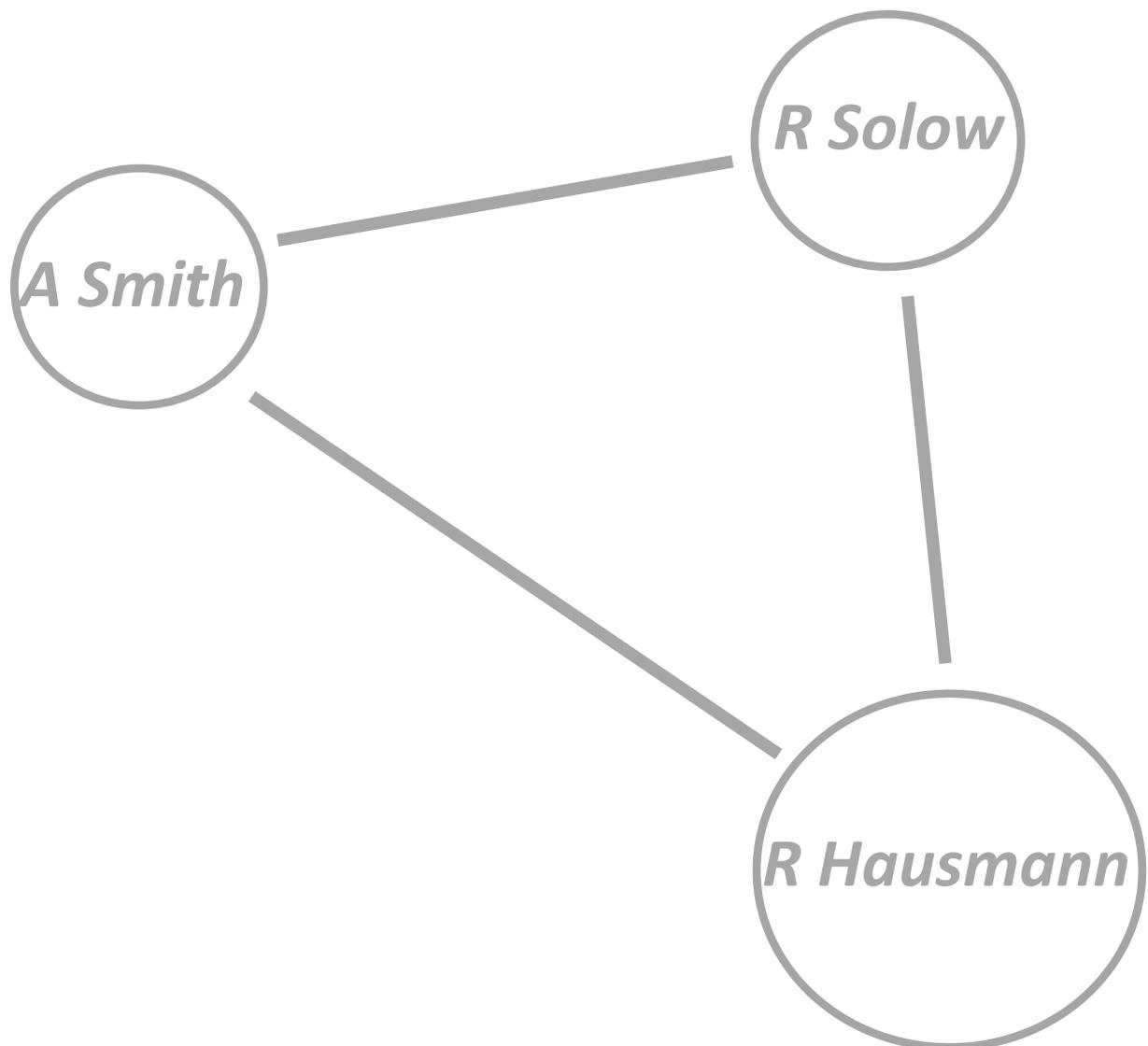


CHAPTER 2

THEORIES OF GROWTH

The links between agriculture, international trade, diversification and economic development





2.1 INTRODUCTION

The question as to why some nations have performed better economically than others has received much attention and debate for decades. This chapter will lay down a theoretical background for economic growth and development by reviewing relevant theories and knowledge that has developed over the last two hundred years. This is by no means a full reflection of all the theories of economic growth and development, but rather a brief synopsis of the most significant ones. In line with the scope of this study as discussed in Chapter 1, this second chapter will discuss some of the key economic growth theories in general and put special emphasis on the role of agriculture, international trade, and more specifically, the role of trade diversification in the economic development process.

Economic growth is a somewhat narrow concept of the quantitative change in a country's economy, conventionally measured as a percentage increase in Gross Domestic Product (World Bank, 2014b). *Economic development* is a more comprehensive term; as Porter (2004:6) puts it: "economic development is a sequential process of building interdependent microeconomic capabilities, shifting company strategies, improving incentives and increasing rivalry." Hence, economic development is not possible without economic growth, but economic growth is possible without economic development, although the potential of growth is dependent on the process of economic development. In this chapter the focus is on the rationale behind economic growth, thus also on the processes of economic development.

2.2 ECONOMIC GROWTH THEORIES

2.2.1 Overview of historical contributions

The interest in understanding economic growth and development gained momentum during the Industrial Revolution in England in the middle of the eighteenth century, as it marked the change from a feudalistic to a capitalistic system. The development of knowledge on why and how economic development occurs prompted the establishment of economics as a



separate scientific discipline. Ever since, various theories on the expansion of economic wealth have been developed, forming different schools of economic thought. This has led to the extensive accumulation of knowledge on the performance of the economic system. A time-line of the major schools of economic growth theory is provided in Figure 2.1.

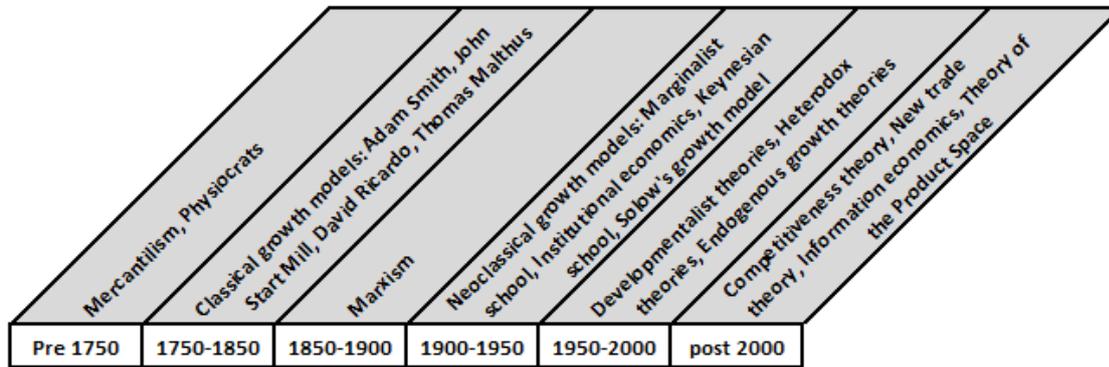


Figure 2.1: Periodic origin of the major schools of economic growth theories

Source: Author's interpretation based on Cypher & Dietz (2004); FRBSF (1990)

A brief background of the most important economic growth theories up to the end of 20th century is provided in Table 2.1 below.

Table 2.1: Review of the most important economic growth theories

Theory	Main contributors	Synopsis
Mercantilist	NA	<ul style="list-style-type: none"> • A nation's wealth is derived from gold and silver • State military power is used to ensure local markets and supply sources • Preference of trade over agriculture
Physiocrats	NA	<ul style="list-style-type: none"> • Circular flow of inputs and outputs • A nation's wealth is derived from agriculture and productive work • Minimal government interference (<i>laissez-faire</i>)
Classical growth theories	Adam Smith	<ul style="list-style-type: none"> • Three factors of production (land, labour, capital) are the major contributors to a nation's wealth • Self-regulated market system ("invisible hand") • Agriculture is not the only productive sector • Agriculture has fewer opportunities for a division of labour, increasing its prices compared to industry
	Thomas Malthus	<ul style="list-style-type: none"> • Population will grow whenever income rises above subsistence level and is limited by the ability of land to produce sufficient food • Only minority of factory owners and landlords benefit from the industrial factory system



(Table 2.1 continued)

Theory	Main contributors	Synopsis
	David Ricardo	<ul style="list-style-type: none"> The law of eventually diminishing returns in agriculture stipulates that when economic growth occurs, additional available farm land of relatively lower production is brought into production which will lead to higher food prices and a windfall gain on more productive land, thus economic profits increase The theory of comparative advantage states that unrestricted trade between countries will increase total global output if each country specialises in those goods that it can produce at relatively lower cost. Each country will then trade some of its lower-cost goods with other countries for goods that can be produced at lower cost elsewhere
	John Stuart Mill	<ul style="list-style-type: none"> Role of market is to allocate resources and distribute income Land and capital are the source of production increases rather than labour
Marxist Theory	Karl Marx	<ul style="list-style-type: none"> Capitalism is not the natural order of society Socialistic system without private property where all production belongs to labour Accumulation of capital constrained by the “reserve army of labour” Value of a commodity equals the socially necessary time used in its production Tendency of the rate of profit to fall
Neo-classical growth theories	Harrod-Domar	<ul style="list-style-type: none"> Rate of savings and productivity of capital determine economic growth
	Robert Solow, Trevor Swan	<ul style="list-style-type: none"> Exogenous growth model which is based on a simple average production function with variables for capital and labour and an additional variable for exogenous technological progress Poorer nations will grow faster than richer nations Convergence of per capita income among different nations with similar fundamentals.
Developmentalist	General	<ul style="list-style-type: none"> Historical and practical approach Industrialisation as a driver of economic growth Focus on macro-economic phenomena Generally pessimistic about export-led growth
	Paul Rosenstein-Rodan	<ul style="list-style-type: none"> Short-term governmental interventions to force economic growth (“big-push”)
	Ragnar Nurkse	<ul style="list-style-type: none"> Balanced vs. unbalanced growth in supply and markets
	Albert O. Hirschman	<ul style="list-style-type: none"> Backward industrial linkages and induced effects
	Arthur Lewis	<ul style="list-style-type: none"> Unlimited supply of labour
	Walt Whitman Rostow	<ul style="list-style-type: none"> Five phases of development (stages of growth) Historical conditions



(Table 2.1 continued)

Theory	Main contributors	Synopsis
Heterodox models	Raul Prebisch Hans Singer (<i>Structuralist</i>)	<ul style="list-style-type: none"> • Changes required for growth are fundamental and profound • Skew distribution of trade benefits towards developed countries • Focus on domestic market and export strategy of secondary products • Improve terms of trade • “Development from within” from import-substituting industrialisation • Diversification to products with less competition and lower income-elasticity • Prebisch-Singer model
	Robert Ayres Gunnar Myrdal (<i>Institutionalist</i>)	<ul style="list-style-type: none"> • Technological progress is the source of economics development • Ceremonialism (past-binding human behaviour) is the limitation of technological progress • Diffusion of knowledge, expanded education and human capital development are key • Radical institutional reforms to counter inequality
	Celso Furtado Paul A. Baran (<i>Dependency school</i>)	<ul style="list-style-type: none"> • Centre as cause (developed countries) and periphery (developing countries) as effect • Lack of development is external
Endogenous growth models	Paul Romer Robert Lucas	<ul style="list-style-type: none"> • Economic growth is an endogenous outcome of an economic system and not from forces outside • Private and public sector choices (behaviour) • No difference between growth paths of rich countries and poor countries • Investment and effectiveness in human capital, physical capital, innovation, research, and knowledge are significant contributors to economic development • Effectiveness can be measured by technical efficiency change • Technological change (i.e. a change in aggregate knowledge) shifts the production frontier of a country outwards which then determines its rate of economic growth

Source: Author’s interpretation based on Cypher & Dietz (2004)

2.2.2 Modern theories of growth

Research and literature on economic development and growth has grown plentiful over the years, and some more recent theoretical contributions will be briefly highlighted here. Most of these modern growth theories are not “new” but rather a revision of earlier theories and are based on the latest case studies, empirical evidence, and insights.



Porter (1990) applied business principles to the creation of a nation's wealth. He criticises the theory of comparative advantage, and argues that national prosperity is not inherited but shaped by the ability of a country's industry to transform and upgrade its national competitiveness. This national competitiveness is driven by pressures and challenges from factor conditions, related and supported industries, local rivalry, aggressive home-based suppliers and demanding consumers. Against the background of increasing competition from globalisation, nations have to develop competitive advantages over other nations in order to create economic growth. Porter (1990) views a competitive advantage as the strategic advantage one country has over countries created by sustainable productivity growth and enhancement of supply chains. Ultimately, countries succeed and create competitive advantages in specific industries since their local business environments are the most progressive, dynamic and challenging (Porter, 1990).

Rodrik (2005) investigated various evidential growth strategies and argues that countries do not need an extensive set of institutional reforms to spur growth. However, he argues, no economy has grown without minimal adherence to good governance, such as property rights, market-orientated incentives, sound money and fiscal solvency. Evidence from China, Mauritius, Singapore, Taiwan, Chile, Botswana and South Korea shows that these principles are often implemented through unconventional policy arrangements (see Rodrik, 2005). All these countries combined conventional interventions, such as market liberalisation and outward orientation, with public interventions and selectivity. However, these unorthodox elements for creating high growth are difficult to duplicate. Thus, institutional designs should be sensitive to local opportunities and constraints. As Rodrik (2005) puts it, "institutional innovations do not travel well".

Easterly (2005) found that the growth performances in developing regions have showed significant variability across time. Short-term growth seems no guarantee for long-term growth. Rodrik (2005) thus argues that sustaining growth is more difficult than instigating it, as it requires more fundamental institutional reforms to increase the economy's resilience to shocks in the long-term. Therefore, he argues that a national growth strategy should consist of two elements. Firstly, a short-run growth stimulating strategy should kick-start



investment and target the most immediate constraints and opportunities in the economy. Secondly, a long-term growth sustaining strategy should build high-quality institutions.

A phenomenon that has significantly changed the global economic environment over the last few decades is the process of globalisation. A vast majority of economists see it as a force leading to a convergence of world incomes (Milanovic, 2003). Globalisation would lead to trade openness, increased technology adaption, more competition, and increased direct foreign investment which would subsequently spur growth. Furthermore, globalisation can improve the allocation of resources and so enhance productivity and efficiency. In their work on globalisation and economic growth, McMillan and Rodrik (2012) find that, despite the attributed benefits of globalisation, it has produced highly uneven results. They argue that economic development is not only a matter of increased productivity, but also of how resources are allocated across sectors. Their empirical research indicates that countries with a comparative advantage in natural resources carry the risk of constraining structural transformation by employing policies that overvalue the exchange rate and obstruct labour market flexibility. Hence, McMillan and Rodrik (2012) state that both structural transformation and economic growth are not automatic policy processes. In their view, globalisation just increases the benefits of doing it right.

In his seminal paper of 1991, Barro conducted an empirical analysis of economic growth over a period of 25 years by using a cross-section of 98 countries, investigating human capital, fertility, investment, government consumption, political instability, economic system and market distortion (Barro, 1991). He found that per capita growth showed a weak statistical relationship with initial per capita GDP, but a strong relationship with initial human capital (i.e. school enrolments). Hence, Barro's work implies that the assumption of the neo-classical growth models that poor countries grow faster than rich countries, based on initial per capita income, does not hold. Further outcomes of his research show that political instability and market distortions significantly hamper growth and investment. His model, however, did little to explain the weak growth performances of some countries in Latin America and Sub-Saharan Africa. Hence, those specific country characteristics were thus not captured by his research (Barro, 1991).



The vast body of literature of the 1980s and early 1990s on cross-country growth regressions are examined by Levine and Renelt (1992). They analysed whether the results of existing research on economic growth held for small changes in the conditioning information set. They found that very few economic variables are robustly correlated with growth, apart from the correlations between the investment share and the ratio of trade to GDP, as well as between growth and the share of investment in GDP.

More recent work on economic growth regressions was conducted by Sala-i-Martin, Doppelhofer and Miller (2004). They used a new estimation technique to tackle the challenge of the multiplicity of possible repressors in growth analysis; the Bayesian Average of Classical Estimates method. Applying this method to a large cross-section of countries and 67 variables, they found that the results supported the earlier empirical analysis on long-term growth by Sala-i-Martin (1997), rather than the work by Levine and Renelt (1992). They found that the relative prices of investment goods, primary schooling enrolment, and the initial level of income have the strongest relationships with economic growth. Other significant variables include some measures of human capital (e.g. life expectancy, location in tropics, and malaria prevalence), dummy variables for region (e.g. East Asia, Sub-Saharan Africa, and Latin America) as well as some dummy variables for sectors (e.g. mining).

A modern and more theoretical contribution towards explaining technology-driven economic growth was developed by Edward Nell (1998) with his *General Theory of Transformational Growth*. This specific theory perceives the economy as an evolving system in which the market forces finance innovations, change the character of cost, and affect the pattern of market adjustment. His theory shows that markets work differently in particular historical periods, as explored in the 1870 to 1914, and 1945 to present, periods.

In a recent application of this theory, Gualerzi and Nell (2010) investigated how the process of transformational growth shaped the boom of the New Economy (i.e. the Internet and Communication Technology industry) in the last decades in the 1990s. The issue here is whether economic transformation based on Information and Communication Technology (ICT) is capable of sustaining long-term growth patterns as other “general purpose technologies” have done in the past. These types of technology have several applications



and set in motion large transformations, e.g. the steam engine and electrical power (Helpman, 1998). It takes time for such technologies to make an impact, depending on the diffusion process and characteristics. Against this background, the study argued that ICT technology is not likely to be a significant “game-changer” for growth in the near future, as the collapse of the ICT boom in the 1990s had revealed the complexities of such transformation.

2.2.3 A new approach to economic growth

Few growth theories have actually examined the economic development of countries from the perspective of actual goods produced. As became evident in the previous sections (see 2.2.1 and 2.2.2), most growth models have only investigated differences in factor endowments, institutions, and technologies. Hausmann *et al.* (2005) showed that what products you export matters for growth. Hence, the wealth of a nation is determined by its productive structure. They developed an indicator to measure the level of sophistication of products based on the income levels of the countries that produce them. Thus, if a product is mainly exported (i.e. produced) by rich countries, the product would be revealed to be sophisticated. This outcome-based level of sophistication is called PRODY. The aggregate indicator that measures the level of sophistication of the total export basket of a country is called EXPY.

Analysis of a large cross-sectional dataset of countries reveals that current export sophistication is a good indicator for future growth (Hausmann and Klinger, 2006a). Furthermore, Felipe (2010) shows that a 10 per cent increase in EXPY leads to a half per cent increase in economic growth. However, these measures of export sophistication also have some shortcomings as some products had been allocated unrealistic levels of sophistication. This overestimation of sophisticated products from low-income countries is attributed to the production method and the fragmentation of production (Xu, 2010; Lederman and Maloney, 2007). Hence, cars differ in quality and sophistication according to the production method (e.g. Tata vs. BMW) and computers may be assembled in low-income countries from high-tech (i.e. sophisticated) imports.



Examining economic development at product level allows for appreciation of sector-specific ingredients that are needed for economies to adapt, experiment, and evolve (Reis and Farole, 2012). Every product requires a set of specific capabilities for its production and supply, which includes, among many others: training, regulations, capital assets, knowledge, property rights, regulatory requirements, natural resources, technology, supply chains, and infrastructure (Hausmann and Klinger, 2007). Producing bananas requires different capabilities than producing canned apricots, but the capabilities used for producing bananas are likely to be similar to those used in producing mangoes. The ability of an economy to produce new products depends on the current set of available capabilities. Hausmann and Klinger (2007) argue that countries which have built a competence (i.e. comparative advantage) in producing a certain good can use its corresponding set of capabilities in the production of new and related products. Hence, economic diversification is led by products that are “nearby” a country’s current productive structure. In this theory, economic development and growth is led by structural transformation by upgrading a country’s productive structure towards related and more complex products.

The next sections will elaborate more specifically on the role of agriculture and international trade in the economic development processes.

2.3 AGRICULTURE AND ECONOMIC DEVELOPMENT

Agricultural activities have been part of mankind for many centuries, ranging from extensive to intensive production systems, and for subsistence and commercial purposes. The role of agricultural activities in the economy has changed over time, but not its significance and relevance. This section, therefore, investigates specifically the contributions of the agricultural sector to economic development, first from a historic theoretical perspective, and from Section 2.3.5 onwards, its position in the economic system is discussed.



2.3.1 Agriculture and development from 1700 to 1950

As far back as the early 1700s, the Physiocrat school of thought already underpinned the importance of agriculture in economic development. The school viewed a nation's wealth as solely deriving from surplus produced by this sector. Industry needed this agricultural surplus to feed its workers and as an input for transforming those products. Hence, industry was viewed to be inferior to the agricultural sector (Cypher and Dietz, 2004).

In the subsequent Classical Growth Theories, the agricultural sector also had prominent recognition. Adam Smith recognised the effects of improvements in agriculture on the wealth of nations (Johnson, 1997). He notes that when 99 per cent of the labour force is used to produce food, there is little left for other consumption: "But when by the improvement and cultivation of land, the labour of one family can provide food for two, the labour of half the society becomes sufficient to provide food for the whole. The other half, therefore, or at least the greater part of them, can be employed in other things satisfying the other wants and fancies of mankind" (Smith, 1776: 256). Thus, Smith argued that it is not the agricultural sector per se that spurs economic growth, but rather the development of increased agricultural productivity.

Malthus (Malthus, 1798), another contributor to the Classical Growth Theories, took the view that in the positive relationship of population growth and economic growth, agriculture was the limiting factor. He argued that population growth would be faster than growth in agricultural output. This would ultimately lead to equilibrium, if the population were to grow at a similar rate as the production of food (Cypher and Dietz, 2004). Despite neglecting the realities of the forth-coming agricultural revolutions, it is evident from these references from the Classical School that agriculture was viewed as a crucial inhibitor for growth, even by the earliest economists.

Theories on whether economic development started historically with industry or agriculture are of more recent date. The agricultural revolution that spread across Europe between the 1500s and 1800s was predominantly spurred by population growth and a change in the structure of land ownership. Rapid growth in the population and urbanisation led to an



increasing demand for food, leading to a shift in farming systems from subsistence to commercial production. The change in land ownership was led by a depopulation of the rural areas which led to a concentration of ownership, larger farms, and new commercial farming structures (Kjeldsen-Kragh, 2007).

Owing to the continuous process of agricultural development, the exact starting dates of these agricultural revolutions in Europe are difficult to determine. However, in an attempt, Bairoch (1969) compiled the following chronology: England (1690-1700); France (1750-1790); Germany and Denmark (1790-1800); Austria, Italy and Sweden (1820-1830); Russia and Spain (1860-1870). However, De Vries and van der Woude (1997) state that agriculture was already highly developed before the 1700s in what is today Flanders and the Netherlands. The generally accepted dates for the start of industrial revolutions in these respective countries all followed the agricultural revolutions by 20 years (Bairoch, 1969). From this chronology, it becomes evident that agricultural changes preceded the start of industrialisation. Hence, economic development would not have been possible without gains in agricultural productivity (Kjeldsen-Kragh, 2007).

The agricultural reforms started at a time of rapid population growth. In line with Malthus's theory (1798), it can be argued that this growth in population was the result of the reforms in the agricultural sector. Following Boserup's theory (1965), it can also be argued that the agricultural reforms were caused by population growth. However, evidence from other parts of the world, where populations also grew rapidly without instigating similar structural change as in Western Europe, contradicts this argument.

In 1950 (when decolonisation started), the GDP per capita in Asia and Africa was similar to that of Western-Europe in 1700 (Maddison, 2003). As the agricultural sector played a major role in the development of Western Europe and the USA between 1750 and 1914, it might have been expected that the developing countries would take a similar path. However, this has not been the case (Kjeldsen-Kragh, 2007).



2.3.2 *Agriculture and the developmentalists (1950-1970)*

Most developing countries have followed the import substitution strategy, where industrialisation is promoted by protection. Agriculture was seen as a reservoir for providing resources. Hence, agricultural development was neglected. This pattern was chosen mainly owing to the views developed within the newly arisen discipline of development economics in the 1950s. This school of thought gained momentum as the former colonies became independent and needed to choose a development strategy. The most important developmentalists were discussed in the first section of this chapter (see Table 2.1 above) and include: Lewis, Hirschman, and Prebisch and Singer. With regard to the role of agriculture in economic development, their theories have different perspectives.

Lewis (1954) focused on factor market linkages and considered that there was an unlimited supply of labour in the agricultural sector. This led to his view that if industrialisation was promoted, it would create employment opportunities for the abundant labour force in agriculture. Lewis argued that marginal labour productivity in agriculture was zero; thus agriculture would not decline, even if its development was neglected.

Hirschman's work (1958) evolved around economic linkages as a criterion for development strategy. Sectors with strong back and forward linkages should be supported. Agriculture does not have as strong linkages as other industries do, he argued.

Prebisch (1950) and Singer (1950) independently considered that the terms of trade of primary products (including agriculture) would decline over time. Accordingly, they argued that it would be better for developing countries to produce industrial products that could replace imports, rather than expand agricultural production.

Apart from these theories, the economic strategies of developing countries were also formed by more ideological motivations. The capitalist system was often opposed, in favour of a more socialistic economic system. The Soviet Union presented as an example of the latter as it showed significant economic development during the 1930s, 1940s and 1950s. Its



model was based on industrialisation and a closed economy, where resources were squeezed out of agriculture.

This development path for developing economies was not successful, and during the 1970s and 1980s new strategies developed. These entailed a focus on growth with equity and structural change. However, agricultural development was still neglected in the developing countries and there were no productivity increases in agriculture which might lead to increased income levels in rural areas. Such higher rural incomes could have created a market for industrial products and a smaller rate of urbanisation. Furthermore, integration between rural and urban sectors would have been stimulated, and would not have been as dualistic in nature as is presently the case (Kjeldsen-Kragh, 2007). Hence, agricultural reforms should have been gradually implemented, led by technological and institutional change, while not neglecting development of the subsistence sector.

2.3.3 *The Green Revolution in Asia (1960 – 1980)*

One of the most significant cases of agricultural-driven economic development in modern history is the Green Revolution in Asia. The notion that agriculture could only passively contribute to development was swept away with the significant transformation of the Asian agricultural sector during the late 1960s and early 1970s (Diao, Hazell and Thurlow, 2010). The possibility of developing a traditional agricultural sector into a modern one emphasised its potential in spurring economic growth and its important role in broad-based, and specifically rural, development (Adelman, 2001; Haggblade, Hazell and Brown, 1991; Hazell and Roell, 1983).

The Green Revolution was a technological success story and evolved around the genetic improvement of staple crop varieties; the usage of inorganic fertilizer; improved agronomic practices; advanced disease and pest control; supportive policies; and strengthened institutions (Toenniessen *et al.*, 2008). It foremost enabled food production in Asia to keep pace with population growth which almost doubled, with average yields almost tripling. The Green Revolution reached many of the rural poor in Asia and the share of the population that was malnourished declined from 41 per cent to 16 per cent between 1960 and 2000



(FAO, 2006). The increased productivity and profitability of small-scale farmers helped to initiate economic development in Asia (Evenson and Colling, 2003).

In contrast to Asia and Latin America, the Green Revolution bypassed Africa, despite considerable funding and effort in the last decade aimed at spurring agricultural development. On the counter side, Meijerink and Roza (2007) argue that the negative effects of the Green Revolution, such as the overuse of pesticides and related environmental pollution, also largely surpassed Africa.

Africa has experienced some increases in crop yields, but only in recent years. However, these tend to be project-specific or attributable to an expansion of the area under cultivation and thus not related to farmers' technology adaption (Toenniessen *et al.*, 2008). The conditions for agricultural development in Africa are more challenging and substantially different than in Asia. Toenniessen *et al.* (2008) state there are few roads and railroads providing access to markets, there is little irrigated land, rainfall is often unreliable, labour is scarce, the cost of inputs is high, the rural population is more dispersed, and labour-saving mechanisation is generally absent. Furthermore, Africa is also much more diverse than Asia in terms of agro-ecological zones and types of farming systems.

2.3.4 *Agricultural-demand-led-industrialisation strategy (1980 – 1990)*

As it is clear from the previous section, it is only since the late 1970s that scholars (Mellor, 1976; Singer, 1979; Adelman, 1984; De Janvry, 1984; Ranis, 1984) have acknowledged the potential of agriculture in generating sufficient demand for spurring industrialisation. The 'Agricultural-demand-led-industrialization' strategy (ADLI), which was developed by Adelman (1984), emphasises the role of increased agricultural productivity in raising rural incomes. This was achieved by means of technological innovation and increased investment. The advocates of this strategy argue that, owing to agriculture's relatively strong productive and institutional linkages with the rest of the economy, the development of agriculture creates strong demand and supply incentives. This is through increased consumer demand from rural households and increased food supply, which subsequently fosters industrial development. Vogel (1994) states that the ADLI strategy breaks away from previous growth



policies, which mainly focused on industrialisation through import substitution and export promotion.

According to Vogel (1994), previous development strategies did not acknowledge the important institutional and structural transformations in agriculture which were related to growth in developing countries. Furthermore, earlier strategies on agricultural development resulted in unbalanced rural–urban linkages. The growth in the industrial sector was predominantly attributed to expanding urban markets and international trade incentives. Hence, the urban linkages with the rural economy remained neglected.

Vogel (1994) noted that the strongest rural production link to the urban economy is the agricultural sector's demand for intermediate production inputs. However, the additional rural input, as well as consumer demand for labour-intensive, locally produced goods, produced by a thriving agricultural and food sector, are missing. By accentuating the linkages between production, income, and consumption demand, the ADLI strategy develops a low-income economy into a more equitable and self-sustaining growth path (Vogel, 1994).

The next sections investigate the position of the agricultural sector in the broader economic system.

2.3.5 Linkages between agriculture and the rest of the economy

Usually, the importance of the agricultural sector in economic development is reflected by its share in GDP. This implies a marginal role for the sector in developed countries as its contribution is often declining and relatively small. This marginal role undermines the growth potential of the agricultural sector through productivity increases, technological change and backward and forward linkages. From historical evidence it is apparent that the role of agriculture in economic development and growth is strongly determined by its linkages with other sectors. Agricultural growth can lead to strong multiplier effects in the non-agricultural sectors (DFID, 2004).



Apart from Lewis' "factor market linkages", as briefly described in Section 2.3.2, two other important schools of thought can be identified with regard to the positive linkages between agriculture and the rest of the economy (Timmer, 1997). Firstly, Johnston and Mellor (1961) highlight product markets and the productive interactions between agriculture and industry. Secondly, Meijerink and Roza (2007), Block and Timmer (1994), and the FAO (2004) identify non-market linkages which are based on the social relationships of agricultural development with the rest of the economy, e.g. increased food security; increased employment; better health; environmental conservation; learning-by-doing of managing development; increased efficiency of household decision making; switching investment from low to high productivity; and ensuring social stability.

In their seminal paper, Johnston and Mellor (1961) identify five types of inter-sectoral linkages that emphasise the importance of agriculture in economic growth. These linkages revolve around both consumption and production, and include:

- i. earning foreign currency through exports;
- ii. increasing the supply for domestic savings;
- iii. providing food for local consumption;
- iv. discharging labour for employment in industry (see also Lewis, 1954); and
- v. expanding the market for local industrial output.

Furthermore, with the rise of the food, feed and fibre processing industries over the last few decades, the agricultural sector also became an important supplier of industry inputs. Against this background, Johnston and Mellor (1961) argue that rural welfare and overall economic growth requires structural transformation, comprising a proportional decline of the agricultural sector and a transfer of resources from agriculture to industry. Contrary to the popular belief that agricultural development should precede, or have less priority than, industrial expansion, they advocate balanced growth.

The positive linkage of the agricultural sector with the rest of the economy stands or falls with the functioning of the rural–urban links. Tacoli (2004) argues that three aspects play a crucial role here: firstly, physical infrastructure; secondly, relations between producers, traders and consumers; and thirdly, market information. From a production perspective,



good linkages to urban areas do not necessarily improve farmers' access to agricultural inputs and services. Other factors, such as household endowments (land, labour and capital), education, and gender play a more significant role here (see Ruben and van den Berg, 2000; Ezumah and Di Domenico, 1995). The linkage of the agricultural sector with the rest of the economy does not reveal how this will benefit the poor. Hence, the next section discusses the sector's contribution to poverty reduction.

2.3.6 *The role of agriculture in pro-poor growth*

The relationship between economic growth and poverty reduction has been the subject of much literature. Dollar and Kraay (2002), not surprisingly, found that there is a distinct connection between national income levels and poverty. They further argue that most policies aimed at reducing poverty, such as spending on health, education, and agricultural productivity, have had limited effects. Growth may raise the income of the poor, on average, or even contribute to more income inequality. Hence, the distributional effects of growth show that it is not a prerequisite for poverty alleviation, *per se*. Dağdeviren, van der Hoeven and Weeks (2004) argue that the growth–poverty link also works the other way around: poverty constrains growth.

However, agricultural growth, specifically, does alleviate poverty in several ways. Irz, Lin, Thirtle and Wiggins (2001) have analysed the impact of growth of the agricultural sector on the agricultural economy and on the rural economy, as well as on the national economy. The effect on the agricultural economy is realised through higher farm incomes and an increase of on-farm employment. The positive impact on the rural economy comprises the creation of more jobs in the rural food chain, spurred by an increased demand for inputs, services, storage, and transport. Furthermore, the increased income of farmers and farm workers results in more consumption expenditures in the rural economy. On a national scale, an increase in agricultural production may decrease food prices which especially benefits the poor, as they spend a relatively larger proportion of their income on food (Irz *et al.*, 2001).



Minot (2005) has studied the effect of agricultural development on the poor in Tanzania. He found that the significant agricultural market reforms, implemented in the 1990s, have led to increased economic growth and a decline in poverty levels. Contrary to expectations, the gains were larger in areas where support structures, such as fertilizer subsidies and maize transport subsidies, were prevalent. Hence, growth is able to offset the negative effects of agricultural reforms.

Mellor (1999) also investigated the reasons why growth does not always bring about poverty reduction. He found that it is often the wrong structure of economic growth that is chosen. Asia found its way out of poverty by realising agricultural growth. The reason for the limited progress in Africa is mainly attributable to an urban bias in development by governments and foreign aid, Mellor (1999) argues. However, recent development initiatives in Africa, such as the Alliance for a Green Revolution for Africa (AGRA) and the Comprehensive Africa Agriculture Development Programme (CAADP), show that there is increased attention on unlocking Africa's agricultural potential.

2.3.7 Empirical evidence of agriculture's role in economic development

Empirical evidence on the role of agriculture in economic development supports the importance of the sector. Haggblade, Hazell and Brown (1988) were among the first to quantify the linkages of the agricultural sector in developing countries by estimating an agricultural growth multiplier. This is a measurement of the effect of an increase in agricultural income on the income in non-farming sectors.

Haggblade *et al.* (1988) found that the agricultural growth multiplier in Africa is in the order of 1.5. This implies that an increase of 1 USD in agricultural income will generate an additional income of 0.5 USD in other sectors. The agricultural growth multiplier was found to be stronger in Asia, namely 1.8. The authors argue that this may be attributed to the fact that there is less irrigation agriculture in Africa, which has a multiplier effect on construction and maintenance activities. Another important reason is the lower population density, increasing the distances to markets, thus making remote producers less competitive. Furthermore, the pattern of household consumption in Africa shows less diversity in food



and non-food consumption. Finally, the poor state of infrastructure and government policies also hampers the development of a non-farm economy.

Vogel (1994) analysed whether agriculture can become a leading sector and has sufficient linkages to support industrialisation (i.e. ADLI) in developing countries. He applied the country Social Accounting Matrices (SAM) of various country groupings of different levels of development to analyse the back and forward linkages of the agricultural sector. He found that the magnitude of production linkages (input–output) of the agricultural sector is strongly determined by the final institutional demand. Furthermore, he found that there exist strong backward linkages (i.e. multiplier of agricultural production expenditures on non-agricultural inputs) and weak forward linkages (i.e. multiplier of non-agricultural production expenditures on agricultural inputs) of the agricultural sector in the development process. Vogel (1994) argues that this qualifies agriculture as a “leading sector”.

Vogel (1994) argues that the decreasing importance of forward linkages in the agricultural sector is explained by the fact that industries that use large amounts of agricultural inputs, such as textiles and food processing, lose their relative importance as countries develop. In contrast, agriculture’s backward linkages to other economic activities are relatively strong, even at lower levels of economic development. Firstly, Vogel (1994) states that this is because many developing countries have chosen to develop export-based agriculture. Secondly, he notes that as countries develop, their agricultural sector becomes more capital and input intensive, as new technologies are adopted.

Delgado, Hopkins and Kelly (1998) also investigated the multiplier effects of the agricultural sector on the overall economy in several African countries (e.g. Zambia, Senegal, Niger, and Burkina Faso). Their multiplier estimations are somewhat higher than the ones reported by Haggblade *et al.* (1988), and range between 1.96 and 2.88. Owing to methodological constraints, they report an average multiplier effect of 2. This thus implies that the overall benefit from finding a way of boosting agricultural income in Africa is twice as high as the immediate return from the agricultural activity that was promoted in the first place.



Quantifying the linkages of the agricultural sector should be seen in perspective with the growth multipliers of other sectors. Block and Timmer (1994) investigated the growth linkages in Kenya. They found that an additional dollar of income in Kenya's agricultural sector generated an additional 64 cents of income in the non-agricultural sector (i.e. an agricultural growth multiplier of 1.64). In comparison, they estimated that the growth multiplier of the non-agricultural sectors was only 1.23. Thus, strategies to promote agricultural development have larger pay-offs in terms of economic growth than other sectors. Further simulations suggest that public investment in agriculture shows significantly larger growth effects than for public investment in other sectors.

2.3.8 Agricultural development and employment creation

Employment is essential for a country's economic and social development. Moreover, development occurs through job creation. Poverty and hardship are alleviated by enabling people to create better livelihoods through the generation of a sustainable income. A country's economy grows as people get better at what they do and become more productive, and as jobs create a sense of opportunity and social cohesion. Hence, it comes as no surprise that job creation features prominently on the development agenda of the World Bank. Most developing countries, including South Africa, face a significant employment challenge. Even with the migration to cities, rural populations in Sub-Saharan Africa and South-East Asia continue to grow. This expansion of the rural work force generates numbers of people who need to find employment in either the farm-economy or the rural non-farm economy, or to migrate to the urban economy. However, most developing regions, including Sub-Saharan Africa, show a gap between the increase in rural population growth and the expansion of the agricultural labour force (World Bank, 2007).

Growth of the agricultural sector can be an important driver for both rural and urban employment creation. Manning (1988) argues that labour absorption in the agricultural sector has been much more successful than expected. Over past decades, labour productivity has risen in most countries as a result of sectoral shifts in the allocation of labour away from agriculture. Growth in income has also been significant, although much smaller in agriculture (Bloom and Freeman, 1986). As mentioned earlier, Lewis (1954)



identified one key mechanism for economic growth, namely the absorption of labour in higher productive non-agricultural employment. However, he underestimated the capacity of the agricultural sector to experience a growth in labour productivity and absorb additional labour (Manning, 1988).

In Asia, rapid technological changes in agriculture, especially as a result of the “Green Revolution”, have had a diverse effect of labour absorption (Jayasuriya and Shand, 1985). However, the overall impact of output growth in agriculture on rural job creation and welfare depends largely on a range of government policies that influence the distribution of investment and income and on the linkages between agriculture and non-agricultural growth (Manning, 1988).

The structure of rural employment shows significant differences across developing regions. Sub-Saharan Africa (SSA) has the highest share of adults which are employed in the agricultural sector of the developing regions. However, agricultural wage employment is significantly lower in this region: only four per cent compared to almost 22 per cent in South-East Asia. Self-employment in agriculture is the predominant form of rural employment for almost 57 per cent of the men and 54 per cent of the women in SSA (World Bank, 2007). Agricultural wage employment is especially important for poor and relatively landless and unskilled households. Empirical analysis reveals a positive correlation between national per capita income and wage labour’s share in agricultural employment in developing regions (World Bank, 2007). SSA and South Africa are good examples in this regard.

In contrast to the SSA region, rural employment in South Africa is not as much dominated by on-farm work. In the first quarter of 2012, 23 per cent of the rural population was employed in the agricultural sector. The structural changes in rural employment in South Africa are illustrated by the fact that this share was only 15 per cent in 2000. Parallel to this, the contribution of agriculture to total employment dropped from seven to one per cent in the same period (StatsSA, 2012). These figures underpin the migration to urban areas for employment opportunities.



Labour demand in agriculture is subject to several factors that are specific to the agricultural sector, including: seasonality, production risks and labour market inefficiencies. For instance, in Brazil an annual variation of more than 20 per cent in agricultural employment is recorded owing to seasonally (Carneiro, 2003). Droughts, floods, pests and price fluctuation can also have a detrimental effect on labour demand and wages. Various contractual labour arrangements have arisen to tackle the problem of monitoring labour productivity and create incentives in agricultural employment. A good example of this is the system of piece-rate wages for harvest tasks which have proved to increase productivity (Foster and Rosenzweig, 1994). Another factor that affects agricultural labour demand is the opportunity cost for labourers to work in rural non-farm sectors. This has caused a reduction in the prevalence of long-term labour contracts and an increase of casual workers in many agricultural sectors throughout the developing world (Sundaram and Tendulkar, 2007). A similar situation is occurring in South Africa but this is further accelerated by local labour policies.

Stimulating growth in agricultural employment is a high priority in most developing countries. As mentioned, the “Green Revolution” in Asia had a diverse impact on agricultural employment. Initially, labour demand was stimulated and rural poverty levels were reduced by year-round employment and increased wages. Later on, increased mechanisation led to a decline in agricultural employment. The high-value and revolution in agriculture is creating a second wave of agricultural employment growth in developing regions. Horticulture and intensive livestock activities embed considerable potential for job creation and growth of productivity (World Bank, 2007). For example, tomato production in Mexico requires five times more labour per hectare than cereal production. Similar situations exist for Peru’s asparagus production and Chile’s and South Africa’s fruit production (Escobal, Reardon and Agreda, 2000; Jarvis and Vera-Toscano, 2004). Furthermore, the increased focus on local value adding down the supply chain creates additional employment opportunities in agro-processing.

Empirical evidence of the employment creation potential of the agricultural sector is often provided by labour multipliers (See van Zyl and Vink, 1988; Taljaard, 2007). These multipliers are based on input–output tables of the Social Accounting Matrix (SAM) and indicate the



number of full-time job opportunities created per every additional R1 million of output. For South Africa, the direct labour multiplier for agriculture, which measures the employment creation directly within the agricultural sector, is 17.3 (Taljaard, 2007). This implies that for every R1 million increase in South Africa's agricultural production, 17.3 new jobs will be created. Of all economic sectors, agriculture ranks third after domestic services (e.g. housekeeping and garden services) and other services and activities.

The indirect labour multiplier, which measures the backward linkages of the agricultural sector, is 3.8 (Taljaard, 2007). This implies that an increase of R1 million in agricultural production will result in 3.8 employment opportunities in all the industries that supply the agricultural sector. Compared to other economic sectors, this is below average. The forward employment creating linkages are measured by the induced labour multiplier. This specific multiplier measures the employment impact as a result of the additional salaries and wages paid both in the agricultural sector and in the input-supplying sector. These additional wages and salaries lead to an additional demand for consumables in other economic sectors (Conningarth Economists, 2005). The induced labour multiplier for agriculture is 8.3, which ranks the sector as fourth among South Africa's economic sectors. From these multipliers, it is evident that the agricultural sector has a very high direct employment creation potential and relatively stronger forward than backward linkages with regard to employment creation.

This section has given clear evidence from the literature of the positive role of agriculture in economic development and growth. The next section discusses the role of trade in economic growth, against the background of the linkage between international markets and agricultural development.



2.4 INTERNATIONAL TRADE AND ECONOMIC DEVELOPMENT

2.4.1 Introduction

The phenomenon of globalisation, predominantly driven by technological changes, has led to an increased integration of supply chains across countries in past decades. This integration is underpinned by growth in international trade in goods and services. A considerable share of domestic production output is being absorbed by foreign demand in most countries, and a substantial proportion of local demand is being satisfied by imports (UNCTAD, 2012). Hence, the role of international trade in accelerating economic development through capital formation and expansion of exports in both traditional and non-traditional products has been at the basis of many development strategies. This section will provide a brief theoretical background of international trade and builds a link with economic development and the agricultural sector. Furthermore, the theoretical background will be illustrated by some evidence from Africa. The section is concluded with a discussion of two trade related growth theories.

2.4.2 Theoretical background

There are undeniable benefits of specialisation in production and subsequent trade. For example, only a few countries can grow mangoes or produce steel which thus results in a manifestation of global trade flows. Various theoretical concepts will be laid out in this section in order to create a better understanding of the importance of international trade.

The classical trade theories have played an important role in explaining two-way trade in the creation of wealth. Important classical economists were Adam Smith, David Ricardo, and John Stuart Mill (see Table 2.1 above). Their views on international trade were mainly driven by disagreement with the Mercantilist school of thought. The Mercantilists theory argues that exports are always good and imports are always bad, and that an economy should strive to be in a state of autarky (Grimwade, 2000). However, a subsequent export surplus does not imply that a country will be better off, as it hinders consumers from obtaining products that could better satisfy their needs (under-consuming). However, Grimwade



(2000) states that trade is not necessarily one country's gain and another country's loss, as is implied by this theory.

Trade has the potential to benefit all countries, argues Adam Smith (1776), owing to the difference in production cost between countries. Smith (1776) explains that because of different labour and capital efficiencies in each country, each country should concentrate on producing goods in which it has an advantage over others. For two nations to trade voluntarily, they should both benefit. In this situation of using an absolute advantage, resources are allocated in the most efficient way and the production output of the traded commodities will rise. It should, however, be realised that the level of production and consumption after trade will depend on the consumer preferences of each good (Appleyard, Field and Cobb, 2010).

David Ricardo introduced the law of comparative advantage, which is one of the most famous and widely used trade theories (see also Table 2.1 above). This theory extends Smith's view, in that it states that even in the case of an absolute advantage of one country, there may still be a basis for mutually beneficial trade (Sodersten and Reed, 1994). In this situation, trade occurs on the basis of a comparative cost of production. Hence, countries receive gains from trade if they produce goods with different relative costs. Therefore, opportunity cost of production is the key element in Ricardo's analysis. Ricardo believed that the determination of wages should be left to free competition, and labour efficiency could be measured in time and not in value.

Ricardo's theory was criticised by Cho and Moon (2000) as it does not consider demand conditions; this supply-orientated analysis considers pre-trade price ratios as its basis. Furthermore, this classical theory did not consider explaining the differences in price ratios; it also predicted an extreme degree of economic specialisation.

John Stuart Mill (see also Table 2.1 above) shared the same view as Ricardo, but added the law of reciprocal demand while trying to analyse what determines the terms of trade. Mill (1848) states that reciprocal demand implies that a country demands a certain product in which another country has a comparative advantage. This product is then traded for the



product in which the former country has a comparative production advantage. His theory furthermore proposes that the terms of trade are dependent on the comparative strength of each of these countries' mutual demand for the product. Mill (1848) showed that terms of trade, in addition to domestic cost, depend on the elasticity of demand.

The neo-classical theory argues that commodity trade can substitute for the lack of trade in production factors (Appleyard *et al.*, 2010). Furthermore, this theory stipulates that efficiency in trade occurs when the traded commodities are those products that are produced at the lowest cost by each individual country. The main contribution of the neo-classical theory is the identification of the sources of comparative advantage and specialisation (Appleyard *et al.*, 2010). The model provides reasons why some industries can profitably expand and why opportunity costs differ. The main neo-classical trade economists include Eli Heckscher, Bertil Ohlin, Paul Samuelson, Wolfgang Stolper, Tadeusz Rybczynski and Wassily Leontief.

One of the most important neo-classical trade theories was developed by Eli Heckscher and Bertil Ohlin, namely the Heckscher-Ohlin (H-O) theory. Their model expands the trade theory by providing an explanation of the rationale behind a comparative advantage in production and the effects of international trade on factor earnings. Carbaugh (2006) states that the foundation of this theory revolves around the notion that countries are not similarly endowed with resources. Hence, different products use different combinations of these resources in their production process. The theory argues that production factors are mobile in the sense that international trade affects the prices of these factors. The Heckscher-Ohlin model shows that the relative abundance of production factors is the foundation for international trade and that the convergence in the prices of these factors are a result of international trade (Carbaugh, 2006). In this theory, the intensity of the use of the abundant factor defines a country's comparative advantage. International trade increases the price of the product that uses that abundant factor, which subsequently also increases the price of that abundant factor (Carbaugh, 2006).

The classical and neo-classical trade theories are valuable in their concepts but are a simplification of the real world. Many assumptions are in effect not applicable to reality, as



goods do not move without transport costs, production technology differs among countries, policies vary by country and the quality of inputs differs significantly. The assumption of perfect competition is a situation that is also unrealistic in the actual trade landscape. Modern trade theories have tried to tackle some of the identified shortcomings.

The economist Wassily Leontief empirically tested the H-O theory in 1954. He found that the USA exported labour intensive commodities and imported capital intensive commodities, which was in contradiction to the H-O model. This situation, where a country with a high capital per worker ratio has a lower capital-labour ratio in exports than in imports, is called the Leontief Paradox. This resulted in a dismissal of the H-O theory by many economists, and has initiated a more Ricardian school of thought where technological differences determine comparative advantage. The US case was explained by a comparative advantage of highly skilled labour over capital. Hence, the term capital was viewed more broadly and includes human capital (Carbaugh, 2006).

Other explanations of the paradox resulted in a move away from the concept that comparative advantage is a determinant of trade. The hypothesis of the economist Staffan Linder states that demand plays a more important role in determining patterns of trade, and that countries sharing similar demands will be more likely to trade (Carbaugh, 2006). These nations will then trade with similar but differentiated goods.

Similarly to this, the “New Trade Theory” states that comparative advantages can develop separately from the variation in factor endowment as increasing returns to scale also play a role. This theoretical concept was predominantly developed by Krugman (1986) and justifies trade protection, as nations should shelter infant industries in order to allow them to develop, specialise and be competitive (e.g. watches from Switzerland, and cars from Japan). This path-dependent industrial concentration may eventually lead to monopolistic competition. The assumption in the more advanced theories is that international trade can also be explained by increasing returns to scale. Carbaugh (2006) notes that the majority of trade in manufactures among developed countries is based on economies of scale and product differentiation, which is not captured by the H-O theory. This also explains the occurrence of intra-industry trade (Carbaugh, 2006).



In the late 1990s, Michel E. Porter's innovative theory of "Competitive Advantage of Nations" added some new dimension to the analysis of why nations trade. Central in his research on the competitive advantage of nations is his assumption that a country's wealth is created, not inherited (Porter, 1990). This was in contradiction to the classical and neo-classical assumptions. The core of his analysis is formed by the Diamond framework, which is an industry-level tool for determining competitive advantages. This framework consists of two external determinants, namely government and chance; and four country-specific determinants, namely factor conditions, demand conditions, industry structure, and rivalry. It is an integrated system in that the effect of one determinant depends on the state of the others. In extrapolating this theory to international trade, a competitive advantage of one nation's industry over the same type of industry in the second nation provides an incentive for exports to the first nation. This section has explained why trade occurs and the next section investigates the different benefits of trade.

2.4.3 *Gains from international trade*

The static gains from international trade depart from the notion that countries are differently endowed with resources and supply conditions. Hence, the opportunity cost of producing products varies between countries. Thirlwall (2000) argues that the challenge for many developing countries, including South Africa, in terms of reaping the benefits from trade is that the type of agricultural products they are trading (mainly primary products) cause both a deterioration in the terms of trade and an underutilisation of resources. Thirlwall (2000) has two explanations for this. Firstly, primary agricultural products have both a low income elasticity of demand and price, which implies that if supply increases, prices may decline significantly. Secondly, the production of primary commodities is land-based and subject to diminishing returns, hence, there is limited employment in activities with diminishing returns.

Furthermore, Thirlwall (2000) stipulates that the dynamic benefits from trade include the shift of the whole production frontier through an increase in resource productivity. Hence, the main dynamic gain from trade is that export markets expand the total market for a country's producers, especially if production is subject to increasing returns to scale. He



further argues that there exists also a close relationship between economies of scale and the build-up of capital stock. A small country with no trade has limited scope for large-scale investment in advanced capital equipment, he argues. Thirlwall (2000) lists the following additional dynamic gains from trade: changes in attitudes and institutions, the acquisition of new knowledge and technologies, enhancing competition, and attracting foreign direct investment (FDI).

Apart from macro-level analyses, research of micro-level data concerning the relationship between firm performance and trade may provide a more fundamental disclosure on how trade influences production, employment and technology. Studies by Bernard and Jensen (1995; 1999), Aw, Chung and Roberts (2000), and Clerides, Lach and Tybout (2000) find not much evidence that firms derive benefits from exporting, per se. Their studies reveal that there exists a process of self-selection among the more efficient producers into exporting activities. Thus, Rodriguez and Rodrik (2001) argue that causality seems to go from productivity to exports and not vice versa

Despite significant trade liberalisation over past decades, a variety of developing countries have failed to diversify both their production and exports, which might have led to structural transformation, and this failure has led to low levels of growth and chronic poverty (UNCTAD, 2002; 2004; 2006). Rodrik (1998) states that Africa's low share in world trade is primarily attributable to the lagging growth in production output of the continent. Moreover, African countries have failed to develop their economies at adequate rates which has resulted in their declining proportion of participation in world trade. Rodrik (2006) argues that raising overall growth rates is the way to reverse the trend, rather than targeting the region's trade volumes. This argument is based on the fact that Rodrik (1998) notes that there is little evidence that trade policies have inhibited trade volumes in Africa below international benchmarks. Moreover, Africa's trade ratios are on par with those of comparable countries elsewhere. He accordingly claims that domestic trade (commercial) and transport policies are the reasons for Africa's marginalisation and that these should rather be focused on for their effects on income growth. Rodrik (1998) concludes that, for Africa, trade policy is an unreliable instrument on its own to spur growth. Furthermore, he concludes that the efficiency effects of trade reform are marginal in comparison to its



redistributive effects. Hence, the differences in the long-term growth performance within Africa are predominantly explained by a small set of fundamentals, including fiscal policy, demography, human resources, and a catch-up factor with regard to the initial per-capita income (Rodrik, 2006).

Hence, the link between trade, growth and poverty reduction remains unresolved despite the significant body of research and comparable data. Santos-Paulino (2012) states that most of the evidence of a positive link between trade and growth is shown through changes in income (i.e. output). Dollar and Kraay (2002) argue that growth is a sufficient condition for poverty reduction in itself. However, others argue that income distribution is equally important (Ali and Thorbecke, 2000; Fosu, 2010). Table 2.2 below provides a summary of the theoretical and empirical literature on the link between trade and poverty.

Table 2.2: Selected studies on the trade-poverty link

Study	Theoretical / empirical framework	Findings*
McCulloch <i>et al.</i> (2001) ; Winters <i>et al.</i> (2004)	<ul style="list-style-type: none"> • Changes in border prices → changes in consumer prices • Impact on profits → employment → wages • Government revenue → tax → spending 	<ul style="list-style-type: none"> • Growth: +/- • Poverty: +/-
Goldberg and Pavnick (2007)	<ul style="list-style-type: none"> • Changes in relative prices and factor incomes • Impact on employment → wages • Industry-specific skill-biased technological change • Impact on formal / informal sectors • Macro-economic policies, trade and tariff policies • Industry specific policies 	<ul style="list-style-type: none"> • Growth → inequality: +/-
Nissanke and Thorbecke (2010)	<ul style="list-style-type: none"> • Differential cross-border factor prices and mobility • Skill-biased technological change • Broad-based macro-economic policies • Pro-poor institutions and policies 	<ul style="list-style-type: none"> • Growth: +/- • Inequality: +/- • Poverty: +/-
Dollar and Kraay (2002)	<ul style="list-style-type: none"> • 137 developing countries, 1950-1990 • Income share of the lowest quintile on mean per capita income 	<ul style="list-style-type: none"> • Income of poorest quintile grows one-for-one with average incomes • Trade openness has no impact on the income of the poor
Cashin <i>et al.</i> (2001)	<ul style="list-style-type: none"> • 100 countries, 1975-1998 • Relationship between economic policy and HDI for a given rate of growth of GDP per capita 	<ul style="list-style-type: none"> • No significant evidence that any trade openness indicator is associated with pro-poor growth



(Table 2.2 continued)

Study	Theoretical / empirical framework	Findings*
Fosu and Mold (2008)	<ul style="list-style-type: none"> • Sub-Saharan African countries • CGE 	<ul style="list-style-type: none"> • African countries cannot expect substantial gains from further multilateral trade liberalisation • Limited impact on poverty due to the sharp contraction in the import competing sector and lack of compensating policies
Fischer (2001)	<ul style="list-style-type: none"> • 66 countries, 1965 – 1992 • Analysis of the evolution of the personal income distribution following trade liberalisation 	<ul style="list-style-type: none"> • Effects of production factors and trade on income is mixed
Barro (2000)	<ul style="list-style-type: none"> • 84 countries, 1960-1990 • Empirical framework based on conditional convergence for the analysis of growth and inequality 	<ul style="list-style-type: none"> • A positive and long-term association between the levels of trade openness and inequality
Nicita <i>et al.</i> (2011)	<ul style="list-style-type: none"> • Sub-Saharan African LDCs • Estimation of the potential pro-poor bias in the structure of trade protection • Estimation of an agricultural household production model, including adjustments in labour income associated with the skills differential 	<ul style="list-style-type: none"> • SSA's own trade policy is biased in favour of poor households, thus pro-poor • The trade policies of the trading partners tend to be biased in favour of SSA's rich households

Note: * +/- no link

Source: Adapted from Santos-Paulino (2012)

A collection of country case studies by Hoekman and Olarreaga (2007) investigate the poverty impacts of trade openness and confirm that it can be a significant driver for growth, which is crucial for economic development and poverty alleviation. However, since most cross-country studies use averages, they might bias the results upwards and downwards.

Thus, so far, the literature recognises and agrees that economic growth is the most important channel through which international trade can reduce poverty. However, Edwards (1998) states that, besides higher per capita incomes, empirical evidence shows no significant links between trade openness and poverty reduction. Santos-Paulino (2012) goes beyond the substantiated relevance of the trade and growth relationship and explores the links between trade, growth and poverty. His empirical exploration shows that there seems to be a positive relationship between trade growth and poverty growth in developing



countries but a negative relationship in Least Developed Countries (LDC). Furthermore, he found a negative relationship between growth in output and poverty growth in both developing countries and LDCs. Hence, output growth seems to be more important in poverty reduction than trade, *per se*.

An important aspect of linking trade with poverty reduction is the distributional effect. Berg and Krueger (2003) found that although many LDCs have undergone structural adjustments that have led to more trade openness, this has not resulted in pervasive poverty reduction. McCulloch *et al.* (2001) argue that the impact of trade liberalisation on poverty reduction is pro-poor in some country cases and anti-poor in others. Thus, in some cases, trade-led growth has even led to a systematic worsening of income equality.

Santos-Paulino (2012) shows that the impact of trade on poverty and income distribution of households works through two channels. Firstly, trade affects the local prices of products and factors of production (i.e. wages, and return on capital). Secondly, the trade impact on poverty depends on the degree of an individual's dependence on various goods and factors of production, as well as whether they are employed in import or export competing sectors.

With regard to the first channel, Bardhan (2007) highlights the fact that trade openness impacts on the poor in rural areas in various aspects, namely as recipients of public services, as workers, as users of common resources and as consumers. He therefore suggests that capitalising on new product markets without the necessary institutional and infrastructural reforms may be suboptimal for the poor. With regard to income distribution, studies in Mexico and Brazil show that trade liberalisation and integration increased the ratio of skilled to unskilled wages and caused heterogeneous gains across geographic areas (Feenstra and Hanson, 1997; Robertson, 2004; Nicita, 2009). Arbache, Dickerson and Green (2004) ascribe this divergence in wages to "skill-enhancing trade" associated with increased FDI and technology adoption.



2.4.4 International trade and employment

Employment creation in the different sectors is a main cause of poverty reduction, as has been discussed (Santos-Paulino, 2012). Hence, understanding the employment effects of trade is an important issue for economic development. A study by World Trade Organisation (WTO) and the International Labour Organisation (ILO) (2007) states that economists have long recognised that trade would lead to a division of labour which is beneficial to everybody involved. By reorganising resources in agreement with the principle of comparative advantage, human resources can be allocated more appropriately and effectively. Highly productive local producers will be able to expand as they start selling their goods and service on international markets.

The WTO-ILO study (2007) furthermore notes that traditional trade models assume that a country's technological capacity and relative factor endowments, such as land, skilled and unskilled labour, and capital, would determine the level of competitiveness of the different economic sectors at the global level. As a result, each country would have a certain set of exporting sectors and import-competing sectors. In these traditional trade models, exporting sectors would increase their production and subsequently their demand for labour. At the same time, the import competing sectors would reduce production and possibly decrease employment. The traditional models do not explain the process of employment transition and trade-related unemployment.

Recent research indicates that labour adjustment processes resulting from trade not only take place between sectors, but also that significant job transfers may take place within economic sectors. The traditional approach of employment and trade has been challenged by new theories (e.g. new trade model, task trade model) (WTO-ILO, 2007). These theories stem from new empirical findings from analysis of firm-level data. Bernard and Jensen (1999) found that exporters in an industry are more productive than non-exporters. Confirming the causality argument of Rodriguez and Rodrik (2001), Bernard and Jensen (2004) also found that high-productive companies are more prone to enter foreign markets. Their results show furthermore that growth rates of employment are much higher for



exporting companies and that this growth continues to increase after entry into foreign markets.

Bernard, Redding and Schott (2007) state that the employment effects from trade liberalisation will result in both job creation and job reduction in all economic sectors. Furthermore, the net-exporting and net-importing sectors will experience the expanding of high-productivity firms and the shrinking of low-productivity firms. This implies that much reshuffling of jobs will take place within sectors. It is assumed that this is a positive situation as it is generally less difficult for workers to change firms within a sector than to move across sectors (Wacziarg and Wallack, 2004).

The empirical literature on the employment effects of trade does not, so far, provide a clear message. The only conclusion that appears from the research is that country-specific and endogenous factors (e.g. labour policies and business cycles) play a significant role in the employment effects of trade (WTO-ILO, 2007). Most empirical studies refer to manufacturing employment, with no indication whether the results can be extrapolated to the agricultural and other sectors.

Rama (2003) observed that trade reforms in developing countries were followed by a temporary increase in unemployment, even among the more successful developing countries. He argues that most of this unemployment is attributable to queuing for so-called “privileged jobs” in the more protected public sector, especially by urban youth. However, unemployment rates are not systematically higher in more open economies (Rama, 2003).

Papageorgiou, Choksi and Michael (1990) conducted a study on the trade reforms in developing countries and their results show that in eight out of the nine countries, the employment in the manufacturing sector increased during and after the liberalisation period. Agenor and Aizenman (1996) argue, however, that this study only provides limited evidence as it fails to analyse changes in employment in other sectors and aggregate unemployment rates. Dollar and Collier (2001) are also less optimistic as they recognise the benefits of trade reforms on both long-term employment and wages, but argue that there are significant transitional challenges in developing countries.



Table 2.3 below provides an overview of some country-specific case studies on the employment effects of trade and is illustrative of the inclusiveness on the impact of trade on employment.

Table 2.3: Country specific studies on trade and employment

Study	Country scope	Main findings
Milner and Wright (1998)	Mauritius	<ul style="list-style-type: none">• Short-run impacts on employment: manufacturing employment increased after 1983 trade liberalisation
Rama (1994)	Uruguay	<ul style="list-style-type: none">• Negative effects of trade liberalisation on employment in late 1970s and early 1980s
Matusz and Tarr (1999)	Costa Rica, Peru, Uruguay	<ul style="list-style-type: none">• Increases in manufacturing employment following trade liberalisation
Harrison and Revenga (1995)	Poland, Romania, Czechoslovakia	<ul style="list-style-type: none">• Employment fell after liberalisation• In transitional economies other reforms beyond trade liberalisation play a significant role
Fu and Balasubramanyam (2005)	China	<ul style="list-style-type: none">• Effect of exports on labour demand is positive• A 1 per cent increase in export volumes raises employment by 0.17 per cent• Exports simply draw upon existing surplus productive capacity and labour and thus provide a channel for these surpluses
Bentivogli and Pagano (1999)	Germany, France, Italy, UK	<ul style="list-style-type: none">• Impact of trade with Asian economies on unemployment is marginal for these countries.• Personal characteristics are significantly more important than exposure to import competition in explaining unemployment
Nicita (2006)	Madagascar	<ul style="list-style-type: none">• Strong variation in the distribution of export growth with skilled workers and urban areas benefiting the most• This is due to a lack of skills of the poor which live predominantly in the rural areas

Source: Adapted from WTO-ILO (2007)

This section investigated the rationale behind international trade and its impact on poverty and employment. The next section discusses a specific element of international trade, namely diversification.

2.5 TRADE DIVERSIFICATION

2.5.1 Introduction

It became evident from the discussion in Section 2.4 that the expansion of international trade has been an important pathway for growth in developing countries. From this perspective, trade diversification is seen as an important channel through which trade drives economic diversification and growth (Brenton, Newfarmer, Shaw and Walkenhorst, 2009). Economic diversification through international trade can take the form of diversifying into new export products and new geographical export markets, and of import substitution that requires either vertical or horizontal integration of supply chains. A broad overview of the channels for trade diversification is provided in Figure 2.2 below.

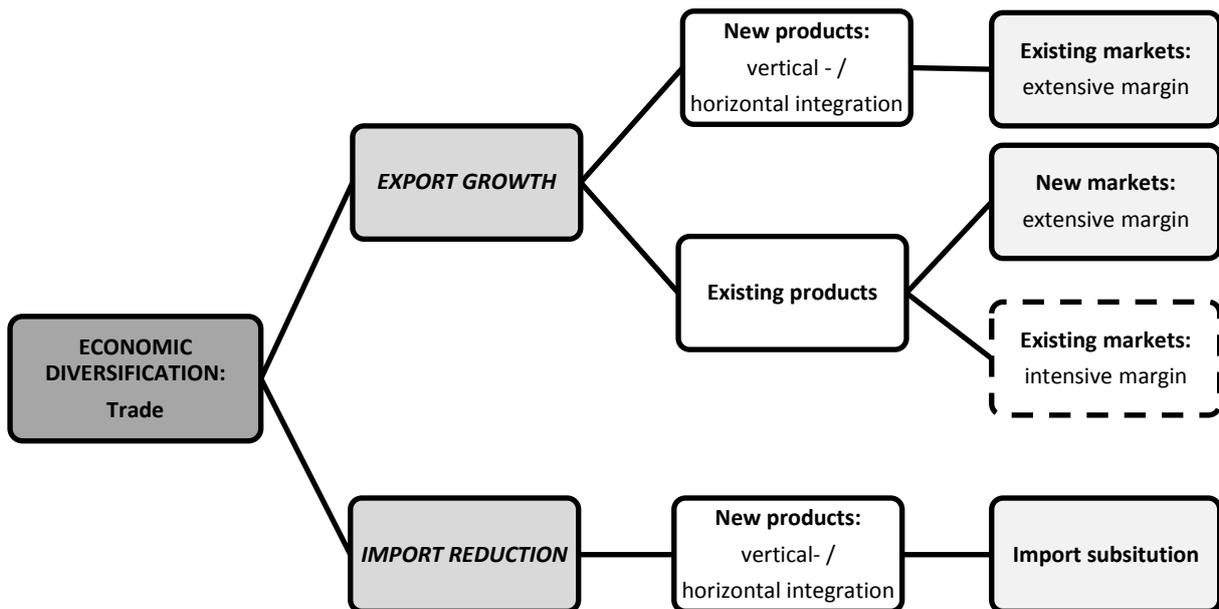


Figure 2.2: Overview of trade diversification channels

Source: Author's own interpretation

Imbs and Wacziarg (2003) reveal that economic development is linked to the diversification of production into a gradually wider array of new industries and export products, until a relatively high level of per capita income is attained. Cirera, Marin and Markwald (2012)



argue that diversification of trade is important for economic development and growth, in the following respects (among others):

- i. it underpins export-led growth strategies (Imbs and Wacziarg, 2003);
- ii. by capturing economies of scale (Brenton *et al.*, 2009);
- iii. the reduction of vulnerability to external shocks (Haddad, Lim and Saborowski, 2009);
- iv. the decrease in the incidence of trade shocks (Ghosh and Ostry, 1994);
- v. it correlates with high growth (Al-Marhubi, 2000; Herzer and Nowak-Lehman, 2006);
- vi. the substitution of imports that can be competitively produced locally;
- vii. it underpins adapting to changing consumer patterns and portfolio risk management strategies of firms (Imbs and Wacziarg, 2003);
- viii. the creation of learning-by-doing opportunities and knowledge accumulation (Imbs and Wacziarg, 2003);
- ix. and by adding value locally by vertical diversification up and down the supply chain.

It is, therefore, clear that trade diversification has moved back to centre stage in economic development initiatives. This section will further elaborate on the status, effects, determinants, and pathways of export diversification.

2.5.2 *Export diversification in developing countries*

Changes in technology and infrastructure have led to a significant diversification of exports by developing countries in the past two decades (Brenton *et al.*, 2009). Chandra, Boccoardo and Osorio (2008) found that almost 60 per cent of developing countries (both low- and middle-income) have diversified their export basket in the past 30 years, to some extent. However, most countries have failed to reap the benefits of extensive diversification as is evident from the limited diversification of existing products into new markets. Some poorly-performing low-income countries showed almost no progress whereas some previously middle-income countries in South-East Asia have started to export high-tech products (Brenton *et al.*, 2009).



Export diversification appears to increase with income until countries reach the lower range of high-income countries in the process of development. Thereafter, diversification falls as per capita income rises. Hence, Cadot, Carrère and Strauss-Kahn (2006) find that for developing countries, exports become less concentrated and more diversified as per capita income rises to US\$20 000 – US\$22 000. In contrast, high-income countries experience a rise in concentration ratio driven by a decreasing number of products they export. Data on Africa and other research on developing countries also confirms that export diversification increases with a rise in income up to a certain threshold (see UNECA, 2007; Bebczuk and Berrettoni, 2006; Klinger and Lederman, 2009).

It is easy to misinterpret the role of diversification in export growth. Analysis by Brenton and Newfarmer (2009) shows that the main origin of export growth in developing countries is an increase in existing bilateral trade flows; this is thus growth in the “intensive margin” (see Figure 2.2 above). As regards export growth from new products or existing products into new geographical markets, the extensive margin (see figure 2.2 above), is rather small. Within the extensive margin, the exports of existing products to new markets accounted for a larger share than new exports (Brenton *et al.*, 2009).

A number of empirical works underpin this observation. Evenett and Venables (2002) find that selling existing products to new markets only accounted for about one-third of export growth for the 23 developing countries they investigated. Besedes and Prusa (2007) find that for the 26 developing countries they investigated, a quarter of their export relationships between 1975 and 2003 were new, but only short-lived. Similarly, Brenton and Newfarmer (2009) show that from 1995 to 2004, the intensive margin for 99 developing countries contributed about 80 per cent to export growth. For the 20 per cent of export growth attributed to the extensive margin, they found that about 18 per cent of this was attributable to exporting existing products to new markets. Hence, the role of new products was found to be negligible. Amiti and Freund (2007) find that no more than 15 per cent of China’s significant export growth to the USA from 1992 to 2005 was attributed to new products. In contrast, empirical studies by Hummels and Klenow (2005) and Pham and Martin (2007) find that most growth in exports is derived from the extensive margin. Hence, more research is needed to better understand the dynamics of export growth.



However, these findings have important implications for industry and policy makers. Firstly, an export strategy that ignores the potential for expanding the intensive margin will ignore important opportunities for export growth (Brenton and Newfarmer, 2009). This implies that a focus on increasing quality, reducing cost and increasing productivity have a high pay-off. Secondly, promoting diversification of existing products to new markets is likely to be more effective than developing new products (Brenton *et al.*, 2009). Thirdly, learning from export survival patterns could lay the basis for more effective export promotion. Finally, exporting new products to new markets has a significant long-term impact on export growth by transferring new technologies, capturing economies of scale, reducing the terms-of-trade volatility and the creation of social knowledge (Brenton *et al.*, 2009; Hausmann and Rodrik, 2003).

2.5.3 *Export diversification and economic growth*

Economic development depends to a large extent on the structural transformation of moving from producing “poor country products” to producing “rich country products”. Many countries that are commodity dependent often have a small domestic market, a narrow export basket, and regularly suffer from export instability resulting from inelastic and unstable global demand (Hesse, 2009). Hence, export diversification is an important channel to alleviate these constraints. Globalisation has exposed countries to increased competition, thus successful export diversification requires structural adjustments to enhance competitiveness in order to take advantage of leveraging world markets.

In correspondence with the motivations for trade diversification discussed at the beginning of Section 2.5, the rationale for the relationship between export diversification and income growth has some sound foundations in economic theory. According to the structural models, countries should diversify from primary products to processed products in order to achieve long-term growth (Chenery, 1979; Syrquin, 1989). Similarly, according to the Prebisch-Singer model (see Table 2.1 above), vertical export diversification could reduce the worsening terms-of-trade for countries exporting primary commodities.



Volatile market prices for commodities make countries dependent on the exports of these products, which are vulnerable to export instability. This may consequently lead to a discouragement of investment in those sectors, subsequently resulting in macroeconomic uncertainty, hampering long-term economic growth (Hesse, 2009). Hence, export diversification can stabilise export earnings in the longer run (Ghosh and Ostry, 1994; Bleaney and Greenaway, 2001).

Amin Gutierrez de Pineres and Ferrantino (2000) stipulate that endogenous growth models revolve around “learning by doing” in ensuring sustained economic growth. In the perspective of export diversification, there are potential knowledge spill-overs from new production techniques and processes, leading to new management and marketing practices, they argue. This thus creates dynamic effects from export diversification on per income growth. Finally, models in the product-cycle literature have explained export diversification by innovation in the North and imitation in the South (Krugman, 1979; Grossman and Helpman, 1991a). It is, however, questionable that this still holds today.

Empirical evidence on the positive relationship between export diversification and per capita income is limited. Al-Marhubi (2000) estimated a growth regression and included several measures for export concentration and found that export diversification promotes economic growth. Furthermore, Lederman and Maloney (2007) used a cross-country panel to study export diversification and their results also established evidence for diversification-led growth. Two country studies of Chile by Amin Gutierrez de Pineres and Ferrantino (1997), as well as by Herzer and Nowak-Lehman (2006) revealed that the country greatly benefited economically from export diversification.

Similarly to Cadot *et al.* (2006), Imbs and Wacziarg (2003) also found that countries specialise at higher income levels and diversify their production in the early stages of economic development. They also showed that this pattern is very robust across the different economic sectors. Their study furthermore argues that the motivation for diversification includes changing consumer preferences and portfolio risk management. A study by Acemoglu and Zilibotti (1997) also supports this portfolio diversification argument.



Using a Solow growth model, Hesse (2009) investigates the link between export diversification and the growth in per capita income for 99 countries in the period 1965 to 2000. The study reveals that many of the high-growing East-Asian countries have a relative low export concentration. In contrast, the countries with a very poor income growth performances and a highly concentrated export sector can be mainly found in Sub-Saharan Africa. In concordance with Lederman and Maloney (2007), the study shows that export concentration is negatively linked to GDP per capita growth. However, their results show furthermore that the effects of export concentration on economic development are non-linear. This implies that poorer countries benefit from export diversification whereas richer countries perform better with export specialisation. These findings are supportive of the study by Imbs and Wacziarg (2003).

Country case studies on export diversification and income growth confirm the development path found by Imbs and Wacziarg (2003). Both Thailand and Malaysia have experienced a significant decrease in export concentration. Besides moving into manufacturing exports, the countries also developed their resource-based sectors (e.g. palm oil, rubber, and fish) into higher-value products (Hesse, 2009). Chile is also a success story with regard to developing from a resource-based economy to a country with a diversified export basket. Most of the new export products are close to the country's comparative advantage and include wine, salmon and fruits. However, manufacturing exports have been almost absent in Chile (Agosin and Bravo-Ortega, 2007). In Uganda, export diversification has only begun in recent years. Although the country is landlocked and has poor infrastructure, it has developed a flourishing fishing industry around Lake Victoria, exporting fresh and processed fish. The country also diversified in higher-value agricultural products, such as fruits and cut flowers. The main factor of success of Uganda's export diversification lies in a decline in freight rates of air transport and the cold-storage system (Bonaglia and Fukasuka, 2003).

The rationale for specialisation is explained either by the Ricardian theory of trade or by clustering effects. The decrease in transport costs has led to a reduction in the number of locally-produced products, which subsequently promotes specialisation (Dornbusch, Fischer and Samuelson, 1977). Moreover, demand conditions may make it profitable for producers to concentrate activities, which may lead to specialisation (Hesse, 2009). This pattern of



domestic diversification and specialisation is similar to that for exports (see Cadot *et al.*, 2006; Imbs and Wacziarg, 2003).

It is often argued that resource-based economies often struggle to diversify their exports. This may result in declining terms of trade for primary commodities, and subsequently the potential for an appreciating real exchange rate (i.e. the Dutch disease) and hence a lack of incentives for investments to diversify. Hence, Sachs and Warner (2001) find an inverse relationship between the abundance of resources and growth.

2.5.4 *Export diversification at firm level*

The processes of diversification have been described in economics, business, and innovation literature (Cirera *et al.*, 2012). The common rationale is that export diversification by firms occurs in order to obtain higher profits. The economics literature points to productivity, size, quality differentiation, and trade cost at firm-level for explaining export diversification (see Melitz, 2003; Baldwin and Harrigan, 2007; Ruhl and Willis, 2009; Costantini and Melitz, 2007). The innovation literature emphasises the importance of learning and knowledge investments to accumulate capabilities for export diversification (see Aw *et al.*, 2009; Cassiman and Martinez-Ros, 2007). The business literature focuses on FDI and international linkages as the main drivers for export propensity, but provides no evidence for a link with diversification (see Lederman, 2009; Marin and Giuliani, 2011; Swenson, 2008; (Greenaway, Sousa and Wakelin, 2004); Cirera *et al.*, 2012).

The process of export diversification can follow different pathways (Cirera *et al.*, 2012). The sequential process where a firm first produces new varieties for the local market and, once they have been proved successful, starts to export them, is a pathway noted in one of the predominant theories. Lacovone and Javorcik (2010) studied the process of export preparation in Mexico and found that firms increase the product quality preceding exports, and once the domestic market is matured, the product is exported. They also found that companies start exporting small volumes of a small variety of exports products.



Besedes and Prusa (2006) elaborated on this perception when they studied US firm-level data and found that most new exports are small in volume and tend to be short-lived. Most of these exports do not survive more than three years. This poses the question: What makes exports sustainable in the long-run? Martincus and Carballo (2009) found, based on evidence from Peru, that export market diversification is more important for increasing the rate of export survival than product diversification. Volker (2009) found, furthermore, that export survival also depends on the proximity of large markets, market power and demand elasticity of substitution.

At country level, a study by Hausmann and Rodrik (2003) analysed the process of how a firm starts to export a product which is new to the country of origin. They found that market failures are the main constraint to export discoveries as the positive externalities of a new product are rapidly imitated by other firms. Based on eight case studies, Klinger (2007) summarised these uncertainties of export discovery in productivity, cost and quality ambiguity, demand, price and market ambiguity. The two main strategies that emerged from his research were export diversification in similar products and the attraction of FDI in order to acquire the essential technology and knowledge for the production of new products.

The resource-based approach of export diversification stipulates the importance of related capabilities and resources (Cirera *et al.*, 2012). Lien and Klein (2010) found that firms will target dynamic sectors for diversification and that they tend to diversify into products that are closely related to their existing resources and capabilities. This concept was also briefly touched on in Section 2.2.3 and is further explored at a country and product level by Hidalgo and Hausmann (2009). They built a network, based on the similarities of products, the “product space”, and showed that diversification by countries occurs by moving from existing capabilities to close and similar products. This product space approach will be discussed further in detail in Chapter 4.

Cirera *et al.* (2012) notice that traditional models have considered firms as producers of only one product. However, in reality, most firms produce a multitude of products and export a number of them to several export destinations (Bernard, Redding and Schott, 2010). Hence,



firms look at the optimal production and export mix in their venture to produce and export a new product. This mix is not random, but based on existing capabilities. Teece, Rumelt, Dosi and Winter (1994) argue, furthermore, that market conditions and the learning-curve determine the degree of concentration which will impact on further diversification

Hence, it is evident that the diversification pathway follows a distinct pattern, based on the relatedness of capabilities required. The processes required to move up the diversification path to related, but more “advanced” products, is especially of importance for developing countries (Cirera *et al.*, 2012). Hence, analysis of firm-level characteristics of the determinants of the diversification process is required.

A paper by Cirera *et al.* (2012) investigated three dimensions of export diversification in Brazil, based on firm-level data. Firstly, they analysed the overall diversification patterns of Brazil, with the following main outcomes:

- i. generally a low survival rate of new exports;
- ii. firm-level export diversification involves a relatively low number of products but a large number of firms engage in export diversification;
- iii. new export products at a country-level are rare (e.g. between 2000 to 2009 there were only 75 “export discoveries” in Brazil);
- iv. new exports tend to be destined for closer export markets in large volumes;
- v. most of the export diversification occurs in highly related or similar products and are exported mainly to existing export markets (e.g. between 49 and 70 per cent of new exports, depending on the measure);
- vi. unrelated diversification is not unusual and tends to be unrelated to the core competencies of the firm. This is often attributed to exporting in different product stages of the same value chain;
- vii. at country-level the majority of all new exports were less sophisticated than the existing exports. Only a third of total new exports were “diversification upgrading” to more sophisticated products. However, based on existing competencies at firm level, almost all new exports were “diversification upgrading” with regard to product sophistication and technology content.



Secondly, they analysed the characteristics of firms involved in export diversification and found the following (Cirera *et al.*, 2012):

- i. it easier to diversify and enter new markets for firms with relatively larger market power;
- ii. larger and foreign-owned firms are more inclined to diversify their exports;
- iii. firms with a production system that is highly specialised in value have fewer prospects for introducing new exports. These firms will likely opt to expand exports of existing products;
- iv. the innovativeness of a firm's production basket is highly significant in explaining diversification in new exports;
- v. Engagement in R&D activities, increased skilled labour and marketing efforts also determine a firm's propensity to diversify in new exports.

Thirdly, Cirera *et al.* (2012) analysed two dimensions of the diversification path of firms, namely relatedness and sophistication. They found that unrelated export diversification is mainly explained by the existing focus of diversification in production by firms. This thus reflects a path dependency of diversification based on business strategies that focus on vertical integration of value chains. The results furthermore suggest that firms with larger market power are more likely to diversify in unrelated activities. Thus, input-based measures of diversification do not capture this type of relatedness. For example, the firm-size may limit the number of firms which are able to acquire all the essential capabilities and knowledge for diversification (Cirera *et al.*, 2012).

2.5.6 *Import substitution as an economic diversification strategy*

Although import substitution is not always in the front line in the literature on trade-based diversification, it poses some opportunities in this regard, especially with regard to food production, the focus on local production, and local value adding, and as local food security has become more eminent. However, diversifying local production by substituting imports comes with various risks and challenges. Supporting new production with entry barriers protects local firms from market forces; this would be repeating the past mistakes of



import-substituting industrialisation by not allowing market forces to “select” those industries with the most potential (Klinger and Lederman, 2009).

Import substitution was an important economic strategy used to spur industrialisation in the former colonies in Latin America and Sub-Saharan Africa during the 1950s and 1960s. Import-substituting industrialisation (i.e. ISI) was particularly successful in Latin America and was advocated there by the Structuralist Raul Prebisch (see Section 2.2.1). Those countries developed some manufacturing industries, such as the automobile industry that still exists today. However, since the late 1960s there was a strong shift to a more outward and export-oriented strategy for developing countries based on the successes of Korea, Thailand, Malaysia, Taiwan and Korea (Bruton, 1998).

Sub-Saharan Africa was less successful in capitalising the potential benefits from an ISI strategy. This was predominantly because of fundamental structural differences with other developing regions. The region had a much lower literacy rate, a less experienced and trained labour force, saving and investment rates were lower, infrastructural and institutional developments were much less extensive and markets less complete (Bruton, 1998). Furthermore, most African countries did not attain their independence until the late 1950s and 1960s. Import substituting strategies in the region were small in number and most of them were ad hoc measures. Hence, the anticipated structural changes did not appear (Bruton, 1998). Riddell (1990) states that imports substitution did not fail in Sub-Saharan Africa, rather it was never really tried.

According to Bruton (1998), the common denominator for the emergence of ISI strategies was that, given the already industrialised North, developing countries in the South must protect their economies from imports from the North in order to develop their own economies. This was done by developing new economic activities that produced an array of manufactured goods that were exported. At the time, as is still the case today, most developing countries relied on the exports of primary products and the imports of processed products from the North.



A study by Franko (2007) noted that, instead of relying on the international economy for growth, ISI strategies aimed to develop new local industries in a “sheltered” environment. The argument was that import substitution would encourage a process of learning. This process would be driven by exposure to new ideas and processes that would spill over to the rest of the economy. Furthermore, ISI placed the role of technological change and back and forward linkages at the core of development with a strong role for the state to promote national technological capabilities.

Import substitution relied on a variety of institutional mechanisms in order to achieve its goal. These can be broken up in three categories (Franko, 2007):

- i. Active industrial policies: state-owned enterprises, nationalisation, procurement.
- ii. Protective international instruments: tariffs, quotas, import licences, exchange rate overvaluation.
- iii. Fiscal and monetary policies: input subsidies, tax breaks, preferential interest rates.

According to Franko (2007), measured by the average annual growth rates in a number of Latin-American countries (e.g. Brazil, Mexico, Argentina, and Ecuador) over the period 1950-1980, it could be argued that ISI was a successful strategy. Import performance was variable in this period as most of the countries in Latin America, which adapted an ISI strategy, did not experience a drop in the import to GDP ratio. Only Brazil was more successful in this regard. Franko (2007) notes that other benefits from import substitution include the development of an urban middle class which demanded public services; moreover, the development of a labour union movement changed the agrarian balance of power.

Franko (2007) concludes that ISI came at a great social and economic cost and proved not to be sustainable in the long-run. Given the limited size of the domestic markets, ISI became “exhausted”. It was envisaged that technological development would increase the minimum size of a production unit. However, successful import substitution is then limited to sectors in which domestic demand exceeds the minimum size of a production unit or where exports could absorb the surplus. However, Franko (2007) states that this export channel was mostly not an option owing to unfavourable exchange rates and less competitive and inefficient industries, as well as the fact that most products did not meet international



quality standards. Furthermore, since the industrialisation process was largely in the hands of the elites, social pressure spurred by inequalities also led to the failure on ISI strategies. The consequential widespread poverty seriously hampered the internal demand for import substitutes. Furthermore, ISI strategies neglected agriculture which resulted in a decrease in production and food security, leading to an increase in food imports and a deteriorating balance of payments (Franko, 2007).

As mentioned, in the last few decades the development approach has shifted towards a focus on export-led growth which is advocated by many economists, aid donors and development agencies. A number of countries have benefited from this approach and many countries are still in the process adopting this strategy. However, Bruton (1998) advocates a more balanced focus in economic development from trade. Recent insights indicate that growth is more complex than the export-orientated argumentation. More emphasis is being placed on entrepreneurship, institutions and knowledge accumulation. He further questions what will come next after the outward orientation has exhausted its momentum. Import substitution as implemented failed but a reconsideration of this strategy, balanced with an outward orientation and a diversification path close to the existing productive structure, as Klinger and Lederman (2009) have suggested, may present some new opportunities for economic development.

2.6 SUMMARY

This chapter provided some theoretical foundations on economic growth and the specific contributions of agriculture and international trade may offer. The next chapter will investigate the performance of South Africa's agricultural sector within its economy and also in a global context in terms of international trade. This analysis provides a baseline for further analysis in the subsequent chapters on agriculture's potential to spur economic development, create employment and capitalise market opportunities through diversification.

