

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter presents a brief background about sectoral exports for Botswana, with special emphasis on three sectoral export products namely: diamond, textiles, and meat and meat products. This information is paramount for the discussion in subsequent chapters which includes investigating the extent to which these sectoral exports are either intra-industry trade (IIT) or inter-industry trade (INT) driven; an analysis of what determines these exports to the various country destinations; and finally, in determining some of the destination countries with unrealized export potentials for these sectoral exports. This chapter also presents the justification and objectives of the study, hypotheses to be tested and an outline of the thesis research.

1.2 Background

The impact of exports to the exporting country is largely accepted to be positive (Blumenthal, 1972; Ragin and Delacroix, 1979; and Jaffee, 1985), although in some cases, negative effects can also be experienced (Lall, 2002; Shafaeddin, 2005 and Cruz, 2008). Considering the positive impacts, the importance of exports to any country or region emanates from its supposed positive contribution to the economic growth of that country/region. This export-growth nexus becomes very important to a developing country such as Botswana, as well as other developing countries, given its quest to economically grow to higher levels. This positive effect of export on the level of economic activity is understood to work both through the demand and supply sides of any economy. On the demand side, an increase in exports will cause induced consumption, investment and government expenditure (in the Keynesian framework¹) and this will further call for the supply side to positively respond through induced

¹ The Keynesian framework expresses: $GDP = Consumption + Investment + Government\ expenditure + Exports - Imports$

changes in technology and the endowed resources, so as to satisfy the requirements of the induced demand.

According to Blumenthal (1972) and Jaffee (1985), the total impact of exports can be broadly divided into four parts. Firstly, there is a direct effect. Since the value added by exports is a part of the gross domestic product (GDP), an increase in the former implies a rise in the latter. Secondly, export industries affect growth through their effect on other backward and forward industries. That is, for industries to produce for exportation they require raw materials and inputs from other industries, i.e., the backward linkage. At the same time the export industry supplies intermediate inputs to other domestic industries, i.e., the forward linkage, besides exporting. Because of these linkages, the export sector will provide a positive impact on the growth of the domestic economy. Thirdly, since exports are the source of foreign exchange, they affect growth via imports, especially of vital production inputs and raw materials. Given that most developing countries' production activities depend on imported inputs and capital equipment, such imports purchases can be done using foreign currency earned from exports, among other sources. Lastly, Jaffe (1985) argued that there is a broader theoretical point that suggests a positive correlation between export dependence, as measured by their contribution to GDP and export revenue, and the growth of an economy.

In the case of Botswana, statistical data from the country's Central Statistical Office (CSO) shows evidence of a positive relationship between export and economic growth. For instance, in 1980 total exports were US\$645 million, while GDP was US\$1.1 billion; in 1990 exports increased to US\$2 billion with a corresponding increase in GDP to a value of US\$3.8 billion. This positive relationship continued over the years, with total exports of US\$3 billion being associated with an increased GDP figure of US\$6.2 billion in 2000, while the 2008 export value of US\$5.3 billion was correlated to a GDP figure of US\$13.9 billion (see Figure 3). Jaffe's (1985) line of thinking suggests that involvement in world trade is a commonly employed indicator of integration into, and expanded production for the capitalist world-economy. This integration is argued to provide a platform for transforming the mode of production from primitive to high technology techniques. This transformation results in an economy that can effectively and efficiently produce for the

contemporary world market. More openness and involvement in world export trade by any country will increase its chances of attaining and sustaining high economic growth rates (Ragin and Delacroix, 1979).

Possible negative impacts of exports on the exporting country can also be experienced. Shafaeddin (2005) and Cruz (2008) argue that in a scenario where exports are mostly done by multinational companies (MNCs) who use imported raw materials instead of local inputs, expansion of exports in such a case where there is limited backward linkages with local producers will not necessarily result in the expected growth in local production activities. In addition, in the absence of relevant investment policies and regulations, competition in the exporting sector between large foreign firms and small domestic firms may result in the latter firms either disappearing or being swallowed by the big foreign firms, with the end result being the creation of new foreign monopolies (Lall, 2002). Given that in most countries non-utility monopolies are discouraged, mainly because they tend to exploit consumers by charging prices which are above their marginal cost of production and also that they tend to produce less output when compared to firms in imperfect or perfect markets, this will be a negative impact coming from the export sector.

Literature on the effects of exports on a country considers the positive effects to be more common than the negative consequences. Thus, given the background on the positive impacts of exports, it follows that export policy could become an important tool to achieve economic growth. Therefore, to come up with sound and objective sectoral export policies, there is need for an analysis which addresses three issues.

Firstly, the investigation should determine the extent to which either intra-industry trade (IIT) or inter-industry trade (INT) dominates sectoral trade. The former results in simultaneous export and import of the same product as advocated by product differential trade models; while the latter is a result of different factor endowment as postulated by the Heckscher-Ohlin (H-O) trade models. The decomposition of sectoral trade into these two parts is important since both parts explain trade.

Secondly, the analysis should also investigate the determinants of sectoral exports with regards to destinations. This analysis should provide an understanding and

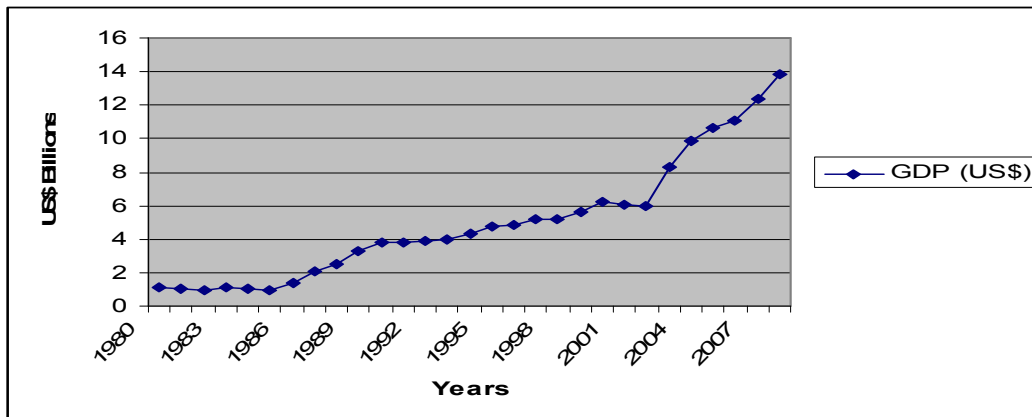
potential reasons, for instance, as to why a larger proportion of a given sector’s exports go to country *A* while only a small percentage of the same sector’s exports are destined for country *B*.

Lastly, the inquiry should include the various sectoral export destinations with untapped market potential. In this last examination, both current and potential sectoral export destinations are important with regards to harnessing the process through which exports can contribute to economic growth. As will be detailed in the thesis, sectoral export destinations of Botswana have evolved, among other factors from the codes of colonial attachments (especially when trading with the EU), comparative advantage, preferential trade agreements, specialized market arrangements, as well as from the advantages of proximity (Allen *et al.*, 2007 and Republic of Botswana, 2008).

1.3 Brief Country Background

Botswana’s economic growth trend since independence in 1966 has been remarkable. Available data from the International Monetary Fund’s (IMF) online database, which is also plotted in Figure 1, indicates that while the country’s GDP was US\$1.1 billion in 1980, the figure increased by more than three-fold ten years later reaching a value of US\$3.8 billion in 1990. The growth trend continued over the years as shown in the figure and the GDP value was US\$13.8 billion by end of 2008. The same positive GDP growth trend, in log form, is depicted in Figure 2.

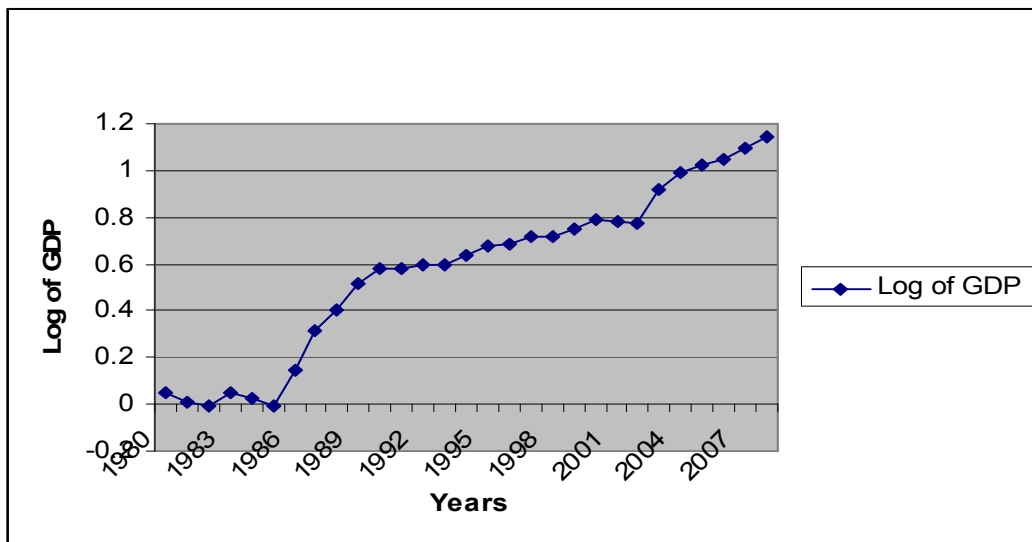
Figure 1: Botswana’s GDP trend in level form



Source: Constructed using figures from the IMF online database

Thus, contrasting the periods soon after independence and today, significant differences can be noted. For instance, at independence, the country was one of the poorest nations whose developmental and recurrent expenditures were dependent on foreign aid. On the other hand, over the years, the contemporary Botswana has experienced self-sustainable economic growth, with a GDP per capita of above US\$11 000 as of 2008, making it an upper middle income country by World Bank classification. In fact, it is considered the richest non-oil producing country in Africa with even greater per capita income than Turkey, Thailand, or Brazil (Todaro and Smith, 2006).

Figure 2: Botswana’s GDP trend in log form



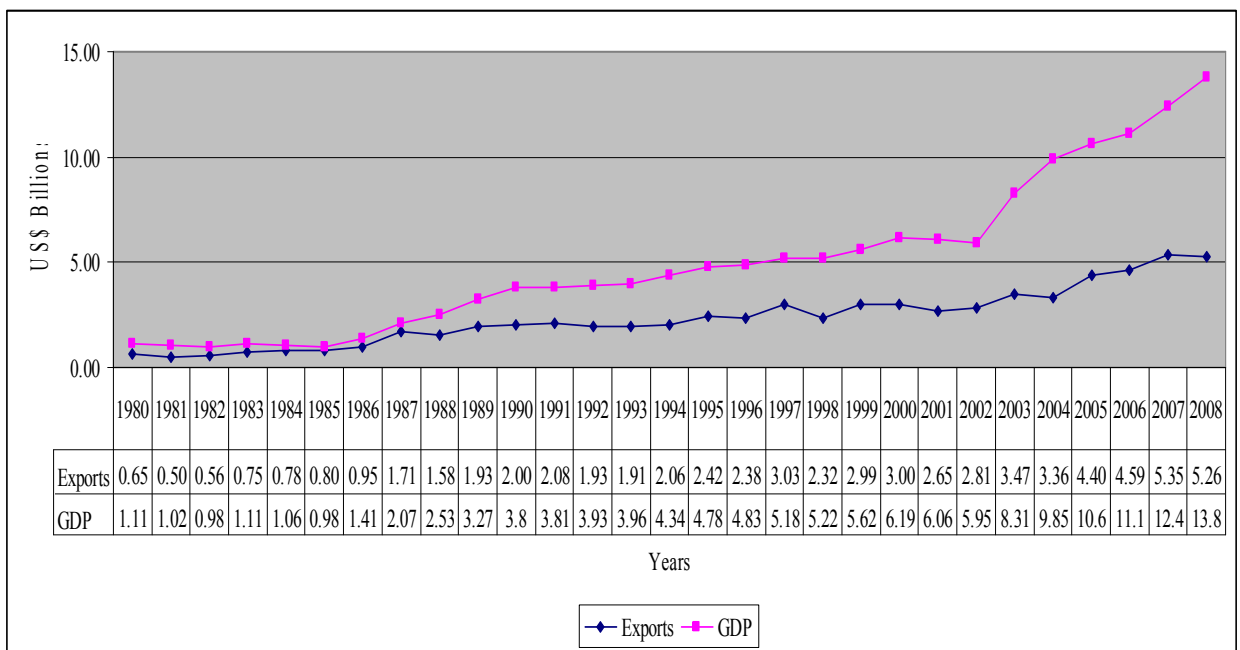
Source: Constructed using figures from the IMF online database

The relationship between Botswana’s GDP and export trends is shown in Figure 3. According to Figure 3, for the period 1980 to 2008, for which statistical figures were available, data trends indicate that the two series were positively related and this positive relationship is confirmed by the Granger causality tests presented in Section 1 of the Appendices. For instance, in 1980, when exports were around US\$650 million, the GDP figure was US\$1.1 billion. As exports increased over the years, GDP figures also increased such that in 1990 when exports were US\$2 billion, the corresponding GDP was US\$3.8 billion. Whilst trend lines indicate that the GDP increased at a

relatively rapid rate, especially since 2002 as shown by the steep upward trend line, exports were also growing, albeit at an average rate.

In terms of sectoral contributions to the country’s GDP, historical economic activity indicates that in 1966, 40% of the economy’s GDP and 90% of employment were mainly from the agriculture sector. This agricultural sector’s contributions have however declined sharply over the years such that the sector only contributed about 4% towards GDP and 16% towards employment by mid–1990s. These contributions further declined to less than 3% and 8%, respectively by end of 2006. On the other hand, the mining sector has taken an important role of contributing towards the country’s economic activities, especially beginning from the 1990s. Specifically, since the early 1990s to date, diamond has been contributing an average of above 35% to the GDP, accounting for more than 70% of Botswana’s export revenues and contributing around 53% towards total government income.

Figure 3: Botswana’s GDP and export trends



Source: Constructed using figures from the IMF online database and the Botswana Central Statistical Office (CSO)

Table 1 provides the percentage contributions of each of the country's nine export sectors towards Botswana's total export revenue. As shown from the table, the major contributor over the years has been diamond, which accounted for over 70% per annum until 2006. Since 2007, the mineral's contribution has relatively declined to less than 66% per year. This clearly indicates the mono-export characteristic of the country. Besides diamond, the other two important export sectors analyzed in this thesis are the textiles, and meat and meat products². Textile exports on the other hand have maintained an average contribution of below 5% towards export revenue for the period until 2006. Since 2007, the sector's contribution started increasing, which is encouraging given the country's endeavour to diversify away from diamond exports. At the same time, although the proportional export revenue shares of meat and meat products have been dwindling from an average of around 2.5% to slightly less than 1% for the ten year period 1996 to 2006, since 2007 the sector's contribution seems to have started increasing.

Table 1: Principal exports by percentage of total export value

Year	1996-1999 ⁺	2000	2001	2002	2003	2004	2005	2006	2007	2008
Sector										
Diamonds	73.3	82.6	84.8	82.1	76.8	75.4	74.9	79.1	63.2	65.2
Textiles	2.6	1.7	1.3	1.8	1.8	3.4	5.0	3.2	6.9	5.7
Meat & meat prod	2.5	1.8	2.5	1.7	2.1	1.5	1.7	0.8	2.2	1.9
Sub total	78.4	86.1	88.6	85.6	80.7	80.3	81.6	83.1	72.3	72.8
Copper, Nickel, Matte	4.9	5.8	4.1	4.4	9.6	9.6	10.3	10.7	21.4	18.6
Vehicles & Parts	10.5	2.1	2.0	3.3	3.5	3.4	2.5	0.9	0.5	0.7
Live animals	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hides & Skins	0.3	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.1
Soda Ash	1.0	0.7	0.9	0.5	0.6	0.6	0.5	0.2	0.4	0.1
Other goods	4.9	5.0	3.9	6.0	5.4	6.0	5.0	4.9	5.3	7.6
Overall Total	100	100	100	100	100	100	100	100	100	100

Source: Calculations using data from the Botswana Central Statistical Office (CSO).

Note: “⁺” Means four-year average

² **Note:** In the Harmonized Commodity Description and Coding System (HS) code, this product is normally written as “meat & meat products”. This author decided to use “and” as it seems to be more formal than “&”.

The diamond sector is analyzed by virtue of being the country's major export revenue earner, while the other two sectors are investigated to provide in-depth analysis which may be helpful to the country's "proposed initiatives that will lead to diversification of the economy thereby reducing the vulnerability of over-reliance on the mining sector... to achieve internationally competitive sustainable economic diversification." (Republic of Botswana, July 31, 2008). These sectors are also a rough representation of each of the major production sectors, which are mining (represented by diamond), agriculture (represented by meat and meat products) and manufacturing (represented by textiles). These three sectors, besides the contribution they make towards the country's export revenue, also provide a large percentage of both formal and informal employment to the country and generate more than half of Botswana's annual GDP. Overall, the above three sectoral exports contribute more than 80% towards the country's total export revenue.

Thus, given the explanation above and the sectoral snapshot presented in Table 1, it can be concluded that these three sectors are very important to Botswana, hence warranting detailed study.

1.4 Justification and motivation for the research

Literature, for example, Sentsho (2003) argues that Botswana has followed an export-led-growth strategy for more than a century, since 1885 to date. Also statistical evidence as shown in Figure 3, and confirmed by the Granger causality test presented in Section 1 of the Appendices, indicates that exports have played and continues to play a very significant role in the economic growth of the country. Specifically, exports contribute over 50% towards the country's annual GDP, more than 60% towards government revenue as well as a significant percentage towards employment levels.

Whilst the above information shows a clear testimony of the importance of exports to the economy of Botswana, the following contributions can be done. Firstly, no systematic study has been done yet towards understanding the nature of sectoral

exports; whether they are dominantly driven by intra-industry trade (IIT) or inter-industry trade (INT) theories.

Secondly, analysis of the determinants of these exports at sectoral level provides important information to policy makers, given that any meaningful exports promotion strategies are done at sectoral (or product) level, as opposed to aggregate level. In addition, no study has been done in this direction on the country. Thus, this study will contribute invaluable information by providing an investigation of these determinants.

Thirdly, although knowing the sectoral exports determinants is important, an understanding of the various potential export destinations for the country's sectoral exports is another imperative knowledge needed for the purpose of designing destination country-specific export promotion strategies. To this end, the research is also motivated by the need to enumerate these unrealized sectoral export destination countries which have unrealized export potential for Botswana's exports.

1.5 Problem statement

Following the justification and motivation presented above, this thesis will attempt to answer the following important questions with regards to Botswana's sectoral export trade.

- i. What is the structure of Botswana's sectoral trade pattern?
- ii. What determines the country's sectoral trade?
- iii. With which trading partners does Botswana trade?
- iv. Which export destination countries still have unrealized export potential for the country's sectoral exports?



1.6 Objectives of the thesis

The study motivation and problem statement presented above led to the following specific objectives in the case of Botswana. These objectives are to:

1. Examine the extent to which either intra–industry trade (IIT) or inter–industry trade (INT) dominates sectoral exports;
2. Investigate the determinants of the country’s sectoral exports;
3. Identify destination markets with unrealized potential for Botswana’s sectoral exports; and
4. Come up with relevant sectoral export/trade policy conclusions drawing from the outcome and findings from this thesis research.

1.7 Hypotheses of the study

In this study a number of hypotheses will be tested, albeit with emphasis placed on those that relate to export trade. The hypotheses to be tested are as follows.

i. Hypothesis 1

The following factors affect the degree of sectoral export product specialization:

- Natural resource base
- Export trade policy

ii. Hypothesis 2

Determinants of exports at sectoral level which contribute to export supply are:

- The cost of production as proxied by revealed comparative advantage index.
- Domestic demand pressure (vent-for-surplus theory).

iii. Hypothesis 3

The physical and psychological distances (and other resistors) between trade partners determine the direction and volume of trade.

iv. Hypothesis 4

The supply for the export market is driven by certain qualitative determinants that motivate firms to sell globally.

1.8 Contribution of this thesis study

This thesis endeavours to contribute in four dimensions which are: (i) analysis of the structure of sectoral exports in terms of intra-industry trade (IIT) and inter-industry trade (INT), and the introduction of a variable in the respective gravity models to represent either IIT or INT as the case maybe; (ii) investigation of the determinates of sectoral exports, (iii) analysis of unrealized export potentials, and (iv) provision of sectoral results.

Firstly, the study will start by analyzing the extent to which either IIT, which arises because of the product differential trade theory; or INT, which is a consequence of factor endowment differences and the resultant product specialization supported by the Heckscher-Ohlin trade models, dominate the exports in each of the three sectors. Once a sector is said to be driven by any one of the two theories, then an explanatory variable to take into account that respective theory will be included in the gravity

trade model for that sector as a possible new explanatory variable. Thus, the contribution in this regard will be the introduction of a variable which will serve the purpose of taking into account the trade structure of a given sector in the gravity trade model.

Secondly, the research will investigate the various respective determinants of exports from each of the three sectors under study. Analysis of these factors is paramount as it will help in the crafting of possible offensive export strategies.

Thirdly, the research will indicate and analyze the various export destination countries with unrealized potential markets. In this thesis, an export destination is considered as having unrealized markets potential for Botswana if actual annual sectoral exports are less than the annual figure provided by the model forecast. This contribution is important since country-specific export promotions can be enhanced for sectoral exports. Whilst this procedure has been employed before, it has mainly been used at aggregate level for other countries and no evidence of such a study on Botswana could be found in the literature.

Lastly, given the absence of a systematic study on sectoral exports for Botswana, this thesis' other contribution will be to provide sectoral results. In this dimension, the research study will add valuable and policy informative contributions by carrying out an empirical research on Botswana's sectoral export using relevant and appropriate econometric methodology.

1.9 Scope of the study

The research is a study on the small, open and developing country, Botswana. The focus of this thesis is on the determination of the country's exports factors at a micro sector level for the period 1999 to 2006. The three micro export sectors³ covered are: (i) diamonds, (ii) textiles, and (iii) meat and meat products.

³ Micro export sectors because they are subsets of broad export sectors. For instance, diamond is a subset of the broad sector, mining; while textiles, is a subset of the broad manufacturing sector; and meat and meat products, a subset of the broad agriculture sector.

1.10 Analytical procedure of the study

To accomplish the stated objectives, the thesis study takes an eclectic approach drawing on historical, theoretical and empirical analysis.

Specifically, the procedure of this study comprises:

- i. Analyzing the trends of Botswana's sectoral exports;
- ii. Investigating the dominance of either IIT or INT in each of the three sectors under study;
- iii. An investigation of the theories of trade that help in understanding the factors that determine the country's sectoral exports;
- iv. An application of panel data econometrics and the gravity trade model, firstly in analyzing the determinants of sectoral exports, and secondly in investigating both current and potential sectoral export destinations;
- v. Use of the results from the above empirical techniques to identify a set of policy recommendations to positively improve Botswana's sectoral export performance.

1.11 Outline of the thesis research

The thesis is divided into the following chapters. **Chapter 1** provides the introduction, justification, objectives as well as hypothesis of the thesis research. **Chapter 2** presents the literature review, which is further divided into two categories: theoretical and empirical reviews. **Chapter 3** provides the study's methodology, while **Chapter 4** provides an overview of Botswana's economic and trade trends. Specifically, Chapter provides a detailed profile of the three export sectors in terms of their contributions to export revenue, employment and GDP, among other contributions to

the economy of Botswana. Furthermore, respective sectoral trade arrangements are also detailed in this chapter.

Chapter 5 investigates the extent to which the three sectoral exports under study are either dominantly IIT or INT driven. Further decomposition of the IIT into horizontal and vertical is also done in this chapter. The study of both INT and IIT is important in that it provides a better platform for formulating policies which deal with trade adjustment costs caused by increased trade liberalization (Abd-el-Rahman, 1991, Greenaway *et al.*, 1995). Given that Botswana continues to open its trade regime, from the bilateral⁴ to the multilateral trade level⁵, increased trade, either in the form of INT or IIT, will result in cost adjustments. Through increased trade, the size of most economic sectors will change. Some will experience increased (or decreased) exports, others increased (or decreased) imports, while others will experience increased (and/or decreased) exports and imports, simultaneously. The changes in exports and imports will involve shifts in resources between sectors (Al-Mawali, 2005). In the case of INT sectors, increased imports of competing or similar goods will hurt these sectors, and may result in closure of some companies in these sectors. In the case of IIT, simultaneous increases in exports and imports is likely to cause marginal, if any, shift of resources between sectors.

Whilst Chapter 5 dichotomizes exports into IIT and INT, **Chapter 6** provides an analysis of the factors which determines why a larger proportion of the country's sectoral exports are exported to country *A* while a smaller percentage of the same products are destined for country *B*. The investigations presented in this chapter are achieved through the application of the sectoral gravity trade models. By extending the analysis of the gravity trade model from Chapter 6, **Chapter 7** investigates the country's export destinations with unrealized potential for Botswana's sectoral exports. In pursuit of achieving its objective, this chapter's analysis will attempt to answer the following three questions:

⁴ Besides having bilateral trade agreements with countries such as Zimbabwe, Botswana is also a member of a number of regional trade blocs including the Southern Africa Customs Union (SACU), Southern African Development Community (SADC), and the African, Caribbean and Pacific (ACP) group of countries with long term trade relationships with the European Union (EU). All these arrangements aim to continuously liberalize trade, among other objectives.

⁵ The country is a member of the World Trade Organization (WTO) whose main objectives include trade liberalization

- i. With which trading partners has Botswana reached its trade potential in these three sectoral products?
- ii. With which trading countries has Botswana gone beyond its trading potential in these three sectoral products?
- iii. With which partner countries does Botswana have untapped (or unrealized) trade potential in these three sectoral products?

Drawing from the thesis research findings in the previous chapters, **Chapter 8** concludes the thesis and presents a set of policy proposals, suggestions and recommendations that can positively influence and enhance Botswana's sectoral exports.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents both theoretical and empirical review with the aim of investigating the theoretical underpinnings of the two main issues which are analyzed in this thesis. These two issues are the structure of sectoral exports (IIT or INT) and the determinants of sectoral exports. The empirical review will focus on three issues, which are the structure of exports, determinants of exports and unrealized export potential destinations.

2.2 Theoretical literature review

This section discusses the theoretical literature that seeks to explain the structure of exports and also the determinants of exports. The section addresses theories that have been advanced in explaining these two issues.

2.2.1 Inter-industry trade (INT) and Intra-industry trade (IIT)

This part of the study will provide theories that explain why exports from one sector are considered as INT driven while exports from another sector are seen as IIT dominated.

2.2.1.1 Inter-Industry Trade (INT)

INT involves the exportation and importation of products from different industries, mainly as a result of those industries producing different goods due to their respective countries having different factor endowments. A good example of INT will be Botswana exporting diamonds from its mining sector, because it has abundant diamonds endowment, to Nigeria, which does not have diamonds endowment, and

conversely importing oil from Nigeria, which is not available in Botswana but in Nigeria.

The absolute advantage theory of Smith and the comparative advantage theories of Ricardo and Hechscher-Ohlin (H-O) are the main theories behind the INT. According to Adam Smith (1776), trade between two nations, say *A* and *B*, with *A* producing good *X products* only and *B* producing good *Y products* only is based on absolute advantage. When one nation is more efficient, or has an absolute advantage, than the other in the production of one commodity but less efficient in producing another, then both nations can gain by each specializing in the production of the commodity of its absolute advantage and exchanging part of its output with the other nation for the commodity of its absolute disadvantage. Arguing for free international trade, Smith says:

It is the maxim of every prudent master of family, never to attempt to make at home what it will cost him more to make than to buy... What is prudence in the conduct of every private family can scarcely be folly in that of a great kingdom. If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it off them with some part of the produce of our own industry, employed in a way in which we have some advantage (Smith 1776: 424)

Thus, according to Smith, one of the reasons for INT is the fact that factors of production (natural resources, labour, capital and entrepreneurship) are not evenly distributed among nations of the world. For instance, in the case of natural resources the basic reason for trade is often quite simple – all countries do not possess every natural resource. For Smith, this uneven distribution will cause the respective endowed countries to be low cost producers, in terms of output per worker, while countries without these endowments tend to be high cost producers. Thus, the latter countries will import from the former countries.

Ricardo (1815) on the other hand explains INT to be the result of comparative advantage, where he considers the differences in opportunity costs of production, or relative prices, between countries as the main factors driving trade. According to Ricardo's (1815) law of comparative advantage, even if one nation is less efficient, or

has an absolute disadvantage, than the other nation in the production of both commodities, there is still a basis for mutually beneficial trade. The first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller, i.e. the commodity of its comparative advantage, and import the commodity in which its absolute disadvantage is greater, i.e. the commodity of its comparative disadvantage.

Ricardian trade models assume that only labour is used to produce goods and services, with a given fixed coefficient between labour and output for a particular product in each country. According to Magee (1980), Ricardo used the labour theory of value⁶ to construct his theory of comparative advantage. Put differently, his theory states that a country will produce and export products that use the lowest amount of labour time relative to foreign countries and import those products that have highest amount of labour time in production relative to foreign countries. Furthermore, only relative amounts of labour time matter. Thus, through this specialization, INT will occur with one country specializing and exporting commodity *X* while another country specializes and exports commodity *Y*.

2.2.1.2 Intra-Industry Trade (IIT)

IIT refers to the simultaneous export and import of similar products from the same industries. A good example of IIT will be Botswana exporting gems (or unprocessed) diamonds from its diamond industry to the United Kingdom (UK) and in turn importing processed diamond products, e.g. diamond rings, crowns, etc., from the UK.

Whilst the theories behind IIT remain controversial, Grubel and Lloyd (1975) consider economies of scale and monopolistic competition as the main theories behind IIT. Other succeeding theoreticians added imperfect competition and product differentiation effects to the list of the main theories propagating IIT.

⁶ The labour theory of value states that the value of any product is equal to the value of the labour time required to produce it. For example, if a car requires two worker-years worth of labour to construct and a truck requires six worker-years, then the price of a truck will be three times as high as that of a car.

Economies of scale: IIT, especially between the large and small countries is underpinned by the fact that the former partners in most cases export products requiring relatively large plant sizes while the latter countries specialize in production of products which require small plant sizes (Hufbauer, 1970). As such, the ability of an economy to mass-produce and export goods is more closely related to the degree of automation of the economy than with the absolute size of its industrial sector/country (Al-Mawali, 2005). In this case, countries with high technology and big manufacturing plants will specialize in the manufacturing and exportation of high value products, e.g. diamond rings and crowns, while countries with low technology and small manufacturing plants will mainly export raw or semi-processed products, e.g. diamond germs, (Kandogan, 2003a).

Monopolistic competition: Another variant of models explaining IIT is based on product differentiation under conditions of monopolistic competition. This theory assumes that in each of the two countries, firms produce differentiated manufactured goods under conditions of increasing returns to scale (Hummels and Levinsohn, 1993). Consumers value both diversity and low prices. Therefore, there is a basic trade-off; more varieties are good for consumers, but they imply shorter production runs, which raises unit costs. The market will find a solution which is likely to be characterized by some variety. Furthermore, the larger the economy, the more varieties will be economically viable. Thus, in the absence of international trade, consumers in a larger economy will find more varieties than consumers in a smaller economy (Helpman and Krugman, 1985).

2.2.1.2.1 Horizontal IIT and vertical IIT

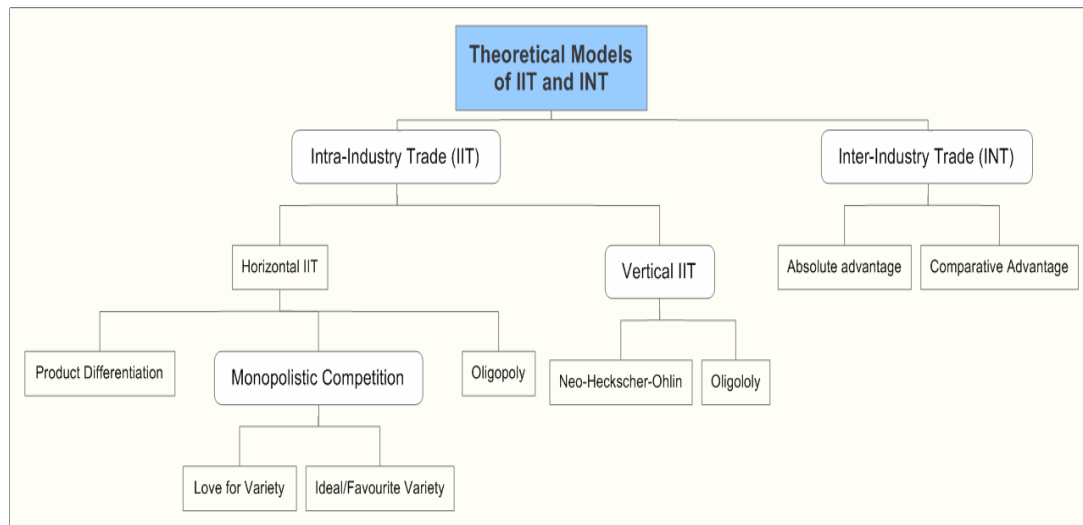
In both theoretical and empirical literature, IIT is further decomposed into horizontal and vertical components. Horizontal IIT (HIIT) refers to the simultaneous importation and exportation of similar products with the same quality but having “different characteristics relating to style and consumer”, or simply as a result of product differentiation. Horizontal IIT trade is described by Dixit and Stiglitz (1977) as the ‘love for variety’, and by Lancaster (1979) as the ‘favourite variety’. Conversely,

Grubel and Lloyd (1975) defined vertical IIT (VIIT) as the simultaneous export and import of products in a similar production sector but with differences in quality at different stages of production. Kandogan (2003a and 2003b) provides another version of horizontal and vertical IIT based on the different stages of production. The author defines horizontal IIT as “similar products that are simultaneously exported and imported at the same stage of production, and is mainly due to product differentiation”. In contrast, the author defines vertical IIT as “the simultaneous exports and imports of goods in the same industry, but at different stages of production and is mainly due to varying factor intensities within an industry”.

Theoretically, horizontal IIT models are mainly underpinned by economies of scale and monopolistic competition, while vertical IIT is due to Hechsher-Ohlin and oligopoly models. According to Al-Mawali (2005), the theoretical underpinnings of HIIT are drawn from neo-Chamberlinian models. See for example Dixit-Stiglitz, (1977), and Krugman (1979, 1980, 1982), and neo-Hotelling models like the Lancaster (1979, 1980). The former postulates the “love for variety” approach where consumers are assumed to consume many different varieties of a given product. In the latter, also known as the “ideal variety or favourite variety” approach, consumers are assumed to have different preferences for alternative varieties of a given product, with each rational consumer consuming only the variety that he/she considers as ideal/favourite.

The schematic presentation of the theoretical models of INT and IIT, with IIT further categorized into horizontal IIT and vertical IIT, is depicted in Diagram 1.

Diagram 1: Theoretical classification of IIT and INT models



Source: author compilation

2.2.2 Determinants of exports

Within the gravity trade model framework there are a number of theories which explain the determinants of a country's exports. Anderson (1979) and Helpman (1987) consider the differentiated product model as the main determinant of exports. Taking the Armington assumption that products are differentiated by country-of-origin as the point of departure, the authors argue that countries export (import) to (from) other countries because each country produces different products. Thus, for one country to get the products that it does not produce, it has to import such products, and at the same time export the different products that it produces to other countries which do not produce such products. Helpman's (1987) theoretical exposure also assumed monopolistic competition as the other determinant of exports. According to Helpman (1987), different countries specialize in the production of different varieties of differentiated products due to the existence of economies of scale at the firm level which enhances the incentives for foreign trade.

Krugman and Helpman (1985) identified the relationship between the bilateral export trade flows and the product of two trading countries' gross domestic products (GDPs)

by utilizing the differentiated products trade model. According to Krugman and Helpman, under the imperfect substitute model, where each firm produces a product that is an imperfect substitute for another product and has monopoly power in its own product, consumers show preference for variety. When the size of the domestic economy (or population) doubles, consumers increase their utility, not in the form of greater quantity only but also in greater variety. Thus, to satisfy this increased consumption, a country will be forced to import (trade).

The “Vent for surplus doctrine” considers foreign trade among trading nations mainly as emanating from the respective countries’ surplus of particular products above domestic consumption requirements. Thus each country is considered as exporting goods in which it has a surplus in exchange for commodities which it could not itself produce in sufficient quantities to meet domestic demand, or could not produce at all (Bloomfield, 1938). An important assumption underpinning this trade theory is that goods that are in surplus supply in one country are apparently regarded as in short supply in another country. In the vent for the surplus philosophy, the main benefit of foreign trade is to provide a market or ‘vent’ for surplus production. The pattern and composition of world trade would in turn depend mainly on the availability and extent of surpluses, and the nature of the particular commodities in surplus.

The following are the statements of the ‘vent for surplus’ theory.

When production exceeds the needs of domestic consumption, foreign trade is born (Hamal, 1844, p. 143).

To exchange the surplus of its commodities against objects which the country cannot produce in sufficient quantities, this must be the sole employment of foreign trade (Saint-Chamans, 1824, p. 55).

Trade between two nations is a free exchange of a superfluous thing for another thing which they need (Page, 1801, I, pp. 285-86).

This theory fits well with Botswana's exports from the three sectors under investigation. Given the country's population of close to 1.6 million in 2008 (IMF, 2009 online database), the country's local demand cannot absorb all the goods produced from these three sectors and the country ends up exporting the surplus.

2.3 Empirical literature

This section reports on empirical literature that seeks to explain the structure of exports, determinants of exports and unrealized potential export destinations. Thus, the section is divided into three parts. The first part presents literature that investigates the structure of exports, as either falling into INT or IIT trade. The second segment discusses literature on the determinant of exports, while the last part contains literature on unrealized potential export destinations.

2.3.1 Literature on INT and IIT

Kalbasi (2003a) employed the unadjusted Grubel and Lloyd's (1975) index in investigating IIT between Iran and its selected major Organization for Economic Cooperation and Development (OECD) trading partners for the period covering 1997 to 2001. The IIT indices were calculated both for Iran's total aggregate trade and also for selected major products. The selected products included food and live animals, manufactured goods, machinery and transport equipment, chemicals, miscellaneous manufactured goods, etc.

The calculated IIT indices from Kalbasi (2003) between Iran and the selected OECD countries were zero for more than half of the years investigated. For instance, there was no intra industry trade between Iran and Spain for the whole five-year period given that all the IIT index values were zero. The indices were also zero for more than three years for countries like Australia, Japan, Korea and Sweden. Overall, the study concluded that trade between Iran and most of the selected OECD countries at aggregate total level was INT driven during the 1997 to 2001 period.

At disaggregated product level, there was no IIT at all for the whole period in goods such as beverages and tobacco, and animal and vegetable oil. For products such as chemicals, manufactured goods, machinery and transport equipments, there was a sequential flow of IIT, with one year trade being intra-industry trade driven, i.e., with IIT values above 50, and the following year trade being inter-industry trade dominated, with IIT values below 50. IIT was consistently evidenced in miscellaneous manufactured goods, but only for the last two years 2000 and 2001.

The Kandogan (2003b) study focused on the decomposition of trade into either IIT or INT for 22 transition economies' trade with 28 developing and developed states for the period 1992 to 1999. The study employed the method proposed by Kandogan (2003a), firstly to decompose exports into IIT and INT, and secondly to categorize IIT into either horizontal or vertical components. Besides decomposing total trade into INT or IIT, the other objective of the research was to investigate the determinants of IIT.

The above study found out that more than 50% of trade in both machinery and manufacturing sectors were IIT driven, with the share of horizontal IIT and vertical IIT being approximately equal. Specifically, the IIT results indicated that horizontal IIT was most common in sectors where there was significant product differentiation such as manufacturing, while it was insignificant in sectors where standardized products were produced, e.g. natural resources, which were mostly underpinned by INT. On the other hand, crude materials, fuels, and animal and vegetable oils sectors were highly specialized and INT driven.

On the determinants of IIT, the study results showed that GDP values of both transition and partner countries were promoters of horizontal IIT, with vertical IIT not responding to GDP value increases. Other variables which proved to be positive determinants of IIT, especially horizontal IIT, were trade liberalization and increasing returns to scale. On the other hand, Heckscher-Ohlin and geographic distance variables were considered to have negative effects on IIT.

IIT was also analyzed by McCorrison and Sheldon's (1991) study. The study employed the Grubel-Lloyd measure to investigate whether trade between the United States of America (USA), the European Commission (EC) and the remainder of the OECD countries on one hand, with the rest of world on the other hand, in processed agricultural products for the year 1986 was either INT or IIT driven. The research also calculated the IIT indices for the EC countries excluding intra-EC trade. The processed agricultural products included meat, cheese, cereals, fruits, vegetables, sugar, both alcoholic and non-alcoholic beverages, and tobacco products.

The results from the above study show that total EC trade, including intra-EC, in all processed products was IIT driven since the Grubel and Lloyd indices were more than 70. Nevertheless, in the case where only EC external trade, i.e. excluding intra-EC trade, was considered, values of the index for seven of the ten processed products fell below 50, signifying that the EC's external trade, excluding intra-EC trade, with the rest of the world was INT in nature. These results also support the notion that high intra-industry trade is normally expected in an integrated trading bloc such as the EC.

The indices for USA's trade with the rest of the world indicated that the country's overall trade was INT in nature with six values of the index being less than 50. Nevertheless, four products, namely cereal preparations, processed fruit, processed vegetables and chocolate products were IIT driven with indices above 50. Indices for the rest of the OECD showed that all the products, with the exception of processed fruit, had values of above 50, thus testifying that this group of countries' trade with the rest of the world was IIT driven.

The study by Sharma (2000) investigated the trend patterns of IIT in the Australian manufacturing sector for the period 1979 to 1993. The research used the Grubel-Lloyd's (1975) index in an attempt to study IIT trend patterns. The calculated results showed that there was evidence of an increase in the share of IIT, from 28% in 1979 to 37% in 1993. This increased share of IIT in the country's manufacturing products was underpinned by an increased shift towards IIT in products such as textile, garments, rubber products, and machinery and equipment. Investigations at product level show that the total share of IIT rose from 7% in 1979 to 22% in 1993 in rubber products, while it grew from 17% to around 31% for motor vehicles and parts during

the same period. Comparing the end points for the period covered, in 1979 approximately 19% of Australian manufacturing industries had lower levels of IIT which ranged between 0 and 10%, and this group of industries fell to around 5% by 1993, indicating that manufacturing industries have over the years become IIT dominated.

Al-Mawali's (2005) paper employed a gravity trade model in a panel data scenario to analyze both new and existing country-specific determinants of IIT for South African data for the period covering 1994 to 2000. The study experimented with a number of gravity model estimations including the constant coefficient approach, the basic gravity, the augmented gravity model, the fixed effects approach, the between effects approach, and the country-specific fixed and between effects model. The overall results from all these estimation techniques were approximately the same.

The research found evidence of IIT between South Africa and its developed trading partners. In line with the presence of IIT between South Africa and its trading partners, the study recommended the former country to “pursue its intra-industry trade by concentrating on industries that produce the most competitive varieties, absorbing labour and other resources from the production of other varieties”. This recommendation was also based on the fact that IIT production adjustments are assumed to be easier to achieve than INT adjustments.

The above study also found out that the market size was among the most important determinants of total IIT and its sub-components, HIIT and VIIT. Specifically, the more IIT, HIIT and VIIT were conducted, the larger the market size of South Africa and its major trading countries grew. More IIT, HIIT and VIIT were also witnessed in the presence of a larger combined GDP per capita as was shown by the product of South Africa's GDP per capita and that of its trading partners. On the other hand, less IIT was conducted between South Africa and its trading partners, the greater the geographical distance between them. Furthermore, variables such as political risk and technology gap were found to be not important determinants of South Africa's IIT, HIIT, or VIIT.

2.3.2 Literature on determinants of exports

Marques' (2008) paper investigated unequal regionalism in the European Union (EU) whereby the economic group is composed of member countries with varying degrees of heterogeneity, especially following the group's May 2004 and January 2007 enlargements. The main objective of the study was to empirically demonstrate that in a mixed trade bloc such as the EU-27, the different determinants of trade will result in an asymmetric effect depending on the direction of the trade flows. The heterogeneity, especially between the old EU-15 and the new EU (mostly Central and Eastern European Countries (CEEC-10)) is with regards to differences in income levels, factor endowments, size, spatial and non-spatial trade costs in industries with different degrees of economies of scale and factor-intensity.

To achieve its objective, the study made use of the generalised gravity equation proposed by Bergstrand (1989). The main advantage of this formulation, according to the author, is that it integrates "in one reduced form equation both increasing returns to scale with monopolistic competition and the factor-proportions theory of trade". In the econometric estimation procedure, the research estimated both import and export gravity equations through the Prais-Winsten regression with country-specific autoregressive (AR (1)) terms and correlated Panel Corrected Standard Errors (PCSEs). The advantage of this technique, according to the study is that it assumes that the error terms are heteroskedastic (i.e., each country has its own variance) and contemporaneously correlated across countries (i.e., each pair of countries has their own covariance). Thus, the research estimated gravity models of both import and export trade flows between old EU-15 and new EU-10⁷. The gravity equations for both the old and new EU were done for the following eight sectors: chemicals, leather products, machinery, metals, minerals, textiles and clothing, transport equipment, and wood products.

The estimations showed that results from import and export equations are different. The results indicate that market sizes have a significant and positive effect on total trade and that, overall, the enlarged EU bloc tends to trade more than proportional to

⁷ Because of data availability problems on 2 of the new EU-12, the study estimated gravity models for the new EU-10, instead of the EU-12.

its market size. The coefficient of GDP per capita, which was intended to measure the purchasing power of the importing country, was not significant in some sectors, while in other sectors it was inconsistent with the theoretical expectation of a positive coefficient. For instance, in the case of EU-15 importers, the GDP per capita variable was significantly positive in three sectors; machinery, textiles and clothing, and wood products, while significantly negative in three other sectors; chemicals, leather and footwear, and minerals. In the case of the EU-10 (CEEC-10) importers, higher GDP per capita increased imports in two sectors; chemicals and metals, whilst negatively affecting imports in four industrial sectors; leather and footwear, machinery, transport equipment and wood products.

The study also includes factor endowment variables, namely human capital and physical capital, with the theoretical expectation that a given country's sectoral exports will increase, the more that country has more of a given factor endowment. Generally, the results indicate that for the EU-15, there was a positive correlation between exports on one hand, and both human and physical capital endowment on the other hand. This positive relationship was evidenced especially for physical capital in sectors such as chemicals, machinery, metals and transport equipment. A negative relationship between exports and capital endowments was however witnessed in the leather and footwear sector. On the other hand, the EU-10's results on the impact of capital endowments were mixed. Human capital was positively correlated with total exports while physical capital endowments, on the other hand, affected exports from different sectors differently. For instance, machinery, textiles and clothing, and wood products sectors' exports were positively affected, while chemicals, leather and footwear, and minerals sectors were negatively affected by physical capital endowments.

The results for distance and borders were also found to be plausible and according to theoretical expectations. Distance was found to be significantly negative, thus reaffirming the theory which predicts a decline in trade due to a larger distance between trading partners under the assumption that the spatial variable increases transport costs. The study also found the distance impact to be higher for the EU-10 countries, by virtue of them being relatively less developed countries in comparison to the more developed EU-15 countries.

Molinari (2003) employed a gravity trade model for eight broad EU trade sectors with the main objective of investigating the level and trends of sectoral integration effects within the economic bloc's member countries as well as to analyze both the level and the evolution of the region's integration since the 1970s. The eight trade sectors analyzed were *textiles* (textile, wearing apparel and leather industries), *wood* (manufacture of wood and wood products, including furniture), *paper* (manufacture of paper and paper products, printing and publishing), *chemicals* (manufacture of chemicals and rubber products), *non-metals* (manufacture of non-metallic mineral products, except products of petroleum and coal), *basic metals* (iron and steel basic industries, and non-ferrous metal basic industries), *metals* (manufacture of fabricated metal products, machinery, electrical machinery apparatus, appliances and supplies, and transport equipment), and *other manufactures* (manufacture of jewellery and related articles, musical instruments, sporting and athletic goods, and industries not elsewhere classified). The study's sectoral approach was motivated by the need to explicitly capture the border effects applicable to different sectors. This is mainly because border controls and import duties that were applied and levied were not the same across the eight imported sectoral products.

The study adopted the gravity formulation of Bergstrand (1989), though modified to fit different sectors. The main determinants of the sectoral bilateral trade were categorized into four groups, namely barriers to trade, production and income, integration effects, and transaction costs. Barriers to trade determinants included both geographical and measures of trade resistance, with the former composed of distance and transportation costs, and the latter consisting of tariffs and non-tariff barriers (NTBs). These barriers were expected to be negatively related to trade. Production and income variables reflected exporters' productive capacity and the purchasing power of the importer country, respectively. Trade integration effects in the form of preferential trade arrangements such as the European Union (EU), European Free Trade Area (EFTA) and North American Free Trade Area (NAFTA) were considered as important positive trade determinants. Two types of transaction costs were used in the equation, bilateral link and bilateral currency. Transaction costs were expected to be lower in the case where two countries had mutual bilateral links between them. Thus, the presence of bilateral trade was expected to reduce transaction costs, hence

boost trade between the countries involved. At the same time a favourable bilateral currency (or relatively weaker currency) was expected to improve a country's terms of trade, resulting in the country's exports becoming more competitive.

The paper estimated the gravity trade equation for the period 1977 to 1999 by employing two panel data models: the fixed (within) estimator⁸ and the random (Generalized Least Squares - GLS) estimator. These two estimation techniques were used because of their ability to capture the unobserved individual and time effects. The transaction costs variables results show that bilateral tariffs were important determinants of trade, with a 1% increase in bilateral tariff causing a decrease in imports of 2%, while a real exchange rate currency appreciation of 1% increased import trade by 0.06%.

The time effects were generally significant for paper, chemical and basic metals sectors for most of the time period, while it was only significant from 1985 and 1986 onwards for the textiles, wood and metals sectors, respectively. For the other sectors, time effects were oscillating from being significant to being insignificant. Generally, the study concluded that unobservable time effects were important. In terms of the effect of EU integration on trade, the study found out that, on average textiles was the most integrated sector. That is, membership to EU in this case increased bilateral textiles trade by 43% as opposed to non-EU membership. On the other extreme, membership to EU increased trade by only 9% for the chemical and the non-metallic products sectors, suggesting that these sectors were the least (significantly) integrated. On the intermediate case, other manufacturers were considered to be mildly integrated, with EU membership increasing trade by 13%.

The aim of Marques and Metcalf's (2005) study was to investigate the relative importance of different determinants of sectoral trade, such as location and endowments, in shaping the trade patterns of the heterogeneous trade bloc, the enlarged EU. This objective was achieved by estimating a gravity model of trade flows between country groups with different skilled/unskilled labor ratios and

⁸ The major drawback labeled against the fixed effects model is that it does not allow the isolation effects of distance, adjacency and common language on bilateral trade. This mainly emanates from the fact that the within estimator looks at the effects which are independent from the time-means, and hence all the time invariant determinants of trade will be captured by the individual effects.

different spatial and non-spatial trade costs, in sectors with different degrees of economies of scale and skill-intensity.

The study's results are summarized as follows. Firstly, income and size were not significant determinants of Spain's trade, irrespective of the fact that the country was the richest and largest in the Southern part of the EU. Secondly, size was found to be a significant determinant of trade than income in the central EU, whereas exactly the opposite was true for the eastern peripheries. Thirdly, income catching-up was found to impact on the enlarged EU internal trade patterns. The results indicated that economic distance increases center-periphery trade, but decreases periphery-periphery trade. Lastly, along with size and income, human capital endowments were found to be important determinants of trade. These endowments revealed a different type of relationship between the center and each of the peripheries: human capital endowments increased Eastern trade, but decreased Southern trade.

The main objective of Ciuriak and Kinjo's (2005) study was to try and address the criticism leveled against the gravity model that it does not take into account comparative advantage. The study considered this criticism as critical, given that comparative advantage forms the bedrock of economists in their understanding of international trade. To address this problem, the study introduced a trade specialization index (TSI) as an additional variable into the gravity model to capture the degree of complementarity of the trading partners' comparative advantages. The study's main general finding was that the TSI clearly distinguished countries that were generally believed to be "most similar" from those that were believed to be "most different". According to the study, the TSI's explanatory power in the gravity equation was good, comparing well with other established variables and it improved the overall goodness of fit of the gravity equation.

Chan-Hyun's (2001) study empirically analyzed Korea's sectoral trade patterns based on the gravity model. Among the sectors analyzed was the mineral sector. The paper's findings indicated that the country's mineral exports were positively related to the products of GDPs (of Korea and its respective trading partners). Specifically, a 1% increase in the product of GDPs increased mineral exports by 1.1%. Two factors which negatively affected exportation of minerals were products of GDP per capita

and distance. A 1% increase in the product of GDP per capita reduced exports by 0.93%, while a 1% increase in distance resulted in a 0.5% fall in exports.

2.3.3 Literature on unrealized export potential

The paper by Ram and Prasad (2007) investigated trade potential for Fiji using an augmented gravity model in which cross section data for the year 2005 was analyzed using the ordinary least squares (OLS) estimation technique. The investigation was based on the maximum possible coverage of world trade flows for which data was readily available. The study found out that the estimated gravity equation fitted the data relatively well and provided accurate and reasonable income and distance elasticities as well as estimates for other geographical and historical characteristics. Generally, all the three traditional “gravity” variables namely, the exporter GDP, importer GDP and distance, were found to be intuitively reasonable, with statistically significant t-statistics. That is, the higher economic size as represented by GDPs of a country pair and geographical proximity was positively propagating Fiji's bilateral export trade flows.

In terms of Fiji's trade potential, the study revealed that the country had unrealized trade potential, first with the Asia-Pacific region and then with Western Europe and North America. At partner level, untapped trade potential for the Fiji's prospective trade expansion was highest with countries like Australia, New Zealand, Thailand and the United States. In particular, after comparing the actual trade values and the gravity simulated potential trade values, the study found that Fiji could potentially achieve ten times more potential trade than the actual level of trade with countries like Samoa, Vanuatu, Tonga, Papua New Guinea and Solomon Islands. Overall, the study concluded that most of Fiji's Pacific trading partners presented possibilities of expanding trade with Fiji.

In an attempt to investigate India's global trade potential, Batra (2004) examined India's bilateral trade with its major trade partners. The study employed an augmented gravity model equation with maximum possible geographical coverage of world trade flows. The research estimated India's natural trade with its trading partners by

including variables that represent such determinants as geographic, culture and historical proximity of bilateral trade pairs, together with respective partner economic size (as represented by GDP). The paper managed to enumerate India's trade partner countries, regions and regional groupings with maximum potential for expansion of the country's export trade.

The estimates obtained using the augmented gravity model specification indicated that, at national level, India had a huge export trade potential with Pakistan amounting to US\$ 6.5 billion, while there was also remarkable untapped export potential with the Philippines, Cambodia and China. The study argued that export trade with China was masked by a number of barriers, which if removed; exports to this destination country could double. At regional level, the paper found that India's trade potential was highest with the Asia-Pacific region followed by Western Europe and lastly, North America.

Eita and Jordaan's (2007) study, besides investigating the determinants of South African export of leather products, also analyzed the extent to which there was unexploited trade potential in the exportation of raw hides and skins (other than fur skins) and leather with the country's trade partners. The investigation was done on South Africa's 32 trading partners in hides and skins, and leather products, and for the period covering 1997 to 2004. To achieve its objective, the study employed the gravity trade model.

After simulating the results from the estimated gravity trade model, the analysis indicated that South Korea, United Kingdom, USA, Zambia and Zimbabwe were some of the trading partners that had unexploited export potential at least from 2002 to 2004. The study argues that such an analysis of untapped export potential was important for trade analysts and policymakers as it help the policy makers to focus efforts on the policies and strategies which can help the country to capitalize on the unexploited trade potential, thus contributing towards acceleration of growth and alleviation of poverty in South Africa.

2.4 Conclusions

The literature review presented in this chapter falls into two parts. The first part presents theoretical review that focuses on factors which explain why some exports are classified as following INT while other exports follow IIT. In both INT and IIT trade models, factor endowment, economies of scale and monopolistic competition were some of the main trade theories which explain why some exports fall into INT, while others fall into IIT. On the other hand, product differentiation and monopolistic competition were some of the determinants of exports. Economic size (GDP) and/or population size were also other determinants of exports.

The second part of the literature review focuses on past studies which have analyzed the above factors, including studies on untapped export potential destinations. Studies on INT/IIT were mainly concerned with calculations to investigate the extent to which export products that were being studied were either INT or IIT driven. Empirical literature on the determinants of exports identified economic activity (GDP) of both the exporting and importing countries as two of the factors which promoted export trade. Distance between the respective trading partners was seen as negatively affecting export trade. Other factors were also included in the various gravity models as potential determinants of exports and their effects on export trade depended on other variables that were also included in the respective gravity trade models.