

The Impact of Trade Liberalisation on the Manufacturing Sector in Cameroon

by

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Abstract

Trade liberalisation has been a prescription for all countries performing poorly and is seen to be necessary in all economies that have grown (Krueger, 1997). Cameroon initiated trade liberalisation in the late 1980s; however, the implementation was not sustained because the government used tariffs to correct trade deficit and raise revenue. By the early 1990s, the government was pressured by external factors, such as participation in the World Trade Organisation (WTO), the imposition of a Structural Adjustment Programme (SAP), membership of the Regional Trade Agreement (RTA), the debt crisis, and internal factors, such as demands to promote competitiveness. The tariff rates were reduced along with other quantitative restrictions.

The aim of this research is to measure the impact of trade liberalisation on the manufacturing sector. The main hypothesis is that trade liberalisation based on theory should have a positive impact on the manufacturing sector. To test this hypothesis, appropriate methodologies were used to empirically determine the hypothesis.

Two periods were selected, 1980 to 1991 (pre-liberalisation period) and 1992 to 2006 (post-liberalisation period). The use of the period 1980 to 1991 allows for the capture of the status quo ante policy, while the period 1992 to 2006 allows for the capture of post-liberalisation impacts (ex poste). The performance variables were regressed with trade policy variables and other control variables that can influence performance. The Ordinary Least Squares was used. The result of the study shows that reduction in protection rates (tariff) did not affect manufacturing positively, as measured by the export performance. The result from the estimation of the single equation supply model reveals that the relative price variable proxied for by the exchange rate and imported

inputs is an important determinant of the performance of the manufacturing sector, as measured by export performance, though not significant statistically. The gravity model is used to complement the results from the estimation of the single equation supply model. The main manufacturing performance indicator is bilateral trade. Bilateral trade was regressed with trade and other control variables such as the Gross Domestic Product (GDP) of the two countries, distance, tariffs, membership of RTA, common language and border and colonial ties, which can all have an impact on the performance of the manufacturing sector. The results show that bilateral trade did not improve as a result of liberalisation. The results further reveal that the membership in RTA and the reduction in tariffs (all indications of liberalisation) did not positively influence bilateral trade in manufacturing. The distance variable and GDP variables equally did not influence bilateral trade in manufacturing.

Overall, support for the hypothesis that trade liberalisation in the early 1990s has had positive impacts on the manufacturing sector in Cameroon has not been obtained. The evidence indicates that liberalisation has negatively affected the manufacturing sector in Cameroon. The findings show that the long-term relationship between trade opening and industrialisation of the manufacturing sector is not stable and that trade opening negatively affects the manufacturing sector of Cameroon. This result is explained by the fact that importation of some inputs cannot be reduced. Moreover, Cameroon manufacturing enterprises are apparently unable to satisfy domestic demand and are uncompetitive. Given the evidence that, under Import Substitution Industrialisation policy, Cameroon established manufacturing firms not on the basis of revealed or latent comparative advantage, the seeming failure of ISI might be a consequence of these wrong decisions that were based on political needs rather than sound economics

(Bhagwati, 1978). It is recommended that Cameroon should develop an industrial policy, which should be based on the identification of the revealed and latent comparative advantage in addition to the progressive and systemic acquisition of acquired comparative advantage as prescribe in the new trade theories. Government's role should be an enabling one relying on market determination of resource allocation, and intervention should only take place when there is market failure. Clustering and agglomeration should be encouraged using the suggested tools, which should avoid rent seeking at all cost. Rigorous research at the microeconomic level is needed to identify the comparative advantage of Cameroon. Despite the findings of the research, intuitive reasoning and analysis of the various policies and actions indicate that trade liberalisation and market-economic decision-making, through government's support (Lin & Monga, 2010) of the private sector (in a public-private partnership), through an overarching vision, is the way to go.

The results from this research contribute towards policy-making that is grounded on sound and rigorous research and not rhetorical or political exigencies, which will ensure and guarantee a sound industrial policy reaffirming the importance of trade liberalisation despite the criticism and an industrial policy based on revealed and latent comparative advantages, which will lead to competitiveness with scientifically justified potentials for the manufacturing sector (GESP, 2010:35).

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Abbreviations

ACP	-	African Caribbean and Pacific Countries
AfDB	-	African Development Bank
AGOA	-	African Growth and Opportunity Act
ANIF	-	National Agency for Financial Investigations
BEAC	-	Bank of Central African States
CD	-	Customs Duty
CEMAC	-	Central African Monetary and Economic Union
CET	-	Constant Elasticity of Transformation
CFA	-	Communauté Financière Africaine
CGE	-	Computable General Equilibrium
CIP	-	Competitive Industrial Performance
CSNC	-	Cameroonian Shipper's National Council
CREDIT	-	Centre for Research in Economic Development and International Trade
CT	-	Complementary Tax
DGSN	-	Direction Générale de Statistique Nationale
ECA	-	Economic Commission for Africa
ECAM	-	Cameroon Household Survey
ECCAS	-	Economic Community of Central African States
ECLA	-	Economic Commission for Latin America
EFD	-	Fiscal Entry Duty
EOI	-	Export Oriented Industrialisation
EPAs	-	Economic Partnership Agreements
EPZ	-	Export Processing Zones

ERP	-	Effective Rate of Protection
EU	-	European Union
FAO	-	Food and Agricultural Organisations
FDI	-	Foreign Direct Investment
FIDAP	-	Financial Intermediation Development Plan
FTA	-	Free Trade Agreement
GATT	-	General Agreements on Trade and Tariffs
GDP	-	Gross Domestic Product
GESP	-	Growth and Employment Strategy Paper
GNP	-	Gross Nation Product
GPT	-	Generalised Preferential Tariff
GSP	-	General System of Classification
GTC	-	General Tax Code
GTP	-	General Trade Program
HIPC	-	Heavily indebted poor country Initiative
IDB	-	Islamic Development Bank
IMF	-	International Monetary Fund
ISIC	-	International Standard of Industrial Classification
ISS	-	Import Substitution Strategy
ISI	-	Import Substitution Industrialisation
IMTOT	-	Import Turnover Tax
LDC	-	Less Developed Country
MDG	-	Millennium Development Goal
MDRI	-	Multilateral Debt Relief Initiative
NEC	-	National Employment Council

MHT	-	Medium and High Technology
MIN COMMERCE	-	Ministry of Trade
MINEPAT	-	Ministry of the Economy Planning and Regional Development
MINFI	-	Ministry of Finance
MINIMIDT	-	Ministry of Industry, Mines and Technological Development
MINPMEESA	-	Ministry of Small and Medium sized Enterprises, Social Economy and Handicrafts
MINRESI	-	Ministry of Scientific Research & Innovation
MINT	-	Ministry of Transport
MINTP	-	Ministry of public works
MINTSS	-	Ministry of Labour and Social Security
MVA	-	Manufacturing Value Added
NAFTA	-	North American Free Trade Association
NEF	-	National Employment Fund
NGO	-	Non-Governmental Organisation
NHC	-	National Hydrocarbons Corporation
NIEs	-	Newly Industrialising Economies
NIS	-	National Institute of Statistics
NRP	-	Nominal Rate of Protection
NTB	-	Non-Trade Barriers
ODA	-	Official Development Assistance
OECD	-	Organisation of Economic Cooperation and Development

OHADA	-	Organisation for the Harmonisation of Business law in Africa
OLS	-	Ordinary Least Squares
PCM	-	Price Cost Margin
PIT	-	Production Internal Tax
PRGF	-	Poverty Reduction and Growth Facility
PROMAGAR	-	Cameroon's Administration Modernisation Programme
PRSP	-	Poverty Reduction Strategy Paper
QR	-	Quantitative Restrictions
REP	-	Regional Economic Programme
RTA	-	Regional Trade Agreements
SAM	-	Social Accounting Matrix
SAP	-	Structural Adjustment Programs
SME	-	Small and Medium Size Enterprises
SMI	-	Small and Medium Size Industries
SOCAPALM	-	Cameroon's Palm Oil Company
SODECAO	-	Cocoa Development Corporation
SSA	-	Sub-Saharan African
TFPG	-	Total Factor Productivity Growth
TFP	-	Total Factor Productivity
TOT	-	Turnover Tax
TSP	-	Transport Sector Programme
UNDP	-	United Nations Development Programme
UNCTAD	-	United Nations Conference on Trade and Development
UNIDO	-	United Nations Industrial Development Organisation

UT	-	Unique Tax
WEO	-	World Economic Outlook
WTO	-	World Trade Organisation

Chapter 1

Introduction

1.1 Introduction and background

No country can possibly develop without high-technology manufacturing and trade. Trade has been important even in the pervasive mercantilist approach. There are many theories that try to inform trade theory. The manufacturing sector produces most of the goods in developed countries. This is because this sector is highly mechanised and adapts easily to technological changes. With the multiplier effect from the acquisition of manufacturing equipment and productivity improvements, which are generated, machines permit us to produce more with less labour and in this way, we can then grow rich; seeing as labour is finally the source of every value added. In line with the above view, trade liberalisation and manufacturing have been used as a trade strategy for faster growth in developing countries that aim to increase output (Ghatak, 1995:349).

The United Nations Conference on Trade and Development (UNCTAD, 2008) report on developing countries highlights increased dependency of poor countries on basic products in the past years. The sudden and fast dismantling of the Import Substitution Industrialisation (ISI) policies, which were aimed at supporting infant industries, has worsened the situation. The percentage contribution of raw materials in total exports of goods has increased from 59 per cent in the period 2000 to 2002 to 77 per cent in the period 2005 to 2006, (UNCTAD, 2008:5). Less-developed countries, Cameroon included, are still at the level of resource production with manufacturing sectors that

produces basic consumer goods and are highly uncompetitive (WEF, 2010:118).

There has been a growing acknowledgment among researchers and especially policy-makers of the need for a more selective Industrial Policy after the seeming failure of structural adjustment imposed trade liberalisation, which negatively affected the manufacturing sector in Africa, and Cameroon in particular. The situation makes the role of the government important especially after the era of no government intervention.

Despite the adoption of the structural adjustment program (SAP) suggested by the World Bank and International Monetary Fund (IMF) as a way to solve the problems faced by less-developed countries, in addition to unsustainable debt and poverty levels, the manufacturing sector did not take off (Carmody, 2009:1197). The above situation led to a rethink of the existing policy of open and unadulterated liberalisation. Trade liberalisation based on comparative advantage might lead to static gains in resource allocations at the expense of important dynamic gains, which are important for the development of the manufacturing sector (Fagerberg, Srolec & Knell, 2007:1595-1600). The neoclassical approach might not consider how poor countries lacking in skills and infrastructure will respond to new technology, innovation and learning. In addition, and as argued in the new trade theory, trade and competition take place under conditions of imperfect competition accompanied by economies of scale with the accompanying externalities. It is assumed that knowledge will logically get to developing countries without any problems or limitations (just like one can go to a car dealer with cash to buy a car and with no driver's license drive away, the consequence is that he will crash the car with the resultant

consequences to him and others). The simplistic reasoning and assumption neglects the need for trade liberalisation to be carried out under conditions favourable to not only the acquisition of new technology, but also the ability to use it, making the availability of the necessary skills and infrastructure, in addition to a good regulatory framework, important (Fagerberg *et al.*, 2007:1620).

Cameroon liberalised her economy and specifically trade in the late 1980s as part of SAP. Cameroon had pursued an ISI development strategy, which was designed to protect local manufacturing firms from cheaper imports using tariffs and quantitative restrictions and subsidies in addition to the manipulation of the exchange rate. However, starting in 1987, the economy in general adopted market-friendly policies and trade liberalisation was an important part of this policy change (MIN COMMERCE, 2008:5). Cameroon's case provides a good case study given the unique position she holds in Central Africa and the pursuit of two different policies since independence, which makes an evaluation of the impact of the policies possible and important. A challenge facing Cameroon is to ensure that manufacturing contributes to the national policy objectives of economic growth given that its present contribution is not very significant and not growing (GESP, 2010:30). Manufacturing is critical to solving Cameroon's unemployment problem and the need to earn money from trade given the unstable prices of agricultural products and commodities. It could be a major source of employment especially if located in the poor rural areas, as part of the established objective of regional development (Ministry of Economic Development and Planning (MINEPAT, 2008:1). In addition, local inputs could be used in the process of production bringing benefits to the local economy.

According to the Cameroonian Ministry of Economic Development and Planning (MINEPAT, 2008:10), manufacturing is considered very important in increasing the Gross Domestic Product (GDP) and employment as well as the diversification of the economy, making her less dependent on commodities. Furthermore, manufacturing has been dwindling especially since the abandonment of the ISI policy, which had made the sector uncompetitive (MINEPAT, 2008:10-50). Again, manufacturing can utilise Cameroon's agricultural output (in which she has revealed a comparative advantage) through the development of agro-allied manufacturing activities. It is obvious that manufacturing is regarded as one of the means through which government can reach its growth objectives, as articulated in the Growth and Employment Strategy Paper (GESP, 2010:18).

In the past two decades, major changes in the manufacturing sector have taken place. These changes have affected manufacturers and others who are either directly or indirectly involved in manufacturing activities. The introduction of free trade has resulted in price fluctuations, which brought about a whole new dimension of risk. Cameroonian manufacturers used to protection from the state were not always prepared to manage the resulting external competition (Njikam, 2007:15), which has resulted in many of the manufacturing firms closing down because of their inability to compete with imported products.

The contribution of the manufacturing sector to gross domestic product (GDP) is well below that of the tertiary and primary sectors, at just under 10 per cent, (DGSN, 2008:25). This situation is explained by a number of structural problems. In 2008, the Cameroon Ministry of Finance carried out a study on the competitiveness of

manufacturing firms with a sample of ninety-five firms grouped in thirteen branches. Findings from this study show that unit costs of enterprises are considerably high. Inputs constitute the main component of the general costs of manufacturing industries (77 per cent), followed by the cost of capital (10 per cent), cost of labour (9 per cent) and taxes (MINFI, 2009:22). Moreover, Cameroonian manufacturers are often faced with problems of smuggling, unfair competition from cheaper imported goods, high tax rates and bad governance (corruption).

At independence, African countries were not sure about the benefits from free trade. Cameroon pursued the ISI policy based on the Infant Industry argument. Since the late 1980s, with the mounting debt crises and the collapse of the economy, there was a rethink of the policy, which led to the adoption of the structural adjustment programme (SAP), seen as the solution to the economic crisis, which was proposed by the World Bank and the International Monetary Fund (IMF). The policy was based on neoclassical economic theories with trade liberalisation being one of the cornerstones of the programme. The change was the consequence of not realising the anticipated gains from ISI policy implantation reflected in poor economic activities, weakening and uncompetitiveness of the manufacturing sector, and the belief among policy-makers that free trade could change the poor performance and also promote regional growth, as seen in the proliferation of many regional trade agreements such as the Central African Economic and Monetary Union (CEMAC) (Economic Commission for Africa (ECA), 2004:13). This was expected to lead to infrastructural development and increased trade, leading to growth and poverty reduction.

Trade reform packages consist of trade liberalisation, which usually encompasses the

removal of quantitative restrictions to trade altogether or their conversion into tariffs; the reduction of the level of tariffs; the reduction or elimination of tariff dispersion (an indicator of price discrimination); the devaluation of the exchange rate; and the removal of export taxes (Shafaeddin, 1994:6).

Trade liberalisation usually aims at the removal of trade barriers and relative price bias, which aims to increase competitiveness, demand contraction; and increasing the supply and diversity of tradables in line with comparative advantages defined by endowed factor-price ratios. These are expected, at least in theory, to have a positive effect on the manufacturing sector.

Opponents argue that trade liberalisation is likely to cause unemployment or to lower incomes in previously protected and internationally uncompetitive activities such as manufacturing. Ackerman & Nadal, (2004:10) conclude that the use of Computable General Equilibrium (CGE) models relying on poor theory and assumptions overestimate the benefits of free trade while neglecting the costs.

Taylor & Von Arnim, (2006:5), show that trade liberalisation simulation results depend on assumptions and conclude that Africa will not gain from trade liberalisation. Their findings indicate that Sub-Saharan Africa is likely to experience welfare losses, even in the absence of macroeconomic shocks.

Cameroon, as part of its liberalisation policy, reduced her tariffs and quantitative controls to encourage competition. The previous import substitution support to government-owned firms was removed or reduced and firms were privatised or at

least commercialised (MINFI, 2006:10). The opening up of the manufacturing sector to competition placed Cameroon in a very precarious position, as the sector could not compete with imports from other countries, because they were cheaper and more competitive. These reforms were aimed at making the manufacturing firms more efficient and competitive (MIN COMMERCE, 2006:100). However, the desired results have not been realised, because firms used to various government supports under ISI, which had led to rent-seeking behaviour (Krueger, 1978), were not ready for the competition resulting from liberalisation.

The beginning of the last two decades witnessed particularly poor manufacturing export growth. Cameroon's manufacturing export revenues stood at only 3 per cent of exports and most of it light consumer products and agri-products to the CEMAC region (DGSN, 2000:10-15). Manufactured imports have been growing, reaching fifty-two per cent of total annual imports since 2000 (OECD, 2006:12). Njikam (2007:20) agrees that the current export trend shows that the capacity is declining, whereas imports, especially of intermediate inputs, are growing and exports are declining drastically. Cameroon has become a net importer of all types of manufactured goods (intermediate inputs) and consumer goods.

The reason for trade liberalisation is to improve economic and manufacturing performance. The question could be asked whether trade liberalisation has had a positive, negative or no effect on the manufacturing sector in Cameroon in relation to bilateral trade, export growth, output growth and competitiveness. Comparing the performance of the manufacturing sector before and after trade liberalisation will enable this research to answer the question. This will be done by looking at export

growth, output growth, bilateral trade in manufacturing and the competitiveness of the manufacturing sector in Cameroon. The research further aims to determine whether the empirical results agree with the predictions of the expected benefits from trade liberalisation suggested in neoclassical trade theory.

1.2 Problem statement and motivation for the research

The result of trade reform (trade liberalisation) in Cameroon has had mixed trends in economic growth. It is noticeable that output has grown slightly after the negative performance in the 1990s, but at a slow pace, and output growth was not enough to generate export growth similar to what was seen in the East Asian manufacturing sector (Amin, 2002:3). However, the manufacturing sector specifically has performed poorly.

The liberalisation of trade by the Cameroonian government has led researchers and policy-makers within the country to question the possible effects of trade liberalisation (Njikam, 2006:10). There is no consensus on the impact that trade liberalisation has on manufacturing, as seen from the literature. Njikam, (2003:15), argues that trade liberalisation had a positive effect on manufacturing productivity. In contrast to this argument, MIN COMMERCE (2005:82) and Söderling, (2006:10) argue that trade liberalisation has led to a decline in manufacturing, making it less competitive and less productive, probably as a consequence of the removal of the pervasive and distortionary government support under ISI policies and the inability to absorb new technologies in addition to human resource problems. The report by the Ministry of Industrial Development and Technology (MINITDT) (2005:1) goes ahead to rhetorically question whether the abandonment of ISI was the right decision.

There are many reasons for conflicting results on this issue, among which is the fact that developing countries like Cameroon compete with both developed and developing countries, which can lead to unreliable results coming from a cross-country analysis of the effects of trade liberalisation. The evidence indicates that many firms shut their doors after liberalisation of trade.

Another reason for controversial conclusions is that most researchers lack consensus in the debate regarding whether to link trade liberalisation to economic growth or to export earnings. Furthermore, there is inconsistency with respect to using tariff or non-tariff data in product prices. Generally, researchers fall short of seeing the impact of the long-term effects of trade flows in their methodology, and as a result, they reach different conclusions, (Rodriguez & Rodrik, 1999:5). The relationship between trade liberalisation and other variables has mainly been assumed from changing trends. Such assumptions for the Cameroonian economy might be unreliable as the 1990s were characterised by internal political and social dynamics, such as the unrest in Cameroon occasioned by the call for the president to resign, volatility associated with the introduction of multi-party democracy, a major change in economic policy through the introduction related to SAP, the devaluation of the currency and the subsequent application for qualification as a heavily indebted poor country (Amin, 2002: 2-3 & Ajaga, 2004:5)

Evidence shows that, despite trade liberalisation, manufacturing performance has not improved as seen from the closure of many plants. For performance to improve in manufacturing, there is a need to increase productivity through human resource and skills development or cost reduction. Cameroon, like many Sub-Saharan African

countries, has a comparative advantage in cheap and unskilled labour, which might suggest that they specialise in the production of such goods that use much of this factor, which might mean the under development of the manufacturing sector since unskilled labour might not be good enough to develop the manufacturing sector (Wood, 1995:57). It is also argued that through trading, skills can be developed through the continuous use of particular machines, which effectively means knowledge transfer (Pissarides, 1998:733).

The poor performance of the manufacturing sector is accompanied in Cameroon, like other African Caribbean Partnership (ACP) countries, by the signing of free trade agreements with the European Union, in addition to bilateral trade agreements with China. Indeed, trade liberalisation may have two contradictory effects on manufacturing in a country. It may reduce prices of imports as well as reduce inefficiency within enterprises, as enterprises are exposed to foreign competition, and at the same time might lead to the closure or collapse of the existing manufacturing concerns.

The recent emerging and conflicting empirical evidence indicates a need to conduct more focused country-specific research on the effects of policy change on manufacturing as part of a broader and more important microeconomic research on the manufacturing sector. Following this, it is also because one cannot merely derive from the literature on neoclassical theory, which informs trade liberalisation, that a more open trade regime will positively affect the manufacturing sector and lead to economic growth. Neither can it be simplistically concluded from the literature and evidence from the implementation of the competition distorting ISI policy of the

1960s to the 1980s that trade liberalisation is bad for manufacturing.

Therefore, it is necessary to provide answers to the following questions: Has trade liberalisation positively affected the manufacturing sector in Cameroon, as predicted by the theory that informs it? Are the current policies sufficient to get Cameroonian manufacturing out of the situation she finds herself in? The government's proposal that the manufacturing sector should account for fifteen per cent of GDP by 2020, up from the present seven percent, is a serious challenge that needs to be addressed (GESP, 2010:25). Given this stated objective of the government there is a need for focused research to answer the above questions.

In line with the above, this research work is timely and relevant from a policy perspective, as trade liberalisation constitutes a very crucial part of policy in the government's current efforts to diversify the economy from a basically subsistence agricultural-based economy to a manufacturing economy, and from a collapse of the once vibrant manufacturing sector under ISI. Furthermore, it is especially true given that manufacturing performance has diminished over the years, especially after the introduction of trade liberalisation. Again, within the context of the long-term economic policy of Cameroon, it is imperative to determine the effects of the change in policy on the manufacturing sector, with the justification that after twenty years the effects can be determined. The aim is to make policy recommendations based on critical evidence (GESP, 2010:1).

1.3 Objectives

In line with the questions above, the main objective of this research is to empirically

determine the impact of trade liberalisation on the manufacturing sector in Cameroon.

Following from the overall objective, the following secondary objectives are addressed:

- To empirically determine the impact of trade liberalisation on manufacturing exports;
- To empirically determine the relationship between trade liberalisation and bilateral trade in manufacturing; and
- To find out how trade liberalisation affects manufacturing competitiveness.

The analysis is largely comparative (what happened before and after trade liberalisation); the sample period is broken down into ten years before and sixteen years after the commencement of trade liberalisation, which started slowly in 1988 and intensified in the 1992. There is a gross lack of micro-level firm data related to the nature of technical relationships such as input-output coefficients in the country. For this reason, this research looks at aggregate manufacturing characteristics (variables), not firm-level variables.

1.4 Methodological approach

A number of methodologies can be used to evaluate the effects of trade liberalisation on the manufacturing sector or on economic growth, in general. Each approach has its weaknesses and advantages. Notwithstanding the debate in empirical literature regarding the ideal or preferred approach, the methodology will ultimately depend on the research objectives and the availability of data required in satisfying alternative approaches.

Some of the more widely used approaches include simulation approaches and econometric models. Simulation approaches are based on partial equilibrium (PE) or computable general equilibrium (CGE) models.

Econometric models involve:

- The use of gravity models to predict bilateral trade between countries; or
- Models designed to determine the impact of changes in policy such as single equations or a system of equations based on time-series, cross-sectional or panel data.

Each approach has its strengths and weaknesses, which will be discussed in detail in Chapter 2. CGE models based on social accounting matrices (SAM) are well suited for assessing the distributive social impact of trade policy and they also capture economy-wide linkages. They are very demanding in data and parameters to be used. However, CGE models, though consistent, are considered to be static in concept and often built on theoretical assumptions, such as more sectors than factors, which leads to the problem of over specialisation and the results might just reflect the assumptions made about the development of the model and the approach followed in developing it. There is also the problem of poor data on Sub-Saharan Africa, especially because of the poor institutional frameworks.

Econometric models, on the other hand, are typically less consistent, but have the virtue of assigning parametric values through statistical estimation with a calculable level of precision. Given the inherent weaknesses of alternative approaches, Westhoff, Fabiosa, Beghin, & Meyers, (2004:383) suggest that analysts should choose on the basis of which approach is best suited to answer the research question(s). In either case, there is usually a trade-off between theoretical rigour and the method of

estimation. In this regard, Abler, (2006:1) argue that econometric models are better when interest is on the historic impact of a trade policy change already in place.

An ideal evaluation, as suggested by Francois & Sheills, (1994:10), should include a complete general equilibrium model based on micro-economic theory, where parameters are estimated at the same time using comparable data with the effects determined from estimations made. Despite this, an ideal approach is not possible in this research (because of the huge data constraints in terms of availability, accuracy and authenticity) or for that matter in the real world. Moreover, models are simply tools constructed to test particular economic hypothesis (problems), implying there are no universal best models. This needs to be emphasised or there would be a danger of getting results that explain and are suited to the assumptions made and not the reality of the situation under study.

For this reason, and given the data constraints, the approach taken is the single equation supply model and the gravity model to measure bilateral trade between Cameroon and her trading partners. The industrial competitiveness index is also used in the research to determine the competitiveness of the manufacturing sector. The results from the three approaches are then compared to see what they predict.

The research uses a chain of reasoning based on a blend of theory and empiricism in conveying its arguments. The hypothesis is that the effects of trade liberalisation should on an *a priori* basis have a positive impact on manufacturing. One justification why this Ferranati, Gill, Guasch, Mahoney, Sanchez-Parama, & Schady, (2003:10), is that, in practice, it is not easy to separate the effects of trade liberalisation on the

manufacturing sector from other changes, which might be taking place in the economy at the same time.

The approach outlined above takes a holistic view of the effects of the policy change on the manufacturing sector and is considered appropriate for the objective of the research, as it is expected to take into consideration the peculiarity of the manufacturing sector in Cameroon. In contrast to the more positivist social science approach, which tends to ignore the institutional and social context of research and operates in an apolitical setting, devoid of reality and could end up just being an investigation, which cannot influence the process of evidence-based policy-making. Inductive reason will be applied in addition to empirical results to reach conclusions and make recommendations.

1.4.1 Data sources

The main source of the data is secondary. The reason for this is that most of the time secondary data is accurate to a greater degree and various sources can be compared to make sure that the data is authentic. In addition, the data is neutral and free from the researcher's bias, as is often the case with primary data. The data will be sourced from the annual publications of the Cameroon Ministry of Economy and Finance (National Statistical Section); the Ministry of Trade and Industrial Development (Directorate of Imports and Exports); Bank of Central African States (BEAC); Central African Economic and Monetary Union (CEMAC); and, for the purpose of authenticity, data will also be sourced from the World Bank; International Financial Reports published by the International Monetary Fund (IMF); World Development Reports published by the United Nations Development Program (UNDP); United Nations Industrial

Development Organisation (UNIDO); Trade Positions published by the General Agreements on Trade and Tariffs (GATT); and now the World Trade Organisation (WTO) and the United Nations Conference on Trade and Development (UNCTAD). This data, for the various variables, will be specifically for Cameroon and it is compared with data from government sources. Data for Cameroon's trading partners will also be sourced from the same sources. This covers the period from 1980 to 2006.

1.5 Contribution of the research

The study is timely and will help in the direction of policy because trade liberalisation constitutes an important element in the government's efforts to influence the performance of the manufacturing sector, as indicated in the development plan of the country. From a research perspective, the empirical results of this study will be timely because it is country specific and context specific in that it considers how the policy change specifically affects the manufacturing sector. Cameroon has a wide variation in its degree of openness, owing to trade liberalisation and ISI policies, and this makes the study more comprehensive.

The study results could show how the Cameroonian manufacturing sector has not benefited from trade liberalisation and as such could lead to a forward-looking assessment with respect to how the manufacturing sector should be handled to achieve better results. It also considers the question of whether there are benefits from belonging to a Regional Trade Agreement (RTA) block, given that Cameroon belongs to CEMAC and the wider implication of the efforts to develop an African free trade zone similar to the European Union (EU).

Furthermore, the study aims to provide a basis for policy formulation that may benefit the manufacturing sector. Specific changes in trade volumes, patterns and prices are of interest to many stakeholders in the manufacturing sector. Results from this study can indicate sectors within the industry that could potentially gain from trade liberalisation. Therefore, it can be useful to stakeholders in exporting and importing countries, including producers, processors, shippers and policy-makers.

It is also of interest to other researchers whose areas of study are in manufacturing and trade policy changes, regional integration and international trade. Governmental and non-governmental trade-related agencies would find the results of this study useful in trade negotiations and analysis. The research also lays the foundation or is a prelude to specific sector and firm-level research.

1.6 Organisation of the thesis

The study consists of eight chapters. Chapters 1, 2 and 3 provide the context of the research in terms of the theoretical background of the research and the literature review by specifying the underlying theoretical and empirical debates associated with the topic under consideration.

Chapter 1 introduces the research topic, background, objectives, methodological approach and possible justification for the research and the expected contribution of the research, including its limitations. The chapter also provides the research problem, structure and content of the research.

Chapter 2 reviews the theoretical basis of the research. The theory underlying trade liberalisation is critically looked at. A critical look at the traditional trade theories and the ‘new’ trade is also considered in this chapter, and finally the approaches to measuring the impact of trade liberalisation are considered.

Chapter 3 deals with the great body of literature on trade liberalisation and manufacturing/economic growth, it considers approaches used such as performance before and after liberalisation; cross country studies; ‘new’ trade theory; performances of liberalised versus protected economies; structure conduct performance; price cost margins; a debate on liberalisation versus export growth; trade liberalisation, technical efficiency and technological progress; a look at the empirical evidence from manufacturing sectors in the developing countries and how liberalisation of trade affected them; and finally a critique of liberalisation. Simply put, it follows a holistic approach to the literature by looking at all aspects of the trade literature debate.

Chapter 4 presents the Cameroonian economy, trade reform/policies and the manufacturing sector in perspective, with the view of placing Cameroon under the lens and providing an understanding and context of what the research is dealing with.

Chapter 5 critically analyses the performance of the manufacturing sector pre and post trade liberalisation. A qualitative analysis of the manufacturing sector, in relation to the structure and performance of imports and exports, employment and total factor productivity is considered.

Chapter 6 presents the methodology to be used for the empirical analysis. It specifically considers the single equation supply model, the augmented gravity model and the industrial competitiveness index. In so doing, it critically presents the justification for the use of each approach and the shortcomings of each.

Chapter 7 discusses the empirical analysis and presents the results. The approach here is to present results from each of the estimated models, to analyse them and to make a comparative analysis.

Finally, Chapter 8 finalises the research by summarising, concluding, making recommendations and stating the limitations of the research.

Chapter 2

Theoretical foundations of the research

2.1 Introduction

The chapter aims at critically looking at the various theories underlying trade policies. These theories include, among others, the classical theories that explain the comparative advantage theory, the infant industry argument that is often seen as the counter argument to trade liberalisation, and the new trade theory. The aim is to place the research within a theoretical context. Approaches to measuring the impact of trade liberalisation will be critically look at. The chapter is subdivided as follows: Section 2.2 presents the context of the research. Section 2.3 deals with the theoretical basis of trade liberalisation; an understanding of the theory underlying trade liberalisation should shed more light on whether it is relevant in explaining the effects on the manufacturing sector. It obviously follows from the objective of the research. It is important to understand the theory that underlies trade liberalisation and what it predicts and under what assumptions. Section 2.4 looks at the critique of comparative advantage; this is important because, rightly or wrongly, trade liberalisation is justified or criticised on the basis of this important theory. Section 2.4.1 looks at the Heckscher-Ohlin model. Section 2.5 looks at the Import Substitution Industrialisation (ISI) and the infant industry argument, while section 2.5.1 considers a critique of ISI. Section 2.6 looks at the new trade theory. Section 2.7 considers the approaches used to determine the effects of trade policy changes on the manufacturing sector and, finally, section 2.8 summarises the main issues discussed in the chapter providing a concluding remark at the same time.

2.2 Context of the research

Concern for the lagging behind of Africa in World Economic growth raises questions about the relationship between international trade and economic growth broadly and specifically on other sectors such as the manufacturing sector. Right from the time of the classical economists, the theory of international trade had been considered as vital in the explanation of changing economic circumstances. This is because of the interdependence of the various economies. This has become more serious in this era of globalisation, advanced by advances in information technology with the era of the Internet and cheaper communication and a great reduction in transport costs. Strydom, (2006:2) argues that there are many theories that explain trade liberalisation, ranging from the classical and neoclassical theories to the new trade theory (with its emphasis on the role of imperfect competition, economies of scale and product differentiation in trade). There has also been an increase in trade in tasks, which has seen an increase in various aspects of outsourcing and offshoring. How these affect manufacturing in the developing countries is of great interest to researchers. Again, how it affects the conventional wisdom of the basis of trade is also very important.

The theory of comparative advantage propounded by David Ricardo, (1772-1823), in its simplest form, explains that specialisation and trade should be carried out on the basis of comparative advantage. Upfront, a caveat should be included: under certain conditions, free trade can be beneficial to participants, contrary to the general statement that it is beneficial in any situation. Earlier, Adam Smith had seen trade on the basis of absolute advantage resulting from the availability of natural resource superior endowments such as minerals, climate, and land among others. Absolute advantage should be the basis of specialisation, he argued.

However, Ricardo, (1881) argued, on the basis of the theory of comparative advantage, that, given full employment of resources and prices of commodities, these reflect their opportunity cost with no diminishing returns. Therefore, a country can attain an optimum pattern of production by trading freely. However, it must be stated here that this theory assumes perfectly competitive situations and obviously in third world countries such as Cameroon, this does not exist. The trading and economic relations and interactions are based on gross market failure and other imperfections. Again, the competition is not between countries *per se*, but between large firms across the country, leading to intra-firm trade, and more often than not, to oligopolistic and monopolistic behaviour by multinational firms.

With the expected benefits, such as higher export growth, higher productivity growth, weaker monopolistic conditions in domestic markets and lower price and competitive prices, trade liberalisation has attracted the attention of numerous researchers and policy-makers, who have studied the effects of trade liberalisation (Phalla, 2004:2).

The research and theoretical discussion need to be situated within the context of industrial policy formulation and what it means especially for poor countries. Over the past fifty years, there have been various debates on industrial policy, at both theoretical and empirical levels. Industrialisation is important, and despite the predictions of benefits from trade liberalisation based on perfectly functioning markets and rational behaviour of participants, this does not happen in the real world where self-interested behaviour accompanied by improper markets inform the intervention of government in developing industrial policies and influencing the functioning of the market (Rosenstein-Rodan, 1943; Hirschman, 1958; Prebisch,

1959:251-273; Myrdal, 1957). However, the ability of the government to develop and implement an industrial policy is doubted by some economists and is considered to be worse than market failure. Again, it could lead to corruption, waste and rent-seeking behaviour, especially where government officials are corrupt, as is the case in developing countries like Cameroon. Given the problems above, trade liberalisation, privatisation or at best commercialisation of government enterprises, with reduced government involvement, which is considered distortionary, should be the way to go. This informed the policy direction of developing countries in the 1980s, especially faced with economic collapse, which was blamed on Import Substitution Industrialisation policies considered as pervasive by opponents (Baldwin, 1969:295-308; Krueger, 1974:270-274; 1990:1-23; Pack, 1993:1-16; 2000:47-68).

In the real world, there is market and government failure especially in developing countries. Therefore, what is important for development is how to develop and implement industrial policy and where to implement it rather than the why of trade liberalisation and industrial policy. Because of the limitations of markets and government capacity problems, especially in developing countries, it is important to deal with a country by understanding the political and historical context, in addition to being flexible in the conception and implementation of trade liberalisation and industrial policy and a recognition that comparative advantage is important and therefore deviating the extent to which it can be defied. The principle of comparative advantage is therefore important, but the extent to go against it in the quest to industrialise might be the difference between success and failure (Lin, 2009:5). This calls for a systematic and coherent approach to industrialisation through innovation, and the development of technology should be a central objective of industrial policy

and as part of trade liberalisation should be an important objective and integral part of trade liberalisation. This approach should be in line with and comply with comparative advantage (Amsden, 1989; Dosi, 2009; Rodrik, 2004; 2007; Chang, 2002:21-32; 2003; 2009; Lall, 2004:4-14; Lin, 2009; Nelson, 1993; Robinson, 2009).

Given various views that are often at variance with each other, Hausmann & Rodrik (2006:5) conclude that countries should change their structure in their quest to develop.

Within the context of this research and in line with the main aim of the research (the empirical determination of the impact of trade liberalisation on the manufacturing sector), it is important to critically examine the theory that underpins trade liberalisation in order to understand what it proposes and to determine whether this applies to Cameroon, given the objective of the research.

2.3 Theoretical foundations of trade liberalisation

Understanding the basis of trade liberalisation as an important policy prescription and why it might or might not explain the reality that we live in the world, especially in the less-developed countries, and in relation to how it affects the manufacturing sector, is important.

According to Krueger, (1980: 289), “markets would function well and provide growth if only policy-makers would abstain from unproductive intervention”. The doctrine of comparative advantage is implicit in the theory of trade liberalisation for all, though under special circumstances infant industry support is justified in principle. The

doctrine of comparative advantage is based on neoclassical free market (perfect market) assumptions.

Trade liberalisation, considered as the absence of all forms of barriers to trade, is based on two important foundations: universality, which contends that gains from liberalisation of trade accrue to all countries irrespective of their institutional or structural characteristics; uniformity, which implies the same barriers to trade, especially tariffs (Shafaeddin, 2000:25). However it is unrealistic as countries differ in every sense, from location, factor endowments, history, culture, politics, international relations, institutions, human resource capacity and stage of development, among others, which affects not only industrial development but also development in general.

Following from the above it can be stated that trade liberalisation consists of static comparative advantage and the assumption of the absence of market failure in any form. However, Krugman, (1993:263) argues that if markets were perfect, free trade would benefit all without making anyone worse off, which would imply that free trade benefits all; however, markets are not perfect, making the case for universal trade liberalisation weak. However, this does not mean that protectionism is preferred to free trade.

Assuming a two-by-two model economy in terms of country and commodities and taking into consideration Ricardo's approach to analysis, differences in labour productivity influence specialisation on the basis of comparative advantage. It is assumed that tastes and demand are taken as a given. However, looking at the

Heckscher-Ohlin model, specialisation is influenced by the available factors of production (Shafaeddin, 2000:25). The Ricardian and H-O models also differ in the way they treat technology in that in the former, production technology for a product differs from one country to another, but the factors of production are the same, while in the later, production technologies differ in terms of the production of a product, but are the same in the importing and exporting countries. This means that the production technology for chocolates is the same in all countries. The basic difference is that the Ricardian version emphasises differences in countries, while the H-O model emphasises differences in resource endowments.

The implication of the above narrative is that countries specialise in the production and export of products that used the factor of production most available to them. Despite differences between the Ricardian and the H-O versions concerning the source of comparative advantage, each country allocates resources on the basis of the costs at the time of production (Shafaeddin, 2000:30), implying that comparative advantage and therefore trade liberalisation are determined by the market forces, which are assumed to be perfect. In this way, resource allocation in both countries will therefore be efficient.

Other things being equal, the structure of the relative abundances of factors that the country possesses, determines the relative factor prices and therefore the optimal industrial structure (Ju, Lin & Wang, 2009:20). A low-income country like Cameroon, with abundant labour and natural resources and a lack of capital, will have comparative advantage and be competitive in unskilled labour-intensive or resource-intensive industries. Comparative advantage is still very relevant, but in the modern world it might or must have to be acquired.

The endowment structure of a country endogenously determines the industrial structure that is optimal and, by implication, the competitiveness (Lin & Monga, 2010:3) based on revealed comparative advantage. In line with this argument, competitiveness will be determined by factor endowment. Given this situation and in line with the new trade theory, less-developed countries can only change their comparative advantage by upgrading their industrial structure to the level of the developed countries.

When firms choose to enter industries and adopt technologies that are consistent with the country's comparative advantage, the economy is most competitive. These firms will claim the largest possible market shares and create the greatest possible economic surplus in the form of profits, at least in theory.

It might not be concluded that supporters of the classical theory neglect dynamic considerations, but they assume that those considerations are reflected in present costs and prices, which presupposes that developing countries such as Cameroon should specialise in the production and export of labour intensive goods, because of their comparative advantage. In line with this reasoning, Cameroon should specialise in the production of commodities such as coffee, cocoa and rubber, meaning that Cameroon will always depend on the developed countries for manufactured imports in exchange for the cheaper commodities produced. This is one of the justifications for the ISI policy. However, it is too simplistic to consider or justify ISI on the basis of this view to the neglect of dynamic advantage and again, each country has a latent comparative advantage, which might not be readily visible if not interrogated or rigorously investigated and identified.

It might be erroneously assumed that firms play no active role in comparative advantage, which in the H-O model is achieved at the level of the national economy contrary to the reality as explained by the new trade theory, where firms, especially multinational firms, play a major role in everything related to trade. Therefore, given the influence of multinational corporations, this assertion can be very misleading. Blecker, (2005:7) concludes that that which determines international competitiveness are the prices of factors of production and inputs determined by the market. In the neoclassical model, these variables play no role in competitiveness. Blecker, (2005), in emphasising the importance of exchange rates, considers them the most important factor that determines competitiveness; however, this might not be true because there are other factors that determine competitiveness, such as labour productivity, economies of scale, which might reduce average costs, and oligopolistic behaviour resulting from the existence of imperfect markets, meaning the firms can fix prices through collusion.

The doctrine of comparative advantage has restrictive and unrealistic assumptions when considered within the context of the modern world and the realities of trade relations between countries that are dominated by large firms with production facilities located in different countries, or component parts produced in different countries, limit its ability to explain real-world phenomena. Emphasis should here be placed on the fact that comparative advantage is the basis on which countries specialise and the criticism of comparative advantage does not necessarily mean an insinuation of the abandonment of free trade.

The theory of static comparative advantage is based on a number of unrealistic

assumptions. Corden, (1974:5) states, “theory (theory of comparative advantage) does not say, as is often emphasised by some economist, that ‘free trade is best’. Rather it says that, given certain assumptions it is best”. Emphasis on assumptions must be noted because it has implications for the expected outcomes from free trade and for industrial policy.

Samuelson, (1962: 266) warns “against a possible misinterpretation of the classical theory of international trade”, which is the basis for international trade. Furthermore he argues that no trade (autarky) is worse than free trade. However, Samuelson does not imply the optimality of free trade in the argument and concludes though that countries are better off with trade than no trade, but does not explicitly say that it makes everyone better off. He concludes that it is not possible to demonstrate rigorously and clearly that free trade is better (in some sense) for a country than all other kinds of trade (Samuelson, 1939: 195). This implies that it is not necessarily the case that free trade is the best policy, as is often argued by its advocates.

Samuelson, (1939:195) argues that it is important to realise that the assumptions on which free trade is based, need to be qualified in reality. Some of the assumptions are that:

- World production can be increased; if there are no externalities, indivisibilities, monopolies, dynamic uncertainties or learning processes, free trade will be ideal. However, this is not possible in the real world.
- There is no guarantee that free trade will maximise real income or consumption of any one country, even if countries that benefit most give some handouts to those that lose out. This implicitly means that in free trade there will definitely

be some losers.

- And finally, despite the fact that some countries might lose out from trade liberalisation, the absence of trade is worse (Samuelson, 1962: 829).

If the assumptions of perfect competition; constant returns to scale; the existence of the full employment of resources; similarity in countries with the only difference being the endowments of factors of production; commodities have different needs in terms of factor intensities; the use of different technologies; and finally, that technology and knowledge are available to both countries are made; then free trade can benefit all the participants and specialisation will be based on factor endowments.

Perfect competition assumes that; (i) markets for firms are small; (ii) there are constant returns to scale; (iv) there is no market power because firms are assumed to be small; (v) there are free entry and exit from the market; (vi) free information, (vii) supply and demand determine prices of all products and factors of production that are homogeneous; (viii) there is no uncertainty and risk; (ix) there are given resources and technology. (x) Market forces determine what happens with the given institutions.

Assumption (ii) is clear; assumption (iii) implies that all countries are similar, Assumption (iv) is implicit in assumption (iii); assumption (v) implies that no firm has monopoly over technology and there are no patent rights. This greatly differs from the reality in the world where trading relations are characterised by imperfect competition, product differentiation and the existence of monopolistic and oligopolistic market situations, as predicted by the new trade theory.

Basically, the theory of comparative advantage is premised on the assumption of perfect competition (Shafaeddin, 2000:15). The above is the basis of trade liberalisation. It is therefore important to look at the weaknesses of the comparative advantage theory.

2.4 Critique of comparative advantage as basis of trade liberalisation

The comparative advantages of developed countries are in the capital and research-intensive products of the secondary and tertiary industries, while that of developing countries are in the unskilled labour-intensive products of agriculture and other primary production. When the barriers to trade are removed, developed countries can export advanced industrial products to the developing countries, and in turn, developing countries will export primary goods to the developed countries. The conclusion therefore is that the liberalisation of trade and specialisation along the Ricardian lines of comparative advantage will probably make the developed countries richer, and less-developed countries poorer. This was one of the justifications for the ISI policy.

The assumption of perfect competition is not based on the reality of a world characterised by strategic rivalry. Firstly, the market for manufactured goods is not small and is dominated by large firms that are interested in maximising their profits because firms invest resources in innovation and research to develop a product and they need to recover their capital. Secondly because of intellectual property rights, firms will have patent rights, which automatically give them an advantage over other firms, especially the new ones. Thirdly multinational firms have a lot of influence on prices, which are used to their advantage with serious implications on world trade in

developing countries. Fourthly firms merge to take advantage of economies of scale at the firm level, which leads to intra and inter industry specialisation and trade, as argued in the new trade theory, and the existence of imperfect competition resulting from oligopolistic and monopolistic behaviour.

Therefore, at odds with comparative advantage, technology and knowledge are not free and are not transferred from one country or firm to another at no cost and without some hindrances, as assumed in the classical trade theory. It is very expensive to develop and hence the patent rights. As such, the firms enjoying economies of scale in Research and Development (R&D) have a technological advantage, are large and well established and are from developed countries, which have a self-interest and produce goods that are not homogenous (there is product differentiation, as predicted in the new trade theories). Increasing returns to scale and economies of scale in general provide them with the ability to influence the market through cost advantage (Shafaeddin, 2000:35). Creative destruction, alluded to by some economists, means that as new technologies come on board, older and not so old technologies become obsolete.

The assumption of fixed and fully employed resources, in addition to the similarity of countries, presumes that the entry of a country into the world market leads to a reallocation in a manner that the increase in production of one product will be at the expense of a reduction in the production of another product. However, in practice, developing countries have excess unskilled labour (Myint, 1958), which cannot be absorbed by the sectors in which they have a comparative advantage. Less-developed countries have a large army of unskilled and unemployed labour, which Adam Smith

called “unproductive labour”. This labour provides the country with surplus (productive) capacity over domestic requirement. The development of plantations, as was the case in Cameroon, absorbed some of the labour, since plantation output was meant for exports. The consequence was that exports increased without a reduction in domestic consumption. The expansion of exports was the consequence of the allocation of a highly endowed factor to produce additional output in the newly established plantations (Myint, 1958:318).

However, this analysis is weak in the modern world because it is no longer possible to fully absorb the surplus labour, because many countries have gone through the same process (Myint, 1958:325). With this situation, there is a need to absorb the unskilled and surplus labour in the developing countries, and manufacturing is seen as an important sector that can do that, making the development of this sector very crucial. This argument applies as long as there is no full employment. However, the static version of the doctrine of comparative advantage does not explain how an economy like Cameroon, which produces primary commodities on the basis of its endowment, might develop her manufacturing sector; not simply consumer goods, but the high technology goods that can absorb the surplus labour.

The doctrine of comparative advantage explains trade between developed and developing countries, specialising in the production and exports of goods in which they have comparative advantage. It does not explain, however, trade among industrialised countries, which engage in trade in similar goods, manufactured products, and inter/intra-industry trade, as explained by the new trade theories; or, for

that matter, trade among developing countries, especially in Sub-Saharan Africa that has almost the same resource endowments and is at the same level of development.

2.5 Import substitution industrialisation and infant industry argument

At the opposite end of trade liberalisation is the Import Substitution Industrialisation (ISI) development policy. Baer, (1972:95) has argued that all countries that have industrialised after England went through some stage of ISI, where some industries were protected and heavily invested in by governments. In modern analysis, there is initial ISI, which involves the substitution of basic consumer goods, followed by export promotion (most developing countries, including Cameroon, skipped this, which might explain their failure), then secondary ISI, which involves the substitution and production of more sophisticated products, and here the sequencing and strategic switching become very important for the success or failure of the development strategy (Cypher & Dietz, 2005:280-302).

Again, a distinction should be made between ISI as a historical phenomenon (an *ex post* concept) and ISI as a deliberate policy (an *ex ante* concept). As a historical phenomenon, it refers to the general practice of many developing countries, which responded to external disruption to trade by producing substitute goods for previously imported goods (this approach was influenced by the Prebisch hypothesis, which explains the relationship between the centre and the periphery premised on the developing countries having an unfair position in trade links with the developed countries because of their underdevelopment or late development). Governments in developing countries at independence tried to use ISI policy prescriptions to kick start

the development of the manufacturing sector and influence changes in the economy, especially structural ones, to reduce their dependence on developed countries. The ISI policy is usually treated as a trade and tariff theory, which is essentially a micro-level concept. ISI is defined as a deliberate industrial policy adopted by governments to establish domestic industries to produce goods that were not previously produced in the country (Shafaeddin, 2000a: 28).

ISI is based on the Singer-Prebisch thesis and on the infant industry argument. The infant industry argument suggests that governments should temporarily support a baby industry to grow and become competitive with the older established ones, especially those in the developed countries with all the advantages. Such a policy is expected to weigh the future cost savings of an industry in which dynamic economies of scale are present with the current consumers' forgone rents due to higher domestic prices as well as higher imported prices of similar products. Shafaeddin, (2000a: 30) argues, just as Prebisch, (1958) did on the postulation of the ISI policy, that the basic idea is that local industries can only develop if given a chance to reduce cost, because they face stiff competition from already established firms in the developed countries, with lower unit costs resulting from economies of scale. Governments took an active role in developing an industrial policy, which led to subsidisation with the aim of producing strategic substitutes, protective barriers to trade, such as tariffs and non-tariff barriers, deliberate overvaluation of currencies to help manufacturers import intermediate goods and inputs for use in further production, and discouraging foreign direct investment: all tools used as part of ISI policy. Advantages claimed by proponents of ISI include increases in domestic employment; reducing dependence on

non-manufacturing industries; the ability to withstand global economic shocks; reduced distance; and therefore the cost of transporting goods, leading to savings.

Restrictions or trade liberalisation are just one aspect of competitive strategy. Taking into consideration the new trade theory and for that matter the traditional trade theories, it should be understood that it is not countries that compete in international trade; rather it is firms that compete. In line with this, therefore, to improve international competitiveness, the whole competitive platform of the country must improve. The following variables need to be addressed systematically: improving human resources; addressing internal demand conditions; developing related and supporting firms and industries; developing effective and functional institutions; developing a micro-economic firm strategy; innovation and technological investment; and improving the quality of goods produced, among others (Cypher & Dietz, 2005:260-264).

The location of an industry is very important and, in the case of Cameroon, most industries are located in a specific area. This is because of reasons of economic geography, such as industrial clustering and advantages of agglomeration, which can increase the economies of scale resulting from locational benefits, as argued in the case of South Africa (Kleynhans & Drewes, 2008:139-158). In addition to other supports, industrial policies are very important in the development process and the competitiveness of the economy, as a whole is indispensable to any successful ISI policy.

On the other hand, the disadvantages claimed include the idea that the industries created are inefficient and obsolete and that the focus on industrial development

makes local people poor, since they produce mostly commodities and live in the rural areas, because they cannot compete in the international market due to overvalued currencies making their products uncompetitive. This means that, in supporting one sector of the economy, the other is disadvantaged. Therefore, a coordinated, strategic and holistic policy approach is needed to influence the overall growth of the economy.

Prebisch, (1976:60) separated the purely theoretical aspects of economics from the actual practice of trade and the power structures that underlie trading institutions and agreements. This is often neglected in classical/neoclassical trade theories that assume that markets function perfectly. In line with this, an efficient and incorruptible bureaucracy is necessary for the success or otherwise of the ISI strategy.

The Singer-Prebisch thesis suggests that countries that export commodities (Cameroon, for example) would be able to import lesser-manufactured goods compared to their exports (because they have to pay for imports of manufactured goods with income from the export of primary commodities), because the fluctuation in commodity prices as a result of the low-income elasticities of demand puts them at a disadvantage. This could solve the usual balance of payments problems.

Prebisch, (1959:256-257) argued that free trade reinforces a bad development path, because with distorted national institutions and economic structures, developing countries are defenceless in the face of distortionary development implied by trade-induced interaction with heavily financed developed world monopolistic capitalism. According to him, third-world countries were being dragged into a state of

dependency on the first world, becoming producers of raw materials and importers of manufactured goods 'a centre-periphery' relationship. Prebisch concluded that without protection, developing countries would never get out of this dependency condition.

A framework for analysis, according to Miravete, (2003:761), considers a country where early industry suffers from such a cost disadvantage relative to foreign producers that it will have to shut down in the event that the government enforces a free trade policy (trade liberalisation). It is assumed that the domestic and foreign industries produce similar but not necessarily identical products. The foreign industry is assumed to behave competitively and to have exhausted all its dynamic economies of scale. A single infant monopolist is assumed to produce all domestic output. This firm enjoys significant learning by doing and marginal cost will reduce as more production takes place. The demand for differentiated domestic and imported products depends on the decision of the government that chooses the import tariff to maximise tax revenues, while the monopolist chooses the relative price of the domestic good that maximises profits (Miravete, 2003:775). Marginal cost reduces at a certain rate with current production and experience depreciates as a fraction of the current marginal cost. Therefore, learning is a reversible process that requires some positive output to encourage cost savings while at the stationary equilibrium, and once learning has reached its limit, production at the moment cautions marginal costs from increasing. The actions of the government and monopolist are dynamic because each of their actions directly or indirectly affects domestic production and the accumulation of experience.

Melitz, (2005:177) moves away from Miravete's framework in two ways by assuming that the domestic industry is competitive and the government is considered a social planner. An additional issue that may arise when several firms compete in the domestic market is learning spillovers or externalities (knowledge acquisition not paid for necessarily, which can be considered as positive externalities). As argued by Stokey, (1988:701), this is an additional reason to protect infant industries, because of the positive externality of knowledge spillovers. By assuming that the government is a social planner instead of a non-cooperative solution, Melitz, (2005:196) eliminates the dynamic interaction between the government and firms. Obviously, this is a situation of collusion between the government and the monopolist to fix prices and tariffs.

The basic criticism of the infant industry argument is that governments lack the ability to take particular policy actions in the future; for example, the government cannot commit to reducing protection if the protected industry fails to make the anticipated productivity gains (though it is often argued that the infant industry will be protected only for a temporary or limited period. How long this period is, is indeterminate especially if rent-seeking behaviour steps in). On the other hand, Staiger & Tabellini, (1987:823) and Matsuyama, (1990:480) propose a case in which protection eases domestic prices through learning, which reduces marginal costs. The government in this case simply allows the firm to earn the minimum profit to make them reduce cost beyond the static equilibrium, because investment is from other sources than from the government. The marginal costs get reduced and the required level of protection needed is lowered in the above case. The idea here is that the firms in less developed countries will improve their efficiency and, over time, as a result of learning by doing, the tariffs meant to give them a competitive edge will reduce till complete

elimination, at which point they will be able to compete with producers from the developed countries. This conforms to Hamilton's, (1778), as quoted by Knot, (2002:43), intuition that protection based on the infant industry argument should only be temporary, despite sometimes surviving for a long time. This has been the case in developing countries where the ruling elite, as in Cameroon, uses such opportunities to get money from the government and the infant industry remains an infant without growing because it becomes chronically dependent on subsidies. Sometimes, these firms import and sell the goods they are supposed to produce (that is, they manipulate the system to their benefit and in so doing destroy the manufacturing sector).

As argued above, countries should specialise on the basis of comparative advantage according to the neoclassical trade theory on which trade liberalisation is based. Along the lines of this argument, the issues of static and dynamic comparative advantage come to play, and it is argued that by protecting infant industries, countries are not allocating resources in the short run on the basis of comparative advantage, but which comparative advantage is not stated. Static comparative advantage is at a point in time and dynamic comparative advantage could be acquired in the process of production. Infant industry support is sometimes justified on the basis of acquired comparative advantage, because the question is asked as to what is best for the country in the long run. Developing countries, in considering their static comparative advantage, which is unskilled labour and commodities that are not transformed, will remain at the lower rank of production (resource-based production). Relying on the production of these types of goods, with unstable prices in the world market, makes long term planning difficult. The situation is risky for the stability of the country and

the GDP changes, in addition to unfavourable balance of payments position, as argued by Prebisch, (1959).

The skills needs for commodity production and manufacturing differ. To produce manufactured goods a country needs skilled labour; however, developing countries have a surplus of unskilled labour. The protection of the infant industry is seen as one way of developing the manufacturing sector through the acquisition of knowledge resulting from learning by doing (Cypher & Dietz, 2005:275). These learning effects might spill over to other sectors of the economy. Firms often do not consider these in their decisions and therefore might not invest in skills development, causing economic development to be slow, if at all, in line with Prebisch's argument, which implies that the government needs to intervene to get the country out of commodity production (Ghatak, 1995:349).

The infant industry argument therefore suggests that protection of domestic industries from foreign competition leads to positive learning and positive externalities. It is assumed that protection will assist infant industries to take off by being shielded from competition until such a time that they can compete internationally. In conclusion, it is argued that by protecting infant industries a government might facilitate the development of the manufacturing sector by supporting it up to the point it can become competitive, because specialisation on the basis of static comparative advantage, proposed in the neoclassical Ricardian model, will leave developing countries in a position of producing primary commodities and importing manufactured goods from developed countries. The centre periphery relationship described by Prebisch will continue, unless there is intervention.

2.5.1 Critique of ISI and protectionism

Consensus in development economics is that the development of the manufacturing sector should be an important objective of government policy, especially in the developing countries that depend on commodity exports with their unstable prices as explained above. This is so because it is seen to be a *sine qua non* for economic growth. It is important for job creation, diversification of the economy and reduction in the risks resulting from commodity price shocks, and satisfaction of local demand. However, there are some limitations to what the theory proposes.

The Prebisch hypothesis divides the world into two, namely the centre and the periphery. The centre is more developed and produces manufactured goods that can fetch higher prices with an inelastic demand, and elastic supply; while the periphery produces commodities with prices that fluctuate all the time with elastic demand and inelastic supply (Ghatak, 1995:341). Given this situation, the developing countries will continue to suffer from unfavourable terms of trade and low wages for labour, while the centre will continue to prosper, creating a virtual dependency of the peripheral countries on the centre countries. The reasons for this, among others, include the following: the nature of exports from developing countries; low price and income elasticities of demand for the commodities; commodity concentration of exports (i.e. specialisation in the production of commodities); and a large percentage of exports to one destination, usually the former colonial masters, leading to market concentration and accompanying vulnerabilities. Given this situation, the developing countries have to develop the manufacturing sector by protecting the baby industries in order to break the cycle through a rational policy to industrialise hence the import substitution industrialisation policy (Ghatak, 1995: 341).

The Prebisch hypothesis and what it predicts have not only been questioned on a theoretical basis, but also on an empirical basis. The empirical evidence presented in a study by UNCTAD, which indicates a reduction in the unfavourable terms of trade, has been questioned especially the choice of the base year, which is well known to have been a boom period in commodities during the Korean war (Ghatak, 1995:342). Therefore, the empirical evidence is suspicious because the results are tainted by an abnormal happenstance.

Coppock, (1962) found that export instability was mainly correlated with price, exports, and imports, with no mention of the statistical significance. As mentioned above, this was a period of commodity boom. However, Michaely, (1962) shows a positive and statistically significant relationship between commodity concentration and export price instability. Massell, (1964:47-63) did not, however, find a relationship along the lines of Michaely's analysis. Empirical evidence does not totally dispute the relationship between instability and commodity concentration, but the link with growth is doubtful.

In a world with externalities, monopolies perpetuated by multinational firms, economic and non-economic barriers and production predicated on the new growth and trade theories; the notion by Prebisch that the gains from technical progress should be distributed globally, irrespective of the country or origin, is at best aspirational (Ghatak, 1995:342). This is because technological development is patented under intellectual property rights, especially because of the huge investment by firms in R & D. Just buying machinery and installing it, as the developing countries did during the ISI period, do not translate into industrialisation. In addition,

competition in the world is not because of countries only, but also firms. Inter- and intra-firm trade dominates most of international trading relationships. Therefore, theoretically, the argument is also weak.

Industrial policy has as one of its objectives increased productivity and efficiency. Free trade and export-oriented policies, as opposed to protectionist import substitution industrialisation policies, are seen and promoted as the better and only way to achieve fast, efficient and sustainable industrial development (Bhagwati, 1990:5; Little, Scitovsky & Scott, 1970; World Bank, 1987:2-10). Import substituting industrialisation has been criticised by economists who support free trade and markets by pointing to the accumulated distortions and inefficiencies resulting from exceptionally high protection and import substitution that prevailed in most countries of Latin America, not only on spurious economic grounds, but also ideological grounds. According to these critics, the indiscriminate nature of import substituting industrialisation led to the development of deeply inefficient and high-cost industries (Baer, 1972:101-106). In line with this, it has been argued that Brazil, which is relatively industrialised, paid a very high price for the success achieved. State intervention policies, such as high trade protection, led to massive distortions that caused widespread economic inefficiency and a lack of technical progress. Cameroon also had the same policy at independence, but by the 1980s, the benefits had run their course and the economy was basically in trouble.

Free trade and export-led proponents argue that this policy promotes static and dynamic efficiencies, unlike protectionism. Krueger, (1978) & Bhagwati, (1988) argue that protection under the guise of Import Substitution Industrialisation creates a

bias against exports and favour import substituting production. It is their view, that it kills competitiveness and encourages inefficiency. The many cases in Latin America and in the former Soviet Union are indications of what such planning and intervention can do.

Little *et al.*, (1970) & Balassa, (1971) demonstrate that protection had very distortionary effects on manufacturing value added using measures of protection. Other works, such as Krueger, (1978) & Bhagwati, (1978), argue and promote the view that outward-oriented industrialisation, which means trade liberalisation, has a positive link to growth as opposed to import substituting and infant industry protection strategy.

Hirschman, (1968:1-4) argues that Latin America's history (where ISI has been a policy of choice especially under the influence of Prebisch as secretary of the Economic Commission for Latin America (ECLA)) has been characterised by mediocre growth, rampant protectionism, very high inflation, low productivity growth, and successive crises. However, the growth in Brazil after various episodes of liberalisation can be sighted as examples of the failure of ISI.

Free trade grounded in free market philosophy and production for the export market in a globalised and competitive world encourages constant productivity improvement, which is considered an important foundation for economic growth (Bhagwati, 1990). The reasoning behind this is that when domestic firms are exposed to foreign competition because of a reduction (or total absence of protectionism), it leads to competitiveness, efficiency and increased productivity in the manufacturing sector.

In the 1950s and 1960s, criticisms and weaknesses of the ISI policy were already in place and, despite that, many developing countries, Cameroon included, still went ahead with its implementation as a policy of choice. Macario, (1964:75-83) pointed out that such policies allow local firms to sell at high and uncompetitive prices with no interest to produce efficiently, because of a lack of competition. Again, the indiscriminate protectionist policy disturbed the development of manufacturing exports and worsened external vulnerability, because of its negative impact on productivity growth and competitiveness. Macario, (1964) pointed out that there was no discrimination in terms of trade barriers, meaning firms that did not need protection were protected, causing them to earn abnormal profits and consequently rent-seeking behaviour (Macario, 1964:11).

Most neoclassical critics see government intervention in trade, exchange and credit markets to promote the industrial sector, as the main sources of distortions and problems within the context of the ISI policy. Irrespective of the dynamic effects from export orientation when compared to those from import substitution policies, free trade and export-led proponents see the protected industries and inward-oriented strategies as harmful to innovation and technical progress (Bhagwati, 1978:193-197; Srinivasan & Bhagwati, 1989:28-31).

Low productivity growth and technological stagnation would be an unavoidable outcome of import-substitution policies, in particular high trade protection. Bulmer-Thomas, (1994) argues that the problem with import-substitution industrialisation was distortionary policies, especially trade protection, which led to serious inefficiency and a waste of resources. Bulmer-Thomas further states that in stopping or reducing

imports, the consequence will be an out-dated and technologically retarded manufacturing sector. Undoubtedly, Brazil is still the only country using the out-dated model of producing the old Volkswagen beetle model long after other countries had upgraded their production and models. Bulmer-Thomas, (1994: 281, 283) concludes that: “the inward-looking model, particularly in the 1950s, is now seen as an aberration although the excesses were often unnecessary the model even in a less-distorted form still cannot be defended”.

Again, in another criticism, Haber, (2006:578) points out that the increase in the size of the Latin American industry translating into an increase in productivity is doubtful. Haber, (2006:538:577-578) concludes that the ultimate outcome of import-substituting industrialisation (ISI) is as depicted in the standard literature: highly protected and seriously inefficient industries as a consequence.

Thorp, (1998) argued that in analysing what happened in Latin American economic history, the reality is complex with good and bad consequences. Furthermore Thorp argues that there were distortions, inefficiencies and lost opportunities, but that there was also a transformation of infrastructure and institutions with firms acquiring new skills and copying and adapting new technologies, which might not have happened without ISI (Thorp, 1998:197). However, it can be argued that these changes occurred in countries where market economies and liberalisation were systematically introduced, such as Brazil and Chile.

Even the development of new growth and new trade theories, considered in the next section, did not out rightly cancel the benefits from free trade. Romer, (1990), Lucas

(1988), and Grossman & Helpman, (1991), using better data and techniques in investigating the relationship between trade policy and growth, questioned the optimality of free trade under certain conditions, but never justified import substituting industrialisation and protectionism. In fact, the new theories established a positive long-run correlation between openness and growth, and as much as possible tried to integrate their models into the context of the neoclassical theory of trade despite identifying its shortcomings. In conclusion, ISI as a strategy on empirical and theoretical basis is seen to be deficient, though the proponents of the policy think otherwise. Having investigated the neoclassical theory and ISI theories, it is important to look at the modern or new trade theory.

2.6 New trade theory

The implication of what the classical trade theory stands for is that countries, which are not similar, trade more. Given the critique of neoclassical trade theory and the comparative advantage bases, which imply that it cannot explain the huge trade between countries with similar factor endowments and intra-industry trade that has become dominant, it is important to look at what the new trade theory says. The models based on the new trade theory, which was developed by Krugman, (1995) and Markusen, Melvin, Kuempfer & Maskus, (1995), among others, imply the existence of new types of gains from trade not considered in the neoclassical trade models, among which are economies of scale that reduce unit costs and induced technical progress, as well as fresh understanding and consideration of the political economy of trade policy. New trade theory sheds more light on trade theory by removing or doing away with the limiting and unrealistic assumptions of the neoclassical free trade theory, based on comparative advantage.

A major point raised as a modification to the neoclassical trade theory in the new trade theory includes the effects of increasing returns to scale on the pattern as well as on the mutual benefits from international trade, in addition to the size of firms and the market structure, all linked to economies of scale, which all need to be considered in policy-making. New trade theory has four innovations when compared to the neoclassical trade theory, namely accommodation of market imperfections in trade analysis; the strategic behaviour of firms that aim to influence outcomes in their favour; new growth theory that offers a new approach to the question of economic growth; and a consideration of the political context in analysis (Krugman, 1990:483).

In line with the above dynamic changes to trade theory, Sen, (2010:5) argues that the inflexible framework of classical/neoclassical theory in trade has been criticised on various occasions, especially as it was seen to be too restrictive given its assumptions. The new trade theory introduces the role of economies of scale in production. The role of increasing returns to scale on the patterns of trade, as well as the mutual benefits from trade, is being interrogated and ascertained. The size of firms and market structure, both of which are linked to potential economies of scale, needed to be emphasised in the literature.

The new trade theory is based on the economic principle of the second best, which predicts that by introducing a single imperfection in a perfect market, the resulting imperfection might be better than the *status quo ante* because one imperfection might just do away with another, making the market rather perfect and not imperfect. Therefore, because of market failure and government intervention (of course in the real world trade policy is developed and implemented by the government making it a major player), the necessity of optimality based on free markets in international trade

is out of the question, because at the local level the government is equally a major player (Krugman, 1990:499). With conflicting and competitive government policies, the perfection of markets cannot be achieved.

As stated above, the criticism of free trade deals with what the theory of comparative advantage suggests. In the Ricardian model, a country should specialise in the production of a good in which it has a comparative advantage, which differs from Adam Smith's absolute advantage; and in the H-O model, the specialisation should be based on factor endowments. Trade will therefore take place on the basis of the specialisation and it is suggested or hoped that everyone will benefit. However, in the real world, countries and firms are not and cannot be laid back in relation to what they produce. What a country produces determines the level of its development and hence the quality of life. As argued by Prebisch, without taking action to develop the manufacturing sector, developing countries will perpetually remain commodity producers, technologically dependent on the developed countries.

If it is assumed that comparative advantage is determined by nature, which nothing can be done about, then Cameroon will perpetually be a commodity producer and remain at the lower ranks of the quality of life. However, in the modern economy, comparative advantages can be created or acquired. Developed countries have the advantage because the process started there earlier (Baer, 2004), which caused them to acquire and accumulate a lot of technological know-how, which was translated into economies of scale.

The question can be asked as to why Switzerland, endowed with natural scenery, dominates the watch-making industry. Obviously, this is not based on specialisation

based on the Ricardian or H-O basis, but rather on acquired comparative advantage. It is not obvious that free trade can divide countries on the basis of what they are best suited to produce or on the basis of available resources. Gomory & Baumol, (2005:10) argue that national rivalry, not harmony, is the condition that exists in the world, because countries strategically ensure the acquisition of comparative advantages rather than accepting their natural place in the world economy based on their factor endowments. This is probably what happened with countries such as South Korea and Japan. The Asian tigers are today industrial giants, without natural resource endowments, through the process of acquired comparative advantage (Lin & Monga, 2010:20). Again, rivalry in the modern economy is not limited to countries, but to firms that fight for and acquire dynamic comparative advantage. Therefore, the argument by proponents of free trade, along the lines of Ricardian comparative advantage that trade rivalries are the result of a failure to see where their comparative advantage lies, is simply not true and ignores the possibility of acquired comparative advantage, making it dynamic and not static. It has been empirically proven, as can be seen in the cases of the Asian Tigers, (Burner & Cali, 2006:557-582; Kojima, 2000: 829-850 and Lemoine & Unal-Kesenci, 2004:1) but this does not discard the importance of comparative advantage; rather it emphasises the real possibility of acquiring it (Lin & Monga, 2010: 28).

According to Craig, (2004:15), the theory of comparative advantage presupposes that the capital in the form of machinery is immobile between nations. However, in the real world, capital is mobile and multinational firms can locate their production factories anywhere in the world to take advantage of the revealed comparative advantage and can pursue absolute advantage based on the availability of the cheapest

resources. As a result there is an increase in off shoring, outsourcing and simply the disintegration of the production process.

In line with the above argument, the challenge for developing countries like Cameroon is whether they should specialise in the production of commodities and products for which unskilled labour is needed, or whether they should fight to acquire comparative advantage just like the Asian tigers did and continue to do.

As discussed above, and following from the analysis of the Ricardian, H-O models and the ISI policies along with their critiques, the new trade theory, as explained above, contends that there is rivalry in trade and that countries and firms can acquire comparative advantage, contrary to the universality concept on which trade liberalisation is based. It also accepts the idea that countries are unique and therefore will perform differently, even under the same conditions.

There are many countries involved in trade, in addition to countries, firms are also involved in trade and with the increase in offshoring and outsourcing, the assumptions of immobility of factors of production do not hold, which changes the way trade is carried out in the world. It is therefore difficult to draw conclusions about a single country. It is also difficult to distinguish the effects of trade policy from other policies being implemented in the country at the same time.

2.6.1 Economies of scale and new trade theory

As explained above, the new trade theory recognises the existence of imperfect competition. Increasing returns to scale can be internal or external to the firm. If they

are internal to the firm, it gives it a competitive advantage, because the producer is in a position to influence the market by manipulating prices and market share. Imperfect competition could be the result. In such a situation, firms or countries, as the case might be, have to act in their best interest to achieve a larger market share. Strategic switching recognises the benefits of strategically switching policies as the situation might dictate (Cypher & Dietz, 2005:295) to achieve the developmental goals.

Trade among developed countries is huge despite having the same endowments and again it is carried out among large firms that enjoy economies of scale. Economies of scale can be internal to the firm or external to it, static or dynamic, product-specific, plant-specific, firm specific or industry specific (Scherer & Ross, 1990: 97). Obviously, the sources of economies of scale are many as the firm grows or as a country industrialises and may be in production, marketing, distribution, management research and innovation. What should be understood and accepted is that economies of scale do affect trading relations.

In accommodating increasing returns to scale and imperfect competition within the framework of the HOS model, the new trade theory faces a lot of challenges, such as the breakdown of a perfectly competitive market with scale economies internal to the firm. This cancels out the basic assumptions underlying the model and, as such, the major conclusions arrived at in terms of its predictive power for trade patterns (Sen, 2010:25).

With regard to economies scale, external to the firm and internal to the industry, production is globalised in terms of location. The new trade theory models explain

cost reduction on a global scale while removing production from countries where it is less cost efficient (Krugman, 198:149-161; Ethier, 1982:1243). Implicit in the argument is a case for free trade that relies on the potential gains to all trading nations by achieving increasing returns on a global scale (Krugman, 1981:158), through location in areas of low cost rather than areas with natural comparative advantage, as in the Ricardian proposition.

2.6.1.1 Static economies of scale

To appreciate the implications of the scale economies as mentioned above, there is a need to take note of the related issue of imperfect markets, which always go with increasing returns to scale. According to Sen, (2010:9) monopolistic competition inherently has differentiated products that further deviate from a competitive free market model in which products are assumed to be homogeneous. The new trade theory differs from the HOS neoclassical trade models in that it incorporates economies of scale, imperfect competition and product differentiation into its models. By doing this, it puts into question the capacity of the HOS models to predict the pattern of trade across countries on the basis of pre-trade factor prices and, by implication, endowments. Static economies of scale are important in bringing about this outcome.

As already mentioned above, increasing returns, if related to economies of scale internal to the firm, are considered incompatible with competitive equilibrium, because producers enjoying internal economies of scale are usually in a position to influence the market through price manipulation as well as the market share. Imperfect competition with monopolistic competition, oligopoly, or monopoly could

be the result (Sen, 2010:12). This means markets can be manipulated in such a situation. With oligopolistic market sharing, the consequence could be the application of strategic trade principles that could emerge as an alternative in terms of policy, with the possibility of more protectionist tendencies.

At the level of the plant, economies of scale can result from buying inputs in large quantities, efficiency in production and coordination as explained in the microeconomic theory of the firm, and overall management efficiency, such as having an open-space system where management could easily discuss issues or through electronic management coordination (Ethier, 1988:379).

2.6.1.2 Dynamic economies of scale

In the process of production, firms do acquire some technical knowledge through managerial and other supply chain-related activities. These are examples of dynamic economies of scale, which depend on how much is produced, which depends on time, size of the firm and how fast production is increasing, which is an indication of efficiency and competitiveness. These economies of scale could be internal and/or external to the firm. Linkages among firms can result in dynamic scale economies external to an industry, and these could result from clustering and agglomeration. However, with the development of outsourcing and offshoring and easy communication via the Internet, which gets cheaper by the day, physical location is not extremely important in the modern world. Therefore, as argued by Kleynhans & Drewes, (2008:2-20), agglomeration and clustering of firms in a competitive economy are very beneficial to economic industrialisation and development.

Division of labour is another source of scale economies. However, the division of labour is influenced by the size of the market. Division of labour may take place within a plant or firm or within an industry or industries (Ethier, 1988: 388).

Economies of scale affect or influence international trade in that when the economies of scale are external to the firm, they could be a basis for trade. It was argued above that a firm with internal economies of scale has an advantage in that it can influence the price and the market share; however, when the economies are external to the firm, it becomes a small part of a large market without any direct influence over prices or market share. Given the above analysis, the neoclassical comparative advantage theory cannot explain the pattern of specialisation between the developed and the developing countries.

In the real world, multinational firms dominate trade by virtue of their size, in addition to economies of scale internal to them; are not indifferent to what happens, and their actions affect the price of the product, because with increased production, the market price can fall. Product differentiation, which is one of the innovations in the new trade theory, can be used by the multinational firms to hinder the entrance of new firms to the market, further retarding competition.

While internal economies of scale enable international competition by multinational firms, the opposite is the case for developing country firms. Developing country firms find it difficult to enter the international market, because they are not competitive and even if they manage to become competitive, the long established firms have the ability to prevent their entry into the market, given their monopolistic or oligopolistic

positions. It might therefore be argued that the only way that firms in the developing country can enter the world market is through protection to make them competitive in the first place (Krugman, 1991:485). Following the above argument, trade liberalisation might not be beneficial to a poor, developing, resource-based economy like Cameroon.

The dynamic implications of free trade or what it obtains in the real world, especially for developing countries, are not explained by the neoclassical trade theories and even by extension the new trade theory. Darity & Davis (2005:141-170) contend that the static theories of trade, with their restrictive assumptions, fail to take note of the uneven development of nations.

2.6.2 Trade liberalisation, spatial elements, specialisation and off shoring

As discussed above, comparative advantage suggests that countries should specialise on the basis of factor endowments and then trade, because it assumes that factors of production are not mobile. It assumes all participants will benefit and the extra production shared, depending on the terms of trade determined by supply and demand in perfectly competitive markets in making all countries better off. This is an abstract case that does not exist in the real world.

With the increase of power of multinational firms, and in line with the predictions of the new trade theory, there has been an expanded development of outsourcing and offshoring. In other words, spatial dimensions in trade relations are important. The terms outsourcing and offshoring should not be used interchangeably, because they

are different and distinctive processes, which relate respectively to firm and country boundaries and may occur independently or jointly (Williamson, 1975).

Outsourcing refers to the decision to buy products or services previously produced internally from another (domestic or offshore) company. It relates to the question of why firms exist, whether and what a firm should make or buy, and can be looked at from the transaction cost economics' perspective (Williamson, 1975), core competences perspective (Prahalad & Hamel, 1990), and evolutionary and resource view of the firm perspective (Penrose, 1959 and Nelson & Winter, 1982).

Outsourcing is not new and continues the trend for firms to purchase raw materials and standardised intermediate goods and components, and is linked to a series of organisational changes such as the rise of flexible specialisation (Piore & Sabel, 1984; Womack, Jones & Roos, 1990) in the 1980s, leading firms in capital-intensive sectors, such as automobiles and electronics, to locate various production activities in different countries or locations, not only to assemble their finished goods, but also to develop a supply base for intermediate products and subassemblies. This could explain the case of the location of General Motors, Ford and Mercedes Benz in South Africa. Outsourcing, in combination with other organisational changes and restructuring related to downsizing, has increased. Outsourcing needs to be looked at within the context of activities and functions involved for a better understanding of its motivations and dynamics (Gertler, 1988:75-99).

Macher & Mowery, (2003: 317) argue that, when knowledge spillovers or other capabilities among segments of the value chain matter for R&D activities, these

activities are likely to follow the globalisation of value chain activities. On the other hand, if R&D activities are not critically dependent on knowledge associated with value chain activities, the location of parts of the industry value chain should have less or little influence on the resulting geography of innovation.

Off shoring, on the other hand, refers to a domestic company obtaining services from a foreign-based company, either as a subsidiary or an independent service provider (offshore outsourcing). The process of off shoring can be broadly defined as locating activities abroad, e.g. manufacturing as well as other business services. The phenomenon goes back to the period of multi-nationalisation (1950s-1970s), when foreign direct investment (FDI) was based on the comparative advantage of the host country (abundant natural resources, lower labour costs, available skills or market protection) (Hymer, 1976 and Vernon, 1966:190-207). The above was the case between the colonial masters and the colonies where firms were located to exploit the extraction of raw materials to feed the manufacturing needs in the developed countries. Labour-intensive stages of manufacturing production, such as assembly and processing (Froebel, Heinrich & Kreye, 1980 and Helleiner, 1973), first in traditional industries (shoes, textiles and toys), and then in high-technology manufacturing (electronic components, electronic goods assembly), moved to less developed countries. In line with the above reasoning and despite its shortcomings, comparative advantage is still a relevant theory, which can be used to explain why multinational firms locate their production activities in certain countries. Added to this should be the role of the government in determining policy and using certain tools to influence the trend, especially in the case of developing countries, to attract firms to locate in their countries.

Over the past decades, as mentioned above, the globalisation of innovation has increased the percentage of research effort performed outside the country of origin, the geographic spread of research facilities, the occurrence of cross-border technological collaboration, and the existence of coordinated and integrated international divisions of labour throughout industry value chains (Archibugi & Iammarino, 1999:317; 2002:98).

Farrel, (2005:675) argues that offshoring certain value chain activities, including research activities, to the developing countries, has increased tremendously. Outsourcing exists today because firms take advantage of lower costs to create comparative advantage. Outsourcing is reaching out to every part of the world, and this is based on the comparative advantage (static or dynamic) of each country. Firms aim to exploit local technology, follow up innovations, maximise knowledge spillovers, and enhance their competitive position, access new talent, and lower costs through these strategic relocation efforts. This affects the trade in many different ways not explained by neoclassical trade theories.

Helpman, (1999:121) states that economies of scale, product differentiation and spatial dispersal are important elements that enforce greater specialisation and generate higher volumes of trade, particularly in intra-industry trade, which is very important in modern trade. These different elements emphasise the importance of imperfect competition and trade in differentiated products that are close substitutes. Moreover, these trading activities occur between similar countries regarding economic structure, income levels and consumer tastes. New trade theory recognises the importance of product differentiation and imperfect competition, implying that

firms can manipulate prices and how much is supplied in the market, as suggested by the models of perfect competition in the traditional trade theory.

As indicated by Krugman, (1991:469), spatial elements are recognised in the development of modern trade theory and new economic geography demonstrates the importance of spatial and locational aspects in trade in the modern world, which results in benefits from clustering and agglomeration, as also argued by Kleynhans & Drewes, (2008). Location is very important in understanding modern patterns in international trade in that how near or far production is located is very important. In the gravity model, distance is one of the important variables used to explain bilateral trade flows. Multinational firms have become very important in international trade, especially in promoting the disintegration of the production activities by trading in various tasks. This has made offshoring (or location of production activities in other countries where the costs of production are lower) an important element in the international economy. The falling cost in transportation has greatly facilitated this disintegration of production.

Venables, (2006:935) argues that proximity is good for productivity in emphasising the importance of offshoring, which is encouraged by the low cost of offshoring, low production cost in new locations, especially in the developing countries, and little opportunity cost at home in giving up certain domestic advantages. This differs from the neoclassical trade theory where trade is dependent on factor endowments, which assumed to be fixed, and trade takes place in homogeneous products. Offshoring contradicts these conventional assumptions, while the process is expected to secure the global allocation or reallocation of production to areas of low cost.

Grossman & Rossi-Hansberg, (2006:10), within the context of the H-O model, analysed offshoring in which the endowment explains or justifies why offshoring occurs from developed to developing countries. The production process is seen as a series of tasks. Certain tasks can be performed remotely and information technology reduces the cost of offshoring and by implication reduces the overall cost of production. The authors distinguish between tasks performed by low-skilled labour and tasks performed by high-skilled labour. In a two-country two-goods model, the two goods will differ in terms of factor intensities. The production of low skill-intensive products can be described precisely and tasks are regarded as codifiable and because of this property they qualify for offshoring. Tasks are performed offshore owing to cost advantages in the remote country, usually a developing country. This enhances the productivity of low-skilled labour, leading to labour augmenting technological progress. A small, open economy, which benefits from offshoring of low-skilled, labour-intensive tasks, sees an initial reduction in demand for low-skilled labour; however, the positive technological progress is expected to benefit low-skilled output through lower production costs (Grossman & Rossi-Hansberg, 2006:12). The low skill-intensive industry is expected to expand, creating employment, and this expansion will offset the initial fall in labour demand by increasing demand at least theoretically. It is expected that offshoring can benefit low-skilled labour, located mostly in the less-developed countries like Cameroon.

In the past, most of the outsourcing and/or off shoring were in manufacturing; however, the recent trend involves non-manufacturing functions and affects white-collar, educated occupations and jobs, unlike manufacturing, which impacted primarily blue-collar workers. While previous trends in offshoring were more

geographically constrained, in that it was related to regional integration and occurred within continental trade blocks, different sets of countries are in contention for these activities and jobs, especially India, China, Africa and Mauritius. Outsourcing and offshoring have also expanded to knowledge-intensive business services such as IT applications, finance and accounting, engineering and R&D, human resources and contact or call centres. Again, this is not new, and can be regarded as carrying on from the trend of global product development started by the establishment of corporate laboratories of large multinationals adapting products from developed economies to the new markets in Asia and Latin America for cost saving reasons (Niosi, 1999:107-117).

Di Gregorio, Musteen & Thomas, (2009:969-988) and Lewin, Massini & Peeters, (2009:901-925) argue that the new trend in outsourcing and offshoring of business services has seen less internationalised companies and small and medium-sized firms going offshore for the sole reason of cost saving and not for expansion of markets where there are opportunities of accessing relatively less costly talent. It involves the relocation of existing activities from developed countries to less developed countries. Kenney, Massini & Murtha, (2009:887-900) contend that these activities are not designed to serve the local market of the host country, but instead, to serve those activities based in the home country or other global operations. This further changes trade relations.

Outsourcing and offshoring present new opportunities for global supplier firms (Sturgeon, 2002:451-496). However, this might not be beneficial to poor, developing countries such as Cameroon; rather it will benefit emerging countries such as the

Asian Tigers and, in Africa, only a country like South Africa might benefit because of her relatively developed manufacturing base. In the case of multinational firms locating in a country like Cameroon, it might be an extension of ISI policy, because mostly consumer goods are produced and sold and the profits repatriated to the source country. In such a scenario the manufacturing sector does not or can never take off, though local jobs are created.

In summary, new trade theory deviates from the traditional trade theory by considering the existence of trade under conditions of imperfect competition. And because of the dominance of multinational firms, there is increased, intra-industry trade and the outsourcing and/or offshoring of various tasks to countries with cheaper cost. Trade occurs and expands even if countries have similar products and produce similar goods. Branding becomes important in addition to relative prices. The bottom line is that this is done on the basis of proven comparative advantage or at least latent comparative advantage. Multinational firms seek to maximise their profits by acting strategically by investing in such a manner that enhances the growth of the firm and, in another sense, invest in such a way that denies the other firms competing with her ability to make profits. Simply put, defensive and proactive investment in a strategic manner guarantees not only the profitability of the firm, but also its continued survival. It is an indication of the imperfect competition resulting from monopolies and oligopolies that control international trade.

2.7 Approaches to measuring the impact of trade liberalisation performance

Having considered the theoretical basis of trade liberalisation and the various theories underpinning trade liberalisation, it is important to determine how the impact of trade liberalisation can be measured. The section therefore aims at presenting the various approaches used in measuring this impact. In so doing, a critical analysis will be made providing the merits and demerits of each approach. In addition it will help in the justification of the chosen methods and also their limitations. This is very important because it will go a long way in answering the research question.

2.7.1 Cross-country or country-specific regressions

Cross-country regression is one of the methodological approaches used to estimate the impact of trade liberalisation on economic growth, as exemplified by Dollar & Kraay, (2000:5). These authors categorise developing countries as being either open or closed using the dynamics of tariffs and trade flow, and not a great deal of difference was observed. However, according to them, the closed countries have higher rates of economic growth.

Rodrik, (2004:50), in criticising the work of Dollar and Kraay, considers the reliability of the data used and the difficulty of distinguishing between correlation and causation in cross-country regression analysis, concluding that the results are inconsistent when specification changes.

Kang, (2003:386) focused on US wood products and analysed the impact of trade liberalisation on the development of the trade pattern between countries and regional

trade blocking, and its impact on trade volume. Kang used the country-specific and product-type regression, and the model revealed that there is a significant change in the US trade structure after NAFTA comes into effect.

The country-specific regression approach has a number of advantages with respect to linking trade and economic growth, such as results that are very close to being accurate, with the sample considered representative. Secondly, country-specific regression is better than simulation models in that they can account for dynamic aspects of trade reform (Hertel & Reimer, 2004:20).

Given the advantages and disadvantages associated with the country-regression and simulation approaches, this study also uses the country-specific approach, concentrating on the Cameroonian-manufacturing sector.

2.7.2 Computable general equilibrium (CGE) models

CGE models usually look at impacts of the economy as a whole at a particular time, on relative prices, resource allocation and incomes, according to Kousnetzoff & Chauvin, (2004:81-89), and, in addition, account for inter- and intra-industry foreign trade links. They are an abstract representation of an economy to a realistic representation of actual economies (Shoven & Whalley, 1984:1007). CGE models are based on micro-economic theory, which assumes that consumers and producers are rational and aim to maximise their utility and profits given the budget and cost constraints, respectively. The CGE methodology allows models of large dimensions to be quantitatively solved, while retaining the basic general equilibrium theoretical structure, as argued by Glebe, (2003:35).

The aim of CGE modelling is to evaluate policy options by specifying production and demand parameters and the incorporation of data reflects the real economy (Shoven & Whalley, 1984:1007). For example, it could deal with the determination of the impact of trade policy change on a specific sector of the economy, such as the manufacturing sector.

Numerical CGE models are based on classical analytical equilibrium models in which a unique optimal solution in competitive markets may be found if three conditions are satisfied at the same time (Mathiesen, 1985:144, Paltsev, 2004:1-3). These are: the zero profit condition; the market clearing condition requiring that supply and demand for any good and factor of production must balance; and the income balance condition requiring that for each economic agent the value of income must equal the value of factor endowments.

CGE modelling has the advantage of dealing with how an economy works in an integrated manner, taking into consideration the complex linkages, feedbacks and spillovers between all the sectors and economic agents operating in the economy being modelled. CGE models are simply a quantitative expression of neoclassical economic theory (with all its shortcomings in explaining the real-life economic relations), which tends to impose a number of strict assumptions on the modelling (Barker, 2004:134). This means specific functional forms or restrictions need to be employed in order to ensure a unique and stable equilibrium. This typically renders the CGE simulation approach often too stylised and rigid for impact analysis such as trade liberalisation.

2.7.2.1 Limitations of the economic theory underpinning CGE models

The CGE theoretical framework draws on a combination of general equilibrium theory, neoclassical micro-economic optimisation behaviour of rational economic agents, and some macro-economic elements that attempt to explain economic phenomena. Nevertheless, as Söderbaum, (2000:15-20) argues, this encompasses a mechanistic, monetary reductionist approach that places a strong emphasis on the market as the solution to all kinds of problems and fails to appropriately account for the institutional arrangements, ethical issues and the developmental needs of a society within an interdisciplinary, pluralistic, holistic and dynamic approach.

However, despite how sweet the theory underlying CGE models as well as its seeming ability to explain the real-world situation is, it relies on a given assumption that the models that often use annual data cannot be negatively manipulated in addition to the assumption that the data fits perfectly (Barker, 2004: 133-134). This is a tall assumption or perception, which in reality is never as easy as it sounds.

Neoclassical theory assumes rationality of consumer behaviour aimed at maximising utility. However, individual preferences play a limited role in human behaviour, as choices are influenced by more complex values. For instance, human beings may display altruistic or sympathetic preferences or may have goals beyond maximising utility objectives, such as moral values or socially valuable choices.

The general equilibrium assumption that is inherent in CGE models is over simplistic and fragile, premised on a steady state of equilibrium, which may never be reached, because of the dynamic nature of the world. The assumption on which CGE models

lay their foundations therefore seem very unstable, as there is no theory to explain what may happen out of equilibrium and it is not a given fact that in the real world equilibrium is achieved (Grassini, 2004:2). Again, in developing countries like Cameroon, there are many factors, such as political instability, that might disrupt a seemingly stable equilibrium that is, if one exists. In addition, CGE modelling often produces a static equilibrium, whereas an open society is grounded in instability and subject to dynamic disequilibrium forces. The assumption of steady-state equilibrium becomes even more uncertain in the case of developing economies that continue to undergo rapid and substantial changes (Piazolo, 2001:829). Moreover, market clearing conditions and the GE rule do not hold in the real world. The CGE model tends to be satisfied with the choice of some specific functional forms and closure rules, and modifies the available representation of the real world instead of rejecting the model (Grassini, 2004:4). The results tend to represent the assumptions made and imposed and the choices and perceptions of the modeller real or imagined. CGE modelling studies have been criticised for their recourse to models characterised by internally inconsistent assumptions, and their choice of model structure, parameter values and functional forms that best serve their purpose (Panagariya & Dutttagupta, 2001:39-60) and not the reality.

The dynamic representation in some CGE models that do incorporate semi-dynamic features is over-simplistic and merely extends the usual CGE assumptions of comparative statistics to a series of annual snapshots based on artificially perfect macro-economic assumptions (Ackerman, 2005:140). This means that CGE models fail to adequately explain adjustment paths and what may happen during disequilibrium.

CGE models derive the values for various crucial model parameters from mathematical manipulation (calibration), and typically on the basis of one year's data, or data are questionably borrowed from the literature, and, hence, are not estimated from statistical fittings of empirical time-series data, ignoring time-series data at the same time adjustment to price changes or during technological change (Barker, 2004: 134).

There is a risk to over generalise an economy being modelled. CGE modelling does not consider the history or specific context of the country. Again, economic agents might not respond to a change in policy in the anticipated way. There are also infrastructural and structural factors that can change the outcomes, which the model might not take into consideration.

In conclusion, CGE modelling is essentially a conservative or 'neoclassical' scientific endeavour, and exhibits the strengths and weaknesses of neoclassical theory. Most CGE models are static in the sense that they consider what happens at a point in time, neglecting the dynamic nature of the real world. This might lead to decisions about how to deal with variables that are dynamic, such as savings and investments. Given the above issues and issues related to data, it cannot be used in a research such as this, which is dynamic in nature and considers and deals with time-series data.

2.7.3 Gravity models

Despite having its background in the physical sciences, the gravity model has been adopted and used to explain bilateral trade flows and policy changes in some cases. The concept is based on Newton's Law of Universal Gravitation relating the force of

attraction between two objects to their combined mass and the distance between them. James Stewart first proposed the application of gravity to the social sciences in the 1940s, according to Fitzsimons, Hogan & Neary, (1999:381-401). Tinbergen applied the gravity analysis to international trade in 1962, in which he implied that bilateral trade depends on size and the distance between the countries in question. The basic trade gravity model relates to the measuring of bilateral trade and the economic mass of two countries, and the distance between them.

The research uses the model to examine the impact of trade liberalisation on bilateral manufacturing trade. The model takes into account the size of two countries and their distance from each other. It is expected that larger countries attract people, ideas and commodities more than smaller countries do, and that common borders encourage trade (Carrillo, 2002).

According to Brulhart & Kelly, (1999:159-174), typical gravity models include the following variables as determinants of trade:

- Export supply, captured by economic factors (national output or output *per capita*) affecting trade flows in exporting countries;
- Import demand, captured by economic factors (income or income *per capita*) affecting trade flows in the importing countries; and
- Transportation cost captured using geographical distance and other variables representing policy and cultural barriers to trade.

According to Polder, (2000:24), exporting and importing countries are the main objects in a gravity model. Trade flow is subject to certain trade restricting factors that

can be improved upon by trade agreements, bilaterally or multilaterally, as Kang, (2003:386-403) stated in his study. The GDP of trading countries and the distance between them can represent economic size and trade barriers, respectively. Adding more variables into the standard gravity model forms the augmented gravity model equation.

In the case of this research, the gravity model is used to determine the impact of trade liberalisation on the bilateral trade flow in manufacturing of twenty selected countries that have more than one per cent trade with Cameroon. The approach used in this research is as follows: Firstly, a selection from a sample of countries will be made and these include the CEMAC countries, European Union countries, Brazil, the United States of America and China, because these are the major trading partners of Cameroon. A gravity equation explaining manufactured bilateral trade within the selected sample is then estimated.

2.7.3.1 Justification for the use of the gravity model

In using a model or mathematical approach for empirical studies, it is important to explain the reasons or justification for using such a model in this case the gravity model. Newton's gravity law is the first justification for the gravity model of trade as explained above. The second justification for the use of the model is based on the partial equilibrium model of export supply and import demand (Linneman, 1966), based on some assumptions and the argument that gravity equation can be developed into a model with strong explanatory powers. However, Bergstrand, (1985:474-481) and others point out that Linneman's approach leaves some parameters unidentified, such as price variables. However, Jakab, Kovacs & Oszlay, (2001:276-292) argue

that, in its simplest form, there is consistency in Linneman's justification for excluding prices.

According Anderson, (1979:170-192), utility maximisation constrained by income gives traded goods shares that are functions of traded goods prices only. Prices are constant in cross-sections; therefore, using the share relationships along with trade balance/imbalance identity, country j's imports of country i's goods are obtained. After considering the endogeneity between income and trade variables, Anderson, (1979:180) follows the Instrumental Variable (IV) approach and proposes two alternative solutions. Using different instruments, either a lagged value of income or first stage estimation of shares by Ordinary Least Squares (OLS) can be used and income values obtained from estimated shares could be substituted for a second stage re-estimation of the gravity equation. According to Krishnakumar, (2002:2-13), for many goods, the aggregate gravity equation is obtained only by substituting a weighted average for the actual shares in the second stage.

The third justification for the gravity model approach is based on the Walrasian general equilibrium model, with each country having its own supply and demand functions for all goods. Aggregate income determines the level of bilateral trade in both countries (Oguledo & Macphee, 1994:107-120). While Anderson's (1979:199-209) deals with aggregates, Bergstrand (1985:474-481, 1989:143-153) developed a micro-economic foundation for the gravity model. Bergstrand, (1985) argues that the gravity model is a reduced equation form of a general equilibrium of demand and supply systems by maximising a constant elasticity of substitution (CES) utility function, constrained by income in the importing countries. Supply equation can be

derived from the profit maximisation behaviour of the firm in the exporting country, with resource allocation determined by the constant elasticity of transformation (CET). Combining the two equations under market equilibrium conditions provides the model's equation (Karemera, Smith, Ojah & Cole, 1999:347-367). Bergstrand, (1985:474-481) argues that since the reduced form eliminates all endogenous variables from the explanatory part of each equation, income and prices can also be used as explanatory variables of bilateral trade. Therefore, instead of substituting all endogenous variables, Bergstrand, (1985:143-153) treats income and certain price terms as exogenous and solves the general equilibrium system keeping the variables as explanatory variables. Krishnakumar, (2002:2-13) terms the resulting model as a "generalised" gravity equation. Bergstrand, (1989:143-153) assumes product differentiation resulting from monopolistic competition and identical preferences and technology for all countries in his analysis. Bergstrand's, (1989:143-153) derives the equation of the model by assuming that firms produce differentiated products in a monopolistically competitive situation with increasing returns to scale being the result.

The assumption of perfect product substitutability of the gravity model is considered unrealistic, since evidence from the new trade theories shows that trade flows are differentiated by place of origin; therefore, excluding price variables leads to misspecification of the gravity model (Anderson, 1979; Bergstrand, 1985:474-481; 1989:143-153; Thursby & Thursby, 1987:488-495; Helpman & Krugman, 1985). It is believed that a commodity moves from a country where prices are low to a country where prices are high and imports move in the opposite direction to where prices are low (Karemera *et al.*, 1999:347-367). Tariffs act as cost and can be manipulated to

influence prices. Therefore, it is an important variable, which can be used to determine not only the level of trade liberalisation but also its effect. Tariffs are considered a cost and the higher the tariff the higher the price and *vice versa*, depending on whether the tariffs are export or import tariffs, making prices important (Jakab, 2001:276-292).

Eaton & Kortum, (2002:1741-1780) derive the gravity equation from the Ricardian basis, while Deardorff, (1998:1-20) derives it from an H-O perspective, assuming frictionless trade, which is unrealistic; simply on the assumptions of the neoclassical models that have been seen to be unrealistic. Evenett & Keller, (1998:15) show that the standard gravity equation can be obtained from the H-O model with both perfect and imperfect product specialisation. However, the question is how this can be done when the H-O model assumes perfect competition. Economies of scale and technology differences in the new trade theories or models are the explanatory variables of the comparative advantage, unlike the case of factor endowment as a basis of this advantage as in the H-O model (Krishnakumar, 2002:2-13). Evenett and Keller, (2002:281-316) argue, as predicted in the new trade theory, that the trade is determined by product specialisation, and argue that the increasing returns to scale model, rather than the perfect specialisation version of the neoclassical model, is more likely to be a better model that validates the gravity equation. Models with imperfect product specialisation, compared to models with perfect product specialisation, can explain differences in trade better and realistically and again, as explained in the new trade theory, justifies its use in this research. Feenstra, Markusen & Rose, (2001:430-447) conclude that it can be successfully used within the context of differentiated products and the monopolistic competition models of international trade.

Haveman & Hummels, (2001:1-25) argue that the gravity equation can be generated from a model with complete and incomplete specialisation. The works of Anderson, (1979:106-116); Bergstrand, (1985:474-481); Deardorff, (1998:7-22), and Helpman and Krugman, (1985:1279-1337) are examples of the complete specialisation model. Derivation of the gravity equation under the complete specialisation model implies that a country produces a single good, which is unrealistic, given that trade in the new trade theory is explained on the basis of differentiated products because consumers like variety and can import the same product, though differentiated, for example wine and chocolates. On the other hand, the incomplete specialisation model implies that importers buy from only a few sources. As a result, trade levels predicted under the complete specialisation model are higher than the incomplete specialisation model (Haveman & Hummels, 2004:1-25). To test for the relevance of monopolistic competition in international trade, Hummels & Levinsohn, (1995:799) use intra-industry trade data. Their results show that much intra-industry trade is specific to country pairings. Therefore, their work supports a model of trade with monopolistic competition (Jakab *et al.*, 2001:276-292).

Therefore, the gravity equation can be derived assuming either perfect competition or monopolistic market structure. According to Jakab *et al.*, (2001:276-292), neither increasing returns nor monopolistic competition are a necessary condition for its use if certain assumptions regarding the structure of both product and factor market hold. Trade occurs because of differences across countries in technologies, as in the Ricardian theory, factor endowments, as in the H-O theory, differences across countries in technologies, as well as continuous renewal of existing technologies and their transfer to other countries (Posner, 1961; Vernon, 1966). Paas, (2000: 57-74)

states that the size of the country and economies of scale are important determinants of trade.

As stated in the theoretical literature above, production will be located in one country if economies of scale are present. Economies of scale also induce producers to differentiate their products. The larger the country is in terms of its GDP, the larger the varieties of goods offered. The similar the countries are in terms of GDP, the larger the volume of their bilateral trade. Therefore, with economies of scale and differentiated products, the volume of trade depends on country size measured by the GDP (Paas, 2000: 57-74). This view is based on the concept of new trade theory, and provides a better explanation of the empirical facts of international trade in terms of their pattern, direction and rate of growth, as postulated by Krugman, (1979:469-479), Lancaster, (1980); Helpman, (1981:305-340; 1989:305-340); Helpman & Krugman, (1985, 1989:1279); and Deardorff, (1984:7-22), in trying to explain the empirics and theory of trade. The theories assume implicitly that countries are similar in terms of the technology they have and in their factor endowments. Consequently, the new trade theories, based on the assumption of product differentiation and economies of scale, seem to have better explanatory and realistic approaches than the neoclassical theories do. This reasoning is in line with the theoretical analysis of the new trade theory.

The H-O and Ricardian theories of trade are in contradiction with the reality of trade in the real world. In the H-O model, the larger the differences in the factor endowments between two countries, other things being equal, and the larger trade between them will be. Therefore, based on this, one would expect little trade between

the developed countries given that these countries have similar factor endowments and more trade between developing and developed countries. This is contrary to empirical evidence and reality. Looking at the international trade statistics, it can be seen that both intra-industry trade and trade among developed countries are very large (OECD, 2005: 102-105).

The relevance of Linder's, (1961) hypothesis of trade can be seen in its suggestion that the presence of increasing returns in production cause the production of each good to be located in either of the countries, but not in both of them. It is also suggested that countries with similar *per capita* income will have a similar demand structure, meaning that countries with similar *per capita* income, trade more. The implication here is that differences in *per capita* income will have a negative effect on bilateral trade between countries. There is more trade between developed countries with similar *per capita* incomes than with developing countries with *per capita* income different to theirs (Mathur, 1999:68-88).

Markusen & Hall, (1986:299-316) have shown that if high-income consumers tend to consume larger budget shares of capital-intensive goods, then it follows that they will trade more with each other than with poor countries, and that poor countries will trade more with poor countries following the same reasoning. These are the same predictions as those of the Linder hypothesis (Frankel, 1997:430-437).

In light of the discussion above, there are two views of trade theorems: supply side and demand side. Technology differences, factor endowments and economies of scale are the supply side theorems of trade. On the other hand, Linder's hypothesis and

intra-industry trade are the demand side explanations of trade. The use of the gravity model in analysing the impact of trade liberalisation on the manufacturing sector in line with how the trade policy affects bilateral trade flows is therefore a good choice as it contains elements of both demand and supply side explanations of trade.

Gross National Product (GNP) is a variable. If a country develops, consumers are expected to demand more manufactured goods. The process of development may be led by the innovation or invention of new products that are then demanded as exports by other countries. Transportation cost is an important factor of trade. Production of the same good in two or more countries in the presence of transport costs is inconsistent with factor price equalisation. Moreover, different trade models might behave differently in the presence of transport cost and differences in demand across countries (Paas, 2000:57-74). Transport costs are very important in developing countries like Cameroon, because of the lack of infrastructure leading to high transport costs, which in turn affect the prices of goods and the level of demand. Transport costs are proxied for by distance. This implies that the distance between two countries determines the volume of trade between them. Studies based on a general equilibrium approach (Tinbergen, 1962; Pöyhönen, 1963:93-99; Bergstrand, 1985, 1989) conclude that the incomes of trading partners and the distances between them are statistically significant and expect positive and negative signs, respectively. Three kinds of costs are associated with doing business at a distance, and include physical shipping costs, time-related costs and costs resulting from cultural differences. Among these costs, shipping costs are obviously the highest (Frankel, 1997, as quoted from Linneman, 1966).

Trade barriers, such as tariffs, have a statistically significant negative effect on trade flows between countries. On the other hand, preferential trade arrangements are found to encourage trade and are statistically significant (Oguledo & Macphee, 1994:107-120). The reason is that belonging to a trade group brings about more incentives for trade because of similarities in consumption patterns and production. Common borders are also expected to encourage more trade (Karemera *et al.*, 1999: 347-367).

2.7.4 Single equation export supply model

The model used in the present study assumes imperfect substitution and is based on previous works by Goldstein & Khan, (1978, 1985), and Tansel & Togan, (1987).

Imperfect substitution means that the imported goods are not perfect substitutes for the domestic ones.

This model is structurally similar to the approach used by others, such as Greenaway, (1998:157-174; 2002:229-244); and Santos-Paulino & Thirlwall, (2000:957-974; 2004:50-72), among others. This involves the analysis of manufactured export growth equation augmented by various processes for trade liberalisation. Basically, this takes a departure from the Santos-Paulino, (2000:957-974) study by addressing the issue from the supply side. Trade flows need some time to adjust making the estimation of a static form of the model problematic. Therefore, a dynamic form should be developed in order to introduce the disequilibrium behaviour into the model. The adjustment mechanism utilised in the export market is partly based on that followed by Goldstein & Khan, (1978) and Browne, (1982), which assumes that export prices adjust to world demand for exports.

Inconclusive results can be arrived at when the analysis is carried out from the demand side, for obvious reasons, such as the ability of the institutions to manipulate demand, as was the case during the ISI era and, even when based on the new trade theory discussed above, multinational firms behave in a self-interested monopolistic manner. Using a supply side analysis might produce more reliable results (Babatunde, 2009:68-94), because supply might not be subject to the vagaries of demand and there might be more competitive behaviour even under conditions of oligopolistic and monopolistic competitive behaviour, as predicted in the new trade theories. Trade liberalisation effects on export performance are better captured as a result of the removal of the pervasive ISI policies, because there is a reduction in the anti-export bias, resulting from the removal of uncompetitive behaviour supported by the government in a structurally challenged economy operating under imperfect market conditions and lacking economies of scale, such as Cameroon. The model is a standard export supply function that is used by many empirical works in the literature (Muscatelli, Srinivasan & Vines, 1991; Bond, 1985), Goldstein & Khan, (1978). The model can be extended to take into account other variables, since it has been mentioned that there are many factors at play making it difficult to disentangle the effect of each one. Trade liberalisation in the form of less protectionism, more openness and less distorted prices, as a whole, leads to the reduction of anti-export bias, and therefore strong supply response. Trade liberalisation may embody a number of different aspects of trade policy reform. Whether a less interventionist trade regime results in a less distorted, more open economy will depend on the characteristics of the pre- and post-reform trade and exchange rate regimes and their impacts on the pattern of incentives and production (Ghatak, Milner & Utkulu, 1995:147-167; Utkulu & Özdemir, 2003; Babatunde 2009:74), which is in line with the predictions

of the new trade theory and implicitly accounts for activities of offshoring and outsourcing activities carried out by especially oligopolistic (multinational) firms operating under imperfect competition, which take advantage of the comparative advantage revealed in the developing countries, such as cheap labour and abundant natural resources. This research considers an imperfect substitute model of trade with the basic underlying assumption that neither exports nor imports are perfect substitutes for domestic goods (Goldstein & Khan, 1985:1044-1050). Assuming that the producer maximises profits subject to a cost constraint, the model determines an export supply equation. At the end of 2005, Cameroon's share in world-manufactured exports was 0.001 per cent, DGSN, 2006:20). There is a small country assumption for Cameroon and, in order to model a single export supply function, corresponding price elasticity for export demand needs to be elastic and is elastic. In the long run, export supply of manufactured goods is expected to depend on the relative prices, input prices, and the productive capacity.

Babatunde, (2009) argues that that export supply is negatively related to domestic demand. The theory behind this is the division of output between home and foreign sales, depending on the assumptions made about how firms behave. Since this research assumes that Cameroonian firms are price-makers in the local market and price-takers in the international market, the demand curve facing the firm is downward-sloping at home and horizontal abroad (Thirlwall, 1986: 223-224). Following this reasoning, if domestic demand increases, the quantity available for exports will fall; and if the domestic demand falls, the quantity available for exports increases. That is, the quantity of exports will vary inversely with the internal pressure or lack of it on demand.

The above argument is true in part because it assumes that trade liberalisation and a number of non-trade factor influences affect manufacturing performance (in this case specifically measured by its manufactured export growth), at least in the short run due to the transitional effects of adjustment (Babatunde, 2009:90). However this is in contrast with the neoclassical models and the new growth theory where output growth is exogenously determined and independent of trade policy.

2.8 Summary

In this chapter, the theoretical basis of trade was critically observed. In summary, the theoretical basis of trade liberalisation is strongly based on the classical theory of trade, nested mostly in the comparative advantage theory. The ineffectiveness of comparative advantage and therefore the trade liberalisation policy stems from the restrictive assumptions it makes and the results it proposes (Shafaeddin, 2000:3-5). The infant industry argument was also looked at, given the propensity of its use at independence by most LDCs, including Cameroon. In comparison with the classical trade theory, it offers some justification as to why it might still be relevant for the developing countries. Baer, (1972:95-122) has argued that all countries that were industrialised after England went through a stage of ISI where the large part of investment in industry was directed to replace imports. The new trade theories attempt to explain trade, taking into consideration the unrealistic assumptions that underlie the benefits from trade liberalisation, while explaining the reality of modern trade relations on the basis of outsourcing and location of production in other countries underscoring the influence of TNCs.

The approaches to measuring the impact of trade liberalisation were also considered. The CGE model, with its strong neoclassical assumptions, was considered inappropriate for use, while the gravity model and the single-equation export supply model are considered appropriate.

The main trade theories have been discussed and it is clear that most of them do not explain or predict the reality of the less-developed countries and are mostly based on very restrictive assumptions, especially the neoclassical theories. Therefore, there is a need to actually determine the efficacy of using such a model in informing policy for the developing countries. Following the theoretical framework of the research and the approaches to measure trade liberalisation, the next chapter deals with a critical review of the literature related to the topic as part of answering the research question and achieving the objective of the research in a logical and systematic manner.

Chapter 3

Literature review

3.1 Introduction

This chapter aims at reviewing the relevant part of the literature on trade liberalisation with a view to determining what has been written on how it can affect the manufacturing sector following the objective of the research. In revisiting the path of previous research on the subject, the research will first examine the broad claims and promises as presented in the literature and will then focus on issues specific to measuring the impact of trade liberalisation on the manufacturing sector. In doing this, the research will attempt to answer the following questions: What has been the impact of trade liberalisation on growth and manufacturing? In addition it will determine under which conditions the conclusions are made and within which context, in order to determine the validity or not of the conclusions. It will also attempt to determine whether, given the evidence from the various sources, there is a need for further trade liberalisation. Given the changing theoretical and analytical perspective, such as new growth and trade theories, what does the analysis of the impact of trade liberalisation predict in this era of globalisation? Here, an attempt will be made to integrate and summarise the main themes of the on-going debate regarding the general applicability of the *a priori* policy prescriptions associated with trade liberalisation, which is based on neoclassical prescriptions as discussed in Chapter 2. In so doing, areas of agreement as well as unresolved areas will be highlighted. The neoclassical trade theory, with its restrictive assumptions, dominates the literature and its emphasis on measuring the impact of trade liberalisation on total factor productivity growth will be investigated. In doing this, the research does not seek to

justify one strand of prescription, but to state the facts in a critical manner that can inform policy based on the empirical evidence, noting how it validates or invalidates the underlying theory or theories. This follows the theoretical foundations of the research discussed in Chapter 2.

The rest of the chapter is divided as follows: Section 3.2, as part of the introduction, investigates the context of the debate on trade liberalisation from the opposing sides. Section 3.3 critically reviews the literature on the relationship between trade liberalisation and growth. Section 3.4 then specifically delves into the literature on the impact of trade liberalisation on the manufacturing sector, by considering in subsection 3.4.1 trade liberalisation and Total Factor Productivity Growth (TFPG); Section 3.4.2 investigates trade liberalisation and Price Cost Margin (PCM), while section 3.4.3 looks at trade liberalisation and export growth. Following these analyses, which are based on neoclassical trade and growth theory, section 3.5 looks at trade liberalisation and the new growth theory with the aim of determining what it predicts and how it has evolved, while section 3.6 looks at trade liberalisation and the new trade theory influenced by the tremendous growth in multinational firms, with the offshoring and outsourcing of tasks and how these affect specialisation on the basis of comparative advantage or by altering what it predicts, especially as they affect developing countries like Cameroon. Finally, section 3.7 provides a summary of the critical literature review.

3.2 Context of the debate on the impact of trade liberalisation on the manufacturing sector

This research is situated within a context defined by a wide-ranging debate between the advocates of trade liberalisation and its opponents. The mixed and sometimes contradictory results from research in relation to the effects of trade liberalisation and economic growth in developing countries have become a central topic of debate among development economists and policy-making trying to make sense of the often-contradictory findings. This is because all the policies implemented from independence until the present seem to have failed, and the stopgap actions that do not seem to lead to development put to question the reliability of policy prescriptions. The constant changes in policy are also an indication of failure in that they might not have been well thought out. There are many studies linking economic growth to trade liberalisation (Little *et al.*, 1970; Krueger, 1978:1-22; Heitger, 1987: 249-261; Romer, 1989:1002-1037; Michaely, Papageorgiou & Choksi, 1991; Bhagwati & Srinivasan, 1999; Dollar, 1992:523-544; Edwards, 1992:383-398; Harrison, 1995; Onafowora & Owoye, 1998:497-506). However, other studies have found little evidence to support a link between trade liberalisation and economic growth (Sachs, 1987; Agosin, 1991:79-100; Taylor, 1991:70-108; Shafaeddin, 1994:1-16; Clarke & Kirkpatrick, 1992; Greenaway & Sapsford, 1994:157-174; Karunaratne, 1994:625-643; Jenkins, 1996:693-716; Greenaway, Morgan & Wright, 1997:229-244; Rodrik & Rodriguez, 1999: 1-60).

The benefits or otherwise of trade liberalisation and its relation to growth and the manufacturing sector has been a subject of research from the time of the mercantilist to the modern era. However, the nature of the relation is as contentious as seen from

the contradictory empirical results and differences among many economists. Differences in the quality of the data used or analysed is one source of disagreement in addition to the details. In other cases, the indicators of openness, used by researchers, as measures of trade barriers, are considered inadequate or unreliable. Misspecification of the models is another source of confusing results, (Rodriguez & Rodrik, 1999:10). Given this, the nature of the relationship between trade policy and economic growth is therefore very much an open question that has not been resolved and might never be resolved (Rodrik, 1995:19-37).

Rodriguez & Rodrik, (2000:2) argue that openness considered simply as liberal trade policies does not guarantee faster growth, if not accompanied by other policies such as social, economic and institutional reforms. The conclusion from the analysis of Rodriguez and Rodrik is that trade liberalisation does not necessarily lead to growth. Despite such a conclusion, empirical studies provide conflicting explanatory models, maybe because of differences between countries and sectors covered and the data and methodologies used in different studies.

Proponents of trade liberalisation argue that protectionism has mostly failed across the developing world. Therefore, this experience and lack of empirical support for protectionism are enough caution not to follow such policies in an integrated and modern world. Studies by the Organisation for Economic Cooperation and Development (OECD), National Bureau of Economic Research (NBER) and the World Bank from the 1970s and 1980s, suggest that countries with more liberal trade policies, with more open economies, grow faster than those with more protectionist

policies, and this is often given as justification for liberal trade policies (World Bank, 2000).

According to the World Bank, (2002), a reduction in trade barriers can increase growth by providing a basis for productivity growth and in so doing enhance specialisation, job creation and poverty reduction around the world. These results from country-specific studies, it is argued, are much more reliable than cross-country regression analysis heavily criticised by economists such as Rodriguez and Rodrik (Bhagwati & Srinivasan, 1999; Lall & Myint, 1996). Other regression analyses, such as those of Sachs & Warner, (1993) and Winters, (2004:41) also arrive at similar conclusions on the benefits of trade liberalisation effects on growth.

The OECD, (1992:2) argues that trade barriers distort patterns of international trade, the allocation of resources, and economic growth and go ahead to quantify the losses from such barriers estimated to exceed \$475 billion per annum. In addition, they state that the benefits from partial reform that could result from the Uruguay round of talks could bring benefits of \$195 billion per annum; more than \$90 billion would go to developing and formerly centrally-planned countries. The conclusion is that trade liberalisation will benefit rural areas in developing countries by raising their incomes (OECD, 1992: 15).

Again, Edwards, (1992), in a study of thirty developing countries from 1970 to 1972, concludes that openness and trade are important, not just because exports contribute to growth with increased revenue, but that with a combination of the right human capital and supporting government policy, liberalisation is an important mechanism

through which firms can acquire technological knowledge by operating in the international economy.

The results from previous studies on infant industry protection often need to be analysed critically. According to Little, (1999) and World Bank, (1999), the results from North East Asia do not show much evidence that protectionism led to higher social returns, productivity and growth. In East Asia, the results are mixed in Japan, South Korea and Taiwan and do not exist in Hong Kong and Singapore and failed in South East Asia (e.g. Malaysia car policies and also Indonesia). The case for infant industry protection in Germany and the United States of America is also contested. The lowering of tariffs and openness to inward investment are often given as justification for Asian success in FDI-led electronics exports and not protectionism. Alves, Draper & Sally, (2009:5-45) again, in line with the above point, argue that China has grown fast through FDI-led exports, not infant industry protection. Furthermore it is argued by Alves *et al*, (2009) those other factors, such as macro-economic stability, competitive exchange rate, private property rights, openness to the world economy, education and infrastructure are very important for manufacturing growth and economic growth.

It is further argued by Alves *et al*, (2009:5-45) that infant industry protection in Latin America, South Asia and Africa has been a disaster; almost similar to industrial planning practiced in the former Soviet Union and the satellite states. The protected infant industries never grew and remained dependent on government subsidies – breeding corruption and rent seeking because of the involvement of government in business, which developed into a patronage system (especially in countries like

Cameroon with many government-owned enterprises). Markets in developing countries are small and disorganised and cannot support infant industries, and state bureaucracies are too weak, incompetent and corrupt to efficiently administer complex instruments required under the ISI policy, with protection as its main aim.

Furthermore, supporters of trade liberalisation argue that a shift towards a more open trading regime is expected to bring significant benefits to the whole economy, based on the belief that there is a strong correlation between trade strategy and manufacturing growth on the one hand, and economic growth and development strategy on the other (Grossman & Helpman, 1990:86-91; Krueger, 1998:33-60). The advocates of liberalisation argue that free trade will increase the growth rate of an economy and thereby enhance overall economic development in all sectors, including manufacturing. Matusz & Tarr, (1999:424-439) agree that, in terms of trade reforms, free trade leads to a more efficient allocation of resources and higher levels of economic wellbeing than one characterised by artificial distortions to trade, in other words protectionism.

On the other hand, the critics of liberalisation argue that a more cautious approach should be adopted, as seen in some criticisms directed at free trade policy reform and its attendant claims in spite of its very strong intuitive appeal and theoretical underpinnings in the works of Rodrik, (1992:87-105) and Rodrik & Rodriguez, (1999:2-65). Here, the argument against trade liberalisation is based on the criticism of neoclassical assumptions that are seen to be very restrictive and therefore do not clearly explain the reality of the world, in addition to methodological approaches and analysis that are seen to be problematic. This was critically investigated in the theoretical literature in Chapter 2.

While the debate between advocates and critics covers broad issues, many of which will be briefly discussed, this research limits itself and focuses primarily on one important strand within the literature, which deals with the impact of free trade on the manufacturing sector and economic growth. To a significant degree, the discussion on the manufacturing performance centres on the impact of trade liberalisation on overall manufacturing growth in the first place, and secondly on the extent to which this growth or decline was (is) a result of a change in trade policy. Here, the debate will focus on the types, nature and sources of the predicted outcomes and their applicability to Cameroon's manufacturing sector.

3.3 Trade liberalisation and growth

Kruger, (1997), points out that openness is the only way to develop and gives the following quote: "Ideas with regard to trade policy and economic development are among those that have changed radically. Then and now, it was recognised that trade policy was central to the overall design of policies for economic development. But in the early days, there was a broad consensus that trade policy should be based on import substitution. It was thought import substitution in manufactures would be synonymous with industrialisation, which in turn was seen as the key to development." Kruger, (1997), however, concludes that it is accepted that: "Growth prospects for developing countries are greatly enhanced through an outward-oriented trade regime and fairly uniform incentives (primarily through the exchange rate) for production across exporting and importing substituting goods. It is generally believed that import substitution, at a minimum, outlived its usefulness and liberalisation of trade is crucial for both industrialisation and economic development. While other policy changes also are necessary, changing trade policy is among the essential

ingredients if there is to be hope for improved economic performance” (Krueger, 1997:1). There is no ambiguity in what Krueger proposes and stands for: free trade without which, there will be no growth or development. The importance of trade as a source of growth has been recognised by all, even the Mercantilists with pervasive ideas on how to carry out trade relationships.

However, Rodriguez & Rodrik, (1999), in reviewing empirical studies that support the view that trade liberalisation is beneficial, claim to have identified several weaknesses in the findings, bringing about scepticism about the findings and predictions (Rodriguez & Rodrik, 1999: 38). The conclusion is that “there should be no theoretical presumption in favour of finding an unambiguous negative relationship between trade barriers and growth rates in the types of cross national data typically analysed, moreover an increase in the growth rate of output is neither a necessary nor a sufficient condition for improvement in welfare” (Rodriguez & Rodrik, 1999: 5).

Rodrik, (1999) further argues, “openness by itself is not a reliable mechanism to generate sustained economic growth and that openness will likely exert pressures that widen income and wealth disparities within countries. He adds that openness will leave countries vulnerable to external shocks that can trigger domestic conflicts and political upheavals” (Rodrik, 1999:13-14). In the quest to find the weaknesses in free trade, Rodriguez and Rodrik’s, (1999: 64) conclude that ISI policies were basically successful contrary to the views of critics who argue that they were expensive and misallocated resources.

Rodrik, (1999:141) concludes that the evidence in favour of free trade is not as compelling, as is often made to look. Investment and macro-economic policies are

more important it is argued. Rodrik, (1999) is adamant that if there were some way to achieve the desired objectives, openness is not one of them (Rodrik, 1999: 141). There is a conviction that economies that succeeded in the past did so using their own specific policies with macro-economic stability and high investment taking precedent (Rodrik, 1999: 47).

Rodrik & Rodriguez, (1999) and Rodrik, (1999) conclude that the case for openness, when linked to improved economic growth performance, should be rejected. This is at variance with the views of Krueger, (1997:1) who concludes that without openness there will be no growth.

The results of growth experiences around the world from 1990 to 2003 and the implications for the growth-openness link hypotheses reported by the World Bank, (2003), according to Rodriguez, (2006:1-15), show that this period did not confirm the predictions of supporters of trade liberalisation. As a rule, more open economies did not fare better than less open economies during this period, and according to some measures of openness, tariff restrictions are actually negatively associated with growth (though never significantly so).

Krueger, (1978:1); Bhagwati, (1978:45-54) and Papageorgiou, Choksi & Michaely, (1991) reached the same conclusion that import substitution policies generally do not produce continuous growth and that outward-looking policies are more appropriate for achieving high growth. In other words, free trade leads to economic growth. It was done using macro-economic policies meant to implement ISI policies

Balassa, (1985:23.35), in regressing the growth rate of exports on the growth of output, both including and excluding exports from the measure of output, found a positive relationship when exports are included as part of output, but it was also found a generally significant positive effect when exports are excluded from GNP. Krueger, (1978:1-3) reveals a positive relation with export growth and economic growth. However, an increase in trade might not necessarily be an indication of liberalisation. She, however, could not conclude that trade and exchange rate liberalisation independently affect growth.

Considering protectionism and free trade, differences among researchers are based mostly on the economic techniques used, which make it difficult to draw conclusions. A general conclusion is that the import substitution approach was not successful in promoting higher growth rates in the long run for developing countries. Cameroon, for example, implemented the policy from independence until it was abandoned by the late 1980s, (Amin, 1996).

Most countries that used protectionism were eventually forced to abandon it because of chronic balance of payments deficits, debt problems and budget-deficit problems in addition to the Washington Consensus Fiscal discipline; interest rate liberalisation; a competitive exchange rate; trade liberalisation; foreign direct investment, privatisation at best and at least commercialisation; and deregulation (Williamson, 2000:251-264) inspired reforms, as conditions for provision of loans to developing countries.

Those that have continued with an inward-looking approach over the years, such as Pakistan, Myanmar and Zimbabwe, have had relatively lower growth rates (World

Bank, 2003). In contrast, although many developing countries that moved to freer policies were often forced to temporarily abandon these policies because of unexpected external events or domestic political pressures related to the adjustment problems, were able to sustainably grow over long periods, as argued by supporters of free trade.

Bhagwati & Srinivasan, (2001:180) argue that the post-war export pessimism was unjustified; a rationale for the adoption of protectionist trade policies in many developing countries was to protect the industries that had matured in Latin America, because World War II had provided artificial inducement to set up domestic capacities to produce interrupted supplies from competitive suppliers abroad, contrary to sound economic theory and empirical results. Here, this decision was not based on sound economics, but on a happenstance in a point in history. The hesitance or outright refusal to devalue the currencies in order to make exports competitive, in addition to high rates of inflation, led to overvalued exchange rates with similar consequences to ISI trade policy, though not called that or stated as such (Bhagwati & Srinivasan, 2001), which was detrimental in terms of competitive exports from these countries. This greatly distorted economic performance, leading to inefficiencies and poor productivity.

According to Rodriguez, (2006:973-987), there is no correlation between growth and most indicators of trade policies, such as tariffs and non-tariff barriers. Again, Rodriguez & Rodrik, (1999:2-50) found that Dollar, (1992:22-49); Ben-David, (1993:653-679); Sachs & Warner, (1995:1-118); Edwards, (1998:383-398), and Frankel & Romer, (1999:379-399) relied either on constructing indicators of openness

that were inappropriate measures of trade restrictions, or were based on a questionable use of econometric methodologies.

Romer & Frankel, (1999:379-399), in asking the question “Does Trade Cause Growth?” tried to separate the causality links in the estimation of the trade-growth relationship by constructing an exogenous variable (the amount of trade that is caused by geographical factors) to use as an instrument for trade/GDP ratios in a regression in which income levels are the dependent variable. The results show that, when used as a means to explain with the predicted trade share, trade ratios maintain a strongly significant coefficient in these regressions. However, Rodriguez & Rodrik, (1999) objected to Frankel and Romer’s argument that the predicted trade share could be acting as a proxy for geography’s direct effect on growth, which could work through the effect of climate on disease, international transmission of technology and institutions or patterns of specialisation. They show that if measures of geography, such as distance from the equator, are introduced into the Frankel and Romer regressions, the coefficient on trade becomes statistically insignificant (Rodrik & Rodriguez, 1999:35-38).

Geography can have effects on trade, but also has direct effects on growth. Geography could also be related to the institutions that an economy can develop, as in Engerman & Sokoloff’s, (2002:41-109) account of how comparative advantage in labour-intensive crops generated the high levels of inequality in many Latin American nations. Trade itself could affect institutions directly. It is quite difficult to isolate the specific effects of trade on growth from the effects of geography and policies, since they work or operate at the same time and could actually affect each other too. What

this means is that the independent variables could at the same time that they are influencing the dependent variable also influence the other independent variables, making the influence on the dependent variable indeterminate because of the source.

Rodrik, (2001:1-45) and Rigobon & Rodrik, (2004:1-22) attempt to reconsider the issues and the controversies by first using the instruments derived by Frankel and Romer as well as the instrument for institutions suggested by Acemoglu, Johnson & Robinson, (2000:1381-1403) to analyse the relationship between geography, trade and institutions. The authors show that the institution variable consistently comes out with a significant coefficient in these regressions, whereas geography has an insignificant though positive coefficient and the coefficient on the trade/GDP ratio turns negative.

Rodriguez & Rodrik, (1999:1-50) conclude that there is no evidence that protectionist policies distorted growth prospects in the developing world during the post-war period. The authors further state that growth displays no significant correlation with the direct measures of trade policy. According to them, the case against trade policy depends on the interpretation of circumstantial evidence. Growth is negatively correlated with policy measures with some theoretical link to trade, such as the black market premium. Income levels and growth rates are negatively correlated with trade shares, an imperfect and highly endogenous measure of trade policy. As is commonly the case with circumstantial evidence, alternative interpretations can be offered to explain these facts. The black market premium can assume the effect of alternative macro-economic distortions. State monopolies of exports have not been consistently measured. Different methodologies to control for causality give different results with respect to the identification of the direct effect of trade liberalisation on growth, they conclude.

Rodriguez & Rodrik, (1999:1-50) argue that even researchers who have shown how these results from trade liberalisation can be reversed in theory avoid questioning them in practice because gains from trade liberalisation is one of the main basis of modern economic theory. It can be called trade liberalisation dogmatism. Given the above apathy for the results, the authors argue that it is therefore not surprising to see economists spending a lot of time and resources trying to find a link between trade liberalisation and economic growth or, for that matter, manufacturing performance, which brings to question where research efforts might be directed. The authors question whether research should be directed towards proving the existence of a relationship. It is further suggested by the authors that the absence of no link or the difficulty to prove one unambiguously can serve to uncover techniques that will allow researchers to confirm the intuitions of basic trade theory. Perhaps the link is so difficult to find because it does not exist according to (Rodriguez & Rodrik, 1999).

According to Rodriguez, (2006:1-15), what is ironic about the intellectual debate is that during the time that the academic debate on the merits of openness was going on, many countries were implementing economic reforms with trade liberalisation as part of the reforms. Rodriguez, (2006) argues that by 1998, all countries were open or liberalised because no country had an average tariff rate above 40 per cent, which is the level that Sachs and Warner consider sufficient to determine that an economy was closed. However, this increase in economic openness and integration was not accompanied by an evident increase in world growth rates according to World Bank figures: average growth during the 1990 to 2003 period was 1.07 per cent, lower than the 1.42 per cent average growth rate for the 1975 to 1990 period (World Bank, 2005:25-50). Rodriguez, (2006) questions whether open economies did grow faster

during the period of openness and concludes that the evidence does not show significant differences between economies' growth rates based on the level of trade liberalisation of the countries studied.

Again, Rodriguez, (2006:1-15), in discussing empirical research regarding the link between openness and growth in cross country data, concludes that the evidence presented in recent papers, such as Warner, (2003:1-118), Dollar & Kraay, (2002:22-49), and Wacziarg & Welch, (2003:1-48), does not alter the conclusion made in 1999 in the sceptic's view (Rodriguez & Rodrik: 1999:2-65) that standard measures of trade policy are correlated with growth. By adding information with weak links to trade policies, the new papers are able to derive a correlation between trade liberalisation and growth, and question whether there should be such manipulation of variables just for the purpose of getting the desired results. It is further contended that attempts at removing the complex set of links of causality and endogeneity among geography, trade shares and institutions do not point to a strong effect of trade liberalisation on economic growth (Rodriguez, 2006:25).

Furthermore, Rodriguez, (2006:5-15) argues that recent data again fails to display an evident link between more liberalisation and economic growth, stating that Lebanon and Lesotho, though applying very restrictive trade policies, have high growth rates as compared to Moldova and Mongolia, which are open yet have experienced considerable growth collapses. Rodriguez, (2006:5-15) concludes that the link between trade liberalisation and economic growth collapsed in the nineties, based on the empirical evidence.

This might hold for Cameroon that experienced serious problems in the same period with the closure of many manufacturing firms, increased poverty and a descent into debts accompanied by a drastic decline in economic growth (MIN COMMERCE 2008:1 20). However, the poor performance of the Cameroonian economy cannot and must not be justified on the basis of trade liberalisation; the evidence from rigorous empirical research should rather inform such a conclusion, as this research aims to do.

Aghion, (2009) also developed a theoretical endogenous growth model to illustrate that trade liberalisation might retard industrial development in small, under-developed countries, because it kills the incentives for innovation, imitation and learning-by-doing. It is increasingly being concluded that trade liberalisation has contributed to the collapse of the manufacturing sector measured by the falling shares of employment and output in the manufacturing sector in Africa and other developing countries (Carmody, 2009:1205). Though it is based on preliminary investigation, it is definitely the case in Cameroon. In summary, and given the evidence, the conclusion is that openness is not necessarily important for growth, (Carmody, 2009). An alternative interpretation of the evidence is that such results are simply indications of problems with the use of cross-country regression analyses, in which case countries have unique and context-specific characteristics. Bhagwati & Srinivasan, (1999:1-8) highlight the need to use detailed country level case studies instead of cross-country regressions to understand complex phenomena such as the relationship between trade liberalisation and growth. According to these authors, growth regressions are simply too oversimplified and subject to too many measurement and specification errors to take their results seriously.

Bhagwati & Srinivasan, (1999: 24) argue that the use of cross-country regressions to

argue the case for trade openness, is weak, while rigorous and in depth studies argue the case much more persuasively, which might give credibility for attacks such as those of Rodrik and Rodriguez, (1999), creating the illusion that the case for trade openness is not credible and is weak. The point being made is that despite the flawed methodological approaches used to justify trade openness, the idea that trade openness is still beneficial, holds. It is rather suggested that country-specific analysis to argue the case for free trade should be carried out. Bhagwati & Srinivasan, (1999:24) conclude that despite Rodrik and Rodriguez' (1999) criticisms, Krueger's (1997:1) point that there is a positive link between free trade and growth still stands, because Rodriguez and Rodrik's criticisms are not convincing to them.

3.4 Trade liberalisation and manufacturing performance

The importance of trade has led to economists finding other possible effects of trade liberalisation. As argued by Smith, (1776), specialisation leads to efficiency and increased productivity; however, increased output resulting from increased productivity is determined by the size of the market and trade is expected to open markets to absorb increased output resulting from increased productivity. The new trade theory posits that trade is influenced by increased returns to scale, which are a result of firms growing, which is a consequence of increased trade. Increased trade will lead to more capital accumulation, reinvestment and expansion, and with repeated activities, productivity increases from learning by doing will affect the whole spectrum of the manufacturing sector. Economists have examined not only the impact of trade liberalisation on the manufacturing sector, but also the routes through which the effects are manifested. Most of the studies have shown that trade openness has a

positive impact on the manufacturing sector. However, reality might be different as other papers dispute this positive impact.

Many writers, according to Edwards, (1992), and as discussed above, argue that more openness may afford developing countries the opportunity to adopt technology and other innovations that have not been developed by them (i.e. copying what others have developed), which makes it cheaper for them to acquire. Research and development of new technology is very expensive and once developed it can be traded in the international market at a fraction of the initial investment. The outcome of the acquisition of new technology is increased output, and with trade it is expected to lead to economic growth and better performance of the manufacturing sector, at least in theory.

Endogenous growth models emphasise the importance of acquired ideas and knowledge capital from imports, as an important source of growth, especially new technologies in developing countries. However, the effects of new technology are influenced by the ability to make use of the new technology, not only on the acquisition (Edwards, 1992).

Trade liberalisation is a macro-economic policy shift that is expected to have an impact on manufacturing performance. For instance, competitive pressure resulting from liberalisation is expected to push inefficient producers to efficiency or out of the market. Therefore, competition should have favourable effects on manufacturing efficiency. Trade liberalisation may remove an avenue for rent-seeking behaviour and by so doing increase the competition between local and foreign producers. It is

expected that trade creates an incentive for local firms to move towards increased productivity, hence competitiveness and profitability. Local firms involved in exporting are forced to catch up with technological development in order to be competitive. This provides an incentive for them to increase efficiency and thereby productivity. Inefficient firms are pushed out and resources are allocated efficiently (Greenway, Morgan & Wright, 1998). These are all anticipated benefits from trade liberalisation.

Trade liberalisation is expected to provide an opportunity for efficient producers to expand their output to a level more than what is demanded locally, making resulting in a surplus for export. Trade liberalisation is expected to increase the demand for products because of a larger market leading to more exports, and more production. Despite these expected positive influences of trade liberalisation and despite empirical studies affirming that trade reform has a positive effect on the manufacturing performance and what the theory proposes, many researchers continue to question the impact of trade liberalisation on economic growth, as discussed above.

As mentioned above, results from trade liberalisation are mixed, at least from empirical analyses. Structural adjustment programmes, especially in the case of Cameroon, might be the cause of poor performance. Again, the abandonment of the ISI policy might also have led to poor performance of the economy, because previously protected firms might have closed down because of their inability to compete, leading to job losses, which could also lead to poor performance of the economy, and not necessarily trade liberalisation being the cause (Greenway *et al.*, 1998). Trade liberalisation, at least in the short run, could result in a decrease in

industrial output, since increased competition may force weaker and uncompetitive producers out of the market (Semenick & Morrison, 2000); which, in itself, might not be a bad thing for Cameroon, because specialisation and production under ISI were not based on revealed, acquired or latent comparative advantage, but on political exigencies.

Mahadevan, (2002:170-185) examined the impact of trade liberalisation on total factor productivity growth, technological progress and gains in technical efficiencies in the Australian manufacturing industries and found a favourable and significant impact on the Australian manufacturing industries after liberalisation. However, Australia is a developed country with many mitigating advantages, unlike Cameroon and other developing countries. A study by Benjamin & Ferrantino, (2001:95-115) found that lower tariff rates (a measure of openness) improved productivity in the manufacturing sector for the thirteen OECD countries considered – again, these are developed countries.

For South Africa, Jonsson & Subramaniam, (2001:197-224) showed that trade liberalisation had a favourable impact on total factor productivity growth (TFPG) in the South African manufacturing sector in the 1990s. The study also showed that there was a favourable long-run relationship between TFP and openness. However, Harris & Kherfi, (2001:1017) found that trade openness had no significant impact on the rate of productivity growth in the Canadian manufacturing sector.

Edwards, (1998:383-398) examined the relationship between trade openness and total factor productivity growth for 93 countries (developed and developing countries) and

from the findings there is support for the view that open economies have experienced faster productivity growth.

Weinhold & Rauch, (1999:1010) investigated the relationship between trade openness and manufacturing growth in 39 countries (developed and less developed countries) from 1960 to 1990 and found that openness accelerated productivity growth through economies of scale. Evidence was also found that specialisation in the manufacturing sector will increase the rate of growth in manufacturing productivity for less-developed countries.

Dutta & Ahmed, (2001:1-25), using the endogenous growth model to study the relationship between trade liberalisation and manufacturing growth in Pakistan, found the existence of a unique long-run relationship between industrial output, real capital stock, labour force, real exports, and the import tariff collection rate and secondary school enrolment ratio and trade liberalisation.

Hwang, (1998:391-405) analysed the impact of trade liberalisation on the performance of the Korean manufacturing sector using the Johansen co-integrating technique and found that Korean manufacturing appeared to be experiencing increasing returns to scale due to the adoption of new technology. The study also showed that learning-by-doing effects, as defined by Lucas, (1988:3-42), contributed significantly to the long-run performance of the South Korean manufacturing companies.

Hallward-Driemeire, Iarossi & Sokoloff, (2001:2-25) investigated the patterns of manufacturing productivity in five East Asian countries and found that investment in training, technology, and optimal selection of inputs is important in increasing the productivity and competitiveness of the manufacturing sectors in these countries. Other research with similar results include: Chand and Sen (2002:120-132), Greenaway *et al.*, (1997:39-48), and Liu, Romilly, Song & Wei, (1997:313-329). Nair & Weinhold, (2001:153-171) found, for Malaysia, that openness and manufacturing outputs are positively correlated. Capital and technical progress was found to be statistically insignificant. However, correlation does not mean causation.

In summary, most of the studies have shown that trade liberalisation has had a positive impact on the manufacturing sector in both developed and developing countries. Some of the studies have shown that technology and human capital development are vital in enhancing the productivity of the manufacturing sector. However, other studies dispute the benefits on theoretical and empirical grounds. Given the above, it is important to look at how these effects are determined for specific variables by focussing on the specific approaches that need to be measured in this research

3.4.1 Trade liberalisation and total factor productivity growth

The focus on productivity (broadly defined to include efficient use of resources, technological progress and efficient management) comes from the observation that productivity is a very important factor that can lead to competitiveness and sustainable economic growth. It is believed by proponents of trade liberalisation that developing countries that have liberalised their trade are more open and have a greater

ability to acquire and adopt technological advances developed in the industrial economies (Romer, 1990:71-102; 1992; Grossman & Helpman, 1992:1180-1187; Baro & Sala-i-Martin, 1995:178-183). Again manufacturing growth can be achieved in economies with the needed skills acquired from advanced education as argued by (Coe & Helpman, 1995:859-887). The implication is that with weak institutions and a poor or misaligned educational system, the benefits from liberalisation might not be realised in a country like Cameroon.

Total Factor Productivity Growth, is the relationship between output produced and an index of selected inputs, implying mostly factors of production. Endogenous growth models emphasise that human capital and knowledge capital lead to an improvement in technology creation, adoption and absorption, which are important determinants of productivity growth (Bruton, 1995:1-15; Dahlman, Ross-Larsen & Westphal, 1985:1-21; Denson, 1967:1-5; Lichtenberg, 1994:1-15).

Despite this, the issue remains a controversial one. Contrary to the findings of several earlier studies, recent ones on developing countries have concluded that TFPG in manufacturing has not increased after the rejection of ISI policies in developing countries in the 1990s (Unel, 2003:1-15). There are points of disagreement on the methods to use to measure TFPG effects resulting from trade liberalisation, because there is no one accepted measure of TFP, because it presents researchers with problems concerning biases, which need to be taken into consideration when interpreting results (Akinlo, 2005:3).

For Mexico, and for three periods, starting from 1975 to 1988, using three indicators, (labour productivity growth (LPG), total factor productivity growth (TFPG) and price cost margins (PCM)), regressed alongside with three sets of explanatory variables, (technology variables, industrial structure variables and trade policy variables), Weiss, (1992:43-46) found that output growth was a good indicator, which explained the TFPG and LPG, as its coefficient was significant and positive for all three periods. The capital labour ratio variable was also found to be positively related to TFPG and LPG at one and 10 per cent levels, respectively, in the first period, negatively and significantly related to LPG in the first period, and TFPG in the first and second periods.

As far as trade variables are concerned, Weiss, (1992:711-725) found that the import share was statistically significant and expected a positive relationship with TFPG and LPG in the first period, 1975 to 1980. This result suggests that any industry with higher imports will have higher TFPG and LPG. Other than that, the nominal rate of protection (NRP) got the expected negative and significant association with LPG in the second and third periods. Moreover, the effective rate of protection (ERP) showed negative and significant associations with LPG in the third period, 1984 to 1988, and with TFPG in the second period, 1980 to 1986. The lag of import share also showed a significant and a positive sign with TFP growth in the second period, implying past liberalisation influenced present performance. TFPG and LPG were mostly explained by the changes in output growth, capital labour ratio and import share. The trade variables were less successful in explaining the variation of TFP, as most of the coefficients of these variables were not significant.

Haddad & Harrison, (1993:51-74) studied the impacts of trade liberalisation in Morocco's manufacturing sector using unbalanced panel firm-level data from 1985 to 1989. By using the Cobb-Douglas production function, TFPG was estimated using a fixed effect model and an Instrument Variables (IV) model. The results show not much variation in TFPG between different estimation methods. To find out how trade liberalisation affects TFPG, the author regressed three dependent variables: the deviation of firms' TFPG from the efficiency frontier from the fixed-effect model; the deviation of firms' TFPG from the efficiency frontier from the instrument variable model; and TFPG level from the result of the fixed effect model with trade policy variables, such as import penetration, export share in total sales, and other firm characteristic variables. The result shows that there is a strong relationship between trade openness and productivity. The author concluded that trade liberalisation in Morocco has had a positive impact on productivity in the manufacturing sector.

Kwak, (1994:398-422) applied a methodology similar to Urata & Yokota, (1994:363-372) to establish what effect trade liberalisation had on TFPG across industries from 1970 to 1988 for South Korea. The results show that none of the trade variables, except the ERP and its rate of change, were significant. The result shows that the effective rate of protection (ERP) had significant and negative association with TFPG in the 1980s, meaning ERP started affecting productivity in the early 1980s when the South Korean government started to implement effective import liberalisation. Moreover, the rate of change of effective protection was found to have the expected sign and statistical significance for the period 1975 to 1985, which can be interpreted that the promotion of trade liberalisation increases productivity. Another result was that the output was found to have positive links with productivity, supporting

Verdoorn's Law, which explains that faster growth in output increases productivity because of increasing returns to scale; change in production volume of about ten per cent should result in an average increase in labour productivity of 4.5 per cent, other things being equal (Verdoorn, 1949:59). However, this undermines the hypothesis that growth in productivity is mainly explained by progress in scientific knowledge and technology (Kaldor, 1966:290), as predicted in the endogenous growth theory. Kaldor, (1966) notes that the negative association between capital and TFPG may be due to low labour productivity, in which case it needs improvement. Lastly, the market concentration was positively and significantly related to TFPG in the 1980s, which suggests that an industry with a high concentration ratio will have a high TFPG. These are benefits resulting from clustering and agglomeration economies.

Osada, (1994:471-491) regressed TFPG with ERP, and the approved foreign direct investment on a cross-sectional, one-digit manufacturing sector dataset from 1987 to 1990 to explore the link between trade liberalisation and productivity in a study of Indonesia, which revealed that both the ratio of decrease of ERP and the magnitude of reduction in ERP have positive effects on TFPG.

Edwards, (1998:383-398) used comparative data for 93 countries to analyse the relationship between openness and TFPG. Nine indexes of trade policy were used to analyse the link between trade policy and TFPG from 1980 to 1990. Three of the nine indexes were related to openness; a higher value means a lower degree of policy intervention in international trade. The other six were related to trade distortions, where higher values indicate a greater departure from free trade. The results show that trade openness indexes are significant with positive signs and trade distortion indexes

are significant with negative signs.

Iscan, (1998:123-148) also analysed the effect of trade liberalisation on TFPG in the manufacturing sector in Mexico for the period 1970 to 1990. Two measures of foreign trade variables, controlled for by export share and measures of protection, controlled for by effective rate of protection, were considered. A dummy variable controlled for the date from which trade was liberalised was also used. The results of the GMM estimations indicate that after liberalisation, exports and productivity growth have a positive and significant relationship, while change in effective rate of protection was negative, but significant. The conclusion is that trade liberalisation affected TFPG positively.

However, other studies, such as Kajiwaras, (1994: 492-507), looking at the effects of trade liberalisation on TFPG from 1984 to 1988 in the manufacturing sector in the Philippines, and by Okamoto, (1994) on the manufacturing sector in Malaysia on the effect of trade liberalisation on TFPG from 1984 to 1990, show unclear relationships, because ERP variables demonstrated unexpected signs or were insignificant.

Urata & Yokota, (1994:363-372) empirically examined the determinants of TFPG for the Thai manufacturing sector by dividing factors determining TFPG into two groups, namely external factors and internal factors. They regressed TFP with the explanatory variables into two periods 1976 to 1982, which is considered pre-liberalisation, and 1982 to 1986, which is considered post-liberalisation to see how trade liberalisation affects productivity. The estimation result for the pre-liberalisation period shows that variables for the degree of trade liberalisation, initial effective rate of protection, scale

effect, domestic competitive pressure and imported intermediate input ratio, all had expected signs. Although the trade variables show expected signs, they were not statistically significant. The result in the second period shows that only one variable, imported capital input ratio, and did not have the expected sign. The remaining variables showed expected signs and significance. It means that trade liberalisation has a favourable effect on productivity. They concluded that domestic and foreign competitiveness is important for productivity growth. This is in conflict with the theoretical postulations of a positive impact of trade liberalisation on TFPG.

Jenkins, (1995:693-716) investigated how trade liberalisation affected the productivity growth of labour in the Bolivian manufacturing sector from 1976 to 1990 to find out whether competition from imports and availability of imports would increase labour productivity. By using the Chi-square test, the results show that there is no support for the claims that imports improve competition and higher imports increase labour productivity.

Weiss & Jayanthakumaran, (1995:65-68) tested whether manufacturing performance can be linked to changes in the degree of protection in Sri Lanka in two different periods – 1985 to 1989 in three digits and 1978 to 1989 in four digits. By using ordinary least squares (OLS), the results show that neither coefficients of trade variable were significant in the long run 1978 to 1989, which means that there was no relation between changes in protection and performance indicators. However, the study found a link between trade liberalisation and labour productivity in the short period, though it was weak. The nominal rate of protection (NRP) and labour productivity was also found to have a more significant and positive relation in high concentration than in low concentration industries when the whole sample was

divided into low and high concentrations. The above justifies the theoretical position that industrial agglomerations are beneficial to industries. Other than trade variables, output growth was also found to have significant and positive associations with both labour productivity and total factor productivity.

In another study about Morocco, Haddad, de Melo & Horton, (1996:20) examined the relationship between trade liberalisation and TFPG of the manufacturing sector at both firm and industry levels from 1984 to 1989. Findings indicate that the growth rate of output significantly explains TFPG. Secondly, the results for both the industry and firm levels were different than expected, as the coefficients of the concentration, import penetration and the interaction term between concentration and import penetration were insignificant. This means that higher competition resulting from imports will not increase TFPG. Finally, the results between industry and firm levels related to export growth are not very clear. The results at the industry level were significant and negative, which means that export growth has negative effects on TFPG, while the coefficient was statistically significant and positive at the firm level, which means that the higher export growth will lead to higher productivity growth.

Mulaga & Weiss, (1996:1267-1278) used the Structure Conduct Performance model to test whether a reduction in protection increases TFPG in Malawi. The weighted least square method was used in the estimation and the results show that the growth of value added and change in the capital-labour ratio significantly affected TFPG positively, as expected. The ERP variable was also significant with the expected negative sign. Mulaga & Weiss's found that there is a stronger effect from trade reforms on highly protected firms. Finally, when the authors try to link the correlation

between ERP and the adjusted TFP with capacity utilisation, the results show the expected negative sign with a coefficient that is lower, but statistically insignificant. Sjöholm, (1999:705-715) empirically tested the effects of exports and imports on productivity growth between 1980 and 1991 in Indonesian manufacturing plants. The results of the study showed that imports, import dummy, effective rate of protection and the Herfindal index did not have any effects on the productivity growth at all, which suggests that trade liberalisation did not have any impacts on productivity. However, the results did show that both exports and export dummies had positive effects on productivity growth, even when scale was introduced into the regression. This result suggests that participation in international trade does increase productivity growth.

Bjurek & Durevall, (1998:303-313) examined the relationship between market liberalisation and TFPG, calculated using Malmquist productivity indexes of thirty-one manufacturing enterprises in Zimbabwe from 1980 to 1995. After many years of implementing import substitution policy, Zimbabwe launched a Structural Adjustment Program (SAP) at the end of 1990. The results show that the TFPG rate in the period before liberalisation, 1986 to 1990 was lower than for 1994 to 1995 and higher than in 1986 to 1990. Chand, (1999:1129-1140) tested the hypothesis that there is a negative relationship between industry assistance and productivity on eight two-digit Australian industries from 1967/1968 to 1994/1995. The results show that the increase in the nominal rate of protection (NRP) had a negative and statistically significant impact on TFP. TFP will be increased by 0.18 per cent when the NRP decreases by one per cent. This study concluded that trade liberalisation had a positive effect on productivity in the manufacturing sector.

Kim, (2000:55-83) also examined the significance of the relationship between trade liberalisation and productivity growth in South Korean manufacturing using the panel data from thirty-six South Korean manufacturing industries over nine sub-periods from 1966 to 1988. Kim's study is different from others in that it changed the assumption of perfect competition and constant returns to scale in calculating productivity by using imperfect competition and increasing or decreasing returns to scale. The study also used direct trade liberalisation measurements, such as the legal rate of tariff and the nominal rate of protection. The results show that the average annual productivity growth rate under constant returns to scale and perfect competition was approximately two per cent from 1966 to 1988. When the assumptions were changed to variable returns to scale and imperfect competition, the growth rate of TFP decreased to around 0.5 per cent from 1996 to 1998, which is very low compared to the previous one. It suggests that productivity contributed little to the output growth in South Korea. Even with a low growth rate of TFPG, trade liberalisation was related to growth. Moreover, the study found that the estimation of TFPG, with the assumption of constant returns to scale and perfect competition, had a biased and spurious relationship with trade liberalisation.

Jonsson & Subramanian, (2000:197-224) empirically examined trade liberalisation and improved efficiency in South African manufacturing using time-series and cross-sectional analyses. The cross-sectional analysis depended on the pooled data to determine the effects of liberalisation, and the authors used the change in tariff rates as the explanatory variable and TFPG as the dependent variable. The results of the regression of the pooled data showed that there was a negatively significant relationship between changes in tariff and TFPG rate across the manufacturing sector.

The result was still robust, even when other variables were included into the regression. There was a non-linear relationship between the change in tariff rate and TFPG. The marginal effect on TFPG tended to decline as the tariff reductions became larger. However, the authors did warn that even when there is a strong relationship between trade variables and TFPG, it is possible that the result is driven by the reduction in employment.

Sharma, Jayasuriya & Oczkowski, (2000:205-222) examined the link between TFPG and trade liberalisation policy on the Nepalese manufacturing sector from 1972/1973 to 1993/1994. The authors focused on TFP, which was calculated using the Tornquist index. The model was estimated with pooled cross-sectional and time-series data using OLS. They found that output growth and share of foreign investment are important determinants of TFP. However, the coefficients of NRP, quantitative restriction dummy and incentive dummies were not statistically significant, which means that trade liberalisation and export incentives have no impact on productivity. Finally, the study found that industries that receive export incentives would likely have lower TFPG than industries that do not get any export incentives after trade liberalisation.

Chand & Sen, (2002:120-132) empirically examined the impact of trade liberalisation on TFPG in the Indian manufacturing sector by using panel data from thirty firms from 1973 to 1988. It measured protection by using what the authors called “price wedge”, making it different. The authors note that productivity growth was reduced by how much protection domestic producers were reduced in comparison with foreign producers. Reducing protection increases domestic prices in relation to international

prices, making domestic products uncompetitive. Another explanatory variable was the number of intermediate inputs available to domestic producers at a point in time. By using the fixed effects estimator, the result of the study showed that the increase in the price wedge would have negative impacts on productivity, as a one per cent increase in the price wedge will decrease TFP by 0.1 per cent. Moreover, when the authors used the price wedge of intermediate inputs, the results showed that one per cent of the increase in the price wedge of intermediate input would double the increase in TFP. The result of the price wedge was very robust, although the authors applied it in different ways. Increased availability of input will also have positive effects on productivity. Chand & Sen, (2002) concluded that trade liberalisation in India did have a positive impact on TFP. There are very few firm-level studies on Cameroon on the effects of trade liberalisation on manufacturing performance, with most of the studies to date relying on multi-industry data rather than firm-level data, because it is lacking and, where available, unreliable.

The findings from the various studies are not conclusive and therefore the jury is still out. How trade liberalisation affects productivity is still an open question in the theoretical framework. Endogenous growth theory, following the work of Romer, (1986:1002-1035) and Lucas, (1988:3-42), identifies a number of factors that determine the productivity and growth rate of an economy. These include increasing returns to scale resulting from increased production and agglomeration, capital accumulation, innovations, openness to trade, research and development, and the formation and development of the right human capital.

It is argued by proponents of free trade that protection reduces productivity by insulating domestic firms from foreign competition, which at the same time inhibits access to imported inputs and technologies from more developed countries, as argued by Bhagwati & Srinivasan, (1983, 1988, 1999), Krueger, (1987:1-6) and Little *et al.* (1970:1-20). It is concluded by advocates that trade liberalisation by removing exports bias and allowing resources to be allocated on the basis of a country's comparative advantage, will increase export's output (Krueger, 1987: 1-6).

Rodrik, (1992:5-35) argues that there is no clear evidence to support Krueger's view that protection reduces productivity growth. He argues that free trade in the form of opening the country to imports negatively affects the growth productivity, because when imports get into the country, which are normally cheaper, the domestic firms lose the market share and this does not motivate them to invest in the development of technology. The implication is that liberalisation harms local industries and this is an indication that he supports protectionism, at least under certain conditions.

If the predictions of the advocates of free trade, as discussed above, are true, an increase in TFPG will make domestic industries productive leading to a reduction in imports, because domestic firms will produce and sell cheaply in the domestic market and export a surplus, where available. Therefore, trade liberalisation policy can only increase or decrease import depending on the productivity of the export sector, and whether it really improves productivity growth in developing countries requires serious empirical research, because the results are as inconclusive as the case of liberalisation in general.

3.4.2 Trade liberalisation and Price-Cost Margins (PCM)

The performance of the manufacturing sector can also be measured by looking at price-cost margin. Trade liberalisation is expected to reduce the profits. According to Tybout, (1996), some studies have concluded that increased exposure to import competition, as a result of trade liberalisation, causes profit margins in industries to fall. Some of the studies were on Chile, Columbia, Mexico, Morocco and Turkey. Hoekman, Kee & Olarreaga, (2001) found that import competition reduces profits.

There are three ways through which openness could have effects on firms' efficiency and therefore profitability: economies of scale, dynamic efficiency gains due to reallocation effects and access to foreign technology found in imported goods and services. Additionally, the contact with foreign firms in domestic or foreign markets could also improve firm efficiency by means of spill over effects.

The price-cost margin (PCM) is simply the difference between sales and expenditure on inputs used in the process of production, and in simple terms it is called profits.

Tybout, (2001) argues that collusive equilibrium rather than static profit maximisation, resulting from import liberalisation leads to lower profits. Collusion by firms may become difficult to maintain because after import liberalisation, firms in a collusive arrangement can no longer sanction their counterparts that do not follow the terms of the collusion agreement, because it becomes difficult to identify cases of non-compliance.

Import liberalisation, as predicted by advocates of free trade, is expected to increase competition. However, the effects on profits of domestic firms, at least in the short

run, must not necessarily be negative, because these firms may increase efficiency through the use of better technology acquired as a result of liberalisation, which should increase profitability by reducing cost as a result of increased production or efficiency in production, other things being equal. Increased import liberalisation can lead to mergers and acquisitions between foreign and domestic firms. It is especially true with the growing influence of multinational firms and increased outsourcing and off shoring.

However, trade liberalisation might lead to a fall in profit. Yalcin, (2000) empirically investigated the effects of liberalisation on profitability in the Turkish manufacturing industry and found that it leads to a decrease in profits in private sector firms in general, but the profits in highly concentrated private sector firms increased instead of decreasing. This may result from economies of scale resulting from clustering and agglomeration.

For India, Krishna & Mitra, (1998) found that, after trade liberalisation, profits declined in three out of four industries in a significant way. The profit parameter of the firms considered dropped to a value less than one, meaning that the firms incurred losses. Krishna & Mitra, (1998) conclude that the reason for this result is that the firm might have invested in fixed capital and in the process of adjusting to competition incurred losses.

On the other hand, and still for India, Srivastava, Gupta & Duta, (2001) found the opposite results after trade liberalisation and concluded that the choice of firms they deal with, which produce consumer goods with little foreign competition, explains the

results.

Beng & Yen, (1977:280-291) empirically examined the relationship between profits and performance of the manufacturing sector by looking at conventional dimensions of market structure, foreign trade and foreign direct investment in relation to 42 Malaysian firms. The results show that exports had a negative influence on PCM, and tariffs enabled producers to enjoy higher domestic profit. If the ERP increases by one per cent, profits would increase by 0.0004 per cent, and if there is an increase in the export output ratio of one per cent, profits will be reduced by 0.0049 per cent. The authors conclude that industries protected by high tariff barriers would have higher profits, and export-oriented industries would show competitive pricing behaviour.

Weiss, (1992:43-60) found that the PCM in the Mexican manufacturing sector at industry level was mostly explained by changes in labour productivity and NRP even though the relation between PCM and NRP was weak.

Furthermore, de Melo & Urata, (1986:445-459) empirically tested the impacts of trade liberalisation on profits and the concentration ratio in the Chilean manufacturing sector when the economy was considered highly protected in 1967. Liberalisation only took place in 1979. By considering the change in concentration ratio between 1967 and 1979, de Melo & Urata found an increase in the concentration ratio. de Melo & Urata, (1986) concluded that there was an increase in mergers among different companies in 1975, leading to such a result. The conclusion is that inefficient firms that survived because of protection were no longer able to compete with efficient firms after trade liberalisation and dropped out or were taken over if

owned by the government. At the same time, profitability dropped and the reasons given were: exposure to foreign competition and that domestic firms were faced with elastic demand caused by imports, which affected their revenue negatively. Again, the authors regressed PCM and the concentration ratio with different trade variables, such as import share, export share and other control variables, by using simultaneous equations on two different years and found that the trade variable had no impact on the concentration ratio. However, the study found that import share was positively related to PCM. The result strongly questions the import-discipline hypothesis that predicts that liberalisation increases the varieties of products available and therefore the elasticity of demand faced by domestic producers, since consumers have more to choose from. However, after comparing the results of 1967 and 1979, the authors concluded that there is some support for the import-discipline hypothesis (Levinhson, 1993:317; Harrison, 1994:53-71). Therefore, more imports will reduce profitability of the highly concentrated industries (Melo & Urata, 1986:445-459).

Tybout, (1996:53-57), using industry and plant level data, in the Chilean manufacturing sector from 1979 to 1985, regressed PCM with the Herfindahl index, import penetration rate, capital-output ratio, industry dummy, and time dummy, and found at the industry level that the industry dummy, to a high degree, determined the results of the regression. When the industry dummy was not controlled for, the import penetration ratio variable showed a significant negative association with the profits. However, when the industry dummy was included, the association of the import penetration ratio became positive and marginally significant with the PCM, and the capital-output ratio was not significantly related to the PCM. The Herfindahl index

and industrial concentration positively affected the PCM, regardless of whether the industry dummy was included or excluded.

The firm-level results, according to Tybout, (1996:53-57), indicate that, in contrast with the result of the industry level, most of the variation at the plant level was explained by the capital output ratio. Secondly, the industry dummy coefficients were significantly different from one another. Thirdly, the effect of the market share on profits was not strong, but significant, which means that increasing market share will improve the profits at a decreasing rate and that the import penetration ratio shows an insignificant relationship with the profits for all types of business organisations. This means that more competition from imports did not reduce the profits in the infant industries. However, the author concluded that despite no significant link between imports and profits, it does not mean that import liberalisation does not have any impact on the profits. On the contrary, it suggests that there is little market power. Chilean industries are therefore competitive enough to get rid of monopoly power.

Using the same methodology as Tybout, (1996:52-57), Roberts, (1996:2-32) studied the impact of trade liberalisation on PCM both at industry and plant levels in Colombia, by using panel plant-level data from 1977 to 1985, and the results differ from Tybout's results. When the industry dummy is included, the coefficient of import penetration ratio becomes significant and negative with PCM, which means that the competitiveness of the domestic industry would be increased as the rate of import penetration ratio increases. Moreover, the results showed that an increase in the share of imports reduced the cost margins in all industries, but the largest and only statistical significance occurred in highly-concentrated industries, and capital intensity

had no significant effect on the PCM when the industry dummy was taken into account, but the capital intensity had a significant relationship with the PCM once the industry dummy was not controlled (Roberts, 1996).

From the results of the plant-level analysis, Roberts, (1996: 2-32) found that the import penetration ratio was positively and insignificantly related to profits. However, the interaction term between import penetration and market share was significant and negative, which means that the margin of large plants will decrease at a greater rate when import penetration increases. Finding out whether there would be different effects from imports on different types of plants, the author divided the Colombian firms into three categories, namely individual proprietorships, small partnerships and large corporations (the last category included multinational corporations). The result from this division was that import penetration affected the firms differently. A rise in import penetration reduced the profits of large plants owned by partnerships and corporations, but neither effect was statistically significant. However, import penetration had no effect on the profits of proprietorships. The author also found that the negative effects of import penetration stated above were mostly on limited partnerships. The PCM of corporations was insensitive to import penetration. From this result, Roberts concluded that the import penetration does affect all plants unequally, and market share is an important determinant of PCM.

Using the same approach as the two authors above, Grether, (1996) studied the impact of trade liberalisations on PCM on 2 800 Mexican manufacturing plants from 1984 to 1990, and the result was similar to the result of Roberts', (1996:2-32) study, where the coefficients of import license and capital output ratio were positive and significant

when the industry dummy was included; the coefficient of import license was not significant, which suggests that differences in the levels of protection across sectors are more important than variations over time. The result of the estimate of average tariff rate was similar to import license, but the power to explain the cross-industry variation was reduced by half. Finally, the concentration index was positive, which confirmed the higher rate of profit in more concentrated industries over time.

The result of the Grether's study at the firm-level estimation opposed the industry estimation where the average tariff had a stronger effect on PCM than import quotas. Grether also divided those firms by market share into five categories. The results show that the impact of protection was stronger in the group with higher market shares. Moreover, the market share effects were significant and had a strong explanatory power at the plant level. A rise in market share increased the PCM of the individual plant at a decreasing rate.

Haddad *et al.*, (1996:51-74) applied the same methodology to Morocco and the results at the industry level show that import penetration had a negative relation with the PCM when the industry dummy was not included. These results support the hypothesis that less protection results in a more competitive industry. However, when the industry dummy was included, the results changed, as most coefficients were not significant. The results at the firm level were similar to the industry level. When the industry dummy was included, only coefficients of market share and capital output ratio remained significant. From these results, Haddad *et al* concluded that import penetration ratio has little effect on PCM. As a result, support for the import discipline hypothesis is weak.

The results of liberalisation on PCM are mixed. While Krishna & Mitra, (1998) did find the positive effect of trade liberalisation on profits, the study by Srivastava *et al.*, (2001), applying the same methodology, found the opposite results.

Jayanthakumaran, (1999:170-180) also found no support for the import-discipline hypothesis in the Australian manufacturing sector between 1989 and 1990 and 1996 and 1997. Jayanthakumaran further argued that there might be monopoly effects in the Australian case. Because the results are inclusive, it might be concluded that there are other factors that might be at play to influence the level of profitability.

In conclusion, it can be said that foreign competition increases productivity and technical efficiency (Balassa, 1988), though it is argued that domestic industries collapse if open to foreign competition too early in their infancy; however, if given time to develop competitiveness and close the productivity gap in protected markets, they are likely to respond by expanding innovation and productivity (Krueger, 1984).

3.4.3 Trade liberalisation and export growth

According to the neoclassical theory, trade protection is biased against exports and has negative effects on export performance because most of the imported raw materials needed for the production of export might not be available. It is expected, as stated in the theoretical literature in Chapter 2, that once protection is removed, producers will be able to gain greater access to imported input. As such, trade liberalisation is expected to bring about an increase in exports, since more can be produced and there is a larger market to export to; assuming that all countries trade honestly and equally remove their self-interested protectionism.

Trade liberalisation and export growth seem to be positively correlated, with exports assumed to be a source of growth depending on the production and demands of the goods produced and exported. Countries specialising in the production and export of primary products do not perform as well as countries specialising in the production and export of manufactured goods, because of the instability in commodity prices. This creates doubts as to the ability of developing countries to benefit from free trade (Thirlwall, 2000:18). However, as mentioned, a lack of trade will make the country poorer in many ways such as a loss of foreign exchange and an inability to acquire new knowledge.

The poor performance of the Import Substitution Industrialisation (ISI) strategy led to its abandonment and consequent adoption of an outward-oriented development strategy by many developing countries as part of the structural adjustment reforms in the 1980s. As part of the SAP liberalisation of the economy, especially trade liberalisation was seen as a very important policy change. Trade liberalisation is expected to reduce obstacles to export and make exports more competitive, by reducing tariff and non-tariff barriers and exchange rate distortions (Santos-Paulino & Thirlwall, 2004).

Despite the above assertions, the issue remains controversial and there is no consensus. The contention is whether trade liberalisation can actually improve export performance. Some empirical research finds an association between trade liberalisation and export performance that is positive, such as Michealy, Papageorgiou & Choksi, (1991); Thomas, Nash & Edwards, (1991); Weiss, (1992); Joshi and Little (1996); Dijkstra, (1997); Santos-Paulino, (2000); Ahmed, (2000) and Niemi, (2001).

On the other hand, other empirical research works find no positive association between trade liberalisation and export performance, such as Clarke and Kirkpatrick, (1991); Greenaway and Sapsford, (1994); Shafaedin, (1994); Agosin, (1991); Moon, (1997); Utkulu, Seymen & Ari, (2004); and Morrissey & Mold, (2006). The importance of complementary reforms, stage of development before trade liberalisation, sequence and degree of liberalisation, as well as methodological and measurement issues, among others, has been the source of the disputed results.

Weiss, (1992:43-60) examined the impact of trade reforms on the Mexican manufacturing sector both at firm level and industry level, by means of two-digit manufacturing branches, from 1985 to 1989, which is a period after Mexico adopted liberalisation. Two dependent variables were used, namely the change in export and change in export share of firms, at both firm and industry levels. Firm-level results were poor. Despite some weak points, the overall result at the firm level showed that lower internal demand was a key contributor to export growth. However, there was no clear effect of the lower trade barrier on export growth, as the coefficient of change in the nominal protection rate was not significant. At the industry level, the nominal rate protection contributed a bigger proportion to the growth of exports than internal demand did. This study was not conclusive due to different results between the firm and industry levels.

The classical liberal free trade, postulated by Smith, (1776), assumes that all countries provide sufficient reciprocal demand for each other's exports so that no country needs to face a demand constraint on the growth of its exports. Based on this vision, economists for many years have tried to deny the existence of a fallacy of composition in the export-led growth efforts of the East Asian countries and other

developing nations (Balassa, 1987:126). Fallacy of composition questions how all, or most, developing countries could become successful at the same time. The success of the Asian Tigers with their export-led growth, it could be argued, was because, at the time the Asian Tigers were succeeding, African and Latin American economies were failing, and therefore there was less competition for the Asian exports to industrialised countries. However, the reality in the global economy is very far from the sort of balanced expansion of international trade that is presented by the classical view. Again looking at the policies pursued by the Asian Tigers it might be argued that there was the presence of Mercantilist behaviour, aim and united the state and the economy, thus making them powerful and predatory in terms of other countries.

Amsden, (1999:2) argued that the industrial development of Asia was a consequence of the opening up of the export markets starting with Japan in the 1960s and 1970s, and Korea and the rest in the 1970s to the 1980s. Export markets have supported manufacturing growth in these countries. Blecker, (2005:527-537) argues that many countries are trying to grow by promoting exports of similar types of manufactured products to industrialised countries, and concludes that the fallacy of composition is obvious. However, it can be counterfactually argued that despite the fact that developed countries produce the same manufactured goods, rather than their trade volumes falling, they have actually increased. Industrialised countries trade more among them. The fear here is that trade among developing country can also increase. This is important or else countries might resort to the mercantilist arguments in order to protect their manufacturing sector, or return to the distortionary ISI policies.

Looking at Blecker's point, it can be argued that a weakness in this model of export-led growth is that the countries that are trying to expand their exports at a very rapid rate are not providing the demand for each other's exports, as is the case with developed countries that trade very much among themselves. By targeting the markets in the developed countries that might already be saturated, creates a situation that might be untenable and unsustainable. South-South trade is therefore important, but it depends on creating a market, however because most countries, especially in Sub-Saharan Africa produce the same goods and are mostly at the same level of development it might be difficult. The growth of Brazil might be as a result of lifting many people out of poverty and developing a middle class that constitutes domestic demand, which equally supports domestic manufacturing.

Thirlwall, (2000:24) argues that by producing and becoming competitive rather than stagnate, countries can actually increase exports by becoming highly productive, which might explain why developed countries have higher incomes. Therefore, more successful exporting nations can achieve this by taking market share from other developing countries and preventing them from exporting to markets in the developed countries which in any case might have been saturated, (Blecker, 2005:527-537). Blecker further argues that exports from many countries, which are more than the growth in demand, can lead to falling prices for manufactured products. What is Blecker trying to say? To the understanding of this research, given such a situation, more could be exported and at the same time less income earned from the exports because of a fall in their terms of trade (Blecker, 2005:527-537), making export prices lower. If this were true, there will be a serious problem for those countries that might want to manufacture purposely for exports, with no internal demand, or in the case of

developing countries, with no well-developed South-South trade. However, trade relations are not based on a zero sum basis, or some Mercantilist approach to trade.

Jenkins, (1996:693-716) tested the effects of trade liberalisation on exports in Bolivia by focusing on two major components of trade reforms, namely the elimination of quantitative restrictions on imports and the adoption of a low and uniform tariff structure. The export performance after liberalisation in 1985 indicates an increase until the early 1990s, when it started to decline. The results of the study reveal that real exchange rate was the key determinant of the growth in manufactured exports, with a significant inverse relationship. There was also a positive relationship between manufacturing growth, GDP growth and export growth, which means that economies of scale greatly contributed to the growth of exports. However, the coefficient of the imported raw material variable was not significant, and the average import duty variable was significant with an unexpected sign. These results suggest that trade liberalisation does not have any impact on export growth in the case of Bolivia.

Warr, (2000:131-147) investigated whether intervention by the Thai government contributed to the success of export growth, both in the agricultural and manufacturing sectors, from 1970 to 1995. To achieve this, Warr correlated the net export performance ratio and its change over time with five policy indicators and their change over time, respectively. The policy indicators were the effective rate of protection, the allocation of subsidised loans through the Industrial Finance Corporation of Thailand, the promotion of industries through the Board of Investment, the allocation of tax exemption by the Customs Department, and the allocation of tax by the Fiscal Policy Office of the Ministry of Finance. The result shows that both the net export performance ratio and its change over time are negatively related to all policy indicators and their changes over time. Moreover, he

also found that the support for the low performing firms is increasing. He concluded that export promotion policy by the government did not help exports at all.

Sharma *et al.*, (2000:123-135) empirically analysed the effects of trade liberalisation on export performance and import intensity for the Nepalese manufacturing sector. The variable used to represent export performance was export intensity and the variable used to measure trade intensity was import penetration ratio. The study period was from 1972/1973 to 1993/1994. After liberalisation, export intensity rose from 0.05 in the early 1980s to approximately 0.2 by 1993/1994. The results indicate that trade liberalisation did not have any effects on export intensity, as the coefficient of NRP was not significant. Furthermore, Sharma and others did not find any support for the view that export intensity is high in sectors that use the nation's endowed factor intensively.

Santos-Paulino, (2002:140-164) examined the effects of trade liberalisation on export growth for a sample of twenty-two developing economies from 1972 to 1998, using an export growth function, which predicts that export volume depends on real exchange rate and world income. Trade openness is measured by the ratio of export duties to total export, as indicator of the degree of anti-export bias and by a dummy variable of timing of the introduction of trade liberalisation measures. Ordinary least square estimation indicates that the export duty is significant with a negative sign and the dummy variable is also significant with a positive sign, and the conclusion is that exports grow faster in open economies.

However, Rodrik, (1992:2-25) argues that home firms' rates of technological growth are positively related to their export market, because firms that export increase their productivity, unlike firms that are competing with imports from other countries. This point might justify protection of local firms until they are able to competitively export. The challenge for Cameroon, therefore, is what to trade in and under what conditions, given that the development of the manufacturing sector is important for overall growth.

3.5 Trade liberalisation and the new growth theory

The new growth theory, or endogenous growth theory, links trade openness to innovation and growth. The implication is that predictions of the impact of trade liberalisation might differ from those predicted by the standard neoclassical theory from which it is derived. It is exactly because of the criticism of the classical growth theory that the new growth theory was developed.

The new growth theory incorporates two important points by viewing technological progress as a product of economic activity and endogenously determined, which is at odds with the neoclassical theory, where it is considered as exogenously determined. It states that knowledge and technology are characterised by increasing returns, which push the process of growth, unlike physical goods, which face decreasing returns and are exogenously determined in the neoclassical theory (Romer, 1992).

Knowledge is important in the growth process, according to the new growth theory; therefore, some endogenous growth models suggest that actions such as subsidies on education and R&D are important motivations for innovation, which can lead to

economic growth.

In understanding this theory further and better, it is important to present some simple neoclassical models, such as Solow's model. Solow's model is an exogenous model, because technology is assumed to be determined outside the economy. The economy is modelled on the basis of decreasing returns to factors in the classical model, and in doing so technology is excluded, making the results unreliable and unrealistic (Solow, 1957:312-320). However, Solow's model implies that growth is due to increases in capital and labour, and therefore assumes that what capital and labour cannot account for, is the residual from improvements in technology, because it is considered to be exogenous and therefore the firm or country can do nothing about it (Fagerberg, 1994). It is contrary to what the endogenous growth theory proposes. The endogenous growth theory contends that economic growth is a consequence of increased knowledge and technological development (Romer, 1993), because by increasing knowledge rather than labour or capital, economic growth is the result. According to Romer, (1992) there is no ambiguity about the fact that knowledge determines growth. The reason is that it can be accumulated without limit and shared among countries and is not subject to diminishing returns. Again, through trade, knowledge can be transferred cheaply to other countries.

Economists have known that growth effects are more important than static effects, but have avoided the analysis of dynamic growth effects because of the difficulties in understanding and measuring them; however, the development of endogenous growth and trade theory has removed the first objection; however, measuring growth effects of trade liberalisation is still challenging (Levine & Renelt, 1992; Frankel & Romer,

1996).

Abnormal profits are earned under monopolistic conditions, which encourage more investment with the anticipation of such gains, in the absence of which entrepreneurs or firms will be reluctant to invest in expensive research and carry out innovation (Romer, 1990; Grossman & Helpman, 1991, Aghion & Howitt, 1992). It should be pointed out that the new trade theory emphasises the fact that neoclassical theory is not completely able to explain reality. Neoclassical theory carries out analyses on the basis of very restrictive and unrealistic assumptions about consumer behaviour and producer behaviour, which are assumed to be rational in that they maximise utility and profits respectively, given the income and cost constraints. Therefore, adding knowledge, which is considered to be endogenous, weakens the assumptions upon which neoclassical models are based. However, it is more tenable to include it in order to make the analysis of growth more realistic and more useful for policy-making.

Trade economists explored a new (endogenous) growth theory within the context of new (imperfect competition) trade models, because the old growth and old trade models assumed perfect competition and constant returns to scale and had a limited range of trade-and-growth links that could be explored. Moreover, given the exogeneity assumption of neoclassical models, most of the initial studies focused on how growth affects trade, rather than how trade affects growth. Smith, (1984) and Findlay, (1984) showed that trade could boost medium-term growth in countries that exported capital-intensive goods.

By allowing for imperfect competition and increasing returns, the models of Grossman and Helpman, (1991), and Rivera-Batiz & Romer, (1994) extend the range of trade-and-growth links that can be considered. Nevertheless, since this literature worked with common forms of market structure and input-output relationships, it focused on a very limited range of trade and growth links.

Grossman & Helpman, (1991, Chapter 9) suggest an alternative classification of effects by listing four ways in which trade can affect growth: market size, redundancy, international knowledge spillovers and the allocation effect. The Grossman-Helpman, (1991) and Rivera-Batiz-Romer, (1991) trade and growth models rely on extremely unrealistic simplifying assumptions. While simplifying assumptions are inevitable in theoretical models, undesired effects of leaving out important economic mechanisms could be the result. One of the simplifying assumptions is the simplistic nature of the sector production technology and market structure. Grossman-Helpman-Rivera-Batiz-Romer models assumed that new units of knowledge capital were produced from labour alone, according to private constant returns and perfect competition. However, real-world innovation is a much more complex process and human and knowledge capital involves other factors, not only labour. In particular, it involves traded intermediate inputs. Without liberalisation, such goods will be affected by the equilibrium price of capital. Furthermore, imperfectly competitive firms undertake a lot of innovation and, given this, trade liberalisation may have a competitive effect that lowers equilibrium profits and thereby lowers the price of capital. This will lead to them not undertaking innovation. Neoclassical models assume that markets are competitive and lead to optimal levels of production and allocation of resources, implying that there is no place for

government apart from creating an enabling environment for competitive behaviour to strive. They assume that technology just occurred, therefore their emphasis on capital accumulation. The new growth theory challenges this by stating that capital suffers from diminishing returns, which inhibits the growth of economies (Romer, 1996). The neo classical theory by not including knowledge in the theoretical analysis, despite the role played by government in promoting education in the process of growth is surprising.

Grossman & Helpman, (1991:1180-1187) argue that trade liberalisation makes access to foreign technologies and exchange of information easy. Capital and intermediate inputs, better than what is available domestically, are available, thereby reducing the costs of producing it from scratch, starting with research and development, consequently increasing productivity. Reciprocal liberalisation of trade is generally good for growth. However, since growth models frequently involve non-Walrasian aspects, *laissez-faire* is usually not the optimal policy. This production externality implies that private agents invest little in research since they recoup their investment. It suggests that governments should support innovative activities via production subsidies and tax breaks along the lines of ISI policy. It shows how difficult it is to draw policy conclusions from non-Walrasian models. Neoclassical economic theory offers very limited sets of policy advice to governments; after all, it emphasises the small role of the government seeking to influence their economic future.

The adoption of import barriers helps few firms and stifles competition. The political power of the state allows state-owned firms to win protection and subsidies that support uneconomic activities, even when liberalisation has taken place and with the

theoretical underpinnings of the new trade theory in terms of knowledge development (Baldwin & Seghezza, 1996). It may destabilise technical progress, because it threatens their comfort by harming their rent-seeking behaviour. Existing firms have knowledge that gives them comparative advantage over other firms, and will therefore resist any policy that removes this advantage, such as trade liberalisation, which not only introduces competition, but also brings in new technology. However, by doing so, they retard the introduction of new technology and remain backwards. It is a criticism often made against ISI. For example, there are firms that are still using technology of the ISI years, despite the fact that new and more efficient technologies, which promote productivity, have been developed and adopted in other countries (Baldwin & Seghezza, 1996:2-10).

In promoting domestic industry, government protects old firms from external competition given the belief championed under the ISI policy that protection will promote productivity-enhancing technology, leading to technological progress and growth. This reasoning is weak, unless the new technology threatens existing firms. However, if they are threatened by new technology, it means they are backwards – using a typewriter in the era of computers. However, given their vantage point, they have no incentive to invest in new knowledge, which can increase productivity. With this situation, government might have to intervene, guaranteeing knowledge acquisition, which is important for growth (Baldwin & Seghezza, 1996:20). Knowledge includes everything we know, from producing sophisticated goods to making simple goods. Economists generally focus their analyses on the production and allocation of goods and services that are rivalrous and in its use can exclude others from using. The new growth theory posits that growth is a consequence of

knowledge accumulation, which can be shared and does not suffer diminishing returns.

However, as earlier discussed and argued by Rodrik, (1992:2-25), market share is important for growth in productivity in the firms that export benefit, and for those that compete with imports from other countries, it is not. This point justifies the protection of local firms to the extent that they achieve competitive levels. However, when and how the competitive level can be determined, especially if rent behaviour steps in and toddler firms decide not to grow, is a challenge. It can be seen from the above postulation of the new growth theory that trade liberalisation is important in increasing productivity.

The main point about the new growth theory is that policies that encourage openness, competition, innovation and change under special circumstances and with an understanding that technology and knowledge can be endogenously determined, are important. On the other hand, policies such as ISI, which inhibit competition and easy dissemination of knowledge and technology, are detrimental to growth. The new growth theory differs from the classical theory in that they consider technology and knowledge to be endogenous and therefore something can be done about it, while the classical theory considers them to be exogenous and therefore nothing can be done about it, and growth can only be a result of capital accumulation and labour productivity.

3.6 Trade liberalisation and the new trade theory

Economic and trade policy in developing countries has changed greatly in the past

decades, particularly in the case of trade strategies. Internal and external factors have made the need for trade liberalisation policy indispensable. The changing circumstances in world trade relations and the development of technology have altered the thinking on trade theory. Questions from different sources on the efficacy of neoclassical trade models in informing policy were asked and efforts were made to introduce economies of scale into the analysis (Sen, 2010:5). The impact of increasing returns to scale and benefits to all countries in international trade was introduced into the analysis.

The new trade theory differs from the neoclassical trade theories in that it introduces some other variables, namely economies of scale, imperfect markets, and product differentiation. This approach makes the neoclassical theories to be weak in their ability to explain trade relations. The implications of including the economies of scale in the analysis need to be investigated in relation to imperfect competition, which is influenced by the size of the firm (Sen, 2010:7). According to Deraniyagala & Fine, (2001:809-825), many of the models based on market imperfections and strategic behaviour to some extent might justify interventionist trade policy.

Theory of market imperfections in the new trade theory addresses realities of trade in the world by dealing with the weaknesses of the neoclassical trade theories (Ethier, 1982; Krugman, 1984, 1986; Brander & Spencer, 1985; Eaton & Grossman, 1986; Grossman & Horn, 1988; Grossman & Helpman, 1991).

As discussed in Chapter 2, the activities of multinational firms have greatly changed in the past years. For instance, the technology used in producing iPhones is developed

in the USA; components are produced in other parts of the world and the phones are assembled in China before being exported throughout the world. Outsourcing of tasks to developing countries reduces production cost to multinational firms. Outsourcing of this kind to a foreign firm rather than another domestic firm is often referred to as ‘offshoring’, according to UNCTAD, (2008:20-50).

Intra-industry trade with product differentiation dominates trade not only in the developed countries, but also increasingly in the developing countries. With such trading relations, firms behave strategically by taking actions to maximise their profits in a highly competitive world (Sen, 2010:5).

Intermediate products are quite important in this type trade, and Feenstra, (1998:31-50) describes this situation as the disintegration of the production process where different elements of the production process are completed in different countries. Grossman & Rossi-Hansberg, (2006:1978-1997) described this process of offshoring as trade in tasks in which the production process is described in terms of sets of tasks as opposed to the conventional combination of different inputs. Multinational firms locate production activities in developing countries to take advantage of cheap labour and poor regulatory frameworks.

Krugman, (1979:469; 1980:950) formulated a series of simple models that explained trade flows between similarly endowed countries, based on the Dixit-Stiglitz preferences. Dixit & Stiglitz, (1977:297-308) wrote the seminal article on demand for variety. Usually, utility is derived from consuming a particular product.

The new trade theory places emphasis on increasing returns to scale, especially in

manufacturing, derived from a continuous fall in average costs. If start-up costs are considered, average fixed cost decreases with scale, meaning that the profitability of a firm increases with the size of the market, since more is produced. The benefits from trade then do not rest on static allocative improvements, but on dynamic expansion, brought about by larger markets and greater specialisation. Larger markets and greater specialisation resulting from trade could explain the continuous expansion and profitability of multinational firms, which engage in competitive outsourcing and offshoring activities.

Multinational firms have been facilitating the disintegration of the production process, making offshoring and outsourcing important elements in the international economy. Offshoring (it must be remembered that this takes place on the basis of identified comparative advantage or latent comparative advantage) leads to low production cost in new locations and little opportunity cost at home in giving up certain advantages of proximity, according to Venables, (2006:935-945). However, those who oppose this argue that jobs are being taken out of developed economies to developing economies and suggest that governments should intervene to prevent the trend.

Government policy can influence outcomes through its policies on education leading to knowledge acquisition and investment in technological development, which provides a link between new trade and new growth theories (Fine, 1999). Models linking trade and endogenous growth have examined the various channels through which trade can influence growth, but provide few general conclusions.

According to Zhang, (1994:285-303), endogenous growth can be linked to

international trade through knowledge and technological developments, which are endogenously determined, but can be acquired through trade. Grossman & Helpman, (1991) show how international trade encourages the growth of an economy through acquisitions of technology in the international market.

Off shoring and/or outsourcing change the conventional assumptions and predictions of modern trade. As discussed above, multinational firm behaviour emphasises dispersion in production, accompanied by strategic behaviour in line with comparative advantage; but in doing so, secures and ensures that the global allocation of production activities takes place in areas of low cost. The implications of this are that any country can develop its own comparative advantage, making it dynamic, as opposed to the static comparative advantage in neoclassical trade theory. This was discussed in Chapter 2 under the theoretical framework. Therefore, the explanation to be made is why poor countries should specialise in the export of primary commodities, if economists generally suggest that growth is potentially high in modern activities such as manufactures. Further a determination on how to acquire comparative advantage as predicted in the new trade theory is important.

In addition, falling relative world prices diminish static gains from international specialisation in primary activities in developing countries and branded secondary and tertiary activities in the developed countries. Export prices of commodities (coffee in Cameroon) tend to decrease over longer periods relative to prices of manufactures (machinery from France). Competition for commodity supply is much higher than competition for manufactured goods. Higher profits for successful branding will therefore go to firms that have big names, and these firms are not in the developing

countries. It might explain why the big firms do well when they locate in developing countries to produce and sell all over the world, taking advantage of cheap labour in developing countries – offshoring or outsourcing.

Helpman & Krugman, (1989) investigated the complex possible outcomes of strategic trade policy. The standard conclusions of traditional theory are irrelevant. Krugman, (1990) discusses cases where trade policy has diverse and often positive effects.

There is a lot of diversity in trade theories and models; however, the new trade theory does away with the simplistic and restrictive assumptions of perfect competition on which neoclassical trade theory is based, which are not realistic. Despite this contribution, models of new trade theory tend to reconcile themselves and are explained and integrated with neoclassical trade models, meaning that they cannot be used in support of successful strategic trade policy intervention (Deraniyagala & Fine, 2001:815). The implication is that the new trade theory has not successfully discarded the view that free trade is beneficial. Most of the research that links trade and new growth theory favours trade liberalisation, especially on the basis of the benefits that can come from knowledge in new growth theory; however, there is a possibility that free trade may be disadvantageous to economic growth. The new trade theory does not favour government intervention on the grounds that rent-seeking behaviour can be the result (Deraniyagala & Fine, 2001:825).

However, Deraniyagala & Fine, (2001:809-825) argue and conclude that many of the arguments relating to the static and dynamic gains from trade liberalisation are not supported by empirical evidence and do not take into consideration other effects of

trade liberalisation.

3.7 Summary

The debate revolves around those who proposed that trade liberalisation is the way to go and the sceptics who argue that it has not proven in any way to achieve what is proposed in theory. As the above discussion suggests on the wide debate concerning the impact of trade liberalisation on the manufacturing sector, various writers have canvassed a vast diversity of issues and considerable attention has been paid to the analyses in relation to the most appropriate methodologies or analytical techniques to be employed. This is important because sometimes the method used might provide results that reflect the assumptions made and the real situation.

Rodriguez and Rodrik present an argument based on the weakness of data, methodology, and specification errors and cross-country analysis, which might not take into consideration country-specific characteristics. Based on this, they argue that the findings from many research works do not support free trade effects on growth.

On the other hand, Krueger, Bhagwati, the World Bank and others argue that free trade is the only way to ensure that resources are efficiently allocated on the basis of comparative advantage to ensure growth. They also contend that trade benefits all the participants.

The next chapter presents a discussion on Cameroon's economy, including economic performance before and after the liberalisation period, covering the effects of liberalisation on social indicators and major macro-economic variables. This is an

important prelude to the methodological and empirical analysis. This will highlight the peculiarities of Cameroon that all have an impact on policy change and as such the desired outcomes. In looking at this, the empirical analysis will either support or disagree with what the reality in the economy is.

Chapter 4

Cameroonian economy, trade reforms and trade policies

4.1 Introduction

This chapter studies the structure of the Cameroonian economy and trade policy reforms. This will provide a clear picture of where the manufacturing sector operates and under what conditions. This will help in partially answering the question of what impact trade liberalisation has had on the manufacturing sector and growth. The indicators will indicate how growth has taken place over the period before and after liberalisation.

The chapter is structured as follows: Section 4.2 investigates the economy in general; and Section 4.3 investigates the structure of the Cameroonian economy by considering the GDP growth and the various components of the GDP.

4.2 Cameroonian economy

Despite the implementation of the Poverty Reduction Strategy Paper (PRSP), Cameroon's economy has not witnessed any major structural change and continues to face many challenges that have been hampering growth. The economy is fragile with structural weaknesses related to low competitiveness of the productive sector, especially the manufacturing sector (GESp, 2010: 5). The non-competitiveness of the productive sector is acute in the rural areas that lack manufacturing and even in the urban areas there is a great deal of informal and *ad hoc* productive activities that are not regulated.

Cameroon's economy performed very well from 1961 to 1985, with agriculture supporting the economy. The government, at independence, deliberately took measures to encourage agricultural production through the provision of subsidies, research and measures to stabilise prices, especially for cash crops meant for the export market. The discovery of petroleum further increased the output in the economy, though revenue from it has been a guarded secret. Again, the policy of Import Substitution Industrialisation ensured that manufacturing output increased because of the production of the local industries. For these periods, Cameroon's economy was regarded as well managed and the country had one of the highest *per capita* incomes in Sub-Saharan Africa. Cameroon had such a steady economic growth rate that she was unaffected by the external shocks of the 1970s and early 1980s (Amin, 2002:2). During the period when agriculture was the dominant economic activity, it accounted for almost 34 per cent of GDP, employing 80 per cent of the labour force, especially in the rural areas and plantations and providing 85 per cent of exports. The share of manufacturing was 17 per cent of GDP (MINFI, 2005:5-100). However, after the mid 1970s, the share of petroleum output increased to 18 per cent of GDP. The economic growth rate was as high as 12 per cent per annum for the period 1977 to 1978, and the period from 1980 to 1981; and despite the high population growth rate of 3.1 per cent, the *per capita* income continued to grow. Public investment increased in this period, but tended to be unproductive (since the emphasis was on grandiose, prestigious and unproductive projects).

The manufacturing sector is ill organised and not fully integrated with other sectors of the economy. The performance of the manufacturing sector has been poor, contributing less than 7 per cent of GDP (MINFI, 2008). The agricultural sector,

which employs the majority of the people, lacks technological innovation and is subsistence in nature and therefore less productive and informal in nature and the real extent of its contribution to GDP cannot be determined. The food production sector grew, while the export crop production sector declined. The service sector has been growing, but it is sadly dominated by purely commercial activities that have no significant impact on value added. This, as argued in GESP, (2010:5-100), led to an unbalanced and archaic pattern of sector contribution to GDP, a highly-exposed economic fabric, open to fluctuating global prices of exported primary products, and a small domestic market without any major opening to the sub-region and the global market. These are signs of a weak economy that is not competitive at all.

After more than two decades of rapid economic growth, Cameroon's economy collapsed in the mid 1980s, partly because of the sharp fall in world prices for its main export commodities and poor domestic economic management. The decline in the GDP growth was sudden and severe, from 8 per cent to less than -5 per cent per year for the period. Because the period of economic expansion was much longer than the period of economic contraction, and given the stylised facts, the magnitude of the economic decline was unexpected and devastating (Amin, 2002:5-35). Cameroon's economy collapsed and the country became highly indebted and had to accept the World Bank imposed Structural Adjustment Program.

Given the poor performance of the economy, there must be a reason for such a situation. The establishment of public agencies, such as the marketing boards and parastatal firms as part of the ambitious import substitution industrialisation policy, was meant to put Cameroon on the path of sustainable development. Railways,

airways, subsidised urban transport and shipping transport were set up as part of government developmental efforts (Amin, 2002:5-35). Various ISI supportive measures, especially to import substituting production firms, ranging from subsidies to direct quantitative protection, were put in place. Specific banks were set up to support sectors ascertained by government officials to be strategic.

The World Bank, (1990:5-50) argues and prescribes especially for developing countries that in order to achieve sustained economic growth, productivity must be achieved. It further states that the private sector is weak and does not have any specific support from the government in terms of policies, especially after the removal of the previous ISI policies as a result of the SAP.

Cameroon has no independent monetary policy because of its membership of the Bank of Central African States (BEAC). Monetary policy takes its queue from the European bank, a consequence of the parity of the CFA Francs and the Euro, in line with legal agreements with the former colonial master, France. Public finances have increased as a result of the rise in oil prices, with fiscal revenue increasing from 17.7 per cent of GDP in 2001 to 19.2 per cent in 2006, in addition to the cancellation of the debts in line with Cameroon benefiting from the HIPC initiative. Cameroon depends very much on the export of commodities with very unstable prices in the world market, which affects government revenue, in addition to custom fraud and other bureaucratic inefficiencies and an informal sector and a largely poor population that does not pay taxes (MINFI, 2005:5-100).

Cameroon reached the completion point of the Heavily Indebted Poor Countries Initiative (HIPC) in April 2006, after having missed the 2004 deadline and the continuous issues related to fraud and corruption. This allowed the country to reduce the net present value of its debt by 27 per cent. Other creditors are also expected to write off slightly over CFAF 100 billion (MINFI/DGSN, 2008:15-45). According to the forecast for 2009, by the Economist Intelligence Unit (EIU, 2009:2-30), the stock of the external debt should reach 32.4 per cent of the GDP and external debt servicing should fall from 6.7 per cent of total exports (of goods and services) in 2005 to 0.1 per cent in 2009. Despite its legislative efforts, Cameroon still finds it difficult to attract foreign direct investment (FDI). In 2005, investment inflows were estimated at US\$18 million, which is only 0.4 per cent of FDI in Central Africa (EIU, 2009:15).

4.3 The structure of the Cameroonian economy

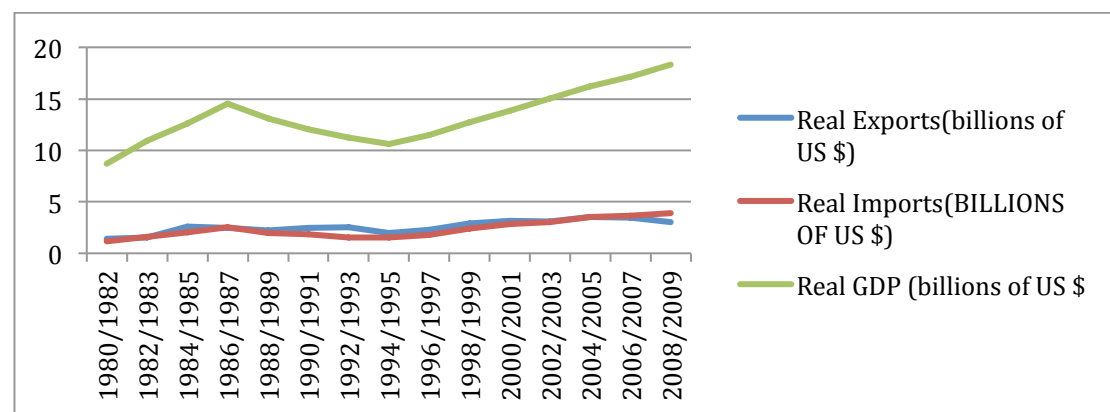
By looking at the structure of the Cameroonian economic, it is expected that the holistic picture of the economy, where the manufacturing sector under study operates, should emerge. The aim is to understand the situation faced by the manufacturing sector as part of answering the research question.

4.3.1 Gross domestic product growth

The growth of the GDP has been relatively stable over the past four decades. The average growth rate in Cameroon from 1960 to 1980 was around 7.3 per cent (Amin, 1994:1). The expansion of the economy in this period was stimulated by the increase in the world demand for agricultural products, such as coffee, cocoa, rubber, palm oil and kernels. The discovery of oil also dramatically added to the growth in the late 1970s. The growth rate in this period was similar to that of Nigeria (3.6 per cent) and

Gabon (5.9 per cent). However, the unwillingness of the government to open up the economy had negative effects. Under the combined burden of high oil prices, the debt crisis, high interest rates and a decline in raw material prices in the early 1980s, the economy almost collapsed. Many big businesses failed, and especially the government parastatal companies, created in the years of boom and supported by high protective tariffs under the import substitution policy, became a big burden and a huge drain on the economy (Njenkeu & Bamou, 2009:2). Again, there was a fall in the prices of commodities, which contributed greatly to GDP. As part of the agreement for short-term financing from the World Bank and the IMF, government spending was drastically reduced, workers in both government businesses and civil servants were laid off, and this drastically affected the GDP.

Figure 4.1: GDP growth in relation to exports and imports



Source: World Bank (World Development Indicators for various years) (1980-2009)
and Data from DGSN (1980-2009)

From Figure 4.1 it can be observed that trade did not contribute much to the growth in GDP. After many reforms, including the introduction of the Structural Adjustment Program (SAP), trade liberalisation and the devaluation of the currency, the economy started growing again, and the growth rate of the GDP averaged 4.5 per cent between

1980 and 1990, then fell to 1.7 per cent between 1990 to 2000, before increasing to an average of 3.32 per cent between 2000 to 2007 (MINFI, 2006:5-100). The main driver of the growth in 1980 was high demand for agricultural products accompanied by high prices. The growth was also led by moving away from production for the domestic market to production for the export market. This poor performance of the economy was not only made possible by major macro-economic reforms, but also by the following factors:

- The depreciation of the US dollar in 1985 made the exports from Cameroon less competitive because the CFA Francs were pegged to the French Francs and so were overvalued, making products non-competitive.
- There was no foreign direct investment (FDI), because of the inherent problems of doing business and corruption in Cameroon.
- Rapid contraction of agricultural output and exports, such as coffee, cocoa and rubber, because the volatility in commodity prices reduced the growth in GDP.

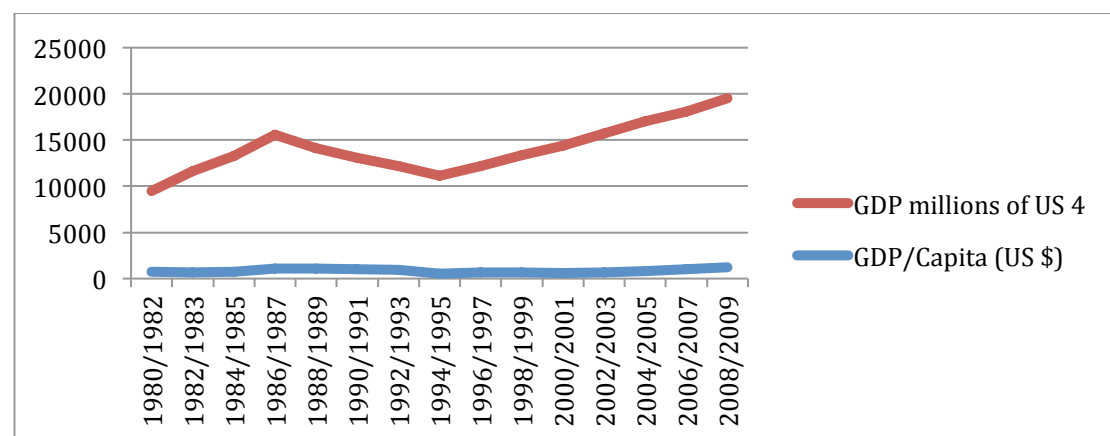
The strong growth seemed to slow down by the early 1990s where the economy reached a point where some difficult adjustments had to be made in such areas as the financial sector, the urban labour market, infrastructure and the legal system (Amin, 1993:1-25). The growth rate of GDP in the first half of the 1990s slowed down to around 1.7 per cent on average. There was a contraction of minus 1.92 per cent in 1988, and minus 2.25 per cent in 1994 of the GDP. The downturn in the economy in 1994 was due to a significant reduction in domestic demand, especially private consumption and investment, a fall in real income, higher unemployment rates and excess capacity, a decrease in wealth accompanied by debt overhang, a pervasive sense of uncertainty and risk, and a credit crunch as a result of the collapse of many

financial institutions and Ponzi schemes (BEAC, 2000: 5-56). The informal sector, which is very large in Cameroon, could not perform well since it depends on the incomes of the formal sector. The private sector is very weak in Cameroon and depends mostly on trading; that is buying from foreign countries such as Nigeria and China and selling. This does not create real jobs.

4.3.2 Real *per capita* income growth

The real *per capita* income measures the average income of the population and, as seen from Figure 4.2, has been fluctuating, especially in the downward direction and this corresponds with the economic fluctuations. Again, the growth in per capita GDP is not aligned to the overall growth in GDP and the implications are that the domestic demand is very weak.

Figure 4.2: Growth in real *per capita* GDP from 1980 to 2008



Source: World Bank (World Development Indicators for various years) (1980-2009)

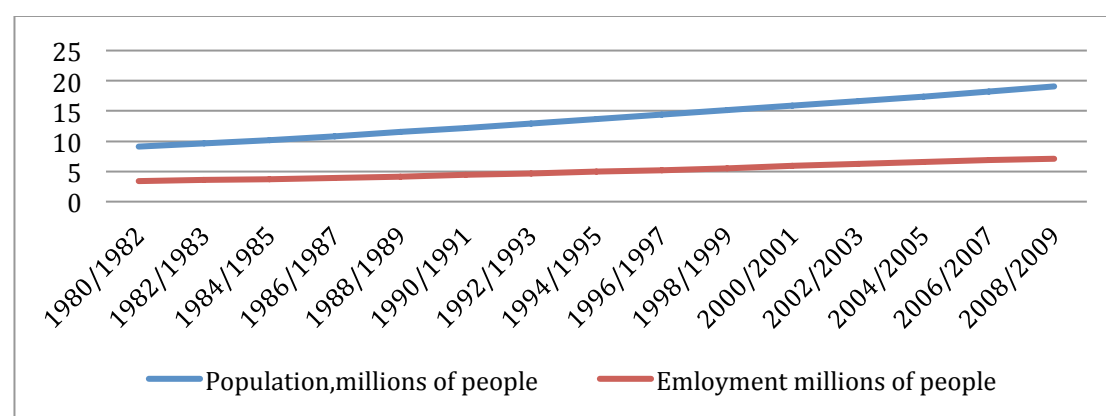
Looking at Figure 4.2, *per capita* income in Cameroon has fluctuated over the years. GDP *per capita* stood at US\$800 in 1980 and by 1994 it had fallen to US\$500 (World Bank, 2005:15). This indicates the bad shape of the economy; the high growth rates of the 1970s were gone. From 1987 to 1994 it was basically falling, and by the time the

currency was devalued in 1994, the GDP *per capita* had reached its lowest level. The period corresponds with the era of high poverty levels and huge foreign debts in terms of total debt and debt servicing. It started to increase slightly at an average of ten per cent per year from 1995 to 2007, and by 2008 it had reached US\$1250 (World Bank, 2009:10-60). However, this *per capita* income is unevenly distributed, given the great disparities and inequality in the economy and general lack of jobs.

4.3.3 Population growth and employment

The unemployment rate in Cameroon is high, at over 50 per cent of the population, as can be seen from Figure 4.3.

Figure 4.3: Population growth and employment



Source: World Bank (World Development Indicators for various years) (1980-2009) and DGSN (1980-2009)

The population increased from approximately 9.08 million people in 1980 to around 19 million people in 2008, while in the same period the labour force increased from around 3.4 million workers to around 7.11 million workers (World Bank, World Development Indicators, 2009:30). The labour market has not been able to absorb most of the labour supply and most people are engaged in informal activities not

recorded in any way as part of GDP, though they contribute to economic growth (Bamou, 2000:5-30). The agricultural sector remains a major source of employment. While Cameroon has abundant unskilled labour, it faces a shortage of skilled labour, particularly in the field of science and technology. In the past decade, more than 50 per cent of Cameroon's workforce had reached only primary or less than primary school level (Ajaga, 2001:15).

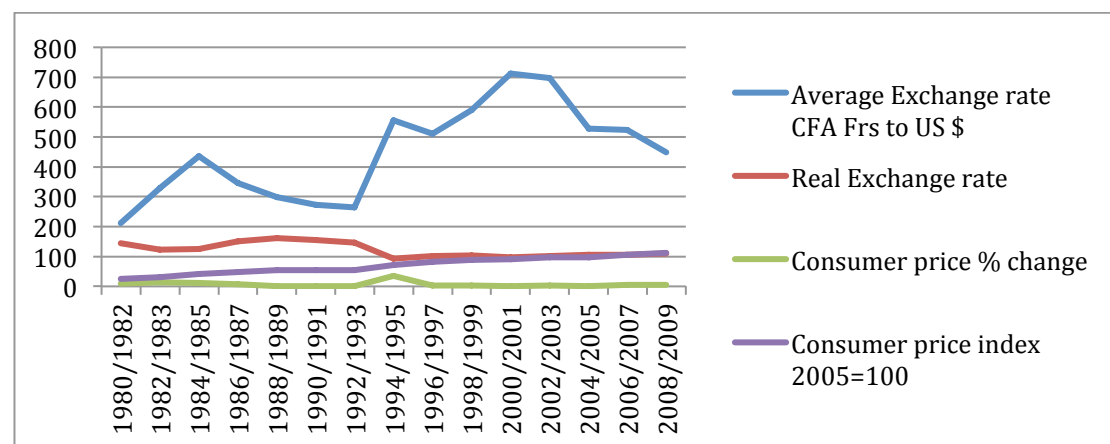
According to Amin, (1994:1-10), the development of human resources over the years has fallen at the same time as the infrastructural development. Moreover, the quality of higher education, such as vocational training and university courses, is not sufficient, because the people are trained in general subjects rather than specialist training, especially in sciences demanded by the business community and necessary for industrial development and therefore economic growth. The quality of education in Cameroon has also been falling because many qualified people have moved out of the country in search for better jobs in other countries.

4.3.4 Inflation

Inflation in Cameroon has been stable since independence (MINFI, 2006:8) and this can be explained by the fact that Cameroon belongs to the CFAF monetary arrangement with a fixed parity exchange rate with the Euro. An explanation for the basic or slight success of the Cameroonian economy is its ability to have kept the inflation rate at a low level for most of the time. Amin, (2004:20-45) notes that the low rate of inflation was due to the conservative management of the monetary policy by the Bank of Central African States, known by its French acronym BEAC. As a member of the BEAC, the currency CFA Franc is pegged to the Euro. This is part of

the arrangement with the former colonial master, France. Whenever the inflation rate rises to more than six per cent, the Bank will pursue a tight monetary policy until the rate falls below six per cent.

Figure 4.4: Relationship between the exchange rate and inflation (1980 to 2008)



Source: World Bank (World Development Indicators for various years) (1980-2009) and DGSN (1980-2009)

The average rate of inflation in the 1960s was only 1.8 per cent and then increased to 4.5 per cent in the 1970s due to higher oil and commodity prices in the early 1970s. The inflation rate was higher in 1980 and 1981, 8.5 per cent and 9.7 per cent, respectively, due to the second oil shock (MINFI, 2005: 5-50). However, it went down significantly after the early 1980s. The average rate of inflation from 1982 to 1997 was around 4.2 per cent, as can be seen from Figure 4.4.

4.3.5 Balance of payments and GDP

Trade has played a limited role in Cameroon's economic development. This can be observed from the slight changes in its contribution to GDP. In 1960, the share of

export and import in GDP was around 14 per cent, and then increased to around 27 percent in 1980, fell to 20 percent for exports and 17 per cent for imports in 1990, and then increased slightly to 21 per cent for both imports and exports in 2008 (MINTI, 2006:4-60; WTO, 2008).

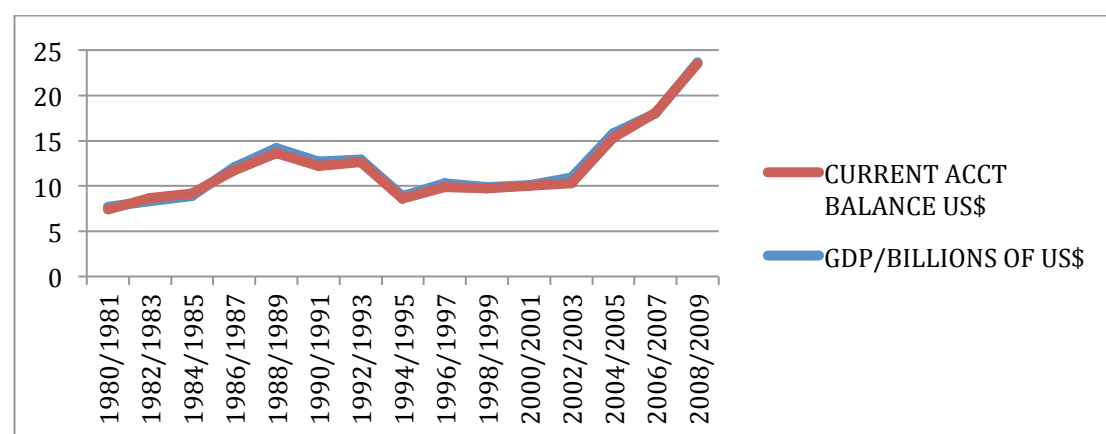
The export sector in Cameroon has not performed well. It has not expanded with its value, falling from 27 per cent of GDP in 1980 to 21 per cent of GDP in 2008. Cameroon's exports as a percentage of total world exports fell from just 0.033 per cent in 1980 to 0.022 per cent in 2008 (WTO, 2009:10-100).

Exports contracted again to 16 per cent in 1998 due to the slowdown in demand from major trading partners such as the European Union and the United States of America (BEAC, 2001:5-30). By 2002, exports grew strongly again by 23 per cent in 2007 as the external demand recovered, but fell again in 2009 because of the world financial crisis.

Although exports had grown at various points, Cameroon was still faced with a trade deficit due to the substantial increase in imports. Running parallel to export growth, the growth of imports slackened in the early 1990s. However, the value of imports decreased after the crisis from 27 per cent of GDP in 1997 to 23 per cent in 2008. Imports started to increase again in 1999 due to the increase in the demand for raw material used in export production and higher domestic demand after the slight economic recovery and the benefits from debt relief (BEAC, 2008:5-30). The major imports in 2002 were consumer goods, mostly from China, capital goods from the

European Union, including raw materials and semi-finished goods (BEAC, 2008:5-30).

Figure 4.5: Relationship between balance of payments and GDP



Source: World Bank (World Development Indicators for various years (1980- 2009))

The devaluations of the CFA Francs in 1994 and major economic reforms that took place from the late 1980s did not help to improve the current account balance at all. The figures show that the current account balance was negative and rather low in the early 1990s. However, it increased after 2000 and reached the highest level of -509 million US dollars in 2008, which was equal to 2.1 per cent of GDP (BEAC, 2008:5-30).

The balance of payments of Cameroon has been negative from 1980 to 2008, except in 1995 where it stood at 0.9 per cent of GDP and in 2006 where it stood at 1.08 per cent of GDP (MINFI, 2009:5-60). The value of the balance of payments was low in the first half of the 1990s, but then started to increase from just 0.3 per cent of GDP in 1991 to 4.5 per cent in 2000 and 4.3 per cent in 2005. This trend of a positive and higher balance of payments is associated with huge inflows of funds, such as direct investment, portfolio investment, long-term and short-term capital and above all the

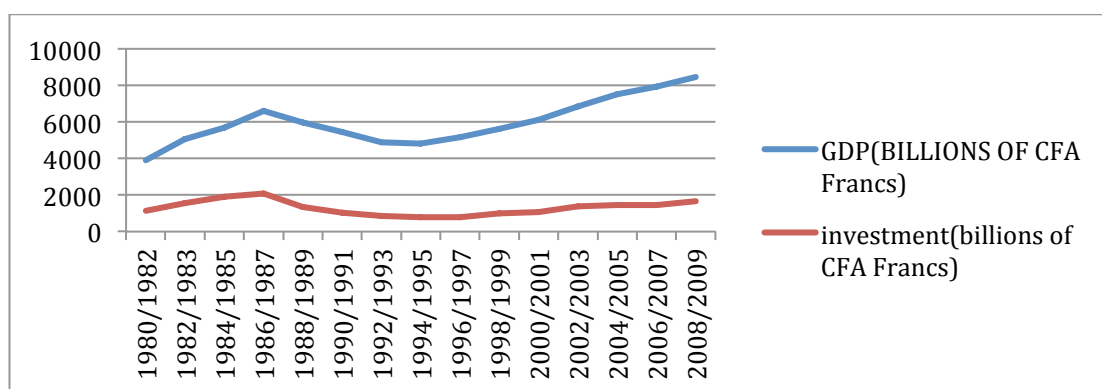
cancellation of Cameroon's debt after she qualified for debt relief under the Highly Indebted Poor Country Initiative launched by the World Bank and the IMF in 1996 (BEAC, 2008:2-50).

4.3.6 Domestic investment and external debt

Even with the little growth of the economy, Cameroon still faced an imbalance between domestic investments and savings, which existed from the early 1980s to the period before the crisis. The rapid economic growth in the 1960s and the 1970s did help to increase the income of the people and it did contribute significantly to the increase in the gross savings of Cameroonian residents. However, savings fell from 20.84 per cent of GDP in 1980 to 12.57 per cent in 1994, before slightly increasing to 17 per cent in 2008 (BEAC, 2006:5-30). Therefore, gross national savings are not enough for domestic investment. To cover the shortage, Cameroon had to borrow from abroad and as discussed earlier there has been a low inflow of capital, both short and long term, to cover the investment.

The gross domestic investment growth seems to have been stable, as its share of GDP remained around 64 per cent from the early to the late 1980s. However, the share fell sharply from around 64 per cent in 1980 to around 17 per cent in 2008 (BEAC, 2006:5-30).

Figure 4.6: GDP growth and investment: 1980 to 2008



Source: World Bank (World Development Indicators for various years) (1980-2009)
and DGSN 1980-2009)

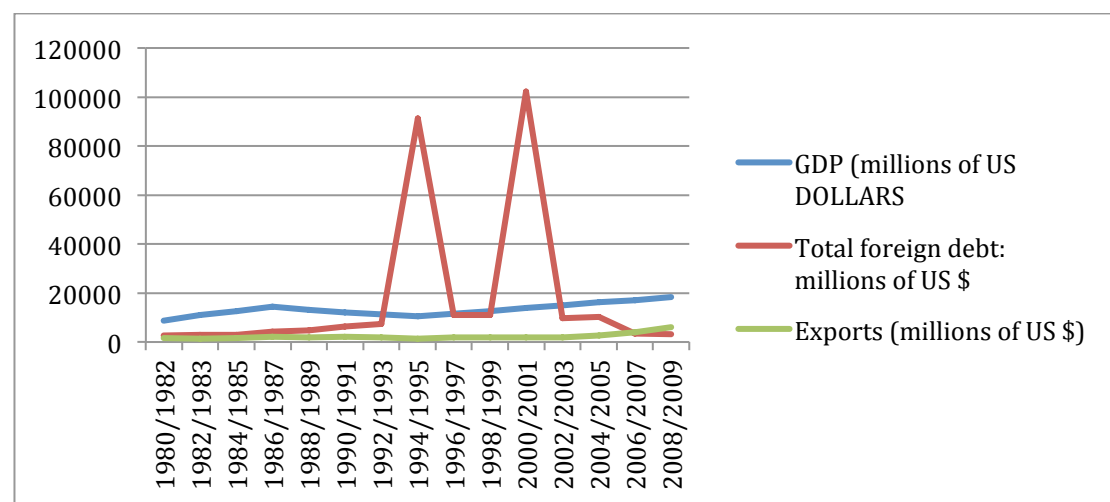
The fiscal account balance showed a budget deficit from the 1980s to 2008. The government had to reduce the deficit, but it was unsuccessful due to difficulties in raising and collecting tax and due to the effects of the world economic slowdown. Tax fraud is very rampant in Cameroon and the institutions are poorly developed. However, the government was successful in raising a budget surplus in 2008 as a result of the cancellation of debts and benefits from the HIPC debt relief initiative coupled with macro-economic reforms in the late 1980s and 1990s (MINFI, 2009: 5).

The low spending on capital expenditure in the late 1980s and the economic growth in the late 1970s and early 1980s had also stretched the capacity of infrastructure, such as seaports, highways, water supply, electricity and telecommunications, to its limits. Due to these constraints, capital expenditure was increased in the late 1990s and early 2000s, especially after Cameroon started benefiting from HIPC initiatives. According to MINFI, (2009:2-50), this spending mostly went to energy, transportation and communication for the sake of the urbanisation process.

4.3.7 Relationships between external debt, GDP and exports: 1980 to 2008

Cameroon has been classified as a highly indebted poor country as a consequence of continuous accumulation of debts through borrowing in the 1970s to finance the prestigious yet economically unproductive projects. In addition, the implementation of the Import Substitution Industrialisation policy ended up subsidising corrupt, inefficient and uncompetitive state corporations.

Figure 4.7: Relationships between external debt and GDP (1980-2008)



Source: World Bank (World Development Indicators for various years (1980-2009) and DGSN 1980-2009)

The total external debt stood at approximately 35.48 per cent of GDP on average from the early 1980s, and by 1990 it had increased to 51 per cent of GDP, as shown in Figure 4.7. However, the debt increased again to over 60 per cent by 1992 and by 1994 it doubled to 126 per cent of GDP (MINFI, 2009). The debt stayed above 100 per cent for most of the year, prompting the authorities to apply for the Highly Indebted Poor Country Initiatives, and once Cameroon qualified and started benefiting from the initiative, the debt fell to just nine per cent of GDP in 2006

(World Bank, 2009:10-50). The reasons for the sharp increase in debt was the strong rise in both short-term and long-term debts and the inability to service the debt, which led to the compounding of the interest, since a lot of the money was borrowed from private sources in Europe at very high interest rates.

One point that should be noted is that the structure of the external debt in the 1990s was not the same as the structure of debt in the 1980s. The debt in the 1990s mostly came from external multilateral sector debt, whereas the debt in the first half of the 1980s mostly came from the external sector debt (IMF, 2006:2-30).

4.4 Trade reform in Cameroon

Trade opening, generally estimated as a ratio of total imports and exports on GDP, is integrated into the decision menu of trade policy in Cameroon. The Cameroonian government has taken important measures to liberalise the trade policy regime, to promote the development of the private sector as an engine of economic growth, to strengthen the competitiveness of the country, and to boost investment (WTO, 2001:35). Trade policy is viewed as including all measures whose impact can change the incentives for producing or consuming either tradable goods versus non-tradable or some tradable goods relative to others.

From 1960, the time of independence, to the early 1990s, Cameroon's trade policy was shaped by the Import Substitution Industrialisation (ISI) strategy. Cameroon's trade strategy was characterised by a highly complex tariff regime and an extensive use of Non-Tariff Barriers (NTBs). Concerning the tariff barriers, all imported goods were subject to the Common External Tariff (CET) in the CEMAC zone, plus the

Cameroonian surcharges such as the unloading fee, the municipal tax, and the tax for the contribution to shipper national council, the tax for inspection on meat, the veterinary tax, and the special tax on fuel (MIN COMMERCE, 2008: 235).

The government of Cameroon started pursuing trade measures within the framework of a structural adjustment programme (SAP) from 1988. There is no general understanding of what is meant by trade policy reform. According to Papageorgiou *et al.*, (1991:2-10), trade liberalisation can be considered as any action that will lead to a neutral trade regime or trade without government intervention. It is because neo classical economists consider government intervention distortionary. According to them, an episode of liberalisation commences at a point at which a significant policy change towards liberalisation was implemented. It ends with a reversal or when no further policy trend in either direction is apparent. Trade liberalisation measures have a number of common features. These measures generally involve neutralising incentives for exports and imports at low tariff levels through the removal of import quotas and other Quantitative Restrictions (QRs) or their conversion into tariffs; the removal or reduction of export taxes; the subsequent reduction of the level and dispersion of import tariff rates; and the compensatory devaluation of the local currency. In the case of Cameroon, it was imposed within the context of the Structural Adjustment Programs (SAP) imposed by the World Bank and the IMF.

Export taxes and levies were, as part of the SAP, either significantly reduced or totally eliminated in most of the SSA. Cameroon removed all export taxes, especially on commodities such as cocoa, rubber, coffee and manufactured goods, especially agricultural goods. The remaining export prohibitions that still exist in some cases

apply only to sensitive goods, because of the need to ensure quality and because of health and environmental reasons. The establishment in Cameroon of an Export Processing Zone (EPZ) in Douala is seen as part of the liberalisation process aimed at making exports cheaper given the special status under which firms operating them benefit. However, the EPZ in Douala has not taken off, especially because of bureaucratic reasons. Cameroon's trade protection policies are linked to those of the CEMAC regional body.

However, at the domestic level, there were four individual taxes on imports: the custom duty, import turnover tax, fiscal entry duty, and the complementary tax. The custom duty was levied on the cost insurance freight (c.i.f.) value of the imported goods, and was subject to a wide variation (5 to 30 percent) both across and within sectors and regardless of origin. The import turnover tax was levied at 10 per cent of the c.i.f. value, inclusive of custom duty, fiscal entry duty, and the complementary tax (MINIMIDT, 2006:5-25). It could be zero for some imported goods considered as necessities, but sometimes reached 72 per cent of (cif) value for some luxury imports. The fiscal entry duty was a tariff levied on the c.i.f. value of imports, whatever the country of origin at a rate between 5 and 90 per cent. The complementary tax was levied on the *ad valorem* basis at a rate between 0 and 100 per cent. Within the CEMAC region, there were two main taxes, i.e. the internal production tax and the unique tax (CEMAC, 2005:2-25). Enterprises registered with the unique tax system were exempted from all taxes and duties within the CEMAC zone. These enterprises paid only a tax called unique tax. However, access to the unique tax regime was very difficult, leading to the creation of a domestically administered variant, i.e. the internal production tax regime (CEMAC, 2005:2-25). In the category of Non-Tariff

Barriers (NTBs), an annual ‘General Trade Program’ classified goods by tariff lines into four categories as follows: ‘sensitive’ goods, which were imported under very restrictive conditions; ‘twinned’ goods, which necessitated a prior authorisation to import a quantity in proportion to the local purchase; ‘government-controlled’ goods, which required a prior authorisation to be imported; and the ‘freely imported’ goods (MINIMIDT, 2005:5-25). Other protective measures were price controls, which were based on protected costs of production plus a margin for profit and marketing. Official reference prices were national prices used by the government as a basis for imposing tariffs. They were usually used as a means of combating under-invoicing of imports (BEAC, 2006:1-35).

4.4.1 Trade reform episodes

It is important to look at the specific episodes of trade policy reforms in Cameroon in order to link or de-link it from the performance of the manufacturing sector in the specific periods.

4.4.1.1 Phase one: 1989/1990

In 1989/1990, approximately 105 commodities did not require import licenses. In 1990/1991, trade liberalisation moved ahead, and 22 products were classified in the free import category. This number increased continuously with time and in the period 1992/93, all QRs have been removed (CEMAC, 2004:2-20). ‘Sensitive’ imports were steadily transferred to ‘government-controlled’ goods. Import licenses for ‘government controlled’ goods had become virtually automatic and therefore less restrictive. The price controls were first progressively removed from most goods and

then abolished. The system of reference prices was also subsequently abolished (CEMAC, 2004:2-20).

Considering the relative relaxation of Quantitative Restrictions (QRs) on imports and exports, in 1989/90, for example, approximately 105 commodities did not require import licences and so were removed from QRs. In 1990/91, 22 products were classified in the free import category (CEMAC, 2004:2-20). For exports, exit duties on all commodities, except coffee, cocoa and cotton, were removed. Basically, there was a simplification of the process of obtaining import as well as export licences and authorisations and the elimination of the twinning system. On the other hand, the labour market had been deregulated in order to allow firms more flexibility in responding to the changing competitive environment. Despite these measures, the Cameroonian economy cannot be said to be an open economy, and these liberalisation episodes can be characterised as mostly institutional.

4.4.1.2 Phase two: 1992/1993

Further liberalisation took place in 1992/93, within a regional framework of the Regional Fiscal Reform. As stated above, prior to the trade reform period, there were four individual taxes on imports: the custom duty (CD), the imports turnover tax (IMTOT), the entry fiscal duty (EFD) and the complementary tax (CT). At the regional level, and on the export side, there were two main taxes: the production internal tax (PIT) and the unique tax (UT). The fiscal regime permitted partial or total fiscal and custom exemptions, which were compensated for by the collection of a specific tax called the production internal tax. The enterprises registered to the system of unique tax were exempted from all export taxes and duties in the UDEAC, now

CEMAC member states. These enterprises paid only a tax called unique tax (BEAC, 2005:2-5).

The impetus for trade liberalisation gained momentum in 1993/94 within the regional framework (CEMAC, 2004:2-20), called the 'Regional Fiscal Reform Program' in the CEMAC zone. The tariff regime was rationalised. The custom duty and the fiscal entry duty were replaced by a custom duty applicable to all imports and according to the category of goods: first necessity goods five per cent, capital goods ten per cent, intermediate goods 20 per cent, and current consumption goods 30 per cent of the c.i.f. value, respectively. The import turnover tax and the complementary tax were replaced by a turnover tax applicable to all imports as well as to all domestic production at three different rates: a zero rate for exempted goods, a reduced rate of 5 per cent, and a normal rate of 12.5 per cent, respectively (CEMAC, 2005:2-10). The internal production tax was abolished, while a 'Generalised Preferential Tariff' replaced the unique tax, which was a proportion of the normal custom duty rate. At the domestic level, the tariff regime was simplified, as the number of lines facing specific tariffs was drastically reduced. Finally, in January 1994, there was a large devaluation of the local currency (MINFI, 2000:5).

After trade liberalisation, the custom duty and the entry fiscal duty were replaced by a custom duty applicable to all Cameroonian imports, and according to the category of goods: first necessity goods, five per cent of the cost insurance freight, (c.i.f.) value; equipment goods, 10 per cent; intermediate goods, 20 per cent; and current consumption goods, 30 per cent. The import turnover tax and the complementary tax were replaced by the turnover tax (TOT), applicable to all Cameroonian imports as

well as to all domestic production at three different rates: zero rate for exempted goods, a reduced rate of 5 per cent and a normal rate of 12.5 per cent. On the export side, and at the regional level, the production internal tax was abolished, while the unique tax was replaced by a generalised preferential tariff (GPT), which is a proportion of the custom duty applicable to similar goods that do not conform to this particular tax system (MINIMIDT, 2005:20).

Despite these drastic and generalised changes, the other taxes remained unchanged, and their application depends on each CEMAC member state. In Cameroon, the contribution to Cameroonian Shipper's National Council (CSNC) and the computer charge (CR) are levied at rates of 0.3 per cent and 1.5 per cent, respectively. A tax on the control and inspection of agricultural products (cocoa, coffee, wood, palm oil and banana) is levied at the rate of 0.95 per cent of the Free on Board (FoB) value of exports. With regard to the manufacturing sector, in 1994/95, Cameroon had reduced tariffs to uniformly low levels, and had considerably reduced the level of protection in addition to the fact that the average import tariff rates decreased in most industries (CEMAC, 2005:5-25).

Import licences for "government-controlled" goods, including manufactured goods, are almost automatically granted. However, the import of products that represent a danger to the environment or to the lives of human beings and animals is still strictly forbidden.

4.5 Trade policy in Cameroon

The structural adjustment and trade liberalisation programmes that Cameroon

embarked on were intended to revamp the economy. There were some positive results. Cameroon liberalised its trade regime in 1990, and the rate of decline in GDP first slowed, then recovered, with a 3.2 per cent increase in GDP. However, there was no improvement in the manufacturing sector, as the government had anticipated. The agricultural sector was responsible for the results. Sustained agricultural and oil exports contributed to an improved trade balance, although fiscal revenue did not meet expectations (Bamou, 1999:5). Nor had the improved trade balance prevented the continued deterioration of the balance of payments. The situation was primarily the consequence of increased capital transfers; debt servicing alone absorbed more than two thirds of export revenue by the end of the first reform episode.

In Cameroon and other countries in the CFA Zone (CFAZ), the trade regime in the pre-reform period (late 1980s) included a restrictive tariff, a non-tariff protection scheme and widespread price controls on most manufactured products. There was a marketing board for the main agricultural export crops (coffee, cocoa). These measures were also part of an overall discretionary scheme for tax exemptions on most products within the investment or tax codes. Such a trade regime, in general, led to an important bias against exports. The implicit tax on Cameroonian export sectors resulting from tariff protection was estimated at 27 per cent in the short run and a loss in output evaluated at 3.3 per cent of the 1988 GDP (Njinkeu, 1996:10). Cameroon also respects and upholds the obligations as a member of the WTO.

4.5.1 Trade policy instruments in Cameroon

Cameroon, as a member of the Economic and Monetary Union of Central African States, known by its French acronym CEMAC, follows a system based on the

Common External Tariff (CET). The rates in this region are considered uncompetitive when compared with those of other countries in Sub-Saharan Africa. As a member of CEMAC, the tariff rate must be aligned to that of the union, with a maximum tariff rate of 17.8 per cent (DGSN, 2000:5). Regarding its commitment to liberalising services trade, Cameroon ranks 135th (out of 148) on the GATS Commitments Index (WTO, 2002).

With regards to Quantitative Restrictions (QRs) on trade, most of them were systematically removed over the years and presently the only the phytosanitary considerations used to restrict imports and exports are totally liberalised with the removal of licenses (MIN COMMERCE, 2006). For exports, exit duties on all commodities were removed. Within the SAP framework, there has been a simplification of the process of obtaining import licenses and authorisations and the elimination of the twinning system. On the other hand, the labour market has been deregulated in order to allow firms more flexibility in responding to the changing competitive global environment, which is closely related (MINFI, 2006).

Further liberalisation took place in 1992/93 within a regional framework, i.e. the Regional Fiscal Reform Programme in the UDEAC zone. Prior to the trade reform, there were four individual taxes on imports: the custom duty (CD), the imports turnover tax (IMTOT), the entry fiscal duty (EFD) and the complementary tax (CT). The custom duty was levied on the cost insurance freight (c.i.f.) value of the imported goods for local use, and was subject to a wide variation (5-20 per cent) both across and within sectors. The import turnover tax was levied at 10 percent of the c.i.f. value inclusive of custom duty, entry fiscal duty and the complementary tax; it could be

zero for some imported first necessity goods, but sometimes reached 72 per cent of the c.i.f. value for some luxury imports (MINFI, 2000).

The entry fiscal duty was a tariff levied on the c.i.f. value of imports, whatever the country of origin, at rates between 15 and 70 per cent. The complementary tax was levied on the c.i.f. value at a rate of 40 percent. At the regional level, and on the export side, there were two main taxes: the production internal tax (PIT) and the unique tax (UT). The fiscal regime permitted partial or total fiscal and custom exemptions, which were compensated for by the collection of a specific tax called the production internal tax. The enterprises registered to the system of unique tax were exempted from all export taxes and duties in the UDEAC member states; these enterprises paid only a tax called unique tax.

After trade liberalisation, the custom duty and the entry fiscal duty were replaced by a custom duty, applicable to all Cameroonian imports, and according to the category of goods: first necessity goods, 5 per cent of the c.i.f. value; equipment goods, 10 per cent; intermediate goods, 20 per cent; and current consumption goods, 30 per cent. The import turnover tax and the complementary tax were replaced by the turnover tax (TOT), applicable to all Cameroonian imports as well as to all domestic production at three different rates: zero rate for exempted goods, a reduced rate of 5 per cent and a normal rate of 12.5 per cent. On the export side, and at the regional level, the production internal tax was abolished, while the unique tax was replaced by a generalised preferential tariff (GPT), which is a proportion of the custom duty applicable to similar goods that do not conform to this particular tax system.

However, other taxes remain unchanged, and their application depends on each UDEAC and now CEMAC member states. The contribution to Cameroonian Shipper National Council (CSNC) and the computer charge (CR) is levied at rates of 0.3 per cent and 1.5 per cent, respectively. A tax on the control and inspection of agricultural products (cocoa, coffee, wood, palm oil and banana) is levied at a rate of 0.95 per cent of the free on board (FOB) value of exports.

Pre-liberalisation, quantitative restrictions (QRs) were regarded as the principal instrument for local protection in which an annual general trade programme (GTP) classified goods by tariff line into four categories: “sensitive” goods, imported under very restrictive conditions; “twinning” goods, required prior authorisation to import a quantity of a specific good in proportion to the local purchase; “government-controlled” goods, needed prior authorisation to be imported; and “freely-imported” goods. Since 1992/93, sensitive goods have been steadily transferred to “government-controlled” goods. Import licenses for government-controlled goods are almost automatically granted. Despite the above measures, the import of products that present a danger to the environment or to the life of human beings and animals is banned. The period analysed in this paper covers the two liberalisation episodes described above (MINFI, 2000). However, despite trade liberalisation, there are still some restrictive policies in place that may mean that there is slow liberalisation, which in many ways might achieve the desired objectives of productivity and competitiveness.

4.6 Summary

The Cameroonian economy is relatively diversified. The growth rate has been very unstable and has been lagging behind those of comparative countries. In 2006, Cameroon started benefiting from the HIPC Initiative. As a member of CEMAC, Cameroon's currency is pegged to the euro and the trade policies are almost the same in the region.

From a theoretical perspective, tariff reductions led to an increase in imports. Within the Cameroonian context, this has been the case as imports increased dramatically after tariff reductions and the removal of QR.

The previous complex, unfair and cascade-type systems of taxes and duties led to serious distortions and made the policy reforms necessary. The trend towards trade liberalisation started in the late 1980s as part of SAP. The SAP was put in place in July 1988, resulting in many reforms.

Chapter 5

Performance of Cameroon's manufacturing sector (descriptive analysis)

5.1 Introduction

As discussed in the previous chapter (Chapter 4), Cameroon liberalised her economy on a wide scale since 1988, which has led to a significant decline in both the effective and nominal rates of protection. One of the main reasons for this liberalisation is to promote higher productivity, output efficiency and competitiveness in the manufacturing sector. The manufacturing sector in Cameroon has gone through different stages of development, which is directly related to the general economic condition. During the era of ISI, manufacturing growth was accompanied by high economic growth rates, and with the decline and economic malaise in the 1980s, the manufacturing sector also dramatically declined (GESP, 2010:35). This sector is ill organised and not fully integrated with other sectors of the economy, contributing just about seven per cent to the GDP and producing mostly consumer goods (MINFI, 2006:10).

Given the above narrative, the main purpose of this chapter is to carry out a descriptive analysis of the performance of Cameroon's manufacturing sector and an investigation into the industrial policy of the country with a view to determining whether it has been successful. Sections 5.2 and 5.3 examine the manufacturing performance before and after trade liberalisation in 1988. Industrial policy and its consequences are critically investigated in section 5.4, and the main manufacturing indicators are discussed in section 5.5. A summary is given in section 5.6.

5.2 Manufacturing performance before trade liberalisation

After independence in the early 1960s, one of the national development objectives, to promote economic growth, was premised on the development of the manufacturing sector, starting with a resource-based industrial sector aimed at agricultural processing, textiles, sugar, rubber, paper and pulp and wood processing through the establishment of large-scale agro-firm companies owned by the government (GESP, 2010: 30).

Despite the importance of this sector, it has problems, some of which are structural, which influences how much it can produce. Most of the production equipment is old, since they were acquired in the 1960s and 1970s and there are problems with obtaining the spare parts, because, due to innovation, they are no longer produced. It is just like looking for components for a typewriter in an era of an increased use of computers (MIN COMMERCE, 2008:5). Added to this is the inherent corruption in all areas of Cameroonian life and the inability of the local firms to compete with products from other countries as a result of trade liberalisation policy. Again, the manufacturing sector is based mainly on assembly activities and not necessarily the technological transformation of the available resources; an indication of poor technological development. For instance, with the increased demand for motorcycles as a means of transport, there have been increased assembly activities for motorcycles whereby all the parts are imported from Japan and simply assembled in Cameroon. Japan is the producer and not Cameroon (MIN COMMERCE, 2006). Added to this point is the fact that during the period of ISI, the establishment of manufacturing firms was misaligned and not based on the country's proven comparative advantage or latent comparative advantage. This means that such firms from the beginning were

set up for failure.

The evaluation of the manufacturing sector's performance before 1990 can be divided into two different periods, namely the 1960s to the 1970s, considered to be the period of good performance (performance based on the pervasive and distortionary ISI policies as discussed in Chapter 4), and 1980 to 1988, considered as the adjustment period with poor manufacturing performance. At the time of its early development, manufacturing, when compared to agriculture, contributed less to the country's GDP. The share of the manufacturing sector in GDP in the 1960s and 1970s was 12.5 and 16 per cent, respectively, and then increased to 22.5 per cent by 1985 (DGSN, 2001:15-20).

Table 5.1: Structure of Cameroon's manufacturing sector pre and post reforms (Number of firms)

Industry	Number of firms			
	Pre-reform		Post-reform	
	Number	Share (%)	Number	Share (%)
Food products	185	44.79	52	28.89
Beverage and tobacco	13	3.15	10	5.56
Textiles	36	8.72	07	3.89
Wood and furniture	68	16.46	35	19.44
Paper and printing	24	5.81	21	11.56
Chemical products	20	4.84	19	6.11
Rubber and plastics	15	3.63	11	2.78
Building materials	07	1.69	05	2.68
Basic metallurgy	03	0.73	03	1.67
Electrical products	33	7.99	11	6.11
Transport materials	06	1.45	03	1.67

Source: National Statistic Office (DGSN) of the Ministry of Economy and Finance (2005)

The pre-trade reform figures in Table 5.2 show that Cameroon's manufacturing sector consisted of 406 firms. The dominant sectors in terms of the number of firms were food processing, wood and furniture, textiles and leather, and electrical products, with the share of the number of firms varying between eight and 45 per cent. After trade liberalisation, Cameroon's manufacturing sector consisted of 180 firms. The dominant sectors were food processing, wood and furniture, paper and printing, and chemical manufacturing, with the number of firms representing 10.5 to 29 per cent of the total output. Relative to the pre-trade reform sample, the post-trade reform figures show a drop in the number of manufacturing firms across all types of firms (DGSN, 2005:100-120)

Under the Import Substitution Industrialisation (ISI) policy, the manufacturing sector grew by around ten per cent on average (Njikam, 2003:5-25). However, its growth rate slowed down dramatically in the early 1980s due to the adverse consequences of the oil and debt crises, and the government's continuing commitment to the ISI policy, which had run its course. The growth rate of the manufacturing sector dropped to around 6 per cent in 1981 and then contracted in 1985 to minus 1.37 per cent. From the 1970s to the early 1980s, labour-intensive manufacturing, such as textiles and garments, had become more important with their value added increasing from 18.16 per cent in 1970 to 23.55 per cent in 1980 (MINIMIDT, 2005:20-25). From the 1990s and due to liberalisation, cheaper imports came into the country and with a reduction or cancellation of subsidies and other protection policies, many firms could not compete and had to go out of business. The garment industry was virtually wiped out.

5.3 Manufacturing performance after trade liberalisation in 1990

The manufacturing sector is made up of five main categories of industries, which include the mining and oil refining industry; the agro-industry; the wood processing and textile industry (other industries); energy and water; and buildings and public works (BPW) (UNIDO, 2005:12).

The agro-industry is dominated by the production of sugar, flour, refined oil, and brewery and soap products. The agro industry sub-sector has observed a relative expansion because its products are consumed by Cameroonians. Specifically, the production and the turnover of agro-brewery industries increased respectively by 14 per cent and 19,1 per cent in 2009 (MINFI, 2010). From 1993 to 2008, the value added of this sub-sector increased from 30 410 billion FCFA to 52 591 billion FCFA.

The wood transformation and textile sector production of by-products of wood suffered the effects of the 2008 global crisis. Resultantly, the quantity of sawed wood fell by 38 per cent in 2009, notably because of the shortfall in demand in the international market. The textile industry, on the other hand, experienced an activity surge of 10.3 per cent in 2009, due to increased sales of factual loincloths, particularly those used for the visit of the Pope in March 2009 (MINEPLAT, 2010). Between 1993 and 2008, the value added of wood-processing industries and the textile industry increased from 566.47 billion FCFA to 961.39 billion FCFA (DGSN, 2010:50).

5.3.1 Manufacturing growth rate and structure

The major economic reforms carried out by the government, such as the tightening of the fiscal policy, controlling inflation, exchange rate devaluation and trade

liberalisation, in the late 1980s, did not bear the desired fruits. The manufacturing sector did not take off as expected in the 1990s. In addition, the manufacturing sector in Cameroon is generally made up of small-sized enterprises, some formal and many informal. It has been observed that between 1989/1990 and 1998/1999, more than 80 per cent of manufacturing firms surveyed each year had a workforce of less than 300 persons. Only about 9 per cent of the firms had more than 500 employees (DGSN, 2000:2).

Data from the National Statistics Office, known by its French acronym DGSN, since 1990/1991, show that an average of 218 enterprises employ 98 per cent of the workers in the industrial sector and realise more than 97 per cent of industrial output (DGSN, 2001:2-50).

Trade reform was disastrous for sectors such as textiles (worthy of note here is the fact that a great deal of imported textiles from China made the local manufacturers uncompetitive), electrical, transport materials, and wood and furniture. With a decrease in the number of firms of nearly 80.56 per cent, 66.67 per cent, 50 per cent and 48.53 per cent, respectively, the reforms almost led to the disappearance of these sectors (DGNS, 2006:2-5).

There were 406 firms in total before liberalisation in 1988 and this number was reduced drastically to 180 firms after liberalisation (MINFI, 2005:15-25). The manufacturing sector recovered from the crisis in 1997 with a growth rate of 15 per cent when there was an acceleration of production in almost every sector of manufacturing, especially beverages, food production, iron and steel production, and

other export-oriented industries (BEAC, 2000:2-25). By 2002, the manufacturing growth rate was 3.6 per cent. Even though the manufacturing sector was affected by the crisis, the annual average growth rate from 1997 to 2008 was still considered remarkable, averaging over five per cent (BEAC, 2006:5-10).

The majority of firms in the manufacturing sector in Cameroon produce for the domestic market rather than for the export market; the few exports go to other CEMAC countries (Chad, Congo Brazzaville, Central African Republic, Gabon and Equatorial Guinea) with very small markets. Industries that have a high percentage of firms exporting their products are textiles (20 per cent) (before liberalisation), agricultural products (40 per cent), wearing apparel, dressing and dyeing of fur (10 per cent), chemicals and chemical products (5 per cent), machinery and equipment (2 per cent), office equipment, electrical machinery and apparatus (3 per cent), and wood and furniture (20 per cent) (MIN COMMERCE, 2004:2-10).

When industry is classified based on the level of technology, the whole manufacturing sector can be divided into three categories: higher-technology, medium-technology and low-technology industries. The rate of increase in the higher-technology industries in Cameroon can be considered one of the smallest in the world, and is comparable to those of other Sub-Saharan African countries like Chad, which is an indication that the manufacturing sector is underdeveloped (Tabi, 2010:3-5). However, it must be stated that technological capability is judged to a large extent by the final product; there is no differentiation between simple assembly and the more technologically demanding production of components and parts. According to Amin, (1996:1-20), the low level of production of highly technological products, or the

absence thereof, such as electronics, in the Cameroonian manufacturing sector, where there is no machinery, the sub-sector basically assembles what has been pre-produced in the technologically advanced countries of Europe and Asia. The implication of this is that the manufacturing of high-technology goods might never take off under the present circumstances in Cameroon.

5.3.2 Structural changes in the manufacturing sector

The manufacturing sector has experienced significant structural changes. In the 1980s, it diversified from only a few agriculturally based firms to more labour-intensive industries with broader product ranges. The structure changed again in the 1990s, as the share of labour-intensive industries decreased due to the loss of competitiveness, while the share of capital-intensive industries, such as transport, electrical appliances and computer parts, took a more dominant position in the total value added, but mostly they were involved in assembling only and not manufacturing. (As mentioned above, what goes on is assembly of completely knocked down parts (CKDs)). The increase in the share of capital-intensive industries can be an indication of the increase of the manufacturing technology capability. Table 5.2 reveals that the combined shares of value added for food, beverage and tobacco in total, dropped from 26.1 per cent in 1985 to 18.6 per cent in 1999. The combined shares of the textiles and garments industry also dropped from 23.55 per cent in 1980 to 14.50 per cent in 1999, while the value added of petroleum and products, the machinery industry and electrical machinery increased from 5.18 per cent, 3.35 per cent, and 2.95 per cent, respectively, in 1980 to 10.4 per cent, 9.5 per cent, and 10.7 per cent, respectively, in 1999 (DGNS, 2002: 15-20).

5.3.2.1 Structure of the manufacturing sector in Cameroon

Table 5.2 below provides an overview of the structure of the manufacturing sector from 1995 to 2005. Agricultural firms constitute most of manufacturing in Cameroon (DGNS, 2002:15).

The chemicals, petroleum refineries, rubber and plastics firms are also important and contribute very much to the economy (MINTI, 2006:5-20). Cameroon refines petroleum, and waste products from it are transformed into tar. The Cameroon Development Corporation (CDC), owned by the government, farms and transforms rubber. The chemical sector produces some pharmaceutical products and cosmetics, such as perfumes and soaps, for the local market. The main company in this sector is GANDOUR SA (MIN COMMERCE, 2006).

With the liberalisation of the forest laws, wood processing has increased with the development of new sawmills in many towns (UNIDO, 2002:23). The textiles and leather industry has seen a decline. The government-owned SODECOTTON is an important player in the textile sector. This sector has seen a decline following trade liberalisation and competition from smuggled textiles from Nigeria (GESp, 2010). Cotonnière Industrielle du Cameroun (CICAM) uses the cotton produced by SODECOTTON, and is also owned by the government, hence it is affected by the same problems. With privatisation or commercialisation this sector has not attracted investment due to competition from the above sources (MIN COMMERCE, 2008). At the same time, the leather and footwear firms have declined because of the same reasons: smuggling and cheap imports from other countries as a result of trade

liberalisation (MIN COMMERCE, 2006:2-20). It should be remembered that these sectors were highly protected and heavily subsidised during the ISI era.

Cimenteries du Cameroun (CIMENCAM) produces cement for local consumption and some is exported to the CEMAC (UNIDO, 2002:2-20). According to the Ministry of Mines and Industries, Compagnie Camerounaise de l'Aluminium (ALUCAM) produces and exports mostly to Europe and some is used locally (MINTI, 2006:2-20).

**Table 5.2: Structure of the Cameroonian-manufacturing sector (1990-2005)
(Exports, Manufacturing value added and Employment)**

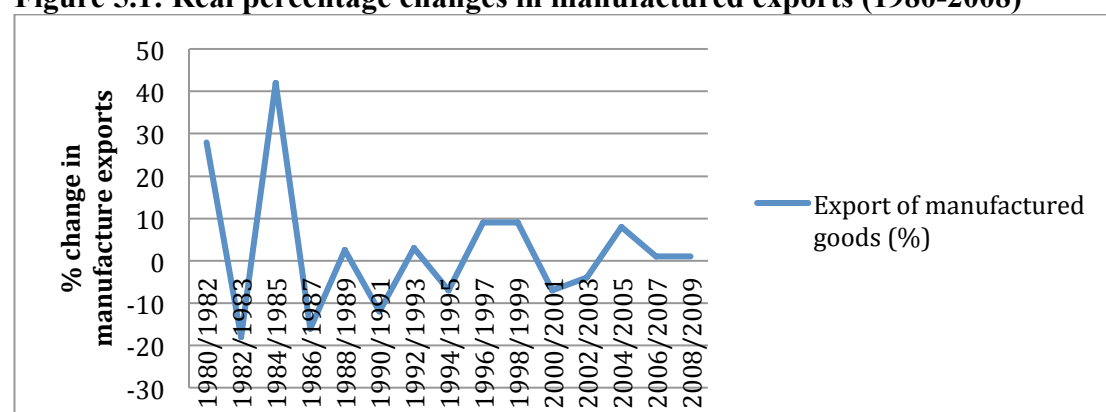
Group	Share of manufactured exports (per cent)	Share of manufactured value added (per cent)	Share of manufacturing employment (per cent)
Food beverages and tobacco (ISIC 311/3/4)	10,3	40,7	29,0
Textiles, clothing, leather and footwear (ISIC 321/2/3/4)	0,8	12,2	6,2
Word processing (ISIC 331/2)	47,2	14,2	15,0
Paper, printing and publishing (ISIC 341/2)	0,3	3,3	3,4
Chemicals, petroleum refineries, rubber and plastics ISIC 351/2/3//5/6)	19,7	16,6	40,9
Construction materials, metalworking and iron and steel (ISIC 361/2/9, 371/2)	19,4	9,5	3.0
Fabricated Metal products, electrical machinery and transport equipment (ISIC 381/2/3/4)	1.9	2.3	1.9
Other manufactured products (ISIC 390)	0.4	1.3	0.6
Total	100	100	100

Source: Column 1: International Trade Statistics, United Nations, 2006 data;
columns 2 and 3: INDSTAT 2006, averages for the period 1995-2005

5.3.3 Export of manufactured goods

Given the poor performance of the manufacturing sectors and their underdevelopment, exports from the sector cannot be expected to be impressive. The share of manufactured exports in GDP decreased from just 3.76 per cent in 1980 to 3.03 per cent in 2006 (WTO, 2006:20). The share of manufactured exports has been less than the share of agriculture before and after liberalisation (MIN COMMERCE, 2006:2-20). The fluctuation in manufactured exports, mainly consumer goods, to other CEMAC countries has been unstable can be observed in Figure 5.1.

Figure 5.1: Real percentage changes in manufactured exports (1980-2008)



Source: World Bank (World Development Indicators for various years) (1980-2009) and DSGN, (1980-2009)

Njikam, (2003:2-35) notes that manufactured exports grew at around 38 per cent per annum in the latter half of the 1980s, 20 per cent in the first half of the 1990s, but then failed to register any growth by 1996. It was negative in 1986, 1987, 1993 and 2007 (EIU, 2009). The impact of the crisis caused the annual average growth rate of manufactured exports to drop to just around four per cent from 1995 to 2000 (Table 5.1). After the devaluation, the manufactured exports grew again in 1999 by around ten per cent before falling again to around five per cent in 2001 and then increasing again to nine percent in 2005.

The growth of manufactured exports was not only confined to two or three manufacturing products, but was spread over a wide cross-section of the manufacturing sector and mostly to the CEMAC region (Njikam, 2003:2-35). However, its growth rate slowed down in the early 1990s and was replaced by the stronger growth rate of low- to medium-technology manufactured products. Table 5.2 shows that the annual average growth rate of labour-intensive exports per year was 17.2 per cent in the period 1990 to 1995, and then it contracted to -1.2 per cent from 1995 to 2000, while the growth rate of science-based exports, in the same periods, was 32.3 per cent and 9.3 percent per year respectively. The shares of resource-based and labour-intensive exports in the total manufactured exports declined from 30.7 and 25.6 per cent, respectively, in 1990 to 20.1 and 12.5 per cent, respectively in 2000, while the share of the science-based exports increased from 14.1 per cent in 1990 to 28.1 per cent in 2000. The composition of Cameroon's manufactured exports can be compared to that of other Sub-Saharan African countries, but it still falls far behind South Africa and Nigeria as well as Newly Industrialised Economies (NIEs) as a share of the technologically complex products. On the whole, Cameroonian exports are still small compared to these countries (UNIDO, 2006:1-35).

The major products for exports are garments, canned food, electrical and electronic consumer goods (televisions and air-conditioners are assembled), precious stones, footwear, furniture, plastics and rubber products. After the devaluation of the currency in 1994, the structure of manufacturing export changed again slightly. Some products, such as textiles, clothing and other consumer goods have declined due to the structural challenges and a fall in demand and it is assumed that this is because of the cheap imports from Asia, especially China.

Njikam, (2003:2-35) notes that the little success of manufactured exports in Cameroon is due to five reasons, namely (i) the comparative advantage obtained by Cameroon in the labour-intensive and resource-based products due to abundant supplies of labour and natural resources; (ii) the position of Cameroon within the CEMAC region as one of the most diversified economies; (iii) changing international economic conditions such as the realignment of major currencies; (iv) foreign direct investment in export-oriented industries from multinational corporations; and (v) efforts made by the Cameroon government to develop their export markets, especially within the region given the reductions in tariffs.

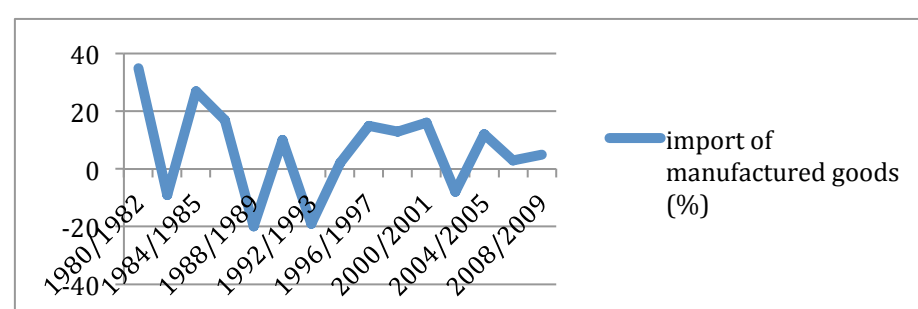
While there is success in the overall growth of manufactured exports (which might be a consequence of the devaluation of the currency leading to reduced prices, making products competitive), there are some problems with individual products because they have lost competitiveness and market shares. Dhanani & Scholtes, (2002:6) note that a product is considered competitive if there is an increase in its share in the world market; it is considered dynamic in the world market if its growth rate is faster than the average growth rate of all products. Along with the changes in export products, the geographical destinations of exports have also changed. Cameroon has not diversified its manufactured export destination and trades mainly within the CEMAC region.

5.3.4 Import of manufactured goods

With the weak growth in manufactured exports, imports expanded rapidly because the manufacturing sector in Cameroon relies on imported inputs, capital equipment and intermediate products. The share of manufactured imports in GDP increased from

15.78 per cent in 1980 to 39.23 per cent in 2002. As the government focused on the local production of consumer goods during the implementation of the Import Substitution Industrialisation period, the share of consumer goods in total imports decreased significantly from around 17 per cent in 1986 to around 10.58 per cent in 2002 (MIN COMMERCE, 2006:2-30). However, imported capital goods in total imports increased substantially in 1985 from 31.5 per cent to 45.99 per cent in 2002.

Figure 5.2: Trends in import of manufactured goods



Source: World Bank (World Development Indicators for various years) (1980-2009) and DGSN (1980-2009)

In addition to consumer goods and capital goods, the share of raw materials and intermediate goods in the total imports also increased in 2002 to 26.48 per cent. Njikam, (2003:2-30) notes that there are three reasons for the high share of the import of intermediate input in the total import. Firstly, there was a change in the manufacturing structure from labour-intensive to capital-intensive manufacturing. Import-competing products depend on imported raw materials. Other labour-intensive products, such as textiles, garments, plastic products and footwear, are also dependent on imports of intermediate inputs. Secondly, the increase in foreign direct investment in the form of multinational enterprises in the manufacturing sector requires a higher proportion of imported inputs. Finally, the increase in manufactured exports increased the need for higher quality intermediate inputs, not available locally.

5.4 Location of manufacturing firms: Geographical distribution

Cameroonian manufacturing is unevenly distributed within and among the ten provinces. Cotton and textiles are concentrated in the Northern provinces, while the agro-firms are located in the South West and Littoral provinces. Eighty per cent of all manufacturing is, however, located in the Littoral province and 20 per cent in the rest of the country (MIN COMMERCE, 2006). The province with the highest concentration of manufacturing boasts the most advanced communication infrastructure and other variables needed by the manufacturing sector. In addition, it has the international airport and the seaport. However, the government, in its vision 2020, envisages the development of infrastructure across the country with a deep seaport in Limbe and the tarring of more roads to facilitate the movement of people and goods (GESp, 2010:25-28). This is expected to disperse manufacturing activities to other parts of the country.

5.5 Foreign Direct Investment (FDI) in the manufacturing sector

Foreign Direct Investment into Cameroon is in the form of investment from multinational firms. FDI in Africa is mainly from multinational enterprises and the government of Cameroon makes efforts to attract the multinational firms, because they bring in capital to compensate for the shortage of domestic savings. FDI came into the country at the beginning of the 1990s with the introduction of SAP and liberal policies accompanied by the withdrawal of government involvement in production activities. Many privatised public enterprises were bought up by western multinationals.

According to UNCTAD, (2008a), this evolution is explained by the attraction of

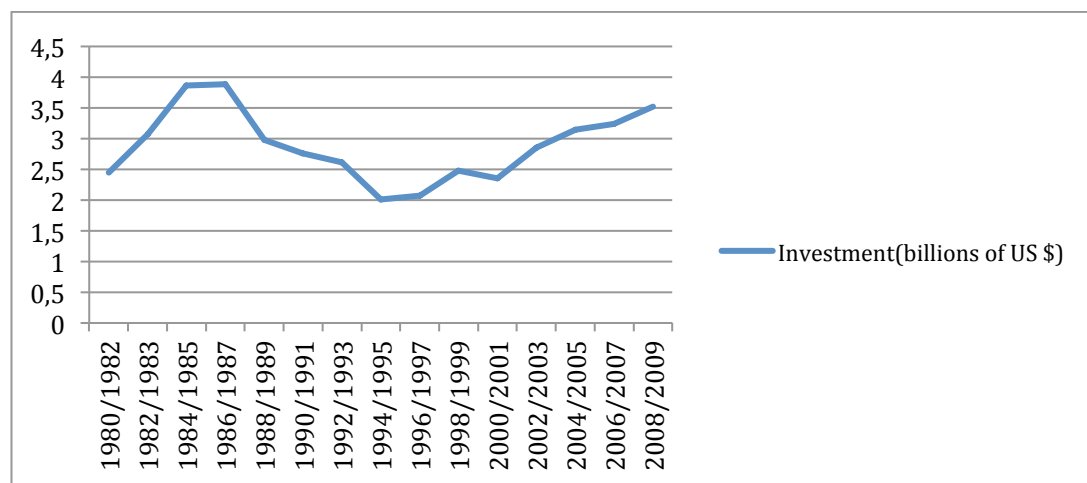
primary resources, which has witnessed increased demand from NIEs in Asia, the increase in profits of enterprises, and generally a more favourable economic climate. In Cameroon, the big restructuring projects such as energy, water, deep-seaport, and railroad would be financed mainly by China, France and some multilateral institutions like the African Development Bank (AfDB) as part of the broad efforts aimed at privatisation and commercialisation (GESP, 2010:20). To strengthen the sub-sector of mining, the government of Cameroon intends to attract FDI using measures such as: granting the possibility to companies that exploit hydrocarbons to import components, all equipment and material duty free, and the liberalisation of pump prices; the parliament, in April 1998, voted for a law on fiscal incentives (exemption of special tax on income) for the exploitation and implementation of oil fields and the reduction of tariff protection (WTO, 2001)

Foreign investment in Cameroon today is mostly in the form of direct investments with an insignificant amount of portfolio investments. According to UNCTAD, (2000:35-60), FDI in Cameroon is still limited, but increasing. The lack of or an undeveloped stock exchange market might also be a limitation to the flow of FDI especially from institutional investors who might want to buy and sell shares without any involvement in management.

Since the devaluation of the CFA franc in 1994, net FDI has been on a steady increase, driven almost exclusively by occasional privatisation and oil sector investment (EIU, 2009:15). The top sources of FDI in Cameroon have been France and the United Kingdom, South Africa and China, mostly in the form of joint ventures. Most of the investment in the manufacturing sector was widely spread into

textiles, food and beverages, metal and non-metallic products, petrochemicals, and transport equipment (Amin, 2004:20). Most of the Chinese investments are in the scope of government promotion of investment, and Chinese investors tend to have joint ventures with local investors (Amin, 2002:15). In comparison, American, French and United Kingdom investments have been concentrated in mining, such as oil, manufacturing, such as electrical appliances, and trade. They have been investing in projects outside those promoted by the government and also considerably in the energy sector.

Figure 5.3: Trends in foreign direct investment



Source: World Bank (World Development Indicators for various years) 1980-2009) and DGSN (1980-2009)

5.6 Industrial policy in Cameroon

Cameroon, like most independent African countries in 1960, pursued an Import Substitution Industrialisation policy, which informs the direct involvement of the government in the production process. Despite the importance of this approach, most decisions to invest government money in particular industries were often based on

political decisions rather than on sound economic analyses and on the basis of the proven comparative advantage or latent comparative advantage.

Industrial policy can be through selective interventions, influence on the market by deviating from market forces, a series or collection of interventions aimed at influencing industrial outcome, or simply any action that influences industrialisation out of its normal evolutionary process along the lines of comparative advantage (Pack, 2000:2).

According to the World Bank, these are different from trade policy as carried out by Cameroon in that they are government attempts or efforts to change the structure and performance of industries so that they can grow and productivity can be achieved (World Bank, 1993).

In Cameroon, industrial policy had the following objectives: the substitution of imports with locally-manufactured products in the first plan; the search for competitiveness to be able to penetrate foreign markets in which efforts were made to make state-owned enterprises more competitive in the second and third plans, and the decentralisation and adaptation of the manufacturing sector. However, along the reasoning of the ISI policy, these enterprises were heavily subsidised and protected to be competitive, which means, in the absence of this, they were bound to collapse (AfDB, 2009:18)

With regard to the substitution of imports, locally manufactured products were for the domestic market with only a small percentage being sold in the CEMAC region, then known as UDEAC. Cameroon imports virtually everything including consumer goods

(GESP, 2010:20)

The poor management of state-owned enterprises made it impossible to attain the objectives of competitiveness suggested in the second and third plans, because managers were often appointed on the basis of political affiliations and inefficiencies and rent-seeking behaviour resulted. With regard to the use of local raw materials and the decentralisation of industries, firms import most of their raw material and other inputs (DGSN/MINFI, 2000:5-10).

From the above, the objectives of the various industrial policies have not been attained. GESP, (2010) concludes that the industrial sector has a system of strategic planning, which is greatly influenced by the ISI in its outlook and development. Even with this, it was not rigorously implemented because of capacity problems and corruption, because the ISI policy encourages rent-seeking behaviour on the parts of managers appointed by the government. Above all, the mistake made was to invest in industries in which Cameroon had no proven or latent comparative advantage.

5.7 Main manufacturing indicators

Having considered the industrial policy of Cameroon, and in line with the objective of this research, it is important to look at specific indicators that can be said to be measures of performance of the manufacturing sector in Cameroon. By doing so it will afford us the opportunity of knowing what the performance of the manufacturing sector has been in terms of the variables considered.

5.7.1 Productivity of Cameroon's manufacturing sector

The total factor productivity growth in manufacturing shows similar patterns as the economic growth in the 1980s; the total factor productivity growth in manufacturing in the period of 1980 to 1995 were negative at minus 3.1 per cent and minus 0.01 per cent (Adenikinju, Söderling, Soludo, & Varoudakis, 2000:10).

Other than total factor productivity, the Cameroonian manufacturing sector is considered as inefficient. The study by Njikam, (2002:2-30), using data from the report of the 1997 manufacturing census, shows that firms in the Cameroonian manufacturing sector are not efficient as the level of technical efficiency remains very low at less than one per cent. Söderling, (2000:20) notes that, although most of the small and medium-sized enterprises are more labour intensive, they tend to be less efficient than the large firms. The reason for this could be that many of these small and medium enterprises are not involved in exporting. Njikam, (2003:35) finds that the technical efficiency in small firms is 30 per cent, while technical efficiency in medium and large firms stands at 57.3 and 80 per cent, respectively. His study also shows that the total factor productivity (TFP) of small firms is lower than that of medium and large firms.

The performance of labour productivity in the Cameroonian manufacturing sector is also considered reasonable when compared to other countries within CEMAC and Sub-Saharan African countries. The value added per worker for Cameroon was US\$15 600 in 1995 at 1990 prices (UNIDO, 2001:20). Moreover, Njikam, (2003:30) notes that the labour productivity growth in the Cameroonian manufacturing sector has outpaced the growth rate of wages as the cost of labour as a proportion of gross

output declined in most industries in the period 1986 to 1996. Njikam further notes that Cameroon was one of the few countries in which labour productivity grew faster than the growth rate of wages in Sub-Saharan Africa. Despite these results, the performance of the manufacturing sector remains poor.

5.7.2 Revealed comparative advantages of Cameroonian firms

Another indicator to assess the manufacturing sector is the revealed comparative advantage (RCA), which can be used to find out whether an industry is competitive in comparison to the same industry in another country. The general comparative advantage has shown that Cameroon has lost its labour-intensive advantage in recent years as the index of RCA of labour-intensive products dropped from 3.5 in 1985 to 1.7 in 1997 (UNIDO, 2001:10). However, the index is still higher in that unit, which suggests that Cameroon still maintains some comparative advantage in the labour-intensive industry. In contrast, Cameroon has gained competitiveness in innovation-intensive products, as the RCA index increased from 0.6 in 1985 to one in 1997.

UNIDO reports that labour-intensive industries, such as food and beverages (ISIC 15) and textiles (ISIC 17), keep to a fair degree the competitive advantages, as the RCA indices are more than unity, with a slight increase over time. Other labour-intensive industries, such as garments (ISIC 18), leather and leather products, including footwear (ISIC 19), rubber and plastic products (ISIC 25), and furniture (ISIC 36) are also fairly competitive, as RCA indices are higher than unity, although decreasing over time. However, other labour-intensive industries, such as wood and wood products (ISIC 20), paper and paper products (ISIC 21), and printing and publishing (ISIC 22) have lost competitiveness completely as their RCA indices are much lower

than unity. While some labour intensive industries, like office, accounting and computing machinery (ISIC 30), electrical machinery and apparatus (ISIC 31) and radio, television and telecommunication equipment (ISIC 32) have gained their competitiveness as the RCA indices are more than 1.0 with a trend to increase (UNIDO, 2005:15).

5.7.3 Industrial linkages

The poor success of the manufacturing sector does not provide jobs and exports, but it provides linkages with other sectors in the economy or other industries. The strong linkages, both backward and forward, can improve the performance of the supporting industries and the competitiveness of domestic firms (UNIDO, 2005: 20). The Cameroonian government started promoting industrial linkages in the 1970s, as indicated in the various development plans related to industrial development above, and the results show that there has been a significant increase in backward linkages. Many supporting industries have been set up. While the backward linkages show successes in some industries, the forward linkages are still weak in most industries. However, some industries, such as the agricultural, pharmaceutical, chemical and textile industries show strong linkages both forward and backward (UNIDO, 2005: 20).

The petrochemical industry, iron and steel industry, machinery industry, and paper and publishing industry have strong forward linkages, while the backward linkages are low because the production in these industries is basically for other sectors. The ceramic and glass industry, food-processing industry, cement industry, animal feed industry, rubber industry, and wood industry have high backward linkages, while the

forward linkages are low. The reason for the high backward linkages is the fact that these industries use local materials and the productions are basically for consumer goods (UNIDO, 2006:15-20).

5.7.4 Technological structure of manufacturing

Most developing countries began their industrialisation with simple activities producing consumer goods such as foods, beverages, cigarettes, textiles, clothing and footwear (these traditional activities appear in the first two left-hand columns of Table 5.2 for the years 1970 and 2000). Cameroon has the largest share of such activities (see 2008).

Diversification in the Cameroonian manufacturing sector is weak, with most of the sub-sectors underdeveloped (GESp, 2010:34). The capital goods sub-sector does not exist and what happens in the economy is basic assembly, whereby firms import parts from other countries and assemble them and consume them locally or export to other countries within the region (MIN COMMERCE, 2008). As mentioned earlier, the government ambitiously invested in firms for which it had no capacity to manage, simply for political and prestige reasons. Most of those physical facilities lie fallow now.

Table 5.3 shows the distribution of MVA in a number of selected sectors, which reveals the technological structure between two points in time, 1980 and 2008. The evidence is that the performance has been poor. The subdivisions are based on UNIDO and OECD classifications. Cameroon basically lags behind in the production of manufactured goods and is considered to be at the very early stage of development,

where mostly resource- and consumer-based activities are carried out (AfDB, 2009:28-30).

Table 5.3: Technological structure of manufacturing in Cameroon

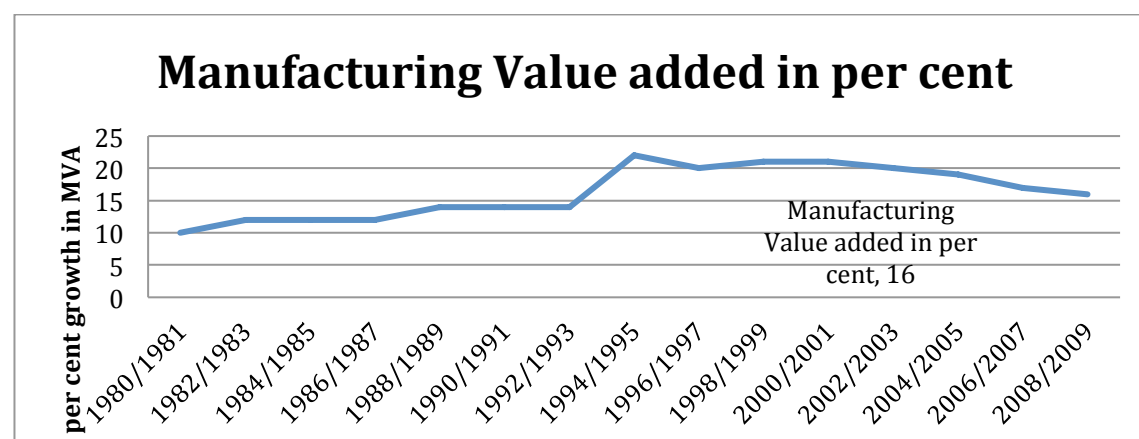
Technological structure							
Distribution of MVA (as percentage) By end use				Distribution of MVA (as percentage) By technology category			
Consumer goods		Capital goods		Resource-based		Medium- & high-tech	
1980	2008	1980	2008	1980	2008	1980	2008
66	63	24	08	53	70	23	13

Source: INDSTAT, 1982 and 2008; UNIDO, (2009)

5.7.4.1 Manufacturing value added (growth rate)

Manufacturing Value Added (MVA) can be used to evaluate the performance of the manufacturing sector. Industrial performance is measured in terms of MVA as a share of GDP or in terms of *per capita* MVA. Cameroon still lags far behind because her MVA share in GDP has virtually not changed very much between 1980 and 2008. The average growth rate of MVA has been by eleven per cent.

Figure 5.4: Manufacturing value added



Source: UNIDO database (Various years 1980-2008)

5.8 Summary

In summary, the manufacturing sector consists mainly of small establishments. Only 0.24 per cent of the whole sector are firms that employ 1 000 people or more. The growth rate of the manufacturing sector was low in the early 1980s, and then increased significantly in the latter half of the 1980s. The growth rate became negative in the middle of the 1990s. However, it recovered in 1997. Even when facing a crisis, the average growth rate of the manufacturing sector from 1990 to 2002 was 3.2 per cent.

Besides the growth rate, the manufacturing structure also changed considerably as the share of capital-intensive industries increased significantly in the 1990s. The growth of the manufacturing sector was made possible partly by the huge inflow of foreign direct investment, which contributed tremendously to the development of the Cameroonian manufacturing sector and economy as a whole.

The export of manufactured goods has also shown an impressive growth over the years, especially to the CEMAC region. The share of manufacturing exports in total exports exceeded the share of agricultural exports for the first time in 1985. The share of manufactured exports in total exports increased significantly and reached around 85 per cent in 2000. Other than changes in the growth rate, there has been a significant structural change in manufactured exports. The share of the exports in labour-intensive and natural resources has come down, while the share of science-based products has been on the rise. A strong growth of exports also led to rapid growth and significant structural changes in imports over time. The share of the import of consumer goods decreased over time, while the share of capital goods

increased substantially. Moreover, the share of intermediate goods in the total imports is also high, as the Cameroonian manufacturing sector relied and still relies heavily on the imported intermediate goods.

Before the crisis, the Cameroonian-manufacturing sector was considered highly inefficient because its level of technical efficiency was around 20 per cent (Njikam, 2003:20). Another point is that smaller firms are more efficient and have higher a TFP than medium firms do. The performance of labour productivity in the Cameroonian manufacturing sector is comparable to that in Nigeria and Cote d' Ivoire. The manufacturing sector in Cameroon did not perform well before and after trade liberalisation. This goes to answer the question and achieve the objective of this research in relation to the impact of trade liberalisation on the manufacturing sector.

Chapter 6

Methodological approach

6.1 Introduction

The main objective of this chapter is to present the methodological approach that will be used as part of the overall research to answer the research question and to achieve the objectives of the research. The aim is to propose a methodology in an effort to assess the impact of trade liberalisation on the manufacturing sector from 1980 to 2006.

This section comprises the discussion regarding the estimation models: the single equation export supply model, the gravity model and the industrial competitiveness index. These will be applied in the empirical analysis to test the validity of the predictions of the theory. The use of time-series data is proposed for the first model (that is the single equation supply model), as there is no reliable panel firm-level data in Cameroon. The second model will use panel data analysis for the aggregate manufacturing bilateral trade of Cameroon. In both cases, data over time will be used and a before and after analysis (approach) will be followed in order to determine the impact of the policy change. In both cases, the econometric models designed and used are meant to capture the impact of trade liberalisation on manufactured export performance.

The rest of the chapter is structured as follows: Section 6.2 considers a general discussion of the methodological issues within the context of the research. Section 6.3 specifies the single equation supply model and its expected predictions. Section 6.4

deals with the gravity model, while section 6.5 deals with the impact of trade liberalisation on manufacturing (industrial) competitiveness. Finally, section 6.6 summarises the discussions.

6.2 Discussion of the methodological approaches

As discussed earlier, the impact of trade reform on economic performance in general and the manufacturing sector in particular has been and is one of the most widely-debated subjects in economics, given the lack of agreement on the effects of trade liberalisation. Proponents have gone to great lengths to proclaim its benefits and applicability as a strategy for growth and development to all countries, especially the Sub-Saharan African countries, hence the trade liberalisation approach. The promulgation of this view, based on conventional neoclassical trade theory, has resulted in the rise of a new orthodoxy on trade policy based on trade liberalisation in conjunction with other supportive reforms suggested by the Washington consensus. Against this backdrop and compelled by economic crises with high levels of debt and poverty, the World Bank/IMF suggested structural adjustment programmes to be adopted. With the failure or inherent weaknesses of the ISI policy, and as part of trade liberalisation and liberalisation in general, in line with free market prescriptions, regional and bilateral trade agreements were seen as a solution, and Cameroon followed this line of policy prescription, as can be seen from her membership of CEMAC, ACP trade agreement with the European union and many bilateral trade agreements, all aimed at increasing trade, especially exports.

As discussed in Chapter 2 and Chapter 3, many have questioned the consensus regarding the efficacy of trade reforms as a strategy for growth and development

because of the mixed empirical findings. Some opponents argue that a number of recurrent shortcomings in much of the empirical work continue to make it difficult to link performance outcomes to trade policy (Rodrik & Rodriguez, 2000; Harrison, 1996; among others). Even proponents of free trade, such as Bhagwati & Srinivasan, (1999: 24) argue that the use of cross-country regressions is problematic in making a strong case for free trade. Concerns raised include the assumptions made, channels through which the effects occur and problems associated with disentangling simultaneous effects associated with other policies.

In light of the contrasting views regarding the growth effects of trade liberalisation, the methodological approach of this research is critically explained in this chapter. The consideration of two models is borne out of an understanding that each model has its shortcomings (the gravity model, for instance, is mechanistic and borrowed from concepts in the physical science), and it is therefore hoped that using the two models in addition to an analysis of the Competitive Industrial Performance index and comparing the results will provide results that might be considered more reliable, because of the belief that each model will augment the weaknesses of the other. To the best knowledge of this researcher, this is such an approach will be used.

6.3 The single equation export supply model

Most of the approaches used in analysing the impact of policy changes have been static, despite the fact that the variables under consideration are dynamic. Therefore, it is important to use dynamic analysis to analyse dynamic variables in order to capture the effects of policy changes, such as trade liberalisation effects on the manufacturing sector performance (Jayanthakumaran, 2004:1-5). One justification for this is the

realisation of the inadequacies of the approaches based on traditional static analysis. It is also suggested that, given the weaknesses inherent in cross-country analysis resulting from lumping together countries that differ in terms of culture, history, institutions and other specific characteristic, a better and efficient approach, which can provide more reliable results, should be country specific, and should be for longer periods (Jayanthakumaran, 2004:1-5). Due to unreliable data in Cameroon, total output data for the whole manufacturing sector that is available will be used in an analysis in the case of the single equation supply model, and aggregate bilateral trade data in the case of the gravity model. The case study of Cameroon is to avoid the criticisms associated with cross-country models, as mentioned above.

The empirical analysis, which is to be used to achieve the objectives of the research, will consider the behaviour of the Cameroonian manufactured export supply before and after trade liberalisation. What factors determine or can influence manufactured exports? Since trade liberalisation, Cameroon's economy has experienced serious import liberalisation with the abandonment of the ISI protectionist policy, the devaluation of the currency, though the exchange rate is still heavily managed by BEAC and in line with the parity agreements with European Union, and less intervention in the manufacturing sector, to a certain extent.

This research, in using the imperfect substitutes model of trade, does so more importantly because of its assumption that exports are not substitutes for imports and *vice versa*, depending on the source (i.e. country) (Goldstein & Khan, 1985:1044-1050). Assuming that the producer maximises profits subject to a cost constraint, the model determines an export supply equation for the end of 2005, when Cameroon's

share in world-manufactured exports was 0.001 per cent (DGSN, 2006:20). There is a small country assumption for Cameroon and, in order to model a single export supply function, corresponding price elasticity for export demand needs to be elastic and is elastic. In the long run, export supply of manufactured goods is expected to depend on the relative prices, input prices, and productive capacity.

Accordingly, the effects of the policy change are examined against the background of their expected performance based on the *a priori* assumption, as explained in neoliberal trade policy literature (i.e. that trade liberalisation leads to positive outcomes). The approach is basically similar to that employed by Santos-Paulino and Thirlwall, (2000:2-25), but departs from it by looking at the supply side instead of the demand side, as is the case with Babatunde, (2009:2).

In theory, trade protection discourages exports and therefore has negative effects on export performance, because most of the imported inputs needed for the production of exports might not be available, in addition to the idea that other countries can engage in the same protection to retaliate. It is important for a country like Cameroon that depends on intermediate goods as inputs for production to take place. It is expected that once protection is removed, producers will be able to gain greater access to these imported intermediate inputs. Therefore, it is expected that trade liberalisation will bring about an increase in exports because, with the removal of tariffs, it is assumed that intermediate inputs will be easily imported at cheaper prices. Given the reasoning above, it is anticipated that production will increase and with a reduction in the average cost resulting from economies of scale prices will be internationally competitive. However, the response from importing and exporting might not be immediate because of other activities undertaken in the process of production up to

delivery to the final consumer (Goldstein & Khan, 1985; Junz & Rhomberg, 1973:412-418).

It is believed that export supply is negatively related to domestic demand. This assertion is based on the theory that division of output between domestic and foreign sales, depends on the assumptions made about the behaviour of the firm on the one hand and on the shape of the demand curve facing firms in foreign markets. Since this research assumes that Cameroonian firms are price-makers in the local market and price-takers in the international market, the demand curve facing the representative firm is downward-sloping at home and horizontal abroad (Thirlwall, 1986: 223-224). Following this reasoning, if domestic demand increases, the quantity available for exports will fall; and if the domestic demand falls, the quantity available for exports increases. That is, the quantity of exports will vary inversely with the internal pressure of demand.

Many economists agree that because of the dynamism of time-series data, it needs to be analysed using dynamic techniques as opposed to static techniques because of the dynamic effect associated with it. To test for the causal linkage between exports, exchange rate, imports of capital intermediate goods, tariffs and output, three steps are commonly followed in time-series studies: (i) test for unit roots and the order of integration, (ii) test for co-integration between the series, and (iii) causality test.

In this research, the econometrics procedure used follows these steps, mostly taken from Enders, (1995:1-10). The reason for this is to ensure the stationarity of the variables. This is done to consider the possibility of long-run relationships between

the integrated variables (co-integration test), and the direction of causation between the variables.

Muscatelli *et al.*, (1995:147-155) argue that there has been widespread recognition in recent empirical works of the importance of supply side effects in modelling the determination of export volumes in which the combined demand and supply model is used.

In this research, the methodology used, specifically on the performance of manufactured exports as earlier mentioned, takes a departure from the study by Santos-Paulino, (2000:1-25) addressing the issue from the supply side. Addressing it from the demand side may likely yield inconclusive empirical results and hence evidence, which might result in incorrect recommendations. Trade liberalisation effects on export performance are better captured using the export supply approach, since the reduction liberation is expected to improve export supply. This will be combined with a before-and-after approach (i.e. determining the impact of trade liberalisation before and after the reforms). Basically, a supply-side model is developed following Babatunde, (2009:1-30).

In addition to the single equation supply model, the gravity model for Cameroonian manufacturing bilateral trade performance with regard to how it is affected by trade liberalisation will also be estimated using a panel data approach.

6.3.1 Critique of the single-equation export supply model

Studies on OECD studies suggest that firms in this country might prescribe different prices in the domestic market and markets in other countries, and as such there is a need to have a model that deals with domestic and export prices at the same time (Orcutt, 1950:117-132; Aspe & Giavazzi, 1982:83-93; Funke & Holly, 1990:83-93).

Given the above, it is efficacious to deal with imports, exports, internal demand for locally manufactured goods, and level of employment in the manufacturing sector, manufacturing output and the competitiveness of the industrial sector in a systematic yet dynamic way.

The application of simultaneous demand and/or supply models in empirical analysis has been criticised by Riedel, (1988) and Athukorala & Riedel, (1990:81-89), who argue that the results obtained from such estimations depend critically on whether one normalises the export supply equation for prices, as is usually done in most empirical studies, or on whether one chooses the opposite normalisation where supply equation is normalised for quantity and demand normalised for exports.

However, as demonstrated by Muscatelli *et al.*, (1992:1467-1477), allowing for a general dynamic specification of the above model does away with the normalisation paradox, which might exist in Riedel's (1988) model. According to Muscatelli *et al.*, (1995:147-155), their estimation strategy based on the full system allows them to assess the validity of the chosen normalisation. It is important to understand the context of the assumptions made so that the results do not end up reflecting the assumptions instead of the reality.

In addition to the problems of econometric estimation, aggregated export models might not deal with the effects of transformation in the productive capacity of a country on the types and quantities of goods.

How trade policy in the form of tariff and non-tariff barriers affects Cameroon's trade is important because the evidence from research might not reflect the reality, because most research does not include this variable (Muscatelli *et al.*, 1995:147-155). This research explicitly addresses this by including the tariff variable as an independent variable.

If it is considered that the use of OLS in data that is expressed in different levels could provide unreliable results and criticism of such results will occur. As such, with this shortcoming in mind, this research uses the eclectic approach and inductive reasoning to reach the conclusions.

6.3.2 Specification of single equation export supply model

The model used in the present study assumes imperfect substitution and is based on previous works by Goldstein & Khan, (1978:275-286; 1985) and Tansel & Togan, (1987:521-534). Imperfect substitution means that exports are not perfect substitutes for domestic products, which could simply be a consequence of product differentiation and branding, prevalent as explained in the new trade theory.

Since trade flows need some time to adjust, the estimation of a static form of the model might be problematic. The use of the dynamic model introduces disequilibrium behaviour. The adjustment mechanism utilised in the export market is partly based on

that followed by Goldstein & Khan, (1978) and Browne, (1982), assuming that the price of exports adjusts according to the world demand for exports.

Given the importance of trade in development, as predicted in the neoclassical and the new trade theories, and even the highly pervasive Mercantilists who recognised the importance of trade, the question to ask is whether trade liberalisation can result in export expansion. In line with the same reasoning, what are the determinants of an export supply function. The possible answers for the question have important policy implications, especially for an underdeveloped country like Cameroon struggling to develop her manufacturing sector and joining the competitive world market. Standard models of export supply include explanatory variables such as export prices, domestic and foreign costs of inputs, and intermediate goods needed for further production and productive capacity (Goldstein & Khan, 1978; Bond, 1985; Faini, 1994). However, some researchers (Muscatelli, Srinivasan & Vines, 1990; Muscatelli *et al.*, 1992:1467-1477; Muscatelli, 1994:1415-1417; Athukorala & Riedel, 1994) have contributed to the empirical modelling and the issue of developing country exports supply, which is highly contentious and problematic.

Theoretically, exportable surplus of a particular commodity exists when domestic production is greater than its consumption. Accordingly, if the quantity of domestic supply is in excess of the quantity demanded, then the country becomes an exporter of that commodity (Kreinin, 2002), considering that the dynamics of domestic supply and demand can derive the export supply curve. At the domestic level, an equilibrium price is generated where domestic supply is equal to domestic demand, and therefore the country has no excess quantity for export supply. However, at higher world prices

above the domestic equilibrium price, the country would be willing to supply more for export. The same factors determine domestic and export supply. Trade liberalisation, which was undertaken as part of the structural adjustment programmes, was aimed at making exports from Africa competitive. This followed the long application of the Import Substitution Industrialisation (ISI) policy, which often left exports uncompetitive because of the high costs of production and over-valued currencies.

It is believed that export supply is negatively related to domestic demand. The theory behind this is that the division of output between home and foreign markets depends on behaviour of the firm, on the shape of the demand curve facing firms in foreign markets. In going back to what the new trade theory predicts, there is more inter- and intra-firm trade accompanied by product differentiation, imperfect competition perpetuated by multinational firms and economies of scale that ensure a large market share for them. Since this research assumes that Cameroonian firms are price-makers in the local market, especially under the conditions of distortionary ISI policies before trade liberalisation, and price-takers in the international market because of the small market share that is a result of any small firm, the demand curve facing the representative firm is downward-sloping at home and horizontal abroad (Thirlwall, 1986, 223-224). Following this reasoning, if domestic demand increases, the quantity available for exports will fall; and if the domestic demand falls, the quantity available for exports increases. That is, the quantity of exports will vary inversely with the internal pressure of demand. This will very much be influenced by prices; therefore, competition results in reduced prices and might result in a fall in demand for the local market without increasing exports at the same time.

The supply of export (manufactured exports from Cameroon), under free trade policy, can be analysed using the imperfect substitute model that incorporates tariffs, which affect the price level and at the same time are a measure of trade liberalisation.

The model outlined in equation 6.1 below is a standard export supply function that is used by many empirical works to a great extent (Muscatelli, Stevenson & Montangna, 1991; Bond, 1985; Goldstein & Khan, 1978). As mentioned above, and for emphasis, the major assumption of the model is that imports are not a perfect substitute for exports and domestic goods. When a country exports, the importing country considers this as an imperfect good and *vice versa*; a consequence of branding. Trade liberalisation may cover a number of different aspects of trade policy reform. In the case of Cameroon, mostly a reduction in tariffs, quantitative restriction removals and bilateral and multilateral trade agreements in addition to membership of the WTO. Whether trade liberalisation leads to a less distorted, more open trade, depends on the characteristics of the pre- and post-liberalisation and exchange rate regimes and their impacts on the pattern of incentives and production (Ghatak *et al.*, 1995:147-167; Utkulu & Özdemir, 2003). Again, as argued by Babatunde, (2009:25), if goods produced locally and those produced in other countries were perfect substitutes, the specialisation will take place and a country will either export or import in line with classical comparative advantage. However, as argued in the new trade theory and in the critique of the comparative advantage in Chapter 2, although comparative advantage is important, the static version is not, because comparative advantage can be acquired from the benefits of trade mentioned in the new trade theory (Krugman, 1990). Again, differences in prices for similar products (for example chocolate) in different countries (at constant purchasing power parity) and also local and export

prices of the same product in the same country do not allow imports or exports to be perfect substitutes. In line with new trade theory, prices of goods, which are influenced by imperfect competition, become very important in determining trade. The bottom-line here is to understand that profit maximising producers will take decisions that maximise their profits. The variables that affect the exports, such as prices of exports, domestic prices and the productive capacity, are right-hand variables and export is the dependent variable (Babatunde, 2009:1-35). All major studies regress export volumes on relative export prices and real world income. While doing this, the underlying framework is the imperfect substitutes model of the trade literature, as already mentioned and discussed above. Goldstein & Khan, (1985:275-286) argue that if domestic and foreign goods were perfect substitutes, market share of both will be in unity, and each country will be an importer or exporter of a good in which they are trading, but not both. Theoretically, price and income elasticities are expected to have negative and positive signs, respectively. Given the above narrative and analysis, the formal relationship or equation is given as:

$$X_t = f(P_x, PC) \quad 6.1$$

Where X_t is the level of manufactured exports at time (t); P_x is the price of manufactured exports and PC is the economy's productive capacity to produce manufactured exports, measured by manufacturing output. Relative prices of manufactured exports affect export supply negatively, on the one hand, and an increase in the productive capacity of the economy is expected to have a positive effect on export supply of manufactured goods. This is because a country's manufactured exports depend on exporting prices and excess supply, which depend on the productive capacity of the manufacturing sector (Babatunde, 2009). This

research, however, assumes that dominant relative price competition occurs among exporters. The relative price term is therefore taken to be the ratio of the export price (P_x) to competitors' export prices (P_w) adjusted for exchange rate change, that is, $P_x/P_w * e$. The model can be extended to consider other variables. Trade liberalisation reduces hindrances to exports and increases export supply, as suggested by neoclassical trade theory.

$$X_t = f(P_x/P_w * e, PC) \quad 6.2$$

Trade liberalisation, as mentioned above, is expected to lead to a reduction in anti-export bias, leading to an increase in manufactured exports. Ahmed (2000) argues that trade liberalisation may affect export performance through tariff reduction. For example, in a small economy, which in the above explanation has been assumed to be the case with Cameroon, because in the world market they are price-takers, she consumes and produces three categories of commodities, namely: manufactured exportable goods (EX), manufactured importable goods (IM) and non-tradable goods (NT); and it is assumed that excess supply of EX will be exported, while excess demand for IM will be in the form of intermediate and capital goods needed for production of exports and a single tariff rate (TAR) is assumed to be applied to IM with no export taxes and subsidies. The prices of IM, EX and NT, namely P_{IM} , P_{EX} and P_{NT} , respectively, are obtained in the domestic market. The prices of manufactured importables and exportables are simultaneously assumed to depend on prices in the foreign market and the exchange rate, while in the case of IM, it is the tariff rate (TAR). The prices are therefore expressed as:

$$P_{IM} = EXHCP *_{IM} \quad 6.3$$

$$P_{EM} = EXCHP *_{EM} \quad 6.4$$

If $P_{IM}^* = P_{EX}^*$ is assumed to be constant, an increase in EXCH or TAR increases P_{IM} , while P_{EM} can only be affected by an increase in EXCH. If the prices of non-tradables are assumed to be constant, a rise in P_{EM} or P_{IM} will result in an increase in the rate of exchange between exports and imports. An import tariff will therefore alter the relative prices by raising P_{IM} relative to P_{EM} by the amount of the tariff rate. Consequently,

$$P_{IM} = e P_{IM}^* (1 + \text{TAR}) \quad 6.5$$

Under trade liberalisation, the adoption of a real exchange rate, taking into consideration a fall in the tariff rate and the simultaneous depreciation of the exchange rate, reduces P_{IM} relative to P_{EX} . The fall of P_{IM} to P_{EX} is expected to move resources away from non-tradables (NT) to exportables (EX) as a result of the depreciation exchange rate, which raises the price of exportables (P_{EX}) relative to that of non-tradables (P_{NT}). As stated above, the anti-export bias will be removed and competitiveness increased if quantitative restrictions on some imports are removed and a real devaluation increases the price of tradables relative to non-tradable imports relative to exports (Babatunde, 2009:7). Unrealistic exchange rates do not reflect the relative scarcity of foreign exchange; a rigid exchange rate regime, as in the case of Cameroon, rejects market forces in exchange rate adjustments, and causes exchange rates to fail to signal and guide economic agents to allocate resources efficiently (Zhang, 2001).

Theory suggests that reforms in the form of trade liberalisation lead to an increase in imports. Governments engage in direct controls on imports through tariffs, quotas, and licensing schemes; they engage in deflationary policies; or devalue the currency for the purpose of servicing external debt or rebuilding foreign exchange reserves.

Such policies cause the reduction of imports and have a negative effect on export supply because they reduce the import of capital and intermediate goods that are necessary in the production for exports. Theoretically, imports are affected by the availability of foreign exchange and export performance depends on the supply of imported inputs (Goldstein & Khan, 1985; Khan & Knight, 1988:315-321).

However, the net effect of trade liberalisation on exports may depend on the price and income elasticity of demand and supply at home and abroad. In theory, tariff reduction will have an effect the more elastic the demand is and how responsive exports are to prices. In addition, domestic currency undervaluation (overvaluation) can encourage (discourage) export competitiveness, because it increases (reduces) returns to entrepreneurial activity, especially when identifying new high productive exports. Another channel by which trade liberalisation may lead to better export performance is through greater access to imported inputs and capital goods. Protectionism makes access to inputs difficult for exporters. Trade liberalisation is expected to increase the availability of such imported inputs, which are indispensable to the production of manufactured goods for export. Allowing for the above *a priori* considerations, the extended manufactured export supply equation can be expressed as:

$$X_t = a_1 P_x / P_w^* e_t + a_2 M A N_t + a_3 T A R_t + a_4 I M P_t + U_t \quad 6.6$$

Where TAR_t is tariff rate, IMP_t is import of manufacture intermediate materials and u is the random term with its usual classical properties. The implicit assumption made in equation (6.6) is because of the assumed instant adjustment of export supply to changes in prices, productive capacity, and trade liberalisation such that $X_t^s = X_t$; (that

is export supply of manufactured goods is the same all times). In reality, it is more reasonable to assume lagged adjustment. Exports are therefore assumed to adjust to the difference between present supply of exports t and the observed flow of exports in the previous period:

$$\Delta X_t = Y [X_t^e - X_{t-1}] \quad 6.7$$

Where Y is the coefficient of adjustment (assumed to be positive) and Δ is a first-difference operator [$\Delta X_t = X_t - X_{t-1}$]. The adjustment function in equation 6.7 assumes that the exports depend on supply in the rest of the world. Substituting equation 6.7 into 6.8, the equation for export demand can be obtained in the form:

$$X_t = a + a_1 (P_x/P_w * e)_t + a_2 MAN_t + a_3 TAR_t + a_4 IMP_t + U_t \quad 6.8$$

Equation 6.8 can further be adjusted as:

$$X_t = a + a_1 EXCH_t + a_2 MAN_t + a_3 TAR_t + a_4 IMP_t + U_t \quad 6.9$$

On an *a priori* basis, the values of a_1 , a_2 , a_3 and a_4 are expected to be as follows: $a_1 > 0$, $a_2 > 0$, $a_4 > 0$, $a_3 < 0$, which are the elasticities only if lags are taken into consideration.

X_t is defined as real aggregate manufactured exports at time t . $EXCH$ is the exchange rate that replaces $(P_x/P_w * e)_t$ in equation 6.8. $EXCH$ is the relative price of exports measured by the real effective exchange rate. $EXCH$ takes into account the weighted real exchange rate between a country and its trading partners. This can also serve as a measure of competitiveness. With trade liberalisation, the exchange rate is expected to be depreciative.

MAN is manufactured output. Greater utilisation of capacity is expected to lead to more manufactured exports, although higher exports do not necessarily lead to greater

utilisation of available capacity. The choice of the measure of productive capacity is inconclusive in the literature. Different studies have used different measures of the productive capacity. Bond, (1985:56-77) and Senhandji & Montenegro, (1995) support secular output of the economy, arguing that relative prices alone cannot fully explain the choice and ability to export. Muscatelli, Stevenson & Montagna, (1995:147-155) used the stock of fixed capital to represent increasing productive capacity and productivity on export supply for some newly industrialised economies in Asia; while Ahmed, (2000:1077-1084) measured capacity utilisation as the predicted values of GDP.

Milner & Zgovu, (2004), however, used agricultural output as a proxy for the productive capacity. The choice of the productive capacity in this research is manufacturing output as a proxy for capacity; this is justified by the reasoning that the performance of the manufacturing sector of a country is a good indicator for economic health and further justification is given by the reasoning that the aim of the research is to empirically determine the effects of free trade on the manufacturing sector.

The theoretical argument regarding technology knowledge, and as explained both in the classical and new trade theories (Bhagwati, 1978; Krueger, 1978; Krugman, 1991), is that foreign imported technology is potentially an important factor in determining an export supply increase. To capture this effect, imports of manufactured intermediate goods into the economy can be used. Again, in line with the theory, in terms of greater economies of scale in high-technology sectors, an export commodity composition type of index may yield significant results (Muscatelli

et al., 1991; Utkulu & Seymen, 2003).

Tariff (TAR) is measured as average nominal tariff rate; and IMP is measured as import of manufactured intermediate goods. If changes in the incentive to export were a significant determinant of export performance, this would show up in terms of a significant positive coefficient on an export incentive variable. If the assumption that increased access to imports is true, a positive relationship between exports and the level of imported inputs (IMP) will exist. In addition, if there were an absolute bias against exports as a result of high tariffs on imported inputs, this would be reflected in an inverse relationship between tariff and exports.

6.3.3 Econometric tests related to the single equation export supply model

The reason for carrying out various tests in econometric analysis is to determine the stability of the regression equations to be estimated and their predictive ability. In dealing with time-series data, the research needs to follow the same process. Unit root tests determine whether the series is stationary or non-stationary. The Dickey-Fuller test takes into account the role of the constant term, which can be included or excluded from the stochastic process.

The main reason why it is important to know whether a time series is stationary or non-stationary before regression analysis, is that there is a danger of obtaining significant regression results from data that is not related, if and when data in a series is non-stationary (Carter, William & Guay, 2007:165-232). When this happens, such

regression results may appear similar to the reasoning of the analysis, but are not valid.

The existence of heteroscedasticity violates the least square assumptions, which means that the error variables change as the independent variable changes. Therefore, in dealing with time-series data, which is dynamic, homoscedasticity needs to be established, meaning the error variables do not change. These tests are important to ensure the validity of the results by ensuring the stability and predictive ability of the equations, as the case might be.

6.3.3.1 Multi-collinearity test

According to Mendenhall & Sinchich, (2003:34), multi-collinearity exists when the independent variables in the model are correlated. In other words, two or more of the independent variables contribute overlapping information.

The variance inflation factor (VIF) is a formal test used to detect multi-collinearity. The test calculates the coefficient of determination, R^2 , between each independent variable in the model:

$$E(x_i) = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + \cdots + \alpha_{i-1} x_{i-1} + \alpha_{i+1} x_{i+1} + \cdots + \alpha_n x_n \quad 6.10$$

If a VIF for a β parameter is greater than five where:

$$(VIF)_i = \frac{1}{1-R_i^2} \quad 6.11$$

6.3.3.2 Heteroscedasticity test

One of the assumptions necessary for the validity of regression inferences is that the error term ε has a constant variance σ^2 for all levels of the independent variables.

Variances that do not satisfy this property are said to be heteroscedastic (Mendenhall & Sinchich, 2003: 379).

A formal test used to test for heteroscedasticity is the White Test. Before performing a hypothesis test and deriving a test statistic to test for heteroscedasticity in the specified model, distinction is made between the mean function $E(y_i)$ and the variance function $var(y_i)$. Hill, Lim, William & Griffiths, (2008: 213) distinguish between the two.

The main function is:

$$y_i = E(y_i) + \varepsilon_i = \beta_0 + \beta_1 x_1 + \dots + \beta_n x_{in} + \varepsilon_i \quad 6.12$$

The general variance function hypothesising that the variance depends on a set of explanatory variables $z_{i1}, z_{i2}, \dots, z_{in}$ is:

$$var(y_i) = \sigma_i^2 = E(\varepsilon_i^2) = h(\alpha_0 + \alpha_1 z_{i1} + \dots + \alpha_n z_{in}) \quad 6.13$$

The linear function is:

$$h(\alpha_0 + \alpha_1 z_{i1} + \dots + \alpha_n z_{in}) = \alpha_0 + \alpha_1 z_{i1} + \dots + \alpha_n z_{in} \quad 6.14$$

From this, it is possible to formulate a hypothesis test. When $\alpha_0 = \alpha_1 = \dots = \alpha_n = 0$, the function $h(\cdot)$ becomes $h(\alpha_0 + \alpha_1 z_{i1} + \dots + \alpha_n z_{in}) = h(\alpha_0)$. The term $h(\alpha_0)$ is a constant and does not depend on any explanatory variables. Therefore, when $\alpha_1 = \alpha_2 = \dots = \alpha_n = 0$, heteroscedasticity is not present. Consequently, the null and alternate hypothesis for the White test for heteroscedasticity is:

$$H_0: \alpha_2 = \alpha_3 = \dots = \alpha_n = 0$$

$$H_a: \text{not all } \alpha_n \text{ in } H_0 \text{ are zero}$$

The next component is to derive a test statistic. The test statistic is obtained from the linear variance function by substituting equation 6.12 into 6.11:

$$var(y_i) = \sigma_i^2 = E(\varepsilon_i^2) = \alpha_0 + \alpha_1 z_{i1} + \cdots + \alpha_n z_{in} \quad 6.15$$

Allowing $v_i = \varepsilon_i^2 - E(\varepsilon_i^2)$ be the difference between a squared error and its mean;

then
$$\varepsilon_i^2 = E(\varepsilon_i^2) + v_i = \alpha_0 + \alpha_1 z_{i1} + \cdots + \alpha_n z_{in} + v_i \quad 6.16$$

$\hat{\varepsilon}_t$ is replaced by $\hat{\varepsilon}_t^2$, the square root of the least squares residuals and the operational version of equation 6.14 is:

$$\hat{\varepsilon}_t^2 = \alpha_0 + \alpha_1 z_{t1} + \cdots + \alpha_n z_{tn} + v_t \quad 6.17$$

Therefore, the White test is performed as a chi-square (χ^2) distribution with $n - 1$ degrees of freedom, $\chi^2 = N \times R^2 \sim \chi_{(n-1)}^2$. Therefore, for a five per cent significance level, H_0 is rejected when $\chi^2 > \chi_{(0.95, n-1)}^2$ and heteroscedasticity is confirmed (Hill *et al.* 2008: 215).

6.3.3.3 Augmented Dickey-Fuller test

Dickey & Fuller, (1979:427-431) developed three different regression equations in differences for unit root tests. The first equation is a pure random equation, the second equation has a drift (intercept) term (a_0), and the last equation has both a drift and a linear deterministic trend (t). The error terms in all three equations are assumed to be independent (White noise) with equal variance. All three equations are denoted as Augmented Dickey-Fuller (ADF) tests. To test for unit roots in the series, involves estimating one or more of these equations using the OLS procedure (Enders, 1995). The last two equations will be used to test for unit roots in the series selected for this study. Below is a presentation of the third equation developed for the DF:

$$\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \sum_{i=2}^p \beta_i \Delta y_{t+i} + \varepsilon_t \quad 6.18$$

Where p is the number of lags

In this equation (as in the other two equations), the parameter of interest is γ . If this coefficient is not significantly different from zero, the series contains unit roots $I(1)$ or is non-stationary.

Although it is difficult to select the appropriate ADF test equation, two out of the set of three equations will be used: one with a constant (a_0) and another with a constant and a trend (a_2).

In the equation containing a constant and a trend, the null hypotheses is that $\gamma = 0$ and $a_2 = \gamma = 0$ is tested. In the equation with only a constant, the null hypothesis that $\gamma = 0$ will be tested. Failing to reject these null hypotheses implies that the series in levels are non-stationary and they must be modelled in first differences $I(d)$, to make them stationary. Rejecting these hypotheses (calculated t-statistics greater than critical values) implies that the series are stationary and they must be modelled in levels (actual data) making them $I(0)$.

6.3.3.4 Co-integration test

As a general rule, non-stationary time-series should not be used in regression models to avoid the problem of spurious regression (Carter, *et al.*, 2007:165-232). However, there is an exception to this rule. If Y_t and X_t are non-stationary $I(1)$ variables, then we expect their difference, or any linear combination of them, such as

$e_t = y_t - B_1 - B_2 X^3$ to be $I(1)$ as well. There is an important case when $e_t = y_t - B_1 - B_2 X_t$ is a stationary $I(0)$ process. In this case, y_t and x_t are said to be co-integrated. Co-integration implies that y_t and x_t share similar stochastic trends, and since the difference e_t is stationary, they never move too far from each other (Carter *et al.*,

2006:165-232). A way to test whether y_t and x_t are co-integrated is to test whether the errors $e_t = y_t - B_1 - B_2 X_t$ are stationary or not. Since e_t cannot be observed, the stationarity of the least squares residuals, $e_t = y_t - b_1 - b_2 x_t$ is tested using the Dickey-Fuller test. The test for co-integration is effectively a test of the stationarity of the residuals. If the residuals are stationary, then y_t and x_t are co-integrated; if residuals are non-stationary, then y_t and x_t are not co-integrated and any opponent regression relationship between them is spurious.

6.4 The gravity model

The gravity model studies international trade flows, as already explained in Chapter 2. Researchers such as Tinbergen, (1962); Pöyhönen, (1963:93-99); Linnemann, (1966); Anderson, (1979:106-116); Bergstrand, (1985:474-48); Helpman & Krugman, (1985); Eaton & Kortum, (1996:251-278); Deardorff, (1998:7-32); Evenett & Keller, (1998); and Haveman & Hummels, (2004), among others, have all used it with high levels of success.

Therefore, it can be argued that the use of the gravity model to analyse bilateral trade flow, in theory, is justified, since it can be derived assuming a perfectly competitive or monopolistic market structure. In addition, many factors that influence trade can be used to measure the effects of a policy change in an augmented gravity model. The basis of the model is the Newtonian physics concept. The model of trade basically states that bilateral trade between two countries is determined positively by their income (GDP) and negatively by the distance between them (in this research, distance between capital cities). Krugman & Obstfeld, (2005) specify the simplest version of the gravity model that takes the following form:

$$EX_{ij} = A * GDP_i * GDP_j / D_{ij}. \quad 6.19$$

Where

EX_{ij} = Bilateral trade flows (export + imports) between country i and country j.

A = A constant term

GDP_i = Country i's GDP

GDP_j = Country j's GDP

D_{ij} = Distance between Countries i and j.

The log-linear form of the model is as follows:

$$\text{Log}(EX_{ij}) = \alpha + \beta \log(GDP_i) + \gamma \log(GDP_j) + \delta \log(D_{ij}) \quad 6.20$$

When estimated, this baseline model is expected to give relatively good results. However, there are other factors that also influence trade levels. Most estimates of gravity models add a number of dummy variables to equation 6.20 that test for specific effects, for example being a member of a trade agreement, sharing a common land border, speaking the same language and so on, and in this case, tariff variables that capture the impact of trade liberalisation. Most of these variables might be either trade enhancing or trade restricting variables.

Assuming that one wishes to test for p distinct effects (G_s), the model then becomes:

$$\text{Log}(EX_{ij}) = \alpha + \beta \log(GDP_i) + \gamma \log(GDP_j) + \delta \log(D_{ij}) + \sum_{s=1}^p \lambda_s G_s \quad 6.21$$

s is the number of dummy variables and takes the value of one.

6.4.1 Limitations of the gravity model

Despite its empirical success, the gravity model has not been free from criticism. As a

criticism, there was no theoretical support for the gravity model in the beginning, or at best weak support. Anderson, (1979:106-116), assumed product differentiation in his formulation of a theory. Bergstrand, (1985:474-481; 1989:143-153) dealt with it from the perspective of monopolistic competition. Helpman, (1987:62-81) dealt with differentiated products with increasing returns as a theoretical basis for it. Deardorff, (1995:7-22) justifies the model on the basis of the neoclassical trade theories. The difference in the approaches to develop a theoretical justification for the gravity model explains the different results from the analyses, which can be considered a weakness.

Despite the theoretical justification of the gravity model, there are criticisms of the econometric expression. With different specifications of the gravity equation, the question of using population as an explanatory variable could be considered to be inconsistent, as in the models by Anderson, (1979:106-116), Helpman, (1987:62-81) and Deardorff, (1995:7-22), which can yield spurious results. In the opinion of this research, the quality of the population is often not taken into consideration.

Again, Baldwin & Taglioni, (2006) identify an error related to the fact that when trade between two countries is analysed as an average, a problem might result from the calculation, because it entails taking the log of the average in one direction.

Kalirajan & Findlay, (2005) argue that the peculiarity of countries under consideration is often neglected, which can affect the results. Leaving out the unobserved trade-limiting variables leads to a bias, because assuming that the random variable is normally distributed in this case, which is not the situation, causes heteroscedasticity.

Cheng & Wall, (2005:60) conclude that the fixed effects model is better from a statistical perspective. Using a panel data approach to get more accurate estimates that are not fixed over time, leaves out some variables and their impacts. Harrigan, (2001:45) argues that this approach leaves out variations in the data used. Anderson & Van Wincoop, (2004) agree with Harrigan, (2004) that in relation to calculating the cost of transactions there is no clarity on how the calculations can be handled.

Baldwin & Taglioni, (2006) argue that the variables used and the methods of estimation consequently leave out some variables, which causes the results to be unreliable and inconsistent at best. It is easy to measure tariffs, but reliable data is lacking and is basically a small and trade forward aspect of trade cost.

Anderson, Ferrantino, & Schaeffer, (2005) and Ghosh & Yamarik (2004:369-395) argue that, because of the specification problems, the value of coefficients could be overestimated. Again, Anderson *et al.*, (2005) show that the unreliable nature of data used in the estimation might produce unreliable results, which might indicate the influence of variables that are not true, but based on poor data. Ghosh & Yamarik, (2004:394) question the empirical results of the effects of RTAs in boosting trade, arguing that dummy variables might be based on or reflect the perception of the researcher.

Polak, (1996:533-543) considers problems of specification in relation to distance, and finds some inconsistencies in its estimation; however, distance is fast becoming less important in terms of trade. Brulhart & Kelly, (1999:159-174), in trying to deal with the data limitations, include a variable known as a remoteness indicator; however,

how this is arrived at is also problematic. Basically it can be concluded that despite the popularity and wide use of the gravity model to estimate trade relations, it suffers from specification problems and the estimation of variables and choices of dummy variables, which might be influenced by the bias of the researcher. The consequence of this is that the value of the coefficients might be exaggerated and, based on these results policy prescriptions could be made which could be misleading.

6.4.2 Specifications of the gravity model

In addition to the primary variables described above, other studies have included other variables, such as population and land area, common border, political ties, colonial ties, common border, bilateral agreements, belonging to the same economic union, common language, corruption and tariffs, which gave rise to a new form of the gravity model, termed the “Augmented Gravity Model”. The term augmented here explains the fact that other variables that explain bilateral trade performance, apart from the standard or traditional variables, have been included, hence the inclusion of the scope for the model to explain trade flows between two countries.

This research adopts a conventional gravity model similar to that used by Krugman & Obstfeld, (2005). It augments the basic gravity model with additional variables, to control for language, colonial linkage, bilateral trade agreement, membership of the World Trade Organisation, membership of a regional economic block, tariffs to take care of the effects of trade liberalisation, and a corruption variable to take care of the institutional problems in Cameroon, etc. These variables are usually introduced into the model as binary variables to capture those qualitative effects on bilateral trade, since data relating to such variables are not easily available. In the next section, the

research presents the augmented gravity model as part of the answering of the research question.

6.4.3 Augmented gravity model

The generalised gravity model of trade predicts that the volume of exports between pairs of countries is a function of their GDPs, their populations and their geographical distance. In this research, an “augmented” gravity model adds more variables, which can affect bilateral trade apart from the ones suggested in the standard model. In this way, the research avoids an omitted variable bias. The coefficients of the regional agreement dummies, for instance, could be particularly important for Cameroon because of her membership in CEMAC. Again, the dummies for a common language, having a common colonial master, and membership of the WTO, which is an indicator of liberalisation, are also included. Specifically in this research, the tariff variable is added, which captures liberalisation of trade’s effect on bilateral trade.

A panel data approach is used to estimate the model, with bilateral-specific effects to isolate the non-observable characteristics of each pair of countries, which can influence their bilateral trade (such as a common language, historical links, etc.).

Moreover, the research estimates the model according to the Krugman & Obstfeld, (2005) method, which enables the research to take into account the possible endogeneity of some explanatory variables. The estimation is also corrected for a potential selection bias, as already mentioned above.

$$\begin{aligned} \ln(EX_{ij}) = & \beta_0 + \beta_1 \ln GDP_i + \beta_2 \ln GDP_j + \beta_3 \ln D_{ij} + \beta_4 \text{Comlang}_{ij} + \beta_5 \text{COL}_{ij} + \beta_6 \text{ColM}_{ij} \\ & + \beta_7 \text{BTA}_{ij} + \beta_8 \text{WTO}_{ij} + \beta_9 \text{WX}_{ij} + \beta_{10} \text{RTA}_{ij} + \beta_{11} \text{TAR}_{ij} + \varepsilon_{ij} \end{aligned} \quad 6.22$$

Explanation of variables:

Where i and j denote countries (Cameroon is i and other countries j):

EX_{ij} = Value of real bilateral trade in manufacturing between i and j .

GDP_i = Real GDP of i .

GDP_j = Real GDP of j .

D_{ij} = Distance between i and j .

Comlang_{ij} = Language variable is unity if i and j have a common official language.

COL_{ij} = Colony variable, which is unity, if i and j were colonies after 1945 with the same colonial master.

ColM_{ij} = A colonial master variable, which is unity if i colonised j or *vice versa*.

BTA_{ij} = A bilateral trade agreement variable, which is unity if i and j have bilateral agreements.

WTO_{ij} = A variable, which is unity, if both i and j are members of WTO (Being a member means your economy is liberalised.).

WX_{ij} = A variable, which is unity, if either i or j is a WTO member.

RTA_{ij} = A variable, which is unity, if i and j both belong to the same Regional Trade Agreement (Cameroon belongs to CEMAC; as does Gabon).

TAR_{ij} = Tariff rate for imports into the country.

ε_{ij} = Error term.

6.4.4 Estimation technique of the gravity model

The standard gravity model is augmented with other variables expected to explain the

performance of manufactured bilateral trade. The sample consists of 20 countries chosen on the basis of their trade with Cameroon, once it exceeds 1 per cent.

In order to maintain meaningful interpretation for the spatially lagged variables (i.e. in order to capture demand side and supply side factors separately), the research estimates the model for both exports and imports, as expressed in the bilateral trade component, which also happens to be the dependent variable.

Given the alternative formulations found in the literature, this research opts for the regression of the bilateral trade flows (manufactured imports and exports) on GDP in the partner countries and the distance between the countries, as it is the model least affected by the presence of multi-colinearity. Tariff rates, which are the same for all the countries, are also an important determinant of bilateral trade flows. Given our focus on the accuracy of the parameter estimates, this is an important feature. The use of panel data is preferred, because it avoids the shortcomings of cross-sectional data.

Dealing with zero trade and bias, applied research often ignores the problem of bias and inefficiency in the presence of heteroscedasticity. However, in this research, there is no zero trade, which means the first problem is absent, and with regard to the second, the problem of bias does not exist because of the absence of heteroscedasticity. This is so because the estimation tells you how many observations satisfy the restriction that is imposed for the inclusion of the variable. With approximately a thousand observations, the standard deviations and the variance can be determined.

6.4.4.1 Description of panel data methodology

The gravity equation for Cameroon's bilateral manufacturing trade has been estimated in terms of trade flows with major partners. The gravity model equation has been estimated using the OLS technique with time-series data using a panel data approach, taking into consideration two periods: before and after trade liberalisation. The dependent variable is total manufactured merchandise exports and imports (bilateral trade), in log-linear form, between Cameroon and twenty other countries.

The use of panel data in economic relationships is appealing, since panel data provides valuable information on the behaviour of the individual units (countries) and at the individual level. The benefits of using panel data include controlling heterogeneity among the countries; better identification of effects that are not detectable in pure cross-section or time-series data; and the bias due (fewer degrees of freedom) to aggregation over countries may be eliminated (Baltagi, 2008: 6).

The panel data econometric model can be presented as follows:

$$\log(\text{EXP}_{it}) = \beta_0 + \beta_1 \log(\text{GDP}_{iit}) + \beta_2 \log(\text{GDP}_{jit}) + \beta_3 \log(\text{Dij}_{it}) + \beta_4 (\text{ComLang}_{it}) \\ + \beta_5 (\text{ComCol}_{it}) + \beta_6 (\text{Colm}_{it}) + \beta_7 (\text{RTA}_{it}) + \beta_8 (\text{TAR}_{it}) + \varepsilon_{it}$$

6.23

where

GDP_i = GDP of country i at time t

XP_{it} = Bilateral trade between country I and j

GDP_{it} = GDP of country j at time t

Dij = Distance between country I and j at time t

ComLang_{it} = Common language with other countries at time t

ComCol = Common Colonial master time t

Colin = Common boundary at time t

RTA = Membership of regional trade agreement

TAR = Tariff rates

ε : Error term $\varepsilon_t \sim N(0; \sigma^2)$

t : Denotes the observation period (1980-1991 for the pre-liberalisation period and 1992-2006 for the post-liberalisation period)

i : Denotes the observation for the i th country ($i = 1, 2, \dots, 19$)

6.4.4.2 Preliminary data analysis

Before the model can be estimated the variables included in the model need to be tested for stationarity. According to Hill, Griffiths & Lim, (2008: 326), a time series is stationary if its mean and variance are constant over time, and the covariance between two values from the series depend on the length of time separating the two values, and not on the actual times at which the variables are observed.

Performing individual unit root tests for each cross-section has limited power in a panel data study; therefore, a more powerful panel-unit root test is suggested. The Levin, Lin and Chu test (LLC) is the formal test used for this purpose. According to Baltagi, (2008), the LLC test is derived by performing separate augmented Dickey-Fuller (ADF) regressions for each of the cross-sections and tests the null hypothesis that each individual time series contains a unit root against the alternative, and that each time series is stationary.

Using the LLC test, it is possible to test the following hypothesis to determine whether the pooled variables are stationary:

$$H_0: \theta_{iL} = 0 \quad (\text{When } \rho_i = 0 \text{ and } \rho_i < 0)$$

$$H_a: \theta_{iL} < 0 \quad (\text{Stationary})$$

6.5 Impact of trade liberalisation on manufacturing (industrial competitiveness)

The mechanisms through which trade policy reform (trade liberalisation) affect the manufacturing sector vary. Trade policy reform alters the structure of relative prices, which, in turn, affects the structure of incentives, methods of production, techniques in use, the input structure, and the output composition in an economy (Dornbusch, 1992).

A central feature of Cameroon's pre-reform trade policies was that they created a wedge between financial and economic efficiency prices of factors and products, which had resulted in gross inefficiencies in resource allocation and utilisation, chronic shortages of foreign exchange and internationally non-competitive operations. It could, therefore, be argued that trade policy reform, by reducing the divergence between financial and economic efficiency prices through the re-alignment of domestic relative prices to correspond with international prices, will result in more efficient resource allocation and use, as already stated in Chapter 3.

Therefore, a major criterion for evaluating the impact of Cameroon's trade reform is the extent of efficiency and competitiveness achieved in the manufacturing sector in the post-reform period. The concept of Competitive Industrial Performance (CIP) was developed by the United Nations Industrial Development Organisation (UNIDO), is being increasingly used by economists to determine the international competitiveness of the industrial sector. Therefore, if the pre-reform protectionist trade regime in Cameroon had caused inefficiencies due to the misallocation of resources arising out of protection, then the CIP index, under the new incentive structure of the post-reform

period, in which protection has been reduced, will show the extent to which the firms are efficient and internationally competitive (UNIDO, 2009:1-50).

Conceptually, the CIP index benchmarks competitive industrial activity at the country level, given liberalisation and globalisation. The reason for this is that using one indicator might not give explicit results that consider the whole spectrum of manufacturing, upon which general conclusions can be made.

6.5.1 Manufacturing value added (MVA) *per capita*

Trade liberalisation, which has as one of its main component parts import liberalisation, which is the opening of the economy to imports, is expected to affect the value added to the manufacturing sector. As already discussed in Chapters 2 and 3, technology and knowledge can be acquired from the liberalisation of trade. These are expected to add value to manufacturing. Cameroon, it must be emphasised, adopted liberalisation with an existing, outmoded, weak and technologically poor manufacturing sector.

Manufacturing value added measures the contribution of the manufacturing sector to the total production of an economy and is an indicator of how developed the manufacturing sector of a country is.

According to Lall, (2004:5-7), trade liberalisation has not improved the manufacturing sector in terms of manufacturing value added, thereby concluding that trade liberalisation has been of little use in terms of this variable as a measure of competitiveness. As discussed earlier, one of the main reasons for trade liberalisation

is to improve competitiveness, without which a manufacturing sector cannot contribute to economic growth.

In the case of Cameroon, like most Sub-Saharan African countries, the manufacturing value added has been diminishing as compared to what was obtained during the period of ISI, when the manufacturing sector was heavily protected and subsidised (MINTID, 2005: 20). In considering their contribution, however, the costs of protection and subsidies were not taken into consideration. Besides, the performance of the manufacturing sector in terms of MVA is not a conclusive indicator of the competitiveness of the sector.

As explained in the new trade theory, the levels of technology and knowledge are very important for the development of the manufacturing sector. Economies of scale and other benefits from technological development in terms of developing a functional and sustainable manufacturing sector are very important for growth.

6.5.2 Manufactured exports *per capita*

The question could be asked whether trade liberalisation leads to growth in the exports of manufactured goods. Trade liberalisation is expected to encourage exports by removing tariffs on the import of intermediate goods and other inputs necessary for production for the export market. This also applies to tariffs on the import of raw materials and capital goods, which can improve the competitiveness of the export sector (UNCTAD, 2002).

The case of South East Asia is often given as a good example of trade liberalisation effects on trade liberalisation. However, this is questioned, because there were other national policies that were implemented at the same time. A country that cannot export cannot grow its economy and, more importantly, the types of exports matter. It must, however, be mentioned that how much is exported is not necessarily a reflection of how much local goods are used, as can be seen from the East Asian economies that lack these resources, yet they export a great deal of manufactured goods (Thanh, 2005). The only way to determine this, is to rigorously study the structure of exports of manufactured goods and in so doing identify the inputs that are used and from where they originate.

6.5.3 Industrialisation intensity

Trade liberalisation is expected to alter the structure of the manufacturing sector, in theory, by pushing lowly industrialised countries such as Cameroon up the ladder of industrialisation through the benefits explained in Chapters 2 and 3. One of the measures of this is industrialisation intensity, measured by the average of the share of MVA in GDP and, on the other hand, what influences this contribution (that is the type or level of manufacturing), and whether it is low, medium and high technology (MHT) manufacturing in MVA. It is important to include low manufacturing because many countries such as Cameroon are still at the low level of manufacturing, meaning that if this is left out, the results might be misleading (AfDB, 2009:19). While MVA deals with the position of manufacturing in the whole economy, low technology and MHT deal with the level of technological application in the manufacturing process. That suggests that a country that produces advanced manufactured goods, like aeronautical goods, will have a high value of MHT; those

that produce basic consumer goods, like Cameroon, will have a low value. A country with a high value of MHT is one that has a better chance of continuous expansion and improvement of its manufacturing sector, which is the case with the industrialised countries. The reverse is true for poor, developing countries. If these variables are, however, considered, at a point in time, the dynamic nature of manufacturing growth might be missed; therefore, this variable of CIP has to be considered within the context of this limitation by dealing with other variables in addition to this one (UNIDO, 2005:1-25).

6.5.4 Export quality

What a country exports matters in many ways and this is a determining factor in the quality of lives of the population and the level of development. Within the context of the CIP index, it is simply considered as the share of manufactured exports in total exports. The reasoning is similar to that on industrialisation intensity. It is obvious that highly-industrialised countries, such as those in Europe, will export mostly manufactured goods, while less-industrialised countries, like Cameroon, will export mostly commodities or low-level consumer manufactures, such as leather and fabrics (OECD, 2006:5). It is important to differentiate between countries that actually produce goods from ideas and design to the actual production and, on the other hand, those that simply assemble the parts to get the same product. With the increased use of motorcycles as a means of transport in Cameroon, there has been an increased demand for it. With this situation, Japanese firms that produce motorcycles simply package the completely knocked down parts to Cameroon for assembly, with little or no local content. Therefore, Cameroon does not produce motorcycles, but simply assembles them, and might never acquire the knowledge if such a situation persists

the producer of the motorcycles is Japan (UNIDO, 2005:2-35). A policy prescription might be to compel companies to transfer the knowledge and technology and to increase the local content in the product as much as possible.

6.6 Summary

This chapter looked at the methodological approach, which means, as suggested by the *a priori* expectation, that trade reforms are expected to have a positive impact on the manufacturing sector.

It was explained that the approach of examining trade liberalisation through the demand side may likely yield inconclusive evidence. Trade liberalisation effects on manufactured export performance are better captured using the export supply approach, since the reduction of the anti-export bias should increase export supply. In addition, the contrasting evidence provided by time-series evidence regarding the link between trade and exchange rate policy reform and export performance was assessed through the utilisation of a time-series data analysis technique based on the least squares method of estimation. This was combined with a before-and-after methodology. The gravity model estimated the impact of trade liberalisation on the bilateral manufacturing trade in Cameroon, which was augmented to capture more variables that might influence the performance of the manufacturing bilateral trade.

The competitive industrial performances index analyses whether the manufacturing sector in Cameroon is competitive or not. A competitive industrial sector is a developed one, and one that is not competitive is underdeveloped. To the best of our

knowledge, this method has not been used in any study in a holistic approach such as this, especially pertaining to the case of Cameroon.

Chapter 7

Presentation and interpretation of empirical results

7.1 Introduction

The objective of this chapter is to present and interpret the results from the estimation of the models in the previous chapter, in order to empirically determine the impact of trade liberalisation on the manufacturing sector in Cameroon for the period 1980 to 2006. Specifically, it presents the results of the time-series estimation of the export supply function on the one hand, and the gravity model on the other hand. It is then followed by the results from the analysis of the industrial competitiveness index. It consists of three main sections.

Section 7.2 presents the results and findings from the single equation supply model. Section 7.3 presents the results from the estimation of the augmented gravity model; While section 7.4 presents the findings from the analysis of the manufacturing sector using the industrial competitiveness index. In section 7.5, a comparative analysis of the results from the models is carried out. Section 7.6 then presents a summary of the chapter.

7.2 Presentation of results from the estimation of the single equation supply model

As discussed in the preceding chapters, theoretical and empirical literature continues to deliver disparate predictions regarding the impact of trade liberalisation on the manufacturing sector. While traditional international trade theory appears to have some clear prediction about static effects, the dynamic effects are much less clear. In

view of the fact that theoretical development is yet to resolve the debate about the relationship between trade liberalisation and manufacturing performance, empirical analysis is still required to bear on those issues, especially on specific issues; in this case manufactured export performance and specifically for Cameroon.

There has been significant trade liberalisation in Cameroon since the late 1980s and 1990s. However, the performance of the manufacturing sector has not been encouraging, as stated in Chapter 5. Many previously protected firms under ISI went out of business and the remaining ones did not perform optimally. Increased competition was reflected in the growth of export orientation as well as import penetration with mixed results.

Against this background, it is important to examine the links between trade liberalisation and manufactured exports. Indeed, given the increased openness, this research asks whether there is a possible link between a greater liberalisation of trade and manufactured export performance. An empirical exploration of these issues is important, since time-series data that documents these issues is available. The empirical results from the various periods are presented and analysed here, with the aim of making informed conclusions and drawing inferences.

7.2.1 Whole series period (1980-2006)

An analysis of the results in Table 7.1 (on lagged regression results) reveals that countries' productive capacity (MAN) had a positive but not significant impact on export performance in Cameroon during the review period. The variable was positive, but not significant. This positive relationship is a suggestion that economies of scale

may be a contributory factor in manufactured export performance in Cameroon. However, the real effective exchange rate (EXCH) variable did not come with the expected sign in the regression analysis. It was positive and significant while *a priori* expectations point to a negative relationship.

Table 7.1: Lagged regression results for the single equation export supply model

Explanatory variables	Dependent variable (Manufactured exports)
Constant	167.06
EXCH (-1) (Real exchange rate)	-1.37
MAN (-1) (Production capacity)	-23.23
TAR (-1) (Tariff rate)	2.50
IMP (-1) (Imported inputs)	3.18
Standard error of regression	53.03
R ²	0.37
Adjusted R ²	0.25
F-statistic	3.01

Source: Own data (2010)

All variables are significant. R², which stands at 37.57 per cent, indicates that just above 37 per cent of variation in manufactured exports (EXP01) is explained by the independent variable regression. This is an indication that there are other factors that need to be investigated apart from manufactured output. The F-statistic exceeds the critical F-value 3.01>1. Therefore, the model is statistically significant for estimation and prediction purposes

7.2.1.1 Multi-collinearity test

According to Mendenhall & Sinchich, (2003:365-379), multi-collinearity exists when the independent variables in the model are correlated. In other words, two or more of the independent variables contribute overlapping information. The variance inflation factor (VIF) is a formal test used to detect multi-collinearity. The test calculates the coefficient of determination, R^2 , between each independent variable in the model.

The centred VIF results for the coefficients are as follows:

$$\begin{aligned}(\text{VIF})_{\text{MAN}} &= 1.88 \\(\text{VIF})_{\text{EXCH}} &= 1.52 \\(\text{VIF})_{\text{IMT}} &= 3.68 \\(\text{VIF})_{\text{TAR}} &= 3.41\end{aligned}$$

All the variables are below 5 per cent, indicating that there is no multi-collinearity present.

Table 7.2: Augmented Dickey-Fuller test equation results

	t-statistic	Probability
Augmented Dickey-Fuller test statistic	7.21	0.00

Source: Own data, (2010)

The results indicate that once first differences are applied, all the independent variables become stationary. The higher the negative values, the stronger the rejection of the hypothesis that there is a unit root at some level of confidence. This is indicated in the above results where negative t-values are quite high. In the case of the regressions in the research, there is stationarity and therefore no need for a co-integration test.

7.2.1.2 Heteroscedasticity test

Mendenhall & Sinchich, (2003: 379) argue that for the regression inferences to be valid, the error term ε should have a constant variance σ^2 for all levels of the independent variables. Variances that do not satisfy this property are said to be heteroscedastic

A formal test used to test for heteroscedasticity is the White Test. Before performing a hypothesis test and deriving a test statistic to test for heteroscedasticity in the specified model, it is important to distinguish between the mean function $E(y_i)$ and the variance function $var(y_i)$. Hill *et al.* (2008: 213) distinguish between the two. The single model has been tested for multi-collinearity and heteroscedasticity. The tests reveal that the model is correctly specified and the independent variables used in the model are not correlated with each other. The assumption of constant variance also holds true. There is no heteroscedasticity present; the P value is less than 5%. The Chi-square statistic exceeds critical value.

7.2.1.3 Basic estimated equation and explanation/interpretation of the estimated variables (1980 to 2006)

Analysing the results for the whole period of the analysis gives the following equation for interpretation. The results show that some of the variables are not statistically significant and the reason for this could be because there are other variables that affect the performance of exports. For instance, following the liberalisation of trade, many support mechanisms to firms were removed. In addition the reliability of data is another problem especially exporting data.

$$\text{EXP0-1} = 167.06 - 1.3\text{EXCH} - 23.22\text{MAN} + 2.50\text{TAR} + 3.17\text{IMP} + \text{U}$$

7.1

EXCH: A one-unit increase in real exchange rate decreases manufactured exports by 1.3 units. The theory behind this is that on an *a priori* basis, as the exchange rate appreciates, exports become more expensive in foreign markets, meaning that demand for the exports will fall because of the higher prices resulting from the appreciation of the exchange rate. Potential markets in the developing countries are at the same level of production, meaning they produce the same goods and as such will not buy the manufactured exports. However, this is at odds with what the new trade theory predicts, where emphasis is placed on economies of scale and imperfect competition. Despite the fact that developed countries trade more among them, the evidence in developing countries indicates the opposite.

MAN: A one-unit increase in production capacity (measured by manufacturing GDP) decreases exports by 23.22 units. This could be because of an increase in the production (output) cost for firms that are uncompetitive, as might be expected, because ISI policy supported inefficient firms as part of infant industries' protectionist policies, discussed in Chapters 2 and 3, which made them chronically dependent on subsidies and other supports.

TAR: A one-unit decrease in tariffs increases exports by 2.50 units, because when tariffs increase, the cost of the products increases and when tariffs fall, the cost of products also falls. This meets the *a priori* expectations. Obviously, tariffs increase costs and affect both imports and exports. Given the importance of imports of manufactured inputs for the production of manufactured exports, tariffs have an important effect on the performance of manufacturing. However, the decrease in

tariffs is not much and the policy might change in drastically reducing the tariffs in order to reduce the cost.

IMP: A one-unit increase in imports of inputs increases manufactured exports by 2.04 units. Imported capital goods were used as a proxy, and this indicates that it might have been cheaper to import the manufactured goods, given the appreciation of the real exchange rate (EXCH)

7.2.2 Pre -trade liberalisation period (1980 to 1991)

(See Table 7.3 for full results)

The pre-liberalisation period is the period characterised by Import Substitution Industrialisation policies that are normally a distortion to free trade and the expected benefits from it. Because the tariff rate is uniform, it is removed from the equation for the period, because it has no direct effect on the estimation of the equation. R^2 is 39.22 per cent, which indicates that 39 per cent of the variation in exports is explained by the three independent variables. It is, however, very low. The F-statistic is 1.51, which is below the critical F-value, indicating that the model is not statistically significant for prediction and estimation purposes and the conclusion in this case is that the model does not clearly explain the pre-liberalisation situation, because the R^2 is low and the F-statistic is insignificant.

Table 7.3: Estimated results from the pre-trade liberalisation period

Explanatory variables	Dependent variable (Manufactured exports)
Constant	14.93
EXCH (Real exchange rate)	0.64
MAN (Production capacity)	9.37
IMP (Imported inputs)	-1.29

R ²	0.39
Adjusted R ²	0.13
F-statistic	1.51

Source: Own data (2010)

7.2.2.1 Basic estimated equation and explanation/interpretation of the estimated variables (1980 to 1991)

The tariff value is omitted because pre-liberalisation, the average tariff value was high at a uniform rate, so it does not explain anything. However, the other variables do as follows:

$$\text{EXP01} = 14 + 0.64\text{EXCH} + 9.3\text{MAN} - 1.29\text{IMP} + U \quad 7.2$$

EXCH: A one-unit increase in real exchange rate increases manufactured exports by 0.164 units before liberalisation, as indicated in Table 7.3. The theory behind this is that on an *a priori* basis, as the exchange rate appreciates, exports become more expensive in foreign markets; however, during the pre-liberalisation period, there were many government policies aimed at supporting exports and inefficient local industries as part of the ISI policy. This means that the changes in exchange rate for purposes of influencing exports could be counter balanced by other distortionary policies.

MAN: A one-unit increase in production capacity (measured by manufacturing GDP) decreases exports by 9.3 units, as indicated in Table 7.3. This could be because of an increase in the production (output) cost for firms that are uncompetitive, as might be expected given the ISI policy that supported inefficient firms as part of support for infant industries, already discussed in Chapters 2 and 3.

IMP: A one-unit increase in imports of inputs decreases manufactured exports by 1.92 units. Imported capital goods were used as a proxy, and this indicates that it might have been more expensive to import the manufactured intermediate goods because of the appreciation of the real exchange rate (EXCH). Again, government policy was aimed at protecting domestic markets.

7.2.3 Post-trade liberalisation period (1992 to 2006)

Post-liberalisation is the policy change brought about in terms of the abandonment of protectionism and other distortionary policies. As indicated in Table 7.4, all estimated coefficients are statistically significant. R^2 is good at 61.7 per cent and approximately 62 per cent of variations in manufactured exports are explained by the four independent variables in the post-liberalisation period. The F-statistic is high at 65 per cent in the post-liberalisation period, indicating that the model is highly accurate for prediction and estimation purposes.

Table 7.4: Estimated results for lagged equation for the post-liberalisation period

Explanatory variables	Dependent variable (Manufactured exports)
Constant	858.06
EXCH (-1) (Real exchange rate)	0.23
MAN (-1) (Production capacity)	-35.22
TAR (-1) (Tariff rate)	-38.23
IMP (-1) (Imported inputs)	1.44
R^2	0.62
Adjusted R^2	0.45
F-statistic	3.64

Source: Own data (2010)

7.2.3.1 Basic estimated equation/interpretation of the estimated variables (1992 to 2006)

This period represents the period when trade policy changed with the abandonment of the Import Substitution Industrialisation policy. Here, the impact of the policy change can be measured and compared with the pre-liberalisation period. It is expected that this section will give an indication as to whether trade liberalisation has had the desired effects. The complete results are presented in Table 7.4. Tariffs were reduced and the distortionary import substitution policies were drastically reduced. Again, during this period, the currency was devalued by 100 per cent with the aim of making the manufactured exports competitive.

$$\text{EXP01} = 858.06 + 0.23\text{EXCH} - 35.22\text{MAN} - 38.23\text{TAR} + 1.44\text{IMP} + U \quad 7.3$$

EXCH: A one-unit increase in real exchange rate decreases manufactured exports by 0.23 units, because the exports will become more expensive as a consequence of an appreciated currency, as indicated in Table 7.4. The theory behind this is that on an *a priori* basis, as the exchange rate appreciates, exports become more expensive in foreign markets, and as expected, demand for exports, especially in the less-developed countries are highly elastic, especially because potential markets in the developing world are at the same level of production, meaning they produce the same goods and as such will not buy the manufactured exports from each other. Again, as expected, they cannot export to the developed countries, because they are highly industrialised making competition stiff.

MAN: A one-unit decrease in production capacity (measured by manufacturing GDP) decreases exports by 35.22 units, because a reduction in output means there is less to

export, since there is a need to satisfy domestic demand, as indicated in Table 7.4. Therefore, if there is a fall in output, obviously the volume available for exports will be reduced, because less will be available for exports. In addition, with an appreciated exchange rate, exports will become more expensive, meaning less will be demanded.

TAR: A one-unit decrease in tariffs increases exports by 38.23 units, as indicated in Table 7.4. This meets the *a priori* expectations. Obviously, tariffs represent an increase in costs and affect both imports and exports. Because of the importance of imports of manufactured inputs for further production of manufactured exports, the effects of tariffs on export performance are very important. A fall in tariffs should obviously increase manufactured exports.

IMP: A one-unit increase in imports increases exports by 1.44 units, as indicated in Table 7.4. Imported capital goods were used as a proxy, and this indicates that if more capital intermediate goods are imported, they will be used to produce more manufactured goods.

7.2.3.2 Augmented Dickey-Fuller test

Table 7.5: Augmented Dickey-Fuller test results

			t-statistic	Prob
Augmented statistic	Dickey-Fuller MAN	test	3.3	0.00
Augmented statistic	Dickey-Fuller TAR	test	-3.3	0.0

Source: Own data, (2010)

1) The manufacture variable is stationary (therefore no need to differentiate it), and the other variables all contain a unit root and were differentiated providing the results below.

2) The variables MAN and TAR are now significant (Prob. < 0.05).

The R^2 for the post-liberalisation model is much higher than the model that covers both the pre- and post-liberalisation periods (at 64.30 per cent). The F-statistic also indicates that the model is statistically significant; i.e. $4.50 > 1$. This means that the variables can be used to explain what happens to the dependent variable.

7.2.4 Summary of results from the estimation of the single equation

supply model

7.2.4.1. The whole period (1980 to 2006)

Looking at the analysis for the whole period, it shows that the tariff rate variable is positive and insignificant; suggesting that trade liberalisation in the form of tariff reduction has only a marginal impact on manufactured export performance. The positive value of the tariffs is an indication of bias against export, meaning that high tariffs might have a negative effect on export. Tariffs are an increase in cost of production and hence an increase in prices. However, the absolute bias against exports seems to be marginal. The tariff elasticity of export is 2.5, which means for every one per cent reduction in tariff rates, manufactured exports should increase by 0.025 per cent.

The proxy for the productive capacity variable (MAN) is positive, but not statistically significant. The import of raw material variable (IMP) is negative and statistically

significant at the five per cent level. In addition, the real effective exchange rate has a significant effect on manufactured export performance. The coefficient for the variable is negative (minus 1.3) and statistically significant. The variable (EXCH) turned out to be negative and statistically significant, suggesting that exchange rate policy reforms affect manufactured export performance in Cameroon more than trade liberalisation does. The coefficient of the one-year lag value of manufactured exports is significantly different from zero, implying a degree of dynamic adjustment for manufactured export.

7.2.4.2 Interpretation of the results of the pre- liberalisation period

The tariff rate was not used for estimation because the value was the same for the estimated period, making it static. The proxy of the productive capacity variable (MAN) is still positive, but not statistically significant. It shows that a one-unit increase in production capacity increases manufactured exports by 9.3 units. The import of the raw material input variable (IMP) is negative and statistically significant at the 5 per cent level. In addition, the real effective exchange rate has no significant effect on manufactured export performance; it is positive and does not meet the *a priori* assumption. It shows that when it appreciates, exports increase. The coefficient of the value of manufactured exports is not significantly different from zero, implying that there is no dynamic adjustment for manufactured export. It should be emphasised here that this was the period of ISI with a lot of distortionary and uncompetitive practices in Cameroon and other Sub-Saharan African countries.

7.2.4.3 Interpretation of the results of the post-liberalisation period

The results show that the tariff rate variable is negative and insignificant; suggesting that trade liberalisation in the form of tariff reduction has only a marginal impact on export performance. The negative relationship between tariffs and manufactured export is an indication of bias against export as a result of high tariffs on imported inputs. However, the bias against manufactured export seems to be marginal. The tariff elasticity of export was minus 38.2. For every 1 per cent reduction in the tariff rate, manufactured export should increased by 38 per cent. The proxy of the productive capacity variable (MAN) is positive, but not statistically significant. The import of the raw material variable (IMP) is positive and statistically significant at the 5 per cent level. In addition, the real effective exchange rate has a significant effect on manufactured export performance. The coefficient for the variable is negative and statistically significant. The variable (EXCH) is positive and statistically significant, suggesting that exchange rate policy reforms affect manufactured export performance in Cameroon more than trade liberalisation does. The coefficient of the one-year lag value of manufactured exports is significantly different from zero, implying a degree of dynamic adjustment for manufactured export.

7.2.5 Summary of the findings from the estimation of the single equation supply model

In summary, there is an indication of relative price (EXCH), access to imported inputs (IMP), and productive capacity (MAN) effects on manufactured export performance. The results are, however, insignificant. In addition, it provides evidence that trade liberalisation through tariff reductions does not significantly improve the sensitivity of manufactured exports. With reference to the tariff rate (TAR), Cameroon recorded

a significantly negative relationship effect (at the 10 per cent level of significance) with manufactured export.

While the evidence obtained in this research is similar to some of the results obtained by other studies, it conflicts with some. For example, it is in contrast with Ahmed (2000:1077-1084) and Santos-Paulino (2000), who found a positive and significant relationship between their indicators of trade liberalisation and export performance. The significance of their trade liberalisation variable, as earlier argued, could be due to the use of dummy variables, which could have had a biased effect upwards. However, it confirms the findings of Jenkins, (1996:693-716) for Bolivia, Utkulu *et al.*, (2004) for Turkey, and Morrissey & Mold, (2006) for Africa that effective exchange rate management rather than trade liberalisation is the major determinant of export performance.

The marginal and indirect impact of reductions in protection suggests that other domestic policy constraints may be significant factors in affecting manufactured export performance in Cameroon. Oyejide, Ndulu & Gunning, (1999:5-10) indicated that domestic supply constraints constitute a significant part of the anti-export bias observed over the last three decades. They argued that anti-export bias has been on the decline because of the downward trend in the exchange rate and import tariff rates, coupled with the removal of quantitative restrictions. However, the switch to the use of the exchange rate for clearing disequilibrium in the market for foreign exchange has significantly reduced the need to use trade liberalisation instruments to manage balance of payments pressures.

7.3 Presentation of results from the estimation of the gravity model

The results of the gravity model for both periods with dummies are analysed here. Generally, the dataset fits well for the augmented gravity model in the analysis. The standard features and power of explanatory variables in the regression are good. The baseline variables are significant and have the expected signs.

The coefficient of the partner country's GDP variable in the specification is positive, statistically significant and economically reasonable, indicating that higher GDP increases trade. Given that the coefficients for partner GDP (0.66) pre-liberalisation and (0.19) post-liberalisation are both less than one, an increase in the size of the country's GDP increases trade, though less than proportionately. In the post-liberalisation period, the value is very small and insignificant, meaning the influence is less.

The estimated coefficient on log distance has the anticipated sign and is less than one, indicating that trade between a pair of countries falls by a small percentage for every percentage increase in the distance between them. The dummy variable for common border does not increased in magnitude if the distance increases meaning that distance does not have much effect on bilateral trade contrary to the predictions of the model.

The panel data econometric model can be presented as follows:

$$\begin{aligned}\log(\text{EXP}_{it}) = & \beta_0 + \beta_1 \log(\text{GDP}_{iit}) + \beta_2 \log(\text{GDP}_{jit}) + \beta_3 \log(\text{Dij}_{it}) + \beta_4 (\text{ComLang}_{it}) \\ & + \beta_5 (\text{ComCol}_{it}) + \beta_6 (\text{Colm}_{it}) + \beta_7 (\text{RTA}_{it}) + \beta_8 (\text{TAR}_{it}) + \varepsilon_{it}\end{aligned}$$

7.4

Where EXP_{it} = Bilateral trade between country I and j

GDP_{it} = GDP of country i at time t

GDP_{it}	= GDP of country j at time t
D_{ij}	= Distance between country I and j at time t
$ComLang_{it}$	= Common language with other countries at time t
$ComCol$	= Common Colonial master time t
$Colin$	= Common boundary at time t
RTA	= Membership of regional trade agreement
TAR	= Tariff rates
ε	: Error term $\varepsilon_t \sim N(0; \sigma^2)$
t	: Denotes the observation period (1980-1991 for the pre-liberalisation period and 1992-2006 for the post-liberalisation period)
i	: Denotes the observation for the i^{th} country ($i = 1, 2, \dots, 19$)

7.3.1 Results from various tests (Preliminary data analysis)

Before the model can be estimated the variables included in the model need to be tested for stationarity. According to Hill, Griffiths and Lim, (2008: 326), if the mean and variance of a time series are dynamically constant in terms of time, and the covariance between two values from the series depend on the length of time separating the two values, and not on the actual times at which the variables are observed, the series is considered stationary.

7.3.1.1 Panel-unit root test

Performing individual unit root tests for each cross-section has limited power in a panel data study; therefore, a more powerful panel-unit root test is suggested. The

Levin, Lin and Chu test (LLC) is the formal test used for this purpose. According to Baltagi, (2008: 276), the LLC test is derived by performing separate augmented Dickey-Fuller (ADF) regressions for each of the cross-sections and tests the null hypothesis that each individual time series contains a unit root against the alternative, and that each time series is stationary.

Using the LLC test, it is possible to test the following hypothesis to determine whether the pooled variables are stationary:

$$H_0: \theta_{iL} = 0 \quad (\text{When } \rho_i = 0 \text{ and } \rho_i < 0)$$

$$H_a: \theta_{iL} < 0 \quad (\text{Stationary})$$

The tables below provide the panel-unit root test results for the variables included in the model.

Table 7.6: Panel-unit root test results for the proposed variables (pre-trade liberalisation period)

Variable	Test statistic	Unit root test	Level of integration
log(EXP)*	-2.71	level	I(0)
log(GDPi)*	-5.83	level	I(0)
Log(GDPj)*	-10.24	first difference	I(1)
TAR*	-9.33	level	I(0)

- Significant at 99% confidence level

Source: Own data (2010)

It should be noted that a unit-root test for non-stationarity of dummy variables is undefined and not valid. Therefore, only quantitative variables are tested. Obviously,

distance is constant throughout the years for each cross-section and therefore also does not get tested.

Table 7.7: Panel-unit root test results for the proposed variables (post-trade liberalisation period)

Variable	Test statistic	Unit root test	Level of integration
log(EXP)*	-4.33	level	I(0)
log(GDPi)*	-16.74	first difference	I(1)
Log(GDPj)*	-14.68	first difference	I(1)
TAR*	-4.1	second difference	I(2)

* Significant at 99% confidence level

Source: Own data, (2010)

Using the LLC t-statistic, H_0 of non-stationarity is rejected for all variables at the 99 per cent confidence level. Most variables experience integration at order zero, the others at first and second difference. The residuals are tested to determine if they are randomly distributed. The histogram along with the Jarque-Bera test statistic indicates that the normal distribution assumption is not violated; meaning residuals are approximately normally distributed.

7.3.2 Empirical estimation and interpretation of results from the gravity model of Cameroon's manufacturing bilateral trade

As mentioned in Chapters 2 and 6, the gravity model is used to determine the impact of trade liberalisation on manufacturing performance. This section presents the results and interprets them with the aim of answering the research questions.

Following the gravity approach, bilateral trade flows are expected to be positively influenced by: (i) GDP of the partner is used as a proxy for demand, (ii) trade agreements, (iii) common language and ethnicity. Bilateral trade flows based on theory should be negatively correlated with the geographical distance of the host's market; a proxy for the cost of moving goods from one country to another.

The gravity theory states that the value of trade between two countries is proportional to the product of the two countries' GDPs, and bilateral trade is expected to fall with an increase in distance, meaning Cameroon will trade less with New Zealand and Japan. This implies that the two countries' GDPs should be positively related to bilateral trade. The measures of liberalisation represented by tariffs and distance are the major variables of interest in this research, which, as stipulated in the gravity theory, should be negatively related to trade. This means an increase in tariffs will reduce bilateral trade and *vice versa*. Membership of an RTA and WTO is also an indication of trade liberalisation.

7.3.2.1 Estimated results and interpretation of the pre-trade liberalisation period

The results of applying the gravity model described in Chapter 6 are presented in Table 7.8 for the pre-trade liberalisation period. Table 7.8 reports the summary of the estimated results of the independent variables and output statistics (pre-liberalisation period). The approach of this research is to regress trade bilateral trade volumes on the augmented variables in the model, which can affect the performance of manufacturing trade while controlling for the standard gravity model controls, such as country size and geographical indicators.

Table 7.8: Summary of estimated results of the independent variables and output data (pre-liberalisation)

Variable	Coefficient	t-statistic
GDP _i	-0.836240	0.1875
GDP _j *	0.661804	0.0000
D _{ij}	-0.121867	0.2291
ComLang	0.298668	0.1186
ComCol*	-1.260178	0.0639
Colin*	1.426589	0.0005
RTA*	3.564883	0.0000
TAR*	-0.447725	0.0000
R ²	0.5281	
F-statistic*	30.64	

- Significant at 90 per cent confidence level

* Variables that are statistically significant at a 10 per cent level of significance

Source: Own data (2010)

From Table 7.8 it can be seen that GDP_i is insignificant. If GDP in Cameroon increase by one per cent, exports will decrease by 0.83 (which is the elasticity of exports). However, the coefficient of Cameroon's GDP pre-liberalisation is negative in bilateral trade relations. This is contrary to the gravity theory of trade, which predicts a positive relationship as stated above. During the pre-liberalisation period, trade was heavily protected as part of the Import Substitution Industrialisation policy; therefore, as GDP in Cameroon increased, exports decreased or the imports increased and over-shadowed exports, given the emphasis on the import of inputs and machinery for production of consumer substitutes. Again, the GDP component is not

very significant in explaining the level of trade given the importance of borrowing to finance imports, which eventually led to the heavy debt burden.

During the pre-trade liberalisation period, and as indicated in Table 7.8, GDP_j is significant and positive, as expected. As the particular trading partner country's GDP increases by one per cent, exports of Cameroon to that country increase by 0.66 (elasticity) per cent. This is as predicted by the gravity model. An increase in the GDP of other trading partners leads to an increase in the bilateral trade with Cameroon.

D_{ij} : Negative and insignificant. It can be argued that the variable is negative as expected, and also, the further the distance the less the trade, but the coefficient is insignificant meaning that distance did not affect trade. However, the fact that the variable is insignificant explains the fact that distance does not explain the level of trade in modern times. Cameroon trades more with China, Japan and France than with Gabon or Chad, next door to her.

For the dummy variables, the interpretation is that a one-unit increase/decrease in any of the variables leads to a one per cent increase/decrease in the dependent variable, which is bilateral trade.

Comlang: Positive as expected, but insignificant. Common language has a positive impact on exports/import trade, but is not significant. This can be explained due to the fact that, because of globalisation, language has become less of a deterrent to trade or an advantage for that matter. Goods produced in China have labels in other languages based on the destination.

ComCol: Significant and negative. Cameroon trades less with fellow former colonies, especially in the CEMAC area. This is contrary to the prediction of the gravity model that countries, which share a common colonial master, will trade more.

Colin: Positive and very insignificant, meaning that though this might have an impact on bilateral trade, it is not a very important determinant of trade. Cameroon trades more with far away China than with nearby Gabon or Nigeria or Equatorial Guinea.

RTA: Positive and significant. Meaning if the two member countries are part of RTA, exports increase. Belonging to a Regional Trading Area means that trade barriers are removed and as such it becomes easier for the countries to trade, especially during the era of protectionism. The estimated coefficient for the dummy for the trade affinity index shows a positive sign and a value of more than one, indicating that countries having traditional trading affinity, as in the case of Cameroon and CEMAC countries, are likely to trade more.

The dummy variable for RTA is statistically significant. The membership of an RTA explains the nature of bilateral trade. The coefficient of the dummy variable for RTA is 3.5, implying that RTA can lead to an increase in bilateral trade as well as diversification of bilateral trade, as predicted by the model.

TAR: Highly significant and negative, as expected. Tariff rates reduce trade. A one-unit (which is a percentage on its own, hence it was not logged) increase in tariff rate reduces bilateral trade by 45 per cent. The high tariff rates actually acted as a hindrance to trade and this is important because, post-liberalisation, the effects of the

tariffs can be determined, since it is one of the main variables that explain liberalisation.

The R^2 value indicates that approximately 52 per cent of the variation in the dependent variable (EXP) is explained by the included independent variables. This is sufficient for panel data analysis.

The F -statistic is significant, indicating that the model is adequate for prediction and estimation purposes.

7.3.2.2 Estimated results and interpretation of the post-trade liberalisation period

Following from the analysis and the reasons for using the gravity model explained in section 7.3.2, this subsection considers the post-trade liberalisation period. Table 7.9 reports on the summary of results of the independent variables and output statistics in the post-trade liberalisation period. The approach of this research is to regress bilateral trade volumes on the augmented variables in the model, which can affect the performance of bilateral manufacturing trade.

Table 7.9: Summary of estimated results of the independent variables and output data (post-liberalisation period)

Variable	Coefficient	t-statistic
GDP _i *	1.286046	0.0000
GDP _j *	0.197967	0.0000
D _{ij} *	-0.200295	0.0005
ComLang	0.153164	0.1430

ComCol	-0.028553	0.9407
Coim*	0.582389	0.0096
RTA	-0.608749	0.0116
TAR*	-0.077677	0.0074
R ²	0.4468	
F-statistic*	27.87	

- Significant at 90% confidence level

Source: Own data, (2010)

From Table 7.9 it can be observed that GDP_j is significant and positive, as expected. As the particular trading partner country's GDP increases by one per cent, exports from Cameroon to that country increase by 0.19 (elasticity) per cent. This variable is lower than for the pre-liberalisation period due to the trading partner's GDP increase, which leads to lower exports by Cameroon in the post-liberalisation period, and this is in addition to other countervailing factors such as smuggling.

D_{ij}: Negative as expected and significant. It can be argued that the countries that are far apart like Cameroon and New Zealand will trade less. This condition is satisfied during the post-liberalisation period. This means that as the cost falls as a result of a fall in tariffs, costs resulting from transportation become important and influence the volume of trade.

Comlang: Was significant, but for the post-liberalisation period, it becomes insignificant. This makes sense because as a result of improved technology, the language barrier is broken and it does not affect the amount or level of bilateral trade.

ComCol: Highly insignificant and negative, meaning it does not have an effect on bilateral trade. Cameroon trades more with China, despite the fact that they never shared the same colonial master, and less with Gabon with whom she shares a common colonial master.

Colin: Significant and positive. This is a reflection that countries that share the same boundary trade more. For example, there is large bilateral trade between Cameroon and Nigeria. However, this case cannot be generalised because, despite the distance between Cameroon and China, or Japan for that matter, with no common boundary, they trade more than neighbouring Chad. Trade, as predicted in the new trade theory, is influenced more by technological competitive behaviour resulting from economies of scale, product differentiation and oligopolistic and monopolistic behaviour. Again, outsourcing and offshoring by foreign firms, for example from the United States of America or France, will mean that Cameroon will trade more with these countries.

RTA: For the post-liberalisation period, this has become negative and insignificant. During the post-liberalisation period, this variable has become negative and insignificant because Cameroon has liberalised her trade with the whole world without specific preferences for goods from RTAs or to RTAs, such as CEMAC. Contrary to the predictions of the gravity model, this variable becomes insignificant and negative. It can then be argued that being part of RTA in the post-liberalisation period is detrimental and leads to lower exports/trade. This could be true in the case of Cameroon and CEMAC, especially because they are import dependent in addition to producing virtually the same goods and depending on the same colonial master for most of their imports and exports.

Tar: Positive and significant. This is consistent with the pre-liberalisation period. As tariffs increase, exports will always decrease, no matter whether it is pre- or post-liberalisation. However, now a one-unit increase in the tariff rate only leads to a 0.07 per cent decrease in exports. For the post-liberalisation period, it can be argued that, contrary to the prediction of the gravity model, less emphasis is placed on the tariff rate and this has a relatively smaller effect than during the pre-liberalisation period, meaning other factors determine trade levels. The R^2 value indicates that approximately 45 per cent of the variation in the dependent variable (EXP) is explained by the inclusion of independent variables. This is sufficient for panel data analysis. The F -statistic is significant, indicating that the model is adequate for prediction and estimation purposes.

7.3.3 Summary of results and interpretation from the estimation of the gravity model

Empirical investigations of the impact of trade liberalisation on the manufacturing sector in Cameroon were analysed using the gravity model in which bilateral manufacturing trade was carried out. Basically, the variables that might or can affect manufactured exports and imports were considered.

The gravity model of trade policy change (trade liberalisation) was estimated using a panel data analysis approach on the pre- and post-liberalisation periods. The econometric results were mostly found to be statistically and economically significant. However, some of the results, as predicted by the model and trade theory, seem not to hold. For instance, distance, which is a reflection of the cost of trade, does not have much of an impact on Cameroon's bilateral trade. Tariffs and membership of

RTA, which are supposed to have a positive impact on trade if they are reduced or if a country belongs to it, do not show such a sign, in the case of Cameroon in CEMAC.

This research has shown, on the basis of the econometric analysis and the estimation of gravity model for the bilateral trade, that the variables have weak explanatory powers. This is not surprising, because Cameroon's bilateral trade in general, and the manufacturing sector in particular, is influenced by other factors apart from those predicted by trade theory. The overall findings of this research presuppose that the manufacturing sector has not really benefited from liberalisation of trade, as predicted by neoclassical theories of trade, as the performance of the sector has become worse since liberalisation. Some form of strategic industrial policy might be a good idea, at least in the short term. As seen in Chapter 5, Cameroon has a credible industrial policy, which somehow has remained on paper without any implementation. It may be a good idea to look at it, update it and implement it, or to develop the institutions to implement it. Having seen the analysis of the single equation supply model and the gravity model for Cameroon, it is important to consider the how competitive the manufacturing sector in Cameroon is, by looking at the industrial competitiveness index for Cameroon's manufacturing sector. Having considered the empirical findings from the gravity model, the following section, in line with answering the research question, analyses the competitiveness of the manufacturing sector in Cameroon.

7.4 Competitive industrial performance index

The CIP index basically measures the ability of a country to produce and export manufactured goods and, in line with this, the type of manufactured exports is considered. The variables considered for use are MVA and medium- and high-technology (MHT) products, and added to this is the low-technology products, where

Cameroon belongs in MVA and in manufactured exports. The first two indicators reveal capability, while the other two reflect technological complexity and industrial upgrading (UNIDO, 2005:15).

In the developing countries, especially those in Sub-Saharan Africa, industrial development, especially in the post-ISI era, has been carried out by small firms, which often lack the needed capital investment. Cameroon performed poorly in all competitiveness indices and is classified as one of the economies at the first stage of development driven by resources or primary commodities (WEF, 2011:118). In the global competitiveness index of 2009 Cameroon was ranked 116th out of 131 countries, (AfDB, 2009:5). Obviously, Cameroon is highly uncompetitive when all possible variables are considered.

7.4.1 Manufacturing value added (MVA)

Sub-Saharan Africa's performance in terms of MVA is very poor, apart from South Africa. Cameroon, as mentioned above, is considered as having an economy driven by resources or factors (WEF, 2010:119). In line with the above reasoning, it can be argued that the size of the manufacturing industry indicates how competitive the manufacturing sector is, because it cannot grow if it is not performing well.

Considering manufacturing value added, Cameroon is among the lowest industrialised countries in the world. Again, with the abandonment of the pervasive ISI policy, which supported some manufacturing after independence, most of the manufacturing firms collapsed under the sustained competition resulting from trade liberalisation (AfDB, 2009: 30).

Table 7.10: Cameroon's manufacturing value added

MVA 1980		MVA 2004		Real growth 1980-2002
US\$	Percentage of GDP	US\$	Percentage of GDP	Percentage Per annum
593	1.8	940	2.5	3.8

Source: World Bank (World Development Indicators) 2002/2004

It is shown in Table 7.10 above that the MVA contribution to GDP is low. The 2009 Doing Business Report ranks Cameroon 164th out of 181 countries and Transparency International classifies Cameroon as one of the most corrupt countries in the world (AfDB, 2009:6). Cameroon cannot meet its basic energy needs; its infrastructure is poor; Cameroon is classified, by choice, as one of the heavily indebted poor countries in the world; the poverty in Cameroon is pervasive, especially in the rural areas, which means internal demand is weak; and with high unemployment levels, the financial sector is poorly developed – all reasons why a sustainable manufacturing sector might not take off (AfDB, 2009:10). The explanation might not give the whole picture, as there are other hidden factors, amongst which is a lack in the ability to develop the industrial sector. Building such capabilities is difficult for poor, developing countries, such as Cameroon.

Table 7.11: Cameroon's industrial performance indicators

Share of MVA in GDP 1980 (per cent)	Share of MVA in GDP 2006 (per cent)	MVA <i>per capita</i> US\$ 2006
10	11	62

Source: World Bank database (World Development Indicators 2002/2004) and UNIDO industrial statistics database (INDSTAT, 2004)

Table 7.11 shows a set of indicators derived from MVA, which can be used to evaluate industrial performance according to (UNIDO, 2002:5). As already discussed in Chapter 6, the table indicates the level of industrialisation measured in terms of

MVA. Cameroon's MVA share in GDP was 11 per cent in 1980 and 14 per cent in 2006, showing an increase of three percent, respectively, and the same *per capita* MVA of US\$ 62 is quite low.

7.4.2 Changing patterns of industry

Developing countries, especially in Sub-Saharan Africa, are not involved in innovation as far as manufacturing is concerned; rather they are involved in imitation of what has been developed, especially in the industrialised countries. Medium- and high-technology (MHT) sectors, which are absent in a country like Cameroon, can lead to more competitiveness in the manufacturing sector. This is the sector that can have a great deal of benefits to the country, and developing countries like Cameroon have simply been unable to rise to this level, and remain at the lower ranks of production (UNIDO, 2005:19). Value added from the resource-based (RB) and low-technology (LT) sectors is very low and does not have many externalities in addition to not being able to develop the economy, because the skills needs are limited, unlike with the MHT.

Table 7.12: Cameroon's technological structure of manufacturing production

Distribution of MVA as (per cent) By end use				Distribution of MVA as (per cent) By technology category			
Consumer goods		Capital goods		Resource-based (RB) industries		Medium- and High-tech (MHT) industries	
1970	2000	1970	2000	1970	2000	1970	2000
66	63	24	08	53	70	23	13

Source: INDSTAT 2006 UNIDO

Most developing countries, such as Cameroon, have not yet started industrialisation because, as of 2010, she is still in the first stage of industrial development, classified as factor level one (WEF, 2010:120). What is produced are basic consumer goods such as foods, beverages, cigarettes, textiles, low quality clothes and shoes. The share of capital goods industries in MVA has not increased at all and Cameroon is still very much an import-dependent economy (AfDB, 2009:10).

7.4.3 Export performance of the manufacturing sector

What and how much a country exports determines its level of competitiveness. How much an economy has changed in terms of what it produces explains how developed and competitive the manufacturing sector is. It is in line with this that this research used the single equation supply model to estimate the level of exports, although the model does not classify the exports. The CIP complements the results by being able to classify the exports in terms of the type and level of specialisation from RB to MHT.

7.4.3.1 Export diversification

Support for a trade liberalisation policy is based on a peculiar understanding of what happened with the South East Asian economies, in which it was implied that a liberalised economy is based on maintaining realistic and competitive exchange rates, the removal of quantitative restrictions, and a reduction in tariffs on imports and exports, among others (Balassa, 1989; World Bank, 1987). In addition the positive relationship that based on neoclassical trade theory exists between trade liberalisation and export growth is supported by the analysis of Weiss, (1992), Helleiner, (1994) and Ahmed, (2000).

In line with the above reasoning, it is expected that liberalisation should lead to export diversification. Cameroon exports mostly commodities and what UNIDO calls low-technology goods, which constituted a meagre 4 per cent in 1980 and 7 per cent in 2002, and decreased to 5 per cent in 2005 (MINTID, 2005:35). Cameroon has simply not been able to diversify her economy and by implication her exports, which indicates how uncompetitive the manufacturing sector is, because they concentrate or are able to produce only basic consumer goods (GESP, 2010:35). Given this situation, as part of the ten-year growth trajectory and objective of the government, known as vision 2020, the government aims to improve the contribution of the manufacturing sector to GDP to up to 17 per cent through the diversification of the economy. Whether this can be achieved given the present circumstances remains a big challenge, given the present state of the economy.

Table 7.13: Cameroon's manufacturing export performance indicators

Export of goods and services (percentage of GDP)		Export of primary Commodities (percentage of merchandise exports)		Manufactured exports (percentage of merchandise exports)		High-technology exports (percentage of merchandise exports)	
1980	2006	1980	2006	1980	2006	1980	2006
28	27	96	93	4	7	3	1

Source: World Bank, (2007): World Development Indicators

What a country exports matters and this has been discussed at length in Chapter 6. A report by the Ministry of Trade and Industrial Technology has stated that the performance of the manufacturing sector was better under the ISI policy regime than it is under the liberalisation regime, as seen from its export diversification (GESP, 2010:35). Exports of high-technology products are a strong indicator of industrial

performance and competitiveness. High-technology products involve research and development (R&D). Cameroon's ability to change its present status in terms of export diversification is doubtful and, as mentioned earlier, the competitiveness of the manufacturing sector is weak and the infrastructure is simply not there (Albaladejo, 2005:5-10).

7.4.3.2 Export structure/quality

There is a serious challenge in developing countries, especially in Sub-Saharan Africa. Classical and neoclassical trade models unambiguously prescribe that countries should specialise in the production and export of goods for which they have comparative advantages (Bhagwati & Srinivasan, 1983); the reason being that by doing so resources will be allocated efficiently. However, by specialising and exporting on the basis of the neoclassical comparative advantage condemns countries like Cameroon to low technology and resource exports, which leaves them susceptible to the vagaries of external shocks.

From a historical perspective, developing countries, such as Cameroon, have been producing and exporting commodities, even during the ambitious ISI era. In addition to that, they are involved in the production of goods that do not require skilled labour, and this probably explains the comparative advantage of these countries in unskilled labour and commodities (OECD, 2002:2-25).

The structure of Cameroon's economy is characterised by her high export concentration and dependence on primary commodity exports, such as crude oil, petroleum products, timber, cocoa, aluminium, coffee and cotton (GESP, 2010:5). African countries, Cameroon included, export primary commodities and resource-

based semi-manufactures, which in most cases are simply assembled and not really produced (UNCTAD, 2003:2). The situation is so bad that there have been suggestions on the need for government intervention in the determination of the productive and export structure of economies to change the status in the absence of which growth will elude resource dependent countries such as Cameroon (Rodrik, 2005).

The manufacturing sector is important because, unlike primary commodities, manufactured goods have high income elasticities of demand and therefore the export market can be increased with trade liberalisation. Dependence on the export of primary commodities will leave Cameroon unable to take advantage of potential benefits of manufactures for growth, as argued in GESP, (2010:25).

Obviously, Cameroon is still in the lower resource-based level of production, which makes her very vulnerable and keeps her under developed because of the poor quality of exports, which, as mentioned, are dependent on primary and unprocessed commodities. When goods are highly processed, they can earn more revenue and move the economy towards a better growth trajectory. The government of Cameroon recognises these weaknesses and hence the emphasis on improving on the export quality of Cameroon (MINFI, 2008:20).

Table 7.14: Distribution of exports by technology category as percentage

Years: 1985-1995			Years: 1995-2006		
PR	RB+LT	MT+HT	PR	RB+LT	MT+HT
80	15.6	3.9	72.4	25.5	2.1

Source: Calculated from Comtrade data; various years (1980-2005), by author

Table 7.14 indicates that Cameroon has remained a primary commodity exporter with a slight fall over the period considered of just under 80 per cent, while the share of medium and high technology (MT+HT) fell from 3.9 per cent to 2.1 per cent; an indication of a lack of competitiveness from the period 1980 to 2005 (DGSN, 2008:20).

7.4.3.3 Export concentration vs. export diversification

The diversification of exports indicates the competitiveness of an economy. It can be measured by calculating concentration indices, such as the Herfindahl index or the Hirschmann index. In defining the index, the lower the value of the index the more diversified the export.

Cameroon's share of top five exports forms only 0.10 per cent of exports from the developing countries and consists of only 0.03 per cent of world exports (UNIDO: 2005:29). From the above percentages it can be seen that the exports are not diversified, as seen from the contributions of the top five and top 10 products, which comprise 78.78 per cent and 94.66 per cent of exports, respectively (UNIDO, 2005). This is proof that the economy and the manufacturing sector are not competitive, despite the prescription of the neoclassical trade theory that countries should rather specialise in the production and export of commodities for which they have comparative advantage. Unfortunately for Cameroon and Africa, despite the fluctuations in their main exports (commodities), they have not been able to transform their economies.

7.4.3.4 Industrial efficiency

As discussed in Chapters 2 and 3, and within the context of the new trade theories and models, competitiveness, especially in the international markets, is a result of price variables such as the exchange rate, wages, cost of inputs, and productivity gains. In addition, economies of scale also lead to competitiveness, because they can lead to a reduction in the unit costs (OECD, 2001:4).

Cameroon, as a consequence of the dependence on commodities, is vulnerable to balance of payments volatility, to which they respond poorly. The poor performance of the economy compelled the economy to adopt structural adjustment programme reforms and when things did not change, the currency was devalued and when things did not improve, they applied for and acquired the status of a highly indebted poor country (HIPC), with the associated benefits (WTO, 2006:5). The ISI policy followed by Cameroon and its inconsistencies protected weak firms and perpetuated inefficiencies by stifling competition. Cameroon had a highly regulated labour market, and attempts to reform it, failed. The devaluation of the CFA franc was important, but so far the gains have not been much and the manufacturing sector still struggles (MINTID, 2005:20). The manufacturing sector has basically remained inefficient and uncompetitive and the main activities are the assembly of manufactured goods, which does not translate to production, as in the example of the motorcycle earlier.

7.4.4 Determinants of total factor productivity

According to Adenikinju *et al.*, (1998:1), in a study to determine the total factor productivity in Sub-Saharan Africa, found that Cameroon's productivity in the low levels of manufacturing declined over the years. It can be argued that the so-called

productivity gains during the ISI era might have been the result of the pervasive protectionists' tendencies and subsidies.

Table 7.15: Cameroon's total factor productivity (average annual percentage change for the periods covered)

Sector	Sub-sector	1980-1995	1996-2005
Food		-2.8	NA
	Fish canning	NA	NA
	Oil seeds/others	NA	NA
Chemicals		-1.0	NA
	Rubber	NA	NA
	Other chemicals	NA	NA
Wood and paper			
	Wood	-5.2	NA NA
	Paper/printing	-5.5	NA
Others		-5.2	NA
	Construction materials	-5.2	NA
	Miscellaneous	-4.2	NA
Total		-3.1	-4.5

Source: Adenikinju *et al.*, (2005)

The results are an indication that the policies implemented over the years were not favourable to the manufacturing sector. The ISI policies pursued after independence might have encouraged inefficiencies by supporting uncompetitive firms at a high cost of retarding TFPG, since theory suggests that when an economy is open, it benefits from competitiveness resulting from trading in the international market (Adenikinju *et al.*, 2005:3). The figures also reveal the reverse – productivity improves exports. What the figures indicate is that the policy framework has not

achieved the desired results and there is a need to critically consider the realities with a view to making amends.

7.4.5 Technological and industrial capability

Competitiveness can be analysed from a dynamic perspective, by considering the technological and industrial capability (UNIDO, 2005:35). The interdependence of economies and the opening up has changed the dynamics of comparative advantage, which can now be acquired through trade. The new trade theory recognises this and emphasises that trade is based on economies of scale, product differentiation and imperfect completion, as discussed in Chapters 2 and 3, as opposed to the static comparative advantage analysis based on neoclassical trade theory. In line with this, the traditional variables and approach, which inform production and therefore competitive advantage, have also changed. Based on the new growth and trade theories and models, knowledge acquisition and technological development are more important for competitiveness. Therefore, what might be important for competitiveness might not be the natural comparative advantage, but acquired comparative advantage, resulting from technological development and innovation (OECD, 2002: 35-100). The variables that can influence competitiveness are next considered within the context of Cameroon.

7.4.5.1 Skills availability

Education and skills development are very important to development (Lall, 2005:1). The type of education and skills development is important and should be tied to the objective of developing a dynamic manufacturing sector. The new growth theory has emphasised the importance of knowledge acquisition as an important ingredient of

growth, by making it endogenous (Romer, 1990:5). Therefore, to achieve growth, technological skills are needed and these are acquired through training. According to Lall, (2005:5), Africa is far behind other developing regions in education and vocational training. The educational system is misaligned and emphasis is not on important skills development that can lead to growth in manufacturing, such as engineering (Lall, 2005:5-10).

Data from Asia shows that in terms of total numbers of students enrolled in technical subjects, China has 18 per cent; India has 16 per cent and South Korea 11 per cent, which represents 44 per cent of total technical enrolments in developing countries (Lall, 2005:10). With these figures there is no doubt that these countries are moving to the higher ranks of manufacturing. Cameroon has just 0.06 per cent of the population enrolled in tertiary technical education (Lall, 2005:25). This is further evidence that Cameroon lacks the ability to produce the necessary skills needed for developing a competitive manufacturing sector.

7.4.5.2 Technological effort

Technological effort is closely linked to skills development and the only data available for comparative analysis relates to research and development and officially registered patents. The indicators of technological effort can be observed at the level of production and how the various activities are handled. Cameroon, like other Sub-Saharan African countries, as mentioned earlier, is not involved in innovation, but in the imitation of production processes copied from industrialised countries. Research and development activities are lacking (Lall, 2005:25). Cameroon and other African

countries are not investing in research, which is obvious given their high levels of poverty, indebtedness and therefore lack of resources to invest in technological development. This might explain the low level of manufacturing, and resorting to imitating what has been developed or simply assembling or trading.

7.4.5.3 Foreign direct investment

As discussed earlier, there has been an increase in the practice of outsourcing and offshoring, which emphasises spatial elements in the production process. Multinational firms have been locating more in the developing countries to take advantage of cheap labour; however, many or most Sub-Saharan African countries have not benefited much from this, except South Africa and Mauritius. Most of the firms tend to exploit the primary resources to feed the manufacturing sector in developed countries. According to UNCTAD, (2004:20), and in line with the new trade theory, the decentralisation of the production process means that many multinational firms are investing in developing countries to acquire comparative advantage by taking advantage of the cheaper resources in these countries, compared to their countries of origin.

7.5 Comparisons of the results from the estimation of the various models

In comparing the findings from the various models used, the first question to ask is whether the models had the predictive ability and secondly what have been the empirical findings from the estimations of the models. The overall objective of the research is to determine empirically the impact of trade liberalisation on the manufacturing sector in Cameroon. In answering this question, a before-and-after

approach is followed. The estimations of the single equation supply model and the gravity model were used respectively to answer the question.

In the pre-trade liberalisation findings from the single equation supply model estimation, R^2 is 39.22 per cent, which indicates that 39 per cent of the variation in exports is explained by the three independent variables. It is, however, very low. The F-statistic is 1.51, which is below the critical F-value, indicating that the model is not statistically significant for prediction and estimation purposes. The conclusion in this case is that the model does not clearly explain the pre-liberalisation situation, because the R^2 is low and the F-statistic is insignificant. The tariff rate was not used for estimation because the value was the same for the estimated period, making it static.

In the post-trade liberalisation findings from the single equation supply model estimation, all coefficients are significant. R^2 is good at 61.7 per cent, meaning that approximately 62 per cent of variations in manufactured exports are explained by the four independent variables in the post-liberalisation period. The F-statistic is high at 65 per cent in the post-liberalisation period, indicating that the model is highly accurate for prediction and estimation purposes.

The results show that the tariff rate variable is negative and insignificant suggesting that trade liberalisation in the form of tariff reduction has only a marginal impact on export performance. The negative relationship between tariffs and manufactured export is an indication of absolute bias against export as a result of high tariffs on imported inputs.

It can be concluded that there is an indication of relative price (EXCH), access to imported inputs (IMP), and productive capacity (MAN) effects on manufactured export performance. The results are, however, insignificant. In addition, it provides evidence that trade liberalisation through tariff reductions does not significantly improve the sensitivity of manufactured exports. With reference to the tariff rate (TAR), Cameroon recorded a significant negative relationship effect (at the 10 per cent level of significance) with manufactured export.

With regard to findings from the estimation of the gravity model, generally the data fits well for the augmented gravity model in the analysis. The standard features and power of explanatory variables in the regression are good. The baseline variables are highly significant and have the expected signs and are of reasonable magnitude.

The residuals are tested to determine if they are randomly distributed. The histogram, along with the Jarque-Bera test statistic, indicates that the normal distribution assumption is not violated meaning residuals are approximately normally distributed. This mean the results from the estimation are stable.

The gravity model of trade policy change (trade liberalisation) was estimated using a panel data analysis approach on the pre- and post-liberalisation periods. The econometric results were mostly found to be statistically and economically significant. However, some of the results, as predicted by the model and trade theory, seem not to hold. For instance, distance, which is a reflection of the cost of trade, does not have much of an impact on Cameroon's bilateral trade. Tariffs and membership of RTA, which are supposed to have a positive impact on trade if they reduce or if a country belongs to it, do not show such a sign in the case of Cameroon in CEMAC.

This research has shown, on the basis of the single equation supply model and the estimation of gravity model for the bilateral trade in the manufacturing sector, that the variables have weak explanatory powers. Overall, findings on Cameroon's bilateral trade in general and for the manufacturing sector in particular are influenced by other factors apart from those predicted by trade theory. This research presupposes that the manufacturing sector has not really benefited from liberalisation of trade, as predicted by neoclassical theories of trade, as the performance of the sector has become worse since liberalisation. Some form of an industrial strategy might be a good idea, at least in the short term.

Comparing the findings from the two results, which are different, the conclusion is that the expected benefits from the liberalisation of trade in the case of Cameroonian manufacturing, as predicted by neoclassical trade theory, on which trade liberalisation is based, do not hold. The competitive industrial index analysis also shows that the performance of Cameroon's manufacturing, considering all the variables that explain performance post-liberalisation, is poor.

7.6 Summary

In this chapter 7, the main elements of the empirical investigation in this research are presented. There has been an attempt to provide an explanation for the observed outcome. Use was made of the supply side analysis of manufactured export performance given the justification that it better captures the realities of Cameroon and other less-developed countries. The gravity model of bilateral trade is also estimated to capture the variables that influence manufacturing performance.

The single equation supply model was able to account for the major assumption that neither imports nor exports are perfect substitutes for domestic goods. If domestic and foreign goods were perfect substitutes, any given country would be either an exporter or an importer. The possible role of trade policy in affecting the performance of Cameroon's manufacturing trade was another issue. Here, the evidence is also highly impressionistic, with most empirical researchers ignoring the possible effects of both tariffs and non-tariff barriers (Muscatelli *et al.*, 1995:47-55). This research explicitly addressed this by including the tariff variable as an independent variable.

An analysis of the periods (pre- and post-liberalisation) suggests some explanation for the relatively poor performance of the manufactured exports during the study period. The results from the preceding investigation indicate that there is scope for the manufacturing sector to improve its performance.

The findings of this research, using the single equation supply model regarding the impact of trade liberalisation on manufactured exports, indicate that relative price (EXCH), access to imported inputs (IMP), and productive capacity (MAN) affect manufactured export performance, though marginally and therefore insignificantly. In addition, it provides evidence that trade liberalisation measured by tariff reductions does not significantly improve the sensitivity of manufactured exports. With reference to the tariff rate (TAR), Cameroon recorded a significant negative relationship effect (at the 10 per cent level of significance) with manufactured export.

The estimation of the gravity model also has results that differ from what theory predicts. The econometric results were mostly found to be statistically and

economically significant. However, some of the results, as predicted by the model and trade theory, seem not to hold. For instance, distance, which is a reflection of the cost of trade, does not have much of impact on Cameroon's bilateral trade. Tariffs and membership of RTA, which are supposed to have a positive impact on trade if they reduce or if a country belongs to it, do not show such a sign in the case of Cameroon in CEMAC. This means trade liberalisation does not have the expected positive impact on the manufacturing sector's performance in the case of Cameroon.

The results from estimating the CIP index on all aspects stated in Chapter 7 indicate that the manufacturing sector is highly uncompetitive, poorly developed and focuses mostly on the production of primary commodities. The productivity of the manufacturing sector has fallen after liberalisation, and the skills development is also very poor. The results show a grim picture and a very discouraging one for that matter.

The evidence presented elicits the conclusion that trade liberalisation has not improved the performance of the manufacturing sector, especially its export performance and competitiveness. However, it can be argued that the observed outcomes are a reflection of a complex mix of internal and external factors, most of which are of a structural but dominantly external nature. The next chapter presents the conclusions, recommendations and limitations of the research, including areas for further research.

Chapter 8

Summary, findings and recommendations

8.1 Introduction

The overarching aim of this research is to determine the impact of trade liberalisation on the manufacturing sector in Cameroon. The choice of the manufacturing sector is informed by the belief that the development of the manufacturing sector producing goods for export is crucial to create the foundations of sustainable growth, especially for an undiversified and resource-based economy like Cameroon. Therefore, it may be given some priority in developing countries. Manufacturing shows greater signs of external benefits than the rest of the economy. Economies of scale are most likely to be possible in the manufacturing sector and, in line with the new growth and trade theories knowledge acquisition through trade might be beneficial. Lucas, (1993:251-272) shows that for Southeast Asia, productivity was increased through learning by doing and through the production of increasingly sophisticated manufactured goods.

This research developed a single equation supply model, in line with those of Thirwall & Santos-Paulino, (2000:2-25), Goldstein & Khan, (1978; 1985), and Tansel & Togan, (1987), assuming imperfect substitution for imports and exports and concentrating on the supply side. Imperfect substitution means that the exported goods are not perfect substitutes for the domestic ones. An augmented gravity model is also used to determine the impact of trade liberalisation on Cameroon's manufacturing bilateral trade. In addition, the UNIDO, (2000) Competitive Industrial Performance Index is also used to determine the impact of the policy change.

This work is the first attempt to use three different approaches, which are very different, to empirically investigate the impact of trade liberalisation on the manufacturing sector in Cameroon. Previous research had concentrated on measuring productivity growth with the attendant problems of data, approach and controversial results. The question the research seeks to answer is: Has trade liberalisation (lower tariffs and compliance with the obligations of belonging to the WTO) affected the performance of the manufacturing sector in Cameroon positively, as predicted by theory?

As discussed in Chapters 1 and 4 there had been significant trade liberalisation in Cameroon since the late 1980s and 1990s; however, the performance of the manufacturing sector has not been encouraging, as predicted by theory, and because protected firms under ISI went out of business and the remaining ones did not perform optimally or competitively, as seen from the Competitive Industrial Performance (CIP). Increased competition is often reflected in the growth of export as well as import penetration. It is important to empirically determine the impact on manufactured exports and bilateral trade flow, given that this is also a reflection of competitiveness.

It is important, as argued by Samuelson, (2004), that comparative advantage, which underpins trade liberalisation, as proposed by David Ricardo two hundred years ago, does not say that as long as there is free trade, whatever happens will benefit all participants. Rather, the principle according to the understanding of this research proposes that under proper or certain circumstances, trade will provide benefits to all parties. However, it does not say how the gains will be shared and what the special

circumstances are. This is contrary to the simplistic assumption in neoclassical trade theory that trade liberalisation will benefit everyone who participates. It is therefore possible to lose as a result of your trading partner benefiting from bilateral or multilateral liberalisation. This is not an endorsement of mercantilism or for that matter protectionism. It presents the opportunity for regulation or moderation in case of market failure.

Given the above expectation, it is important to restate the main objective of the research, which is to determine the impact of trade liberalisation on the manufacturing sector. Government policies all over the world are very important in determining the success or failure of any sector of the economy. The manufacturing sector is an important sector and in the case of Cameroon has been facing serious challenges (GESp, 2010:30); therefore, it is important to carry out research that cannot only add to the huge literature on trade policy, but can also influence the policy direction. This is because of the recognition that an effective policy recommendation can only be based on effective and stringent research and empirical work. Therefore, the findings from this research will have implications for government policy. In addition, it will be useful to the manufacturing sector by providing valuable information and analysis, which they, in conjunction with policy-makers, can use. It should also be emphasised here that the conclusion and recommendations would be based on the theoretical analysis, literature review, the structure and performance of the Cameroonian economy, the manufacturing sector, trade and industrial policy. Furthermore, the conclusion and recommendations will be based on methodological and empirical analysis.

The rest of the chapter is organised as follows: Section 8.2 presents the summary of the research. Section 8.3 presents policy implications; section 8.4 presents the recommendations, which can inform policy; and finally, section 8.5 presents the limitations of the research, and further research.

8.2 Summary of the research

The provisional title of the thesis is: The impact of trade liberalisation on the manufacturing sector in Cameroon. The research investigates the impact of trade liberalisation on the manufacturing sector in Cameroon. The problem statement cum research question is: What is the impact of trade liberalisation on the manufacturing sector? This is because the classical/neoclassical trade theory, which informs specialisation on the basis of comparative advantage on which trade liberalisation policy is based, predicts that benefits (positive) will come from the adoption of trade liberalisation. Through a combination of theoretical analyses, a critical literature review and an intrinsic analysis and understanding of the Cameroonian economy and manufacturing sector, in addition to the application of three different models for empirical analysis and verification, the research tries to answer the research question and in so doing deals with the problem statement and research question.

In the chapter on the theoretical framework (Chapter 2), the research critically studies the various theories that explain trade and growth. The predictions of the various theories based on the assumptions underpinning them differ widely in some cases. The chapter starts by looking at the traditional classical trade theory with its comparative advantage basis. A critical appraisal of the neoclassical theory, which informs trade liberalisation, concludes that the assumptions rest on unrealistic

grounds; too restrictive and simplistic and therefore do not explain the reality of world trade. The limited scope of classical trade and growth theories informs the new trade theories and models that take a more realistic view of the situation. The new trade theory deviates from the assumption of perfect competition and emphasises the importance of imperfect competition, economies of scale and product differentiation in explaining the patterns of trade. It explains that countries do not only trade on the basis of comparative advantage, which is considered static in traditional models, but also on the basis of dynamic comparative advantage, which can be acquired and maintained through R&D and economies of scale. This means there is more scope for countries with the same endowments and the same level of development to trade. The ISI theory, which seems to have been popular in developing countries at independence because of the perceived and deterministic failure of classical theories, is critically appraised and the justification of such a policy, based on the Prebisch Singer hypothesis, is seen as not being the answer to the problem. The industrial policy is also considered with the conclusion that trade liberalisation should be based on revealed comparative advantage and latent comparative advantage and, on this basis, should develop a platform for acquired comparative advantage. The various approaches to measuring the impact of trade liberalisation on the manufacturing sector, such as the CGE models, cross-country regression models, the single equation supply model, the gravity model and competitive industrial index model were used to answer the research question as well as a consideration of their critique.

Against the backdrop of the theoretical critique and background, Chapter 3 follows to reinforce the process of answering the research question by critically reviewing the large, diverse and controversial literature. There is a sense and an indication that there

is no agreement in the literature on the predictions of the effects of trade liberalisation and what it theoretically aims to achieve. The proponents of free trade such as Little *et al.*, (1970); Krueger, (1978); Heitger, (1987); Bhagwati, (1978); Balassa, (1985); Romer, (1989); Michaely *et al.*, (1991); Dollar, (1992); Edwards, (1992); Harrison, (1995); Onafowora & Owoye, (1998); and Bhagwati & Srinivasan, (1999) justify free trade on the basis that it brings about benefits to the economy as a whole, such as increasing competitiveness and efficiency, the acquisition of technology and engineering growth, among others, which leaves all participants better off. However, sceptics of the benefits from free trade argue that specifically for poor developing countries, the benefits are not as obvious as the advocates argue and that the seeming indication of benefits is based on poor methodological analysis, and that because of their state of development, developing countries will not on the basis of specialisation compete with the developed countries, unless there is government intervention, at least to protect infant industries (Sachs, 1987; Agosin, 1991; Taylor, 1991; Shafaeddin, 1994; Clarke & Kirkpatrick, 1992; Greenaway & Sapsford, 1994; Karunaratne, 1994; Jenkins, 1996; Greenaway *et al.* 1997; Rodrik & Rodriguez, 1999). When looking at the various approaches, such as Total Factor Productivity Growth, Export Performance, Price Cost Margin, it is evident that they all have inconclusive results. Other trends in the literature, such as the new trade theories and the accompanying trade in tasks, seem to explain the reality as discussed in Chapter 2. Outsourcing and offshoring and the importance of spatial location of industries are seen to be important. The existence of imperfect competition works to the advantage of multinational firms that locate or outsource some of their activities to developing countries to take advantage of the resources that are abundant and comparatively cheaper in those countries. Despite its shortcomings, comparative advantage is still

important for decision-making and a further investigation of the latent comparative advantage will be of great benefit to the developing countries, which should inform the process of acquired comparative advantage and the policy framework.

Following from the analysis of the theoretical framework and a critical analysis of the literature review, Chapter 4 considers the economic performance of the Cameroonian economy and the trade policies used to influence the economy in general and the manufacturing sector. The performance of the Cameroonian economy has been poor over the years since the mid 1980s. The Import Substitution Industrialisation policy followed, since independence had a negative effect on the economy and the manufacturing sector. By the mid 1980s, when the economy had almost collapsed under the weight of high debts and volatile yet declining commodity prices, Cameroon accepted the World Bank/IMF proposed Structural Adjustment Programs (SAP) as a means to get out of the crisis (Amin, 2002:3). As part of the SAP, trade liberalisation policies were introduced by removing barriers to trade and effectively abandoning all ISI policies, especially those aimed at supporting the domestic industries such as QRs and subsidies in addition to reducing tariffs, effectively making imports liberal. The idea was to make the economy competitive and, in line with this aim, the currency was devalued in 1994. The economy did not improve and by 1996, Cameroon had declared bankruptcy and applied for the Heavily Indebted Country Initiative (HIPC-I). Despite all the measures taken and the change in trade policy, the gains to the economy and the manufacturing sector, as predicted by the theory, were not realised.

Chapter 5 considers the structure and performance of the manufacturing sector before and after trade liberalisation. Cameroon's manufacturing sector is seen to be uncompetitive and inefficient despite trade liberalisation and the expected benefits from it. Cameroon is seen to be importing more and exporting less and the few manufacturing concerns are at the lower rank of manufacturing, that is, resource based (Abaladejo, 2003:10). The indicators for manufacturing performance are all poor and Cameroon is one of the least industrialised countries in the world and is considered to be at the very first stage of development, depending on commodities (WEF, 2010:118). Basically, the manufacturing sector, post-trade liberalisation, has performed worse than in the pre-liberalisation period. However, the justification for such performance before liberalisation might be because of the ISI policies that, though distortionary, supported inefficient infant industries with subsidies and protection, which led to rent-seeking behaviour on the part of the managers and with high corruption they were set for failure. At the start of SAP, nothing was left of them except the old and decaying physical infrastructure, which was out-dated given the continuous innovation coming from the developed countries.

Having considered the theoretical framework, the literature review that supports the policy or otherwise, the structure of the Cameroonian economy, and trade policies and the performance of the manufacturing sector in Cameroon, Chapter 6 looks at the methodological approach, which is the first step to the determination of the empirical relationship between trade liberalisation and the manufacturing sector's performance. A critical appraisal of the single equation supply model and the augmented gravity models, used to measure the effects of the policy change, is carried out and it was determined to be good for use in predicting the impact of trade policy change. The

Competitive Industrial Performance Index, which measures the performance of the manufacturing sector, is also considered and seen to be a good model that can explain the performance of the manufacturing sector. The three models were critically discussed with the aim of using them in the empirical analysis.

Following the methodological approach, Chapter 7 presents, analyses and interprets the empirical results from the three models. The conclusion, despite the limitations of the available data, is that the policy change has not had the theoretically predicted effects on the manufacturing sector. The CIP Index also presents similar results to those from the gravity model and the single equation supply model. These results are similar to the results from the qualitative analysis of the manufacturing sector in Chapter 5. Comparing the performance before and after trade liberalisation it is obvious that the sector is worse off after liberalisation. This might be a consequence of the removal of the distortionary ISI support policies. It might also be that despite the ISI policy, specialisation in production was not based on comparative advantage, hence the lack of competitiveness and inefficiencies in addition to the lack of infrastructure. This might not necessarily be a verdict on the free trade policy, because there are other factors that have a negative impact on manufacturing in Cameroon.

Having presented the summary of the work and what has been found out from the theory, literature and empirical results, it is now important to present the conclusions from the research, to make recommendations and to provide the limitations of the research and to suggest possible areas of future research and how it should be carried out.

8.3 Conclusions

In making any conclusion it is important to state that trade liberalisation policy aims at affecting the competitiveness of the manufacturing sector from a pricing perspective, even if it is important to acknowledge the possible acquisition of technology and knowledge in the international market. The research finds that the manufacturing sector has not responded very well to the policy change. In analysing this impact, emphasis is placed on the understanding of the impact on manufacturing export and bilateral, manufactured trade flows. In addition, an analysis of the competitiveness of the manufacturing sector in the light of the policy change is considered. The literature on the various debates on the impact of trade reforms is reviewed to provide a baseline analytical framework. The methodologies for decomposing sources of influence on manufactured exports are explained logically and empirically. The methodology is then applied to Cameroon's manufacturing data to estimate the impact on the manufactured exports. Using the results from the empirical analysis, the conclusion on how manufactured exports have been affected by trade liberalisation is determined. The gravity model measures the bilateral trade flow and the variables that influence it, with specific emphasis on the liberalisation variables such as tariffs and membership of WTO and RTA. The research also focuses on the competitive industrial performance (CIP) index, which determines how competitive the manufacturing sector of Cameroon. This is done by making use of various criteria such as MVA, export diversification and technological change.

Based on the basic theoretical model and employing time-series techniques, the research has robust empirical evidence that prices, relative prices, and real exchange rates have no significant effect on the Cameroonian manufactured export supply.

Results suggest that the Cameroonian manufacturing export supply has been weak. The productive capacity has also proven to be one of the main contributors to Cameroon's manufactured export performance. These results are validated in the presence of structural breaks and endogeneity. These findings have some important policy implications; the extended gravity model, which includes trade reform proxies such as tariffs, shows that trade reform has not worked in the Cameroonian case. Trade reform is unsuccessful in decreasing anti-export bias and does not cause a strong export supply response. The extended model, which involves imported capital goods and raw materials, suggests that import compression has a small significant effect on export supply in Cameroon. These results imply that Cameroonian export supply heavily depends on the imported inputs, a relic of the pervasive import substitution policy.

Overall, the conclusion from the research is that trade liberalisation has not been successful in influencing the performance of the manufacturing industry as predicted by theory and advocates. Changes in the real prices of intermediate inputs in the single equation supply model, and proximity in the gravity model, have not favoured manufacturing performance despite their weak explanatory powers, which might be a consequence of poor data associated with developing countries like Cameroon. Rather, the manufacturing sector seems to have been penalised by trade liberalisation.

The thesis also focused on the competitive industrial performance (CIP) index. This index determines the competitiveness of the manufacturing sector. This is done by considering the MVA, export diversification, and export quality and technological change. The results show that the manufacturing sector is grossly uncompetitive,

inefficient and has not taken off because the production base consists mainly of commodities in addition to its competitiveness ranking of 116th out of 131 countries (WEF, 2010; AfDB, 2009). In addition, Bartels, (2007) argues that industrial performance, as well as its various dimensions, factors and variables, is linked to socio-economic development, which in Cameroon is poor, where over 70 per cent of the population live in poverty with about 40 per cent of the population living on less than a dollar a day (GESP, 2010).

The findings from the post-liberalisation period do not support the claims and predictions of the standard neoclassical trade theory on which the trade liberalisation theory is based. Almost twenty years after trade liberalisation, the results show that the manufacturing sector has performed poorly and is highly uncompetitive. This may be because of the initial conditions and the persistence of the structural and systemic peculiarities of Cameroon, which tend to hinder the speed of adjustment and implementation of liberalisation, in addition to the fact that some manufacturers who benefited from the distortionary ISI policies could have resisted change. Alternatively, it may be the result of external factors, in particular the WTO's policy of the 'one size fits all' rule. With regard to either proposition, the research surveyed a large number of recommendations directed at improving the internal and external environment faced by the manufacturing sector in Cameroon in the hope of realising the still elusive good of a well-developed and competitive manufacturing sector that can be a catalyst for economic growth. This conclusion is drawn taking into consideration the industrial policy developed during the era of ISI, discussed in Chapter 5.

The evidence presented elicits the conclusion that trade liberalisation has not improved manufacturing performance. However, it can be argued that the observed outcomes reflect a complex mix of internal and external factors, among which are a lack of competitiveness in addition to poor policy-making, especially the pervasive ISI policy, which was not based on the revealed or latent or acquired comparative advantage. Thinking along this line, Rodriguez & Rodrik, (1999:1-5) argue that there is no consensus on the effects of openness on economic growth and, by extension, manufacturing growth. Instead, the relationship may depend on a number of country-specific and institutional characteristics. In this light, it can be argued that capacity constraints and other structural factors are more important in determining Cameroon's manufacturing sector's performance than small reductions in the level of anti-export bias or domestic market distortion brought about by tariff reductions and the removal of various protectionist measures.

This view is indeed consistent with the findings of a number of writers who challenge the neoliberal argument, and instead emphasise the importance of other non-price factors. For example, a survey by Winters, (2004) points to the role of other policies related to governance and institutional factors. Meanwhile, others like Abamavitz, (1986:385-406) and Howitt, (2000:829-846) stress the importance of a critical level or basic level of development of domestic capacity before countries can be able to benefit from technology spillovers. Looking at manufactured export growth, demand side factors have been emphasised by writers such as Baumol, (1986:1072-1085) and McCombie & Thirlwall, (1997:5-26). Others, like Babatunde, (2009:1-10), emphasise the supply side, which captures the peculiarities of developing countries such as Cameroon, along the lines of Muscatelli *et al.*, (1991), Bond, (1985), and Goldstein &

Khan, (1978). However, others still think that the role of the government is pervasive and distortionary, as discussed in Chapters 2 and 3, such as Little *et al.*, (1970); Krueger, (1978); Bhagwati, (1999); Bhagwati, (1978:45-54); Balassa, (1985:23.35); Heitger, (1987); Romer, (1989) and Bhagwati & Srinivasan, (1999), among others. With this conclusion, it is now important to present the policy implications and recommendations based on the conclusions.

8.4 Policy implications and recommendations

As earlier discussed, the main reason why developing countries such as Cameroon embark on a policy of trade liberalisation is to benefit from what the theory proposes, such as access to a large market and easy access to new technology, along with other benefits, such as competitiveness, which is expected to lead to efficiency and increased production. However, there is no consensus on the efficacy of this policy, and there is empirical evidence that free trade might actually achieve the above benefits (Karunaratne, 1997). What the research is stating is that it might not necessarily be perfect, but the limitations of ISI, as discussed in Chapters 2 and 3, make free trade under certain conditions as well as limited and well thought-out government policies more desirable. However, there is an increasing recognition that there is need for the development of an industrial policy that takes into consideration the revealed, latent and acquired comparative advantage of the country as well as the level of endowment (Lin & Monga, 2010:20).

The results do not provide evidence of the importance of tariffs, meaning that the simplistic approach to tariff reduction, as an important component of trade liberalisation policy, needs to be investigated. In line with the above reasoning, it is

recommended that an industrial policy, based on the proven or revealed and latent comparative advantage of the country, should be developed. Comprehensive and whole-scale trade liberalisation should critically and rigorously look at the context and reality on the ground in Cameroon, by aligning such a change to a robust industrial policy that takes into consideration the revealed and latent comparative advantages of Cameroon.

The weak economic and financial position of Cameroon (which in the first place compelled her to apply for the HIPC-Initiative) was mentioned in Chapters 1 and 4. Simple trading (buying and selling and not producing) and the assembly of products using imported components do not necessarily develop a country because they tend to build a consumer society that is chronically dependent on borrowing from other countries for consumption of goods, which further leverages the country, since the money might be used to buy manufactured goods from other countries rather than being invested. Hope is important, but it is not a strategy.

Furthermore, Cameroon does not have an independent monetary policy that can be used to influence the direction of the economy based on the evidence at hand and the reality on the ground in Cameroon given that it must conform to what is happening in the other CEMAC member countries. This compromises what can be done through the use of exchange rate alignment or misalignment, as it has been stated to be an important policy tool (Zhang, 2001:89-112).

8.4.1 Recommendations

In making recommendations, it is important to state that they are based on the critical

analysis of the theory, literature review, structure and the performance of the Cameroonian economy and manufacturing sector, the methodological approach and the empirical findings. Specific explanatory variables in the first two models are considered and their explanatory powers are quite weak. This might imply that other variables might be at play in influencing the performance of the manufacturing sector. As discussed in Chapter 2, the ISI policy, which Cameroon pursued as a development strategy though politically popular, is grounded on populist ideas and sometimes unrealistic and untested assumptions, or simply on the basis that what worked in Korea should work in Cameroon. This is simplistic because each country has a unique history, culture, religion, institutions, political system, comparative advantage, endowments, infrastructure and people. This is not saying that best practices should not be considered and learnt from.

Therefore, the extent to which trade liberalisation can influence the manufacturing sector in Cameroon does not only depend on the degree of exposure to the outside world, but also on other factors such as developing a sound and realistic industrial policy that is context specific and unique to Cameroon's history, culture and other peculiar characteristics. Export-promoting policies that subsidise export may enhance openness by increasing the market for exports; however, that same policy might distort international prices and, thereby, reduce openness. Therefore, whether a country that undertakes such a policy is considered more open or not will depend on how the concept is measured.

Therefore, in making recommendations, the following questions need to be asked: Firstly, what is the proper role of government (because the government makes the

rules and enforces them, including trade liberalisation and has the capacity to invest hugely) in a new world where they can no longer sit on the side-lines and focus on a single objective of development? Secondly, what are the appropriate tools that the government should use to steer the manufacturing sector to the right direction to achieve the greater vision of development, especially the objective of having manufacturing contribute 17 per cent to GDP, contained in vision 2020 (GESP, 2010:25)? This is because all that the government has been doing is to liberalise the economy and trade through tariff reductions and free trade agreements with different countries and regions, irrespective of the structure and performance of manufacturing firms. Thirdly, even if the focus of government remains on influencing the direction of trade and the performance of the manufacturing sector as part of the overall objective of economic growth, the ability to stimulate growth could be constrained by continuous declining prices, resulting from efficiency in the older well-established manufacturing firms in developed countries, which are more competitive for various reasons predicted in the new growth and trade theories and discussed in Chapters 2 and 3; therefore, what can the government do for toddler firms?

The results from the empirical studies have several important policy implications for Cameroon. Firstly, trade liberalisation, whether unilateral or bilateral, might not enhance potential trade flows between Cameroon and other countries. Given that distance to markets is important, it will be advised that Cameroon should concentrate on transaction costs. It is also important to protect and advocate productivity growth within the context of a fair trade agreement. Secondly, from an export promotion standpoint, distance in the model's results shows that importing countries' GDP is elastic and therefore significant in determining export. Therefore, it is important for

Cameroon to maintain trade links and extend these to high GDP countries or regions in order to increase her exports. However, the problem here is that developed countries might not need manufactured exports from Cameroon, therefore it is important for Cameroon to concentrate her efforts on expanding markets in the developing countries. However, as predicted in the new trade theory, despite the fact that they might produce the same manufactured goods, trade among them is still possible on the basis of differentiated goods (Helpman *et al.*, 2004:300-316).

Cameroon is still a less-developed country in that her value is concentrated in the production of extractive resources that she might not even have the capacity to process to high value goods; agricultural products, cloths and leather works facing intensive competition from Asia; and bricks, cement and other basic consumer goods. Therefore, the challenge is to get out of this zone to a developing country zone where manufacturing could take off. The question then is whether simply liberalising trade can achieve this. As mentioned above, the variables do not seem to agree with this view, meaning something needs to be done in a different way.

In the first instance, strategically, there is a lack of an industrial vision and strategy in that Cameroon concentrated much on developing the agricultural sector. Policy-making is not based on sound evidence based on rigorous research. The hangover from the ISI era and rent-seeking behaviour is still influencing policy; a reason why Cameroon's economy is trade based. Therefore, it is important to establish research centres dedicated to research on the development of industries, which can collaborate with institutions abroad and move away from copying technology to developing technology.

To achieve the above, it must be realised that Cameroon lacks the medium and high human resource skills needed for technological development, because the majority of the labour force is unskilled. There is a need for education and training with an emphasis on the development of technical skills that can enable the take off of manufacturing. In the meantime, skills should be attracted from other countries where they are available using high incentives, in addition to reversing the brain drain suffered by Cameroon. A special employment policy for skilled and specialist labour should be developed by the government. This should be done in addition to capacitating the bureaucracy. Technology development is critical and endogenous in the development of a competitive manufacturing sector and can be influenced by policy and should be central to trade policy formulation. An institutional framework for skills development should be put in place to take care of the shortage in skills needed for the manufacturing sector. Firms should be able to access funds for training.

The use of tariffs, quotas and export subsidies as the main tools of trade policy to influence the manufacturing sector performance needs to be reconsidered in light of the findings of this research and should be reconceptualised and aligned to a dynamic industrial policy. The basis of developing an industrial policy should be on the proven and latent comparative advantage, with the government playing an enabling and supporting role and the private sector taking the lead with markets being allowed to function well. It is important to note that there are proponents of free trade who argue that industrial policies that make it incumbent on governments to intervene to either protect or subsidise local firms are distortionary and may lead to an inefficient

allocation of resources; however, within the context of poor, backward countries, government involvement might be indispensable.

Government should establish a regulatory framework that should be an integral part of the industrial policy, which encourages and supports private sector investment. This means introducing legislation that favours the manufacturing sector. In line with this, the remaining manufacturing firms owned by the government, such as the sugar firms (SOSUCAM and CAMSUCO), the aluminium smelting firm (ALLUCAM), the cotton production company (SODECOTTON), the textile firm (CICAM) and the agro-allied firms (CDC and SOCAPALM), among others, should be privatised.

Regional trade cooperation should be encouraged in reality and not on paper. Trade among the CEMAC countries is very minimal compared to trade with the EU, China and Japan. Monitoring and evaluating trade among these countries should be carried out and efforts should be made to increase intra-African trade at the same time. This means South-South trade should be encouraged.

As mentioned in Chapter 4, infrastructure is lacking in Cameroon. Transportation and energy costs are very high. Energy supply is also unreliable. Government should therefore provide high quality infrastructure at a low cost to encourage the development of manufacturing and to attract FDI in manufacturing. The clustering of industry across the country, as suggested by Kleynhans & Drewes, (2008), can afford manufacturing firms the opportunity to benefit from such actions taken by government. However, this research suggests that this should be done in line with the

revealed or latent comparative advantage of the region or province for it to be sustainable.

Incentives should be provided for local investment in manufacturing, such as support for innovation and, where necessary, working capital should be provided, especially to the small and medium-sized enterprises, which might find it difficult to raise capital given the high interest rates. New small business institutional frameworks and legislation should be put in place to support small and medium-sized enterprises. Special programmes for sectors undergoing severe structural change should be implemented.

Unfair competition should be dealt with, especially in cases where it is seen that there is dumping in the name of free trade, which might retard the development of local firms. Again, there is a serious problem of smuggling and customs fraud and the inability to develop and implement a strong regulatory framework. The customs services need to be capacitated and made to be efficient and incorruptible in carrying out their duties. This does not mean government control, but rather regulation in which private enterprises are encouraged and markets are free and competitive. The informal manufacturing sector needs to be recognised, supported and formalised.

As argued by the World Bank, (1993), there is a difference between industrial policies and trade policies. Trade policy aims at encouraging trade, but the question can be asked, in the case of Cameroon, what will be traded with an absent manufacturing sector and products? In such a case, liberalisation only creates more dependency on trade. However, industrial policy is when government deliberately takes actions to

change the structure of industry and to promote economic growth via productivity improvement. In the opinion of this researcher, trade policy should follow industrial policies, or at best they should be aligned in such a way that they complement and not penalise the other. Cameroon needs an industrial policy to ensure that the manufacturing sector takes off. Government must take actions to fast track the development of the manufacturing sector, or else this sector might never take off in Cameroon. This research is not advocating a return to the pervasive ISI policy, but rather an industrial policy based on the revealed and latent comparative advantages.

The WTO, which Cameroon is a member of, recognises the importance of an industrial policy and suggests generic rather than specific policies to develop industries in developing countries. More specifically, according to Lall, (2000:2), the WTO agreements impose restrictions on local content protection, the discrimination of investors by origin and the use of export subsidies, but it is possible to institute export credit and insurance below market rates, concessional taxes and duty provisions, and export processing zones. Moreover, the WTO provides special treatment for developing countries to protect infant industries under Article VIII of GATT, with a possible five-year period for least-developed countries (as defined in the UN classification).

This research recommends that government should buy from domestic firms as a strategy to provide them with a market. In case the local firms cannot produce the needed goods, they should partner with foreign companies and in the process of producing, acquire technological know-how. This can lead to technology transfer.

This research recommends micro-economic reform by reason of the fact that macro-economic policies are often emphasised in structural adjustment. The micro-economic reform strategy should identify the points that block manufacturing growth, and should find ways of removing such obstacles. This is a vision that takes into account past and present realities of the country and should be based on the real economy, and the experiences from the implementation of the failed ISI policies. Therefore, Cameroon must liberalise more in a sequential and context-specific manner in order not to make the mistakes of 1988 when blind liberalisation was carried out.

The endogenous growth theory suggests that micro-economic reforms should be part of trade liberalisation. This suggestion is based on the reasoning that such reforms will encourage the transfer of new technology through intra-industry trade, which might lead to domestic innovation, increased productivity and technical efficiency in production. Despite the shortcomings of free trade, the evidence is still in favour of free trade.

Moving from resource-based production or agricultural activities to manufacturing could be achieved with easy ISI aimed at the production of non-durable manufactured goods produced for the home industry in the process of replacing imports of such goods. The failure or success of such a policy will depend on the particular country and the timing of a policy change (Cypher & Dietz, 2004). Again, Cameroon should specialise in the production of goods based on her revealed and latent comparative advantage, as mentioned above, from which point she can acquire comparative advantage to build on what she already has. This will guarantee sustainability and increased productivity without putting the economy to painful stress. Easy ISI can be

considered as just the first step in developing the industrial sector and moving to exports, because there are no guarantees that it can be sustained, as argued by Cypher & Dietz, (2004:288). It can be stated that no single development strategy can be sufficient over time if there is to be sustainable growth, which calls for a policy of strategic switching overtime based on the needs of the particular country. This means that policy-makers should be able to make changes in a particular strategy when it has run its course and is no longer desirable for growth, as was the case with ISI. This calls for an efficient and committed civil service that should partner with universities, where rigorous research can be carried out to inform such policy changes.

The ‘either or’ argument in policy debate needs to be avoided. It is important to be strategic in mixing the various trade policies and to rigorously consider the factors that should inform an optimal policy mix and when to change from one to the other. Strategic policy switching is needed to develop the manufacturing sector. Cameroon therefore needs policy-makers and decision-makers who can understand which policy is working at a given time and the ability to recognise the need for and the timing to quickly and effectively make such strategic switches, given the dynamism of the world economy (Cypher & Dietz, 2004:280-282). Given the various views that are often at variance with each other, Hausmann & Rodrik, (2006:5) conclude that countries must pass through structural changes to develop.

Above all, experienced and qualified researchers should carry out rigorous research to identify Cameroon’s comparative and latent comparative advantage. If production and specialisation are not based on this and the eventual upgrading through acquired comparative advantage, the whole industrialisation project might collapse. A student

cannot understand mathematics by starting from the sophisticated ones; he must start from basic arithmetic and algebra. Treating the symptoms and not the causes can only lead to a disaster. Cameroon needs to go to the drawing board and develop an industrial policy based on the above recommendations.

8.5 Limitations of the research

A quote from Albert Einstein is in place here: “Theory is when you know everything but nothing works. Practice is when everything works but nobody knows why. We have put together theory and practice: nothing is working... and nobody knows why!” (Undated). As alluded to earlier and as is typical with most research, this research had a number of limitations and as such the results must be taken with this proviso in mind. However, in large measures, these limitations relate to the perennial problem of data availability and its implication for the shape and scope of the research design. In this regard, a large sample size may have conveyed a number of statistical benefits, such as increased degrees of freedom, the power of tests with implications for the magnitude, the sign and level of statistical significance and the inferential value of estimated coefficients.

The results of this study have, however, certain limitations. Specifically, the model was unable to capture the impact of smuggling and corruption. It is clear that the issue of smuggling and custom corruption and fraud in Cameroon affects the current potential of export capacity for the manufacturing sector specifically, but was beyond the scope of this study.

Therefore, further research is needed to assess the impact of smuggling, custom

corruption and fraud on trade flows between Cameroon and various global regions, especially Nigeria and CEMAC countries. Within this context, it is important to ensure that the research encompasses investors' confidence in manufacturing.

However, the main limitation of the present study is its restricted scope of estimating Cameroon's manufactured bilateral export only. A majority of the trade-related welfare gains accrue from an improved ability to import better and also diversifying traded commodities. The estimation of trade potential, including both merchandise exports and imports from both sides, from Cameroon and from other CEMAC members, would be a logical extension in this regard. Moreover, attempting a specific sector estimation of trade potential, as in the case of manufactured exports, would also envisage other relevant indications that may be useful for policy-making.

The experimental approach to documenting causal mechanisms should be emphasised in research in economics. This will provide evidence, which can inform better decision-making based on the facts on the ground. In line with this, an interdisciplinary approach could be the way to go to better understand the nexus between trade policy and its influence on various sectors, especially the manufacturing sector. In this case, understanding the impact of trade liberalisation on the manufacturing sector could well be understood from an interdisciplinary approach. Trade policy is very much influenced by politics and vested interest; therefore, concentrating on only the direct economic variables for which easy and accessible data is available could bring about limited results.

In addition, one of the major limitations of the study is the aggregate nature of the

model. Therefore, for effective policy analysis, further studies may be undertaken using data at a disaggregated level. Another limitation pertains to the variables, which might be imperfect, and difficult to estimate, yet they are very important.

It is important to understand that the performance of the private non-farm sector (manufacturing sector) in Cameroon and Africa must improve because agriculture and aid will not solve the country and the continent's development problem. In this regard, by analysing sector specific data, we can learn about certain relationships and mechanisms in Cameroon's manufacturing sector that would be masked in aggregate data, as has been the case in this research. Therefore, more efforts should be made to collect sub-sector level data for analysis. This is the way to go with further research. This could be an important area for future research.

8.5.1 Areas for further research

According to Monga, (2009:15), most of the existing mathematical models of economic systems and even business cycles are only remotely reflective of the behaviour of households, firms and governments. The use of micro-economic tools has often remained rudimentary, and their neglect of lessons from other disciplines has been a mistake. Micro-economic analyses are therefore the way to go in future research.

Mankiw, (2006:30) has observed: "While the early macroeconomists were engineers trying to solve practical problems, the macroeconomists of the past several decades have been more interested in developing analytical tools and establishing theoretical principles." The modern economist must concentrate on carrying out rigorous

research at the micro-level to identify the specific challenges. Within the context of this research, a further area of research is micro-economic research to identify revealed and latent comparative advantages, which should inform areas of strength for possible investment.

Lacking natural resources or having too many; Being a landlocked country; Hot and humid climate; Narrow markets; Weak and ineffective political institutions, are not necessarily what determines growth and success in industrialisation. Many drivers of growth, such as trade, education, or even governance, are endogenous and the empirical literature has not convincingly disentangled their effects. Moreover, most institutional factors associated with growth, such as property rights, are not easy to establish (in some countries, they have resulted from decades or even centuries of socio-political changes). Further research should concentrate on such areas.

An important feature in the approach of future research should always drive towards analytical rigour. A major mistake that is made is to assume that credible and consistent prescriptions can be developed from pragmatic thinking, and by ignoring the pressures to produce mathematically consistent analyses.

Cross-country empirical studies have highlighted broad differences between high-income countries by identifying three types of variables that are correlated to growth: (i) Structural variables, such as productivity, physical capital, labour force or educational attainment; (ii) institutional variables, such as the “quality of institutions” or governance; and (iii) policy variables, such as macro-economic stability, investment climate, financial development or trade openness. Country-specific

research should be carried out and these variables dealt with critically

The existing models of growth in cross-country analyses almost invariably are based on the assumption of representative firms and representative consumers. In real life, and that is the reason why countries with similar conditions and policies may perform quite differently, there is a great deal of heterogeneity in the behaviour of firms and consumers, both within and across countries. From a methodological viewpoint, the study of growth must give more prominence to models where the country is the unit of observation and analysis, than one where attention is given to the agent (household or firm).

Annexures

Annex A: Data for estimation of the single equation model for the pre-trade liberalisation period

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
ManX100	27.8	25	-17.8	17.6	42.3	6.9	-15.9	-14	2.6	21.2	-11.8
ManXPr100	-46.3	-32.1	17.1	-14.4	-18.3	-4.3	51.8	-5.4	6.3	-16.9	30
ManM100	35	50	-8.5	1.7	26.6	26.6	16.9	-2	-20	-16	10
ManMPr100	-7.3	-40.7	-7.6	0.3	-28.5	-4.6	-28.8	5.2	-8.8	18.3	0.8
REER100	145.8	132.5	125.3	126.3	126.6	131.9	149.6	169	162.9	150.2	154.9
MVA100	9.6	10.5	12.1	11.6	12.1	11.5	12.4	13.2	13.6	14.4	14.5
GDP100	18.2	17.1	7.5	6.9	7.5	8.1	6.8	-2.2	-7.8	-1.8	-6.1
INV100	35	38.1	0	11.3	10.2	12.4	-2.8	-11.4	-27.6	-16.5	-7.2
Man Gr100	9.5	32.6	34.6	6.6	1.7	0.6	2.4	-1.4	2	1.9	-7.3
AvTRF100	28	28	28	28	28	28	28	28	28	28	28

Source: World Development Indicators (1985, 1990, 1995, 2000, 2005, 2009)

Definitions

Country CAMEROON

ManX100	Means manufacturing exports in percent
ManXPr100	Means manufacturing export prices in %
ManM100	Means manufacturing imports in percent
ManMPr100	Means manufacturing import prices in %
REER	Means real effective exchange rate in percent
MVA100	Means manufacturing value added in percent
GDP100	Means Gross Domestic Product in per cent
INV100	Means real investment in percent
ManGr100	Means real manufacturing growth in percent

Annex B: Data for estimation of the single equation model for the post-trade liberalisation period

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
ManX100	27.8	25	-17.8	17.6	42.3	6.9	-15.9	-14	2.6	21.2	-11.8	-6	3.3	18.5	-6.9
ManXPr100	-46.3	-32.1	17.1	-14.4	-18.3	-4.3	51.8	-5.4	6.3	-16.9	30	-1.9	-4.4	-4.4	3.6
ManM100	35	50	-8.5	1.7	26.6	26.6	16.9	-2	-20	-16	10	3.4	-19	0.8	2.2
ManMPr100	-7.3	-40.7	-7.6	0.3	-28.5	-4.6	-28.8	5.2	-8.8	18.3	0.8	-18.9	22.9	-6	-3.8
REER100	145.8	132.5	125.3	126.3	126.6	131.9	149.6	169	162.9	150.2	154.9	147.1	146.6	137.9	91.9
MVA100	9.6	10.5	12.1	11.6	12.1	11.5	12.4	13.2	13.6	14.4	14.5	14.5	14.3	21.4	22.3
GDP100	18.2	17.1	7.5	6.9	7.5	8.1	6.8	-2.2	-7.8	-1.8	-6.1	-3.8	-3.1	-3.2	-2.5
INV100	35	38.1	0	11.3	10.2	12.4	-2.8	-11.4	-27.6	-16.5	-7.2	-3.7	-15.7	11.4	-16.3
Man Gr100	9.5	32.6	34.6	6.6	1.7	0.6	2.4	-1.4	2	1.9	-7.3	0.5	2.7	-7.1	-3.3
AvTRF100	28	28	28	28	28	28	28	28	28	28	28	18.1	18.1	18.1	17.7

Source: World Development Indicators (1985, 1990, 1995, 2000, 2005, 2009)

Annex C: Definition of variables used for the empirical analysis of the single equation supply model

Sources and description of the variables used in the regression analysis fixed effects regression of export demand	
<i>EXCH</i>	Real effective exchange rate to measure relative prices. World Development Indicator (1985, 1990, 1995, 2000, 2006, 2008)
<i>EXP</i>	Merchandise Exports (Source: World Development Indicator (1985, 1990, 1995, 2000, 2006, 2008))
<i>TAR</i>	Average tariff rate Source: http://siteresources.worldbank.org/INTRANETTRADE/Resources/tar2002.xls and UNCTAD (1985, 1990, 1995, 2000, 2006, 2008)
<i>MAN</i>	Value of the manufacturing GDP used as a proxy variable for the production capacity of the economy. Estimated from statistics obtained from World Development Indicators (1985, 1990, 1995, 2000, 2006, 2008)
<i>IMP</i>	Imports of raw materials (%) (Source: African Development Indicator Database (1985, 1990, 1995, 2000, 2006, 2008))

Annex D: Results from the estimation of the single equation supply model

Dependent variable: EXP01

Method: Least squares

Date: 07/26/10 Time: 11:06

Sample (adjusted): 1982 2006

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	167.0624	11.19584	14.92182	0.0000
D(EXCH(-1))	-1.365205	0.988638	-1.380895	0.1825
D(MAN(-1))	-23.22986	8.375725	-2.773475	0.0117
D(TAR(-1))	2.502725	5.531502	0.452449	0.6558
D(IMP(-1))	3.176694	1.078579	2.945260	0.0080
R-squared	0.375793	Mean dependent var		163.4495
Adjusted R-squared	0.250952	S.D. dependent var		61.27895
S.E. of regression	53.03544	Akaike info criterion		10.95665
Sum squared resid	56255.16	Schwarz criterion		11.20043
Log likelihood	-131.9582	Hannan-Quinn criter.		11.02427
F-statistic	3.010166	Durbin-Watson stat		1.058021
Prob (F-statistic)	0.042727			

Dependent variable: EXP01

Method: Least squares

Date: 07/22/10 Time: 15:49

Sample: 1980 1990

Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.93215	153.1496	0.097500	0.9251
EXCH	0.641989	1.350242	0.475462	0.6489
MAN	9.372167	13.16153	0.712088	0.4994
IMP	-1.291118	1.425112	-0.905976	0.3951
R-squared	0.393264	Mean dependent var		105.3032
Adjusted R-squared	0.133235	S.D. dependent var		45.75320
S.E. of regression	42.59633	Akaike info criterion		10.61670
Sum squared resid	12701.13	Schwarz criterion		10.76139
Log likelihood	-54.39186	Hannan-Quinn criter.		10.52549
F-statistic	1.512383	Durbin-Watson stat		2.006825
Prob (F-statistic)	0.292929			

Dependent variable: EXP01
Method: Least squares
Date: 07/26/10 Time: 18:32
Sample (adjusted): 1993 2006
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	858.0670	210.2944	4.080313	0.0028
D(EXCH(-1))	0.228855	1.374221	0.166534	0.8714
MAN	-35.22095	11.12178	-3.166844	0.0114
D(TAR(-1))	-38.23166	164.9233	-0.231815	0.8219
D(IMP(-1))	1.436373	1.447498	0.992315	0.3470
R-squared	0.617817	Mean dependent var		197.5479
Adjusted R-squared	0.447958	S.D. dependent var		53.84013
S.E. of regression	40.00295	Akaike info criterion		10.48824
Sum squared resid	14402.12	Schwarz criterion		10.71647
Log likelihood	-68.41765	Hannan-Quinn criter.		10.46711
F-statistic	3.637237	Durbin-Watson stat		0.546160
Prob (F-statistic)	0.049858			

Dependent variable: EXP01
Method: Least squares
Date: 07/26/10 Time: 11:21
Sample (adjusted): 1992 2006
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	862.9972	200.6224	4.301598	0.0016
D(EXCH(-1))	-0.142982	0.899193	-0.159011	0.8768
MAN	-35.37301	10.62428	-3.329451	0.0076
D(TAR(-1))	22.92255	6.915949	3.314448	0.0078
D(IMP(-1))	1.282100	1.325413	0.967321	0.3562
R-squared	0.643005	Mean dependent var		193.5980
Adjusted R-squared	0.500207	S.D. dependent var		54.08998
S.E. of regression	38.23947	Akaike info criterion		10.38682
Sum squared resid	14622.57	Schwarz criterion		10.62283
Log likelihood	-72.90111	Hannan-Quinn criter.		10.38430
F-statistic	4.502899	Durbin-Watson stat		0.554004
Prob (F-statistic)	0.024441			

Annex E: Classification of exports based on technology

Classification	Example
PRIMARY COMMODITIES (PR) wood,	Fresh fruit, meat, rice, cocoa, coffee, tea, coal wood, crude petroleum, gas
MANUFACTURED PRODUCTS RESOURCE-BASED (RB) MANUFACTURERS Agro/forest-based products oils Other resource-based products	Prepared meats/fruits, wood products, vegetable Petroleum products, cement, cut germs, glass
LOW-TECHNOLOGY (LT) MANUFACTURERS Textile and clothing cluster Other low-technology products	Textile fabrics, clothing, footwear, leather manufactures, travel goods Pottery, metal structures, furniture, toys, dishware
MEDIUM-TECHNOLOGY (MT) MANUFACTURERS Automotive products Medium-technology process industries Medium-technology engineering industries	Motor vehicles and parts, motorcycles Synthetic fibres, chemicals, fertilisers, plastics Engines, industrial machinery, ships, watches
HIGH-TECHNOLOGY (HT) MANUFACTURERS Electronics and electrical products Other high-technology products	Telecom, TVs, transistors, turbines, data processing systems Pharmaceuticals, aerospace, optical/measuring instruments

Source: OECD 2004

Annex F: Average tariffs rates by sector in Cameroon

Product category/years	1980	1995	1994	2001	2002
Primary products	35	17.5	17.9	17.3	17.3
Ores and metals	N/A	12.1	15.4	11.7	11.7
Chemical products	45	17.7	18.1	17.5	17.5
Machinery and transport equipment	28	10.6	11.3	10.6	10.6
Other manufactured products	28	14.0	14.1	14.0	14.0

Source: UNCTAD 2005

Annex G: Histogram showing normality test for the independent variables in the estimation of the augmented gravity model

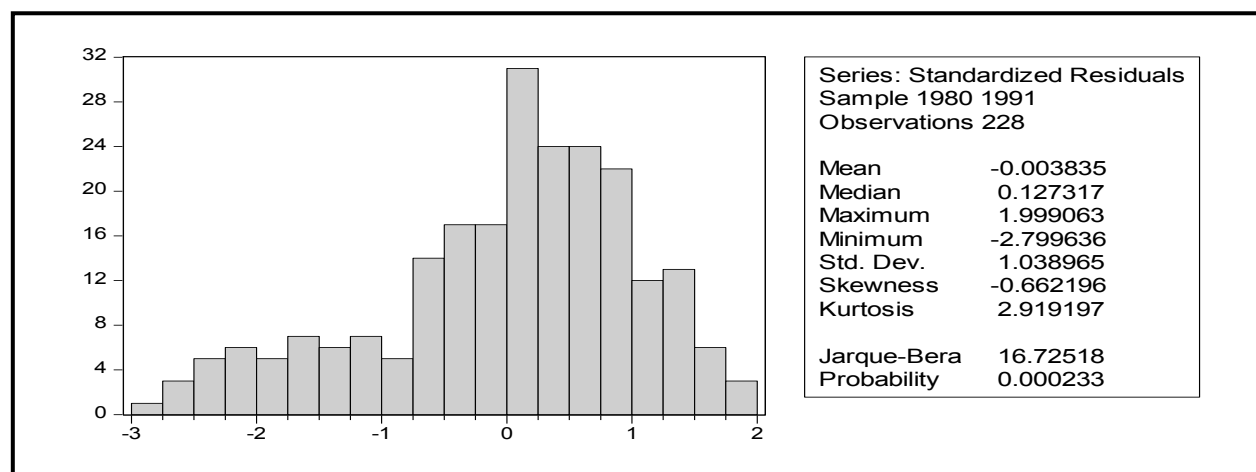


Figure G1: Histogram – Normality test (pre-liberalisation)

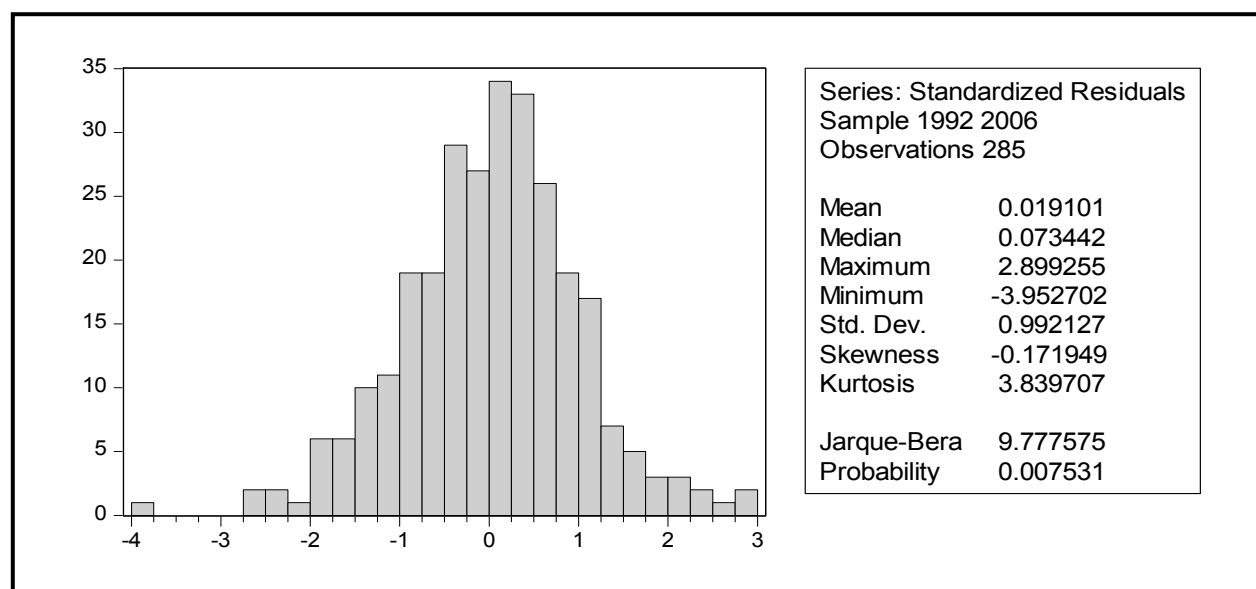


Figure G2: Histogram – Normality test (post-liberalisation)

Annex H: Estimated results of the gravity model pre-trade liberalisation

Dependent variable: EXP Method: Panel least squares Sample: 1980 1991 Periods included: 12 Cross-sections included: 19 Total panel (balanced) observations: 228				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.94039	3.203025	4.976667	0.0000
GDPJ	-0.836240	0.632455	-1.322212	0.1875
DIJ	0.661804	0.080312	8.240391	0.0000
COMLANG	-0.121867	0.101040	-1.206122	0.2291
COMCOL	0.298668	0.190631	1.566735	0.1186
COIM	-1.260178	0.676698	-1.862246	0.0639
RTA	1.426589	0.405100	3.521576	0.0005
TAR	3.564883	0.425697	8.374220	0.0000
	-0.447725	0.051393	-8.711784	0.0000
R-squared	0.528099	Mean dependent var		1.365493
Adjusted R-squared	0.510861	S.D. dependent var		1.518851
S.E. of regression	1.062261	Akaike info criterion		2.997350
Sum squared resid	247.1192	Schwarz criterion		3.132719
Log likelihood	-332.6979	Hannan-Quinn criter.		3.051967
F-statistic	30.63509	Durbin-Watson stat		0.296203
Prob (F-statistic)	0.000000			

Annex I: Estimated results of the augmented gravity model post-trade liberalisation

Dependent variable: EXP01 Method: Panel EGLS (Period SUR) Sample: 1992 2006 Periods included: 15 Cross-sections included: 19 Total panel (balanced) observations: 285 Linear estimation after one-step weighting matrix				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.783664	0.996790	1.789409	0.0746
GDPI	1.286046	0.217713	5.907071	0.0000
GDPJ	0.197967	0.046003	4.303324	0.0000
DIJ	-0.200295	0.056618	-3.537636	0.0005
COMLANG	0.153164	0.104280	1.468783	0.1430
COMCOL	-0.028553	0.383363	-0.074480	0.9407
COIM	0.582389	0.223421	2.606686	0.0096
RTA	-0.608749	0.239544	-2.541278	0.0116
TAR	-0.077677	0.028809	-2.696291	0.0074
Weighted statistics				
R-squared	0.446826	Mean dependent var		1.189778
Adjusted R-squared	0.430792	S.D. dependent var		4.961717
S.E. of regression	1.006590	Sum squared resid		279.6495
F-statistic	27.86731	Durbin-Watson stat		1.984672
Prob(F-statistic)	0.000000			
Unweighted statistics				
R-squared	0.259341	Mean dependent var		3.214986
Sum squared resid	224.4339	Durbin-Watson stat		0.487598

Annex J: Relevant ISIC Classifications

Consumer goods comprise food (ISIC 311), beverages (ISIC 313), tobacco (ISIC 314), textiles (ISIC 321), wearing apparel (ISIC 322), leather products (ISIC 323) and footwear (ISIC 324).

Capital goods include iron and steel (ISIC 371), non-ferrous metals (ISIC 372), metal products (ISIC 381), machinery except electrical (ISIC 382), electrical machinery (ISIC 383), transport equipment (ISIC 384) and professional and scientific equipment (ISIC 385).

RB industries are food (ISIC 311), beverages (ISIC 313), tobacco (ISIC 314), wood processing (ISIC 331), paper and paper products (ISIC 341), products of petroleum and coal (ISIC 354) and rubber products (ISIC 355).

MHT industries are printing and publishing (ISIC 342), industrial chemicals (ISIC 351), other chemical products (ISIC 352), petroleum refineries (ISIC 353), iron and steel (ISIC 371), non-ferrous metals (ISIC 372), metal products (ISIC 381), machinery except electrical (ISIC 382), electrical machinery (ISIC 383), transport equipment (ISIC 384) and professional and scientific equipment (ISIC 385)

Source; UNIDO (2006)

Annex K: Panel data for the estimation of the augmented gravity model

	EXP	GDPi	GDPj	Dij	Coml ang	Com col	CoI M	BT A	W TO	W X	RT A	TAR
19 92	1.728 109	2.397 895	0	9.305 651	1	1	1	1	1	1	1	19.1
19 93	1.758 203	2.397 895	0	9.305 651	1	1	1	1	1	1	1	19
19 94	2.225 704	2.302 585	0	9.305 651	1	1	1	1	1	1	1	19
19 95	2.549 445	2.397 895	0	9.305 651	1	1	1	1	1	1	1	18.8
19 96	2.818 995	2.397 895	0	9.305 651	1	1	1	1	1	1	1	18.8
19 97	2.991 222	2.484 907	0	9.305 651	1	1	1	1	1	1	1	18.7
19 98	2.917 771	2.564 949	0	9.305 651	1	1	1	1	1	1	1	18.5
19 99	3.005 683	2.564 949	0	9.305 651	1	1	1	1	1	1	1	18.3
20 00	1.194 831	2.639 057	0	9.305 651	1	1	1	1	1	1	1	18.1
20 01	1.778 336	2.639 057	0	9.305 651	1	1	1	1	1	1	1	18
20 02	2.056 685	2.708 05	0	9.305 651	1	1	1	1	1	1	1	18
20 03	2.274 186	2.772 589	0	9.305 651	1	1	1	1	1	1	1	17.8
20 04	2.303 585	2.772 589	0	9.305 651	1	1	1	1	1	1	1	17.9
20 05	2.485 74	2.833 213	0	9.305 651	1	1	1	1	1	1	1	17.5
20 06	2.778 819	2.833 213	0	9.305 651	1	1	1	1	1	1	1	16
19 92	2.014 903	2.397 895	1.098 61	6.908 755	1	1	1	1	1	1	1	19.1
19 93	0.996 949	2.397 895	0.693 15	6.908 755	1	1	1	1	1	1	1	19
19 94	1.902 108	2.302 585	1.098 61	6.908 755	1	1	1	1	1	1	1	19
19 95	1.816 452	2.397 895	1.098 61	6.908 755	1	1	1	1	1	1	1	18.8
19 96	2.307 573	2.397 895	1.098 61	6.908 755	1	1	1	1	1	1	1	18.8
19 97	2.694 627	2.484 907	1.098 61	6.908 755	1	1	1	1	1	1	1	18.7
19 98	3.590 439	2.564 949	1.098 61	6.908 755	1	1	1	1	1	1	1	18.5
19 99	3.254 629	2.564 949	1.098 61	6.908 755	1	1	1	1	1	1	1	18.3
20 00	2.674 838	2.639 057	1.098 61	6.908 755	1	1	1	1	1	1	1	18.1
20 01	3.307 253	2.639 057	1.386 29	6.908 755	1	1	1	1	1	1	1	18
20 02	3.322 154	2.708 05	1.386 29	6.908 755	1	1	1	1	1	1	1	18

2003	3.2312	2.772589	1.60944	6.908755	1	1	1	1	1	1	1	17.8
2004	3.321793	2.772589	1.60944	6.908755	1	1	1	1	1	1	1	17.9
2005	3.347093	2.833213	1.79176	6.908755	1	1	1	1	1	1	1	17.5
2006	2.284421	2.833213	1.79176	6.908755	1	1	1	1	1	1	1	16
1992	1.824549	2.397895	6.45677	9.305651	0	0	0	1	1	0	0	19.1
1993	2.13771	2.397895	6.64379	9.305651	0	0	0	1	1	0	0	19
1994	2.587764	2.302585	6.76734	9.305651	0	0	0	1	1	0	0	19
1995	2.714695	2.397895	6.87005	9.305651	0	0	0	1	1	0	0	18.8
1996	2.747271	2.397895	6.96602	9.305651	0	0	0	1	1	0	0	18.8
1997	3.234749	2.484907	7.05445	9.305651	0	0	0	1	1	0	0	18.7
1998	3.597312	2.564949	7.1293	9.305651	0	0	0	1	1	0	0	18.5
1999	3.835142	2.564949	7.20266	9.305651	0	0	0	1	1	0	0	18.3
2000	4.168214	2.639057	7.28345	9.305651	0	0	0	1	1	0	0	18.1
2001	4.110874	2.639057	7.36328	9.305651	0	0	0	1	1	0	0	18
2002	4.180522	2.70805	7.45066	9.305651	0	0	0	1	1	0	0	18
2003	4.370713	2.772589	7.54592	9.305651	0	0	0	1	1	0	0	17.8
2004	4.884316	2.772589	7.74066	9.305651	0	0	0	1	1	0	0	17.9
2005	5.025852	2.833213	7.8067	9.305651	0	0	0	1	1	0	0	17.5
2006	5.345201	2.833213	7.85049	9.305651	0	0	0	1	1	0	0	16
1992	3.261935	2.397895	1.098612	6.908755	1	1	1	1	1	1	1	19.1
1993	2.526528	2.397895	1.098612	6.908755	1	1	1	1	1	1	1	19
1994	2.879198	2.302585	1.098612	6.908755	1	1	1	1	1	1	1	19
1995	3.113515	2.397895	1.098612	6.908755	1	1	1	1	1	1	1	18.8
1996	2.879198	2.397895	1.098612	6.908755	1	1	1	1	1	1	1	18.8
1997	3.182212	2.484907	1.098612	6.908755	1	1	1	1	1	1	1	18.7
1998	3.206803	2.564949	1.098612	6.908755	1	1	1	1	1	1	1	18.5
1999	3.165475	2.564949	1.386294	6.908755	1	1	1	1	1	1	1	18.3
2000	3.202746	2.639057	1.386294	6.908755	1	1	1	1	1	1	1	18.1

20 01	3.198 673	2.639 057	1.386 294	6.908 755	1	1	1	1	1	1	1	18
20 02	3.165 475	2.708 05	1.386 29	6.908 755	1	1	1	1	1	1	1	18
20 03	3.139 833	2.772 589	1.609 44	6.908 755	1	1	1	1	1	1	1	17.8
20 04	3.148 453	2.772 589	1.386 29	6.908 755	1	1	1	1	1	1	1	17.9
20 05	3.363 842	2.833 213	1.609 44	6.908 755	1	1	1	1	1	1	1	17.5
20 06	3.254 243	2.833 213	1.609 44	6.908 755	1	1	1	1	1	1	1	16
19 92	1.722 767	2.397 9	- 0.693 15	5.707 11	1	1	1	1	1	1	1	19.1
19 93	1.757 858	2.397 9	- 0.693 15	5.707 11	1	1	1	1	1	1	1	19
19 94	2.485 573	2.302 59	- 0.693 15	5.707 11	1	1	1	1	1	1	1	19
19 95	3.186 477	2.397 9	0	5.707 11	1	1	1	1	1	1	1	18.8
19 96	3.475 191	2.397 9	0	5.707 11	1	1	1	1	1	1	1	18.8
19 97	3.349 939	2.484 91	0	5.707 11	1	1	1	1	1	1	1	18.7
19 98	3.332 24	2.564 95	0	5.707 11	1	1	1	1	1	1	1	18.5
19 99	2.850 88	2.564 95	0.693 147	5.707 11	1	1	1	1	1	1	1	18.3
20 00	2.879 423	2.639 06	0.693 147	5.707 11	1	1	1	1	1	1	1	18.1
20 01	2.573 223	2.639 06	0.693 147	5.707 11	1	1	1	1	1	1	1	18
20 02	2.701 563	2.708 05	0.693 15	5.707 11	1	1	1	1	1	1	1	18
20 03	2.850 938	2.772 59	1.098 61	5.707 11	1	1	1	1	1	1	1	17.8
20 04	2.890 427	2.772 59	1.098 61	5.707 11	1	1	1	1	1	1	1	17.9
20 05	2.949 741	2.833 21	1.098 61	5.707 11	1	1	1	1	1	1	1	17.5
20 06	2.042 518	2.833 21	1.386 29	5.707 11	1	1	1	1	1	1	1	16
19 92	2.708 05	2.397 9	1.791 759	6.111 467	1	1	1	1	1	1	1	19.1
19 93	2.639 057	2.397 9	1.791 759	6.111 467	1	1	1	1	1	1	1	19
19 94	2.970 414	2.302 59	1.791 759	6.111 467	1	1	1	1	1	1	1	19
19 95	3.292 126	2.397 9	1.945 91	6.111 467	1	1	1	1	1	1	1	18.8
19 96	3.552 487	2.397 9	2.079 442	6.111 467	1	1	1	1	1	1	1	18.8
19	0.955	2.484	2.079	6.111	1	1	1	1	1	1	1	18.7

97	511	91	442	467								
19	0.788	2.564	1.945	6.111	1	1	1	1	1	1	1	18.5
98	457	95	91	467								
19	0.693	2.564	1.945	6.111	1	1	1	1	1	1	1	18.3
99	147	95	91	467								
20	3.049	2.639	2.079	6.111	1	1	1	1	1	1	1	18.1
00	273	06	442	467								
20	1.931	2.639	2.079	6.111	1	1	1	1	1	1	1	18
01	521	06	442	467								
20	1.960	2.708	2.079	6.111	1	1	1	1	1	1	1	18
02	095	05	44	467								
20	1.960	2.772	2.079	6.111	1	1	1	1	1	1	1	17.8
03	095	59	442	467								
20	2.014	2.772	2.079	6.111	1	1	1	1	1	1	1	17.9
04	903	59	442	467								
20	1.887	2.833	2.079	6.111	1	1	1	1	1	1	1	17.5
05	07	21	44	467								
20	3.218	2.833	2.079	6.111	1	1	1	1	1	1	1	16
06	876	21	44	467								
19	1.791	2.397	7.769	8.578	0	0	0	1	1	0	0	19.1
92	759	895	38	476								
19	1.335	2.397	7.761	8.578	0	0	0	1	1	0	0	19
93	001	895	74	476								
19	0.955	2.302	7.788	8.578	0	0	0	1	1	0	0	19
94	511	585	21	476								
19	2.091	2.397	7.807	8.578	0	0	0	1	1	0	0	18.8
95	864	895	92	476								
19	2.219	2.397	7.817	8.578	0	0	0	1	1	0	0	18.8
96	203	895	63	476								
19	2.433	2.484	7.836	8.578	0	0	0	1	1	0	0	18.7
97	613	907	37	476								
19	2.493	2.564	7.854	8.578	0	0	0	1	1	0	0	18.5
98	205	949	38	476								
19	2.292	2.564	7.873	8.578	0	0	0	1	1	0	0	18.3
99	535	949	22	476								
20	2.186	2.639	7.906	8.578	0	0	0	1	1	0	0	18.1
00	051	057	92	476								
20	2.163	2.639	7.920	8.578	0	0	0	1	1	0	0	18
01	323	057	45	476								
20	2.163	2.708	7.921	8.578	0	0	0	1	1	0	0	18
02	323	05	54	476								
20	2.197	2.772	7.918	8.578	0	0	0	1	1	0	0	17.8
03	225	589	63	476								
20	2.351	2.772	7.926	8.578	0	0	0	1	1	0	0	17.9
04	375	589	24	476								
20	2.424	2.833	7.901	8.578	0	0	0	1	1	0	0	17.5
05	803	213	01	476								
20	2.442	2.833	7.966	8.578	0	0	0	1	1	0	0	16
06	347	213	59	476								
19	2.873	2.397	6.111	8.600	0	0	0	1	1	0	0	19.1
92	565	895	47	063								
19	2.862	2.397	6.118	8.600	0	0	0	1	1	0	0	19
93	201	895	1	063								
19	3.230	2.302	6.150	8.600	0	0	0	1	1	0	0	19
94	804	585	6	063								

1995	3.634951	2.397895	6.17794	8.600063	0	0	0	1	1	0	0	18.8
1996	3.575151	2.397895	6.20859	8.600063	0	0	0	1	1	0	0	18.8
1997	3.86073	2.484907	6.24611	8.600063	0	0	0	1	1	0	0	18.7
1998	3.83298	2.564949	6.28786	8.600063	0	0	0	1	1	0	0	18.5
1999	3.918005	2.564949	6.32794	8.600063	0	0	0	1	1	0	0	18.3
2000	3.956996	2.639057	6.3613	8.600063	0	0	0	1	1	0	0	18.1
2001	3.949319	2.639057	6.37502	8.600063	0	0	0	1	1	0	0	18
2002	3.956996	2.70805	6.38182	8.600063	0	0	0	1	1	0	0	18
2003	3.923952	2.772589	6.37332	8.600063	0	0	0	1	1	0	0	17.8
2004	3.875359	2.772589	6.38688	8.600063	0	0	0	1	1	0	0	17.9
2005	3.89995	2.833213	6.40192	8.600063	0	0	0	1	1	0	0	17.5
2006	3.790985	2.833213	6.43133	8.600063	0	0	0	1	1	0	0	16
1992	3.725693	2.397895	7.29438	8.350902	0	0	0	1	1	0	0	19.1
1993	3.758872	2.397895	7.28551	8.350902	0	0	0	1	1	0	0	19
1994	3.862833	2.302585	7.30787	8.350902	0	0	0	1	1	0	0	19
1995	4.12552	2.397895	7.33563	8.350902	0	0	0	1	1	0	0	18.8
1996	4.207673	2.397895	7.34666	8.350902	0	0	0	1	1	0	0	18.8
1997	4.513055	2.484907	7.36645	8.350902	0	0	0	1	1	0	0	18.7
1998	4.625953	2.564949	7.38461	8.350902	0	0	0	1	1	0	0	18.5
1999	4.549657	2.564949	7.40062	8.350902	0	0	0	1	1	0	0	18.3
2000	2.617396	2.639057	7.43071	8.350902	0	0	0	1	1	0	0	18.1
2001	2.766319	2.639057	7.44833	8.350902	0	0	0	1	1	0	0	18
2002	2.646175	2.70805	7.45182	8.350902	0	0	0	1	1	0	0	18
2003	2.734368	2.772589	7.45472	8.350902	0	0	0	1	1	0	0	17.8
2004	4.536891	2.772589	7.4668	8.350902	0	0	0	1	1	0	0	17.9
2005	4.645352	2.833213	7.46794	8.350902	0	0	0	1	1	0	0	17.5
2006	4.584967	2.833213	7.48605	8.350902	0	0	0	1	1	0	0	16
1992	3.703768	2.397895	8.221748	9.313168	0	0	0	1	1	0	0	19.1

1993	3.680 091	2.397 895	8.223 895	9.313 168	0	0	0	1	1	0	0	19
1994	3.807 995	2.302 585	8.230 044	9.313 168	0	0	0	1	1	0	0	19
1995	4.064 401	2.397 895	8.249 314	9.313 168	0	0	0	1	1	0	0	18.8
1996	4.127 134	2.397 895	8.277 158	9.313 168	0	0	0	1	1	0	0	18.8
1997	4.467 057	2.484 907	8.292 549	9.313 168	0	0	0	1	1	0	0	18.7
1998	4.592 085	2.564 949	8.038 512	9.313 168	0	0	0	1	1	0	0	18.5
1999	4.486 387	2.564 949	8.270 781	9.313 168	0	0	0	1	1	0	0	18.3
2000	2.397 895	2.639 057	8.298 54	9.313 168	0	0	0	1	1	0	0	18.1
2001	2.433 613	2.639 057	8.300 28	9.313 168	0	0	0	1	1	0	0	18
2002	2.424 803	2.708 05	8.302 762	9.313 168	0	0	0	1	1	0	0	18
2003	2.557 227	2.772 589	8.317 278	9.313 168	0	0	0	1	1	0	0	17.8
2004	4.506 454	2.772 589	8.344 03	9.313 168	0	0	0	1	1	0	0	17.9
2005	4.563 306	2.833 213	8.362 642	9.313 168	0	0	0	1	1	0	0	17.5
2006	4.505 35	2.833 213	8.384 576	9.313 168	0	0	0	1	1	0	0	16
1992	1.526 056	2.397 9	4.077 537	6.836 259	1	1	1	1	1	1	0	19.1
1993	1.029 619	2.397 9	4.094 345	6.836 259	1	1	1	1	1	1	0	19
1994	0.875 469	2.302 59	4.094 345	6.836 259	1	1	1	1	1	1	0	19
1995	2.370 244	2.397 9	4.110 874	6.836 259	1	1	1	1	1	1	0	18.8
1996	4.914 858	2.397 9	4.158 883	6.836 259	1	1	1	1	1	1	0	18.8
1997	4.737 075	2.484 91	4.189 655	6.836 259	1	1	1	1	1	1	0	18.7
1998	5.007 296	2.564 95	4.204 693	6.836 259	1	1	1	1	1	1	0	18.5
1999	5.257 495	2.564 95	4.219 508	6.836 259	1	1	1	1	1	1	0	18.3
2000	4.072 44	2.639 06	4.262 68	6.836 259	1	1	1	1	1	1	0	18.1
2001	3.992 681	2.639 06	4.290 459	6.836 259	1	1	1	1	1	1	0	18
2002	4.104 295	2.708 05	4.304 07	6.836 259	1	1	1	1	1	1	0	18
2003	6.420 646	2.772 59	4.406 719	6.836 259	1	1	1	1	1	1	0	17.8
2004	4.209 16	2.772 59	4.465 908	6.836 259	1	1	1	1	1	1	0	17.9
2005	4.206 184	2.833 21	4.532 6	6.836 259	1	1	1	1	1	1	0	17.5

2006	4.545 42	2.833 21	4.584 97	6.836 259	1	1	1	1	1	1	0	16
1992	1.974 081	2.397 895	6.075 346	9.389 072	0	0	0	1	1	0	0	19.1
1993	1.481 605	2.397 895	6.135 565	9.389 072	0	0	0	1	1	0	0	19
1994	2.240 71	2.302 585	6.216 606	9.389 072	0	0	0	1	1	0	0	19
1995	2.580 217	2.397 895	6.304 449	9.389 072	0	0	0	1	1	0	0	18.8
1996	3.346 389	2.397 895	6.371 612	9.389 072	0	0	0	1	1	0	0	18.8
1997	2.747 271	2.484 907	6.418 365	9.389 072	0	0	0	1	1	0	0	18.7
1998	2.856 47	2.564 949	6.347 389	9.389 072	0	0	0	1	1	0	0	18.5
1999	2.844 909	2.564 949	6.437 752	9.389 072	0	0	0	1	1	0	0	18.3
2000	2.541 602	2.639 057	6.519 147	9.389 072	0	0	0	1	1	0	0	18.1
2001	2.660 26	2.639 057	6.556 778	9.389 072	0	0	0	1	1	0	0	18
2002	2.595 255	2.708 05	6.624 065	9.389 072	0	0	0	1	1	0	0	18
2003	2.484 907	2.772 589	6.654 153	9.389 072	0	0	0	1	1	0	0	17.8
2004	2.772 589	2.772 589	6.700 731	9.389 072	0	0	0	1	1	0	0	17.9
2005	2.873 565	2.833 213	6.741 701	9.389 072	0	0	0	1	1	0	0	17.5
2006	2.580 217	2.833 213	6.790 097	9.389 072	0	0	0	1	1	0	0	16
1992	3.353 407	2.397 895	6.618 739	8.377 241	0	0	0	1	1	0	0	19.1
1993	3.152 736	2.397 895	6.606 65	8.377 241	0	0	0	1	1	0	0	19
1994	2.975 53	2.302 585	6.629 363	8.377 241	0	0	0	1	1	0	0	19
1995	2.884 801	2.397 895	6.656 727	8.377 241	0	0	0	1	1	0	0	18.8
1996	3.250 374	2.397 895	6.680 855	8.377 241	0	0	0	1	1	0	0	18.8
1997	3.490 429	2.484 907	6.720 22	8.377 241	0	0	0	1	1	0	0	18.7
1998	3.594 569	2.564 949	6.763 885	8.377 241	0	0	0	1	1	0	0	18.5
1999	3.194 583	2.564 949	6.804 615	8.377 241	0	0	0	1	1	0	0	18.3
2000	3.306 887	2.639 057	6.879 356	8.377 241	0	0	0	1	1	0	0	18.1
2001	3.465 736	2.639 057	6.913 737	8.377 241	0	0	0	1	1	0	0	18
2002	3.600 048	2.708 05	6.940 222	8.377 241	0	0	0	1	1	0	0	18
2003	3.569 533	2.772 589	6.968 85	8.377 241	0	0	0	1	1	0	0	17.8

2004	3.756 538	2.772 589	6.999 422	8.377 241	0	0	0	1	1	0	0	17.9
2005	3.797 734	2.833 213	7.033 506	8.377 241	0	0	0	1	1	0	0	17.5
2006	3.804 438	2.833 213	7.070 724	8.377 241	0	0	0	1	1	0	0	16
1992	2.882 004	2.397 895	7.341 484	8.596 559	1	0	0	1	1	0	0	19.1
1993	2.524 928	2.397 895	7.363 914	8.596 559	1	0	0	1	1	0	0	19
1994	3.039 749	2.302 585	7.406 103	8.596 559	1	0	0	1	1	0	0	19
1995	3.511 545	2.397 895	7.435 438	8.596 559	1	0	0	1	1	0	0	18.8
1996	3.600 048	2.397 895	7.462 215	8.596 559	1	0	0	1	1	0	0	18.8
1997	3.799 974	2.484 907	7.492 203	8.596 559	1	0	0	1	1	0	0	18.7
1998	3.912 023	2.564 949	7.525 101	8.596 559	1	0	0	1	1	0	0	18.5
1999	3.701 302	2.564 949	7.554 859	8.596 559	1	0	0	1	1	0	0	18.3
2000	3.751 854	2.639 057	7.615 791	8.596 559	1	0	0	1	1	0	0	18.1
2001	3.802 208	2.639 057	7.615 298	8.596 559	1	0	0	1	1	0	0	18
2002	3.708 682	2.708 05	7.639 642	8.596 559	1	0	0	1	1	0	0	18
2003	3.775 057	2.772 589	7.662 468	8.596 559	1	0	0	1	1	0	0	17.8
2004	3.795 489	2.772 589	7.694 393	8.596 559	1	0	0	1	1	0	0	17.9
2005	3.845 883	2.833 213	7.713 338	8.596 559	1	0	0	1	1	0	0	17.5
2006	3.790 985	2.833 213	7.740 664	8.596 559	1	0	0	1	1	0	0	16
1992	3.561 046	2.397 895	9.022 443	8.633 909	1	0	0	1	1	0	0	19.1
1993	3.586 293	2.397 895	9.050 641	8.633 909	1	0	0	1	1	0	0	19
1994	4.165 114	2.302 585	9.090 543	8.633 909	1	0	0	1	1	0	0	19
1995	4.368 181	2.397 895	9.115 37	8.633 909	1	0	0	1	1	0	0	18.8
1996	4.654 912	2.397 895	9.152 075	8.633 909	1	0	0	1	1	0	0	18.8
1997	4.885 072	2.484 907	9.195 633	8.633 909	1	0	0	1	1	0	0	18.7
1998	4.914 858	2.564 949	9.238 345	8.633 909	1	0	0	1	1	0	0	18.5
1999	4.931 592	2.564 949	9.285 448	8.633 909	1	0	0	1	1	0	0	18.3
2000	5.046 002	2.639 057	9.325 988	8.633 909	1	0	0	1	1	0	0	18.1
2001	4.721 174	2.639 057	9.336 709	8.633 909	1	0	0	1	1	0	0	18

2002	5.177 843	2.708 05	9.354 7	8.633 909	1	0	0	1	1	0	0	18
2003	5.724 238	2.772 589	9.379 323	8.633 909	1	0	0	1	1	0	0	17.8
2004	6.230 481	2.772 589	9.414 423	8.633 909	1	0	0	1	1	0	0	17.9
2005	4.962 845	2.833 213	9.695 109	8.633 909	1	0	0	1	1	0	0	17.5
2006	5.280 662	2.833 213	9.470 857	8.633 909	1	0	0	1	1	0	0	16

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