: critique and prospectus. *The economic journal,* 84(336): 886-905.

Neuman, W.L. 2012. Basics of social research. 3rd ed. United States of America: Pearson Custom.

Noronha, V.T. & Goodchild, M.F. 1992. Modelling interregional interaction: implications for defining functional regions. *Annals of the association of American geographers,* 82(1): 86-102.

North, D.C. 1955. Location theory and regional economic growth. *Journal of political economy,* 63(3): 243-258.

Ogburn, W.F. 1936. Regions. *Social Forces,* 15: 6-11.

Ohlin, B.G. 1967 Interregional and international trade. United States of America: Harvard University Press.

Pant, R., Barker, K. & Zobel, C.W. 2014. Static and dynamic metrics of economic resilience for interdependent infrastructure and industry sectors. *Reliability engineering & system safety,* 125: 92-102.

Parr, J.B. 1980. Frequency distributions of central places in southern Germany: a further analysis. *Economic geography,* 141-154.

Parr, J.B. 2001. On the regional dimensions of Rostow's theory of growth. *Review of urban & regional development studies,* 13(1): 2-19.

Parr, J.B. 2017. Central place theory: an evaluation. *Review of urban & regional development studies,* 29(3): 151-164.

Pendall, R., Foster, K.A. & Cowell, M. 2010. Resilience and regions: building understanding of the metaphor. *Cambridge journal of regions, economy and society,* 3(1): 71-84.

Peres N.W. & Primi, A. 2009. Theory and practice of industrial policy: evidence from the Latin American experience. Chile: United Nations Publications.

Perroux, F. 1950. Economic space: theory and applications. (*In* Friedmann, J. & Alonso, W., *ed*. Regional development and planning: a reader. Massachusetts: The MIT Press. p. 21-36.

Peters-Berries, C. 2010. Regional integration in southern Africa – a guidebook. Germany: Internationale Weiterbildung und Entwicklung, pp. 1-196.

Philbrick, A.K. 1957. Principles of areal functional organization in regional human geography. *Economic geography,* 33(4): 299-336.

Pickett, S.T., Cadenasso, M.L. & Grove, J.M. 2004. Resilient cities: meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms. *Landscape and urban planning,* 69(4): 369-384.

Pike, A., Dawley, S. & Tomaney, J. 2010. Resilience, adaptation and adaptability. *Cambridge journal of regions, economy and society,* 3(1): 59-70.

Preston, R.E. 1992. Christaller's research on the geography of administrative areas. *Progress in human geography,* 16(4): 523-539.

Pretorius, O & Drewes, JE. 2016. The spatial integration of the SADC through development corridors. (*In* 52nd ISoCaRP Congress: cities we have vs cities we need. Durban South Africa. Conference Proceedings. p. 637-647).

Pretorius, O., Drewes, E. & Van Aswegen, M. 2017. Fostering a resilient regional economy in the SADC through regional integration. *Regional science policy & practice,* 9(3): 217-228.

Puga, D. & Venables, A.J. 1999. Agglomeration and economic development: import substitution vs. trade liberalisation. *The economic journal,* 109(455):292-311.

Quora. 2017. Does India really need SAARC. https://www.quora.com/Does-India-really-need-SAARC Date of access: 2 April 2017.

Retch, M. 1997. Social structure of accumulation theory: retrospect and prospect. *Review of radical political economics,* 29(3): 1-10.

Richardson, H.W. 1978. The state of regional economics: a survey article. *International regional science review,* 3(1): 1-48.

Richardson, H.W. 1985. Input-output and economic base multipliers: looking backward and forward. *Journal of Regional science*, *25*(4): 607-661.

Rivera-Batiz, L.A. and Romer, P.M., 1991. Economic integration and endogenous growth. *The Quarterly Journal of Economics*, *106*(2): 531-555.

Robinson, S. & Thierfelder, K. 2002. Trade liberalisation and regional integration: the search for large numbers. *Australian journal of agricultural and resource economics,* 46(4): 585-604.

Rodríguez-Pose, A. 1999. Convergence or divergence? Types of regional responses to socio-economic change in western Europe. *Tijdschrift voor economische en sociale geografie,* 90(4): 365-378.

Röhn, O., Sánchez, A.C., Hermansen, M. & Rasmussen, M. 2015. Economic resilience: a new set of vulnerability indicators for OECD countries. OECD economic department working paper, 1249.

Rojas, *et al.,* 2005. http://bibliotecadigital.fgv.br/dspace/bitstream/handle/10438/535/1797.pdf?sequence=1 Date of access: 3 May 2017.

Rosenstein-Rodan, P.N. 1943. Problems of industrialisation of eastern and south-eastern Europe. *The economic journal,* 53(210/211): 202-211.

Rostow, W.W. 1971. The stages of growth: a non-communist manifesto. 2nd ed. United Kingdom: Cambridge University Press.

Roy, N., Arnason, R. & Schrank, W.E. 2009. The identification of economic base industries, with an application to the newfoundland fishing industry. *Land economics,* 85(4): 675-691.

RWJF. 2008. The positivist paradigm. http://www.qualres.org/HomePosi-3515.html. Date of access: 21 September 2016.

SAARC. 2018a. About SAARC http://saarc-sec.org/about-saarc Date of access: 5 September 2017.

SAARC. 2018b. Economic trade and finance. http://saarc-sec.org/areas_of_cooperation/area_detail/economic-trade-and-finance/click-for-details_7 Date of access: 25 January 2018.

SAARC. 2018c.Specialized bodies. http://saarc-sec.org/saarc-specialized-bodies Date of access: 16 February 2018.

SAARC. 2018d. Technical committees. http://saarc-sec.org/technical-committees Date of access: 7 June 2017.

SAARC. 2018e. Programming committee. http://saarc-sec.org/programming-committee Date of access: 19 August 2017.

SAARC. 2018f. Standing committee. http://saarc-sec.org/standing-committee Date of access: 3 February 2017.

SADC. 2001. Report on the review of the operations of SADC institutions. http://www.sadc.int/files/6113/5281/6304/REPORT_ON_THE_REVIEW_OF_OPERATIONS.pdf. Date of access: 14 July 2016.

SADC. 2011a. SADC statistics yearbook 2011. http://www.sadc.int/information-services/sadc-statistics/sadc-statiyearbook/. Date of access: 12 July 2016.

SADC. 2011b. Regional indicative strategic development plan. http://www.sadc.int/files/5713/5292/8372/Regional_Indicative_Strategic_Development_Plan.pdf. Date of access: 22 September 2017.

SADC. 2012a. History and treaty. http://www.sadc.int/about-sadc/overview/history-and-treaty/. Date of access: 29 October 2016.

SADC. 2012b. Monetary union. http://www.sadc.int/about-sadc/integration-milestones/monetary-union/. Date of access: 25 September 2016.

SADC. 2012c. Member states. http://www.sadc.int/member-states/. Date of access: 29 October 2015

SADC. 2012d. SADC objectives. http://www.sadc.int/about-sadc/overview/sadc-objectiv/

SADC. 2012e. Free trade agreement. http://www.sadc.int/about-sadc/integration-milestones/free-trade-area/. Date of access: 16 March 2018.

SADC. 2012f. Regional infrastructure development master plan: executive summary. http://www.sadc.int/files/7513/5293/3530/Regional_Infrastructure_Development_Master_Plan_Executive_Summary.pdf. Date of access: 26 October 2017.

Sandelowski, M. 2000. Whatever happened to qualitative description? *Research in nursing & health,* 23(4): 334-340.

Saurugger, S. & Terpan, F. 2016. Crisis and Institutional Change in Regional Integration. United States of America: Routledge.

Schiff, M. and Winters, L.A., 1998. Dynamics and politics in regional integration arrangements: an introduction. *The World bank economic review*, 12(2): 177-195.

Schmitt-Egner, P., 2002. The concept of 'region': theoretical and methodological notes on its reconstruction. *Journal of European Integration*, *24*(3): 179-200.

Schularick, M. & Taylor, A.M. 2012. Credit booms gone bust: monetary policy, leverage cycles, and financial crises, 1870-2008. *American economic review,* 102(2): 1029-1061.

Scotland, J. 2012. Exploring the philosophical underpinnings of research: relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English language teaching,* 5(9):9-16.

SDFSEC, 2016a. SAARC Development Fund. http://www.sdfsec.org/funding-windows Date of access: 15 October 2017.

SDFSEC, 2016b. Information handbook. http://sdfsec.org/sites/default/files/news_file/Information%20Handbook%20-%20E%20and%20I%20Windows_0.pdf Date of access: 16 May 2017.

SEICA. 2018a. Mobility and logistics. http://www.sieca.int/index.php/economic-integration/economic-integration/transport-infrastructure-and-logistics/mobility-and-logistics/?lang=en Date of access: 2 September 2016.

SEICA. 2018b. Regional projects. http://www.sieca.int/index.php/international-cooperation-and-regional-projects/regional-projects/?lang=en Date of access: 9 June 2017.

SEICA, 2018c. Completed projects. http://www.sieca.int/index.php/international-cooperation-and-regional-projects/regional-projects/completed-projects/?lang=en Date of access: 11 April 2017.

Semple, R.K., Gauthier, H.L. & Youngmann, C.E. 1972. Growth poles in Sao Paulo, brazil. *Annals of the association of American geographers,* 62(4): 591-598.

Siebert, H. 1969. Regional economic growth: Theory and policy. United States of America: International Textbook Company.

Simmie, J. & Martin, R. 2010. The economic resilience of regions: towards an evolutionary approach. *Cambridge journal of regions, economy and society,* 3(1): 27-43.

Simsek, Z., Heavey, C., Veiga, J.F. & Souder, D. 2009. A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. *Journal of management studies,* 46(5): 864-894.

Smith, B. 1965. Regionalism in England: its nature and purpose, *Acton Society Trust,* 2:1905-1965.

Smith, D.M. 1966. A theoretical framework for geographical studies of industrial location. *Economic geography,* 42(2): 95-113.

Smith, M.E. 1977. State systems of settlement: response to Crumley. *American anthropologist,* 79(4): 903-906.

Smith, M., 2015. On Rostow's 'Stages' Thesis and Explanation of 'Take-Off' Growth. Sydney: University of Sydney.

Solow, R.M. 1956. A contribution to the theory of economic growth. *The quarterly journal of economics,* 65-94.

Sonis, M., 2007, April. Central Place Theory after Christaller and Lösch: some further explorations. In *Space-Structure-Economy: A Tribute to August Lösch* (pp. 229-287).

Stebbins, R.A. 2001. Exploratory research in the social sciences. United States of America: Sage Publications. 67 p.

Steckler, A., McLeroy, K.R., Goodman, R.M., Bird, S.T. & McCormick, L. 1992. Toward integrating qualitative and quantitative methods: an introduction. *Health Education Quarterly*, 19(1): 1-8.

Supple, B., 1972. Thinking about economic development. London: Allen & Ullwin.

Syrquin, M. & Chenery, H. 1989. Three decades of industrialization. *The world bank economic review,* 3(2): 145-181.

Szirmai, A. 2013. Manufacturing and economic development. (*In* Szirmai, A., Naudé, W. & Alcorta, L., *eds*. Pathways to industrialization in the twenty-first century: new challenges and emerging paradigms. United Kingdom: Oxford University Press. p. 53-75).

Szirmai, A., Naudé, W. & Alcorta. 2013. Introduction and overview: the past, present, and future of industrialisation. (*In* Szirmai, A., Naudé, W. & Alcorta, L., *eds*. Pathways to industrialization in the twenty-first century: new challenges and emerging paradigms. United Kingdom: Oxford University Press. p. 3-52).

Terluin, I.J. 2003. Differences in economic development in rural regions of advanced countries: An overview and critical analysis of theories. *Journal of rural studies,* 19(3): 327-344.

Thiam, I. 2016. Low performance of economic growth in West African Economic and Monetary Union (WAEMU): explanatory factors. *British Journal of Economics, Management & Trade,* 4(12): 2034-2048.

Thomas, B., Miller, C. & Simmons, G. 2015. An examination of regional policy implications pertaining to SME E-Business adoption in South-East wales. *Strategic change,* 24(5):429-446.

Thomas, G. 2011. A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry,* 17(6): 511-521.

Tiebout, C. 1956. Exports and regional economic growth. *Journal of political economy, (*64)160-164.

Todaro, M.P., & Smith, S.C. 2012. Economic development. 11th ed. United States of America: Pearson.

Tumwebaze, H.K. and Ijjo, A.T., 2015. Regional economic integration and economic growth in the COMESA region, 1980–2010. *African Development Review*, *27*(1): 67-77.

Turok, I. 2014. The resilience of South African cities a decade after local democracy. *Environment and planning A,* 46(4):749-769.

Tussie, D. & Vásquez, P. 2000. The international negotiation of PPMs: possible, appropriate, convenient? (*In* Tussie, D., *ed.* The environment and international trade negotiations. Canada: International Development Research Centre. p. 95-115.).

UNCTADstat. 2017. Data centre. http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ Date of access: 1 October 2017.

UNECA, 2018. Trade and market integration. https://www.uneca.org/oria/pages/eccas-trade-and-market-integration Date of access: 20 September 2017.

United Nations. 1959. Regional planning – housing, building and planning. New York: UN Department of Economic and Social Affairs.

USTR. 2018. West African Economic and Monetary Union (UEMOA). https://ustr.gov/countries-regions/africa/regional-economic-communities-rec/west-african-economic-and-monetary-union-uemoa. Date of access: 14 March 2018.

Vamvakidis, A. 1998. Regional integration and economic growth. *The world bank economic review,* 12(2):251-270.

Väyrynen, R. 2003. Regionalism: old and new. *International studies review,* 5(1): 25-51.

Vehovar, V., Toepoel, V. & Steinmetz, S. 2016. Non-probability sampling. (*In* Wolf, C., Joye, D., Smith, T.W. & Fu, Y. *eds*. The Sage handbook of survey methodology. United Kingdom: Sage Publications. p. 329-345).

Venables, A.J. 2003. Winners and losers from regional integration agreements. *The economic journal,* 113(490):747-761.

Von Thünen, J.H. 1863. Der isolierte staat. (*In* Hall, P., *ed.* Von Thünen's isolated state. Translated from the German by Wartenberg, C.M. London: Pergamon Press. p. 7-304.).

Walker, B., Holling, C.S., Carpenter, S. & Kinzig, A. 2004. Resilience, adaptability and transformability in social–ecological systems. *Ecology and society,* 9(2): 5-14.

Warleigh-Lack, A. 2006. Towards a conceptual framework for regionalisation: Bridging 'new regionalism' and ‘integration theory'. *Review of international political economy,* 13(5): 750-771.

Weber, A. 1929. Über den Standort der Industrie. (*In* Friedrich C.J., *ed*. Alfred Weber’s theory of location of industries. United States of America: The University of Chicago Press. p. 17-252).

Wiedmann, T.O., Schandl, H., Lenzen, M., Moran, D., Suh, S., West, J. and Kanemoto, K., 2015. The material footprint of nations. *Proceedings of the National Academy of Sciences*, *112*(20): 6271-6276.

Wood, P.A., 1969. Industrial location and linkage. *Area*, 1(2): 32-39.

WorldData. 2018. Members of the central American common market. https://www.worlddata.info/alliances/cacm-central-american-common-market.php Date of access: 4 January 2018.

Ying, L.G., 1999. China's changing regional disparities during the reform period. *Economic Geography*, *75*(1): 59-70.

Zimmerbauer, K. and Paasi, A., 2013. When old and new regionalism collide: deinstitutionalization of regions and resistance identity in municipality amalgamations. *Journal of Rural Studies*, 30: 31