Unbalanced International Trade Flows and Their Implication: An Extentensive Review

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ABSTRACT

The relationship between international trade flows and key macroeconomic variables such as economic growth, Export (X), and Import (M), among others is one of the most widely debated areas among economists and policy makers around the globe. The aim of this paper is to review the extensive literature in this area, focusing on both the theoretical debate and empirical evidence. This review is important in order to learn from past experience and to derive major conclusions which can be beneficial in macroeconomic debates. In addition, this review could also assist policy makers in formulating the right economic policies to tackle problems such as the high Trade Deficit (TD) and high debt levels associated with international trade flows. The majority of these studies used X, M, Gross Domestic Product (GDP) and related relative competitiveness variables, such as relative prices to examine the economic prosperities various countries' overtime. The key outcomes from these studies showed that relatively open economies countries seem to achieve higher economic prosperity than the less open economies. However, unbalanced trade, in particular the TD and subsequent rising debt levels with the Rest of the World (RoW), lead to undesirable macroeconomic consequences. In relation to Australia, the bulk of the empirical studies show that Australia has experienced a persistent TD for the past 30 years, with increasing TD as a percentage of the GDP. The key outcomes from empirical studies presented in this paper show that Australia's growing liabilities with the RoW are intended predominantly for other than investment purposes, which may perhaps weaken the economic prosperity in Australia in the future. In addition, various policy implications which might arise from the debates are also discussed in the paper.
Keywords: Trade flows, GDP, survey, implication, Australia

INTRODUCTION

In recent times, the growing trade deficit (TD) and associated government debt have become major debated issues among economists and policy makers in both developed and developing countries. Extensive literature has been developed to examine the relationship between export (X), import (M) and countries' economic prosperities both at the theoretical and empirical level. Much of the literature has focused on the relationship between X levels and economic growth, known as the Export Led Growth (ELG) Hypothesis, which proposes that exporting leads to higher efficiencies, increases in productivity, and consequently, to higher economic growth. The links between X and real GDP growth have been extensively analysed for many developing countries, Newly Industrialized Countries (NIC) and developed countries. The studies which have established the support for ELG hypothesis for developing countries include Kravis (1970), Michaely (1977), Balassa (1978; 1985), Tyler (1981), Jung and Marshall (1985), Chow (1987), Ahmad and Kwan (1991), Nidugala (2001) and Boriss and Dierk (2005). Hsiao (1987) and Chen (2007) investigated the NICs and also found significant support for the ELG hypothesis. Studies by Marin (1992), Serletis (1992), Henriques and Sadorsky (1996) and Yamada (1998) have concluded similar results for developed countries. Furthermore, some empirical studies, including Bahmani-Oskooee and Alse (1993) and Ahmad and Harnhirun (1995), found evidence of bi-directional causality between X and economic growth, while Dodaro (1993) has not been able to establish a conclusive link between X and economic growth.

Additionally, other literature with respect to the impact of world trade in merchandise and services includes McGuire and Findlay (2005), Orcutt (1950), Goldstein and Khan (1978, 1985), Bahmani-Oskooee (1986), Deyak et al. (1993), Trefler, (1993, 1995), Weinstein et al. (1997), Helpman (1998) and Harrigan (1997, 1999). Furthermore, other studies focus on the relationship between trade flows or trade imbalance and the national accounts Morici (2007), Skarstein (2007), Dernburg (1989), Krugman (1993) and Blanchard (1997).

Also, extensive literature (e.g. Balassa, 1978; 1985, Bahmani-Oskooee and Alse, 1993; Aw et al., 2000; Chen, 2007) have investigated the association between X and its economic effects on countries, while some studies have investigated M and its economic effects on the countries' economy (e.g. Lawrence and Weinstein, 1999; Galdón-Sánchez and Schmitz, 2003).

The main aim of this paper is to conduct an overview, both at the theoretical and empirical level of the relationship between trade and economic growth; to identify the trade flow determinants; to establish the X and M flow effects on the national accounts and to identify the main scholarly contribution in this area. In doing so, this paper derives substantial conclusions to such a relationship which can be used by policy makers to contextualize the relationship, not only between the X, M and country prosperity but also how increasing TD and associated debt levels can undermine the economic prosperity in the future. Understanding this relationship can benefit not only Australia but other countries' governments around the world.

The paper is divided into five distinct sections. Section 2 establishes recent developments in the international trade environment and their association with economic growth. International trade

patterns are discussed in Section 3. Section 4, comments on X and M determinants and trade imbalances and their association to the national accounts. This section also includes some relevant national accounting fundamentals and the TD economic implications. Finally, Section 5 and 6 highlights the policy implications and concludes the major findings.

INTERNATIONAL TRADE ENVIRONMENT AND ECONOMIC GROWTH – A REVIEW

International trade between countries have experienced notable changes in recent decades and the notion of free trade as a means of efficient utilization of economic resources, economic growth and increasing standard of living has been drawing much attention from the countries' governments, scholars and also from the general public. The concept of free trade as a means of economic prosperity amongst countries has generated both supporters and opponents.

Robertson (1938) claims that trade is 'the engine of growth'. Studies by Edwards (1998) and Frankel and Romer (1999) also support the link between the level of trade and economic growth. According to Frankel (2000), free trade and increased economic integration amongst countries lead to the absorption of the world's best practices which in turn lead to higher innovation and the prevention of firms exercising the monopoly power.

However, the study by Roberts (2000) suggests that a link between trade levels and economic growth is doubtful, while according to Stolper-Samuelson (1941) and Samuelson (1948), trade distributes the income within the economy and does not lead to economic growth. A study by Bretschger (1997) stipulates that free trade can hurt economic growth significantly if the country's supply of skilled labour is considerable and international dissemination of knowledge is not sufficient. One of the earlier studies (Graham, 1923), supported by Grossman and Helpman (1991) pointed out that countries are likely to lose from free trade1, if free trade leads to the reallocation of the resources from the industries which are experiencing an increasing returns to scale to the industries with a decreasing returns to scale. A similar view is taken by Bhagwati (2002) who maintains that free trade does not necessarily increase economic growth; free trade may have no effect, or in some cases, can reduce economic growth.

As international trade consists of X and M amongst countries, some studies have investigated the association between X and its economic effects on countries' economy (Balassa, 1978; 1985, Bahmani-Oskooee and Alse, 1993; Aw et al., 2000; Chen, 2007), while other studies have investigated M and its economic effects on the countries' economy (Lawrence and Weinstein, 1999; Galdón-Sánchez and Schmitz, 2003).

Studies that established a link between X levels and economic growth, known as the Export Led Growth (ELG) hypothesis propose that exporting leads to higher efficiencies, increases in productivity, and consequently, to higher economic growth. The links between X and real GDP growth have been extensively analysed for many developing countries, NIC's and developed countries. The studies which have established the support for ELG hypothesis for developing countries include Kravis (1970), Michaely (1977), Balassa (1978; 1985), Tyler (1981), Jung and Marshall (1985), Chow (1987), Ahmad and Kwan (1991), Nidugala (2001) and Boriss and Dierk (2005). Hsiao (1987) and Chen (2007) investigated the NIC's and also found a significant support for ELG hypothesis. Studies by Marin (1992), Serletis (1992), Henriques and Sadorsky (1996) and Yamada (1998) have concluded similar results for developed countries. Furthermore, some empirical studies, including Bahmani-Oskooee and Alse (1993) and Ahmad and Harnhirun (1995), found evidence of bi-directional causality between X and economic growth, while Dodaro (1993) has not been able to establish a conclusive link between X and economic growth.

Overall, empirical evidence lean towards a link between X and economic growth for all, developing, NIC's and developed countries. Balassa (1978) pointed out a consensus that the X promotion in the 1970s has generated significant technological improvements due to increased international competition, which led to greater exploitation of the economies of scale, which further led to increases in employment levels and more efficient resource allocation.

Analysis into the link between M and economic benefits for the importing country, known as 'learning by importing' have established that importing plays a significant part in productivity improvements, both in plant efficiencies and labour productivity amongst domestic industries (Dertouzos et al.,1990; MacDonald, 1994; Lawrence and Weinstein,1999; Galdón-Sánchez and Schmitz, 2003).

Based on the literature review it can be concluded that both X and M are important constituents of economic development and long-run prosperity for any country. For instance, Dollar (1992) estimated that if a country opens up fully to free trade, it will increase per capita Gross Domestic Product (GDP) by 2.1 percent, on average. Furthermore, free trade allows countries to specialize in certain industries and due to the 'learning by doing' process, such specialization leads to lower unit costs of production, which in turn lead to increases in international competitiveness (Rapping, 1965; Irwin and Klenow, 1994).

[1] The view by Graham (1923) is disputed by Ethier (1979). Ethier (1979) suggested that if positive spillovers exists worldwide from the point of world dissemination of knowledge, then free trade is beneficial for countries irrespective of whether free trade leads to the reallocation of resources from industries with a decreasing return to scale to the industries with an increasing return to scale or vice-versa.

In overall, this section has established that degree of country openness and both the X and M flows are important constituents for the economic prosperity for any country in the world. However, not all studies suggest that either the X or M will always increase the national economic output and the standard of living. As a result, free trade will always have its supporters as well as the opponents. However, the empirical evidence in this section overwhelmingly suggests that the benefits outweigh the costs and that open economies have achieved higher economic growth than relatively closed economies.

PATTERNS IN THE INTERNATIONAL TRADE

According to Rodrik (1995) and Rodriguez and Rodrik (1999), the link between the countries' outward oriented policies and economic growth is weak and doubtful. These remarks are empirically supported by Pritchett (1996) that shows a negative relationship between economic growth and the openness and positive relationship between trade barriers and economic growth. However, the supporters of countries' openness, such as Stiglitz (2002), strongly argue that outward oriented policies are a better alternative because they lead to a higher economic growth and a better standard of living. In the following sections, the world trade in merchandise and services, as well as the ratio of exports to GDP, for selected countries is presented.

■The World Trade in Merchandise

Tables 1 and 2 present the world merchandise X and M for the period 1870 to 2005. As Table 1 indicates, over that period, the world's export in merchandise grew steadily over the entire period, in an exponential pattern, with the exception of the years 1932 and 1973. The decline in the level of merchandise export in 1932 was a consequence of the 'Great Depression', while the decline in 1973 was due to the 'Oil Crisis'.

The largest contributor to the world merchandise X in 1870 was the United Kingdom, followed by France, Germany and the United States, which accounted for 18.9, 10.5, 8.3 and 7.9 percent, respectively. Australia's contribution to the world merchandise X is rather insignificant, however, it rose from 1.9 percent in 1870 to 2.5 percent in 1938. Since 1948, when the data for Australia and New Zealand are reported together, their combined X has gradually decreased from 3.7 to 1.3 percent of the total world merchandise X in 2005.

It is clear from Table 1, that the establishment of the General Agreement on Tariff and Trade (GATT), in 1948, had a significant effect on the world trade. In 1948, its member countries accounted for 63.4 percent of the world merchandise X; while in 2005, almost all of the world X (94.4 percent) was amongst the World Trade Organisation (WTO) (a replacement of the GATT, in 1993) member countries. The proportion of the total world merchandise X between 1948 - 2005 decreased slightly for developed countries (from 66.4 to 62.6 percent), while it increased for the developing countries (from 31.4 to 34.1 percent).

TABLE 1: SHARE OF THE WORLD MERCHANDISE EXPORTS, SELECTED COUNTRIES, 1870-2005, USD, BILL

	Year											
	1870	1900	1913	1929	1932	1938	1948	1963	1973	1983	1993	2005
World	5.1	10.1	19.5	33.0	12.7	22.7	59.0	1,570	579	1,838	3,675	10,159
	Percentage Share											
Canada	1.1	1.7	1.9	3.6	3.5	3.7	5.5	4.3	4.6	4.2	4.0	3.5
USA	7.9	14.1	12.8	15.8	12.5	13.5	21.7	14.9	12.3	11.2	12.6	8.9
Europe	-	-	-	-	-	-	35.1	47.8	50.9	43.5	45.4	43.0
Austria	3.1	4.2	2.9	0.9	0.8	0.6	-	-	-	-	-	-
France	10.5	7.9	6.8	6.0	6.1	3.9	3.4	5.2	6.3	5.2	6.0	4.5
Germany[a]	8.3	10.9	12.4	9.7	10.8	9.3	1.4	9.3	11.7	9.2	10.3	9.5
Italy	4.1	2.6	2.5	2.4	2.7	2.4	1.8	3.2	3.8	4.0	4.6	3.6
UK	18.9	14.6	13.5	10.9	10.2	10.8	11.3	7.8	5.1	5.0	4.9	3.8
Australia/NZ	**2.1**	**2.1**	**2.4**	**2.9**	**3.2**	**3.5**	**3.7**	**2.4**	**2.1**	**1.4**	**1.5**	**1.3**
Australia	**1.9**	**1.6**	**1.9**	**2.1**	**2.3**	**2.5**	**-**	**-**	**-**	**-**	**-**	**-**
New Zealand	0.2	0.6	0.5	0.8	0.9	1.0	-	-	-	-	-	-
China	2.0	1.2	1.5	2.2	1.6	1.9	0.9	1.3	1.0	1.2	2.5	7.5
India	5.0	3.4	4.1	3.5	2.8	2.6	2.2	1.0	0.5	0.5	0.6	0.9
Japan	0.3	1.0	1.6	2.9	2.9	3.3	0.4	3.5	6.4	8.0	9.9	5.9
GATT/WTO Members[b]	-	-	-	-	-	-	63.4	72.8	81.8	76.5	89.5	94.4
European Union[c]	-	-	-	-	-	-	-	27.5	38.6	30.4	36.1	39.4
Developing countries	-	-	-	-	-	-	31.4	22.6	20.2	26.8	25.2	34.1
Developed countries	-	-	-	-	-	-	66.4	72.9	76.3	68.2	73.3	62.6

Source: Compiled from the World Trade Organization (WTO, 2008) - International Trade Statistics 2008, Norbohm (1962)and Maddison (2001).

a Values refer to the Fed. Rep. of Germany from 1948 through to 1983.

b Membership as of the year stated.

c Values refer to the EEC(6) in 1963, EEC(9) in 1973, EU(10) in 1983, EU(12) in 1993, EU(15) in 2003 and EU(25) in 2005. Intra-EU trade is always included.

Note: Between 1973 and 1983 and between 1993 and 2003, X and M shares were significantly influenced by oil price developments.

A historical movement in the world merchandise import is presented in Table 2. However, due to the data limitation, the period covered is reduced to between 1948 and 2005. Similar to X, the world merchandise M has gradually increased, from USD62 bill. in 1948 to USD10,511 bill. in 2005. Comparison of Table 1 and Table 2 shows that the world merchandise M exceeded the world

merchandise X by USD3 bill. in 1948 but the gap expanded to USD352 bill. in 2005. Thus, the world merchandise M has been rising faster than the world merchandise X.

Amongst the reported countries, the largest merchandise importers in 1870 were the United Kingdom, followed by France and the United States, which accounted for 22.1, 9.7 and 8.9 percent of the world's total merchandise M, respectively. The United Kingdom maintained the position of the world top leader until 1948. However, in the subsequent reported period (1963), the United States emerged for the first time as the largest merchandise importer in the world, with the share of 11.4 percent of the world's total merchandise M. It has remained the world's top import leader ever since.

Australia's share in the world merchandise M has been, similar to its share in the merchandise X, rather insignificant, and in addition, fluctuating. Whereas historically Australia's proportion of the world X in merchandise (Table 1) has been slightly higher than the proportion of the total M (Table 2), in 2005 for the first time, Australia's contribution to the world M has been higher than its contribution to the total world X.

As evident from Table 2, in 1948, the GATT members accounted for 58.6 percent of the world merchandise M, while in 2005, the WTO members accounted for almost all merchandise M in the world in 2005 (96.1 percent). The contribution to the total world merchandise M by developed countries over the period 1948-2005 increased slightly, from 66.7 to 69.1 percent; while at the same time, it decreased for developing countries, from 31.3 to 28.9 percent.

TABLE 2: WORLD MERCHANDISE IMPORTS, SELECTED COUNTRIES, 1870-2005, USD, BILL

Year	1870	1900	1913	1929	1932	1938	1948	1963	1973	1983	1993	2005
World	-	-	-	-	-	-	62.0	164	594	1,882	3,769	10,511
Percentage Share												
Canada	1.5	1.7	3.2	3.6	2.8	2.2	4.4	3.9	4.2	3.4	3.7	3.0
USA	8.9	8.2	9.1	12.3	9.5	8.7	13.0	11.4	12.3	14.3	16.0	16.5
France	9.7	8.5	8.0	6.3	8.2	5.7	5.5	5.3	6.4	5.6	5.8	4.7
Germany [a]	-	12.8	12.7	8.8	7.9	8.7	2.2	8.0	9.2	8.1	9.1	7.4
Italy	3.3	3.1	3.5	3.1	3.0	2.4	2.5	4.6	4.7	4.2	3.9	3.6
UK	22.1	21.4	16.1	15.0	16.2	17.1	13.4	8.5	6.5	5.3	5.6	4.9
Asia	-	-	-	-	-	-	13.9	14.2	15.1	18.5	23.3	24.7
Australia/NZ	**-**	**2.1**	**2.2**	**2.4**	**1.7**	**2.9**	**2.9**	**2.2**	**1.6**	**1.4**	**1.5**	**1.4**
Australia	**-**	**1.7**	**1.7**	**0.6**	**1.1**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**
New Zealand	-	0.5	0.5	0.6	0.6	0.9	-	-	-	-	-	-
China	-	1.8	2.0	2.5	2.4	2.7	0.6	0.9	0.9	1.1	2.8	6.3
India	-	2.8	3.3	2.6	2.5	2.3	2.3	1.5	0.5	0.7	0.6	1.3
Japan	-	1.3	1.8	2.8	2.9	3.0	1.1	4.1	6.5	6.7	6.4	4.9
GATT/WTO Members[b]	-	-	-	-	-	-	58.6	74.2	89.1	83.9	88.7	96.1
EU [c]	-	-	-	-	-	-		29.0	39.2	31.3	34.3	39.3
Developing countries	-	-	-	-	-	-	31.3	22.0	18.7	25.6	26.5	28.9
Developed countries	-	-	-	-	-	-	66.7	73.8	78.0	70.1	72.3	69.1

Source: Compiled from World Trade Organization (WTO, 2008) - International Trade Statistics 2008, Norbohm (1962), Maddison (1962) and Maddison (2001).

a Figures refer to the Federal Republic of Germany from 1948 through 1983.

b Membership as of the year stated.

c Figures refer to the EEC(6) in 1963, EEC(9) in 1973, EU(10) in 1983, EU(12) in 1993, EU(15) in 2003 and EU(25) in 2005. Intra-EU trade is always included.

Note: Major breaks in time series affect continuity especially between 1913 and 1921(e.g. Germany).

In overall, this section has established that the X and M volumes of the world merchandise has been rising rapidly without any sign of slowing down. These patterns could be due to a number of reasons. According to Francis (2003), these trends are accelerated by declining costs associated with engagement in international trade such as reduction in transportation costs, communication costs and reductions in trade barriers. Another reason for these trends is the greater economic cooperation between countries that recognize the associated economic benefits of trade, as validated by many empirical studies in this review.

■The Ratio of Merchandise Export to GDP

Another way of examining international trade flows is to observe the contribution of the merchandise X to the corresponding country's GDP. This concept is related to the ELG hypothesis, which evaluates the relationship between a country's X levels and economic growth. Table 3 shows the ratio of the world and selected countries' merchandise X to the corresponding GDPs. The Table reveals that the ratio of the world X to the world GDP increased from 4.6 percent in 1870 to 20.5 percent in 2005. Thus, in 2005, the merchandise X accounted for 20.5 percent of the world's economic output. At the beginning of the examined period, in 1870, the highest ratio of X to GDP was experienced by Switzerland, followed by Netherlands and Finland, accounting for 18.9, 17.4 and 15.5 percent, respectively. In 2005, the highest proportion of X to GDP was in Belgium where the X exceeded the country's total GDP, reaching 112.6 percent. Over the estimated period, the Western European countries accounted for the highest merchandise X to GDP levels, with an increasing trend.

The ratio of Australia's merchandise X to GDP initially increased from 7.1 percent in 1870 to 13.2 in 1929: then, it dropped to 8.8 percent in 1950. For the successive 50 years, the contribution of merchandise export to GDP exhibited an increasing trend and in 2000 reached almost 20 percent of

Australia's GDP. However, in 2005, it dropped slightly, to 18.6 percent of GDP. As Table 3 indicates, Australia has maintained similar trends of the merchandise X to GDP ratio as the world on average.

Over the estimated period, the most significant expansion of merchandise X to GDP is recorded for Belgium, over 100 percent, and the lowest increase is for India, 1.1 percent. Brazil is the only country that experienced a net decline in merchandise X to GDP ratio, by 3.3 percent.

TABLE 3: RATIO OF MERCHANDISE EXPORT TO GDP, SELECTED COUNTRIES, 1870-2005

	Year							
	1870	1913	1929	1950	1973	1998	2000	2005
	Percentage Share							
World	4.6	7.9	9.0	5.5	10.5	17.2	18.5	20.5
Australia	**7.1**	**12.3**	**13.2**	**8.8**	**11.0**	**18.1**	**19.8**	**18.6**
Austria	5.5	8.6	7.4	5.2	16.3	45.5	52.7	64.8
Belgium	9.0	22.6	24.3	17.3	52.1	88.5	97.0	112.6
Brazil	12.2	9.8	6.9	3.9	2.5	5.4	5.5	8.9
Canada	11.3	11.6	22.4	12.3	19.3	39.0	42.4	39.7
China	0.7	1.7	2.6	2.6	1.6	4.9	5.9	10.7
Denmark	8.3	12.8	23.2	12.1	23.7	41.9	45.5	49.4
Finland	15.5	25.0	40.4	18.7	30.2	51.6	54.6	51.9
France	4.9	7.8	11.5	7.6	15.2	28.7	29.9	27.6
Germany	9.5	16.1	14.8	5.0	20.6	38.9	42.1	51.1
India	2.6	4.6	4.0	2.5	2.0	2.4	2.9	3.7
Italy	4.3	4.8	5.9	3.5	12.5	26.1	28.7	28.8
Japan	0.2	2.4	6.1	2.2	7.7	13.4	14.6	15.7
Mexico	3.9	9.1	14.3	3.0	1.9	10.7	12.3	12.3
Netherlands	17.4	17.3	29.7	12.2	40.7	61.2	62.9	77.7
Norway	9.0	14.0	23.3	12.9	26.2	55.4	56.7	55.6
Sweden	10.3	15.3	23.9	15.6	31.4	62.5	63.3	64.5
Switzerland	18.9	34.8	35.0	15.3	33.2	51.8	56.0	59.3
United Kingdom	12.2	17.5	14.2	11.3	14.0	25.0	23.1	19.3
United States	2.5	3.7	5.9	3.0	4.9	10.1	10.6	10.2

Source: Compiled from Maddison (2001) and World Trade Organization (WTO, 2008) - International Trade Statistics 2008.

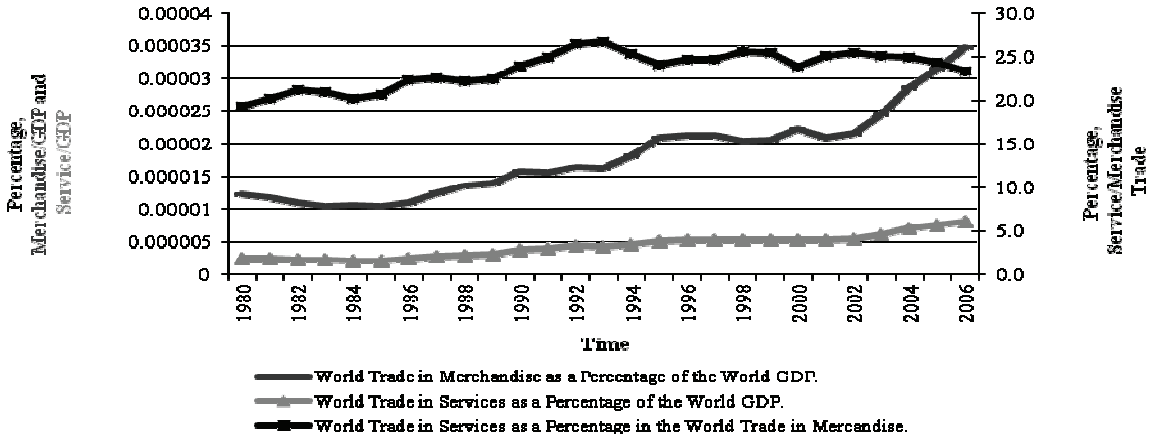
Note: Territorial changes affect comparability in time for a number of countries especially between 1913 and 1929 and 1929 and 1950 (e.g. Austria, France, Germany, Great Britain, China, India and Japan).

■The World Trade in Services

In recent years, the trade in services gained on its significance and according to McGuire and Findlay (2005), it accounts for approximately 20 percent of the total world X and is growing slightly faster than the trade in merchandise.

In an attempt to verify this indication, Figure 1 displays the ratio of both the merchandise and services X to the world GDP, as well as the proportion of the world trade in services as a percentage in world trade in merchandise. According to Figure 1, the world trade in merchandise has been persistently higher than the world trade in services. In the period between 1980 and 2006, the world trade in merchandise, as a proportion of the world GDP, increased almost three times, from 0.0000125 to 0.000035. Over the same period, the world trade in services as a proportion of the world GDP increased from 0.0000025 to 0.0000075 percent, which is exactly a three-fold increase from the level in 1980.

FIGURE 1: WORLD TRADE IN MERCHANDISE AND SERVICES, 1980-2006



Source: Compiled from the United Nation Conference on Trade and Development (UNCTAD): UNCTAD Handbook of Statistics, 2007, Tables: 1.1 Value and Shares of Merchandise Exports and Imports, 5.1 Value and Shares of Total Exports and Imports of Services and Table for GDP and its Breakdown at Constant 1990 Prices in US Dollars.

In order to find out whether the world trade in services has been gaining more significance than the world trade in merchandise, the world trade in services is expressed as a proportion of the world trade in merchandise. In order to identify the reality, it is important to note the differences in the two scales (left-hand-side and right-hand-side) used in Figure 1. The figure reveals that in 1980 the

world trade in services, measured as a proportion of the world trade in merchandise was 19 percent. This proportion increased gradually and reached a peak of 27 percent in 1993. However, after 1993, the world trade in services as a proportion of world trade in merchandise has been declining and reached 23 percent in 2006. Thus, the world trade in merchandise is far from being a shadow of the world trade in services.

In overall, this section has established that the X to GDP levels grew significantly for most of the countries in the world for the last 140 years. These trends give significant support for the ELG hypothesis, which stipulates that the X levels are playing a significant role in the country's economic growth. Furthermore, this section also establishes that the world X in merchandise is growing faster that the world X in services, which emphasize the relative importance of merchandise X and associated manufacturing industries.

TRADE FLOW DETERMINANTS, TRADE IMBALANCES AND THE NATIONAL ACCOUNTS

■Trade Flow Determinants

Trade flows are influenced by several factors. According to Morici (2007), X and M are affected by GDP levels, Exchange Rates (EXR), competitiveness, government policies that include fiscal and monetary policies and foreign trade practices, both domestic and international.

According to Orcutt (1950), Goldstein and Khan (1978, 1985), Bahmani-Oskooee (1986) and Deyak *et al*. (1993) X and M volumes are affected by income levels and relative prices. At the same time, the relative prices are determined by countries' EXR differentials. Other things being equal, it is expected that as a country's currency depreciates relative to other currencies, the products originating from that country will become relatively cheaper; hence, the X volumes from that country are expected to increase. This proposition stipulates that countries with higher economic growth are likely to import more than countries with a lower economic growth.

Another important factor that influences the relative price of products and consequently X and M is productivity levels in the corresponding industries (Trefler, 1993, 1995; Weinstein *et al*., 1997; Helpman, 1998 and Harrigan, 1997, 1999). This proposition suggests in industries where the productivity levels rise, the relative price of products from those industries falls and their international competitiveness and X from consequently rise. On the other hand, in industries in which productivity levels lag behind international productivity levels experience a relative price rise of their products. However, if an industry also supplies domestic markets, the decline in relative productivity in that industry may instigate an increasing M in that industry.

A further related factor influencing the X and M volumes is the level of innovation that, as pointed out by Krugman (1979) has an effect on many aspects of international trade flows, including the product quality, variety and productivity levels.

According to Hayward and Erickson (1995), international trade policies play an important part in determining X and M levels between countries. They can have an impact on the level of Foreign Direct Investment (FDI), which in turn has an effect on the X and M volumes (Orr, 1991; McCulloch, 1993). Other determinants of X and M include the distance between countries (Tinbergen, 1962; Deardoff, 1998), various government policies (Feaver *et al.* 1998; Kyereme, 2002; Jayanthakumaran, 2002), the level of Saving (S) and Investment (I) differentials between countries (Graham and Krugman, 1995).

In overall, this section has established that the X and M determinants tend to produce varying outcomes in different industries/countries depending on the nature and intensity of their effects on the trading environment. However, the main trade flow determinants are GDP levels, relative prices and the government policies.

■Trade Imbalances-An Overview

One of the neoclassical trade theory assumption is that trade between countries is balanced (Skarstein, 2007). However, the empirical evidence indicates that international trade flows between countries are unlikely to balance; some countries experience a large and protracted growing TD, while other countries experience prolonged and large Trade Surplus (TS). Some scholars including Dernburg (1989), Krugman (1993) and Blanchard (1997) suggest that trade imbalance will self-correct in the long-run, as long as the EXR are flexible. Skarstein (2007), however, argues that there is no reason for market forces alone to balance trade in the long-run. He pointed out two examples, one is the United States that have been in deficit since 1976, and this deficit is continuously escalating; the other is Japan that has been historically accumulating a massive TS.

According to national accounting principles - Balance of Payment (BoP), the countries that run the TS overtime generate a Current Account Surplus (CRAS) and a Capital Account Deficit (CPAD) and the status of such countries is known as 'Creditor Countries'. On the other hand, the countries that run the TD overtime generate a Current Account Deficit (CRAD) and a Capital Account Surplus (CPAS) and the status of such countries is known as 'Debtor Countries'. As pointed out by Quiggin (2004), a persistent TD leads to an exploding CRAD overtime.

Tables 4 to 6 present the trade imbalances for the selected countries according to their status, thus, depending on whether the country is running an overall TS or TD. Table 4 lists the world's top 20 creditor and debtor countries. The ranking is based on the average value for the selected periods

between 1973 and 2006, presented in a five year interval, except for the last interval that covers three years interval only. The ranking for creditor countries is listed in the descending order, while the debtor countries are ranked in the ascending order. The starting year, 1973, is chosen for two related reasons. The first, because in 1973 the 'The Bretton Woods', thus, the fixed EXR system officially came to an end (Carbaugh, 2005). The second, following the proposition by Orcutt (1950), Goldstein and Khan (1978, 1985), Bahmani-Oskooee (1986) and Deyak et al. (1993) that X and M levels and consequently, the TD and TS are affected by the EXR.

According to Table 4, the world's top creditor countries are Germany, Japan, Russian Federation, Saudi Arabia, and most recently, China. The average TS with the RoW for these five countries for the period 1973 to 2006 is a staggering USD246,084 mill. It is apparent that the world's top 20 creditor countries are either the countries with a strong manufacturing sector or they are associated with a significant world's energy production, such as oil and natural gas.

Table 4 clearly indicates a growing world trade deficit over the estimated period, starting with a deficit of USD10,581 mill. in 1973, and reaching a deficit of USD238,325 mill. in 2006. Thus, the increase between 1973 and 2006 is more than 22-fold. The average world deficit for the entire period accounted for USD104,396 mill.

Furthermore, according to Table 4, the world's top debtor countries are the United States, the United Kingdom and Spain. With the average TD of USD263,078 mill., the U.S. is the top debtor country. Its TD is rapidly growing, especially since the mid 1980s, reaching USD881,160 mill. in 2006. The U.S. TD exceeds the overall average for the entire period and the combined deficit for all the remaining 19 debtor countries.

As it is evident from Table 4, Australia is amongst the world's top 20 debtor countries. Australia recorded a TD in all selected years, except 1973, with the average TD for the entire period of USD5, 330 mill. Observing the composition of the world's top debtor countries in Table 4, it is noticeable that debtor countries are mainly the developed countries and the countries with a relatively declining manufacturing sector to the increasing service sector.

TABLE 4: TOP 20 WORLD'S CREDITOR AND DEBTOR COUNTRIES, 1973-2006

Creditor countries (USD mill., 1989/90 prices)

		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	Germany	12,673	20,699	16,540	72,856	37,525	72,206	146,896	203,258	72,832
2	Japan	-1,372	18,289	20,528	77,478	120,620	107,443	88,887	70,357	62,779
3	Russia	-	-	-	-	8,211	11,068	52,252	124,266	48,949
4	Saudi Arabia	7,043	20,312	6,665	2,592	14,193	8,809	56,329	149,168	33,139
5	China	669	-1,176	836	-7,752	-12,215	43,475	25,468	177,775	28,385
6	Belgium	-	-	-	-	-	-	20,665	14,950	17,807
7	Netherlands	-1,392	-3,724	5,455	3,744	12,344	18,312	31,297	46,778	14,102
8	Ireland	-659	-1,431	-571	3,173	7,843	21,112	38,856	36,350	13,084
9	Norway	-1,564	-615	4,501	-784	7,898	2,926	27,994	57,109	12,183
10	Indonesia	482	4,953	4,794	5,971	8,495	23,033	24,563	22,834	11,891
11	Canada	1,724	2,154	11,960	4,394	6,143	8,261	27,791	31,879	11,788
12	Brazil	-800	-2,395	5,098	17,439	10,950	-9,995	22,203	41,953	10,557
13	UAE	1,335	4,467	7,548	3,728	4,120	6,331	15,061	40,251	10,355
14	Rep. of Korea	-1,019	-2,250	-1,746	8,885	-1,564	39,031	14,990	16,082	9,051
15	Malaysia	599	1,495	842	4,575	1,481	14,983	17,421	29,493	8,861
16	Sweden	1,293	1,201	1,348	4,120	7,221	16,352	18,557	20,273	8,796
17	Kuwait	2,761	5,829	4,199	1,613	3,208	934	9,689	41,275	8,688
18	Taiwan (China)	582	1,631	4,778	10,739	7,542	5,572	16,534	21,282	8,582
19	Middle Africa	1,077	1,022	2,318	1,741	4,571	3,480	8,860	44,127	8,399
20	Venezuela	2,079	-2,580	7,518	-2,482	2,075	1,889	16,747	31,594	7,105
	World	**-10,581**	**-36,939**	**-45,535**	**-92,432**	**-64,900**	**-119,948**	**-226,504**	**-238,325**	**-104,396**

Debtor countries

		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	USA	-2,749	-40,199	-64,239	-137,116	-138,665	-262,215	-578,279	-881,160	-263,078
2	UK	-8,891	-7,926	-8,366	-44,236	-27,971	-47,230	-93,741	-152,442	-48,850
3	Spain	-4,469	-5,598	-9,459	-20,161	-12,930	-24,662	-52,437	-114,934	-30,581
4	Greece	-2,020	-4,461	-5,087	-6,892	-13,587	-19,410	-31,459	-42,751	-15,709
5	Turkey	-769	-2,311	-3,507	-2,673	-14,083	-18,947	-19,061	-51,672	-14,128
6	India	-	-1,194	-4,913	-5,868	-1,217	-9,543	-13,595	-54,579	-12,987
7	Portugal	-1,173	-2,823	-3,642	-6,951	-8,804	-13,619	-15,437	-23,331	-9,473
8	France	-1,671	-3,769	-13,411	-15,020	-668	12,846	-6,799	-44,509	-9,125
9	Egypt	206	-4,990	-7,061	-17,592	-5,962	-13,036	-4,828	-3,909	-7,146
10	Poland	-1,381	-2,506	645	1,248	-4,691	-19,303	-14,467	-15,063	-6,940
11	Mexico	-1,563	-2,104	13,477	1,290	-16,553	-13,488	-13,107	-17,728	-6,222
12	Croatia	-	-	-	-	-748	-3,758	-8,022	-11,112	-5,910
13	**Australia**	**2,166**	**-1,151**	**-1,345**	**-2,862**	**-2,854**	**-8,737**	**-17,538**	**-10,320**	**-5,330**
14	Israel	-2,792	-3,493	-4,466	-6,821	-7,798	-6,349	-4,519	-3,544	-4,973
15	China, HK	-584	-1,941	-2,058	-733	-3,406	-10,516	-8,134	-12,012	-4,923
16	Serbia*	-	-	-	-	-1,428	-1,991	-5,395	-6,743	-3,889
17	Lebanon	-365	-1,092	-2,901	-1,677	-4,369	-6,408	-5,502	-6,833	-3,644
18	Austria	-1,836	-3,844	-3,939	-5,512	-8,417	-5,421	-2,385	2,781	-3,572
19	Morocco	-234	-1,462	-1,586	-1,147	-3,677	-3,137	-5,472	-10,987	-3,463
20	Romania	-47	-1,552	1,098	3,138	-1,630	-3,521	-6,384	-18,770	-3,458

Source: Compiled from the United Nation Conference on Trade and Development (UNCTAD): UNCTAD Handbook of Statistics, 2007.

Note: 'Average' indicates average values of all periods presented in this table for the specific country and rankings are according to average values. Furthermore, the creditor countries are named those with a positive average trade balance, while debtor countries are with average negative trade balance. Finally, the ranking for creditor countries are in descending order, whilst the ranking for debtor countries are in ascending order.

** Including Republic of Montenegro.*

Another way of identifying the top world's creditor and debtor countries is to examine the TS for creditor countries and the TD for debtor countries as a proportion of the corresponding country's GDP. This approach is particularly useful for debtor countries, because the TD cannot be labeled as large or small, without examining the corresponding country's GDP levels.

Table 5 shows the world's top 20 creditor and debtor countries with TS and TD levels expressed as a percentage of the corresponding country's GDP. The ranking is according to the average percentage over the period 1973 to 2006. Based on this indicator, the top creditor countries as a proportion of their GDP are Kuwait, the United Arab Emirates (UAE), Saudi Arabia and Ireland. The top ranked creditor country, Kuwait, exhibits the average TS for the entire period of 24.18 percent of its GDP. In 2006, Kuwait's TS accounted for a staggering 89.62 percent of its GDP. Is it is evident that, in general, the top creditor countries's TS relative to their size of the economy are mainly oil producing countries.

The world TD as a percentage of the world GDP rose from 0.08 percent in 1973 to 0.39 percent in 2006, which is almost a 5-fold increase over the estimated period. As indicated by Table 5, the world's top debtor countries in terms of the share of TD to GDP are Lebanon, Croatia and Serbia-

Montenegro2. Lebanon's TD as a percentage of GDP is, on average for the entire period, 68.73 percent, with an incredible TD to GDP of 112.26 percent in 2006 (even higher in 1998).

Australia's TD to GDP rose from 1.09 percent in 1973 to 1.86 percent in 2006, with the average for the estimated period of 1.41 percent. Compared to the world's top debtor countries, this proportion is relatively low; however, since 1998, Australia's proportion of the TD relative to GDP has noticeably increased, averaging almost 2.5 percent in the period between 1998 and 2006, compared to the overall average of 1.41 percent for the entire period.

Finally, observing the composition of the world's top debtor countries and their TD to GDP shows that the highest proportions are recorded for the developing countries.

TABLE 5: RATIO OF TRADE BALANCE TO GDP, 1973-2006, TOP 20 CREDITOR AND DEBTOR COUNTRIES

Creditor countries, percentage (1989/90 prices)										
		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	Kuwait	8.80	22.11	22.47	8.11	12.04	3.13	27.15	89.62	24.18
2	UAE	32.50	21.40	25.56	14.75	11.26	12.83	22.11	45.52	23.24
3	Saudi Arabia	9.71	18.88	6.18	2.41	10.66	6.01	34.08	76.09	20.50
4	Ireland	2.70	4.53	1.61	7.61	15.15	26.81	34.81	28.10	15.17
5	Venezuela	6.23	5.80	17.96	5.14	3.78	3.18	33.31	44.05	14.93
6	Malaysia	3.96	7.06	2.81	12.37	2.57	19.79	18.05	25.57	11.52
7	Russia	-	-	-	-	1.94	3.38	11.55	22.58	9.86
8	Norway	2.35	0.74	4.70	0.70	6.19	1.84	15.93	29.94	7.80
9	Indonesia	1.17	8.46	5.84	5.65	5.39	12.81	11.39	9.04	7.47
10	Belgium	-	-	-	-	-	-	7.98	5.41	6.70
11	Netherlands	0.69	1.62	2.29	1.37	3.96	4.95	7.60	10.66	4.14
12	Germany	1.10	1.61	1.19	4.65	2.05	3.60	6.89	9.10	3.77
13	Sweden	0.75	0.65	0.67	1.77	3.11	6.07	6.03	5.91	3.12
14	Rep. of Korea	1.42	2.07	1.21	3.92	0.48	9.74	2.75	2.58	3.02
15	China	0.61	0.82	0.39	2.07	2.12	4.65	1.80	9.34	2.73
16	Brazil	0.34	0.75	1.45	3.92	2.37	1.85	3.76	6.38	2.60
17	Japan	0.08	0.97	0.93	2.84	3.82	3.23	2.55	1.87	2.04
18	Canada	0.49	0.52	2.62	0.78	1.04	1.18	3.35	3.51	1.69
19	China, Taiwan	0.53	1.14	2.26	2.87	1.31	0.60	1.17	1.12	1.37
20	Middle Africa*	-	-	-	-	-	-	-	-	-
	World	0.08	0.23	0.26	0.43	0.28		0.73	0.69	0.39
Debtor countries										
		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	Lebanon	4.31	22.64	72.46	29.85	100.49	115.03	92.84	112.26	68.73
2	Croatia	-	-	-	-	4.71	18.05	32.97	40.38	24.03
3	Serbia**	-	-	9.56	10.64	29.82	27.57	19.40	27.57	19.40
4	Egypt	1.87	29.55	26.17	49.75	13.26	22.65	6.87	4.67	19.35
5	Greece	2.44	4.59	5.23	6.62	12.30	15.39	20.28	24.45	11.41
6	Romania	0.23	4.80	2.75	7.25	5.25	10.95	16.81	40.86	11.11
7	Portugal	2.66	5.71	6.43	10.22	11.32	14.70	15.18	22.30	11.06
8	Morocco	1.76	8.07	7.56	4.23	12.54	8.78	13.12	23.16	9.90
9	Poland	2.80	3.68	1.07	1.71	7.35	22.48	14.53	13.23	8.36
10	Israel	8.81	0.44	10.17	12.89	11.45	7.13	4.54	3.08	7.31
11	Turkey	1.08	2.47	3.39	1.94	8.09	9.05	8.43	18.41	6.61
12	Spain	1.34	1.47	2.36	4.21	2.42	3.95	6.96	13.76	4.56
13	UK	1.24	1.04	1.05	4.59	2.79	4.01	6.94	10.44	4.01
14	United States	0.08	0.99	1.46	2.51	2.27	3.57	6.91	9.50	3.41
15	Mexico	1.10	1.13	5.94	0.54	5.72	4.04	3.47	4.21	3.27
16	Austria	1.69	3.13	2.85	3.62	4.79	2.73	1.09	1.18	2.64
17	India	0.00	0.65	2.23	2.02	0.33	1.90	2.06	6.41	1.95
18	**Australia**	**1.09**	**0.51**	**0.53**	**0.93**	**0.83**	**2.04**	**3.47**	**1.86**	**1.41**
19	France	0.21	0.41	1.31	1.29	0.05	0.91	0.43	2.68	0.91
20	China, HK	0.54	1.35	0.97	0.20	0.59	1.12	0.57	0.63	0.75

Source: Compiled from the United Nation Conference on Trade and Development (UNCTAD): UNCTAD Handbook of Statistics, 2007 and The United Nations (UN, 2008): United Nations Statistic Division.

Note: Average figures are average values of all the periods presented in this table for the specific country and the rankings are according to the average percentage values (Trade Balance/ GDP). Finally, the ranking for both the creditor and debtor countries are in descending order.

** In Table IV is one of the Top 20 Creditor countries, however, the data on GDP and Gross Investment are not available and therefore the ratio could not be calculated. ** Including republic of Montenegro.*

Now, that the world's top creditor and debtor countries have been identified and the relative magnitude of the TS and TD to countries' GDP is determined, it is useful to establish what percentage of the TS and TD accounts for the corresponding countries investment. This is particularly important for the debtor countries as it is an indicator of the future ability to repay their

[2] In May 2006, Serbia and Montenegro declared independency; however, the trade data for the year 2006 reflect trade statistics for both countries combined.

debts associated with the growing TD. As Carbaugh (2005) pointed out, if debt is used for the I, it will increase the future productive capacity of the economy which may be sufficient to repay the debt and increase domestic spending; however, if the debt finances consumption it is likely to be a burden of borrowing in the future.

Table 6 shows the world's top creditor and debtor countries and their corresponding TS and TD as a percentage of the gross national capital formation (a proxy for the investment, I) for the period 1973 to 2006. For the creditor countries, the values show what proportion of the TS is used for the I, while for the debtor countries, they show what proportion of the TD is spent on the I.

As Table 6 shows, the country with the largest TS, Kuwait, almost doubled its gross capital formation as the proportion of its TS, over the period. In 2006, Kuwait's gross capital formation was 4.38 times higher than its TS levels. Once again, it is apparent that the highest proportion of gross capital formation to the TS levels is mainly for the world's largest energy exporters.

Establishing the proportion of gross capital formation to the TS levels for creditor countries is informative; however, establishing it for debtor countries is vital. If a debtor country accumulates debts overtime by running a TD those debts must be repaid in the future.

Thus, the I levels, expressed as the gross capital formation to their debt are of paramount importance. The world's proportion of the gross capital formation to the world's TD levels, presented in Table 6, rose from 0.31 percent in 1973 to 2.72 percent in 2006. It is a more than 5-fold rise over the period. The average value for the entire period is 1.57 percent, is relatively low which suggests that the world's TD is used mostly for the C rather than the I.

TABLE 6: RATIO OF GROSS CAPITAL FORMATION TO TRADE BALANCE, 1973-2006, TOP 20 CREDITOR AND DEBTOR COUNTRIES

Creditor countries, percentage (1989/90 prices)

		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	Kuwait	297.15	165.15	93.84	60.77	118.45	29.57	202.74	438.85	175.81
2	Russia	-	-	-	-	10.27	51.07	114.54	196.71	93.15
3	UAE	112.19	56.19	86.4	61.29	50.59	55.25	104.45	152.62	84.87
4	Venezuela	25.83	18.95	151.44	17.16	16.21	12.3	236.41	142.16	68.53
5	Ireland	9.65	17.86	7.05	46.71	100.9	118.06	165	123.11	64.9
6	Saudi Arabia	72.42	52.02	18	12.24	43.34	31.09	148.14	273.34	63.22
7	Malaysia	15.76	25.82	7.48	46.37	6.32	67.36	67.56	98.84	41.94
8	Belgium	-	-	-	-	-	-	39.26	24.18	31.72
9	Norway	6.45	2.47	16.98	2.52	29.47	6.71	75.59	112.79	28.76
10	Indonesia	4.35	23.3	13.03	13.73	13.01	39.32	42.08	33.29	22.76
11	Germany	4.23	7.12	5.75	21.61	9.26	16.34	36.34	46.09	18.34
12	Sweden	3.38	3.7	3.8	8.33	19.33	31.36	32.54	29.77	16.53
13	Netherlands	2.39	6.29	10.98	6.19	19.64	20.22	34.75	48.01	16.39
14	Brazil	1.28	2.85	7.72	15.27	10.07	7.34	16.31	28.21	8.26
15	Canada	2.61	2.74	14.8	3.56	5.54	5.46	14.42	13.34	7.81
16	Japan	0.24	3.14	3.44	9.03	12.61	11.54	10.15	7.36	7.13
17	Rep. of Korea	7.78	6.93	4.49	12.54	1.3	34.88	8.99	8.79	5.59
18	Taiwan (China)	1.58	3.01	6.6	7.76	3.18	1.6	2.84	2.58	3.64
19	China	1.82	2.17	1.15	-5.6	5.16	12.45	4.38	21.54	3.55
20	Middle Africa*	-	-	-	-	-	-	-	-	-
	World	0.31	0.97	1.18	1.85	1.24	1.83	3.1	2.72	1.57

Debtor countries

		1973	1978	1983	1988	1993	1998	2003	2006	Average
1	Lebanon	28.26	164.22	458.99	102.21	373.37	694.7	671.89	811.44	413.13
2	Serbia**	-	-	-	-	85.34	116.04	131.51	97.85	107.68
3	Croatia	-	-	-	-	32.42	72.27	110.16	125.13	85
4	Romania	0.72	10.76	7.64	23.56	22.9	66.22	86.2	186.78	50.6
5	Egypt	3.47	33.4	35.9	161.7	42.19	59.6	18.4	10.44	45.64
6	Portugal	8.88	23.09	29.48	39.05	46.62	45.42	53.95	85.88	41.55
7	Greece	5.06	14.14	21.64	27.27	53.71	57.42	64.5	78.16	40.24
8	Israel	29.31	43.64	48.22	74.2	44.03	28.97	24.63	16.94	38.74
9	Morocco	8.15	22.89	25.97	16.53	48.44	30.23	40.03	66.36	32.33
10	Poland	10.44	13.85	4.16	6.28	38.11	70.53	57.84	48	31.15
11	Turkey	5.9	17.07	21.66	9.6	28.96	35.94	34.92	65.27	27.42
12	U K	5.79	5.53	6.02	21.49	15.06	17.83	31.63	45.11	18.56
13	Spain	5.03	6.67	12.38	17.58	11	15.71	24.94	45.78	17.39
14	United States	0.41	5.16	8.68	13.88	12.66	15.73	32.01	41.27	16.12
15	Mexico	3.97	3.97	28.26	2.4	22.04	14.39	13.21	16.24	13.06
16	Austria	6.33	13.63	14.1	15.61	21.13	11.64	4.86	5.4	11.59
17	India	0	2.45	9.31	7.37	1.39	7.25	7.15	17.19	6.51
18	**Australia**	**3.81**	**2.11**	**2.18**	**3.35**	**3.49**	**7.31**	**10.88**	**5.32**	**4.81**
19	France	0.85	2.02	6.91	6.07	0.28	4.46	2.06	12.02	4.26
20	China, HK	1.59	3.58	2.84	0.53	1.44	3.01	1.4	1.46	1.98

Source: Compiled from the United Nation Conference on Trade and Development (UNCTAD): UNCTAD Handbook of Statistics, 2007 and The United Nations (UN, 2008): United Nations Statistic Division.

Note: Average figures are average values of all periods presented in this table for the specific country and t rankings are according to the average percentage values (Trade Balance/ Gross Capital Formation). Finally, the ranking for both the creditor and debtor countries are in descending order.

** In Table IV is one of the Top 20 Creditor countries, however, the data on GDP and Gross Investment are not available and therefore the ratio could not be calculated. ** Including republic of Montenegro.*

Table 6 reveals that developing countries experienced the highest proportion of gross capital formation to the TD. The first place is occupied by Lebanon, followed by Serbia-Montenegro, Croatia and Romania with 413.13, 107.68, 85 and 50.6 percent on average, respectively. In contrast, the United States, the United Kingdom and Spain, the world's top debtor countries, overall (see Table 4), reached the proportion of the gross capital formation to their TD levels on average between 16 to 18 percent and in recent years this value has become significantly higher, reaching 40 percent in 2006.

Australia's gross capital formation as a percentage of the TD levels accounted for 3.81 percent in 1973 when it started its steady uprising trend, reaching almost 11 percent in 2003. However, in 2006, Australia's gross capital formation to the TD levels almost halved to 5.32 percent which was close to its overall average for the entire period equal to 4.81 percent. Thus, Australia's increasing debt levels are associated with a growing TD. However, only 5 percent of the generated debt is used for the I. The remaining 95 percent appear to be associated with other components, such as the C. It is evident that Australia's gross capital formation as a percentage of the debt is one of the lowest amongst the debtor countries.

The growing TD and its implications generate diverse responses. The studies by Moon (2006), Scott (2007) and Tonelson and Petrucci (2007) suggest that the growing TD is a problem, while the studies by Robert (1992) and Griswold (2007) argue that there is nothing to worry about. Pakko (1999) and Ghosh (2006) take the view that it all depends on the overall macroeconomic environment. Therefore, a question must be posed – "To what extent should the trade imbalances and the TD be of concern. Stein (2004) argues that there are inadequate policies concerning the growing TD and external debt. A rising external debt is financed by the selling of assets or by further increase of the national debt levels that are measured by Net International Investment Position (NIIP). As the NIIP declines, due to the increasing TD levels, a classical concern is the so-called 'Hard-landing Scenario3' (Cline, 2007). Furthermore, there are increasing concerns that the growing TD in some countries may eventually lead to trade protection (Cline, 2007) and subsequently cause the decline in the overall national welfare.

■National Accounts

TD levels cannot be examined autonomously because they are interrelated with international money markets. The BoP summarises all economic transactions in monetary terms for both the flows in the goods and services and the monetary flows between one country and the RoW and consists of the Current Account (CRA) and the Capital Account (CPA) (Carbaugh, 2005). Some studies suggest that the CRAD and the CPAS in debtor countries is caused by the differences between C and S differentials (Calvo et al., 1996); S and I differentials (Graham and Krugman, 1995; Chinn and Prasad, 2003; Lee et al., 2006); the global supply and demand for S (Bernanke, 2005); Other studies suggest that the I levels alone are largely responsible for the CRAD (Spatafora and Warner 1995; Serven, 1999). Carbaugh (2005, p.329) defines the CRAD as: (G – T) + (I – S), where (G – T) is the government deficit (Government Expenditure (G) minus Government Tax (T)) and (I – S) is private I minus private S. According to Griswold (2007), the direct link between the CRA and the CPA is the equality between the S and I differentials and the trade balance. However, Dorman (2007) argues that a low domestic S is not responsible for increasing TD levels, because trade factors influence the macroeconomic aggregates rather than, as conventionally assumed, that macroeconomic aggregates influence trade factors.

As obvious from Tables 4 to 6, the world's top debtor countries, including Australia, have generated a significant CRAD that has been increasing overtime. It is, therefore, important to establish whether the growing CRAD represents a potential economic problem. According to the Lawson Doctrine, the CRAD is not a major problem as long as this deficit is generated by the private sector I and not due to the public sector deficit (Corden, 1994). However, when Mexico's financial crisis occurred in 1994, the Lawson Doctrine proved to be flawed and this phenomenon is supported by other studies. The study by Loser and Ewart (1997) noted that regardless of underlying factors of the CAD, a large CAD is likely to be unsustainable.

If the CRAD increases, it is financed by capital inflows, so the CPA has to be in surplus. However, if there are insufficient inflows in the CPA and the CRAD is present, the macroeconomic implication for the country can be very serious. As Hutchinson and Noy (2002) pointed out, a sudden decline in foreign capital inflows is likely to reduce the levels of I, GDP and employment. In fact, studies by Calvo et al. (2004), Edwards (2004a; 2004b; 2005a; 2005b; 2005c) report that countries that experienced a sudden decline in capital inflows also experienced a significant decline in GDP. Other examples of the negative consequences of CRAD imbalances, causing the currency

[3] Hard-landing Scenario indicates a sudden loss of investors' confidence in particular the country's ability to repay its debts associated with the increase of foreign liabilities. As a consequence, there is a massive outflow of funds which ultimately leads to an economic downturn or a recession.

crisis, decline in GDP, and rise in unemployment include Denmark in 1970 and 1983, Sweden in the 1980s, the United Kingdom in the 1990s and France and Italy in 1992.

Pitchford (1990, 1995) argues that the CRAD is not a problem and does not constitute a macroeconomic policy concern as long as the EXR is flexible; however, this view has not been supported by empirical studies. Based on empirical studies including Debelle and Faruqee (1996), Milesi-Ferretti and Razin (1998), Cashin and McDermott (1998), Freund (2000), Chinn and Prasad (2003), Mussa (2004), Edwards (2004b; 2005a; 2005b) and Munro (2005), it has been suggested that a CRAD cannot rise indefinitely and the adjustments are likely to take place in the range of between 4 and 5.5 percent of the GDP.

According to Bonnaz and Paquier (1993), a growing TD affects the EXR stability which can have an effect on the stability of the money markets4. Cline (2007) argues that a growing external debt undermines foreign investors' confidence, which will eventually cause a rapid decline in capital inflow and depreciation of the EXR5. This will increase the interest rates and as a result, I levels, the stock market, and the housing market will decline. This chain of consequences is likely to lead the economy into recession.

Finally, the growing TD can have a negative impact on the nation's Terms of Trade (TOT6), unemployment levels and the stability of the international money markets (Carbaugh, 2005). The TD indicates that the country's capital goes to foreign holdings, which will ultimately undermine economic growth in the future (Morici, 2007).

In overall, it can be concluded that inconclusive evidence exists whether the TD is generated by macroeconomic aggregates that influencing the trade factors or whether the TD is generated by trade factors that are influencing the macroeconomic aggregates. However, irrespective of how the growing TD is generated, the empirical evidence suggests that a growing TD is not self-correcting, can undermine investors' confidence and that it can have negative economic consequences if the growing TD levels are not managed well.

■Trade Deficit-Economic Implications

The global imbalances represented by the TD, TS hence CRAD and CPAS amongst the countries are evident. Dooley et al., (2003; 2004) suggest that the principal driving force which is causing the global imbalances is the ELG strategy perused by the East Asian countries, most notably China.

According to Stein (2004), the TD may reflect the effects of the low level of domestic S, but at the same time, the TD is an indicator of the RoW competitiveness. This argument by Stein suggests that countries that generate a TD should pay attention to their level of competitiveness. The growing TD is frequently associated with significant job losses, most noticeably in the manufacturing sector. Ghosh (2000), for instance pointed out a long-run evidence of the association between employment levels in manufacturing and the net import in the United States. Morici (2006) argues that growing TD levels shift domestic productive resources from X and M competing industries (manufacturing sector) which are high in Research and Development (R&D) to non-tradable activities (service sector) such as restaurants and retirement villages which in turn 'cripples' future economic growth.

The growing TD levels are non-discriminatory and are common to both the developing and developed countries. There is a strong association between TD levels and the stage of development (Siebert, 1989; Eichengreen, 1992; Genberg and Swoboda, 1992; Roldos, 1996; Chinn and Prasad, 2003). Moon (2007) suggests that developing countries should therefore, exercise caution and adopt a prudent avoidance of the mounting and chronic TD levels that is proven to be a better alternative for the economic progress.

The growing TD levels are also an increasing concern for many developed countries, including the United States, Australia and many European Union member countries (Wijeweera and Deskins, 2008). According to Wijeweera and Deskins a large TD is not likely to be self-correcting as previously suggested by Dernburg (1989), Krugman (1993) and Blanchard (1997), and the government intervention to correct the TD appears to be the only option.

Pattillo et al. (2004) suggest that for highly indebted countries a twofold increase in the debt level reduces the GDP growth by approximately one percent and the country's real interest rates are likely to be higher by about 20 to 30 basis points, for each percentage point of debt to GDP levels (Obstfeld and Rogoff, 2001; IMF, 2005).

Reisen (1998), Erturk (2003), and Pattillo et al., (2004) advocate that growing debt levels make the financial crises to occur more likely. This view is also supported by Moon (2005) who pointed out that high TD levels amongst the Asian countries in 1990s have contributed to the Asian financial crisis.

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[4] The models of international trade 'Hysteresis Phenomena' stipulate that a significant EXR shocks; both appreciation and depreciation of the currency in terms of other currencies can inflame a permanent effect on the trade flows between the countries, hence on the trade balance (Amano *et al*., 1993; Baldwin, 1988; Harris, 1993; Mastropasqua and Vona 1989).

[5] It has been suggested that the depreciation of the currency leads to the improvement in trade balance in the long-run. After devaluation of the currency relative to other trading partners' currencies, it will lead to an initial worsening of the trade balance, however, in the long-run, trade balance will improve. This phenomena is known as a 'J-curve' (Dornbusch *et al*., 2002). However, the empirical support for the J-curve phenomena is inconclusive, and some studies show the evidence for the J-curve phenomena (Bahmani-Oskooee, 1985), while others such as Himarios (1989) do not.

[6] TOT is the ratio of the price of exports to the price of imports.

Despite the fact that many countries experience significant and growing TD levels, and despite the TD being one of the most significant concerns in the modern economic landscape, there is an inadequate frame to interpret the TD and the area has not been subject to vigorous empirical analysis by economists.

The growing TD has been so far regarded as a 'consequence' of other macroeconomic variables, rather than an independent agent for economic policy concern. However, Moon (2005; 2006) Morici (2006; 2007), Dorman (2007) Scott (2007) and Tonelson and Petrucci (2007) contest that view. They suggest that the growing TD is more a causing agent rather than the consequence of other macroeconomic variables. Dorman (2007) advocates explicitly that the TD is a cause rather than a consequence, as the TD is affecting the macroeconomic aggregates rather than the other way around.

POLICY IMPLICATIONS

Based on this overview, it is apparent that international trade and the relative openness plays a significant role in the economic prosperity for all countries in the world. However, the economic prosperity associated with international trade and openness can generate negative consequences for the countries which are accumulating increasing TD levels as a percentage of their GDP levels. Australia is one of the TD countries for which the TD levels are increasing as the proportion of GDP overtime. Furthermore, the Australian debt associated with the TD levels is predominantly used for other purposes than investment which includes household and government consumption spending (The Treasury, 2011) and government expenditure on defence and administration, which in turn diminishes its ability to repay these debts in the future. In overall, these trends are likely to weaken the future economic prosperity in Australia, unless something is done to maintain the TD levels at more sustainable levels.

In order to ease or prevent any negative consequences associated with a growing debt with rising TD levels in Australia, some specific government policies may be necessary. Such specific policies may include increase funding for Research and Development (R&D) and improvements in the productivity levels in the current and future export industries. In addition, another alternative policy would include various incentives to encourage that rising debt levels associated with the growing TD levels are used for investment, since this is likely to generate additional future income to increase the ability to repay those growing debts.

CONCLUSIONS

The trade volumes amongst countries have grown significantly overtime and trade in manufactures traditionally dominates the composition of trade between countries. The world trade volumes in the manufactures account increasingly for the higher proportion of the world GDP than the overall trade in services as a percentage of the world GDP. In recent years, however, the trade in service has increased in significance. Despite international trade in services gaining more significance, trade in manufactures remains the major component of X and M volumes amongst countries. This trend is likely to continue in the near future.

The estimated trade tendency appears to be the result of trade liberalization led by multilateral agreements, the rise in the popularity of RTA and of the formation of the WTO. Based on the findings of numerous empirical studies, there is strong evidence that relatively open countries have been achieving a higher economic prosperity than the less open countries. However, not all scholars agree that free trade always leads to a higher economic prosperity. One demonstration of this argument is the incidence of unbalanced trade by some countries. Unbalanced trade, in particular for the TD countries, leads to rising debt levels with the RoW and these resulting liabilities can have undesirable macroeconomic consequences, especially if the growing TD levels are not managed properly.

Australia has been running a significant TD with the RoW for the last 30 years, with the TD levels and a percentage of TD to GDP rising. There is a view that the TD levels and associated liabilities are not necessarily bad if such liabilities are intended for investment. However, over the period 1973 and 2006, Australia's gross capital formation accounts for less than 5 percent of the TD, on average. This suggests that Australia's liabilities with the RoW are utilized for other than investment purposes; which includes household and government consumption spending (The Treasury, 2011) and other expenditure such as government expenditure on defence and administration, while these facts are not very encouraging.

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