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Analysis of the World Trade Crisis

Lakmin Wickramasuriya

Advisor:Assistant Professor Gregory Corcos

Master Thesis in International Business

NORGES HANDELSHØYSKOLE

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Abstract

Throughout my studies my main area of passion has been Economics specifically macro economics. This is as it is primarily focused in the practical aspects of the business world.

Therefore my idea was to focus on an economic problem that was critical in the current environment. This is due to my being able to provide an additional original outlook.

Therefore the topic I chose is the synchronous global trade crisis of 2008 and early 2009. This was ideal as it enables me to provide new insights into a fairly new topic. Therefore I have critically considered the various causes that have been espoused as causing this crisis. Furthermore a comparison with another great trade crisis that occurred in 1929 has been considered. Finally, the possibility of how to avert the deepening of this crisis and future aversion of a similar scenario has been considered.

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Foreword

This thesis is only a step towards uncovering what exactly caused the world trade crisis of 2008 and 2009. However, I certainly hope that its contents are useful in the further analysis of this subject. It is also my hope that based on the conclusions drawn and other research conducted on the subject measures will be taken to rectify the crisis, and also avert it in future.

I express my gratitude to Assistant professor Gregory Corcos who was my advisor for this thesis, for introducing me to this topic and also for providing valuable feedback in relation to this area particularly with regard to analysis. Without his help and guidance I would not have had the opportunity to gain such a significant insight into the above mentioned problem. Lastly I thank my friends and family for all the support they rendered me.

Sincerely,

Lakmin Wickramasuriya

2.0 Introduction

2.1Background

The analysis and research conducted on the global trade crisis that occurred during 2008 and the early part of 2009 has been significantly low. This is due to the relatively low time period that has passed since the incident occurred. However, there have been several research papers that have been published on the subject of the collapse of world trade. These have focused on identifying the reasons behind its failure and the extent of its impact. Despite this there has not been a coherent underlying thread which could have been beneficial in understanding the issue in focus.

Caroline Freund's (2009) analysis of the global trade crisis of 2008 was that there was a systematic breakdown in trade all over the world. She also believed that the high level of elasticity trade had to national GDP explained why it fell at a faster rate than national income. To further this point she provided statistical analysis related to this fact. In addition she mentioned several other factors that can have influenced the fall in trade. These ranged from the use of protectionist policies to the higher level of vertical specialization prevalent in world industry. (Freund.C, 2009)

Many of the articles regarding the trade crisis have focused on the effects of vertical specialization. Tanaka.K (2009) for instance states that this collapse was inevitable due to high levels of interdependence in finance and Foreign Direct Investment. However, he believes that this does not explain the asymmetry in the trade contraction around the globe that happened simultaneously. The theory espoused by him mentions the emergence of global production networks and how it boosts the value of foreign trade. Conversely its breakdown adversely affected the world economy (Tanaka, K, 2009). Though not directly related Escaith and Gonguet's (2009) article focused on how the financial transmission mechanisms affected the global supply networks. According to them this in turn reduces industrial production and contracts world trade.

Furthermore empirical analysis has been conducted on determining whether there was a synchronized global trade contraction. Araujo & Martins (2009) figures that will be reproduced later in the thesis confirm this fact.

More recently published articles (Eichengreen and Erwin, 2009 et al.) have focused on how the recent trade crisis could be compared to the great depression. It highlights the protectionist temptations that were prevalent then, and how it affected the world economy.

The studies and articles above have generally focused on how synchronous the trade collapse around the world has been and the reasons behind the collapse. However, there are disagreements in relation to the scope and symmetry of the fall as well as the impact of some of the causes mentioned.

2.2 My Contribution to Existing Research

As mentioned above the published articles have concluded how the world economy suffered during this time period. The next chapter will provide information in statistical and graph format to highlight the performance of the world economy. Time series evaluations have also been conducted to understand the scope and the depth of the fall.

In addition further empirical research has been conducted on the fall in both merchandise goods as well as service exports during this time period. This is in order to understand the gravity and depth of the trade collapse that occurred in late 2008 and which continued in the early part of 2009.

Despite the high level of data that has been compiled to understand the fall in global trade it has thus far been descriptive data rather than analytical data. This is mainly due to the fact that it is still quite a recent phenomenon. I have considered vertical specialization as one of the main factors contributing to the down fall of world trade.

Due to this fact I considered analyzing separate industries which have varying levels of vertical specialization. The individual industry's performance is then compared against each other during the time period of the trade downturn. This was in order to see if there was indeed a co relation between the two factors.

Furthermore the importance of geographic distance and bilateral trade between two trading countries affecting each country's total trade has been considered. I believe these two factors are possibly pertinent in explaining the global trade recession. An analysis of 30 Countries was conducted utilizing the USA as the common denominator. This was as the USA has been informally accepted as the instigator of the trade and financial crisis.

Furthermore, as an additional sub topic this trade crisis was compared with the Great trade depression that occurred in 1929. This was considered in order to identify any similarities between the two that could further explain the current crisis.

2.3 Scope and Limitations

The scope of the world trade crisis is still significantly huge and there are possibly many more factors that need to be considered. Therefore only the factors that have been widely discussed are considered in significant detail.

Furthermore there are several limitations that need to be considered with regard to the statistical analysis I have conducted. With regards to the vertical specialization study the sample is only limited to five Economic regions. This is mainly due to the difficulty of obtaining comparable data specific to that time period. Therefore it might be difficult to generalize it to economic regions throughout the world. Furthermore the basis of the level of vertical specialization present in the different industries was considered on a more theoretical perspective.

The regression analysis was conducted on geographic distance and bilateral trade between the sampled country and the USA on total exports of each country. The distance was measured in terms of travel between New York and the main trade ports of each country. The ports have been selected based on its popularity rather than statistical fact. This is as it is difficult to identify conclusively which port has the most economic activity. Furthermore with trade being conducted virtually there is a certain amount of scepticism as to how much of an impact geography has on goods exports. Nevertheless even in the present day context it is still worth observing.

2.4 Structure

The Structure of the paper is as follows. Firstly the theoretical framework and the background of the world trade crisis have been presented in greater depth. Thereafter, several reasons that have been produced as contributing significantly to the world trade crisis are critically evaluated .Afterwards; factors which I consider that have also attributed to the fall in world trade have been evaluated following a statistical analysis. A comparison with the great depression that occurred in 1929 has been conducted in addition as a sub topic. This is in order to see whether it provides further new insights into explaining the current crisis. Finally, conclusions are drawn based on the data analysed and recommendations are introduced that can mitigate the impact of the crisis.

3.0 The Theoretical Framework

This chapter is the precursor to the analysis of the main factors that have been put forth in order to understand the fall in world trade. It will establish by way of statistical figures the gravity of the fall in world trade, both on a global as well as a regional scale. Furthermore it will show the difference in performance between merchandise exports and service exports during the same time period globally.

The collapse in trade caught the world unawares at the beginning of October 2008 due to the steady accumulation of trade growth that had occurred before. This however, was not totally unexpected due to the financial crisis that had happened just before. The aggravation of the recession in OECD countries brought international trade to a grinding halt in the fourth quarter of 2008. This contraction in trade volume would continue during the first half of 2009 as well.

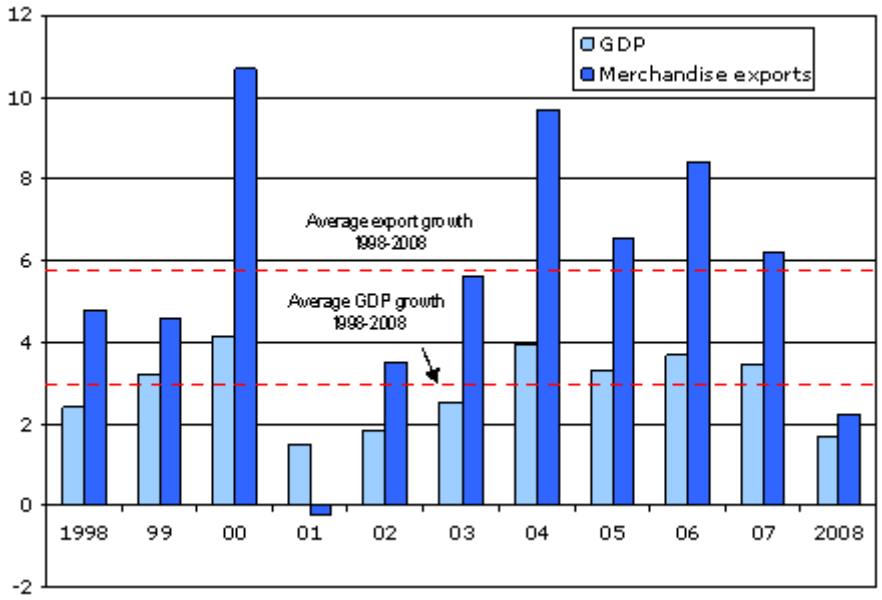
There are however, distinct peculiarities with this collapse in comparison to previous trade collapses. Firstly, this has happened symmetrically across the whole world as in the entire world being affected, but not at the same level. For instance Japan was affected at a greater level than even the USA. (Tanaka.K, 2009). But despite this fact the magnitude of the global decline reflects greater synchronization of trade flows across countries. The figures indicate that the greater chunk of the decline in world trade could be mainly attributed to the fall in merchandise exports.

Shown below are the world trade and GDP figures from 1998 to 2008 .This fairly accurately reflects firstly, the growth that occurred and then the steady deterioration that can be seen during 2008.Whilst this does not isolate the trade collapse to the latter end of 2008 the data for this period will be analysed in greater depth later. Then the regional breakdown of exports figures will be followed by charts showing the synchronized collapse of trade flows of several major trade nations and areas. Finally tables describing the performances of merchandise exports and service exports will be introduced to provide an additional perspective of the global economy

.

The focus is on the main OECD nations as the date is more relevant and up-to-date as well as the fact that they contribute the major portion of the world trade flows.

Chart 1: Growth in the volume of world merchandise trade and GDP, 1998-2008
Annual % change



(WTO, 2009)

The above graph also shows the co-relation between world merchandise trade and GDP through the fact that it has steadily increased after 2001 until the end of 2008. The fall in trade mirrors the fall in GDP that occurred during 2008. This was mainly due to the trade recession that occurred in the final quarter of 2008.

Table 1: GDP and merchandise trade by region, 2006-2008
Annual % changes at constant prices

	GDP			Exports			Imports		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
World	**3.7**	**3.5**	**1.7**	**8.5**	**6.0**	**2.0**	**8.0**	**6.0**	**2.0**
North America	2.9	2.1	1.1	8.5	5.0	1.5	6.0	2.0	-2.5
United States	2.8	2.0	1.1	10.5	7.0	5.5	5.5	1.0	-4.0
South and Central America a	6.1	6.6	5.3	4.0	3.0	1.5	15.5	17.5	15.5
Europe	3.1	2.8	1.0	7.5	4.0	0.5	7.5	4.0	-1.0
European Union (27)	3.0	2.8	1.0	7.5	3.5	0.0	7.0	3.5	-1.0
Commonwealth of Independent States (CIS)	7.5	8.4	5.5	6.0	7.5	6.0	20.5	20.0	15.0
Africa	5.7	5.8	5.0	1.5	4.5	3.0	10.0	14.0	13.0
Middle East	5.2	5.5	5.7	3.0	4.0	3.0	5.5	14.0	10.0
Asia	4.6	4.9	2.0	13.5	11.5	4.5	8.5	8.0	4.0
China	11.6	11.9	9.0	22.0	19.5	8.5	16.5	13.5	4.0
Japan	2.0	2.4	-0.7	10.0	9.5	2.5	2.0	1.5	-1.0
India	9.8	9.3	7.9	11.0	13.0	7.0	8.0	16.0	12.5
Newly industrialized economies (4) b	5.6	5.6	1.7	13.0	9.0	3.5	8.0	6.0	3.5

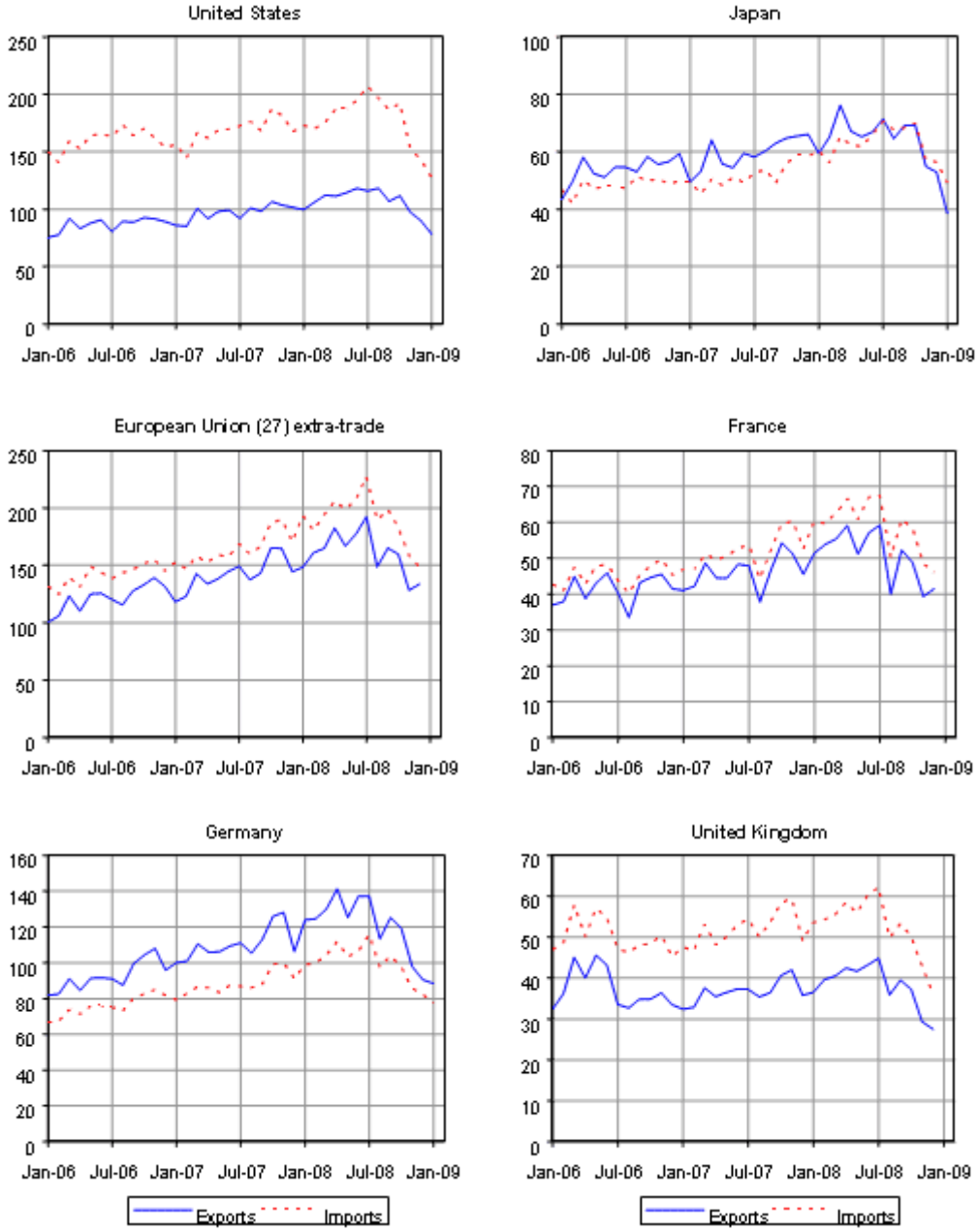
a Includes the Caribbean.
b Hong Kong, China; Republic of Korea; Singapore and Chinese Taipei.

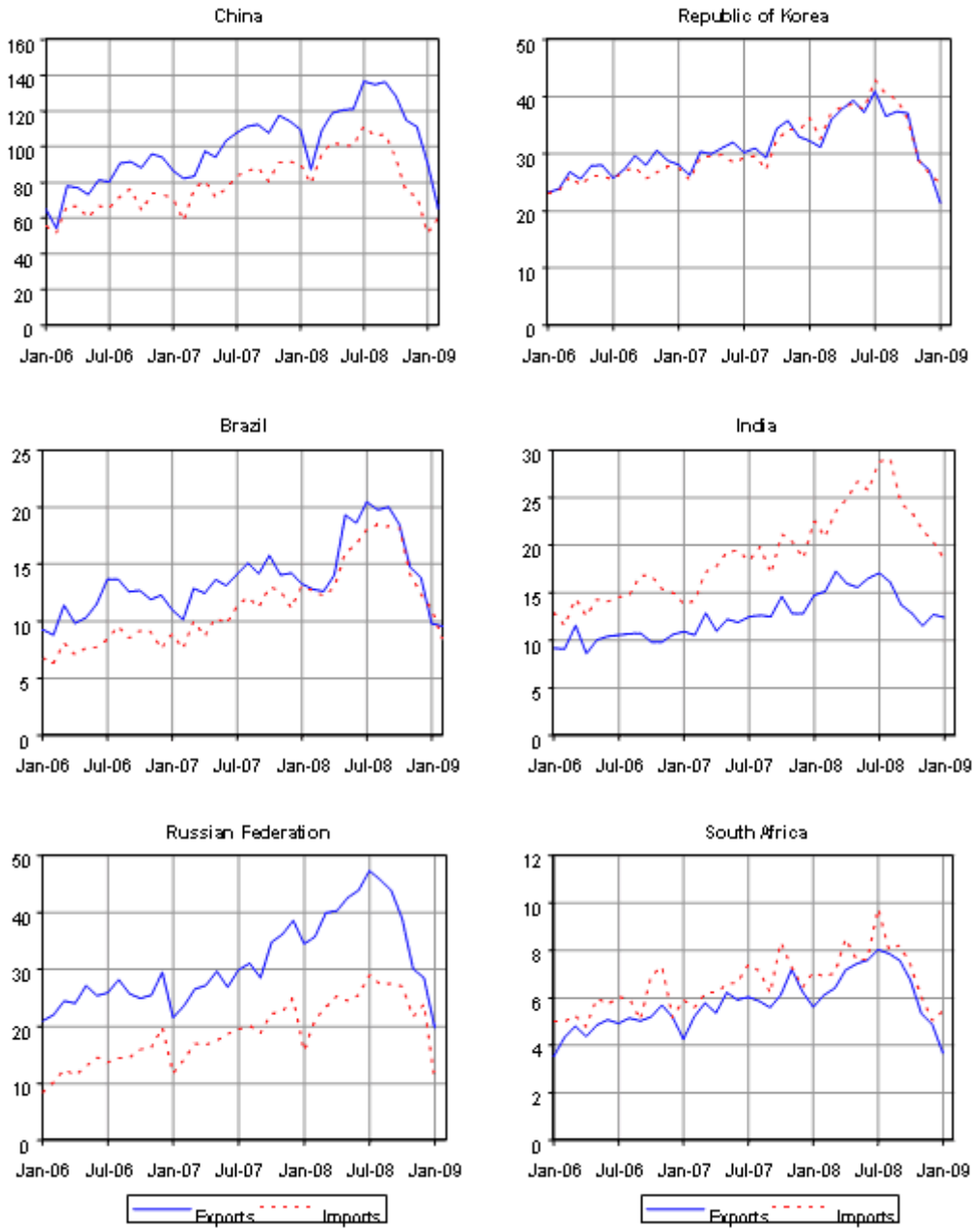
(WTO, 2009)

A regional breakdown of merchandise trade shown in the table above proves that every part of the world suffered a trade breakdown. This provides proof of a synchronized collapse. The EU and Japan suffered the most posting export growth of only 0.5% and 2.5% respectively.

To see how Exports and Imports in different countries have been affected, a graphical chart has been produced below of some of the main trading countries.

Chart 2
Monthly merchandise exports and imports of selected economies, January 2006 — February 2009
$bn




China
160
140
120
100
80
60
40
20
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
Republic of Korea
50
40
30
20
10
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
Brazil
25
20
15
10
5
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
India
30
25
20
15
10
5
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
Russian Federation
50
40
30
20
10
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
Exports
Imports
South Africa
12
10
8
6
4
2
0
Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09
Exports
Imports

(WTO, 2009)

When all the graphs are looked at in isolation the general trend is that each country is recording a significantly lower growth during the analysed period.

However, this in itself is not rare. Several OECD countries have experienced drops of similar magnitudes in the past. For instance, in July 1993, France's total trade decreased by 23% relative to its value in July 1992. The same year, trade declined by more than 20% in January and July in Italy and Germany. In Japan, trade dropped by approximately 25% relative to the same month in the previous year in December 2001. In the US, trade dropped by 34% and 24% in January 1965 and 1969 respectively. (Araujo & Martins, 2009) Hence the simultaneous decline in trade globally is the critical point to observe.

Table 2
World merchandise trade by region and selected country, 2008

$bn and %

	Exports					Imports				
	Value	Annual % change				Value	Annual % change			
	2008	2000-2008	2006	2007	2008	2008	2000-2008	2006	2007	2008
World	**15775**	**12**	**16**	**16**	**15**	**16120**	**12**	**15**	**15**	**15**
North America	**2049**	**7**	**13**	**11**	**10**	**2909**	**7**	**11**	**6**	**7**
United States	1301	7	15	12	12	2166	7	11	5	7
Canada	456	6	8	8	8	418	7	11	9	7
Mexico	292	7	17	9	7	323	7	15	10	9
South and Central America a	**602**	**15**	**21**	**14**	**21**	**595**	**14**	**22**	**25**	**30**
Brazil	198	17	16	17	23	183	15	23	32	44
Other South and Central America a	404	14	23	13	20	413	14	21	23	24
Europe	**6456**	**12**	**13**	**16**	**12**	**6833**	**12**	**15**	**16**	**12**
European Union (27)	5913	12	13	16	11	6268	12	14	16	12
Germany	1465	13	14	19	11	1206	12	17	16	14
France	609	8	7	11	10	708	10	7	14	14
Netherlands	634	13	14	19	15	574	13	15	18	16
Italy	540	11	12	18	10	556	11	15	14	10
United Kingdom b	458	6	16	-2	4	632	8	17	4	1
Commonwealth of Independent States (CIS)	**703**	**22**	**25**	**20**	**35**	**493**	**25**	**30**	**35**	**31**
Russian Federation c	472	21	25	17	33	292	26	31	36	31
Africa	**561**	**18**	**19**	**18**	**29**	**466**	**17**	**16**	**24**	**27**
South Africa	81	13	13	20	16	99	16	26	12	12
Africa less South Africa	481	19	20	17	32	367	18	13	28	31
Oil exporters d	347	21	21	18	36	137	21	9	31	37
Non oil exporters	133	15	18	15	22	229	16	15	27	28
Middle East	**1047**	**19**	**22**	**16**	**36**	**575**	**17**	**12**	**25**	**23**
Asia	**4355**	**13**	**17**	**16**	**15**	**4247**	**14**	**16**	**15**	**20**
China	1428	24	27	26	17	1133	22	20	21	19
Japan	782	6	9	10	10	762	9	12	7	22
India	179	20	21	22	22	292	24	21	25	35
Newly industrialized economies (4) e	1033	10	15	11	10	1093	10	16	11	17
Memorandum items:										
Developing economies	6025	15	20	17	20	5494	15	17	18	21
MERCOSUR f	279	16	16	18	25	259	14	24	31	41
ASEAN g	990	11	17	12	15	936	12	14	13	21
EU (27) extra-trade	1928	12	11	17	13	2283	12	16	16	16
Least Developed Countries (LDCs)	176	22	25	24	36	157	17	15	24	27

a. Includes the Caribbean. For composition of groups see the Technical Notes of WTO, International Trade Statistics, 2008.
b. The 2007 annual change is affected by a reduction in trade associated with fraudulent VAT

declaration. For further information, refer to the special notes of the monthly UK Trade First Release
c. Imports are valued f.o.b.
d. Algeria, Angola, Cameroon, Chad, Congo, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan.
e. Hong Kong, China; Republic of Korea; Singapore and Chinese Taipei.
f. Common Market of the Southern Cone: Argentina, Brazil, Paraguay, Uruguay
g. Association of Southeast Asian Nations: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam.

(WTO, 2009)

Table 3
World exports of commercial services by region and selected country, 2008
$bn and %

	Exports					Imports				
	Value	Annual % change				Value	Annual % change			
	2008	**2000-2008**	**2006**	**2007**	**2008**	**2008**	**2000-2008**	**2006**	**2007**	**2008**
World	**3730**	**12**	**13**	**19**	**11**	**3470**	**12**	**12**	**18**	**11**
North America	**603**	**8**	**12**	**14**	**9**	**473**	**7**	**12**	**9**	**6**
United States	522	8	13	16	10	364	7	12	9	7
South and Central America b	**109**	**11**	**14**	**18**	**16**	**117**	**10**	**14**	**21**	**20**
Brazil	29	16	21	26	27	44	14	21	28	28
Europe	**1919**	**13**	**12**	**21**	**11**	**1628**	**12**	**10**	**19**	**10**
European Union (27)	1738	13	12	21	10	1516	12	10	19	10
Germany	235	15	16	16	11	285	10	8	15	11
United Kingdom	283	12	13	20	2	199	9	8	16	1
France	153	9	3	15	6	137	11	8	15	6
Italy	123	10	11	13	12	132	12	11	21	12
Spain	143	13	13	21	11	108	16	17	26	10
Commonwealth of Independent States (CIS)	**83**	**22**	**23**	**27**	**26**	**114**	**22**	**17**	**30**	**25**
Russian Federation	50	23	25	27	29	75	21	16	32	29
Africa	**88**	**14**	**13**	**22**	**13**	**121**	**16**	**16**	**31**	**15**
Egypt	25	12	10	24	26	16	11	8	27	25
South Africa a	13	13	7	13	...	17	15	18	16	...
Middle East	**94**	**14**	**18**	**13**	**17**	**158**	**16**	**21**	**29**	**13**
Israel	24	6	10	10	13	20	7	8	20	11
Asia	**837**	**13**	**16**	**20**	**12**	**858**	**11**	**14**	**18**	**12**
Japan	144	10	13	10	13	166	6	9	11	11
China a	137	...	24	33	...	152	...	21	29	...
India a	106	...	35	22	...	91	...	33	23	...
Four East Asian traders c	271	11	14	17	10	247	10	12	15	7

a. Secretariat estimates.
b. Includes the Caribbean. For composition of groups see Chapter IV Metadata of WTO International Trade Statistics, 2008.
c. Chinese Taipei; Hong Kong, China; Republic of Korea and Singapore.

Note: While provisional full year data were available in early March for 50 countries accounting for more than two thirds of world commercial services trade, estimates for most other countries are based on data for the first three quarters (the first six months in the case of China).

(WTO, 2009)

The above reproduced tables show the world exports of merchandise goods and commercial services. It provides evidence of merchandise exports being more significantly affected than services during 2008. Interestingly enough the world and USA goods exports have grown at a more rapid rate whilst Europe has remained stationery during the same time period. However, it should be noted that this is a general picture for 2008. This will be analysed in further detail during the later chapters as mentioned above.

3.1 Summary of the Chapter

This chapter has been written in order to provide an overview of the world trade crisis. Firstly, the figures show how countries throughout the world have suffered in terms of drop in exports during the latter half of 2008 and early part of 2009. Furthermore it provides evidence to the fact that merchandise goods have fallen at a relatively more rapid rate than services. There also appears to be a strong link between GDP and trade that can be statistically proved. The reasons that have been espoused as the root cause of this crisis will be critically evaluated in the following chapter.

4.0 Reasons Attributed to the Collapse in Trade

There have been several reasons that have been attributed to the collapse in trade during this time period. Firstly research on the relationship between trade and income show a strong elasticity between the two separate variables. This provides a strong explanation for the fall in trade. According to Irwin (2002) as cited by Freund.C (2009) the elasticity of real world trade to real world income increased from under 2 in the 1960's to 3.4 in the 1970's. This implies that trade declines at a far more rapid rate than GDP. It is certainly a partial explanation for why trade has fallen so hard during the current world scenario. The relationship between the two factors can be seen in the following table.

Table 4

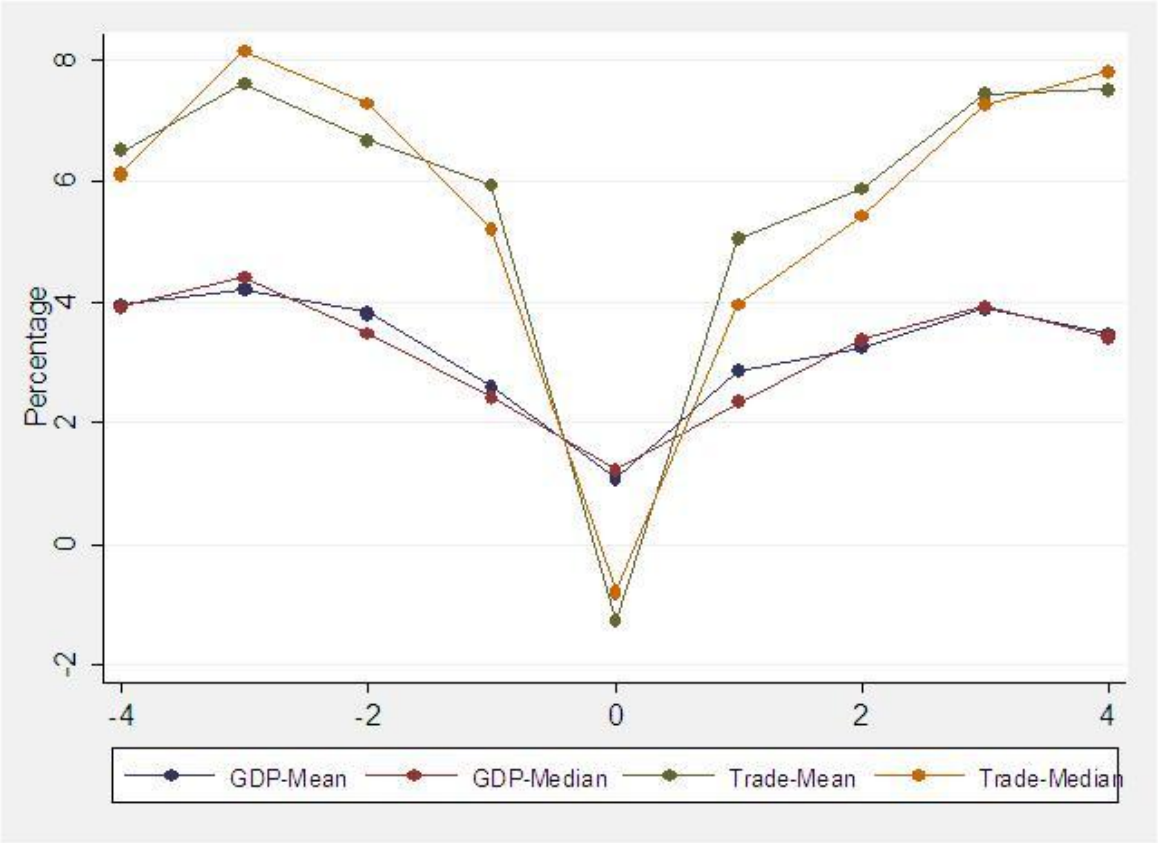
	dependent varialbe=dlntrade					
	Full	1960s	1970s	1980a	1990s	2000s
	(1)	(2)	(3)	(4)	(5)	(6)
dlngdp	1.77***	1.94**	2.13**	2.75***	3.36***	3.69***
	[0.25]	[0.81]	[0.78]	[0.19]	[0.47]	[0.40]
Observations	45	9	10	10	10	6
R-squared	0.58	0.43	0.66	0.94	0.77	0.96

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

(Freund.C, 2009).

Whilst recent statistics indicate that the relative magnitude for trade is highly related to GDP it appears to be even more pronounced during global downturns. Figures have been obtained for generally accepted downturns that occurred in 1975, 1982, 1991 and 2001.On each of these occasions world income dipped below 2% from the previous 5 year average. (Freund.C, 2009)

Chart 4. Real trade and real GDP, growth relative to the previous year



(Freund.C, 2009).

The above graph shows the mean and the median of growth in trade and income during the sampled time periods where Year zero is the downturn year. The decline in growth from the previous year to the downturn year as can be seen is much larger for trade in comparison to GDP. Income growth declines on average by 1.5 percentage points from previous year, whilst real trade declines on average by 7.2 percentage points. The rebound in trade is also very sharp when income expands. (Freund.C, 2009). This indicates that national income is a main contributory cause to the fall in trade of each country and therein world trade.

However, as is the case with many studies there are certain factors that need to be considered. Firstly Irwin only used four sample time periods to analyse the correlation between fall in GDP and Trade. Therefore it is difficult to generalize these figures to include any down turn period where there is a fall in trade and a fall in GDP as in 2008.

Furthermore whilst the test shows a strong correlation between the two factors it does not provide a conclusion as to what maybe the causal factor. This is as in whether it is trade that influences the GDP or whether alternatively it is GDP that influences the trade position. Furthermore Trade is measured in gross value and GDP in value added. A large decline in trade could reflect a much smaller decline in the value added level of GDP if production is done across countries at the margin. (Freund.C, 2009)

Whilst the fall in GDP due to the financial crisis may have been a causal factor in the fall of world trade several other factors have also been espoused as critical.

Vertical specialization is a main part of the business landscape that has definitely increased the level of trade that occurs between different nations and regions. However, at the same time this has increased the inter-linkage between nations. Thereby it has been argued that the fall in international demand has been transmitted at a faster rate than had happened in the past.

Another argument that has been put forward is that as the global and National GDP of a nation declines protectionist policies will kick in. This in turn exacerbates the decline in trade. Furthermore goods comprise a significantly higher percentage of Trade than services. According to Freund (2009) during downturns, goods decline more than services. Therefore this causes trade to fall and suffer significantly.

The lack of Trade credit financing due to the tightening of lending restrictions by financial institutions means most companies are unable to function. This negatively impacts the trade sector. In addition trade is affected by firms reducing production and using accumulated inventories. This begins a vicious cycle where factories may be shut down and unemployment rises. In turn this reduces international demand for goods. Another factor that affects world trade is customers sourcing relatively more from home country suppliers during downturns. (Freund.C, 2009)

These main factors as well as certain other factors have been presented by economists and other researchers as having instigated the decline in trade. They will be considered in extensive detail below.

4.1 The impact of vertical specialization

The Second factor that is considered in relation to the trade crisis is international supply chains or namely the growth of vertical specialization. The composition of global production networks has significantly altered in the recent past. This is due to the increase in linked networks between countries that has resulted in higher trade in intermediate and final goods. Firms and different countries in this process specialize in different stages of the production process. Therefore Products may cross different countries regularly and change significantly before they reach the final consumer.

The link between vertical specialization and international trade enjoys strong empirical backing. In 2001, Hummels, Ishii & Yi as cited by Tanaka.K (2009) showed that vertical integration could account for almost one-third of the export growth in OECD countries. It should also be noted that Trade is measured in gross terms whereas National GDP is measured in Net worth. This means that vertical specialization boosts the values and volumes of foreign trade exponentially comparative to GDP.

The growth of vertical specialization was driven by investments of multinational firms to take advantage of lower costs of unskilled labour in foreign countries (Tanaka.K, 2009). Multinationals established offshore production plants in unskilled-labour abundant countries to conduct the unskilled labour-intensive stages of production. Under these schemes, parent firms supplied intermediate inputs to their foreign affiliates, which performed the final assembly. Subsequently they exported the final product back to home markets. (Tanaka.K, 2009)

Therefore to put it succinctly geographical fragmentation helps international firms to improve their efficiency. This also enables them to react more rapidly to changes in international markets. However, it is then more susceptible to adverse external shocks, and thereby the nations themselves. This is as MNC’s comprise a high proportion of National exports of the MNC’s country of incorporation.

Whilst trade in manufactured products represented a quarter of the world industrial output in 2000, this proportion doubled in five years. Pertinently almost 30% of this trade is related to the exchange of intermediate inputs and goods for processing among firms. This again clearly shows the link between vertical specialization and world trade. (Escaith, H & Fabien G .2009)

Hence the above mentioned methodology can explain the disproportionately large collapse of trade flows. It can also explain why the impact of the collapse has been asymmetrical across the globe. This is as different countries are at different stages of the production line in multiple products. Therefore countries which provide a higher value of the product in production would suffer most in terms of export value. For instance China is mostly focused on the lower margin exports at the bottom of the production line. Thereby they suffer less in comparison to the USA. In contrast the US which focuses on the high value margin exports will suffer relatively more.

Despite the logical reasoning that is the basis of this theory it is statistically unproven. Therefore for the purpose of identifying if vertical specialization has indeed played a part in the decline of world trade a small analysis was conducted. This is based on the following sample of data. It has utilized several assumptions due to the lack of available data for the countries used in the analysis. The ensuing data is as follows.

The underlying theory used to analyse the data is that certain industries have more vertical specialization than others due to the nature of the industry itself. These industries for example are the automobile industry, capital goods industry, machinery and transport equipment industry and other manufactured goods. Industries such as the raw material, food, drink & tobacco would utilize little or no vertical specialization and be produced completely in the country of origin. Therefore if vertical specialization is a major cause for trade, industries with higher vertical specialization will decline more significantly than other industries during 2008.

For the purpose of the test five areas have been considered namely the United States, the United Kingdom, EU16, Australia and Norway. The United States was chosen mainly as it is widely regarded as the origin of the trade collapse. It is also one of the largest exporters of merchandise products in the world. The United Kingdom and the EU16 areas were chosen for the similar reason. Norway and Australia were countries that were somewhat least affected by the trade crisis. These countries were considered as Australia is heavily into an Agricultural oriented economy, whilst Norway depends heavily on raw material exports. Therefore they are from the opposite spectrum to the industrialized economies that are operating in the other three areas.

For all countries other than the United States the SITC classification of goods were used. This is as it gives a fairly acceptable breakdown of industries based on the level of vertical specialization used. However for the United States data breakdown for 2008 and 2009 was not available under the SITC classification. Therefore the BEC classification for merchandise exports was used. This is as it also gives an acceptable breakdown of industry performance based on vertical specialization. As this is designed to compare the performance of each industry during different parts of the year but for the same area currency equalization is unnecessary. Therefore they are presented in their original currency.

Data was broken down into the first half of 2008 and the second half of 2008 along with the first six months of 2009. Due to the small sample size as well as the lack of complete data for all countries there might be a difficulty in generalizing this analysis. However, it has to be noted that these five areas are some of the main exporters of the OECD nations and therefore comprise a significant proportion of world exports. Therefore the results need to be considered carefully. The abbreviations that have been used in the table are for the following industries.

FD&T- Food, Drinks and Tobacco

RM – Raw Materials

MFLRM- Mineral Fuels, Lubricants and related Materials

CRP-Chemicals and Related Products

MTE- Machinery and transport Equipment

OMG-Other Manufactured Goods

FF&D- Foods, Feeds and Beverages

IS- Industrial Supplies

CG- Capital Goods

AV- Automotive Vehicles etc

CG2- Consumer Goods

OG- Other Goods

The first six industries are according to the SITC classification whilst the latter six are based on the principal end user category (BEC). For the purpose of this analysis vertical specialization is high in the MTE, OMG, CG and AV categories. In contrast MFLRM and IS possess relatively lower level of vertical specialization. The other industries are chiefly exporting the primary good and hence no vertical specialization. The basis for this surmise is the type of activities that have been included in the National Accounts in relation to these industries. Each industry in each country is evaluated based on the relative and not the absolute performance. We have focused on Merchandise exports in order to keep the data pool smaller. Further it also accurately reflects the trade performance and comprises a significant percentage of the sample economies trade. The analysis is conducted based on the figures from Table 5 produced below.

Table 5- Merchandise Export Statistics Performance for 2008 and 2009 (Mn)

	EU16(€)		AUSTRALIA(AUS$)		UK(£)		NORWAY(€)		US ($)	
	(01-06)08	48885.80	(01-06)08	11671.00		6 220.2		2332.70		55039.00
FD& T	(07-12)08	51304.00	(07-12)08	12917.00	(07-12)08	7 438.9	(07-12)08	2625.10	(07-12)08	**FFD**	53399.00
	% change	4.95	% change	10.68	% change	19.6	% change	12.53	% change		-2.98
	(01-06)09	44579.80	(01-06)09	13304.00	(01-03)09	6 678.5	(01-06)09	2428.8	(01-06)09		45322.00
	% change	-13.11	% change	3.00	% change	-10.2	% change	-7.48	% change		-15.13
	(01-06)08	18428.70	(01-06)08	25127.00	(01-06)08	3 493.9	(01-06)08	649.20	(01-06)08	**IS**	198151.00
RM	(07-12)08	15733.60	(07-12)08	31704.00	(07-12)08	3 070.3	(07-12)08	577.70	(07-12)08		188051.00
	% change	-14.62	% change	26.18	% change	-12.1	% change	-11.01	% change		-5.10
	(01-06)09	13728.30	(01-06)09	26538.00	(01-03)09	2 402.6	(01-06)09	471.00	(01-06)09		135451.00
	% change	-12.75	% change	-16.29	% change	-21.7	% change	-18.47	% change		-27.97
	(01-06)08	32627.30	(01-06)08	25227.00	(01-06)08	16 832.2	(01-06)08	41645.60	(01-06)08		237365.00
MFLRM	(07-12)08	30952.70	(07-12)08	45878.00	(07-12)08	16 781.6	(07-12)08	35416.80	(07-12)08	**CG**	232111.00
	% change	-5.13	% change	81.86	% change	-0.3	% change	-14.96	% change		-2.21
	(01-06)09	19827.30	(01-06)09	31240.00	(01-03)09	12 036.5	(01-06)09	26881.00	(01-06)09		191466.00
	% change	-35.94	% change	-31.91	% change	-28.3	% change	-24.10	% change		-17.51
	(01-06)08	118981.60	(01-06)08	3901.00	(01-06)08	21 443.9	(01-06)08	1484.20	(01-06)08		62723.00
CRP	(07-12)08	116204.00	(07-12)08	4565.00	(07-12)08	22 285.0	(07-12)08	1329.40	(07-12)08	**AV**	58209.00
	% change	-2.33	% change	17.02	% change	3.9	% change	-10.43	% change		-7.20
	(01-06)09	108604.50	(01-06)09	3927.00	(01-03)09	22 567.1	(01-06)09	1352.80	(01-06)09		34076.00
	% change	-6.54	% change	-13.98	% change	1.3	% change	1.76	% change		-41.46
	(01-06)08	197250.30	(01-06)08	11234.00	(01-06)08	30 248.1	(01-06)08	6746.80	(01-06)08		26721.00
OMG	(07-12)08	193178.80	(07-12)08	12149.00	(07-12)08	30 442.3	(07-12)08	5855.70	(07-12)08	**OG**	26517.00
	% change	-2.06	% change	8.14	% change	0.6	% change	-13.21	% change		-0.76
	(01-06)09	152245.10	(01-06)09	9336.00	(01-03)09	25 407.0	(01-06)09	4363.90	(01-06)09		21494.00
	% change	-21.19	% change	-23.15	% change	-16.5	% change	-25.48	% change		-18.94
	(01-06)08	340954.70	(01-06)08	6964.00	(01-06)08	44 864.3	(01-06)08	5238.00	(01-06)08		81171.00
MTE	(07-12)08	330524.80	(07-12)08	8323.00	(07-12)08	43 737.5	(07-12)08	5272.00	(07-12)08	**CG2**	80051.00
	% change	-3.06	% change	19.51	% change	-2.5	% change	0.65	% change		-1.38
	(01-06)09	248722.50	(01-06)09	5660.00	(01-03)09	38 237.0	(01-06)09	4837.90	(01-06)09		72500.00
	% change	-24.75	% change	-32.00	% change	-12.6	% change	-8.23	% change		-9.43

FD&T- Food Beverages and Tobacco
RM- Raw Material
MFLRM- Mineral Fuels Lubricants and Raw Mat
CRP- Chemical related products
OMG- Other Manufactured Goods
MTE- Machinery & Transport Equipment

FFD- Food Feed and Beverages
IS- Industrial Supplies
CG- Capital Goods
AV- Automotive Vehicles
OG- Other Goods
CG2- Consumer Goods

(Source: Eurostat a,2010;Eurostat b,2010; Australian Bureau of Statistics a,2010;US Census Bureau a,2009;US Census Bureau b,2010; US Census Bureau c,2010; UK Trade Info,2010)

Firstly the EU16 Export performance shows that nearly all the industries suffered during the latter half of 2008 and beginning of 2009. This is apart from the food and beverages sector in the latter part of 2008 where they posted a slight growth. The most significant decline was registered in the MFLRM and MTE industries for 2009 with a 35.94% and 24.75% drop respectively. The substantial fall in the MFLRM sector is as exports to EU27 countries not in the EU16 and the USA suffered a significant downturn.

Other Manufacturing Goods (OMG) also dropped by nearly 22% during the early part of 2009.Though there is a decline the FD&T and the CRP industries have registered a relatively better performance during the same period. This is consistent with the hypotheses as vertical specialization is lower in these industries. However, raw materials which have lower vertical specialization dipped by 15% and 13% respectively for the end of 2008 and the beginning of 2009 respectively. This does not concur with the hypotheses.

Australia recorded growth during 2008 and suffered mainly during the early part of 2009. This indicates that they weathered the trade collapse well. Hence it concurs with the hypotheses. Due to being an agricultural economy they are not as vertically integrated with other countries' industries. MFLRM performed significantly above average in 2008 posting a growth of nearly 82% during the latter half of the year. This was mainly due to the high demand of Australia's main trading partners in the APEC region such as China and Hong Kong.

MFLRM and MTE declined by nearly 32% whilst OMG dropped by 23% during the beginning of 2009.MFLRM though not highly vertically integrated does possess a certain amount of processing in the mineral fuels and lubricants sector. Whilst in 2009 all the industries suffered, comparatively FD&T registered moderate growths during the same time period. Furthermore RM did not suffer as badly as the other industries though this did also decline by 23%. This is in line with the thinking that the industries not as highly vertically integrated performed better in Australia.

For the United Kingdom the data appears to follow a similar trend, where the biggest loss was registered by the MFLRM sector of 28.5% in 2009. However, the RM industry declined by 12.1% and 21.7% respectively in 2008 and 2009. This does not agree with the hypotheses of industries less vertically integrated performing relatively better than other sectors. The main reason for the downturn in this sector though was the decreasing demand from China.

In comparison though the FD&T industry grew by 19% in 2008 and then shrank by only 11% in 2009. The CRP industry also grew modestly during the sampled time period. This once again indicates that the industries with lower level of vertical integration apart from RM perform better than the other industries.

In Norway the FD&T industry recorded growth of 10% before falling modestly by 7% in 2009. Meanwhile the CRP industry though declining in the latter half of 2008 managed to rebound by 1.76% in 2009. This is in line with the hypotheses that lower the vertical integration the lesser the decline in performance. However, the RM and OMG industries recorded significantly negative performances during the sampled time period. The OMG industry decline however is line with the stated hypotheses. This is as miscellaneous manufactured articles are a part of OMG. Miscellaneous manufactured articles possess relatively high vertical integration and it declined the most during the sampled time period.

The RM industry negative performance is mainly due to the fact that the price of crude oil dropped exponentially during the relevant period. Apart from RM the less vertically integrated industries with complete home origin production post a better performance. Interestingly enough MTE which possess a high level of vertical integration has not suffered unduly in comparison to the other industries. This is not in line with the above stated hypotheses

USA Trade figures provide a similar pattern to the previously analyzed figures. It should be noted though that as the industries are based on the principal end user category a direct comparison cannot be made. All the industries have registered declines in export performance during the relevant time period. The biggest losses are registered in the AV industry and the RM industry in 2009 posting a 42% and 28% drop respectively. Capital Goods and Other Goods also posted declines at roughly 18% during the first half of 2009.

Though the fall in the AV industry concurs with our hypotheses the RM industry was affected severely which is in line with most of the countries sampled. This is mainly due to the drop in demand particularly from China as mentioned before and to a lesser extent the developing economies from Asia. However, unlike with other nations the industries seem be affected more severely in 2009 and not 2008 similar to Australia. Furthermore the FF&D industry also suffered a 15.13% drop in 2009. The final fact is not in line with our hypotheses as we assume it is not as vertically integrated. Hence it should generally be unaffected in comparison to other vertically integrated industries. However it has performed relatively better than the other sectors during 2009. Therefore the US exports statistics do not give a clear indicator as to whether vertical integration did indeed provide a basis for the fall in exports.

The data though not perfectly conclusive indicates that the higher the vertical integration in an industry the more it underperformed. Norway and the US however did not appear to have any relation between vertical integration and performance. Australia which is mainly focused on primary export produce and is an agricultural economy suffered less in comparison to other countries. This can be taken as a point in favour of the vertical integration theory as it is certainly comparatively more isolated than other major trading countries.

4.2 Protectionism

Another significant factor that needs to be considered as to whether it has affected the trade crisis is protectionist policies. Though trade was not the cause of the original economic crisis it certainly became its biggest casualty during the latter part of 2008 continuing into 2009.It experienced a sudden severe, globally synchronized collapse as mentioned above. Due to this factor nations have already begun strengthening protectionist forces. Though this was certainly not the factor which initially caused trade to collapse it has begun to further exacerbate the global decline. The new methods which countries have used in order to circumvent free trade policies are what are collectively known as murky protectionism. Originally G20 nations signed a pledge on 15 November 2008 to avoid protectionist measures. However since then 17 of these signees have implemented 47 measures which in effect restrict trade at the expense of other countries. (Gamberoni. E & Newfarmer.R, 2009). The following table provides evidence of some of the policies that have been implemented.

Table 6

Levels of Support and Protection since the Global Financial Crisis	
Country	Type of Protection
European Union	(i) Re-introducing export subsidies for butter, cheese and whole and skim milk powder from January 2009 (ii) Support the auto industry - France, Germany
Russia	Introduced measures to support domestic car manufacturers including state subsidies, and in January raised import duties on cars and trucks
Canada	Aid package of short-term loans to the auto industry
Australia	Planning to set up a A$2 billion fund to provide liquidity to car dealer financiers
India	Increased tariffs on some steel products in November 2008
Republic of Korea	Tariffs on imports of crude oil will increase from 1 per cent to 3 percent in March 2009
Indonesia	Restricted the entry points for imports, such as electronics, garments, toys, footwear, and food and beverages to only five ports and certain international airports since December 2008
Argentina	Imposed non-automatic licensing requirements on products considered as sensitive, such as auto parts, textiles, TVs, toys, shoes, and leather goods
Mercosur	Members have proposed to raise their common external tariff by 5 per cent on average, on a number of specific items, including wine, peaches, dairy products, textiles, leather goods and wood furniture. Waiting for ratification

(African Development Bank Secretariat, 2009)

These measures are naturally within the WTO regulations despite it infringing on Free trade. Nevertheless it has a detrimental effect on world trade and eventually the global economy. This is as whilst one country introducing barriers might improve its performance due to reduction of imports it will result in retaliation by other countries. Due to this collectively the world market demand and supply will shrink. The restriction of foreign competition will drive up prices and make the economy unsustainable and further cause international feuds between countries. (Baldwin,R and Evenett,S. eds.2009)

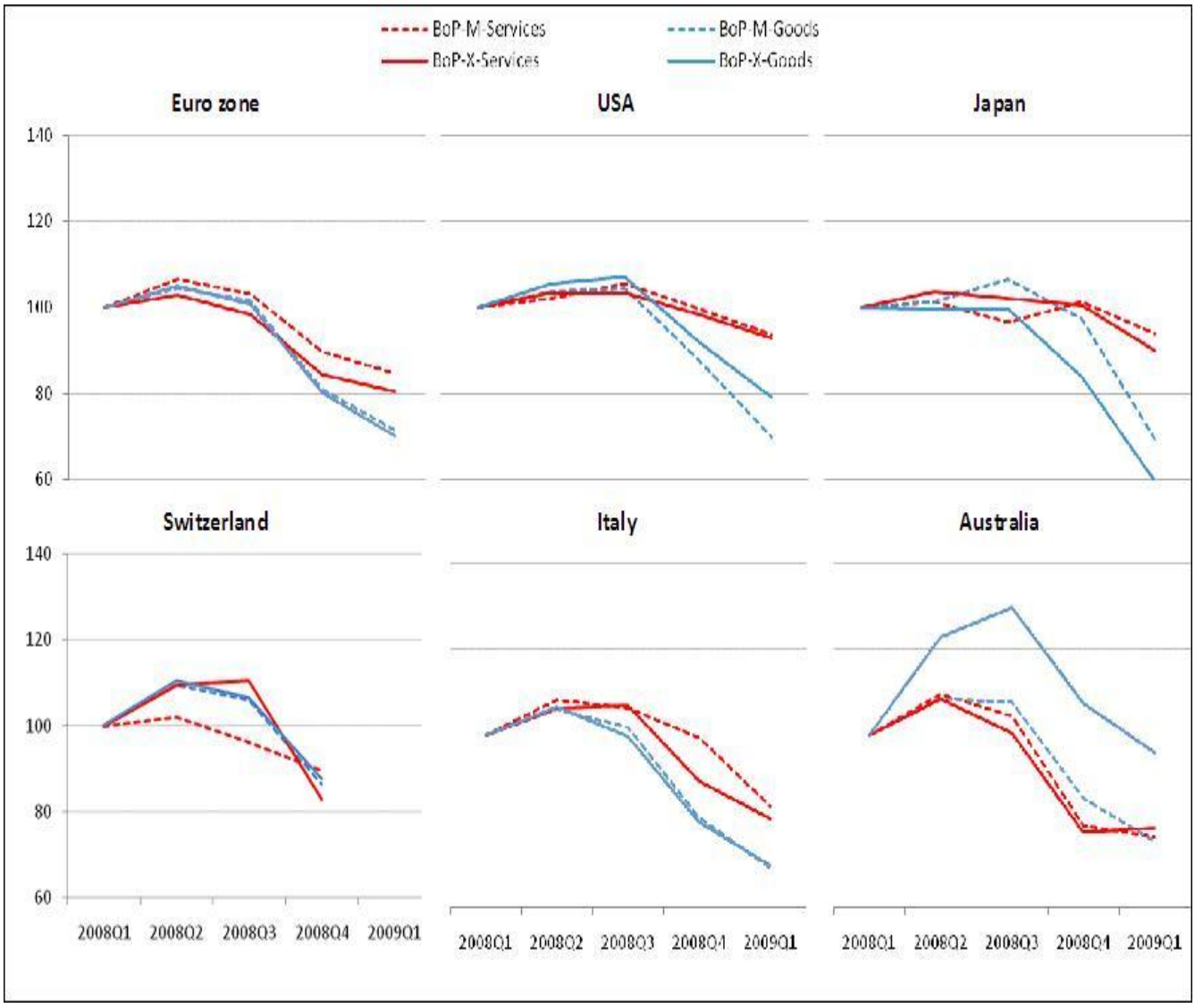
The main problem with practiced protectionism is that countries only see the short term benefits to domestic industries rather than the long term adverse effects. It is difficult to obtain directly related figures to protectionism therefore this discussion has focused on how it negatively impacts global trade.

4.3 The Effect of Merchandise Exports in relation to service Exports

A reason why world trade has fallen at a higher rate than GDP is the exponentially larger fall in merchandise exports in comparison to the Service export industry. The inherent logic is that whilst Services constitute a major portion of GDP, merchandise exports constitute the higher proportion of Trade. Therefore, a higher fall in Merchandise trade would impact Trade more significantly than GDP.

This can be seen in chart 4 below. Whilst trade is falling in both goods and services in most OECD countries the decline in trade in manufactured goods has been sharper. Switzerland is the exception, with a more abrupt fall in service exports. Trade in goods and services are declining at similar rates in only a small group of OECD countries. Australia and Mexico are notable as their exports of services seem to be rising. (Araujo & Martins, 2009)

Chart 4. **Trade in goods vs. trade in services**



(Araujo & Martins, 2009)

In order to gain another perspective in whether merchandise exports were affected more than services three countries were identified. Once again the sample size with regards to the data had to be limited due to lack of in depth data. However these three countries were chosen for a particular reason. The United States and the United Kingdom are two of the leading industrialized nations of the world. Meanwhile Australia provides an opposite spectrum of an agricultural economy.

Table 7

EXPORT DIFFERENTATION PERFORMANCE BY GOODS AND SERVICES (Mn)		
	G	S
UNITED STATES		
2008 First Half	648513	275867
2008 Second Half	628482	273735
% change from previous half	-3.09	-0.77
2009 First Half	494975	248261
% change from previous half	-21.24	-9.3
UNITED KINGDOM		
2008 First Half	125616	83223
2008 Second Half	126027	87535
% change from previous half	0.31	5.17
2009 First Half	110452	82116
% change from previous half	-12.35	-6.19
AUSTRALIA		
2008 First Half	98375	26151
2008 Second Half	125435	26430
% change from previous half	27.51	1.07
2009 First Half	105750	26469
% change from previous half	-15.69	0.15

(Source: US Census Bureau c, 2010; Australian Bureau of Statistics b, 2010; Australian Bureau of Statistics c, 2010; Office for National Statistics, UK, 2010)

There are several assumptions that have been used. Firstly it is the seasonally adjusted data that has been used whilst the figures are in the local currencies of each nation. The figures bear verification of the fact that merchandise exports have suffered much more than service exports. Service exports have declined less in the UK and the USA during the relevant time period whilst Australia even posted a moderate growth in 2009. US exports for the 2009 first half have declined by 9.3% whilst in comparison goods have declined by over 20%.

Australia once again appears to be the isolated case where goods exports have actually grown during the latter end of 2008. However their first half 2009 performance is in line with the underlying thinking.

The relative lack of fall in service exports in comparison to merchandise exports is due to the interconnected nature of the supply chain. This means that goods exports have synchronously fallen hard all over the world. Service exports however, are provided by countries in an individual capacity. For instance consultancy services decline in the US does not affect the consultancy firm's performance in India. Once again the figures show that Australia which is an agricultural country with primary exports production is relatively unscathed during the crisis. This proves how vertical specialization and in turn merchandise exports have significantly affected the other OECD industrialized nations performances.

4.4 Trade Credit Financing

The dearth of credit financing has also resulted in the squeezing of world trade. Though it cannot be directly linked to world trade the cycle could be developed as follows. When the US subprime mortgage crisis hit the US market, many large banks such as Bear Stearns were forced to close down. The banks that were still operating had to scale down their operations, mainly with regard to distribution of liquid credit.

A significant portion of this was trade credit which was in the form of letters of Credit (LC), Import Finance Loans (IFL) and acceptance letters. Prior to the crisis the market was in an upswing meaning there was no collateral kept for the offering of these instruments. Furthermore the margins were relatively low in order to boost international trade. However, banks during the analysed time period increased margins and increased the requirements for trade through collateral. This resulted in lower trade as the small and medium scale suppliers were unable to meet these requirements.

Furthermore, due to the crisis the suppliers and buyers were unsure without the backing of the bank instruments whether the payments were safeguarded.

Hence the result was a vicious cycle of increasingly lower trade. Though this contributed to the decline in international trade it cannot be considered as significant as Vertical specialization.

4.5 The use of accumulated Inventory and the growth of Home Sourcing

Due to the Economic crisis the companies in mainly all of the industries have had to scale down production. Therefore a hypothesis presented in order to explain the further exacerbation of trade decline is companies utilizing their accumulated inventories. This would halt supply side growth. (Freund.C, 2009)

However, this is a fairly weak explanation in order to explain how the crisis could have occurred or even become worse. Firstly, the reduction in industrial production is a consequence of the receding in trade demand. Therefore it will not have impacted the decline in trade originally. Furthermore the utilizing of accumulated inventory ensures at least the supply chain continues moving forward. This thereby keeps the trade cycle flowing instead of grinding to a complete halt.

Another reason presented in order to understand the fall in trade is the higher level of home industry or company sourcing. (Freund.C, 2009) This is not protectionism as it is simply a preference for home products due to it being less costly. However, if these home country products are being artificially priced low then this can qualify as protectionism. This can be linked to trade financing problems as well due to banks being unwilling to engage in international transactions without significant collateral.

The increasing margins of the intermediary banks for international trade transactions means it is cheaper to source from local suppliers with regards to commodities. Due to subtle protectionist policies practiced by national governments this may have become exacerbated as well. The only way to analyse this hypothesis is to compare the performance of Multinational corporations operating in foreign countries with the local competitors. This test would consider the time period of the crisis in 2008 in relation to the prior time period. McDonalds, Coca Cola and Pizza Hut can be used as the hypothesis examples. The results can be used as a useful origin point.

This can be conducted in approximately five nations to be able to generalize results to a certain extent. In conclusion Home sourcing results in less trade in the world. However it is not a significant factor.

4.6 Summary of the Chapter

This chapter has analysed the main reasons that have been introduced in order to explain the world trade crisis that occurred in late 2008 and early 2009. Firstly the relationship between Trade and National income (GDP) and the growth of vertical specialization in global production was analysed. This was followed by the use of protectionism by governments and the higher level of Merchandise exports in total exports in comparison to services. Finally the dearth of trade credit financing, the usage of accumulated inventory by industrial companies and the usage of more home produced goods was evaluated.

The impact of vertical specialization on the world trade crisis was analysed empirically. Furthermore a small sample analysis was conducted and found to be highly influential. Then the impact of protectionism on exacerbating the world trade crisis was considered and found to be highly relevant as well. Empirical research indeed showed that merchandise exports had fallen at a far more rapid rate than service exports. This was further confirmed by the small analysis that I conducted as well. This certainly explains why world trade fell at even a faster rate than GDP as it comprises a higher proportion of world trade and a smaller proportion of GDP.

Additionally the impact of trade credit financing was considered in depth and found to have played a profound impact in spiraling the fall in world trade. The theory of higher use of accumulated inventory did not provide any valuable insights upon close inspection. The usage of more home suppliers though contributing to the fall in world trade has not impacted it hugely. This is as it is more of a consequence of the tightening of trade credit controls amongst other reasons. The following chapter will consider whether geographical distance and bilateral trade with the USA affected national exports of nations.

5.0 The Impact of Bilateral Trade and geographical distance with the USA on a nation's overall trade

The USA financial crisis was significant towards instigating the world trade collapse that occurred in 2008 and early 2009.This is as the subprime mortgage crisis reduced the liquidity available in the economy, hence resulting in lower national consumer demand. However, it should be noted that other OECD nations such as the UK and Ireland suffered financial crises during this period. A prime example is the failure of Northern Rock which created consumer panic. However, even the failure of banks such as Northern Rock was partly due to the US crisis.

This is as the banks mentioned above extended mortgages to UK customers and then resold these on the US market in forms of securitization. However, as the liquidity crisis struck demand dropped drastically for these assets and subsequently the banks faltered. This was a common occurrence for other European countries as well. Consequently the influence of the US economy on the world economy was significant. However, detailed statistical research has not been conducted to identify a correlation between the fall in US trade and the fall in trade of other countries.

Another variable that may or may not affect global trade is geographic distance between trading countries. Therefore here it can be stated that the geographic proximity to the USA could affect the national trade performance of the other countries. Accordingly if this factor was important Canada for instance would be more affected than Spain. Though in modern society international links are more virtual as shown for instance by Northern Rock, this does not account for merchandise exports.

In order to identify whether these two variables could have affected the national trading position of countries a regression analysis was conducted. The explanatory variables were namely geographic distance from New York to the main hub port of each sample country. The other variable was bilateral trade between each sample country and the USA. The countries sampled were selected from the OECD database representing the largest economies in the world. The explained variable was each individual country's total exports. A regression analysis and a coefficient of determination analysis were conducted under the following guidelines.

The test was conducted on whether the two variables mentioned above significantly affected each country's overall export performance.

X1 is bilateral trade and X2 is geographical distance. Yi is the explained variable namely the total export performance of each sampled country. The hypothesis is based on the following equation.

$$Yi = \alpha + \beta 1Xi + \beta 2X2i$$

H_0: $\beta 1=0, \beta 2=0$

Against

H_1: $\beta 1 \neq 0, \beta 2 \neq 0$

The results are evaluated to determine whether the figures of these two factors are statistically significant. Essentially it is to identify whether the above factors have contributed towards the sampled nations overall trade performance during the trade crisis. Data has been gathered for each quarter from the fourth quarter of 2007 onwards in order to have a period of time prior to the world crisis. This was done in order to see whether the factors as relevant explanatory variables became more important during the world trade crisis.

Table 8-The Effect of Bilateral Trade and geographic distance with the USA on Total Exports of member countries

	(1) q42007	(2) q12008	(3) q22008	(4) q32008	(5) q42008	(6) q12009	(7) q22009
Q42007	3.755***						
	(4.92)						
geographicaldmi	7.309	7.817	8.466	8.063	7.032	5.765	5.894
	(1.15)	(1.17)	(1.22)	(1.20)	(1.38)	(1.39)	(1.30)
Q12008		3.985***					
		(5.11)					
Q22008			3.873***				
			(5.17)				
Q32008				3.861***			
				(5.02)			
Q42008					3.479***		
					(5.40)		
Q12009						3.680***	
						(5.92)	
Q22009							3.685***
							(5.46)
_cons	-26061.0	-28115.9	-31720.6	-31236.3	-28145.2	-23439.7	-22945.0
	(-0.80)	(-0.82)	(-0.89)	(-0.90)	(-1.07)	(-1.10)	(-0.99)
N	30	30	30	30	30	30	30

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

q42007-q22009- Total exports for each country from quarter 4 of 2007 and ending in quarter 2 of 2009

Q42007-Q22009 - Bilateral Trade between the USA and each member country beginning with q42007

geographicaldmi – geographical distance between New York and the main trade port of each country

(Source: OECD Database, 2009, Geobytes, 2009)

When independent tests are run for the variables at 95% and 99% confidence intervals the p value obtained for β1 and β2 is lesser than 0.05 and 0.01. This means the null hypotheses for both variables is accepted. However, at 0.001 significance level the p value obtained for β1 is less whilst the p value obtained for β2 is significantly higher than 0.001. This means that the null hypotheses with regard to β1 is rejected whilst the null hypotheses with regard to β2 is accepted. Consequently Xi affects the explanatory variable whilst X2i does not as it is statistically significant.

The tests confirm that bilateral trade with the USA affected the overall trade performance of the sampled countries. However, conversely geographical distance did not affect the trade performance of the individual countries. It has to be noted though, that the total exports of the countries includes the bilateral trade conducted with the USA. Therefore Yi and X1 are not completely independent. Nevertheless the purpose of the test was to identify the impact of bilateral trade with the US on total exports of each country. The above test confirms the impact. Another approach towards identifying the impact of US trade is to evaluate the level of US exports as a percentage of total exports of the major economies. Statistics would show that US Exports comprise a high percentage of total exports, particularly in OECD nations. This will confirm the impact of US trade. For instance Exports to the US comprised approximately 15% of total UK goods exports in 2009 which is quite significant (Office for National Statistics, UK, 2010). Furthermore exports to the US comprised 11.9% of total exports from the EU16 bloc of nations in 2009. (Eurostat c, 2010)

The test also further confirms that geographical distance with the USA did not affect the trade performance of the major economies at least at a significant level. This is mainly due to as mentioned before the high level of international business conducted virtually.

Table 9

Co-efficient of Determination of geographical distance and bilateral trade with the USA on Total Exports of Sampled Nations

	Q42007	Q12008	Q22008	Q32008	Q42008	Q12009	Geographical Distance
q42007	**0.6695**	0.6861	0.6885	0.767	0.6961	0.7334	**-0.0552**
q12008	0.6671	**0.6838**	0.6862	0.6744	0.6939	0.7313	**-0.0530**
q22008	0.6674	0.6842	**0.6865**	0.6747	0.6946	0.7315	**-0.0532**
q32008	0.6690	0.6857	0.6880	**0.6761**	0.6963	0.7328	**-0.0515**
q42008	0.6713	0.6874	0.6902	0.6784	**0.6975**	0.7350	**-0.0471**
q12009	0.6666	0.6837	0.6857	0.6738	0.6939	**0.7311**	**-0.0459**

q42007- Total exports for each country during q4 of 2007

q12008- Total exports for each country during q1 of 2008

q22008- Total exports for each country during q2 of 2008

q32008- Total exports for each country during q3 of 2008

q42008- Total exports for each country during q4 of 2008

q12009- Total exports for each country during q1 of 2009

Q42007-Q12009 - Bilateral Trade between the USA and each member country beginning with q42007

Geographical distance – geographical distance between New York and the main trade port of each country

(Source: OECD Database, 2009; Geobytes, 2009)

Table 8 shows the goodness of fit relation between the dependent variables and the independent variable. Whilst bilateral trade with the US has steadily increased in terms of relation to total exports at over 0.73 and averaging 0.68 throughout, geographic distance has recorded a negative relationship. It should be noted that the variables are compared during the same time periods only.

This further proves that geographical distance is not a valid explanation with regards to the transmission or fall of world trade.

Based on this data the scatter plot matrices that are shown in appendix 3 were derived basing bilateral trade with the US as the only explanatory variable. Apart from three outliers during the time period considered, all countries total exports have been affected by the bilateral trade with the USA.

It must be stressed however as US bilateral trade is included in total exports of each country the variables are not independent. Nevertheless it does confirm the impact of US trade on each country, and naturally the higher the trade with US the more the partner nation suffered.

These figures show that at least the bilateral trade with the US has affected each countries individual total export performance and therein world exports. Hence, it lends statistical credence to the theory that the USA has acted as the transmission mechanism.

5.1 Summary of the Chapter

This chapter focused on the impact bilateral trade and geographical distance between USA and other OECD countries had on the overall exports. The hypotheses testing found that the null hypothesis regarding the bilateral trade variable was correct. However, the null hypotheses regarding geographical distance between the USA and other member countries could not be accepted. This is as the β was significantly different from zero.

The correlation between bilateral trade between the USA and the other OECD countries was found to be significantly high. This was confirmed through the coefficient of determination graph.

6.0 Comparison with the Great Depression

Many experts have considered the recent trade and economic crisis as significant as the Great depression that occurred at the beginning of the century. Therefore, as a sub topic in addition to the main topic a comparison of the two crises is worthy to consider. This is not only purely from an empirical standpoint but also as to whether it is possible to gain any significant insights for future reference.

6.1 Background

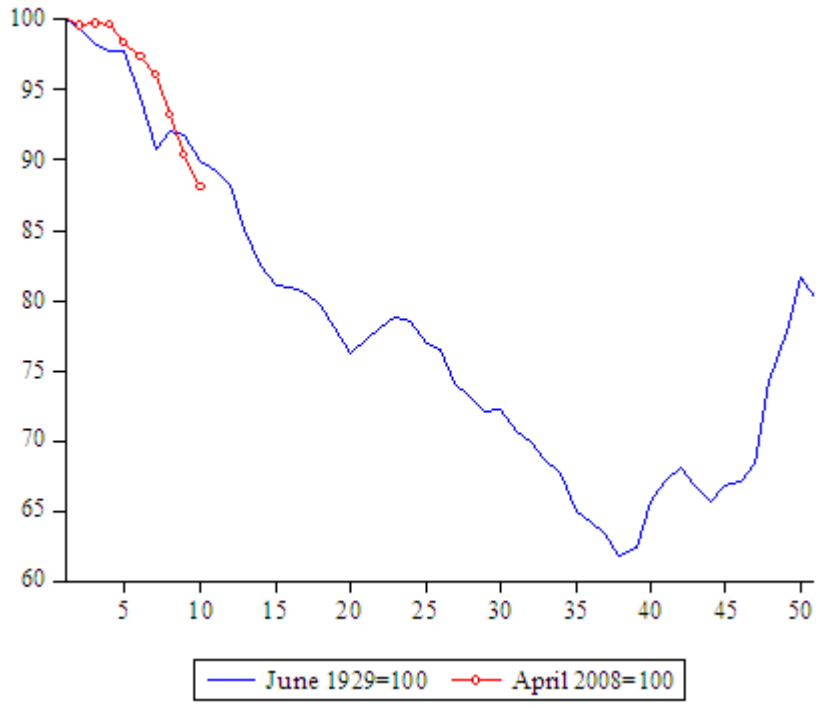
The origins of the great depression occurred in 1929 with the stock market crash in the United States of America. Many articles have been published related to the level of globalization that had been reached with regard to world trade during this time period. For instance Sachs and Warner (1995) cited by Bordo *et al,* (1999) argue of the reemergence of a global capitalist economy that had existed one hundred years earlier. Therefore this shows how it was possible for the trade crisis to be transmitted worldwide. However, there were significant differences in world trade in 1929 when compared to the present day scenario. Trade is substantially more important now than in 1929 as there were a higher proportion of non traded goods in 1929. (Bordo *et al, 1999*)

There has also been a substantial increase in service exports since that time period. This means the ratio of merchandise trade to GDP has receded whilst total trade has increased. Furthermore though Multinational trade was present it was mainly in relation to the collection of raw materials for the individual companies. This has naturally become a much larger presence due to the growth of foreign direct investments along with the growth of outsourcing. Commercial integration is greater today due to lower transport costs and relatively lower trade barriers. (Bordo *et al, 1999*)

6.2 comparisons

The parallels between the 1929 great depression and the recession that occurred in 2008 have been widely considered through diametrically opposite points of view. Several economists such as Paul Krugman believe the current crisis is not as significant an economic downturn as the great depression that occurred in 1929.(Eichengreen.B & O'Rourke.K, 2009)To identify whether there are similarities in the performance of the world economies during the identified time periods the following graphs are used.

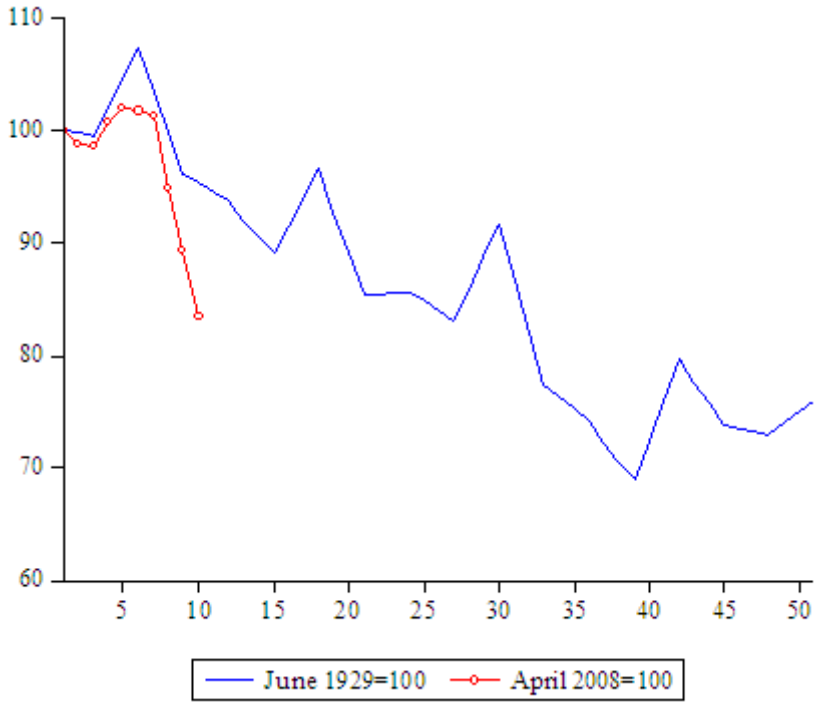
Chart 6. World Industrial Output, Now vs Then



(Eichengreen.B & O'Rourke.K, 2009)

The world industrial output graph shows that the current recession is causing industrial output to recede at a similar level to the great depression. This is primarily due to a lack of demand and trade, which causes a vicious cycle making the economies shrink. This is borne in the world trade figure comparison as well.

Chart 7. The Volume of World Trade, Now vs Then



(Eichengreen.B & O'Rourke.K, 2009)

These figures show that when the current world trade figures are considered in comparison to 1929 it is indeed as significant a fall.

However, there appears to be different policy changes that are being utilized by the governments in the respective eras. Central Banks in the OECD nations in particular have cut interest rates in order to stimulate spending and increase money supplies. For instance the US unleashed a 700Bn$ Bailout package in order to save several large financial institutions. This was in stark contrast to the policies practiced by central governments during the great depression that occurred during 1929.Monetary expansion has grown rapidly as central governments are using the Keynesian supply side economics theory in order to stimulate demand. This approach is different from 1929 when governments became conservative with spending resulting in disastrous consequences. (Eichengreen.B & O'Rourke.K, 2009)

A severe case of protectionism was practiced by the governments during the 1930s that merely exacerbated the economic crisis. For instance they erected tariff and nontariff barriers to trade to encourage demand for local products and remove the interest for imports. The Smoot-Hawley Tariff Act that was passed in 1930 in relation to this had catastrophic effects on trade and employment. (Eichengreen.B & O'Rourke.K, 2009)

This finding has important implications for policy makers responding to the current crisis that is mainly to avoid protectionism and attempt to stimulate demand. The main countries have apparently learnt the errors of the policies that were adopted during the previous depression and have been far more proactive. Governments have realized that there needs to be more focus on fiscal policies rather than merely engage in monetary lending. (Eichengreen,B and Irwin,D ,2009) The focus of countries such as the USA, Great Britain and the EU has been on increasing government expenditure. This is in order to stimulate growth along with reducing interest rates to encourage borrowing. Furthermore there has been a fairly concerted effort in order not be too conservative with regard to protecting home grown industries. This has been benefited by the strict laws that have been passed under UN protocols. However, as previously stated the protectionist temptation is still prevalent as shown above by the practice of murky protectionist policies.

6.3 Summary of the chapter

This chapter's intention has been to first identify the great depression that occurred in 1929 and then compare the similarities between this and the current crisis. It analyses the policy decisions undertaken during both time periods and evaluates its success. It is difficult to appraise the impact of the policies undertaken during the current crisis. However, it is pertinent to observe that economic policies employed by the governments have been different to 1929. Therefore the impact of the 1929 great depression has certainly influenced the present day decision making mechanism.

7.0 Impact of Trade Crisis on the Macro Environment

The above chapters have mainly concentrated on the world trade crisis and the theories proposed as to what may have caused it. This chapter will focus on how the trade crisis has impacted the different countries on a macroeconomic level. It will also attempt to further identify how the different nations around may have been affected at different levels.

The world trade crisis which began in the middle of 2008 was mainly attributed to the financial crisis that engulfed the US economy during the same time period. This meant that world merchandise exports and services fell at an increasingly rapid rate. As the USA is one of the largest net importers of goods and services in the world this affected exports of other nations.

The fall of exports meant that international demand was declining. This in turn meant that countries were forced to reduce their output in general. The reducing output meant that many companies both in the public and the private sector were recording substantial losses. As Companies were recording losses they were forced to reduce their expenditure by reducing the employee task force. This resulted in higher unemployment being recorded in most countries. The high unemployment levels meant that people were reducing in their purchasing power. This leant itself to a vicious cycle where the demand for goods and services began to reduce. This was further compounded by the fact that due to the financial crisis financial institutions were unwilling to provide financing. Though the lower demand should have resulted in falling prices and ultimately deflation, federal governments attempted to stabilize inflation. They attempted this through artificial arrangements such as financial bailout packages and protectionist measures.

However, as statistics from several experiments conducted above show not all countries were affected to the same extent by the trade crisis. For instance Australia due to its geographic location as well as its agricultural economy did not suffer to the same extent as other OECD nations. This is as it does not operate in as open an economy as the United States or the United Kingdom. Therefore its main

merchandise exports do not possess as much vertical specialization in the production process.

Furthermore it did not establish as many protectionist policies in order to attempt to mitigate the fallout from the declining trade. China also due to the strict government policy of not maintaining a fully open economy did not suffer to the same extent as many other OECD nations..

To recapitulate what has been stated above this chapter has focused on how the Trade crisis affected the macro economic factors comprising the world economy.

8.0 Recommendations and Conclusions

There are several policies that need to be utilized by the national governments in order to ensure that this world crisis can be mitigated from escalating even further. Firstly it is quite necessary to identify global solutions to global problems. In order to achieve this free trade must be continued without diverting to protectionist policies. There are different methods that could be utilized in order to negate the occurrence of these forms of protectionism.

A critical method that can be used to reduce protectionism is Standstills. Standstills propose a very specific strengthening of the OECD's protection mechanism. This proposed Protocol on state intervention during the current global economic downturn covers the new, murkier forms of protection. It also covers traditional discriminatory measures. The internet and other forms of technology can be used to ensure that the protection mechanism is being enforced on a rigorous basis. (Gallagher.P& Stoller.A, 2009) However, there needs to be meaningful commitments in order to encourage home governments from warding off protectionist measures. These include not increasing custom duties and also ensuring no subsidies for domestic suppliers. This will also create international goodwill amongst nations as well. (Gallagher.P& Stoller.A, 2009)

Furthermore nations need to increase exports in relation to services as these will not be affected to the same extent as merchandise exports. This is as the average consumer would still need to utilize services in the consultancy or the insurance industry. Vertical specialization impacted the world crisis and exacerbated it even further. However, when global markets weather the storm it will drive the growth in world trade thus becoming a positive factor. The government also needs to encourage state firms and then later private financial institutions to relax the trade financing arrangements. Consequently this will create more funds that are available for companies to produce in order to stimulate demand.

In this paper firstly, we established the background of the world trade crisis. The statistics provided showed the synchronous decline in world trade. Thereafter we considered in detail the main factors that have been attributed to the decline in world trade. The effect of vertical specialization was considered. After critically evaluating how theoretically it caused the reported downturn a sample analysis of five regions was conducted. This considered a differentiation between industries on the basis of the use of vertical specialization. Subsequent analysis found that industries with a higher level of vertical specialization mainly performed less than their counterparts. Furthermore Australia which is not as vertically integrated in their export industries performed better than the other analysed countries during the same time period.

Afterwards the effect of protectionism on deepening the world trade crisis was considered in greater scope and found to be exacerbating the crisis even further. Then another theory was presented as to why trade suffered. This was on the basis of the impact of merchandise exports. Service exports were shown to have performed more creditably than goods exports during the trade crisis. Empirical statistics did prove the fact that merchandise exports have indeed overall fallen at a far more rapid rate than Service exports. This was borne out in my sample analysis as well. Therefore it was clearly shown that the fall in merchandise exports was a major contributor to the decline in world trade.

The other main factors that were considered in detail was the fall in trade financing, the use of accumulated inventory and home production sourcing. The reasons for the fall in trade financing and how it impacted world trade was considered. In addition the effect of the use of accumulated inventory which would halt production supply was evaluated.Particularly with regard to major industrial companies it did not appear to be significant enough to have impacted world trade negatively. However, home production sourcing definitely impacted world trade negatively. Nevertheless, it appeared to be more a byproduct of the fall in trade financing.

Subsequently bilateral trade and geographical distance between the USA and the OECD nations was analysed. The Hypothesis testing and the goodness of fit testing showed that bilateral trade affected world trade. However, geographical distance appeared to be an independent variable that did not significantly attribute to the transmission of the crisis. In addition to gain further insight into understanding the present day crisis an economic comparison was conducted with the great depression of 1929.

Therefore, to recapitulate the main reasons that have been espoused in order to explain the world trade crisis have been critically evaluated and analysed. Apart from two factors they have been found to explain the world trade crisis to a reasonable degree of certainty.

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Appendix 1- OECD Nation Figures for Geographical Distance and Bilateral trade with the USA and Total Exports

	Q4-2007	Q1-2008	Q2-2008	Q3-2008	Q4-2008	Q1-2009	Q2-2009	q4-2007	q1-2008	q2-2008	q3-2008	q4-2008	q1-2009	q2-2009	Geographical d(mi)
Australia	12435	13838	16357	17325	14436	13279	12180	5114	5491	5671	5871	5186	4765	4335	11624
Austria	14546	15998	16639	15806	12032	10564	10950	672	735	657	646	611	504	464	4229
Belgium	38691	41308	44042	41778	31941	28216	29380	6674	7195	7849	7383	6477	5231	5409	3664
Canada	36933	38394	41188	40431	32130	25440	24530	65758	64720	71592	66695	58143	47098	49142	345
Czech Republic	11531	12924	13363	12757	9704	8264	8910	337	202	407	337	334	248	237	4089
Denmark	9145	10005	10601	10083	7808	7225	7420	795	714	723	645	629	549	500	3850
Finland	7962	8502	8932	8392	6432	4861	4930	809	797	1124	10777	763	388	405	4118
France	48645	53322	54442	52099	41042	36475	38880	6919	6987	7698	7098	7058	6973	6877	3632
Germany	118302	127277	132898	126938	101869	85731	87490	12825	5197	14525	13705	12950	11122	10059	3971
Greece	2080	2072	2320	2231	1810	1525	1660	428	407	498	480	547	370	740	4930
Hungary	8570	9571	10027	9300	7196	6098	6560	321	343	368	374	345	324	305	4372
Iceland	466	383	522	483	397	289	280	141	153	117	111	88	123	79	2613
Ireland	10418	10765	10957.9	10778	9343	9316	9730	2008	2201	1958	1710	1742	2124	2060	3181
Italy	44161	46980	49082	46573	36661	31296	32780	3850	3877	4456	3729	3398	2954	3137	4294
Japan	63940	70037	67934	63169	56065	44896	44840	15634	16101	17208	16943	10889	12653	12107	6756
Korea	33377	34584	37376	38754	30092	25923	28310	9148	8676	9624	9222	7147	5669	6937	6881
Luxembourg	2016	2129	2254	2345	1779	1618	1670	293	180	204	385	220	254	295	3770
Mexico	24034	25339	25627	25107	20635	18103	17800	34514	35746	38174	40340	36961	29088	29547	2090
Netherlands	50517	55212	57975	56258	43697	38462	39130	8381	10096	9726	10148	9750	7944	6463	3648
New Zealand	2657	2696	2700	2605	2173	1922	2030	652	582	629	716	607	484	519	8822
Norway	13158	14525	16519	15313	11225	9610	9160	826	836	908	778	771	640	766	3679
Poland	13124	14610	15817	15447	11163	9845	10620	973	1025	960	991	11557	616	484	4265
Portugal	4544	5014	5082	4889	3618	3181	3420	649	675	681	631	660	405	241	3376
Slovak Republic	4963	5487	6200	6173	4847	4066	4310	72	95	146	76	231	49	62	4262
Spain	22398	23479	24033	24002	17874	15945	17250	2645	3150	3041	3210	2789	2493	2001	3588
Sweden	15466	16151	17120	16157	11911	9782	10440	1148	1157	1353	1319	1189	1121	1112	3930
Switzerland	14781	15642	17737	16461	13972	12865	13270	3836	6355	5752	5640	4277	4566	4416	3935
Turkey	9800	12028	11749	12257	8542	8903	7780	1748	2027	2999	3038	1894	1396	1936	5021
United Kingdom	38987	39576	41952	40826	31322	26505	27740	12307	14117	14884	13138	11460	11749	11090	3467
European Union	478940	515780	537926	515270	402059	348476	363270	62961	68177	72296	68088	63249	55553	54449	3971

q42007-q22009 - Bilateral Trade between the USA and each member country beginning with quarter 4 2007 and ending with quarter 2 2009
Q42007-Q12009 - Total exports for each country from quarter 4 2007 and ending with quarter 2 2009
Geographical distance – geographical distance between New York and the main trade port of each country (Miles)

(Source: OECD Database, 2009; Geobytes, 2009)

Appendix 2-Regression Table for Geographical Distance and Bilateral Trade with the USA on Total Exports of OECD Nations

. correlate q42007 q12008 q22008 q32008 q42008 q12009 var1 var2 var3 var4 var5 var6 geographicaldmi
(obs=30)

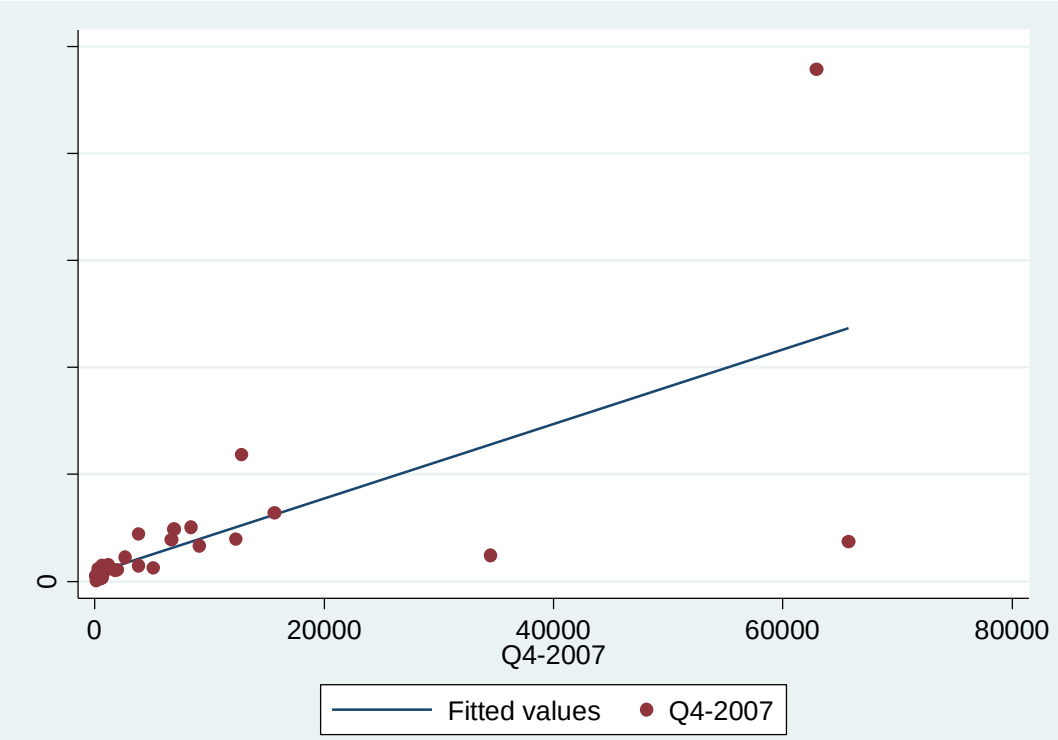
	q42007	q12008	q22008	q32008	q42008	q12009	var1	var2	var3	var4	var5
q42007	1.0000										
q12008	1.0000	1.0000									
q22008	0.9999	0.9999	1.0000								
q32008	0.9999	0.9998	1.0000	1.0000							
q42008	0.9999	0.9999	0.9998	0.9998	1.0000						
q12009	0.9998	0.9998	0.9999	0.9999	0.9999	1.0000					
var1	0.6695	0.6671	0.6674	0.6690	0.6713	0.6666	1.0000				
var2	0.6861	0.6838	0.6842	0.6857	0.6874	0.6837	0.9944	1.0000			
var3	0.6885	0.6862	0.6865	0.6880	0.6902	0.6857	0.9994	0.9957	1.0000		
var4	0.6767	0.6744	0.6747	0.6761	0.6784	0.6738	0.9933	0.9901	0.9939	1.0000	
var5	0.6961	0.6939	0.6946	0.6963	0.6975	0.6939	0.9878	0.9855	0.9888	0.9846	1.0000
var6	0.7334	0.7313	0.7315	0.7328	0.7350	0.7311	0.9931	0.9932	0.9959	0.9905	0.9890
geographic~i	-0.0552	-0.0530	-0.0532	-0.0515	-0.0471	-0.0459	-0.3109	-0.3011	-0.3079	-0.3088	-0.3176

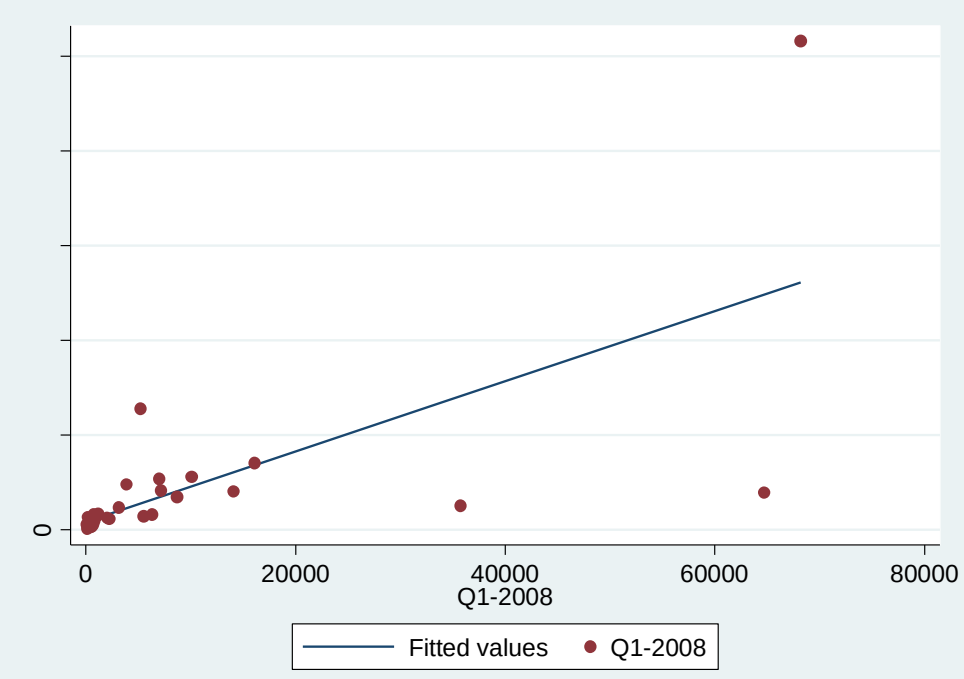
	var6	geogra~i
var6	1.0000	
geographic~i	-0.2927	1.0000

(Source data- OECD database,2009; Geobytes,2009)

Table developed through Stata

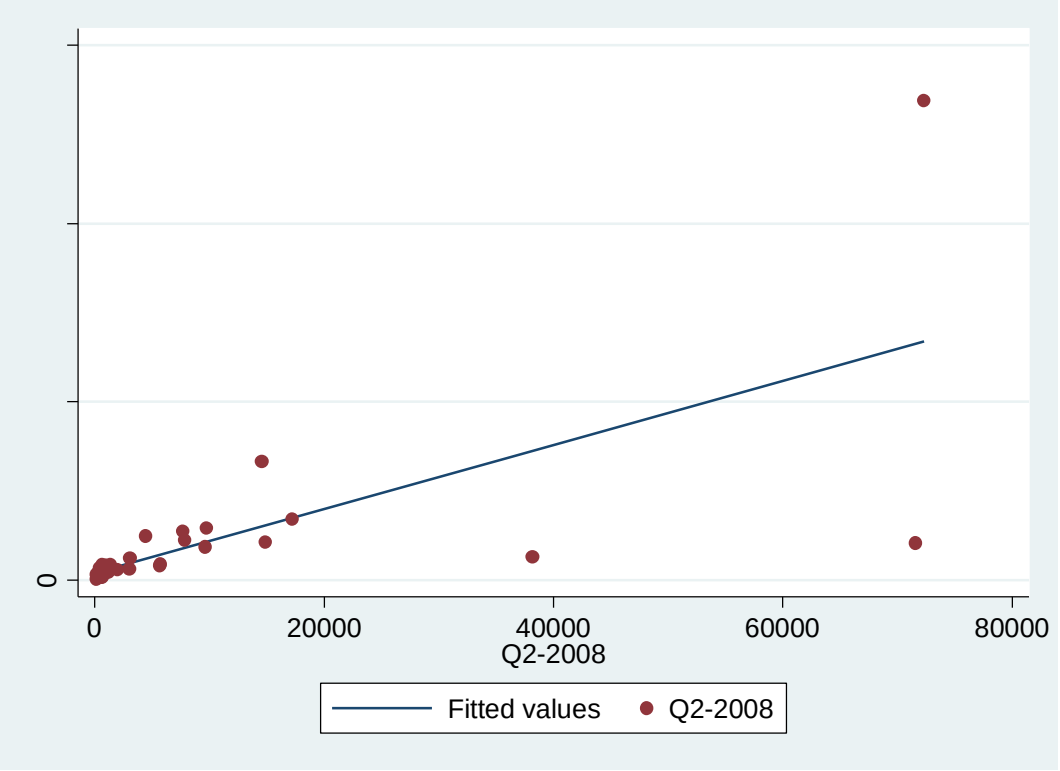
Appendix 3- Scatter Plot matrices for bilateral trade with the USA on Total Exports of OECD Nations

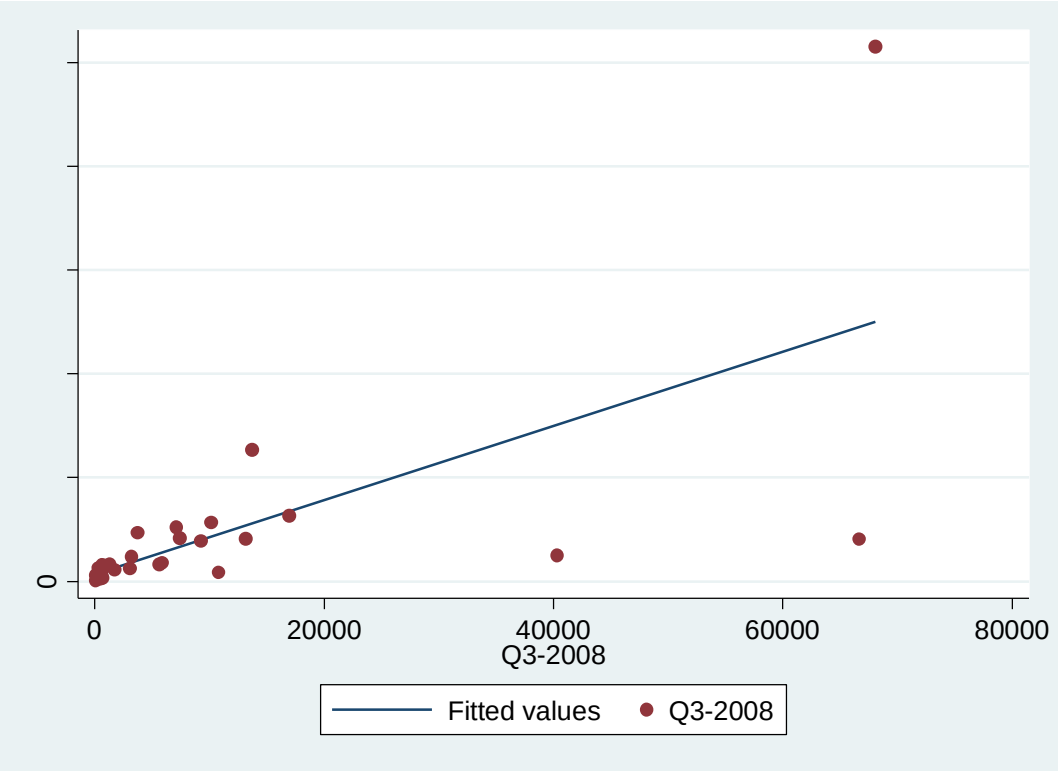




(Source data- OECD database,2009; Geobytes,2009)

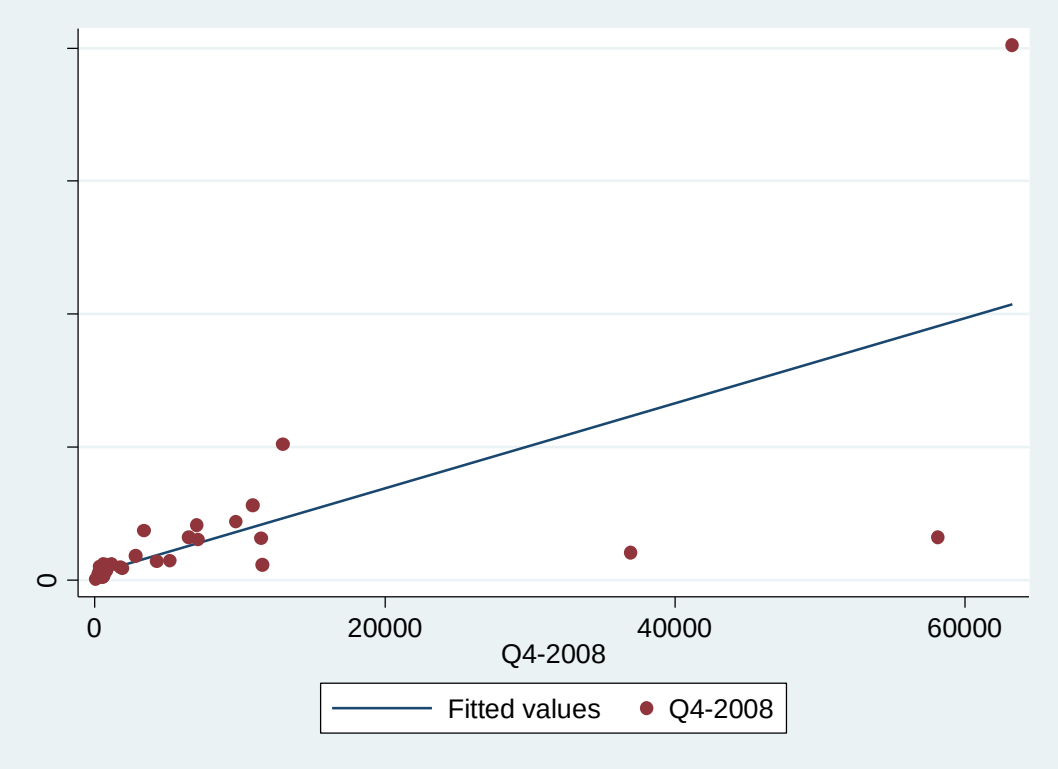
Graphs developed through Stata

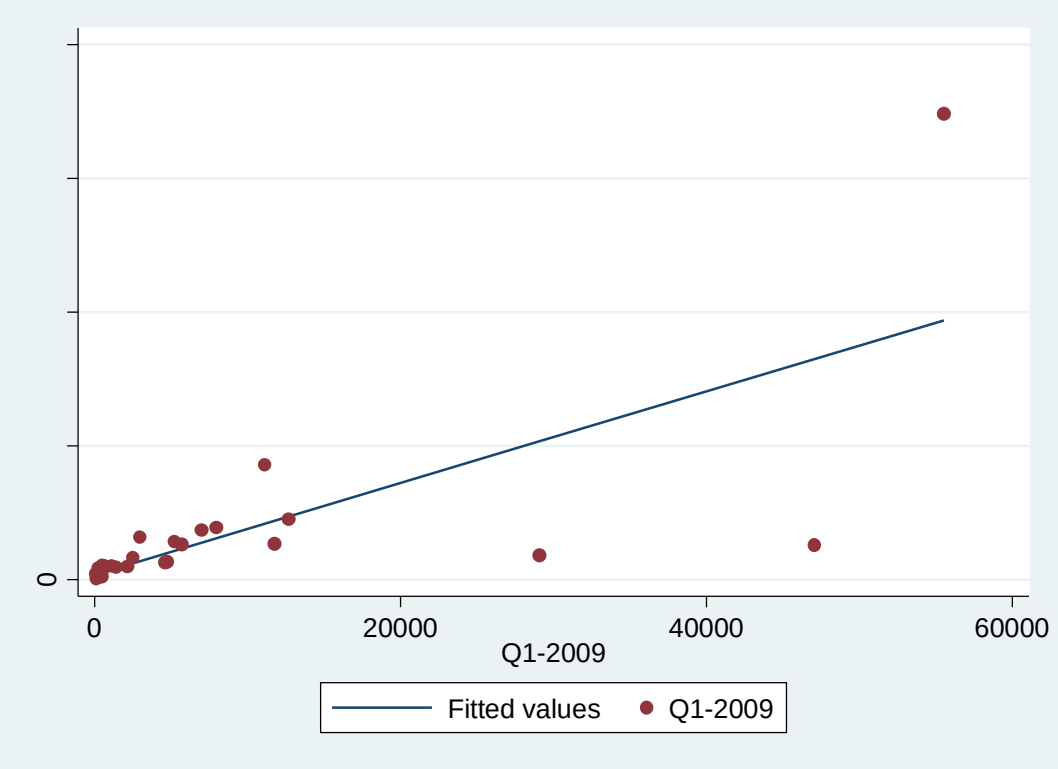




(Source data- OECD database,2009; Geobytes,2009)

Graphs developed through Stata





(Source data- OECD database,2009; Geobytes,2009)

Graphs developed through Stata