

CHAPTER 1

INTRODUCTION

Hitherto, all empirical studies and analyses of intra-industry trade have been confined to trade in goods.... Yet, for the purpose of analysis of trade flows and their effects on the allocation of resources and the welfare of national residents, there is no reason to separate trade in goods from trade in services.

(Lee and Lloyd, 2002: 159)

1.1 INTRODUCTION

This chapter introduces different aspects of intra-industry trade (IIT) in services with particular reference to South Africa-US trade in services. The chapter is organized as follows. Section 1.2 briefly explains the emergence of services as the key sector in the globalising world. Section 1.3 defines services as opposed to goods. It also provides two definitions of international trade in services. The contribution of services to national output (GDP), employment and international trade is dealt with in Section 1.4. Section 1.5 presents a statement of the research problem that resonates throughout the study. Section 1.6 presents two main hypotheses of the study. Justification and objectives of the study are presented in Sections 1.7 and 1.8, respectively. Section 1.9 deals with research methodology while Section 1.10 focuses on the scope of the study. Section 1.11 presents the conclusions from this chapter while the last section highlights the outline of the study.

1.2 THE MOVE TOWARDS A “SERVICE-DORMINATED ECONOMY” AND INTRA-INDUSTRY TRADE

The services sector has witnessed a steady growth worldwide, generating more than half of gross domestic product and jobs, and although at a much lower level, is increasingly traded internationally. Indeed, according to United Nations Conference on Trade and Development (2004b), foreign direct investment (FDI) worldwide is increasingly shifting towards services.

Wong, Wu and Zhang (2001:1), Linders (2001:38-45) and Salvatore (2004a, 2004b) identify three reasons for the increase. Firstly, revolution in information communications technology (ICT) has increased the tradability (storability and transportability) of services and created new services such as Internet-based electronic commerce (e-commerce). Secondly, more services sectors continue to be liberalised through multilateral trade negotiations under the General Agreement on Trade in Services (GATS). According to Bowen, Hollander and Viaene (1998:67), the GATS encompass the most-favoured nation (MFN) and national treatment (NT) principles of the WTO with a few exceptions. GATS forbids, some market access (MA) restrictions such as limitations on the number of suppliers, total quantity of output service, value of transactions or assets, number of natural persons that may be employed, type of legal entity and the share of equity ownership of a foreign investor. Thirdly, services have become crucial to co-ordinate production process by creating and absorbing new innovations and increasing benefit extraction capacity in production and consumption. This has facilitated the global trend of fragmentation of production process.

Despite its dominance in GDP and employment, services account for less than a quarter of South Africa's total trade due to two factors. Firstly, most services are still non-tradable due to higher transaction costs that emanate from their unique characteristics of non-storability and perverse restrictions on MA and NT still maintained by many WTO members. Secondly, service trade data are generally understated due to inconsistencies in definition and many transactions, which are unrecorded. However, the revolution in ICT

and the multilateral trade negotiations underway are likely to increase the tradability of services over time.

The increase in the contribution of services to the national economy and, in particular, international trade, has two contradictory economic welfare implications for South Africa. On one hand, the increase in tradability of services, *ceteris paribus*, leads to gains from trade emanating from different sources. Firstly, there are comparative advantage gains that result from specialisation and exchange of services between nations. These are the standard goods-based comparative advantage gains highlighted in Markusen, Melvin, Kaempfer and Maskus (1995: 61-68). Secondly, there are non-comparative advantage gains from trade associated with new trade theories such as pro-competitive gains, exploitation of scale economies, increased service or input diversity instead of lower average costs for a fixed range of services. Thirdly, as initially pointed out by Balassa (1966), there could be lower factor market adjustment costs when factors of production move “within” instead of “between” sectors (i.e. smooth adjustment hypothesis or “non-disruptive trade growth”). Fourthly, liberalisation of trade in services is consistent and complementary to sustainable development in the context of the Doha Development Agenda (World Trade Organisation, 2001a, 2004). Finally, services are important components of trade facilitation¹ and international fragmentation of production (Deardoff, 2000).

On the other hand, the increased tradability/liberalisation of services has wider negative economic repercussions. Increased inter-industry tradability of services leads to reallocation of resources between industries, which may be detrimental to the factor of production engaged in services industries largely contested by imports along the lines of Stolper-Samuelson theorem (Markusen *et al.*, 1995: 116-118). This is “disruptive trade growth”. Additionally, liberalisation that allows unrestricted access of Americans to some services (e.g. education and medical services) may inhibit attainment of some development objectives in South Africa, particularly when these services are subsidised.

¹ This is one of the controversial “Singapore issues” (World Trade Organisation, 1996a) agreed upon in the July 2004 post-Cancún agreement package (World Trade Organisation, 2004).

The separation of positive from negative welfare implications of trade in services calls for a need to disentangle inter-industry trade from IIT since they have different causes and consequences. Inter-industry trade is the export of services from one industry in exchange for services from a different industry and traditionally associated with the comparative advantage gains from trade. IIT is the two-way exchanges of services that belong to the same industry (Grubel and Lloyd, 1975) and mainly associated with non-comparative advantage gains from trade. IIT has become an important component of trade since the 1960s and Krugman and Obstfeld (2003) point out that it consists of about one-fourth of world trade.

Originally, the empirical evidence of the phenomenon of IIT by Verdoon (1960), Balassa (1966) and Grubel (1967) was understood as an invalidation of traditional theories of international trade based on Ricardo's comparative advantage. This spawned a lot of theoretical and empirical literature focussed on four (related) questions. Firstly, what are the determinants of IIT? Secondly, are the gains from trade different from those associated with Heckscher-Ohlin-Samuelson (HOS) model? Thirdly, with IIT should the thinking regarding the impact of intervention in markets dominated by trade in differentiated products/services be changed? Finally, when trade expands, is factor adjustment smoother in an environment characterised by IIT as compared to inter-industry trade?

Lee and Lloyd (2002:159) note that studies on IIT have concentrated on merchandise trade and contend that this approach is not appropriate since for a comprehensive analysis of the effects of trade flows on allocation of resources and welfare of national residents, trade in services should be included.

1.3 SERVICES

1.3.1 The definition and characteristics of services

Hill (1977:318) defined a service as “...a change in the condition of a person, or of a good belonging to some economic unit, which is brought about by the activity of some other economic unit, with the prior agreement of the former person or economic unit”. This definition emanates from the specific nature of a service, traditionally considered to be non-storable and intangible. The non-storability means that a service has to be consumed at the same time as it is produced.

Bhagwati (1987) added two features to Hill’s definition: services do not always require the movement of consumers or producers (as with tele-medicine) and that some services may be embodied in a good (e.g. music downloaded from Internet to compact disk), which can make it difficult to distinguish between goods and services.

Welsum (2003) points out that some non-storable services can be transported. A case in point is power generation, where production can take place in a different location from consumption. Additionally, Hill’s non-storability definition of a service is also questionable for example in insurance or consultancy services where the consumption of certain aspect of the service may be spread over time. Welsum (2003) further suggests that owing to reputation, there is an incentive to go to other countries to maximise rents from proprietary service increases and thus an increase in FDI. This is further bolstered by the need for interaction between the service provider and the consumer, especially in the face of asymmetric information. The use of reputation may also be a barrier to entry for new firms, thus highlighting the likeliness of imperfect competition in services industries.

The new manual on statistics of international trade in services (United Nations, 2002:7) argues that the term “services” refers to a wide range of intangible products and activities that cannot be easily captured by a single definition. Moreover, it recognises, like the

International Monetary Fund (1993), that many services are bundled to goods, which make it difficult to identify them.

The United Nations system of national accounts (SNA) (the United Nations, 1993) defines services as a group of industries, generally qualified as services, that produce outputs, which have many characteristics of goods, i.e. those concerned with provision, storage, communication and dissemination of information, advice and entertainment; the production of general or specialised information, news, consultancy reports, computer programs, movies, music etc. The outputs of these industries over which ownership rights may be established are stored on physical objects such as paper, tapes, disks, etc-that can be traded like physical goods.

The SNA defined in the United Nations (1993) is translated to data as follows. Service industries or activities are classified under section G through Q of ISIC revision 3 (United Nations, 1990). The products or outputs of the service industries are classified from sections 5 through 9 of the United Nations Central Product Classification version 1.0 (United Nations, 1997).

Stern and Hoekman (1987) and Sampson and Snape (1985) distinguish between four different types of services. Firstly, separated services, where neither the consumer nor the producer needs to move. Examples include services embodied in goods (e.g. floppy disks, music CD) or services traded electronically. Secondly, demander-located services, where the producer moves to the consumer for example certain types of consultancy services. Thirdly, provider-located services, where the consumer moves to the producer for example education, tourism etc. Finally, footloose or non-separated services where both the producer and consumer move² to a third country. For example entertainment services such as the Olympic games.

Having defined services, the next issue is definitions of international trade in services.

² This was not recognized by GATS' definition of services and it is possible to label it as "mode 5".

1.3.2 Definition of international trade in services

Lee and Lloyd (2002: 160) point out that defining international trade in services is inherently troublesome. They argue that there are broadly two definitions for international trade in services. The first definition is attributed the International Monetary Fund's balance of payments manual known as "BMP5" (International Monetary Fund, 1993). BMP5 defines services as economic flows that take place between residents and non-residents of an economy. This corresponds to the concept of trade in services in "the rest of the world" account in the SNA (United Nations, 1993).

The second definition is given in the GATS. GATS Article 1 (in World Trade Organisation, 2002:286-287) defines trade in service using four modes of supply. Firstly, cross-border supply (mode 1), which takes place when both the consumer and the supplier remain in their respective home territories while the service crosses national borders. Service delivery could take place through telephone, Internet, mail etc. Examples of this mode include freight transport services, correspondence courses, and tele-diagnostics in medicine. Secondly, consumption abroad (mode 2), which takes place when a consumer moves outside his or her home territory and consumes a service in another country. Examples include medical treatment of non-resident persons, language courses taken abroad, tourist activities, ship repairs abroad etc. Thirdly, commercial presence (mode 3), which occurs when a supplier establishes commercial presence abroad with a view to ensuring close contact with the consumer in his or her home territory at the various stages of production, during and after delivery. Examples include medical services provided by a foreign owned hospital, courses in foreign owned schools, services supplied by a domestic branch or subsidiary of a foreign bank etc. Finally, presence of natural persons (mode 4), occurs when an individual supplier moves temporarily into a territory of the consumer to provide a service, whether on his or her own behalf or on behalf of his or her employer. It covers two groups of natural persons: self-employed and employees. Examples include financial auditing services by an auditor sent by a foreign firm or provision of entertainment services of self-employed professional foreign entertainer who is temporarily on a tour in the host economy.

Presence of natural persons covers only non-permanent employment in the country of the consumer. However, GATS provides no definition of non-permanent employment.

Lee and Lloyd (2002: 161) argue that most trade economists currently think in terms of GATS modes of supply. However, no statistics of services trade by GATS modes is available in most countries since BMP5 is still the basis of data collection.

1.4 BACKGROUND INFORMATION ON SERVICES IN SOUTH AFRICA

1.4.1 Contribution of services sector to GDP and employment in South Africa

Services sector plays an important role in South Africa's economy. Its contribution to GDP rose from 50 per cent in 1990 to 58 per cent in 2002 (Table 1.1). During the same period the contribution of services to GDP in the US, the leading producer and exporter of services, rose from 70 per cent in 1990 to 79 per cent in 2002 (Table 1.1). According to Maurer and Chauvet (2002:235), the contribution of services sector to GDP ranges from 38 per cent in low-income countries to more than 65 per cent in high-income countries. Similarly, its contribution to employment in South Africa rose from 56 per cent in 1990 to 64 per cent by 2002. This means that services have become increasingly crucial in the modern production systems and that South Africa is catching up with the US in embracing the modern service-dominated economy.

1.4.2 Contribution of services to total trade

The share of service trade in international transactions lags behind the contribution of services in the structure of production and employment in South Africa and the US. This is not surprising given the fact that services are not easily traded due to high transaction costs as well as the fact that a significant proportion of services trade is unrecorded.

Table 1.1 shows that in South Africa, imports of services contribute more to total imports trade (merchandise and services) with the rest of the world than exports. This means that

South Africa has higher import dependence in services than the US. Moreover, while the share of exports of service to total trade increased marginally during the period 1990-2003, its contribution to imports has declined. This is not surprising given the fact that South Africa's new political dispensation in 1994 and subsequent liberalisation of the economy opened more opportunities for trade in services.

A number of features emerge from Table 1.2. Firstly, the Organisation for economic co-operation and development (OECD) countries are the main trading partners for South Africa in services. In 2002, South Africa's services exports to the OECD countries as a percentage of services exports to the rest of the world was 63.8 per cent, which implies that 36.2 per cent of the trade is with non-OECD countries mainly in Africa, South America, Europe, Asia and Oceania. Similarly, South Africa's imports from OECD countries contributed 75.3 per cent of total imports trade in services with the rest of the world.

Secondly, South Africa's exports of commercial services to the US as a percentage of total services exports to the rest of the world rose from 6 per cent in 1992 to 18 per cent in 2001 but declined to 12.8 per cent by 2003. The contribution of South Africa's services imports from the US followed the same trend as exports. It rose from 11.5 per cent in 1992, peaking at 24.5 per cent in 2001 but declined substantially to 16 per cent in 2003.

1.4.3 The choice of the US

The study focuses on South Africa-US IIT in services. The choice of the US is motivated by three factors. Firstly, the US is the leading producer and exporter of services in the world (World Trade Organisation, 1996b: 168) and South Africa's leading exports destination of services to the OECD countries³ (Table 1.3). Secondly, bilateral international trade in services data at sectoral level is available for the US (from the US Bureau of Economic Analysis, thereafter BEA). Finally, discussions are underway for a

³ The totals in Tables 1.2 and 1.3 differ due to the different sources of data.

Free Trade Agreement (FTA) between the US and the SACU. Therefore the study may complement other research (such as Hodge and Nordas, 2001, Walley and Keith, 2003) in informing the services component of the SACU-US FTA negotiations.

1.4.4 Employment in services sector

Figure 1.1 shows percentage change in employment for various skill categories in South Africa's services sector over the period 1990 to 2003. It is apparent that semi-and unskilled labour category has shed jobs or generated modest growth in employment. At the same time the skilled and highly skilled recorded an increase in employment in most years.

These developments raise questions as to whether the loss in employment especially for the semi- and unskilled categories is attributed to lower IIT. Theoretically, high homogeneous and horizontally differentiated IIT in services entails lower labour market adjustment costs than inter-industry trade and vertically differentiated IIT. This is because the mobility of labour across firms and occupations is greater "within" industries than "between" industries or quality strata.

Table 1.1: Some indicators of South Africa and US trade in services

	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Contribution of services sector to GDP in South Africa	50	55	55	55	56	57	58	59	60	60	59	58	N/A
Contribution of services sector to GDP in the US	70	72	72	72	73	73	73	75	75	76	77	79	N/A
Contribution of services sector to total employment in South Africa*	56	58	58	58	58	59	60	62	63	63	64	64	N/A
Contribution of services sector to total employment in the US	71	73	73	73	73	73	73	74	74	75	75		N/A
Contribution of services exports to total exports (merchandise and services) in South Africa	12	13	12	13	14	15	15	17	16	14	14	14	15
Contribution of services exports to total exports (merchandise and services) in the US	27	28	28	28	27	28	27	28	29	28	28	30	30
Contribution of services imports to total imports (merchandise and services) in South Africa	17	18	19	18	16	16	15	16	18	16	16	15	N/A
Contribution of services imports to total imports (merchandise and services) in the US	19	18	17	16	16	16	16	16	16	15	16	16	16

Source: Data from online UNCTAD Handbook of Statistics CD ROM 2004 (<http://www.unctad.org>)

Notes: * Computed Using data from Quantec Research (<http://ts.easydata.co.za>). N/A means the data not available as at the date of writing

Table 1.2: South Africa's total trade in services with the US, OECD and the rest of the World (nominal US \$ millions)

Year	SA-US		SA-OECD		SA-Rest of the World			
	Exports	Imports	Exports	Imports	Exports		Imports	
	<i>Commercial service</i>		<i>Total service</i>		<i>Total</i>	<i>Commercial</i>	<i>Total</i>	<i>Commercial</i>
1992	202.00	462.00	N/A	N/A	3351.95	3310.78	4357.28	4201.75
1993	230.00	493.00	N/A	N/A	3276.00	3120.19	4705.78	4528.13
1994	294.00	624.00	N/A	N/A	3749.25	3555.46	5086.80	4886.33
1995	400.00	797.00	N/A	N/A	4618.69	4414.45	5970.73	5756.01
1996	543.00	842.00	N/A	N/A	5086.66	4847.90	5735.48	5508.01
1997	728.00	1003.00	N/A	N/A	5394.04	5209.91	6002.91	5809.21
1998	858.00	1068.00	N/A	N/A	5395.96	5212.94	5657.64	5464.97
1999	864.00	1317.00	3211.00	5100.00	5210.04	5040.80	5758.72	5580.64
2000	855.00	1425.00	3363.00	4595.00	5045.82	4888.32	5822.82	5656.98
2001	870.00	1304.00	2715.00	3989.00	4652.78	4535.44	5251.32	5127.76
2002	777.00	1183.00	2921.00	3945.00	4672.47	4577.21	5340.33	5240.13
2003	977.00	1188.00	N/A	N/A	6601.8	6414.44	7554.32	7347.99

Source: Different databases are used as follows; SA-US trade: US Bureau for Economic Analysis available from <http://www.bea.gov/bea/di/1001serv/intlserv.htm>
SA-OECD: Organisation for economic co-operation and development. 2004. Statistics on International Trade in Services: 1999/2000 to 2001/2002 available from <http://www.oecd.org/dataoecd/56/35/1945964.xls>
SA-Rest of the world: UNCTAD Handbook of Statistics CD ROM 2004 available from <http://www.unctad.org>.

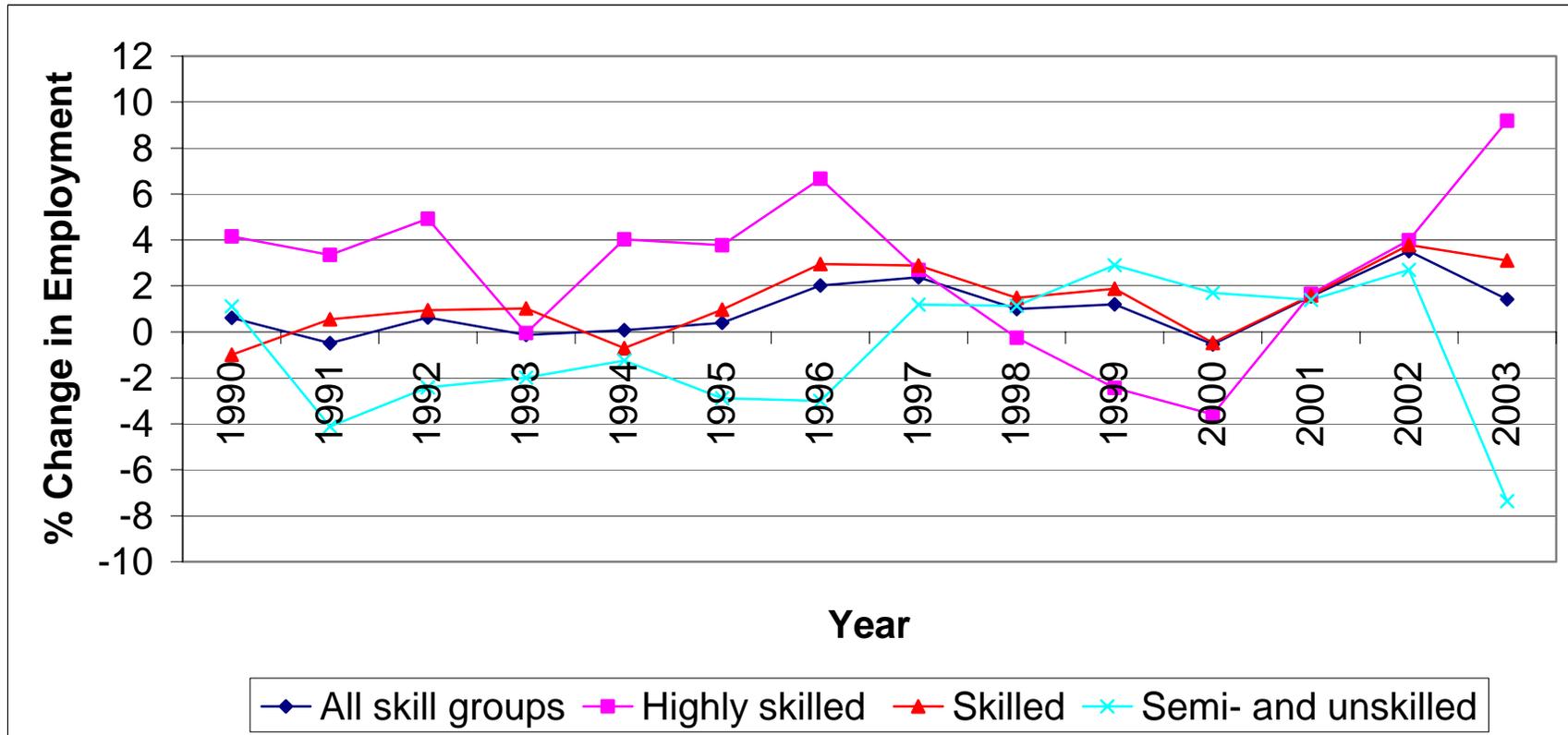
Notes: Commercial services exclude government services. N/A means data not available.

Table 1.3: South Africa-OECD trade in services (nominal US \$ millions)

OECD countries	<i>Imports</i>				<i>Exports</i>			
	1999	2000	2001	2002	1999	2000	2001	2002
United States	1323	1426	1288	1135	908	845	918	828
United Kingdom	1778	1465	1530	1479	764	790	792	899
Germany	838	453	N/A	N/A	741	643	N/A	N/A
France	193	214	218	288	183	218	216	245
Japan	154	147	124	137	182	194	162	162
Italy	N/A	95	93	79	N/A	176	161	150
Netherlands	221	192	153	200	156	155	156	167
Belgium	N/A	N/A	N/A	65	N/A	N/A	N/A	134
Luxembourg	N/A	N/A	N/A	32	N/A	N/A	N/A	13
Australia	141	106	102	105	122	106	110	141
Canada	90	108	123	N/A	37	62	44	N/A
Austria	92	82	64	54	45	40	35	49
Portugal	41	40	31	39	28	26	22	26
Denmark	15	72	106	88	20	20	10	19
Czech Republic	N/A	1	1	1	N/A	3	5	6
Finland	0	0	0	0	2	3	3	3
Slovak Republic	N/A	0	0	N/A	N/A	2	2	N/A
Hungary	N/A	0	1	1	N/A	1	1	2
Sweden	N/A	32	26	57	N/A	36	23	22
Greece	N/A	N/A	13	35	N/A	N/A	13	18
Hong Kong, China	214	162	116	150	23	43	42	37
Ireland	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Korea	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Norway	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spain	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total South Africa-OECD trade	5100	4595	3989	3945	3211	3363	2715	2921

Source: Organisation for Economic Co-operation and Development (OECD). 2004. Statistics on International Trade in Services: 1999/2000 to 2001/2002. <http://www.oecd.org/dataoecd/56/35/1945964.xls>.

Figure 1.1: Percentage change in South Africa's service sector employment in the period 1990-2003



Source: Data from Quantec Research <http://ts.easydata.co.za>

1.5 STATEMENT OF THE RESEARCH PROBLEM

The preceding sections have provided a basis upon which to conceptualise the research problem. Firstly, it was pointed out that the contribution of services to national output and employment has increased due to, among others, revolution in ICT. Secondly, despite its dominance in national output and employment, services account for less than a quarter of total trade in South Africa and the US due to non-tradability of most services and unreliable data. Thirdly, it was emphasized that the revolution in ICT and the multilateral trade negotiations underway are likely to increase the tradability of services in future.

Fourthly, the increase in the contribution of services has two opposite economic welfare implications for South Africa. On the positive front, the increase in tradability can lead to standard comparative advantage and non-comparative advantage gains from trade. On the negative front, the increased tradability may lead to reallocation of resources between industries, which may be quite disruptive to factors of production along the lines of Stolper-Samuelson theorem.

The disentanglement of the positive from negative economic welfare implications of South Africa-US trade in services calls for a need to separate inter-industry trade and IIT flows since they have different causes and consequences. Inter-industry trade is mainly associated with comparative advantage gains and “disruptive trade growth”, while IIT is associated with non-comparative advantage gains coupled with “non-disruptive trade growth”.

Since the phenomenon of IIT was identified in the 1960s, theoretical and empirical literature has focussed on four related questions: determinants of IIT; gains from trade characterised with IIT; impact of intervention in markets dominated by trade in differentiated products/services; smooth adjustment hypothesis. These are the same issues that are crucial in South Africa-US IIT in services.

However, the analysis is frustrated by lack of appropriate data. Services trade data from the South African Reserve Bank (SARB)⁴ and the IMF Balance of Payments annual reports are compiled on the basis of the BMP5 (International Monetary Fund, 1993) and have a number of flaws. Firstly, the coverage and level of disaggregation makes the analysis based on this data subject to categorical aggregation. Secondly, the data are only available on nominal value basis (no volumes). Thirdly, the data is presented as South Africa with the “rest of the world”, which means that it is impossible to determine how much South Africa exported to and imported from the US.

Although there is a more reliable database from the US Bureau of Economic Analysis (BEA) for the period 1992 to 2003, it has some flaws. Firstly, there is the problem of deflating this trade flows due to lack of service sector deflators. Secondly, the industrial classification used by BEA does not fully agree with the industrial classification used by Statistics South Africa (STATSSA), which makes it difficult to use South Africa’s national accounts data to explain IIT as well as in testing the SAH. Additionally, trade in services (exports and imports) with the US contributes about 29 per cent of South Africa’s total trade in services with the OECD countries and may not explain much of the dynamics of employment in the latter. This makes it impossible to rigorously test the SAH.

It is against this background that the thesis focuses on the causes and the labour market adjustment consequences of South Africa-US IIT in selected services. This research issue is broken into the following questions;

- (a) What is the structure and trend of South Africa-US IIT in services?
- (b) What are the existing barriers to South Africa-US IIT in services?
- (c) What are the determinants of South Africa-US IIT in services?
- (d) Does South Africa-US IIT in services entail lower labour market adjustments costs in terms of job losses?

⁴ Data presented in SARB Quarterly Bulletins as well as online data at <http://www.resbank.co.za> .

1.6 HYPOTHESES OF THE STUDY

Since the study focuses on the causes and the labour market adjustments consequences of South Africa-US IIT in services, there are two main hypotheses.

Hypothesis 1: South Africa-US IIT in services is consistent with the theoretical IIT models. Specifically it is determined by “country-specific” and “industry-specific” factors. This broad hypothesis can be broken down into the following propositions;

Proposition 1: There is either a negative or positive relationship between the differences in per capita income and the odds ratio of IIT in services.

Proposition 2: The differential between South Africa and US market sizes in the specific service is negatively related to the odds ratio of IIT in services.

Proposition 3: A depreciation of the South African rand relative to the US dollar increases the odds ratio of IIT in services

Proposition 4: The economic freedom in South Africa and the US is positively correlated to the odds ratio of IIT in services

Proposition 5: Barriers to trade on modes 1, 3 and 4 in the US and on mode 2 in South Africa is negatively related to the odds ratio of IIT in services

Proposition 6: The US FDI in South Africa has a negative relationship with the odds ratio of IIT in unaffiliated services.

Hypothesis 2: In accordance with the smooth adjustment hypothesis (SAH), high marginal intra-industry trade in services leads to low labour-market adjustment costs (i.e. less job losses).

1.7 JUSTIFICATION OF THE STUDY

Services sector in South Africa has undergone significant structural changes in the last decade that have not only made it crucial in modern production systems but also

enhanced its international tradability. Currently, it is the leading contributor to GDP and employment creation.

These structural changes create opportunities and pose challenges for the South African economy. On one hand they generate comparative advantage and non-comparative advantage gains to trade. On the other hand, the structural changes present serious economic development problems in terms of shedding of labour in the lower cadres (semi and unskilled employees).

In the context of South Africa-US trade in services, one of the policy challenge faced by the department of trade and industry (DTI) is how to exploit the opportunities offered by the trade relationship while minimising the job losses associated with it. One solution to this quandary is to disentangle South Africa-US trade in services flows into IIT and inter-industry trade since they have different causes and consequences. The thesis follows this approach by separating South Africa-US trade in services flows into “genuine IIT” before attempting to find empirical determinants of the log-odds ratio of IIT. The labour market adjustment consequence issue is also addressed.

The study extends the frontiers of knowledge in IIT in services in a number of ways. Firstly, although there is currently no single model of IIT in services, the thesis adapts some of the models of IIT in goods to IIT in services. Secondly, nonparametric measures of trade barriers in services for South Africa and the US are constructed using a methodology developed by Hoekman (1995). Fourthly, the thesis highlights the uniqueness of mode 2 supply and its implication on the perverse mercantilist-like tendencies⁵ in trade negotiations and trade policy. Fifthly, the thesis provides, for the first time, empirical determinants of South Africa-US IIT in selected services using panel data econometric techniques coupled with bootstrapping.

⁵ The mercantilist view is that imports are bad while exports are good. In the context of services, negotiators assume that services are the same as merchandise. However, for mode 2 (consumption abroad), a country's restrictions inhibit its own exports of services to other countries.

Sixthly, the smooth adjustment hypothesis (SAH) in the services sector is addressed albeit at descriptive level due to data problems. Finally, policy recommendations are provided which are useful for future trade negotiations with the US, the leading producer and exporter of services in the World. For instance, notwithstanding the MFN principle of WTO, the measures of trade barriers, other determinants of trade and results from the SAH, may provide a basis for future trade negotiations. Moreover, the findings may inform pan African development initiatives such as New Partnerships for Africa's Development (NEPAD) when it comes to trade in services with the US.

1.8 OBJECTIVES OF THE RESEARCH

This thesis aims to achieve the following goals;

- (a) Present the theoretical and empirical literature on IIT with an emphasis on services
- (b) Provide a descriptive analysis of the structure and trends of South Africa-US IIT in services in the period 1992-2003.
- (c) Construct measures of trade barriers in South Africa and US using the methodology developed by Hoekman (1995).
- (d) Use the indices in (c) and other “country-specific” and “industry-specific” factors to estimate a model of the determinants of South Africa-US IIT in services
- (e) Address the issue about the SAH in the services sector in South Africa
- (f) Make policy recommendations

1.9 RESEARCH METHODOLOGY

Three layers of economic reasoning underpin the research methodology employed in the study: IIT in service trade issues, trade theory and data availability. In this regard, the analysis is conducted at two levels of statistical sophistication: descriptive analysis and econometric analysis using bootstrapping techniques.

Firstly, mirrored data from the BEA is sorted to identify “genuine IIT” using a methodology pioneered by Abd-el-Rahman (1991). IIT is a structural feature of trade in

a particular service sector if minority service flow is at least 12 per cent of the majority service flow. Descriptive analysis is done for the structure and trend of South Africa-US IIT in services during the period 1994-2003. A distinction between horizontally differentiated (variety) IIT and vertically differentiated (quality) IIT is not done due to lack of unit value data to proxy quality differences.

Secondly, in view of the perverse restrictions on market access and national treatment in services, non-parametric indices of these barriers is computed using a methodology developed by Hoekman (1995). This entails scoring GATS commitment schedules submitted by South Africa and the US to the WTO in 1994, 1995, 1997 and 1998 (World Trade Organisation, 1994b, 1994d, 1995a, 1995c, 1997a, 1997c, 1998a and 1998d). However, since the GATS commitment schedule is only a “wish list” submitted by a WTO member, a descriptive analysis of the “actual” restrictions reported in various trade policy reviews for South Africa and the US (World Trade Organisation, 1996b, 1998b, 1999, 2001b and 2003) is also done.

Thirdly, a dynamic panel data econometrics model for log odds of IIT containing the Hoekman indices, among other determinants, is specified. This is estimated within a general linear model (GLM) context and hypothesis 1 in Section 1.6 tested using two versions of bootstrapping that are robust to heteroscedasticity (pooled residuals and Davidson-Liu-Flachaire wild bootstrap).

Fourthly, issues relating to the SAH (hypothesis 2) in Section 1.6 are addressed using descriptive analysis of Brülart (1994) and Azhar and Elliot (2003) marginal intra-industry trade (MIIT) indices. A rigorous test of the SAH is not performed due to data limitations.

1.10 SCOPE OF THE STUDY

The study concentrated on two issues; the determinants of South Africa-US IIT in services and the role of IIT in labour market adjustment (Smooth Adjustment Hypothesis). Although the SAH could be addressed more appropriately by focusing on all the trading partners of South Africa, the lack of data for these countries makes such an analysis difficult. Nonetheless, the US is the leading importer of South Africa's services (Table 1.3). The study covers the period 1994-2003.

1.11 CONCLUSION

The purpose of the study is to understand South Africa-US IIT in services. This is motivated by three factors. Firstly, the high and increasing contribution of services sector to GDP and employment in South Africa has risen substantially in the last decade. This has implications on trade, especially with the US, the leading producer and exporter of services in the world. Secondly, it is widely accepted that with trade dominated by IIT, there exist additional potential gains from trade in terms of increased variety, exchange of economies of scale and pro-competitive gains. Thirdly, when trade is dominated by homogeneous services and HIIT, changes in trade flows will entail lower factor market adjustment as compared to inter-industry trade and VIIT. This emanates from the fact that IIT entails movement of factors of production "within" industries as opposed to "between" industries in inter-industry trade or "between" different qualities in the case of VIIT.

The thesis attempts to address these issues using descriptive analysis and panel data econometrics techniques in a GLM context. The hypothesis testing is done using bootstrapping methodology as opposed to the classical approach. The study is instructive in that it provides empirical analysis of South Africa-US IIT in services in terms of determinants and consequences. The study does not cover all the aspects of South Africa-US IIT in services due to data limitations. The empirical results of this study are instructive in South Africa's trade and industrial policy as well as future trade

negotiations in services with the US. The study is also relevant for pan-African development initiatives such as NEPAD.

1.12 OUTLINE OF THE STUDY

The rest of the thesis is organised as follows. Chapter 2 deals with an overview of the literature on IIT with special emphasis on services.

Chapter 3 describes the structure and trends in South Africa-US IIT in selected services. The emphasis here lies on the revealed evidence of IIT in services.

Chapter 4 deals with measures of barriers to trade in services for South Africa and the US. The liberalisation of trade in services, which has been initiated under the GATS framework, can be an auxiliary cause for further internationalisation of services.

Chapter 5 focuses on the empirical estimation of the determinants of South Africa-US IIT in selected services over the period 1994-2002 using GLM coupled with two versions of nonparametric bootstrapping.

Chapter 6 attempts to answer the question whether changes in South Africa-US IIT entail lower labour market adjustment costs in terms of job losses or not.

The main insights of the thesis are summarised in the last chapter with some concluding remarks on policy recommendations and possible areas for future research.

In each chapter, a research question is provided in the introduction to structure the analysis. The question may be either theoretical or empirical.