



**Institute of Social Studies**

Graduate School of Development Studies

**VERTICAL SPECIALISATION, TRADE  
THEORIES AND THE FIRM: Analysing the Impact on  
Botswana's Attempt at Industrial Diversification**

A Research Paper presented by:

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## KEYWORDS

Vertical specialisation, Botswana, international trade, the firm, global production network, globalisation, industrial upgrading.

## DEDICATIONS

This paper is partly the result of lengthy and stimulating discussions with my supervisor, Mr. Peter de Valk. His insights have provided much clarity and by providing adequate guidance, he has allowed this paper to tackle a plurality of views which have proven to be of great relevance and, by doing so, has permitted my understanding of the issue from not become intellectually obtuse. Additionally, I would like to thank Mr. Jan Kees van Donge for his comments and suggestions, especially in regards to the conceptualisation of the firm, have been most beneficial. Any errors and omissions however, are strictly of my own doing.

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## TABLE OF CONTENTS

<b>1</b>	<b>PRELIMINARIES</b> .....	<b>6</b>
1.1	Introduction .....	6
1.2	Statement of Research Problem and Working Hypothesis .....	6
1.3	Objectives of the Study .....	7
1.4	Significance of the Study .....	7
1.5	Scope and Limitations.....	8
1.6	Research Methodology.....	8
1.7	Structure of the Research Paper.....	8
<b>2</b>	<b>STYLISTED FACTS: BOTSWANA'S ECONOMY AND SOCIETY</b> .....	<b>10</b>
2.1	Economic Outlook of Botswana.....	10
2.1.1	Historical Essentials .....	10
2.1.2	Recent Trends .....	11
2.2	Politics and Society.....	13
2.2.1	Political Stability.....	13
2.2.2	Labour.....	14
2.3	Trade Agreements.....	15
2.4	Economic Competitiveness .....	17
<b>3</b>	<b>CONTEXTUALISING A PHENOMENON: THE CHANGING NATURE OF THE FIRM AND THE RISE OF VERTICAL SPECIALISATION</b> .....	<b>19</b>
3.1	The Changing Nature of the Firm.....	19
3.1.1	Opening up the 'black box' .....	19
3.1.2	Beyond a coordinating agent .....	21
3.1.3	Supplanting the market through governance .....	22
3.2	Nature and Growth of Vertical Specialisation.....	24
<b>4</b>	<b>THEORIZING HYPER-FRAGMENTATION'S IMPLICATIONS: A CRITICAL ASSESSMENT</b> .....	<b>26</b>
4.1	A Trade Theory Approach .....	26
4.1.1	Classical Trade Theories .....	26
4.1.2	New Trade Theories .....	28
4.1.3	New Paradigm Globalisation .....	30
4.2	Theories Pertaining to the Firm .....	32
4.2.1	Product Cycles .....	32
4.2.2	Buyer-Seller Relations .....	34
4.2.3	Global Value Chain Governance .....	36
4.3	Merging trade and firms theories: dialectic harmony or mutual exclusiveness? .....	38
<b>5</b>	<b>VERTICAL SPECIALISATION AND BOTSWANA: IMPLICATIONS FOR ITS INDUSTRIAL AND MANUFACTURING SECTOR</b> .....	<b>41</b>
<b>6</b>	<b>CONCLUSIONS</b> .....	<b>45</b>
	<b>BIBLIOGRAPHY</b> .....	<b>47</b>



## **LIST OF TABLES AND FIGURES**

**Table 1.1:** Productivity Contribution to GDP by Sector ..... p. 12

**Table 1.2:** GDP of Neighbouring Countries ..... p. 15

**Table 1.3:** Tax Rate of SACU Member Countries ..... p. 17

## **LIST OF ACRONYMS**

**GPN:** Global Production Network

**GVC:** Global Value Chain

**MNE:** Multi-National Enterprises

**NIE:** New Institutional Economics

**SACU:** Southern Africa Customs Union

**SADC:** Southern African Development Community





## **1 PRELIMINARIES**

### **1.1 Introduction**

The aim of this paper is to analyse trade theories and firm theories and through this get elucidations on the effects that vertical specialisation may have on Botswana's attempt to diversify its industrial and manufacturing sector. If a consensus has emerged surrounding the belief that 'productive diversification is a key correlate of economic development' (Dani Rodrik, 2006: 3), knowledge as to how to follow this path, given the present state of trade and production networks—characterised by the hierarchical discipline imposed by multinational corporations—remains largely elusive. Indeed, the on-going trend of firms spreading their production through contractors and subsidiaries abroad, a phenomenon coined 'vertical specialisation' (Hummels et al., 1998: 80) has led to a shift in international production patterns, which has blurred our understanding of trade.

Botswana's continued efforts to industrialise conjugates with an overwhelming body of empirical evidence, largely emanating from the positive experiences of east-Asian newly industrializing countries. Though Botswana assiduously follows the commonly prescribed ingredients to boost its manufacturing sector, the results continue to remain lethargic. Yet the country is aware of the urgency of diversifying away from its mineral based economy; the ravages of HIV/AIDS being set to have a devastating impact on the country's finances, while its diamond resources are predicted to be depleted in a little over two decades. As Michael Porter notes, '[w]hile the possession of abundant natural resources may support a high per capita income for a sustained period of time, a factor-driven economy is one with a poor foundation for sustained productivity growth' (1998: 548).

### **1.2 Statement of Research Problem and Working Hypothesis**

The main research question this paper will seek to address is the following:

- As vertical specialisation has significantly altered global trade and production patterns, what implications will this phenomenon have on Botswana's attempts at pursuing industrial diversification?

Because the research will need to tackle both trade theories and theories pertaining to the firm, the following sub-questions will serve to ensure that our understanding does not become analytically obtuse.

- How can trade theories help us elucidate the intricacies of export-led economic growth within a global trading framework where the growth in significance of the fragmentation of production is challenging previously accepted wisdom?
- As firm's are the main actors behind vertical specialisation, what are the motivations that push them to pursue some of their sourcing or manufacturing abroad?

### **1.3 Objectives of the Study**

By contrasting trade theories, using an arguably more political economy perspective, alongside concepts pertaining to the operation of firms at the global level, this research paper will attempt to offer a more thorough understanding of the dynamics at play within the global production network (henceforth GPN). Thru this, it shall be possible to identify the implications vertical specialisation is having on Botswana's attempts at pursuing industrialization.

### **1.4 Significance of the Study**

Though literature abounds on the subject of vertical specialisation, the field of economics has remained quiet on its implications for developing countries, preferring to cater their studies on the effects that vertical specialisation may have on the North's competitiveness, wages and unemployment. While some recent advances in trade theories have provided the field with knowledge about the scale of production, intermediate goods and vertical specialisation, these do not provide an incisive framework to understand how a country like Botswana, who according to orthodox economics has all the prerequisites to growth, yet fails to benefit from the global fragmentation of production.

The novelty of this paper lies in its epistemic study of the firm and its operational dynamics so as to rightfully reclaim the firm as a unit of analysis and insert it within a framework of trade theories, which have tended to neglect the firm and its inherent structure. As firms are the primary drivers of vertical specialisation and the governance structure which supports the GPN, trade theories' inadmissible yet still prevalent omission of the firm is detrimental to our understanding of the impact vertical specialisation stands to have on the industrial and manufacturing sector of a small, land-locked developing country.

## **1.5 Scope and Limitations**

This paper purposely limits itself to assess vertical specialisations impact on Botswana's attempt to diversify and upgrade its industrial and manufacturing capabilities. Though this will involve a plurality of approaches, these will be constrained in relation to their link with vertical specialisation and not in relation to an assessment of Botswana's industrial capabilities per say.

Thus, this paper will attempt to abstract away from the political issues that could come to mar the outcome of the country's industrial potential. As such, this research will operate in a *ceteris paribus* manner. While this may sound limiting—politics is not achieved in a vacuum—it will have the benefit of not overburdening this research with potentially distracting political variables and permit a concise analysis. Hence, this paper will not include in its assessment the transitory and dubious-system of trade preferences of which Botswana is a member (notably with the United-States and the European Union) as, in any event, these typically exclude light-industrial products, the precise sector which Botswana is trying to target.

## **1.6 Research Methodology**

This paper will essentially be a critical exploratory analysis of theories pertaining to trade and the firm in a context of vertical specialisation. However, given the prevalent misconception of the firm within trade theory literature and their tendency to present, out of analytical simplicity, mere factoids, an epistemic study of the firm and its operations at the global level will be conducted. Attempting to understand the dynamics of vertical specialisation without properly acknowledging the inherent interests of firms operating at a global level would limit this paper to simply compound old assumption that are simply not in line with empirical evidence.

Through this it shall be possible to decipher any discrepancies within the various strands of trade theories and more importantly, integrate this with an analysis of concepts pertaining to the firm and their applicability both in the context of vertical specialisation and Botswana's condition.

## **1.7 Structure of the Research Paper**

The following section of this paper, Chapter 2, will present stylised facts of Botswana's economic and political situation. Chapter 3 will contextualise the firm and how it has evolved into its present structure in parallel to the various developments that globalisation has instilled upon it. Subsequent to this, the chapter will provide a cursory genesis of vertical specialisation and its ramifications on global trade. Chapter 4 sets out to demystify the various strands of trade theories and present a more coherent synthesis of its applicability to

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vertical specialisation. The chapter will also analyse various concepts of the firm which pertain to the phenomenon of vertical specialisation and the firm within the GPN. Chapter 5 will investigate the implications that vertical specialisation stands to have on Botswana's attempt at industrial upgrading by integrating the two previous chapter's main conclusions on trade and the firm in light of Botswana's small, land-locked economy. Finally, Chapter 6 will re-iterate the main findings of this paper while presenting further avenues worthy of research on the subject.

## Chapter 2

### **2 STYLISTED FACTS: BOTSWANA'S ECONOMY AND SOCIETY**

Though Botswana has historically been blessed with capable leaders, the country's present endeavour to diversify its economy through industrialization and manufacturing, in an attempt to lessen its reliance on diamond exports, may fall prey to the vagaries of contemporary international trading patterns. By giving a cursory overview of the pertinent elements of Botswana's political and societal traits, as well as an enumeration of some of the features the country has to help the competitiveness of its manufacturing sector, a proper foundation will be established upon which to assess, in Chapter 5, the impact that vertical specialisation stands to have on its attempt to upgrade its industrial and manufacturing sector.

#### **2.1 Economic Outlook of Botswana**

##### **2.1.1 Historical Essentials**

Botswana benefited greatly from the careful management of its diamond resources since their discovery shortly after gaining independence in 1966: Botswana's diamond-led economic growth over the last 3 decades averaged a yearly 7%, outpacing rates achieved by the Asian 'tigers' (Leith, 2005: ix; Acemoglu, Johnson and Robinson, 2003: 80), prompting the World Bank to classify Botswana, with a per capita income of US\$4,600 (IMF, 2007: 21), as an 'upper middle-income' country (World Bank, 2007).

Botswana's joint venture with South African mining giant De Beers, established in 1978 (Debswana, n.d.<sup>1</sup>), epitomizes Botswana's foray into enlisting the private sector as a means to achieve its development goals. Its partnership permitted the country to amass vast amounts of wealth<sup>2</sup>. To this day, the diamond sector still accounts for roughly 75 percent of Botswana's foreign exchange, 60 percent of the government's revenue and 33 percent of the country's Gross Domestic Product (Debswana, n.d.). Because of this, the government has never had to go cap-in-hand to the International Monetary Fund (Acemoglu et al., 2003: 102) and is in fact one of only two African countries that contribute to the World Bank and the IMF's coffers (Clover, 2003: 2).

At the time of independence in 1966 however, cattle was the main economic activity and until 1977, cattle meat was Botswana's primary export product (Tsie, 1996: 599). Though the sector presently accounts for a very marginal 1.8% of exports (author's calculations/CSO,

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<sup>1</sup> No date given.

<sup>2</sup> The Government of Botswana and De Beers each hold 50 percent of shares (Tsie, 1996: 613). The government of Botswana also has a 15 percent stake in De Beers. Debswana's production accounts for 66 percent of De Beers' output (IMF, 2007: 22), making Botswana a de facto price-maker in the diamond sector.

2007), it has in the past been an active agent in ensuring that the country does not adopt an overvalued currency: a policy common in many primary-resource exporting countries. Additionally, Botswana has always pursued capitalist policies, even during the time when most African nations were experimenting with socialism and ISI (Taylor, 2002: 2).

During the 1970's, as diamond revenues soared the government was reputedly worried that its diamond sector would lead to a 'Dutch-disease' effect, it was the country's cattle-based constituency that provided the impetus for keeping the exchange rate low, fearing that an overvaluation would effectively kill their livelihoods. As James Clark Leith notes, 'the joint economic interests of all those involved in the cattle sector lay in maintaining Botswana's external competitiveness' (2005: 55).

If the country has succeeded in creating a non-invasive and largely meritocratic bureaucracy (Tsie, 1996: 601), it has however failed to spur private sector growth and, though it has actively sought private capital since the 1970's to broaden its industrial and manufacturing sectors, these efforts have largely failed to attract investments outside resource extraction<sup>3</sup>. Indeed, as of 2002, 71% of foreign direct investment in the country was directed at the mineral sector (PWC, 2005), corresponding to the investment trend found elsewhere in Africa (Shiels and Spar, 2000: 2). Furthermore, the positive externalities created by the State's careful investments in infrastructure and education have, since the early 1990's, begun to accrue less benefits as the initial surge in productivity reached a plateau: something symptomatic of resource-based economies such as Botswana.

### **2.1.2 Recent Trends**

Aware of its over-reliance on the diamond industry, Botswana has sought to diversify its economy to enable it to maintain positive growth rates and to provide employment and poverty relief to its constituencies: the country's consensus based political system – the root behind the nation's stability which has proven to be one of the country's hallmarks – being heavily dependant on the government's ability to make economic growth inclusive. Though Botswana's vast export-oriented cattle sector has traditionally provided the means to such stability, environmental and societal hurdles associated with the sector's enlargement are undermining its role as a purveyor of wealth (Leith, 2006: 7; Darkoh and Mbaiwa, 2002: 151)

The expansion of cattle rearing and its affiliated activities are proving incompatible with the country's staunch pastoralist traditions and its semi-arid geography. As a result, its share of exports has rapidly dwindled from being its primary export commodity at the time of

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<sup>3</sup> It must be stated that, since independence, the country has always adopted an open stance towards the private sector. This strategy was adopted providing that it would be concomitant with the country's goal to foster 'rapid economic growth, social justice, independence and sustained development' (Tsie, 1996: 606).

independence to less than 1.9 percent now (author's calculations/CSO, 2007). This skewed distribution of income<sup>4</sup> – only 5% of households hold more than half the national cattle herd (Van Buren, 2007: 111) – can potentially cause the demise of their nation's stability by undoing a social pact that governments have attempted to maintain since independence<sup>5</sup>. Furthermore, due to the rapid depletion of its diamond resources, the IMF is projecting that Botswana's fiscal revenues will shrink by about two-thirds from 2021 to 2029 (2007: 6).

**Table 1.1 - Productivity Contribution to GDP by Sector  
Average Annual Growth Rates**

Period	Agriculture	Mining	Manufacturing	Government
1979-1985	-15.7	11.6	-4.8	1.2
1985-1991	0.2	-4.0	6.9	2.7
1991-1997	-5.4	-3.2	3.2	2.4
1997-2003	-6.3	0.7	-3.2	0.2
2001-2006 p	-3.1	-0.8	-2.3	0.8

p = provisional figure

Source: Productivity Statistics (Botswana National Productivity Centre-BNPC)

The depredation of HIV/AIDS amongst Batswana<sup>6</sup> has exacerbated the negative trend of declining Total Factor Productivity growth. After having invested for decades in both human and physical capital, total factor productivity growth has begun to decline since the 1990's (BoB, 2005), as the initial effects of investing in primary education and capital stock formation in the mineral sector have stabilized. In addition to this, in the space of 5 years, life expectancy has suffered a tremendous set back, from 42.7 years in 2000 to 35 in 2005 (World Bank, 2007), further compounding the decline in productivity of Botswana's labour pool. It is foreseen that over the next decade, the impact of HIV/AIDS will result in annual budget deficits of 2%, reduce government revenues by 7% and will cause expenditure to rise by 15% (Clover, 2003: 4).

Annual GDP growth has dropped from 8.2% in 2000 to 6.2% in 2005 (World Bank, 2007), partly a reflection, like in many other developing countries of the higher price of oil, of which Botswana is an importer, but also of weaker growth rates in some sectors. The manufacturing sector has been especially hard hit, with growth slowing from 13 percent during the 1980's to around 3 percent today (IMF 2007, 22), the result being that its industrial and manufacturing sector represents a lowly 5% of GDP (Africa Review, 2007: 29). Thus,

<sup>4</sup> Botswana's income disparity is second only to Namibia (Clover, 2003: 6) and its Gini index is scarcely more equal than Brazil's (Darkoh and Mbaiwa, 2002: 163).

<sup>5</sup> Though diamond revenues do wonders for the government's coffers, it accounts for only 3% of employment. It's Gini coefficient is just below 0.6, whereas for most other middle-income country, it is around 0.3 to 0.5. (IMF, 2007: 20).

<sup>6</sup> The correct appellation for citizens of Botswana. Singular form *Motswana*.

excluding mining and the government, average annual growth rates have decreased from 6.5% in the 1993 to 1999 period, to 4.6% in the 1999 to 2004 period (BIDPA, 2005:2).

However, the country's strong economy nonetheless still creates current-account surpluses, allowing the country to amass substantial foreign exchange reserves<sup>7</sup>. Thus the government still has the wherewithal to provide financial concessions and tax rebates to attract investors, even as its health spending has risen in recent years, due to the ravaging effects of HIV/AIDS on its population<sup>8</sup>.

## **2.2 Politics and Society**

Notwithstanding its exceptionally high GDP growth rates averaged over the course of the last few decades, Botswana is also acclaimed for its enduring political stability. Located in a continent whose governments have been on the whole more efficient at squandering resources than developing civic institutions, the country must constantly assuage the concerns of those who believe in the 'Africa is homogenous' factoid.

### **2.2.1 Political Stability**

Two factors have contributed to Botswana's political stability. Firstly, it has been argued by many observers that Botswana's traditional consensus-based communal dispute settlement mechanism is very much compatible with the type of citizen involvement required to have a participative democracy. Secondly, Botswana's clairvoyant post-independence leaders have upon discovery of mineral deposits levied a mineral rights tax, whose windfall would accrue to the central government. The vesting of these, argues James Clark Leith, would 'prove to be the key to establishing the authority of the nation state' (2005: 60).

Perhaps more important than these two causes is the fact that the ideals that Botswana was trying to reach as a developmental state were largely concomitant with the economic self-interest of the elite, somewhat reducing the magnanimity of their acts. As the noted by Acemoglu, Johnson and Robinson in their study of Botswana's economic success, the country 'was able to adopt good policies and institutions because they were in the interest of the political elites, which included the cattle owners and powerful tribal actors' (Acemoglu et al., 2003: 106)<sup>9</sup>.

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<sup>7</sup> Enough to satisfy the Botswana's import needs for over 2 years (Bank of Botswana, 2006: 71)

<sup>8</sup> In 2003, the latest figures available, the prevalence of HIV/AIDS within Botswana's adult population was estimated to at 37.3% (WHO, 2005). The economic repercussions of this are non-negligible, it is estimated that in the next decade, the cumulative effects of HIV/AIDS will entail 2% annual budget deficits and reduce government revenues by 7%, while raising expenditure by 15% (Clover, 2003: 6).

<sup>9</sup> James Leith remarks however that this can also be attributed to the fact that De Beers, unlike elsewhere, did not corrupt Botswana's elite and politicians (Leith, 2005: 63).



This has acted as a positive counter-balance to the magnitude of the mineral sector by favouring, amongst others, the non-overvaluation of the Pula<sup>10</sup> and the maintenance of open borders conducive to trade. Unlike innumerable others, the country has never fallen prey to the vagaries of corruption and nepotism and has managed to maintain a largely efficient and meritocratic bureaucracy (Acemoglu et al., 2003: 83) and since independence in 1966, all elections have been described as free and fair (Clover, 2003: 9).

### 2.2.2 Labour

Since independence, Botswana's national development plans have cited the importance of investing in their country's human capital, understanding that this could be the only way Botswana could become empowered and hold an active stake in their country's prospering. The rents accrued from the mineral rights concession gave the country a more secure financial footing necessary for these investments, whereas neighbouring Namibia and Zimbabwe could not<sup>11</sup>, giving Botswana's labour sector a much better educational endowment than its neighbours.

Despite the quality of its education system, a study done on behalf of a major American multinational (Shiels and Spar, 2000: 12), found that the country's workforce was on par with South Africa but less productive than Zimbabwe, lacked technical expertise<sup>12</sup> and that its health was less than ideal (in large part due to prevalence of HIV/AIDS). A study amongst business executives by the World Economic Forum cited similar concerns (WEF, 2004: 114). In order to compensate for what the apparent shortfalls of its workforce, the government has created several schemes, notably the Financial Assistance Scheme (Shiels and Spar, 2000: 14) to, in some cases, extensively shoulder the bulk of the cost of skills upgrading by firms, aware of the positive externalities this can produce.

Unemployment officially stands at 28% (CSO 2007; Africa Review, 2007: 26) with the inclusion of the informal sector, this figure jumps 40% out of a workforce of 600,000 scheduled to grow by 2.3% per annum (Africa Review, 2007: 26; BIDPA, 2005: 3). Though agriculture's share in the economy is marginal – its share of GDP stood at 2.23% in 2006 (CSO, 2007) – around 45% of Botswana's economically active population is employed in the sector (Van Buren, 2007: 110). In terms of formal employment though, the agricultural sector represents 5% (Clover, 2003: 8), manufacturing around 10% (Africa Review, 2007: 29) and

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<sup>10</sup> Botswana's currency, adopted in 1976.

<sup>11</sup> Though South Africa certainly had the wealth to provide adequate education to its black population, Apartheid governments purposely avoided to do so, fearing black empowerment (The Economist, 2007: 55)

<sup>12</sup> This is attributed in large part to the fact that Botswana produces far more lawyers and administrators than engineers or technicians (Shiels and Spar, 2000: 16).

mining has fallen from a high of 7% of employment to less roughly 3.5%, or 6,400 workers currently (Clover, 2003: 8; Van Buren, 2007: 112).

These statistics however only paint half the portrait of the effect of employment rates on wages, for Botswana has in effect a dual-labour market, the result of what Pillay calls 'enclave development', typical of mineral-based economies (quoted in Clover, 2003: 08). As Pillay explains, '[t]his creates a wage-fellowship trend in which all other sectors of the economy demand their wages to resemble those of the booming sector' (Pillay, 2001: 12). Though comparatively not pervasive, the country's bureaucracy employs 37% of the workforce (Clover, 2003: 7) which, along with its affect on wages, as contributed to the country having too many lawyers and managers and too few engineers. Further upward pressure on wages is created by the fact that many Batswana go and work in South Africa (Hutcheson, 2006: 105)<sup>13</sup>. Thus in Botswana wages have increased at a rate which can't be justified by increases in productivity alone, partly the reason why it has higher wages than South Africa (Africa Review, 2007: 28) which as a more diverse economy.

That being said, Botswana's labour sector is characterised by the relative absence of labour unrest. This can be traced back to the low-level of industrialisation at the time of independence from the British (Tsie, 1996: 607). Hence Botswana is one of the least unionised countries in southern Africa, and there are no records of unions existing outside the public sector or Debswana, the largest mining group (Shiels and Spar, 2000: 15, Hazleton, 2002: 7).

### 2.3 Trade Agreements

Botswana is part of numerous bilateral trade agreements with its neighbouring countries, however given the marginal export opportunities that these represent; we will focus on those that include South Africa, the region's biggest economy.

**Table 1.2 - GDP of Neighbouring Countries  
SACU Members**

	Botswana	Lesotho	Namibia	South Africa	Swaziland
GDP*	10.63	1.49**	6.31	255.27	2.65**

\*Total GDP in billions US dollars current prices, 2006

\*\* IMF estimates

Source: IMF World Economic Outlook Database, October 2007

<sup>13</sup> It is estimated that as many as 50,000 Batswana work in South Africa. Around a tenth of these are thought to be working in mining (Hutcheson, 2007: 105).

### ***SACU – Southern African Customs Union***

The aim of this customs union is to advance the economic development of its member countries: Botswana, Lesotho, Namibia, South Africa and Swaziland. Trade within SACU members operates without any tariffs or any type of quantitative restrictions (SACU, 2007) while also its members transit rights for goods to other destinations outside SACU, including the paved routes to Namibia and South Africa's deep-water ports (Leith, 2005: 69).

SACU is thus crucial in two ways: it grants duty-free access to neighbouring ports (crucial given its land-locked location) and it provides a duty-free quota-free access to a body of states that comprises a market of 45 million people (BDC, 2007), much bigger than Botswana's 1.8 million. The free-trade area created with the SACU is especially important since it allows Botswana to access South Africa's market, which alone represents roughly 95% of the SACU's GDP (Harvey et al., n.d.: 16) and is an important destination for Botswana's non-traditional exports. The member states of SACU provide Botswana with more than 75% of all its imports (Van Buren, 2007: 111; Harvey et al., n.d.: 16).

SACU also allows infant industry protection, for a period of 8 years, to all its members bar South Africa (Kirk and Stern, 2005: 177), implicitly granting Botswana's manufactures an advantage given their duty-free access to South Africa. However, for all these benefits, the customs union has a high external tariff, which forces its manufactures to source most of their inputs from within SACU, effectively sheltering its members from outside competition and hurting productivity as without this it could source cheaper elsewhere. If SACU significantly reduced the common tariff from a high of 20% to an average of 5.8% (USTR, 2007: 565), they remain significant for some finished and non-finished products<sup>14</sup>. In this respect, it could be said that Botswana is more affected by regional trade than by globalisation.

To circumvent this external tariff however, the government has instituted generous programs to allow manufacturers to re-coup some or all of the expenses that the customs union bears on producers. The Customs Duty Drawback programme allows exporters to claim for a full refund of customs duties and the country's value added tax (BEDIA, n.d.). Additionally, the Duty Credit Certificate programme enables exporters of textile products who source their raw materials outside SACU and export their wares outside of it to receive a credit typically worth between 15-30 percent of the sales value of the exports (BEDIA, n.d.).

### ***SADC – Southern African Development Community***

Though negotiations are underway to turn SADC into a free trade area, thus creating a much larger customs union of 200 million people, doubts remains as to the effectiveness of this

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<sup>14</sup> Some of these rates are as follow: apparel, 40%; yarns, 15%; fabrics, 22%; finished goods, 30%; fibres, 7.5%; vehicles, 36%; new automobile parts, 28% (USTR, 2007: 565).

since South Africa would still make up 75% of the GDP of the SADC region (MTI, 2003) and Botswana already has access to it. As it stands SADC acts as some type of development forum for the region.

#### 2.4 Economic Competitiveness

Botswana's environment has numerous advantages, especially compared to some countries in the region. Amongst these, as seen in Table 1.3, is the availability for manufacturers of a concessionary 15% tax rate guaranteed until the year 2020 (MTI, 2003).

**Table 1.3 - Tax Rate of SACU Member Countries  
Applicable rates for export manufacturing**

	Botswana	Lesotho	Namibia	South Africa	Swaziland
Percentage	15	15	35	30	30

Source: SADC Tax Database, 2007

Notwithstanding these low rates, Botswana applies a fairly light regulatory touch on issues pertaining to profit repatriation typifying its stance as a small yet open economy – within the confines of its customs union. It abolished all foreign exchange controls in 1999, the second African country to do so and has no restrictions on investment ownership or sources of investments and has no local content requirements (PWC, 2005; Shiels and Spar, 2000: 13). In addition, expatriates can remit 100% of their earnings and the currency, the Pula, is both stable and freely convertible (Ibid). Inflation rates have remained below 10% for most of the last decade and presently hover around 7% (Acemoglu et al., 2003: 102, CSO, 2007).

Of importance to foreign investors, its legislation regarding intellectual property rights fully comply with the TRIPS agreement<sup>15</sup> (PWC, 2005), though the consultancy firm PriceWaterhouse Coopers warns that capacity building is required for stronger enforcement (PWC, 2005). Transparency International, an NGO, estimates Botswana to be the least-corrupt country in Africa (2006: 5), while the 2004 Competitiveness Report of the World Economic Forum ranked the country first in Africa and 36<sup>th</sup> overall (2004: 114). Unsurprisingly given its stable macroeconomic conditions, both Moody's and Standard & Poor's have awarded the country as being investment grade (BDC, 2007)

<sup>15</sup> Called Trade Related Intellectual Property Rights (TRIPS), this legal provision is an integral part of the conditions that countries must abide to as members of the World Trade Organisation, which Botswana is (MTI: 2003).

To encourage the expansion and diversification of its manufacturing sector, the government of Botswana has instituted over the last few decades the following institutions and programmes:

- *BEDIA – Botswana Export Development and Investment Authority*

Created in the late 1990's, this independent government organization – five board members are from the private sector and two from government – is responsible for promoting the export of Botswana's manufactured goods (Harvey et al., n.d.: 35).

- *BDC – Botswana Development Corporation*

The Botswana Development Corporation was established in 1970 with the objective to assist in the 'establishment and development of commercially viable businesses in Botswana' (BDC, 2007). The Corporation, who operates as the government's investment arm – in effect a venture capital fund according to Leith (2005: 95) – has to gain a return on its investment. The BDC typically limits its equity participation to a minority position with the firms it is involved with, as its mandate rather seeks to limit foreign investors' exposure to risk, though it is also mandated to promote manufacturing through the provision of commercial and industrial premises, in a bid to reduce the capital necessary to invest in manufacturing type of activities in Botswana (BDC, 2007).

Besides equity participation, the BDC also offers, through its Financial Assistance Plan, tax reductions invoice discounting, loan financing, labour and training subsidies and capital grants (BDC, 2007; Shiels and Spar, 2000: 14)



## Chapter 3

### 3 CONTEXTUALISING A PHENOMENON: THE CHANGING NATURE OF THE FIRM AND THE RISE OF VERTICAL SPECIALISATION

The rise of vertical specialisation cannot be complete without a proper understanding of the firm and the dynamics operating within. If Michael Porter can be credited with re-popularising the inclusion of the firm within trade economics<sup>16</sup>, it would be a disservice to the field to neglect advances made by others before him, whose prescience on the role of the firm and the issue of vertical specialisation—however defined at any point in time—have proven to be remarkably resilient. As this section will demonstrate, what many in the field of international trade have termed the ‘vertical disintegration of production across borders’ (The Economist, 2007: 82), is far from being novel.

#### 3.1 The Changing Nature of the Firm

Multinational firms, the drivers behinds this trend, have evolved in the last few decades to profit from an increasingly benign trading environment, thereby pushing the boundaries of what was thought to be within their sphere of competence. Understanding how this came about, by firstly historicizing the firm and its evolution, will be the subject of this section.

##### 3.1.1 *Opening up the ‘black box’*

The firm, at least in economics circles, has been relegated to a rather passive role for much of its history. This stems mainly from early 20<sup>th</sup> century economists’ misconceived understanding of the firm. R.H. Coase, basing himself on Alfred Marshall’s notion that ‘organisation’ is also a factor of production, exulted the role of the ‘entrepreneur-coordinator’ but his analysis treated the transaction decisions operating within the firm as being isolated from the market structure of cost-based transaction (Coase, 1937: 389). ‘It can, I think, be assumed that the distinguishing mark of the firm is the supersession of the price mechanism’ (Ibid). As George J. Stigler noted, writing some twenty years after Coase’s seminal work, the firm was typically understood as an agent that purchased a set of inputs ‘from which it obtained one or more salable (sic) products’ (1951: 187), asserting that in the view of these economists, ‘the firm and perhaps also the industry were too small to serve as units of analysis’ (Ibid).

Stigler, venturing from Adam Smith’s division of labour, believed that in order to have a more rigorous cadre of analysis, it would be preferable to view the firm as an agent that

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<sup>16</sup> Though he has been criticised for putting too much emphasis on ‘national’ firms (Shapiro, 2007: 9), (Davies and Ellis, 2000: 1190).

engages in a chain of separate processes (1951: 187); the interrelationship of these being dictated by the costs of sourcing inputs either in-house or outside the firm in a fashion that best suits the entrepreneurs' ability to turn a profit<sup>17</sup>. This conception of the firm, which integrates cost analysis with the entrepreneur's flair to coordinate production, provides a more rigorous cadre of analysis, far beyond Coase's nebulosity on firms' motive to integrate vertically or not<sup>18</sup>. Stigler's conceptualisation in effect attempted to reconcile the firm with the dynamism of capitalism as preached by the Austrian school, whose conception of the market as a 'discovery procedure'<sup>19</sup> (Palermo, 2007: 553), allows firms to source their inputs in the most cost-efficient manner.

Stigler's legacy has permeated the field and many have applied his view of the firm to describe the behaviour of multinational enterprises (henceforth MNE). As Helleiner noted in the early 1970s, to reduce their production costs MNE have in the last few decades actively supported the creation of 'common markets, customs unions and free trade areas in the developing countries since these enable them to better rationalise their production planning in these areas' (1973: 26). This has not only contributed to internationalise the role of the firm as an agent that bases its production processes based on costs, but has also contributed to alter the way in which firms traditionally carried out their business.

As Markusen explains, industries which have typically traded goods are now finding themselves to be, in effect, exporters of firm-proprietary services to their subsidiaries (1995: 175). These foreign subsidiaries, or their licensed-contractors – organisational structures created to profit from lower production costs elsewhere – then import these services 'in exchange for repatriated profits, royalties, fees or output' (Ibid). Thus, if advances in technology, namely in communication and transport, have contributed to the decline of the Fordist mode of production<sup>20</sup>, these advances have been complemented by an increasingly encompassing international legal framework, which has allowed MNE to operate abroad with

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<sup>17</sup> Stigler argues that the costs of individual functions are related to the use of technology. The cost of one function will depend on the cost of the preceding function. He gives the example of hot ingots, which need to be processed in the vicinity in order to save heat, and therefore costs, as a process that is best done in-house. Conversely, the 'interrelationship' between each functions may be remote, as when an entrepreneur opts to 'neglect production' (mid-20<sup>th</sup> century parlance for outsourcing) in order to supervise the marketing operations of that product (Stigler, 1951: 187).

<sup>18</sup> 'As is evident, the amount of "vertical" integration, involving as it does the supersession of the price mechanism, varies greatly from industry to industry and from firm to firm' (Coase, 1937: 389).

<sup>19</sup> This stems from the Austrian school's defiance of *homo economicus* as conceived by the neoclassicals, an ex-ante creation that reacts identically and predictably to events (Palermo, 2007: 540). Austrian economists sided more with methodological individualism, which allowed for the ex-post exploration of failures.

<sup>20</sup> The production process which prevailed in Coase's time in which firms vertically integrated all the processes necessary to complete a given good.



the certainty that their firm-proprietary advantages are protected<sup>21</sup>, hence effectively reducing costs and thereby expanding the ability of firms to source outside.

These advances have helped to develop what Helleiner calls 'commercial subcontracting' (1973: 28), itself a consequence of MNEs accentuating Stigler's notion of the firm as a coordinating agent of production processes. By 'subcontracting', Helleiner denotes a system in which firms decide to source some, or all, of their inputs through contractors, subsidiaries or intermediates depending on costs; thus dismissing Coase's understanding of the firm as an agent that bases its production decisions in isolation of market forces. This represents a quantum shift from what was previously understood as being the role of the firm during and before Coase's time; at least in orthodox economics circles, and emphasises the notion that 'separability of ownership' (Gereffi et al., 2005: 80) is crucial for understanding modern organisational structures.

### *3.1.2 Beyond a coordinating agent*

Sounding as Stigler's heirs apparent, Gereffi, Humphrey and Sturgeon explain that MNEs have in many cases been redefining their 'core competencies' to focus on innovation, product strategy, marketing and the highest value-added segments of their manufacturing and services (2005: 78). Their managerial, financial and technological advantages allow them to 'profit from their ideas, trademarks, expertise and technological innovations' (Archibugi and Pietrobelli, 2003: 865), which are areas of competences that they do not view as being necessary to shift outside the firm.

Given their firm-proprietary function as creators of value within the production process, MNEs tend to retain within the firm whatever process of production that can best be utilized to turn a profit. As a consequence, MNEs have shifted from 'high-volume to high-value production' (Gereffi, 2001: 32), leaving the firm as a brander who concentrates on its proprietary resources (i.e. a respected brand name) to reap the most profit, while it relegates to its subsidiaries the burden of producing most of its wares. Investing in research and development abroad thus, would be an inefficient duplication of what it can do back home. Supporting this stance, Amsden et al. demonstrate that on the whole, MNEs do not invest in R&D in developing countries (2001: 1)<sup>22</sup>. An offshoot of this type of production, where foreign companies produce items which are subsequently branded under Western logos,

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<sup>21</sup> As Peteraf explains, if there is a risk that proprietary information can be revealed, a form of cost to the firm, than it might be preferable for the firm to develop that good internally (1993: 187). An effective legal framework thus reduces this chance.

<sup>22</sup> Singapore being a notable exception (Amsden et al., 2001: 1), though it is contentious to include this city-state as a developing country. Grossman and Helpman proclaim that countries who conduct 'state-of-the-art' research & development are defined as being part of the 'North' (1991: 559). Thus in their view Singapore can no longer be deemed a 'developing country'.

appeared during the 1970's (Gereffi, 1999: 46) and is frequently dubbed 'original equipment manufacturing' (Feenstra, 1998: 34).

Pushing Stigler's notion of the firm further still, Henderson et al. (2002: 7) proclaim heuristically that MNEs, using a cost-based analysis of efficiency similar to transaction costs economics, are not the most effective form of industrial organisation. Rather, the 'global production network' (2002: 5), a concept – not unlike Daniel Bell's 1973 notion of the post-industrial society (Bell, 1999: 122) – which contextualises global commodity chains and global value chains, is seen as the most cost-effective way to coordinate production and reduce market failures, notably information asymmetry, in today's technologically advanced and integrated world. That is to say, to profit fully from differences in costs, the chain of command which directs production should no longer be a vertical line which stems from the headquarters to subsidiaries/contractors, but should instead rely on a 'web of independent yet interconnected enterprises' (Gereffi, 2001: 32).

### *3.1.3 Supplanting the market through governance*

Understanding global production networks (henceforth GPN) from the perspective of transaction cost economics—which views the firm as a production function, a clear legacy of its intellectual origin in neo-classical economics—the optimal efficiency of the firm is achieved through a continuous adjustment of production to prices and output (Williamson, 2000: 600). Though this might be adequate in some simpler sectors, Williamson deems that this understanding of the firm is however not sufficient, hinting at the complexity of today's MNEs (2000: 602). The root of the problem, according to New Institutional Economics (henceforth NIE), is that Coase's misconceived view of the firm is still too omnipresent<sup>23</sup>, and though Stigler 'upped the ante' by opening the black box that the firm was previously viewed as, it nonetheless still cannot fully explain how the firm has come to develop this global network of production and how it operates within it.

The problem resides in the fact that, though an effective international legal structure did arise and this has certainly helped reduce transactions costs, it relies on a strong assumption that both the definition and the enforcement of property rights are costless, which has been shown to be a fallacy (Williamson, 2000: 599). This has important implications for developing countries, as the transmission and protection of firm proprietary knowledge becomes much more dependent on safeguarding intellectual property rights: a costly affair for developing countries. Indeed, not only are there legal costs – enforcing a firm's intellectual property right can involve lengthy and costly legal battles – but there are also qualitative

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<sup>23</sup> Paradoxically, the field of NIE itself rose from Coase's 'Nature of the Firm' and its foresighted and implied references to transaction cost economics, itself 'part of the New Institutional Economics research tradition' (Williamson, 1987: 16)

costs, or information asymmetries that can arise during transactions between MNEs and their subcontractors (Kranton et al. 2001: 485)<sup>24</sup>.

To reduce these inherent costs of producing within this global network, a system of governance has risen to alleviate these costs to a minimum. This structure of organisation requires the use of 'hierarchy to effect coordination and decide disputes', (Williamson, 2000: 602) as the firm becomes entangled in a web of increasingly complex governance. However, as Palermo warns, this is not because 'neoclassical competition does not exist in reality, as radical mainstream economists suggest, but rather because capitalism altogether is a "system of power"' (2007: 539). Forgoing any notion of differentiated power within the market system hence, is an ahistorical contraption.

In the GPN therefore, MNEs reduce contractual hazards with the sheer weight of their purchasing power, effectively resolving disputes by fiat by bringing these transaction out from the market and into their hierarchical system. That is to say, in today's environment, the 'market' is supplanted by a system of governance that creates its own incentives and comes to, not distort, but rather integrate transactions and its associated costs into what is believed to be the optimal approach for firms to allocate or source their productive resources.

In short, globalisation has affected the organisational structure within and between firms and the disintegration of production which has risen from this has boosted trade amongst firms and nations: inputs need to cross borders several times with vertical specialisation (Feenstra, 1998: 34). The contradiction however is that the rise in trade of vertically specialised goods – a result of a more favourable trading climate created in part by advances in communications and reduced tariffs – has prompted the creation of a structure of governance whose rules have grown commensurate with the rise in trade. Consequently, though globalisation has helped to shift the organisational structure of the firm from horizontal to vertical specialisation, the network, or bundle of contracts in layman's terms, created to supplant the purported efficiency of the market has also evolved to accommodate this shift in contractual arrangements.

This revamped view of the firm is necessary not only to contextualise the primary driver of vertical specialisation, the firm, but to serve a cautionary tale: dismissing the internal dynamics of the firm, out of analytical simplicity, entails losing out on important aspects of its behaviour and imperils our analysis. As it has become evident, the assumption that firms operate in a system of pure market-based efficiency is not concomitant with reality. It is apparent that theorising on vertical specialisation, the subject of the following section, will

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<sup>24</sup> Health, safety and undisclosed quality can be classified as being some of these costs.

need to incorporate a plurality of views to compensate from trade theories' misleading simplicity.

### 3.2 Nature and Growth of Vertical Specialisation

Macher and Mowery propose what is perhaps the clearest and most succinct definition of the phenomenon: 'Vertical specialization is the restructuring of industry-wide value chains, such that different stages of the development, production and marketing processes are controlled by different firms, rather than being vertically integrated within the boundaries of individual firms' (2004: 318). This ability to separate production stages – the phenomenon has also been coined intra-product specialisation – is thought to allow a finer division of comparative advantage (Hummels et al., 1999: 25), as the economies of scale possible through specialisation enable countries to produce only a 'subset' of the products required within each sector of industry (Krugman, 1981: 960).

Though their description is compelling, they, and many others in the field, present a misconceived understanding of its dynamics, affirming that vertical specialisation relies on market-based coordination amongst agents (Macher and Mowery, 2004: 319), which, as we have shown in the preceding chapter, is not congruent with reality: a hierarchical governance structure having risen to subdue contractual hazards.

To grasp the concept of vertical specialisation, it is necessary to understand industrial production, as was described in the previous section, as a multi-stage process. Some stages are achieved within the firm, vertical integration<sup>25</sup>, while others can be sourced from a network populated by other firms and industries. At first glance, this appears to be a simple progression from the trend in the growth of intermediate goods, but as Kei-Mu Yi explains, the 'concept is related to, but separate from, intermediate goods' (2005: 56). The difference between the two concepts is that while on the input side the two concepts are similar, on the output side however, vertical specialisation differs from intermediate goods in that it can produce either partially-finished (intermediate goods) or final goods (Yi, 2005: 56).

Globalisation, properly understood as the functional integration of customs and standards, has been instrumental in creating this structure. Technological advances and reductions in communication and transport costs have, naturally, far from impeded the phenomenon's advancement. Grossman and Rossi-Hansberg explain that in Adam Smith's time, specialisation required proximity as coordination didn't yet benefit from advanced communication systems (2006: 2), prompting firms to keep the activities that generated economies of scale in the vicinity of the firm.

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<sup>25</sup> A scenario of horizontal specialisation would imply that countries trade goods that are produced entirely in just one country (Hummels et al., 1998: 80).

In such a setting therefore, the industrial factory was the pinnacle of organisational efficiency, but today's environment signals 'the end of the need to perform most manufacturing stages near each other' (Baldwin, 2006: 7). The 'integration of trade', as Robert C. Feenstra puts it, results in the 'disintegration of production' (1998: 31). This enables the further spatial separation of various production stages (Hummels et al., 1998: 79), thereby allowing firms to practice labour arbitrage as the North-South wage gap becomes both more evident and easier to harness<sup>26</sup>, heralding the move from horizontal to vertical specialisation. As Kohler, pleading for another paradigm argues, 'in contrast to traditional trade theory, a certain value-added process then no longer takes place under a uniform set of factor prices, but draws on different factor markets for different fragments' (2004: 793).

This fragmenting of production processes, the 'slicing of the value-chain' as Paul Krugman sees it (quoted from Feenstra, 1998: 32), creates a leaner degree of advantage as a finer degree of specialisation – that is to say a larger amount of production stages – is now possible. Global competition hence, now occurs on a task-by-task rather than firm-by-firm or sector-by-sector basis (Baldwin, 2006: 8). As Jones and Kierzkowski argue, the '[i]nternational fragmentation of vertical processes into separate production blocks often results in these blocks being sufficiently simple that they find potential uses in other activities seemingly remote from the original final product' (2000: 18).

Though born out of the principle of economies of scale, vertical specialisation additionally creates the potential for what Storper has called 'economies of scope' (1985: 270), where the item produced, either final or intermediate, can be sold to multiple other firms and therefore expand the export possibilities. As Dani Rodrik claims, 'a country is better off producing goods that require assets that can be used in a wide range of goods other than those already in production' (2006: 13).

Vertical specialisation thus, has the potential to be beneficial to developing countries, as unlike intra-industry trade, which tends to favour exchanges amongst developed countries, developing countries stand to capture – through the finer level of specialisation that vertical specialisation entails – the supply of certain market segments by granting developing countries a comparative advantage in a sector where it had none before (Jones et al., 2005: 307; Deardorff, 1998: 8). Having situated both the firm and vertical specialisation in context, the next section will analyse the pertinent trade and firm related theories to help assess if reality conjures the alleged benefits for a small, economically open yet land-locked country.

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<sup>26</sup> There is now even talk of 'intellectual arbitrage' amongst the top-tier beneficiaries of the offshoring of production (The Economist, 2007b: 59).



## Chapter 4

### **4 THEORIZING HYPER-FRAGMENTATION'S IMPLICATIONS: A CRITICAL ASSESMENT**

As we have seen in the previous section, international corporations were vital players in the move towards international outsourcing and subcontracting, leading some to argue that a new paradigm is needed to understand this phenomena in which firms have evolved to trade 'tasks' instead of whole goods. Understanding, through an analysis of various trade and firm related theories, what this implies for Botswana's attempt to diversify its industrial sector will be the subject of this chapter. A word of warning however, concepts are transient in nature and as was described earlier, the proper inclusion of the firm as a unit of analysis within trade theories somewhat blurs the pure categorical definitions with which we are used to. However, an attempt has been made to maintain a methodological structure which respects the origin of these concepts and their present applicability as proposed in this paper.

#### **4.1 A Trade Theory Approach**

In the last few years, as rich-world governments have begun to fret about the effect of outsourcing on their wages and economic competitiveness, a large body of literature from experts pertaining from the field of trade theories have sprung up. Some of these theorists entertain strong scepticism towards conventional trade theories, arguing their futility given the shifting nature of trade and production patterns. Others meanwhile, such as Greg Mankiw, maintain that vertical specialisation 'fits comfortably within the intellectual framework of comparative advantage built on the insights of Adam Smith and David Ricardo' (The Economist, 2007a: 82). Nonetheless, their insight may help us decipher if vertical specialisation stands to be beneficial to Botswana's enterprise of diversifying its industrial sector

##### **4.1.1 *Classical Trade Theories***

There is disagreement amongst scholars on the actual merits of creating a new paradigm to explain trade given the prominence of vertical specialisation. Many argue that Heckscher-Ohlin theory and Ricardian comparative advantage are amply adequate to explain contemporary patterns of trade, no matter how fragmented these have become. In other words, though the unit of analysis may have been refined – from goods to tasks – the forces which govern trade in their view, the drive to profit from abundant factors somewhere else, remains intact.

Adopting a Heckscher-Ohlin stance, Jones et al., argue that production, even if it has become increasingly fragmented to the level of tasks, still follows the basic tenets of endowments allocation. In their view, the more labour intensive fragments will still be 'located in the more labour-abundant region, and the more capital-intensive fragment in another region' (2005: 311). Also using a very Ricardian approach to attempt to define who stands to gain from vertical specialisation, they insist that the finer degree of specialisation possible with this phenomenon will serve to 'reward those countries that are particularly good at producing some fragment, but whose superiority is not of such a calibre in others' (Jones and Kierzkowski, 2000: 6). This line of thinking follows the precepts of factor price equalisation theorem, which states that factor prices tend to equalise across countries that do not differ in levels of technology (or can at least have the technology available).

Therein lays classical trade theory's biggest flaw in regards to vertical specialisation and developing countries: its assumptions that all markets, including technology markets – required for industrial upgrading – are efficient, thus dismissing reality in favour of methodological simplicity. This stems directly from neo-classical economics dismissal of technology in their growth models, as it does not sit well with its assumption of constant returns to scale. Though Heckscher-Ohlin Samuelson theorem is suitable to explain patterns of trade in which only simple labour-intensive technologies are involved between two actors, it seems however inapt to explain patterns of vertical specialisation whose basic tenet rests precisely on the economies of scale made possible through specialisation and technology-intensive structures.

This unwillingness to address economies of scale opens up an inherent contradiction when applying the theorem to vertical specialisation. Because their theorem forbids increasing returns to scale, there is in their view no rationale for industries to agglomerate and hence no provision as to why industries should not spread production to take advantage of more abundant factors elsewhere. While this does acknowledge firm's motive for sourcing in countries with more abundant factors of production, mainly labour, this line of reasoning however, proves incompatible with a phenomenon that sprung up precisely because of the economies of scale generated through specialisation (Jones et al., 2005: 311). The contradiction highlights a serious analytical void that hinders our understanding of actual trade flows brought about by vertical specialisation.

While not offering a new paradigm, Sanjaya Lall offers a very illuminating take on Ricardian comparative advantage by suggesting that classical trade's notion of advantage is too static to mean anything<sup>27</sup>. Lall develops the 'capability approach' (2000: 339) to suggest that comparative advantage is more dependent 'on the national ability to master and use

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<sup>27</sup> Because of its assumption of constant returns to scale.



technologies than on factor endowments in the usual sense' (Ibid). His approach is an attempt to reconcile traditional trade theories with the changing nature of the firm, which has come to rely much more on intermediate goods and thereby tend to depend much less on natural endowments in their value-creation process.

The goal, explain David and Ellis, is to shift a nation's resource endowment 'towards technological knowledge and its comparative advantage towards technology-intensive products' (2000: 1201). Lall's take represents a truer reflection of comparative advantage that can account for national policies towards augmenting technological capabilities, hence offering a certain degree of refinement over a simple assessment of 'fundamentals' based on fixed endowments of labour, capital and skills.

Borrowing from Lall's ideas, Michael Porter, a business academic, explains that classical trade theory's stance on comparative advantage is outdated. For him, comparative advantage cannot be the result of an abundance of basic factors, but is rather the result of 'up-grading' a nation's industries through innovation, product differentiation, branding and marketing (1998: 165): this is his notion of the 'competitive advantage of nations' (Ibid). This line of thinking partially succeeds in filling one of the implicit assumptions of old-trade theories by stating that government intervention can positively reinforce a country's comparative advantage through technological learning: something akin to heresy amongst classical trade theorist.

Classic trade theories thus offer no hints to enable a developing country such as Botswana to predict if it can stand to benefit from vertical specialisation: the theorem's applicability has been disputed by its inability to even 'explain the basis of trade in intermediate goods' (Batra and Casas, 1973: 297). While it does signal that vertical specialisation will operate using the same logic of classical trade patterns – firms moving to take advantage of factor abundance somewhere else – its insistence on constant returns to scale fails to properly assess the dynamics at play behind vertical specialisation, making it an odd theorem to attempt to forecast contemporary trade patterns. As Porter deplures, '[t]he long-dominant paradigm for why nations succeed internationally in particular industries is showing signs of strain... these theories have grown inadequate to the task' (1998: 2)<sup>28</sup>.

#### **4.1.2 New Trade Theories**

Stemming from the positive advances of economic geography in the 1970's which sought 'to explain the emergence of the large corporation, its technologies of production, the organization of its production systems, and their spatial linkages' (Storper, 1985: 261), New

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<sup>28</sup> Porter was clearly interested in the competitiveness of nations, but this required a more thorough look at the way firms actually operate.

Trade Theories (henceforth NTT) have done much to improve the orthodox rigidities present in the field. These acknowledgments, especially in regards to economies of scale and imperfect markets – monopoly, dumping (Krugman, 1990: 11) – enable NTT to potentially offer a more realistic interpretation of the dynamics behind global trade. We include in our overview of trade theories New Economic Geography within NTT since they share these same precepts. Given Botswana's land-locked location, it is primordial to understand the implications this may have on its ability to diversify its manufacturing sector.

NTT's edge over classical trade theories, at least in regards to vertical specialisation, is New Economic Geography's insight on disagglomeration forces which upgrades neoclassical's assumption of perfect competition. Paul Krugman, basing himself on declining trade costs in a core-periphery framework, argues that declining trade costs are advantageous for the periphery<sup>29</sup> as the latter's advantage in terms of lower wages offsets agglomeration's advantages, namely: closer proximity to input and output markets (1999: 145).

Forslid and Wooton reinforce Krugman's position by claiming that as trade barriers fall, industrial location will become more and more dependent on comparative advantage (2003: 601). In their view, developing countries may thus 'be able to take advantage of the more liberal trade regime with a reinvigorated manufacturing sector' (Ibid). Having reviewed actual trade flows, Jones et al., comment that disagglomeration does seem to be more prevalent than agglomeration (2005: 316): the result of firms taking advantage of reduced trade costs in order to avail themselves of minute differences in factor prices.

Yet NTT's position on disagglomeration finds itself hampered by its weak definition of what constitutes low trade costs (understood here to include transaction costs) and at which point these become low enough for developing countries to benefit. Krugman's analysis simply alludes to a certain threshold after which trade costs would become low enough to propel disagglomeration. This makes it difficult to dispel the notion, embedded in new economic geography, that proximity is beneficial for productivity (Venables, 2006: 19).

As of only a few years ago, the process of firms vertically disintegrating was known to be associated with agglomeration, as firms tended to cluster together to reduce complex transactions costs by cooperating in a spatially tight production network (Storper, 1992: 83) while disintegrating part of their production to profit from cheaper input prices resulting from the scale economies of specialised firms. Hence the advances in contractual arrangements, brought upon as we've seen by a benign global trading environment, have permitted to reduce transactions costs enough to prove Krugman's notion of disagglomeration true.

However, NTT's notion of core and periphery is limiting as it does not offer a sectoral approach to disagglomeration. Though disagglomeration is certainly happening as a plethora

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<sup>29</sup> In a condition of high trade costs however, economies of scale encourage agglomeration (Krugman, 1991: 483).

of Western and emerging country firms and MNE are sourcing or having some of their goods produced abroad in countries with cheaper factor endowments, this presents an unfairly simple representation of trade that utterly dismisses the agglomeration effect present in the clustered manufacturing sectors of developing countries.

Indeed, it seems apparent that within developing countries the principle of agglomeration is still valid, which offers little to explain if a lone firm or certain firms can be situated outside an agglomerated industrial sector within vertical specialisation. That is to say, NTT proposes disagglomeration, but paradoxically, that production is itself transferred to agglomerated sectors in countries with cheaper factor endowments. Thus the picture of trade presented by NTT is incomplete in the sense that the outsourced production is being undertaken in agglomerated sectors. It would be insufficient to explain the presence of such agglomerated sectors in developing countries on an assumption that developing countries do not witness disagglomeration due to high-transaction costs and weak contractual arrangements, which is what NTT implicitly posits.

Though a step forward in terms of refinement due to its acquiescence of anomalies within the global trading system, it nonetheless serves us nothing palatable to assess what and who stands to benefit from vertical specialisation since the phenomenon 'cannot be explained by conventional notions of comparative advantage, nor entirely by the new trade theory based on economies of scale' (Storper, 1992: 60). While NTT provides an appropriate depiction of trade patterns brought about by vertical specialisation as illustrated in the case of MNE moving production to the periphery, it fails to provide a more micro-level look at the inherent manufacturing structure and capacity in developing countries. This paradigm thus implies that vertical specialisation only stands to benefit those developing countries which already have an agglomerated industrial sector.

#### ***4.1.3 New Paradigm Globalisation***

The need for a new paradigm argues Richard Baldwin, amongst the biggest protagonist of the offshoring phenomenon, is required given the 'much finer level of disaggregation' occurring within contemporary trade (Baldwin 2006: 5). As he and others, notably Gene Grossman and Esteban Rossi-Hansberg (2006: 2), argue, the old conceptualisation of trade is insufficient to deal with modern global production process in which tasks instead of goods are being traded and whose focus is directed on the falling costs of goods, not ideas (Baldwin, 2006: 17).

In their view, the insights of David Ricardo and Adam Smith can only account for half of today's trade equation. The first 'unbundling' as they call it, resulted from having the capacity to produce goods far from their point of consumption. What their new paradigm

suggests however, the second 'unbundling', is that globalisation will bring about a much higher level of fragmentation that will ultimately 'play itself out at the level of tasks within firms' (Baldwin, 2006: 28).

What is implied here is that New Paradigm Globalisation acquiesces the shift in production that globalisation helped bring about: the creation of profit not based solely on natural endowments. As Michael Storper argues, 'the world of production has changed fundamentally since the time of Ricardo. We now live in a world where factors of production for technologically stable products are not endowed, but produced as intermediate inputs' (1992: 63). This highlights the need to go beyond classical theories to study the implications of vertical specialisation since we are dealing with endowments supplied by a network, not nature's abundance: hence the need for a paradigm that integrates the firm and the dynamics of the environment it is situated in.

By demystifying what was initially 'packaged in a black-box production function' (Baldwin, 2006: 32), this paradigm seeks to explain that competitive pressures, that is to say comparative advantage, will take place at a much finer level, signifying that these pressures will challenge all production processes, not just certain sectors of the economy. However, though Baldwin as well as Grossman and Rossi-Hansberg do not state so explicitly, the implied fault of this paradigm rests on the fact that it is still very state-centred and thus cannot account for having firms instead of nations being the drivers of trade, even if their paradigm acquiesces the role of firms, its inclusion is relegated to a passive role.

Indeed, while 'new paradigm' recognises the firm as an active agent that can shape trade patterns, it does not in anyway provide us with the analytical tools needed to predict which tasks will be offshored and if they will be of low or high-value added in nature. Additionally, the new paradigm fails to properly define in which ways it differs from standard trade theories beyond its reproach to the latter that its object of analysis, goods instead of tasks, is erroneous. As it stands, this new paradigm does not disclose if it assumes perfect factor mobility or not, a rather important criteria given the proclaimed dissagglomeration of production it is supposed to induce.

For all its merits, the new paradigm proves incapable of adding any refinement from orthodox theories' prediction of trade patterns within the context of vertical specialisation. Though the proponents of the paradigm proclaim the need to include the firm within its scope of analysis, it makes but fleeting remarks without any subsequent recommendations as to how a micro-level analysis of the firm could alter the reasoning of its paradigm, which basically limits itself to stating that tasks instead of goods are traded and that endowments are no longer endogenous but accessed through a market. Though the paradigm is still nascent, the most recent literature makes an unconvincing case on the need for a new paradigm to study trade

patterns, as theirs is basically an adaptation of the core precepts present in classical trade theories.

## **4.2 Theories Pertaining to the Firm**

As we have observed, trade theories offers us some insights that are applicable to understand the effects of vertical specialisation, but by forgoing a more micro-level look of the firm, the simplicity of their models ill serves to explain the real dynamics at play, leaving developing countries such as Botswana with a distorted understanding of global trade and production pattern. Highlighting the weaknesses of trade theories, Porter notes that ‘...since firms play a central role in the process of creating competitive advantage, the behaviour of firms must become integral to a theory of national advantage’ (1998: 21). In this section, a number of firm related concepts and theories will be analysed to attempt to elucidate the role and objectives of firms within hyper-fragmentation. Through this, a clearer depiction of the behaviour of firms operating within the global production network (GPN) will be illustrated.

### **4.2.1 Product Cycles**

‘Product cycles’ exemplifies the idea of a concept whose applicability intertwines both trade and firm theories given the lack of dichotomy in the relationship between global trading patterns and the rate of transfer of technology from the North to the South. The pertinence of exploring product cycles is hence vital to our understanding of vertical specialisation and industrial upgrading. As was explained in section 3.1, the tendency amongst MNE is to outsource some of their production and to concentrate on areas where they possess proprietary advantage, notably in matters related to technology. Thus the concept of product cycles can provide hints to understand the rate of transfer of technology and the geographical dispersion of manufacturing as firms outsource certain segments of production.

Helleiner and Storper propose separately that firms will relegate some of their production to specialised firms when the production processes have become standardised and the skills required lessened (1973: 43; 1985: 269). Though MNE play an important role in dispersion of technology (Arndt, 2000: 122), it tends to be rather old and redundant, as firms do not want to have their proprietary advantages stolen (Porter, 1998: 548). Recalling Leontief’s challenge to Hecksher-Ohlin theory in the form of the “contrary factor intensities paradox”, Vernon esteemed that the product cycle entails the location of capital intensive industries to low-wage regions (Vernon, in Storper, 1985: 271). In this perspective, the industrial comparative advantage of developing countries lays in its lower factor prices (Storper, 1985: 269; Dollar, 1986: 178).

Expanding on Adam Smith's specialisation theorem, George Stigler proposed that vertical disintegration arises in growing industrial sectors, while the opposite (vertical integration) happens in declining industries (1951: 189). Macher and Mowery argue – somewhat contextualising Stigler's analysis in a network of production characterised by vertical specialisation – that geographical dispersion of production will only arise once sufficient demand for a given sector of industry offers the potential for smaller firms to appear and take advantage of economies of scale (2004: 320). Once the given sector has matured and shrunk back in size, then firms will re-integrate certain segments of production – geographical concentration – as the demand would not allow specialised firms to survive and thus firms would be more efficient at producing these themselves given the transaction costs entailed with the outsourcing of production.

Seemingly influenced by Schumpeter's notion of creative destruction (Muller, 2002: 312), Storper defines this process as a 'dynamic flux' (1985: 269) in which a cycle of investment in some sectors and disinvestment in others occur. The ramifications for this on developing countries is that efforts to play technological catch-up can only accomplish temporary benefits, as flows of knowledge and technology are inherently transitory: 'it has become more continuous, with much briefer temporal advantages' (Storper, 1992: 67). In fact argues Cantwell, the dynamic of the product cycle has changed in the last 20 years (1995: 155). MNE, the 'technology leaders', have through commercial subcontracting<sup>30</sup>, created an organisational structure that allows them to repatriate the rents that occur from operating technological advances subsidiaries in low-wage countries.

Storper argues that the 'dynamic flux' that illustrates technological investment and change and which drives the product cycle can still nonetheless allow developing country firms to benefit: 'specialized producers can shift along a path of technological evolution... by minimizing asset specificity' (1992: 67). Yet, Storper's position is not concomitant with the reality of the GPN which, as we've shown, does not operate on the basis of pure competitive markets and perfect mobility of factors.

Peteraf, using a more resourced-based view of the firm, argues that leading firms will not willingly delegate their technology, as this would severely undermine the very advantage that the firm enjoys over others (1993: 182). Though such transmission of technology is possible however, it would be characterised by activities with low-barriers to entry, such as those found in export-processing zones (Gereffi, 2001: 32) which typically involve low-valued added activities and maintains countries in a low-level equilibrium trap. In any event, the hierarchical nature of the GPN have imposed contractual obligations to developing country

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<sup>30</sup> Please see section 3.1 for a discussion of the concept.

partner firms, severely hampering Storper's take on technological evolution, as firms are in an effective technological 'lock-in' (1992: 62) with their superiors.

The insight gained from the product cycle paradigm suggests that, for developing countries, vertical specialisation does not provide the means to allow technological upgrading or capital accumulation. The dynamism of the product cycle allows but only limited temporal advantage on what are anyways already outdated technologies – as Peteraf's resourced-based view claims– and hence, of low value-added provided of course that their contractual obligations do not restrict them to certain technologies. In the instance where high-technology does flow to the periphery, the organisational structure surrounding this type of contracting imposes the prompt repatriation of profits to the core.

#### **4.2.2 Buyer-Seller Relations**

In section 3.1 we have observed that the GPN, a type of governance structure organically created amongst firms to reduce transaction costs, is an institutionalised type of buyer-seller relation involving a plurality of actors each situated within a certain part of the system's hierarchical configuration. Relevant to the position of a developing country within a trading environment typified by vertical specialisation, understanding the dynamics of buyer-seller relations can highlight discrepancies in the assumptions of the alleged benefits of vertical specialisation for their industrial sector, namely: economies of scale and economies of scope.

In contrast to the neo-classical assumption of perfect markets, in which buyers and sellers would be anonymous and simply use the market as a place of exchange whose transactions would be strictly based on cost, the GPN rather operates on the basis of 'links' whose purpose is to diminish the possibility of information asymmetry (Kranton and Minehart, 2001: 485). As Kranton and Minehar argue, '[t]he way in which buyers and sellers are linked, however, plays a critical role in realizing these economies of sharing' (2001: 499).

The importance of good buyer-seller relation is vital in a framework of vertical specialisation, as firms need to produce a certain number of goods in order to realise economies of scale (Walter et al., 2001: 367). Given the reliance of MNE towards specialised manufacturers however, these buyers have an interest in acting cooperatively within the GPN; that is to say, buyers will tend to share many sellers, so as to stimulate a seller's ability to produce on a large scale. This conjugates well with sellers' need to avail themselves of economies of scale through economies of scope, while at the same time insulating them from demand uncertainties that arise when dealing with a single buyer (Kranton and Minehart, 2001: 486).

However, as we have previously observed, vertical specialisation depends on the protection of firm proprietary advantages and without such protection MNE would have less incentive to outsource some of their production to subsidiaries in developing countries. Thus the scenario depicted where buyers share multiple sellers does not apply if the firm is part of the governance structure of the same MNE. That is to say, in a scenario where the sourcing of inputs is done through subsidiaries, these firms are bound and may not thereafter freely try to find new buyers. While the proponents of vertical specialisation praise this mode of production and its capacity to help developing country firms through economies of scope, it views buyer-seller relations through a prism of pure competitive markets and forgoes the reality that MNE will tend to enter in a relationship that effectively 'locks-in' their supplier, thus disproving the myth that firms will share buyers thanks to vertical specialisation.

For developing countries however, the creation of healthy buyer-seller relations for its nascent industries in a context of vertical specialisation must pass through the establishment of a sound reputation since '[i]t is common for buyers from developed countries to assume a product quality hierarchy proportional to the economic level of the country' (Egan and Mody, 1992: 327). This applies not only to highly-engineered and high-value added goods, as even in the lowest value-added segment of a product segment, firms must meet strict quality and time guidelines if they wish to distribute their wares in the GPN (Egan and Mody, 1992: 321).

This is critical for developing country firms who wish to integrate the GPN, as this is their only avenue in which they can cooperate with buyers in order to access export markets and the product specifications demanded by these markets. As well, buyers – what Gereffi also calls 'lead firms' (1999: 38) – are instrumental sources of 'material inputs, technology transfer, and knowledge in these organizational networks' (Ibid). '[V]alue creation' (Walter et al., 2001: 366) and 'gains sharing arrangement' (The Economist, 2007b: 59) are terms which describe this process in which innovations are developed jointly by the supplier and the buyer, resulting in either quality or capacity upgrading for the former.

The literature on buyer-seller relationships is primarily focused on how independent firms link-up with the GPN and thus offers little to support the purported benefits of vertical specialisation for developing countries and how it could help a nascent industrial sector develop. Its applicability seems limited to economies with an already pre-established manufacturing sector, and indeed the bulk of the literature is targeted at that sector. For our purposes, it is the concept's too benign assumption of graduation and transition amongst buyers and suppliers that limits its applicability in the context of developing countries with sub-mature manufacturing sectors.



### 4.2.3 *Global Value Chain Governance*

The basic tenet of the Global Value-Chain governance approach rests on the realisation that producers do not sell their wares in open markets void of any power-struggles, as was explored in section 3.1. Though Global Value Chains (henceforth GVC) and GPN are separate concepts, the differences lies in their scope, not substance. Though literature on GVC is itself wishy-washy on its own proper definition, for our purposes, suffice to say that the GVC is in itself a *segment* of the GPN (Sturgeon, 2000: 6). That is to say, a GVC is responsible for the transactions within a certain sector, while the GPN reflects the myriad of different links between different actors and sectors<sup>31</sup>. While true that the GVC governance approach was designed to strictly study value chains of a specific sector, the paradigm nonetheless adequately fits to explain the hierarchical governance structure existent within the GPN since, as opposed to a New Institutional Economics framework, it can better account for the hierarchical nature of such a network, nicely complementing NIE's insights.

A GVC governance analysis explores the realm of 'power', understood as the strategic behaviour of agents, within trade and production network (Raikes et al., 2000: 7). Or in the words of Gereffi, governance relates to 'the key actors in the chains that determine the inter-firm division of labour, and shape the capacities of participants to upgrade their activities' (2001: 30). Providing the most succinct interpretation of the framework he adds that '[t]his organisational perspective is quite distinct from the neo-classical economics emphasis on pure markets as the key determinant of economic progress, and also the political science emphasis on the role of the state in shaping national competitive advantage' (Gereffi, 2001: 32).

The scenario that has emerged within the GPN is one of a small number of global buyers, which stands to seriously impede the chance for developing countries 'to have effective local governance' (Schmitz, 1999: 2) and thus makes their attempts at industrial upgrading highly dependent upon these buyers. As Schmitz and Knorringa lament, 'an increasing number of developing countries engage in contract manufacturing for a decreasing number of global buyers' (2000: 177) and since foreign manufactures typically outsource their production to countries whose domestic technological capabilities are limited (Keesing and Lall, in Gereffi et al., 2005: 85), the manufacturing options they will received involves low-barriers to entry in production.

In this buyer-driven scenario signal Raikes, Jensen and Ponte, 'producers are subordinated to the key agents controlling design and marketing, specifically the control of international brand-names and retailing, where the barriers to entry are high and profits concentrated' (2000: 6). But participation in this hyper-fragmented global value chain, even

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<sup>31</sup> Henderson et al., cite that the GPN supersedes the GVC since the later is bounded to inter-firm network analysis while forgoing the very influential role of corporate power (2002: 6).

at its lowest point of entry, is, as argues Gereffi, 'a necessary step for industrial upgrading because it puts firms and economies on potentially dynamic learning curves' (1999: 38). However the governance structure of global value chains can immensely affect upgrading possibilities, both in their scope and their speed.

In a study of the governance structure found within global value chains, Humphrey and Schmitz have catalogued four types of relationships, each defined according to the level of power exerted by the buyer or the seller (2002: 1023). Because of the high level of complementary competences required to produce and manage even basic goods aimed for exports to the West – there is a typically a gap in the capabilities of required to produce for the domestic market and the export market (Gereffi et al., 2005: 85) – developing country producers tend to be situated within a 'quasi-hierarchy' relationship (Humphrey and Schmitz, 2002: 1023)<sup>32</sup>.

Though in their view, this type of relationship allows the most favourable path towards fast process and product upgrading<sup>33</sup>, it does hinder functional upgrading since it effectively ties them to the buyer – Storper's infamous 'lock-in' (1992: 62) – and keeps them at the mercy of a small number of relatively powerful customers (Humphrey and Schmitz, 2002: 1023), something Porter overlooks when talking about the merits of the 'globalization of markets for inputs' (1998: 552). It may also limit their upgrading and diversification potential since they are bound to what their customers want. Moving away from this weak position in the hierarchical structure of governance however – towards one that allows greater independence to upgrade – involves the acquisition of new competencies, as the knowledge acquired through existing linkages will no longer suffice (Ibid: 1025).

The GVC governance literature aptly contextualises the power existent within the global production network and by doing so firmly downgrades the prospects that vertical specialisation is deemed to have on developing countries' industrial upgrading by explaining the governance structure at play with the GPN. This leads some to argue that this approach should fall under trade theories since its 'focus is on trade as an integrated system while in economic trade theory the focus is on trade as an isolated phenomenon caused by a few economic indicators' (Raikes et al., 2000: 4)

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<sup>32</sup> The definition of 'quasi-hierarchy', as explained by Humphrey and Schmitz: one firm exercises a high-degree of control over other firms in the chain, frequently specifying the characteristics of the product to be produced – this level of control can arise not only from the lead firm's role in defining the product, but also from the buyer's perceived risk of losses from the suppliers performance failures – ie, doubts about the competence of supply chain (2002: 1023).

<sup>33</sup> The case of Taiwan is given as a country that once was within such a governance structure (2002: 1025).

### 4.3 Merging trade and firms theories: dialectic harmony or mutual exclusiveness?

To provide a taxonomically sound presentation this chapter separated what has typically been presented in the literature as distinct paradigms. This section intends to demonstrate that a rapprochement of both strands offers complementarities that present a more cohesive depiction of international trade and production networks.

As this chapter tried to demonstrate, the apparent failure of trade theories stems from the fact that its analysis is much too obtuse, stemming partly from its insistence of using the State as its main analytical focus while dismissing the validity of the proper inclusion of the firm within its framework. As Arrow exudes, '[a]ny standard economic theory, not just neo-classical, starts from the existence of firms... But firms are palpably not points. They have [an] internal structure. This internal structure must arise for some reason' (quoted in Williamson, 2000: 602).

Integrating the perspective of the firm within trade theories thus broadens the analysis and answers two inherent failures present amongst trade theories: it properly re-integrates the firm and its complex dynamics within trade theories and, in doing so, introduces the notion of hierarchical power within the global production network. Just as orthodox trade theories did not include the mercantilist trait of nations, which barred the perfect mobility of factors of production, New Paradigm Globalisation – despite its subtle pleas for the need to integrate the behaviour of firms – cannot explain the presence of MNE and the ramifications this has on factor mobility.

At its root, what severely imperils theories of trade is their persistent construction of global trade as operating within a competitive market typified as being efficient and void of any power relations. While true that New Trade Theories attempts to contextualise imperfect mobility within markets, it remains unconvincing as it also dismisses the firm; hence only offering a simple acknowledgment versus proposing an effectual framework to integrate its dynamics. This failure of trade theories to acknowledge this new global trading structure, which follows the dictates of a network rather than the market, has prompted some analysts to ask if theorists have been barking at the wrong tree. '[I]t is quite pertinent to ask whether another theoretical framework may not be better suited to explain the emergence of international production networks' (Jones and Kierzkowski, 2000: 7).

It is especially in this light that New Paradigm Globalisation, as proposed by some theorists, remains deceptive. While it acquiesces the obvious shift in the way firms create value – manufacturing depends no longer on factor endowments but rather on intermediate goods – it still assumes an environment of competitive markets and thus entices the advocates of New Paradigm Globalisation to state that developing countries stand to benefit from vertical specialisation as it 'better reflects comparative advantage' (Baldwin, 2006: 15; Jones

et al., 2005: 306), neglecting the power dynamics at play within the GPN. As such, its suggestion that a new paradigm is required given that tasks instead of goods are being traded is woefully inadequate as it exonerates the power intricacies of the production network and its far bearing implications on global trading patterns.

Though Lall's capability approach does not touch upon the issue of hierarchy within the GPN, he nonetheless updates comparative advantage from its focus on endogenous endowments to a framework which includes the prominence of intermediate goods and how nations must effectively upgrade their capability to avail themselves of higher value-added manufacturing; thereby changing the onus of comparative advantage away from set endowments to the capability of countries to turn around intermediate goods into the highest value possible. While Lall's update on Ricardian comparative advantage contemporises the paradigm to reflect reality, its emphasis on the State – much like Porter's – dismisses the weight of the firm and its impact on industrial upgrading, especially crucial in a context of vertical specialisation.

Trade theories' assumption of the benefits of vertical specialisation for developing countries lies in its myopic understanding of the product cycle concept: it assumes unhindered mobility of technology towards the periphery. Not only does this go against factual evidence – unless the receiving firm is wholly-owned by the MNE, developing country firms will only receive already dated technology – but it also overlooks the fact that industrial upgrading through technology is very much dependent on the type of relationship the developing country firm enjoys with its buyer. Again, trade theories' postulation of competitive markets presupposes that firms can freely switch buyers and thus access technology, whilst this has not proven to be the case with developing country manufacturers.

The study of buyer-seller relationships reveals the importance of contractual obligations within the production network and how this affects the 'dynamic flux' of technological investment and thereby the rate of transfer to developing countries given their dependency towards buyers within the GPN. Though the concept is interesting, it too loses validity by overlooking the notion of power that governs the relationship between MNE and its subordinates, which, as we've seen in section 3.1, operates within a network characterised by hierarchical governance.

This dependency towards buyers, or 'lead firms' as Gereffi calls them (1999: 38), is most manifestly understood through the concept of GVC governance. This conceptualisation of trade, understood to operate within the governance structure of the global production network, introduces the notion of hierarchical power and the ramifications it entails for developing countries. For our interests, this concept's most enlightening addition to trade theories is its incorporation of power relations existent within the network and how this affects industrial upgrading since it accounts for the fact that developing country manufacturers do not operate

within an efficient market, but are effectively tied to the benevolence of lead firms. This contractual 'lock-in' comes to harshly downgrade the gospel of vertical specialisation and its purported benefits to developing country manufacturers.

By moving the basis of analysis from the State to the firm, GVC governance allows for the study of inherent power interests operating amongst MNE. As MNE are the obvious drivers of vertical specialisation, this conceptualisation of trade – via its inclusion within trade theories – can adequately dispel some of the blind beliefs that orthodox economics has managed to perpetrate. Rather than dismissing the conclusions of trade theories, a thorough understanding of the motives of firms – as most succinctly depicted in the GVC governance framework – can encompass the variables that shape contemporary trading patterns.

Though trade theories have evolved to accept the changing nature of manufacturing in such a highly integrated world, the myopic view of trade that its dismissal of the dynamics of the firm and its environment entails, severely restrains its analytical validity to aid predictions of the effect of vertical specialisation for developing countries. Predicting trade in this global trading structure need not require a dialectic combat between the validity of trade and firm theories, but it requires the ability to acquiesce the existence of the different dynamics at play within the system that a strictly trade theory or firm theory perspective cannot explain. Though Coase's view of the firm has become discredited over the years, in hindsight, he was right to include a human element, the innate skills of the entrepreneur, within his analysis. Perhaps trade theorist could apply his philosophy and thereby try to liberate themselves from the analytical and myopic explanations of their models.



## **5 VERTICAL SPECIALISATION AND BOTSWANA: IMPLICATIONS FOR ITS INDUSTRIAL AND MANUFACTURING SECTOR**

As we have seen, though theories of trade and the firms profess different things, indeed they were conceived to reflect on different issues especially given trade theories earlier dismissal of the firm proper, their dialectic relationship however construes more towards complementary than polar opposites. In chapter 2, Botswana was described as having an economically sound foundation with levels of political stability and efficiency that makes it one of Africa's most envied nation. However its efforts to diversify out of mining have not materialised. To analyse the impact that vertical specialisation can have on these efforts, this chapter will look at the institutions it has both created and joined, and its pertinent economic and political traits.

Given our understanding of the dynamics of vertical specialisation that our analysis of trade and firm theories has highlighted, this paper stands to be in a better position to attempt to forecast, on the basis of our cursory understanding of Botswana, if this phenomenon stands to be beneficial for the country's attempt at diversification. It should be re-emphasized here that the purpose is not to assess if Botswana's economic and political situation is conducive to industrialisation, but rather, to elucidate if it may hinder or assist its industrial diversification through vertical specialisation.

Botswana's position within the mining sector is enviable, as the world's biggest source for diamonds, it is effectively the commodity's price-maker, yet in terms of manufacturing however, Botswana must be seen as just another player trying to position itself as a star performer amongst a myriad of other developing nations each of which vying for foreign investment in their respective industrial and manufacturing sectors. While true, understanding vertical specialisation's impacts stand to be easier to discern if Botswana was also contextualised as a member of a larger whole: the Southern African Customs Union<sup>34</sup>.

As was previously seen, MNE have been active proponents of free trade zones and customs unions as these political arrangements permit the better rationalisation of their activities by reducing the qualitative and quantitative hurdles to trade. This is beneficial for Botswana's comparative advantage as it reduces the cost associated to trade, especially given its land-locked location as it grants the country duty-free and quota free access to South Africa and Namibia's ports. From the perspective of transactions costs, firms view this favourably as it makes outsourcing to the country less expensive, which as been shown to be a

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<sup>34</sup> Given that a common external tariff applies to all its members, SACU de facto defines Botswana's position vis-à-vis other trading partners outside the customs union.

strong incentive for MNE to disintegrate their production processes and thus makes Botswana an attractive location to outsource.

The free trade that SACU permits to its members is also attractive since with vertical specialisation, goods need to cross borders several times, and in such a situation, marginal tariffs will get compound at every production process making, thereby making the aggregate larger once the product is completed. Given Botswana still nascent industrial sector and its access to the South African input and output market granted within SACU, this is conducive to the creation of links within both economies. Also, given that SACU grants all its members, except South Africa, the right to impose infant industry protection, and that Botswana does not discriminate whether its manufacturers are foreign or locally owned, this makes Botswana an attractive base for South African based companies to source their production there.

As New Trade Theories proclaimed, MNE, when faced with low-transaction costs, tend to spread their production to already agglomerated areas with low factor costs. In this sense, SACU stands to be beneficial to Botswana as it enables the creation backward and forward linkages within an environment typified by low factor costs, the main attraction for MNE to produce abroad. Additionally, Botswana's comparatively lower tax rate for manufacturing makes it an attractive base for MNE to operate within SACU.

However, the customs union external tariff incurs a cost to Botswana manufacturers by making the inputs required more expensive since this operates like a tax that dissuades producers from sourcing perhaps cheaper and better inputs abroad, which also stands to affect the technology transfer, and as we've seen makes the crossing of borders several times an expensive proposition. Thanks to its enviable public finances, and the fact the SACU custom revenues are pooled by its members, Botswana offers different credit programmes that come to annul the extra costs that the common external tariff imposes on producers. This credit programme also applies to inputs purposely imported to be manufactured as exports.

As such, though the SACU offers a common external tariff, the government's programme to attempt to annul its effects, combined to the duty/quota free access it provides to its members, Botswana can be seen as operating not as one isolated nation, but as part of a larger union of 45 million people. In this light, SACU could be compared to a type of economic confederation. This liberal trading regime then, is what orthodox trade theorists view as beneficial as it removes the pervasive hand of the State and replaces it with the market and its efficient allocation mechanism.

Storper's 'dynamic flux' would indicate that the aforementioned benefits of Botswana's membership within SACU would allow the natural flow of technology, dictated by the rate of the product cycle, to go to regions with lower production costs. Our study of the firm and the global production network in which it operates however, stipulates that much more is at play and moderates the expectations towards the proclaimed benefits of vertical specialisation. For



one, globalisation has assisted in the creation of a network where fewer buyers are able to access rich-world markets, which creates a condition of dependency on developing country firms towards their buyers, as on their own they will not be able to access these markets.

It is in that vain that vertical specialisation is deemed to be beneficial for developing countries like Botswana. But this has been shown to rest on the assumption that firms can easily access both the buyers and the technology required to produce the high-value added goods. The flow of technology is hampered by the fact that MNE will typically outsource production with a technology level commensurate with that of the developing country economy. Though this makes it easy to attract footloose companies, the low-barriers of entry that this entails does not attract that type of manufacturing that allows for industrial upgrading.

The Botswana Development Corporation however, offers various programmes and subsidies to assist with the skills upgrading that would be necessary to attract the more technologically intensive type of production. In this sense, Botswana is abiding to Lall's 'capability approach' and Porter's notion of using the state to help build a competitive advantage. This state involvement, especially through the BDC's equity participation, helps to lessen the capital requirement needed for MNE to set-up operations in Botswana, further reducing costs and enticing MNE to outsource their production there.

But, however noble these efforts are, it neglects the fact the firms will not delegate advanced technology that could enable Botswana to start producing the goods that are needed within the production network. As such, there is no incentive for MNE to reveal advanced technology to others if this is part of what constitutes their advantage. Furthermore, the contractual nature between the firm and the buyer of its products, can anyways limit the capabilities of firms' trying to take advantage of economies of scope, such that it imperils the survival of a firm which seeks to survive on economies of scale through economies of scope. The framework offered by the proponents of New Paradigm Globalisation, is silent on this issue, even though it seeks to include the firm within its analysis. Yet evidently, the paradigm cannot account for this inherent behaviour of MNE, nor was it designed to do so.

Supposing that technologically advances outsourcing does happen in Botswana however, the legal structure that has risen in conjunction with the spread of globalisation, notably in this instance Botswana's adherence to intellectual property rights regulation, entails that the firm to which it will be outsourced will be bound to the lead firm in such a way that very little profit remains in the country and tight control of the lead firm's firm proprietary advantages will lessen the chance that the fabled technological spill-overs will take place.

Hence, while vertical specialisation can certainly be a factor in Botswana's economy, the country certainly has the appropriate economic and political fundamentals and the right legal

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structure for MNE to profit from the low transaction costs that this offers, banking on vertical specialisation to actually upgrade and diversify the country's industrial and manufacturing sector would be putting too much onus on a phenomenon that has limited potential for value-creation and profit retention in a developing country.

Our study of trade theories and theories of the firm highlighted the following three major reasons. Firstly, Storper's 'lock-in' which describes the hierarchical power within the global production network in which developing country firms are dependent on the lead firm's contractual obligations, limits the possibilities for technological upgrading and thereby higher value-added operations. Secondly, this contractual relationship between rich-world buyers and developing country sellers, limits the possibilities for these firms to sell their wares to other buyers, in direct confrontation to trade theories purported economies of scope that vertical specialisation is deemed to provide.

Lastly, in creating an organisational structure that allows MNE to avail themselves of the lower production costs that arise through subcontracting to a specialised firm, they have established a structure that allows production to become disintegrated yet enables them to retain their proprietary knowledge, and especially unbeneficial for Botswana, the repatriation of profits.

## 6 CONCLUSIONS

In this paper we have attempted to study the effects of vertical specialisation through a systemic study of the firm so as to get pertinent insights on firm's motivation to outsource some of their production abroad. In doing so we have observed that the organisational structure of MNE has changed in the last few decades as firms have taken advantage of an organisational structure that allows them to divest themselves of functions that were previously believe to have fallen within their sphere of influence. But the lower transaction costs which the global production network allows for has permitted firms to delegate some of these functions in order to concentrate on the profit maximising activities that its firm proprietary advantages enables.

Subsequent to this, our analysis of trade theories and its various strands debated the utility that these models offer in regards to predicting what vertical specialisation entails for a developing country. The survey highlighted many flaws within the various paradigms. First amongst these is trade theories' persistent disregard of the firm and its micro-level implications. Though New Trade Theories and New Paradigm Globalisation purport its inclusion, in their models it is still analytically considered as a 'black box'. The second major fault is that the field of trade theories continue to be thought in terms of production and trade of complete goods, which has been proven not to be the case given that value-adding no longer depends on endowments, but rather on how best to profit from the use of intermediate inputs of production.

Though New Paradigm globalisation acquiesces this shift, it remains a deceptive framework to understand the implications of vertical specialisation as it continues to assume an environment of perfect mobility amongst actors, which our study of the firm, especially through the lessens of buyer-seller relations and GVC governance, has shown not to be the case. Global trade as we have seen is not conducted in pure markets, but through a global production network governed by hierarchical relations amongst global firms. By forecasting that developing countries can benefit from the new benefits in comparative advantage that vertical specialisation allows for, trade theories assume that developing country firms can freely sale their wares to rich-world markets, while in fact to do so they must go through the global production network as buyers exercise hierarchical dominance over the network.

Interestingly, this same structure binds developing country firms to a contractual obligation with their buyer which limits their possibility for upgrading as they are tied to the demands of that buyer and may not freely switch to avail themselves of new opportunities or economies of scope by producing for multiple buyers. This is ironic, given that vertical

specialisation is supposed to divide production to such an extent that goods become sufficiently simple that they can be of use in other sectors. In this sense, the inclusion of theories pertaining arguably more to the operation of the firm with theories of trade comes to moderate the latter's assumptions and comes to complement its perspective with its micro-level understanding of the firm and its operation, both as an outsourced contractor and as a lead firm, within the global production network.

Contextualising all of this and using Botswana as a case study, this paper has highlighted several issues that ultimately would stand to limit Botswana's ability to diversify and upgrade its industrial and manufacturing sector. As means of conclusion the analysis postulates that Botswana's fundamentals are extremely conducive to enable MNE to outsource some of their production in the country, the reality of the hierarchical nature of the global production network entails that vertical specialisation will not be beneficial for Botswana's attempts to diversify and upgrade its industrial and manufacturing sectors for the following reasons:

- The contractual obligations that lead firms exercise over their sub-contracting operations means that firms will be very dependent on the benevolence of the lead firm to upgrade its technology and value-added potential
- In the same vein, the contractual nature stands to limit Botswana's specialised firms to sell their wares, either intermediate or complete goods, to other buyers and thus lessens the purported economies of scope that trade theories predict
- In the event that high value-added and high-technology activities will take place, the organisational structure which has risen to propel vertical disintegration will ensure that profits flow back to the lead firm

For these reasons, this paper is forced to conclude that vertical specialisation will not be the boon that the government of Botswana is looking for to diversify and upgrade its industrial sector. Integrating a systemic analysis of the firm within trade theories thus proves beneficial to bring out the contradictions that arise when studying the effects of vertical specialisation strictly through the prism of trade theories.

Though the study purposely constrained itself to analyzing the effects of vertical specialisation on a small developing country through theories of trade and the firm, it would have been interesting to include an analysis of the manufacturing sector in South Africa, as the biggest economy of the SACU region already has an established manufacturing sector and has become an economic pole in this regard. Thus, analysing the possible links between the two economies would have been beneficial.

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