



LUND UNIVERSITY
School of Economics and Management

Using the WTO Accession to Assess the Link Between Trade and Growth

Marie Ekman

Supervisor
Maria Persson

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Abstract

The debate on the relationship between trade and growth is ongoing and the question is if the GATT/WTO contributes to higher trade flows. In this paper, the modern literature relating to trade and growth will be reviewed, as well as the modern literature on the GATT/WTO and trade. Then, I examine how growth has been affected by the GATT/WTO by looking at growth for member countries for a few years prior to joining and then comparing this with growth a few years after joining the organisation. To summarize my findings, joining the GATT/WTO seems to be associated with an increase in economic growth.

Keywords: trade, growth, the GATT/WTO

1. Introduction

The modern literature on the relationship between trade and growth is extensive, but does not provide a unanimous conclusion. Many economists argue that trade can be associated with increased economic growth, but the causality of this correlation can be difficult to verify. Nonetheless, many countries liberalise their trade in an attempt to enhance growth. An important contributor to trade is the World Trade Organization (WTO) and its predecessor General Agreement on Tariffs and Trade (GATT), which offers a platform for its members to negotiate trade. It is therefore possible that GATT/WTO membership indirectly increases economic growth for its members by increasing trade flows.

The two methods most frequently used to examine the relationship between trade and growth are cross-country regressions and country-specific case studies. It may, however, be difficult to determine whether or not trade liberalisation fosters growth, as many other domestic policies also have an effect on growth. Some of these policies are necessary for growth, while others may hinder growth in the long run. Today, trade liberalisation is widely promoted and many believe that this is the right strategy to increase trade and thus growth.

If trade can indeed be associated with increases in growth, and the GATT/WTO is in fact associated with higher trade flows, then the organisation should indirectly lead to higher growth for its member countries. Trade and growth has been a well debated topic for many years, this is however not the case with the relationship between the GATT/WTO and growth. It is therefore interesting to examine if the organisation can be associated with higher growth.

There are two main purposes of this paper. The first purpose is to perform a thorough review of the modern literature on trade and growth to examine if trade leads to higher economic growth, and to review the literature on the GATT/WTO to examine if membership in the organisation does in fact lead to increased trade. The second purpose is to assess empirically whether trade liberalisation is associated with growth. In order to do this, I use the GATT/WTO as a measurement of trade liberalisation to examine if trade can be associated with increased GDP growth (if membership in the GATT/WTO indirectly can be associated with higher growth). This is done by comparing growth for countries before and after joining the organisation. The results indicate that the GATT/WTO can indeed be associated with higher economic growth.

The paper will be divided into three main parts; first the modern literature regarding the relationship between trade and economic growth is reviewed. Second, the literature on the GATT/WTO and trade is reviewed. Third, I examine empirically how growth has been affected by membership in the organisation by looking at GDP growth for its member countries and trying to determine whether joining the organisation has had substantial positive effects for these countries. Also, a robustness check is performed. Lastly, the final section summarizes and concludes my findings.

2. Literature review on trade and growth

In the modern literature on trade and growth, the methods that are foremost used to find evidence for a relationship between the two are cross-country regressions and country-specific case studies. Among those who believe that cross-country regressions give the best result we find Sachs and Warner (1995), Welch and Wacziarg (2008) and Edwards (1993, 1998). Others, such as Srinivasan and Bhagwati (1999), and, Winters (2004), argue that case studies give more appropriate information about growth.

Most economists, however, seem to agree that trade liberalisation is necessary for growth and argue that trade restrictions will hinder economic growth (See for example Krueger (1998), Sachs and Warner (1995), Wacziarg and Welch (2008), Edwards (1993, 1998)). Others mean that particularly developing countries face great difficulties when liberalising their markets and that other conditions must be considered (See Winters (2004), and, Srinivasan and Bhagwati (1999)). One view is that it might depend on what stage a country finds itself in when opening up to trade and that if trade liberalisation policies are undertaken wrongly they may harm the country (See Shafaeddin (2005, 2011)). Many authors also point out the issue of definitions of openness. Rodrik and Rodriguez (2000), for example, argue that cross-country regressions have serious methodological problems and they find little evidence of the relationship between trade and growth.

Some also examine the effect of different trade areas or trade agreements. Vamvakidis (1999), for example, compares growth for countries that joined Regional Trade Agreements (RTA) with those who liberalised broadly and finds that participation in RTAs does not increase growth. Romalis (2003), however, argues that preferential trade agreements can be significant beneficial for countries, but that the system has limitations.

2.1. Openness and growth

Sachs and Warner (1995) investigate the relationship between openness and growth using cross-country regression. They find that trade liberalisation is the most important element of overall economic growth, but admit that other elements also matter. Sachs and Warner find a strong relationship between openness and growth, and, find that openness to trade and economic integration will also lead to convergence of income disparities among countries. However, the open economies were clearly more vulnerable for external shocks. Sachs and Warner argue that economic reforms take time and that the results are yet to be seen. They draw the conclusion that protectionist trade policies reduce overall growth. Poor trade policies may also have an indirect adverse effect on growth.

Sachs and Warner (1995) define a country as being closed, if it is characterised by one, or more, of the following criteria:

1. Nontariff barriers (NTBs) covering 40 percent or more of trade.
2. Average tariff rates of 40 percent or more.
3. A black market exchange rate that is depreciated by 20 percent or more relative to the official exchange rate, on average, during the 1970s or 1980s.
4. A socialist economic system.
5. A state monopoly on major exports.

An open economy is defined as one with none of the above conditions.

(Source: Sachs and Warner 1995, p. 22).

Sachs and Warner (1995) find that periods of temporary openness to trade have mostly been characterised by sustained economic growth, indicating that protectionist policies have been introduced for political reasons rather than economical. Their theory is that countries with land-scarce and labour-abundant economies tend to open up to trade earlier, because of the fact that the government will be more responsive to the interests of labour over landowners.

However, **Rodrik and Rodriguez (2000)** criticise Sachs and Warner (1995) for using the distortion index taken from World Bank (1994). Rodrik and Rodriguez conclude that the study only covers 29 African countries who undertook structural adjustment programmes from 1987-1991. This means that non-African countries and African countries not participating in these adjustment programmes are overlooked. The African countries were the slowest growing economies during this time period and economies in need of structural

adjustment programmes also tend to do worse than countries not in need of these programmes. This suggests that the survey may not give appropriate empirical evidence. They also criticise the use of BMP (Black-Market premium) as an indicator of trade policy and point out that imbalances in this index may be caused by political conflicts or external shocks. One implication is that high levels of BMP could be caused by high levels of corruption. This should imply that the BMP index is higher the more corruption or less reliable bureaucracy. It is therefore reasonable to think that a high BMP over time reflects different policy failures and that these failures are to blame for the low growth rates, rather than trade policies alone.

In his paper, **Edwards (1993)** reviews the modern literature on trade policy in developing countries and tries to evaluate if the empirical evidence supports the view that openness in trade will enhance growth. He distinguishes two categories of modern empirical work – large scale multi-country studies¹ and econometric cross-country data – and analyses if these methods are efficient. Edwards argues that the cross-country data has two limitations: the difficulty to define adequate indices of protection and trade orientation, and the lack of convincing theoretical framework linking policies, trade orientation and growth together. Edwards finds that cross-country data give little information about the relationship between trade policy and growth. As for multi-country studies, these studies have provided important details for the discussion and have been influential politically. They have also shown that nontariff barriers traditionally have been the most important form of restricting trade in developing countries. This means that if concentrating on tariffs when analysing the effect of protectionist policies, the result will be misleading. However, multi-country studies have small coverage, only analysing a few countries in each study, and authors of these studies have been forced to use larger cross-country data to econometrically analyse the relationship between trade orientation and growth. Most of the multi-country studies have trouble defining the indices for trade liberalisation.

Rodrik and Rodriguez (2000) argue that the modern literature linking trade liberalisation and growth performance together have methodological problems and bad indicators of “openness”. They argue that empirical studies have serious shortcomings and they find little evidence to strengthen the view that trade policies have a significant impact on economic growth. The purpose of the Rodrik and Rodriguez (2000) paper is not to show that trade

¹ I interpret this as country-specific case studies.

restrictions are good for economic growth, they simply stress that there are several issues concerning cross-country regression analysis. They feel that there is a tendency to overestimate the evidence linking openness in trade with growth and believe that external factors and characteristics of a country are crucial for its economic growth. They also stress that growth and welfare are not the same thing and if growth is increased it does not mean that welfare automatically will be improved. Rodrik and Rodriguez recommend caution in interpreting the cross-country data and believe that the relationship between trade policy and economic growth is yet to be identified.

Srinivasan and Bhagwati (1999) criticise the use of cross-country regressions and suggest that other tools should be used for understanding the relationship between trade and growth. They argue that case studies are to be preferred over cross-country regressions. Srinivasan and Bhagwati are sceptic of the findings in the regression analysis and argue that the theoretical foundation is weak. They also point out problems such as poor quality of data and inappropriate econometric methodologies. They find it disturbing that most proponents and opponents of trade liberalisation rely on these regressions. While regressions can be suggestive and valuable for new hypotheses, Srinivasan and Bhagwati state that great caution should be taken. This is especially true because regressions normally depend on the time period, sample of countries, and variables chosen. Srinivasan and Bhagwati side with Krueger's take on the positive relationship between open trade and growth and find that Rodrik's recent critique is unpersuasive.

Edwards (1998) uses data for 93 countries, from 1960 to 1990, to analyse the robustness of the relationship between openness and productivity growth². He uses a cross-sectional regression analysis and nine indices of trade policy (of which three measures openness and the other six measures trade distortion) in order to examine if productivity growth is faster in open economies. Edwards acknowledges the issue of measuring openness and discusses the different definitions in the previous modern literature. He concludes that the majority of these indices have limitations and that most previous empirical work has only included one or two of these indices, leaving themselves open for criticism by the opponents. He finds that countries with more liberal trade policies tend to have faster productivity growth and that this relationship is substantially positive.

² Note that Edwards (1998) examine productivity growth and not economic growth. It is however interesting to look at because productivity growth may be associated with economic growth.

Rodrik and Rodriguez (2000) also review the work of Edwards (1998), and find that Edwards relies on poor countries' data to a great extent. This may be treacherous as one might expect that this data is less reliable than data for rich countries. To do a regression analysis of mainly poor countries may therefore be misleading. They also criticise Edwards' results from the Collected Taxes Ratio (measuring tax revenue as a proportion of total trade), which he calculated from raw data provided by the International Monetary Fund (IMF). They find the numbers incorrect and give the example of India which in the survey done by Edwards had an average ratio of a mere 2.4%, although it is one of the countries with the highest tariff rates in the world. Rodrik and Rodriguez use the World Bank's *World Development Indicators* from 1998 to replicate the survey and find that India has an average trade tax of 37.3%, a number they find much more credible. As a result, they do not concur with Edwards' conclusion that cross-country data show a strong relationship between openness and growth. Further, Rodrik and Rodriguez (2000) also find World Bank's index highly subjective in the *World Development report 1987* and question how some countries have been classified into certain groups. They give the example of Tunisia, with moderate growth, ending up in the same group as the much faster growing countries Chile, Malaysia and Thailand.

2.2. Trade liberalisation

Krueger (1998) discusses the IS (Import Substitution) industrialisation strategy and trade liberalisation policies. She finds that economic growth increases more rapidly under trade liberalisation and points out that the IS strategy fails. She believes that any degree of liberalisation will result in gains, unless other policies prevent it. Other policies (such as exchange rate determination, improvement of infrastructure, labour market regulations, tax and administration reforms) may also be necessary to support trade liberalisation. Trade liberalisations normally lead to growth, but to sustain growth other measures are needed.

Krueger (1998) talks about the static and dynamic losses of import substitution. Static losses include rent-seeking, corruption, delays and production costs of trade distortion. These are losses imposed by quantitative restrictions and losses associated with monopoly positions in the domestic market. However, the dynamic losses seem to overcome the static. Some dynamic losses are that protected activities do not absorb the comparative advantages; the domestic market for industrial commodities is usually small and lead to increasing corruption and smuggling. Another problem is that knowledge is important for growth and with import restrictions the domestic industry does not get access to the foreign knowledge. Learning by

doing will occur more rapidly in export industries and closed countries seem to fall behind in production techniques and quality. Developing countries usually focus on labour-intensive services, agriculture and manufacturing, keeping demand for capital-intensive goods high. This makes developing countries very dependent on imports of these goods.

Wacziarg and Welch (2008) revisit the empirical evidence on the relationship between economic integration and growth. They present updated data and extend the Sachs and Warner (1995) study, henceforth SW. They also examine the timing of liberalisation more carefully and discuss the SW criteria for openness. They argue that the classification of openness, defined by SW, does no longer hold in the 1990s and hence the cross-sectional findings of SW are sensitive for the chosen time period. They argue that liberalisation dates are much more reliable, as some countries may have opened up in the beginning of the period while others have opened up late in the period.

Wacziarg and Welch (2008) find that liberalisation raises openness and that economic growth seem to increase immediately after a trade reform has been implemented. Investment rate also seems to increase and remain high following liberalisation. Furthermore, they use country-specific data to examine if there is heterogeneity among countries that succeeded in their trade reforms. They find that countries which succeeded in sustaining their reform experienced higher growth and continued to extend their reforms after the time of liberalisation. However, it does not seem that other domestic reforms can help predict the effect liberalisation will have on growth. Some domestic reform may even countervail the effects of trade reforms and hinder economic growth. Political instability seems to distort the effects of trade reform and thus prevent the country from realising the gains of liberalisation. However, they have two concerns regarding the results. The first concern is that economic or political crises may occur shortly after a reform, depressing growth and investment rates. The second concern is that other reforms usually are implemented together with trade reforms and it is hard to know whether the trade reform or the other reforms are responsible for the outcome. It is also common that liberalisation attempts are initiated after economic crises or periods of slow growth. It is therefore hard to analyse the immediate effects.

Shafaeddin (2005, 2011) is of the opinion that trade liberalisation is a necessary condition for industrialisation and growth, but if undertaken pre-maturely it will lead to de-industrialisation and unemployment. According to Shafaeddin, it is very important that trade liberalisation is

undertaken gradually and selectively. If liberalisation is introduced at an early stage of industrialisation, it may cause low income countries to be locked in production and exports of primary commodities with little or no prospect of upgrading.

Shafaeddin (2011) argues that all industrialised countries have gone through the process of infant industry phase, including the first industrialised country Great Britain, with the exception of Hong Kong. In all cases the governments intervened through direct and indirect means to encourage savings, promote investments, agriculture development and building up infrastructure and institutions. He points out that the industrialisation process began selectively and gradually, and was mostly supported by the agricultural sector. In contrast, when free trade was forced upon the colonies de-industrialisation occurred and led to a slow increase in growth. Shafaeddin sees a problem with developing countries trying to industrialise today, where they have to catch up with already industrialised countries much faster than the early industrialised countries needed to develop. Social, institutional and infrastructural changes must be made faster and this requires government intervention.

Shafaeddin (2005) finds that the structural reforms undertaken by developing countries since 1980 have shown different results. About 40% of the sample countries have rapidly expanded their exports of manufactured goods and within this group of countries there are also some that have expanded their industrial capacity rapidly, mostly the East Asian countries. The majority of the sample countries have, however, shown slow growth in exports and many of these countries are located in Africa and South America. He also finds that most countries with low levels of development in the industrial sector suffered from de-industrialisation, which shows that the industrial sector was more vulnerable to trade liberalisation in countries with lower levels of industrial capacity. Nonetheless, de-industrialisation did not only occur in low-income countries, but countries in Latin America also suffered from premature de-industrialisation. Shafaeddin criticises the recommendations of trade liberalisation and the reform programmes designated by the IFIs (International financial institutions), as he believes these reforms to have harmed developing countries deeply.

2.3. The importance of other policies

Winters (2004) argues that trade liberalisation alone is not enough to cause economic growth and, consequently, other factors are important for achieving growth. Winters stresses the importance of other policies, such as investments and building of proper institutions. Winters

implies that the less restrictive trade policy a country has, the lower the incentives for corruption. He also claims that transparent policies will reduce corruption. Investment is important for growth and issues such as peace, property rights and financial depth will be necessary to attract foreign investments. Education is another important variable for economic growth and an educated population does not only increase productivity, but also give strong payoffs in health, social and political capital. Human capital is important to maintain and increase productivity.

Winters (2004) also points out problems with cross-country studies, as definitions and measuring of openness are vague and causations and effects of trade liberalisation are difficult to identify. Case studies, on the other hand, avoid these problems but can seldom be generalised with certainty. According to Winters, the relationship between openness and productivity produces far more convincing evidence, although this model faces similar problems of identification. Nevertheless, he agrees that openness seem to be associated with higher growth and does not believe that trade restrictions enhance growth. Winters, however, recognises the difficulties of opening up to trade. In the short run, a shock can lead to a collapse of the market and there might be trade-deficits as trade balance cannot be kept.

Dollar and Kraay (2003) investigate the effect of institutions and trade. They find that using cross-sectional regressions is not very informative about the relative importance of trade and institutions separately, in the long-run, even though the evidence suggests that both trade and institutions are important for growth. High levels of trade and good institutions seem to lead to rapid growth. Furthermore, they look at acceleration of growth in poor countries and examine if growth can be attributed to strong institutions and participation in international trade. Here they look at changes over time, using dynamic regressions of decadal changes in real per capita GDP growth and changes in decadal averages on trade shares. They also measure institutional quality. Using this method, Dollar and Kraay do not find the same identification problems. The result shows a significant and economically relevant effect of changes in trade on changes in growth. The evidence of the partial effects of improvements in institutional quantity is, however, only modest. These results indicate that trade and institutions together play an important role in the long run, while trade plays a more important role in the shorter run.

Dollar and Kraay (2003) find a strong relationship between per capita incomes and institutional quality. The reason for this may be that when income increases, the demand for better institutions increases. Another reason might be that the so called “halo effect”, that is rich countries are perceived to have good institutions, simply for the reason that they are rich. Dollar and Kraay find that countries with strong institutions have greater trade flows and colonial countries, in which institutions have been established, also tend to trade more. Countries with a geographical location that encourage trade also seem to have better institutions.

Rodrik, Subramanian and Tebbi (2004) examine the role of institutions, geography and trade in determining income levels around the world. They find that once institutions are controlled for, measures of geography have little direct effects on income, but strong indirect effects on the quality of institutions, and integration has no direct effect on income. At the same time trade is usually significant and has a positive effect on institutional quality. Institutional quality, in its turn, has a strong positive effect on integration and integration has a positive impact on institutional quality. This suggests that trade can affect income indirectly by providing better institutions. Strong institutions, such as clear property rights, will boost investments and as a result strengthen the economy, for the simple reason that investors feel safer when their property rights are protected.

Rodrik et al (2004) distinguish three main reasons for the difference in income levels between countries. The first is geography, as climate, natural resources and transportation costs all relate to location. Second, integration is an important part of fostering convergence between rich and poor countries. Third, institutions are important for growth and income. They argue that these three factors are determinants of which countries will develop and which will not.

2.4. Growth performance in preferential trade agreements

Vamvakidis (1999) estimates and compares growth performance of countries that liberalised broadly and those who joined Regional Trade Agreements (RTA). Vamvakidis uses time-series and finds that they provide more robust evidence than cross-country regressions. He also uses two measures of openness - the openness index created by Sachs and Warner (1995) and the trade share (total trade/GDP). The data set covers all countries with available data from 1950 to 1992.

Vamvakidis (1999) finds that countries with a broad liberalisation grow faster both in the short and the long-run. These countries also have higher investment shares. Participation in an RTA does not seem to foster growth. This indicates that only non-discriminatory liberalisation has positive effects for growth. Vamvakidis also finds that a low GDP per capita, high investment rates and low population growth rates lead to faster growth. The impact of secondary school, however, does not give robust evidence for inducing higher growth. Growth rate of world GDP per capita also seems to have a significant positive effect. Fluctuations in world output have effects on domestic output. Openness has a direct effect on growth and an indirect effect on investments.

Romalis (2003) estimates the impact of the Generalised System of Preferences (GSP), by looking at GDP growth rates before and after introducing the system. He uses a simple-cross-sectional regression of the difference between the pre- and post-GSP period and also exploits the panel structure of the data. The data on GDP per capita is taken from the World Bank *World Development Indicators 2000* and the Penn World Tables (version 6.1), and covers the years from 1950 to 1998. He argues that even modest trade preferences have a distinct impact on growth. Trade barriers are mostly higher on products that are of export interest of the developing countries and dropping all trade barriers on these products would have a great effect on their economies. He further argues that the GSP is beneficial for developing countries, but that the system has limitations. For one, products in which developing countries have comparative advantages are usually excluded from the agreements and in the case of the US GSP program; products were selectively removed from the scheme. Furthermore, not all developing countries are included in GSP agreements. Another issue is that the system is designed for increasing exports of developing countries and this might lead to more specialisation in commodities, leading in its turn to slow productivity growth. However, liberalisation by developed countries may also lead to technological transfers to developing countries. Romalis finds that countries can benefit substantially from the GSP agreements and that poor countries would benefit considerably from an elimination of tariffs on their exports. If the developed countries drop all trade barriers on exports from developing countries their growth will accelerate substantially.

To summarize, trade does seem to be associated with economic growth although there are several difficulties to be addressed (lacking data, poor methods, negative effects of trade etc). It may not be possible to provide strong evidence for causality between trade and growth, but

it is quite obvious that trade is associated with higher growth. The next step is to examine if the GATT/WTO is associated with increases in trade. If this is the case, I can use the organisation as a measurement for trade liberalisation and examine the effects on growth.

3. The literature on the GATT/WTO

The literature on trade and growth has been reviewed and the next step is to look at how trade is affected by the GATT/WTO. If the organisation does increase trade flows for its members, it may also indirectly lead to higher economic growth for these countries. Therefore, it is very interesting to review the literature on the GATT/WTO and see if the organisation is associated with higher trade flows.

3.1. The GATT/WTO: A background

The GATT was formed in 1947 by 23 countries, which accounted for 80% of world trade. Restrictions on national trade policies were implemented and tariffs were decreased in binding agreements. The first negotiation round was held in Geneva already in 1947 and was a huge success. Just a few years later all major West European countries had joined the GATT. The main purpose of GATT has been to lower trade barriers and end discriminatory trade policies. Tariffs have fallen about 40% after the Second World War. However, some areas (such as agriculture, textile and anti-dumping measures) have not been covered by the GATT and developing countries did not participate as actively as the developed countries during most of the post war period (Irwin 1995).

Throughout the history of GATT, developing countries have however been left out of the liberalisation process and they have had fewer obligations than the industrial countries. It was not until the Uruguay Round that developing countries got more involved and had to take on more obligations. These obligations have been costly for both small and larger developing countries, but it is the small countries that have been most vulnerable to the obligations. When it comes to tariff bindings, developing countries have historically not been forced to lower their tariffs and their markets have not been attractive enough for industrial countries to initiate trade negotiations (Mattoo and Subramanian 2004).

The GATT/WTO has a few fundamental principles, which are the foundation of the multilateral system, and these are non-discrimination, more openness in trade, more

predictable, transparent and competitive world trade, more beneficial trade agreements for developing countries and protection of the environment. The primary purpose of the WTO is to “open trade for the benefit of all” (WTO 2012).

To summarize, the GATT/WTO seems to have had an important role for trade by providing a platform for its member countries to negotiate new trade agreements. The purpose of the organisation is to open up trade and tariffs have fallen considerably since the Second World War. The next step is to review the literature on the GATT/WTO to see if the organisation can in fact be associated with higher trade flows.

3.2. Literature review on the WTO and trade

In the modern literature on GATT/WTO and trade, there are those who strongly believe that the organisation greatly promotes trade (See Subramanian and Wei (2007), Tomz et al. (2007)) and those who are sceptical to such a relationship (See for example Rose 2004, 2005, 2006). The method used for examining the impact of the GATT/WTO is to great extent different forms of the gravity model (See Rose (2004, 2005, and 2006), Subramanian and Wei (2007), Tomz et al. (2007)). I wish to review the literature to see if there is a positive relationship between the GATT/WTO and trade. The important question is if the GATT/WTO increase trade flows for its members.

Rose (2004) examines the effect of multilateral trade agreements on international trade, by using the standard gravity model of bilateral trade. He also includes some extra conditioning variables, such as culture, geography and history. He then compares trade patterns for members of the GATT/WTO comparing these with countries that are not members. He does not only examine the difference between countries, but also the difference in time as membership of the GATT/WTO has grown. The data set is developed by the International Monetary Fund (IMF). It covers bilateral trade for 178 countries during 1948-1999. Rose includes all countries that the IMF provides data for, in an attempt to cover all global trade.

Rose (2004) finds no strong evidence that the GATT/WTO membership has any significant positive effects on trade. Only when including industrial countries alone does the GATT/WTO membership seem to have positive effects on trade. It may, however, be the case that the GATT/WTO has had a great impact on global trade, so that all countries are now

better off than if the GATT/WTO never would have been founded. Rose believes that there are two reasons for that the organisation has not had much impact on trade. First, the GATT/WTO has not forced countries to lower trade barriers. This is especially important for the developing countries, which have been granted special and differential treatment. Second, members of the organisation have typically also extended their most favoured nation agreements to non-members.

Rose (2005) also tries to examine whether or not the GATT/WTO membership is associated with a decrease in trade volatility³. He does this by using a modified version of the gravity model of bilateral international trade, but finds no strong evidence that GATT/WTO membership decreases trade volatility or increases predictability of trade flows. The only exception is when industrial countries alone are included in the sample. Nevertheless, Rose realises that there are two problems, the first being that the data does not fit the model completely. The gravity model is foremost a model for trade flows and not volatility. The second issue is that it is impossible to examine what the world would have looked like without the GATT/WTO and we can therefore not compare how volatile trade would have been without it.

Subramanian and Wei (2007) use the gravity model to examine bilateral trade. They use a version that includes country-fixed effects in the regression and this version has several differences from the version of the model that Rose (2004, 2005) used. For one, Subramanian and Wei criticise Rose for not including the country-fixed effects and argue that it is necessary to include these variables for the model to give useful information. They do not include country pairs involved in Free Trade Agreements (FTA), Custom Unions (CU) or Generalized System of Preferences (GSP) agreements, for the simple reason that countries in these agreements do not need to be members of the WTO to trade more with each other.

Subramanian and Wei (2007) argue that the GATT/WTO has promoted trade and increased world imports substantially. This positive effect has however been uneven, as there are asymmetries to consider. They find that developing countries have gained little from the GATT/WTO membership, because of their unwillingness to participate actively. Because developing countries have not been as active as developed countries, trade liberalisation is

³ A decrease in trade volatility gives more stable and predictable trade, and is therefore desirable.

expected to occur on products of primarily export interest to developed countries rather than developing countries and non-members. There is also evidence that this is exactly what has happened, as tariffs on products of interest for developing countries (such as textiles, agriculture and clothing) have remained high. The developing countries have, however, experienced some benefits from the industrial liberalisation in GATT/WTO. But because of their great differences, Subramanian and Wei argue that developed and developing countries should be treated differentially and be divided into two different groups.

Tomz et al. (2007) examine how international institutions promote trade and integration, focusing on the GATT/WTO. They use the gravity model to examine four types of arrangement: the GATT/WTO, Preferential Trade Agreements (PTAs), non-reciprocal trade agreements, such as the Generalized System of Preferences (GSP), and colonial networks of trade. The data extends from 1946-2004.

Tomz et al. (2007) argue that informal members of the GATT/WTO also play an important role for understanding the effects of trade liberalisation. There are two reasons for this; first of all, informal members are affected by rights and obligations of the institution. Second, some formal members may not accept all parts of the agreement and thus not implement them. Tomz et al. emphasise that formal and informal members had very few differences between them. Informal members were included in Most Favoured Nation (MFN) and other reciprocal agreements. These countries should therefore be included in the analysis of the effects of the GATT/WTO. Most countries are members of several trade agreements and intergovernmental institutions and Tomz et al. mean that this could have an impact on trade flows generated by the GATT/WTO. Tomz et al. also show that the effect of the GATT/WTO was the largest in the early years as the number of members was smaller and non-member countries faced high barriers to trade. They also conclude that trade has increased for both industrial and non-industrial countries, and it also seems that countries gained substantially more from membership in the WTO than membership in PTAs. They do not find that PTAs have eliminated the effects of the GATT/WTO.

In his **2006 paper**, **Rose** comments on the critique given on his 2004 paper. He discusses the three main criticisms: 1) inappropriate pooling of data across countries, sectors and time; 2) inappropriate econometric techniques; and 3) selection bias, as membership in GATT/WTO

may encourage trade between two countries who would otherwise not trade with each other. Rose criticises his opponents for looking at trade outcomes alone, instead of trade policy. Further, Rose (2006) explains why trade may not increase for GATT/WTO members. There are six main reasons for this, according to Rose. These are:

1. The GATT/WTO has not forced developing countries to liberalise. Instead they have been granted special and differential treatment.
2. The GATT/WTO has not made much progress in liberalising areas of high protectionism, such as agriculture and textile.
3. The Most Favoured Nation (MFN) rule has been given away freely.
4. Tariffs have usually been lowered in developing countries under the auspices of the GATT/WTO, but instead non-tariff barriers have often been increased as a substitute.
5. Liberalisation dates does not have much to do with GATT/WTO accession.
6. *Ceteris Non Paribus*. There are many other reasons for growth in trade and these include lower transportation and communication costs, higher productivity etc.

Rose (2006) answers the criticism of excessive pooling, given by Subramanian and Wei (2006)⁴. He finds that they want to exclude data that is not consistent with their finding that the GATT/WTO has a positive effect on trade. Leaving out developing countries, as Subramanian and Wei (2006) suggest, is not efficient, according to Rose. Neither does he share the view of Subramanian and Wei (2006) that key sectors, such as agriculture and textiles, should be left out of the survey and he argues that the failure to liberalise agriculture is one of the main reasons for the Doha round to have had limited success. When it comes to the criticism given by Tomz et al. (2005)⁵, Rose means that their argument of including informal members of the GATT is unreasonable.

The modern literature on the GATT/WTO and trade indicates that it is difficult to provide strong evidence that there is in fact a positive relationship between the organisation and trade. Rose (2004, 2005, and 2006) argues that the GATT/WTO has had no significant positive effect on trade, while Subramanian and Wei (2007) argue that there has been a positive but uneven effect. Tomz et al (2007) argue that informal members of the organisation also play an

⁴ Rose (2006) refers to the unpublished IMF paper “The WTO promotes trade, strongly but unevenly” by Subramanian and Wei (2006).

⁵ Rose (2006) refers to the unpublished Stanford University paper “Membership has its privileges: the impact of GATT on International trade” by Tomz, M., Goldstein, J. and Rivers, D. (2005).

important role for understanding the effects of trade liberalisation. There is no unanimous conclusion and it seems that more research is needed in this area.

4. Empirical study

4.1. Empirical strategy

The majority of the modern literature on trade and growth agrees that trade can be associated with higher growth. Furthermore, in the case that the GATT/WTO is assumed to be associated with higher trade flows, then the organisation should indirectly be associated with higher growth. I therefore use the GATT/WTO as a measurement of trade liberalisation to examine if trade can be associated with higher economic growth. I examine if countries joining the GATT/WTO have seen positive effects on growth. I do this by looking at average annual GDP growth for countries prior to and following joining the organisation to compare levels of economic growth⁶.

The list of membership is taken from the WTO and includes all 153 members, of which 31 are defined as Least Developed Countries (LDCs)⁷ and 34 are members of the Organisation for Economic Co-operation and Development (OECD). The WTO uses the definition of LDCs designated by the United Nations (UN), which constitutes of 48 countries. Furthermore, there are 128 countries that had joined the GATT by 1994⁸ (WTO 2012).

When looking at the data, it seems as if most of the early members of GATT were industrial countries mainly located in Western Europe. Other industrial countries that joined GATT in its early days were the United States of America, Australia and New Zealand. Many newly independent colonies also joined the GATT early on (WTO 2012). There are today 34 OECD countries and they are all part of the WTO. Originally twenty countries signed the Organisation for Economic Co-operation and Development Convention on 14 December 1960. Since then fourteen countries have joined the organisation (OECD 2012).

⁶ I use annual GDP growth in percentage, taken from the World Bank which is defined as: “GDP growth (annual %): Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2000 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources” (World Bank 2012).

⁷ The list of LDCs is taken from UNCTAD (2012)

⁸ See appendix for lists of these countries.

The purpose of this empirical study is to examine economic growth for these countries before and after joining the GATT to see if becoming a member is associated with increases growth. I do this by measuring average annual GDP growth for countries five years before joining and five years after joining the GATT/WTO. Then, I also examine if the GATT/WTO has become more considerable over the years, as the organisation grows and the system gets more ambitious. I do this by examining growth after certain trade rounds of the GATT. The creation of the WTO is also examined to see if this has any large impact on growth. Last, a robustness check is performed where GDP growth three years before and three years after joining the organisation is examined.

4.2. Data and sample

Data for members of the WTO (150 countries) is used⁹. The data is taken from the World Bank and show annual GDP growth in percent for each country (five years before and five years after entry in the organisation). I have, however, been forced to exclude all countries which joined the GATT/WTO before 1965 and after 2006 because of lacking data (there is no available data before 1960 or after 2011 and I need to look at five years periods before and after countries join the organisation). Also, some countries are excluded because of lacking data for some years. The sample therefore includes 71 countries, of which 11 are LDCs and six countries are OECDs.

Having excluded all countries which joined before 1965 it is not possible to see how joining the GATT/WTO affected countries in the early years and the sample for OECDs and LDCs may be too small. Furthermore, growth for most large industrial countries cannot be examined as these mostly joined GATT very early. This means that the US, the United Kingdom, Australia and other west European countries are not in the actual sample. However, these are founding countries of the GATT rather than countries joining GATT/WTO. It may also be the case that data before 1960 is less relevant as the decade after the Second World War mainly constituted of building up countries and economies after the war.

There are also some outlier observations, such as a few countries with extreme decreases in annual GDP growth during the 1990s, such as Armenia (-42% in 1992), Georgia (-45% in 1992), Rwanda (-50% in 1994) and some former Soviet countries. Such extreme decreases in

⁹ See list of results in appendix

growth suggest that it is the result of historical events and may therefore affect the sample and cause the results to be misleading. When examining average growth for all countries joining the WTO in 1995, some countries might be included in the sample that can affect the result. Armenia and Georgia, however, are not among them as these countries did not join the organisation until later, as did many of the former Soviet countries.

4.3. Methodology

First, the average annual GDP growth (in percentage) for all GATT/WTO members before and after joining the organisation is examined. Countries are then divided into three groups, LDCs, OECDs and the remaining countries, to examine if average growth for these groups has been different. Average growth during five years before and five years after joining is assessed. The reason for examining growth over five year periods (instead of one year alone) is that increases in growth may not be seen within individual years and it is therefore necessary to look at growth over periods of a few years. I have chosen not to look at ten year periods, because I find that this may be excessive and in this case give uninformative results seeing that the GATT/WTO accession may be only one of several trade liberalisation reforms induced over a period of twenty years.

Also, average growth during the years around the creation of WTO in 1995 is examined, to see if the WTO has been more efficient than GATT. This sample of 104 countries and includes all former GATT members and new members of the organisation that joined the WTO in 1995. In the sample there are a few countries that must also be excluded because of lacking data. These are Kuwait, Maldives, Poland and Slovenia. The group of LDCs includes 30 countries, of which 19 joined the WTO in 1995. There are, however, three of these countries that could not be included in the sample because of lacking data for some years. These three are Cambodia, Djibouti and Haiti. The group of OECDs includes all 34 of the current OECD countries, of which all except Estonia joined the WTO in 1995. Estonia is therefore not included in the sample. Further Czech Republic, Slovenia and Poland are not included because of lack of data.

Furthermore, a robustness check is performed by examining average annual GDP growth (in percentage) for three years before and three years after countries join the GATT/WTO. Here the periods are changed from five to three year periods in an attempt to analyse if different time periods have an effect on the results. If the GATT/WTO can be associated with higher

growth when the time period is shorter, it would indicate that the effects are visible not only in the longer run and further strengthen the results.

It should be stressed that the relationship between trade and growth is examined, by using the GATT/WTO as a measurement for trade liberalisation. Other policies affecting growth are not considered and the results do not consider causality.

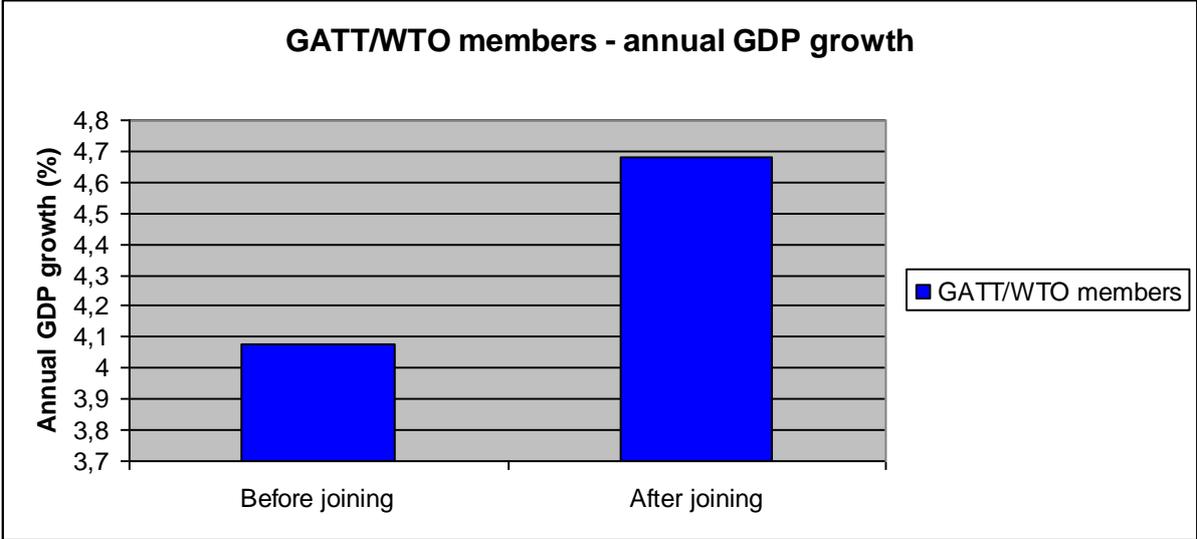
5. Results

5.1. Growth for countries joining the GATT/WTO

I start by examining the effect on annual GDP growth (in percentage) when joining the GATT/WTO¹⁰. I find the average annual GDP growth to be somewhat higher after joining. The average annual GDP growth for all countries was 4,08% during the five years before joining and 4,68% after joining (see figure 1). This result is only modest and may indicate that countries joining the GATT/WTO did not experience substantial economic growth within the first five years after joining the organisation. It may indicate that it takes more time to increase growth or that outlier observation is affecting the results. In a worst case scenario the GATT/WTO does actually increase neither trade nor growth. This would be a disappointing result considering that the organisation stands for trade liberalisation. Next, it is important to divide these countries into groups to see if the effect is more considerable for any countries in particular. It may be that some countries benefit more than others from joining the GATT/WTO.

¹⁰ See list of results in appendix

Figure 1 – GATT/WTO members



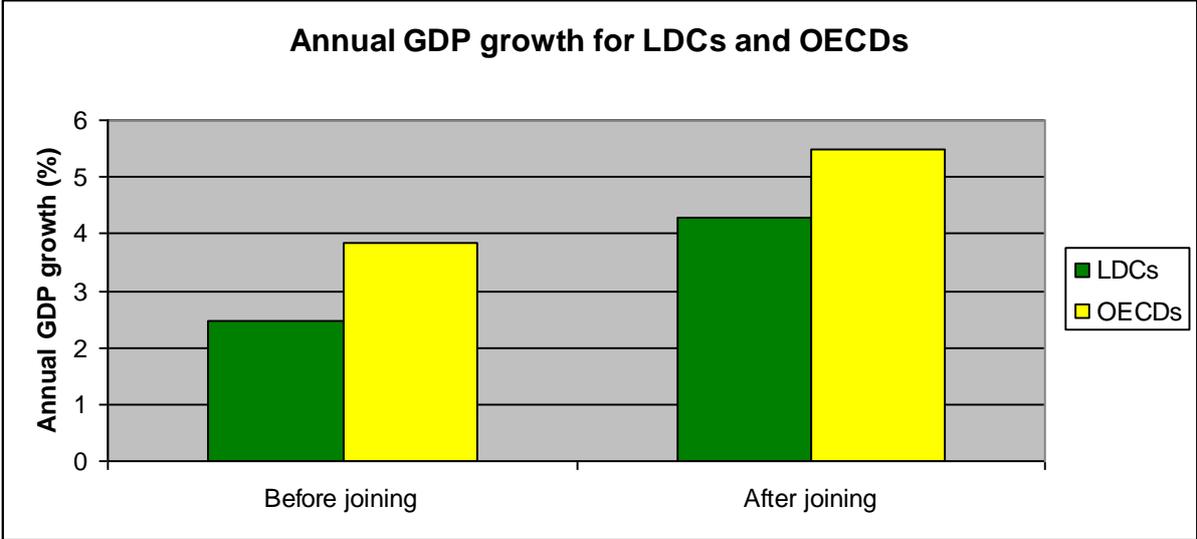
5.2. Separating countries into groups

Growth seems to increase somewhat for countries joining the GATT/WTO and it is now interesting to see what happens when separating these countries into three groups (LDCs, OECDs and the remaining countries). It is necessary to examine the individual effects for these groups to see if some countries may benefit more than others from joining the GATT/WTO.

When separating the LDC and OECD countries, it was found that LDCs had an average growth of 2,47% before joining and 4,29% after joining (see figure 2). This is a more substantial increase than that of all GATT members, indicating that LDCs have gained greatly from joining the organisation. However, the sample of LDCs only includes 11 countries which means that it is not sure that these results are robust. Nevertheless, the result is positive and does not strengthen the view that developing countries are suffering from trade liberalisation and membership in the GATT/WTO.

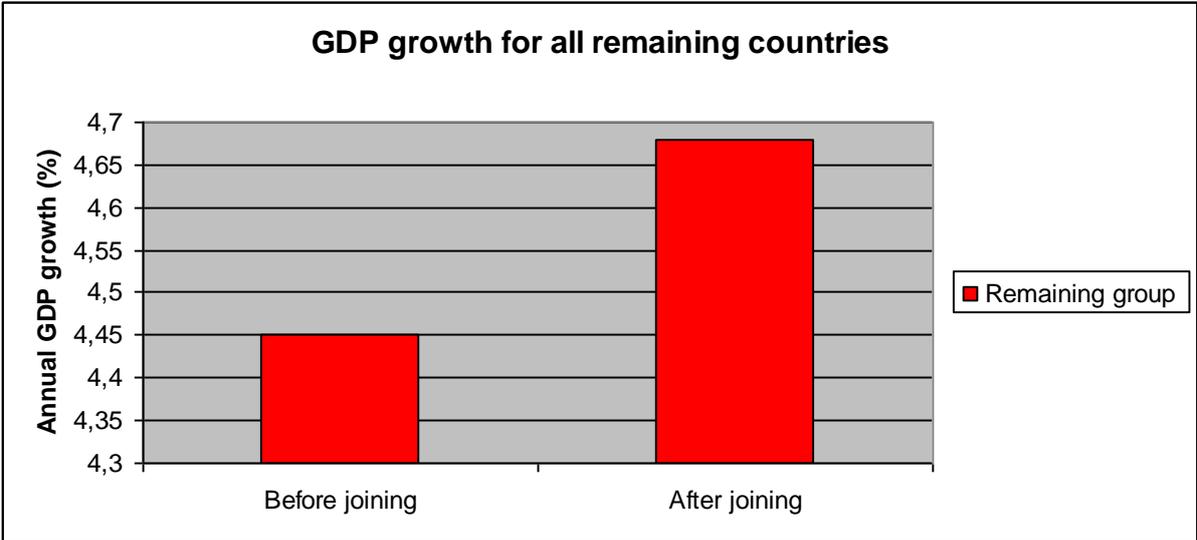
The OECDs had an average of 3,83% before joining and 5,47% after joining (see figure 2). Again, the sample is too small to be sure that the results are trustworthy, but it indicates that OECDs have also gained from GATT/WTO membership (the increase is however slightly smaller than that of LDCs). These results strengthen the assumption that trade can be associated with growth and that the GATT/WTO indirect increases growth for these two groups.

Figure 2 – Growth for LDCs and OECDs



The remaining countries are thus, all countries joining the GATT/WTO between 1965 and 2006 with the exception of LDCs and OECDs. These countries had an average annual GDP growth of 4,45% before joining the organisation and 4,68% after joining (see figure 3). This increase in GDP growth is much less than for the other two groups, LDCs and OECDs. It seems that as groups, the LDC and OECD countries have gained much more from joining the GATT/WTO than other countries. Especially LDCs have gained a lot from joining the organisation. The overall effect of joining the GATT/WTO is surprisingly low, but it is however positive and the effect on LDCs and OECDs is higher than expected. This leads to the question if there are extreme outlier observations in the sample of all countries which affect the results negatively.

Figure 3 – GDP growth for remaining countries



5.3. Growth over time – examining growth after trade rounds

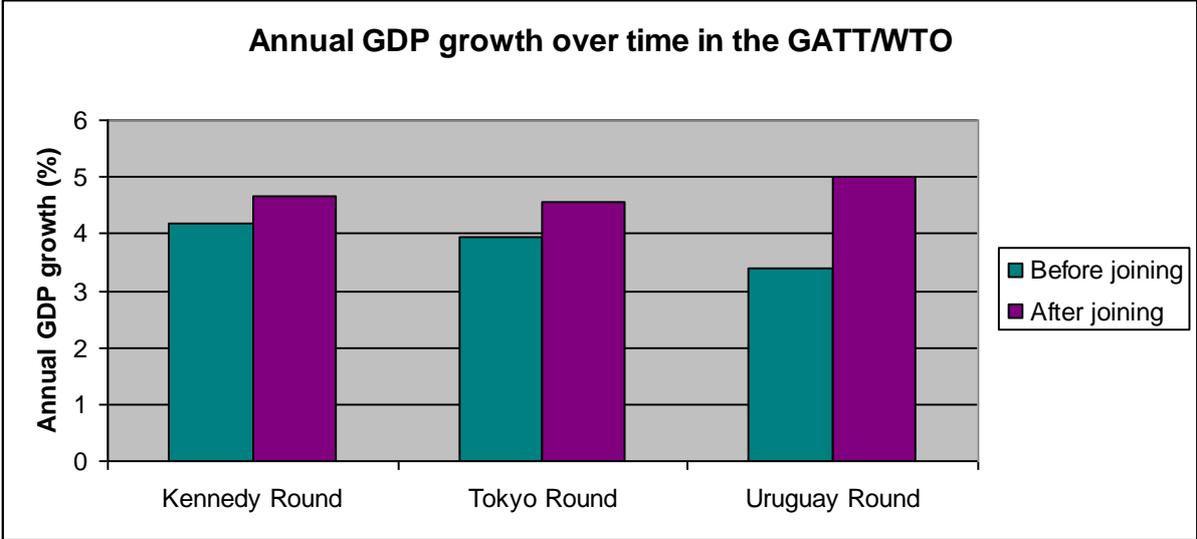
The results strengthen the view that trade can be associated with growth, but they also show that some groups benefit more than others. It is therefore also interesting to see what impact the GATT/WTO has had on growth over time. The impact of the organisation will be examined by looking at growth after certain trade rounds and excluding older entrants successively (see figure 4).

The first round is the Kennedy Round that took place during 1962-67. All countries that joined before 1967 are therefore excluded. Average annual GDP growth five years before and five years after joining is assessed. This, however, does not change the result substantially, as only Guyana and Rwanda are excluded from the original sample. The averages are now 4,18% before joining and 4,65% after joining (see figure 4). This result is very similar to that of the original sample, including all countries joining the GATT/WTO and does not give much more information.

Next the years after the Tokyo Round (1973-1979) are analyzed. Countries that joined the GATT before 1979 are now also excluded. These are Argentina, Bangladesh, Barbados, Democratic Republic of Congo, Egypt, Hungary, Iceland, the Republic of Korea and Singapore. The averages are 3,95% and 4,57% respectively (see figure 4), illustrating a larger change in growth for the years after this trade round. It is however the case that the average growth for countries prior to joining the GATT/WTO is lower than those of the earlier trade round. It is also the case that the average growth after joining the organisation is less than that of the Kennedy Round.

When looking at the Uruguay Round (1986-1994) it is important to think of the fact that this is the last Round of the GATT. This round led to the creation of the WTO. Many countries are now excluded and the sample consists of 32 countries joining the GATT/WTO after 1994. The average GDP growth for these countries was 3,39% before joining and 5,00% after joining (see figure 4). This is the most substantial positive increase in growth for the trade rounds and average growth after joining is now higher for the member countries than before. It is evident here that many of the countries joining the organisation in this trade round are less developed countries and former Soviet members. The average growth prior to joining is lower than for the earlier trade rounds.

Figure 4 – GDP growth over time

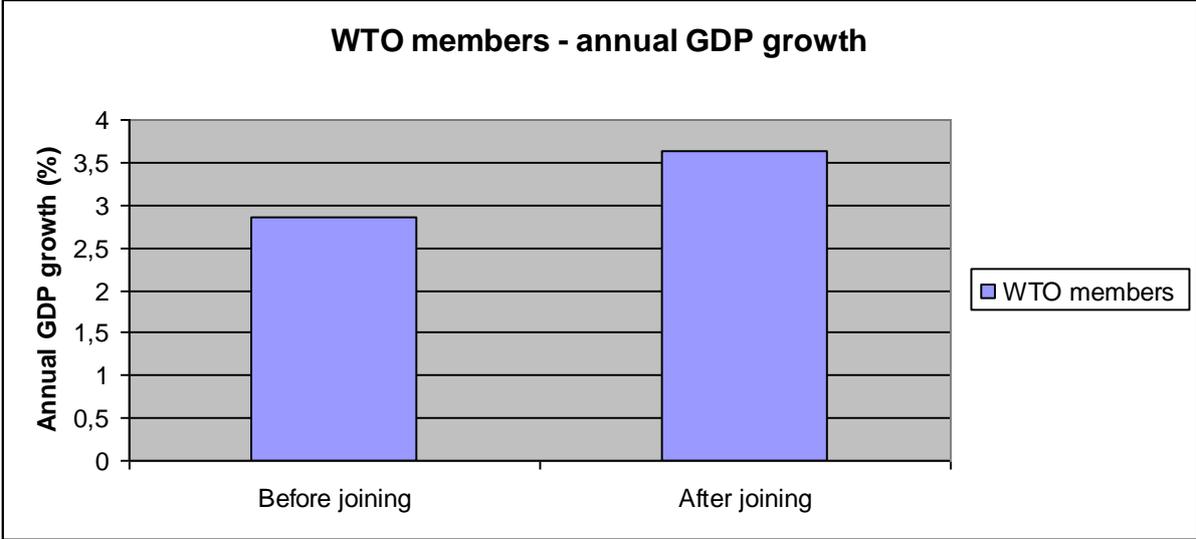


These results indicate that the GATT/WTO has had a more considerable effect over time and that later trade rounds can be associated with larger increases in growth. It is however also the case that countries with less initial average growth have joined the organisation more recently. It is evident that average growth before joining is much lower for countries in the Uruguay Round and that countries in the Kennedy Round had higher initial growth. Countries that joined after the Uruguay Round show higher average growth (after joining) than in any of the earlier trade rounds, increasing by 5, 00% in GDP growth.

5.4. The creation of the WTO

Finally, I look at the average for all countries that joined the WTO in the year of creation 1995 and here all former GATT members and new members of the WTO are included. I find the average to be 2,87% during 1990-1994 and 3,64% during 1995-1999 (see figure 5). This is a substantial increase in growth and shows that the WTO can be associated with higher growth. Growth is however lower than when examining growth for countries joining the GATT/WTO. This is surprising, although many of the countries joining the WTO at its creation were already former members of the GATT. Maybe this may affect the results negatively. There are also a few outlier observations in this sample, such as Guinea-Bissau (-28% in 1998) and Sierra Leone (-19% in 1992). These may affect the sample negatively, but the outlier observations are very few and it is not likely that they affect the result in any substantial degree.

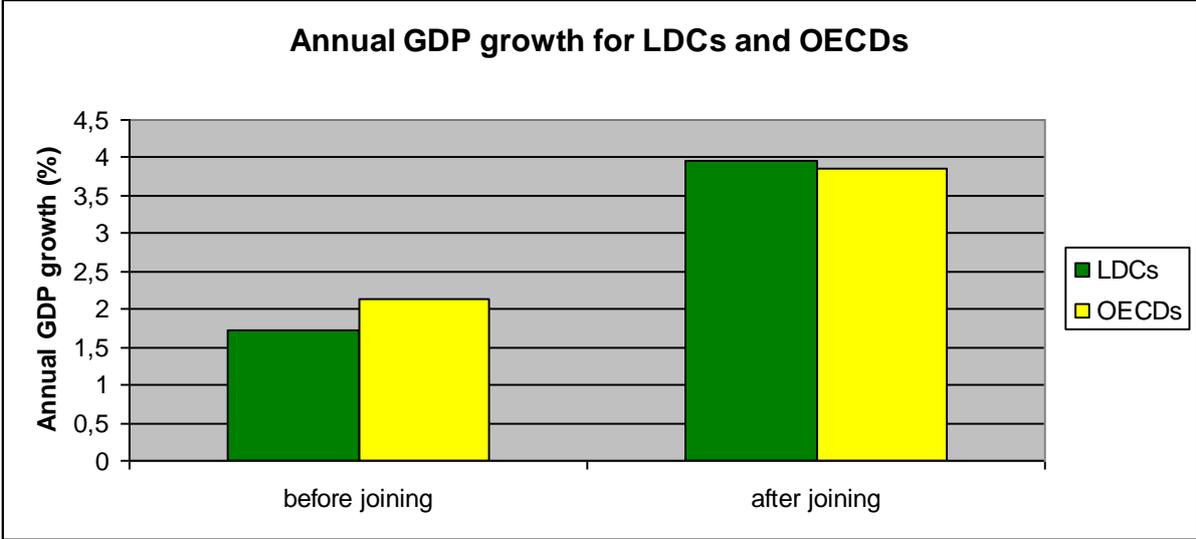
Figure 5 – WTO members



When examining GDP growth for LDCs (joining the WTO in 1995) I find that average growth was 1,72% annually for the five years before (1990-1994) joining. The average then increased by more than double in the five years after (1995-1999) joining to 3,96% (see figure 6). This is a large effect and further strengthens the results that the WTO has a positive effect on growth. It also demonstrates that LDCs do seem to gain greatly from membership in the organisation.

The average GDP growth for the OECDs (joining the WTO in 1995) was 2,13% annually during the five years before joining and then increased to 3,86% for the five years after joining (see figure 6). This effect is less than that of LDCs and may indicate that LDCs have in fact gained more from joining the WTO than other countries. This is very interesting as it is often argued that developing countries face more challenges than developed countries and therefore do not gain as much from the membership. It is also interesting as it may provide evidence that the Uruguay Round did indeed improve terms for developing countries.

Figure 6 – Growth for LDCs and OECDs



To summarize, the results strengthen the view that the GATT/WTO is associated with higher growth. The two groups, LDCs and OECDs, experience substantial increases in growth after joining the organisation and especially the LDCs seem to benefit greatly from joining the GATT/WTO. Further, the organisation seems to have a more considerable effect over time, where later trade rounds can be associated with larger increases in growth. However, the overall effect for all countries joining the GATT/WTO is modest (but still positive). When looking at countries joining the WTO at its creation in 1995 (both former GATT members and new WTO members are included) the results are similar but growth is lower than when looking at countries joining the GATT/WTO. Again, both LDCs and OECDs have substantial increases in growth after joining and yet again it seems to be the LDCs that have the highest increase in growth. However, to further strengthen these results a robustness analysis will now be performed.

6. Robustness analysis

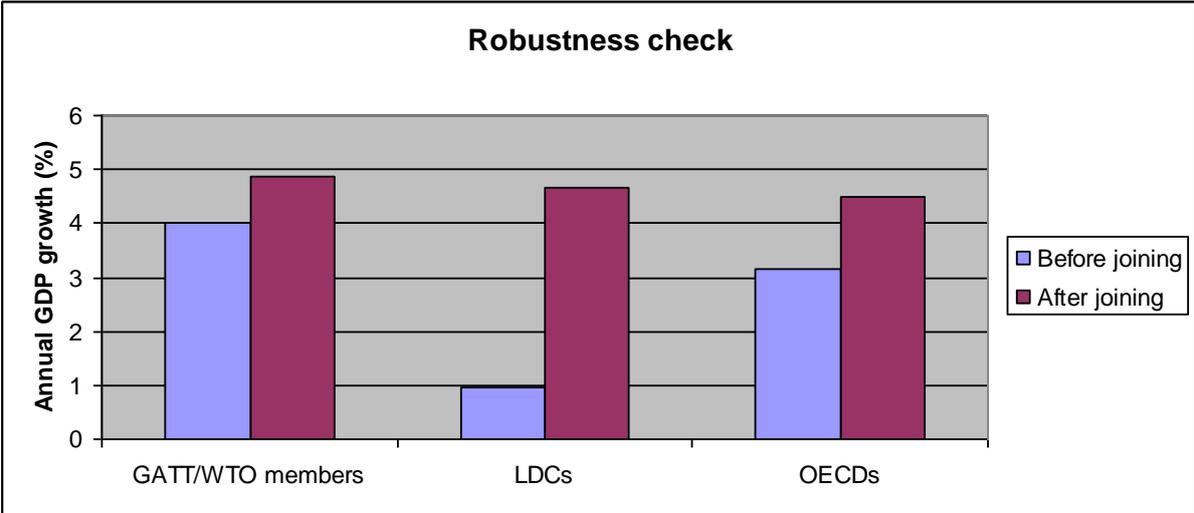
6.1. Growth for countries joining the GATT/WTO

Now average annual GDP growth is examined for three years before and three years after countries join the GATT/WTO. Looking at a smaller sample of years may change the result and it is interesting to see if the new results will still support the positive relationship between the GATT/WTO and growth.

First, the average growth for all countries was 4, 01% before joining and 4,88% after joining (see figure 7). Average GDP growth is hence slightly lower initially and somewhat higher after joining for these countries. The results still show that membership can be associated with increases in growth. The increase is larger than when comparing growth over five year periods. This may strengthen the view that GATT/WTO accession can be associated with growth, seeing that a smaller sample of years is less likely to include many other policies greatly affecting growth. It also shows that growth is not only affected in the longer run.

Second, the LDCs had an average GDP growth of 0,97% before joining, which is substantially lower than the earlier result of 2,47% . The average growth after joining is now 4,67%, which is actually higher than when examining growth for five years (see figure 7). This indicates that growth may be lower for LDCs right before entering the organisation.

Figure 7 – Robustness check



Third, the average growth for OECDs is examined and here the results are 3,17% and 4,50% respectively (see figure 7). These results are both lower than earlier, but still show an increase in growth after joining the GATT/WTO. This indicates that the relationship between the GATT/WTO and growth may be more evident in the longer run. It still indicates that the organisation can be associated with higher growth for countries that join.

6.2. Growth over time – examining growth after trade rounds

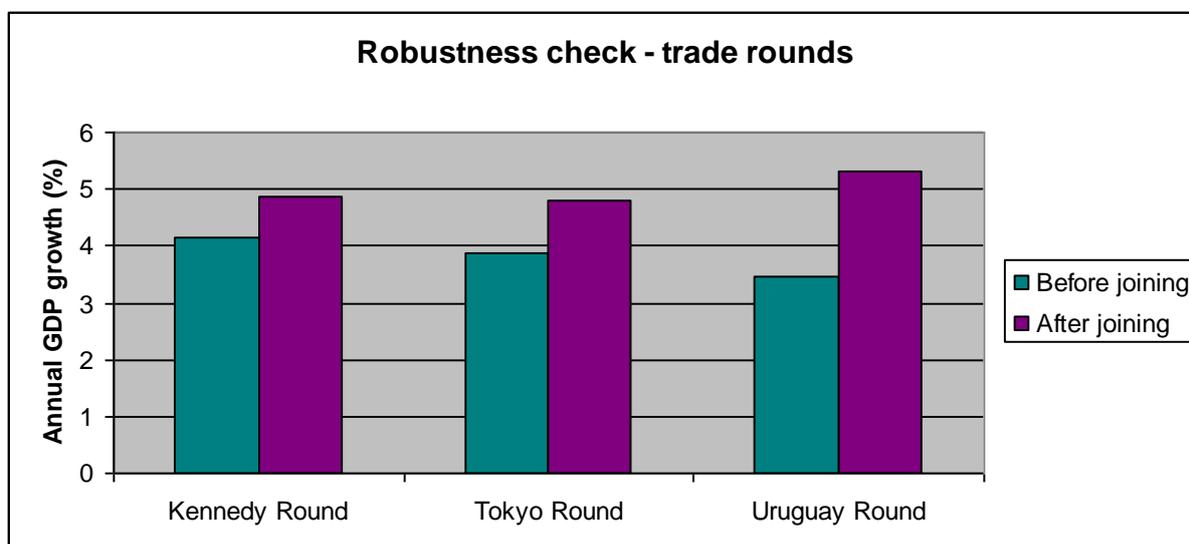
Next the average annual GDP growth is examined for the trade rounds. First, the years after the Kennedy Round (1962-1967) are examined. Again, growth is examined for countries joining after 1967 to see if the effect of the GATT/WTO increases over time. The average

GDP growth was 4,16% during the three years before joining and then increased to 4,87% during the three years after a country joins the organisation (see figure 8). The initial growth before joining is now slightly lower than when examining for a five year period, but the average growth after joining is somewhat higher. The pattern still suggests that countries joining the GATT/WTO experience increases in growth.

Second, growth for countries accession the GATT/WTO after the Tokyo Round (1973-1979) is examined. Here the results are 3,87% and 4,80 respectively (see figure 8). Both these results are somewhat higher than when examining for five year periods. Yet again, the results strengthen the positive relationship between the GATT/WTO and growth.

Third and last, the years after the Uruguay Round (1986-1994) are examined and it is found that the initial average growth was 3,48% (yet again slightly higher than when examining for five years) and GDP growth after joining then increased to 5,32% (see figure 8). This is again higher than before (5,00%).

Figure 8 – Robustness check of trade rounds



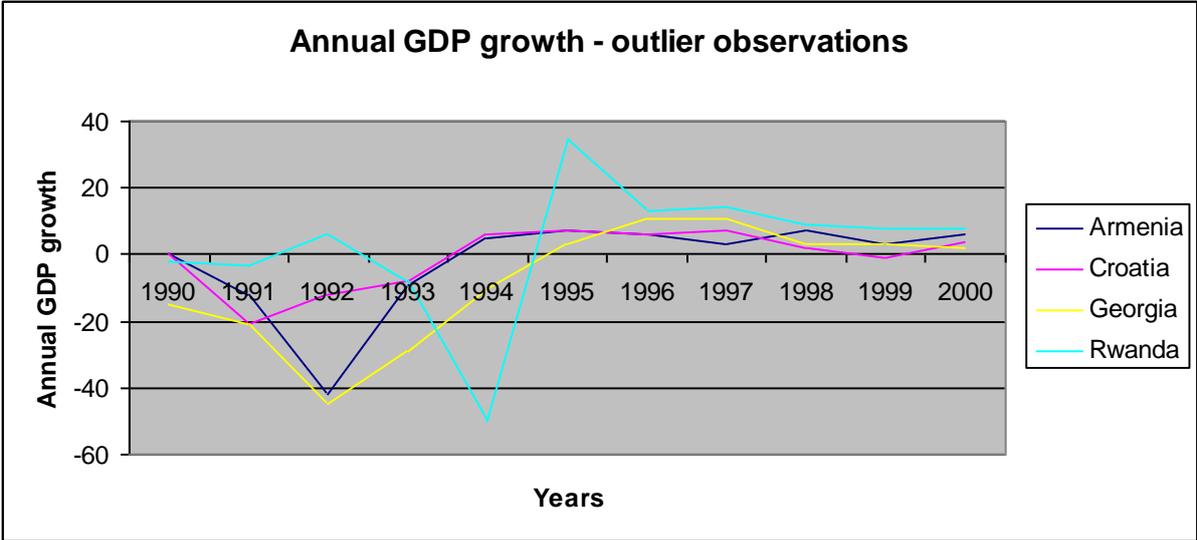
The robustness analysis has shown that we get similar results both when examining for five or three year periods. The GATT/WTO seems to be associated with higher growth for countries that join and growth over time seems to be increasing. Again, it is evident that LDCs and OECDs are two groups of countries benefitting greatly from joining the GATT/WTO. The robustness analysis strengthens the empirical results.

6.3. Outlier observations

It is clear that there are other factors, than trade, that greatly affects growth. I have only examined how trade affects growth and have not considered other factors. There is, however, a pattern for historical events affecting annual GDP growth.

One example is Rwanda, where annual GDP growth decreased by 50% in 1994 which was the year of the Rwandan Genocide. The year before, GDP had decreased with a mere 8% and the year after, in 1995, GDP grew by 35%. The Yugoslavian wars are another historical event that seems to have affected GDP growth. Looking at Croatia, GDP decreased during the years of war with as much as 21% in 1991 and did not recover until the end of the wars. Another example is that of the former Soviet countries. Countries such as Armenia, Georgia, Estonia, Latvia, Lithuania and Slovak Republic had decreasing GDP growth in the early 1990s. Georgia and Armenia have decreases of as much as -45% and -42% in 1992 respectively. This also shows that large decreases in GDP growth take a few years to recover from (see figure 9)¹¹.

Figure 9 – Outlier observations



The robustness analysis strengthens the results and show that the GATT/WTO can be associated with higher growth. However, these results do not consider causality or other policies affecting growth. The GATT/WTO is simply used as a measurement for trade liberalisation to examine if trade can be associated with growth, indirectly that the organisation can be associated with growth.

¹¹ See appendix.

7. Conclusion

In this paper, the modern literature on trade and growth has been thoroughly reviewed, as well as the literature on the GATT/WTO and trade. The purpose has been to examine how trade can affect growth and if countries joining the GATT/WTO has had an increase in growth. The GATT/WTO has therefore been used as a measurement of trade liberalisation to examine if trade can be associated with higher GDP growth. Other factors affecting growth have not been considered in this analysis.

When it comes to the literature on trade and growth, some argue that the evidence is not strong enough that there is in fact a positive relationship between trade and growth. Nevertheless, the majority of the literature agree that trade can be associated with higher growth. There may, however, be a need for more convincing evidence, as there are still many issues to be addressed (such as lack of data, issues with defining openness and limitations of models). The modern literature on the GATT/WTO and trade indicates that it is difficult to provide strong evidence of a positive relationship between the organisation and trade. There is no unanimous conclusion and it seems that more research is needed in this area

The results of the empirical analysis indicate that there is in fact a positive relationship between trade and growth, it should however be stressed that these results do not consider causality. The GATT/WTO seems to be associated with increases in growth for countries joining the organisation. Especially LDCs seem to have substantial positive effects in growth after joining the GATT/WTO. At the same time, OECDs also seem to gain from membership in the organisation although these increases are usually less than those of LDCs. It is a very interesting result, because it is often argued that developing countries face many challenges from trade liberalisation and that trade may even harm these countries. I find no such negative effects when examining the relationship between the GATT/WTO and growth.

When it comes to the effects on growth over time, the GATT/WTO seem to have a considerable positive effect on growth over time. It is evident that the increase in growth gets higher after each trade round. It is however also the case that initial average growth (before joining) for countries is lower for each trade round, indicating that more less developed countries with low levels of economic growth are joining the organisation.

The creation of the WTO in 1995 is also examined to see if there is any difference in GDP growth between the GATT and the WTO. Here both former GATT members and new members are included in the sample. The results show that the creation of the WTO did not lead to higher growth, but growth is actually lower for countries joining the WTO in 1995. One reason for these results could be that most industrial countries already joined the GATT earlier and that most countries joining after the creation of the WTO are in fact developing countries with low levels of growth. However, growth still increases for countries after membership in the organisation and again the group of LDCs seem to gain more from membership than the OECD countries.

There are some issues with my empirical survey, such as a few outlier observations, lacking data for some years and that the samples may not be large enough to provide enough evidence, and therefore a robustness check has been performed. The robustness check examines growth for countries three years before and three years after joining the GATT/WTO. These results are similar to those for five year periods and overall the robustness check further strengthens my findings that the GATT/WTO can be associated with higher growth for countries joining the organisation.

To summarise, trade does seem to lead to higher growth and the relationship between the GATT/WTO and growth seem to be positive. My own empirical analyse suggests that the organisation can be associated with higher growth for countries that join the GATT/WTO. This also lead to the conclusion that trade is associated with higher economic growth.

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9. Appendix

9.1. List of member countries of the WTO/GATT

(taken from the WTO website)

Country	WTO	GATT
Albania	8 September 2000	-
Angola	23 November 1996	8 April 1994
Antigua and Barbuda	1 January 1995	30 March 1987
Argentina	1 January 1995	11 October 1967
Armenia	5 February 2003	-
Australia	1 January 1995	1 January 1948
Austria	1 January 1995	19 October 1951
Bahrain, Kingdom of	1 January 1995	13 December 1993
Bangladesh	1 January 1995	16 December 1972
Barbados	1 January 1995	15 February 1967
Belgium	1 January 1995	1 January 1948
Belize	1 January 1995	7 October 1983
Benin	22 February 1996	12 September 1963
Bolivia, Plurinational State of	12 September 1995	8 September 1990
Botswana	31 May 1995	28 August 1987
Brazil	1 January 1995	30 July 1948
Brunei Darussalam	1 January 1995	9 December 1993
Bulgaria	1 December 1996	-
Burkina Faso	3 June 1995	3 May 1963
Burundi	23 July 1995	13 March 1965
Cambodia	13 October 2004	-
Cameroon	13 December 1995	3 May 1963
Canada	1 January 1995	1 January 1948
Cape Verde	23 July 2008	-
Central African Republic	31 May 1995	3 May 1963
Chad	19 October 1996	12 July 1963
Chile	1 January 1995	16 March 1949
China	11 December 2001	-
Colombia	30 April 1995	3 October 1981
Congo	27 March 1997	3 May 1963
Costa Rica	1 January 1995	24 November 1990
Côte d'Ivoire	1 January 1995	31 December 1963
Croatia	30 November 2000	-
Cuba	20 April 1995	1 January 1948
Cyprus	30 July 1995	15 July 1963
Czech Republic	1 January 1995	15 April 1993
Democratic Republic of the Congo	1 January 1997	11 September 1971(Zaire)
Denmark	1 January 1995	28 May 1950
Djibouti	31 May 1995	16 December 1994
Dominica	1 January 1995	20 April 1993
Dominican Republic	9 March 1995	19 May 1950
Ecuador	21 January 1996	-
Egypt	30 June 1995	9 May 1970

El Salvador	7 May 1995	22 May 1991
Estonia	13 November 1999	-
European Union	1 January 1995	-
Fiji	14 January 1996	16 November 1993
Finland	1 January 1995	25 May 1950
France	1 January 1995	1 January 1948
Gabon	1 January 1995	3 May 1963
The Gambia	23 October 1996	22 February 1965
Georgia	14 June 2000	-
Germany	1 January 1995	1 October 1951
Ghana	1 January 1995	17 October 1957
Greece	1 January 1995	1 March 1950
Grenada	22 February 1996	9 February 1994
Guatemala	21 July 1995	10 October 1991
Guinea	25 October 1995	8 December 1994
Guinea-Bissau	31 May 1995	17 March 1994
Guyana	1 January 1995	5 July 1966
Haiti	30 January 1996	1 January 1950
Honduras	1 January 1995	10 April 1994
Hong Kong, China	1 January 1995	23 April 1986
Hungary	1 January 1995	9 September 1973
Iceland	1 January 1995	21 April 1968
India	1 January 1995	8 July 1948
Indonesia	1 January 1995	24 February 1950
Ireland	1 January 1995	22 December 1967
Israel	21 April 1995	5 July 1962
Italy	1 January 1995	30 May 1950
Jamaica	9 March 1995	31 December 1963
Japan	1 January 1995	10 September 1955
Jordan	11 April 2000	-
Kenya	1 January 1995	5 February 1964
Korea, Republic of	1 January 1995	14 April 1967
Kuwait, the State of	1 January 1995	3 May 1963
Kyrgyz Republic	20 December 1998	-
Latvia	10 February 1999	-
Lesotho	31 May 1995	8 January 1988
Liechtenstein	1 September 1995	29 March 1994
Lithuania	31 May 2001	-
Luxembourg	1 January 1995	1 January 1948
Macao, China	1 January 1995	11 January 1991
Madagascar	17 November 1995	30 September 1963
Malawi	31 May 1995	28 August 1964
Malaysia	1 January 1995	24 October 1957
Maldives	31 May 1995	19 April 1983
Mali	31 May 1995	11 January 1993
Malta	1 January 1995	17 November 1964
Mauritania	31 May 1995	30 September 1963
Mauritius	1 January 1995	2 September 1970
Mexico	1 January 1995	24 August 1986
Moldova, Republic of	26 July 2001	-

Mongolia	29 January 1997	-
Morocco	1 January 1995	17 June 1987
Mozambique	26 August 1995	27 July 1992
Myanmar	1 January 1995	29 July 1948
Namibia	1 January 1995	15 September 1992
Nepal	23 April 2004	-
Netherlands	1 January 1995	1 January 1948
New Zealand	1 January 1995	30 July 1948
Nicaragua	3 September 1995	28 May 1950
Niger	13 December 1996	31 December 1963
Nigeria	1 January 1995	18 November 1960
Norway	1 January 1995	10 July 1948
Oman	9 November 2000	-
Pakistan	1 January 1995	30 July 1948
Panama	6 September 1997	-
Papua New Guinea	9 June 1996	16 December 1994
Paraguay	1 January 1995	6 January 1994
Peru	1 January 1995	7 October 1951
Philippines	1 January 1995	27 December 1979
Poland	1 July 1995	18 October 1967
Portugal	1 January 1995	6 May 1962
Qatar	13 January 1996	7 April 1994
Romania	1 January 1995	14 November 1971
Rwanda	22 May 1996	1 January 1966
Saint Kitts and Nevis	21 February 1996	24 March 1994
Saint Lucia	1 January 1995	13 April 1993
Saint Vincent & the Grenadines	1 January 1995	18 May 1993
Saudi Arabia, Kingdom of	11 December 2005	-
Senegal	1 January 1995	27 September 1963
Sierra Leone	23 July 1995	19 May 1961
Singapore	1 January 1995	20 August 1973
Slovak Republic	1 January 1995	15 April 1993
Slovenia	30 July 1995	30 October 1994
Solomon Islands	26 July 1996	28 December 1994
South Africa	1 January 1995	13 June 1948
Spain	1 January 1995	29 August 1963
Sri Lanka	1 January 1995	29 July 1948
Suriname	1 January 1995	22 March 1978
Swaziland	1 January 1995	8 February 1993
Sweden	1 January 1995	30 April 1950
Switzerland	1 July 1995	1 August 1966
Chinese Taipei	1 January 2002	-
Tanzania	1 January 1995	9 December 1961
Thailand	1 January 1995	20 November 1982
The F.Y.R of Macedonia	4 April 2003	-
Togo	31 May 1995	20 March 1964
Tonga	27 July 2007	-
Trinidad and Tobago	1 March 1995	23 October 1962
Tunisia	29 March 1995	29 August 1990
Turkey	26 March 1995	17 October 1951

Uganda	1 January 1995	23 October 1962
Ukraine	16 May 2008	-
United Arab Emirates	10 April 1996	8 March 1994
United Kingdom	1 January 1995	1 January 1948
United States of America	1 January 1995	1 January 1948
Uruguay	1 January 1995	6 December 1953
Venezuela, Bolivarian Republic of	1 January 1995	31 August 1990
Viet Nam	11 January 2007	-
Zambia	1 January 1995	10 February 1982
Zimbabwe	5 March 1995	11 July 1948
(Yugoslavia	-	25 August 1966)

Observer governments

Afghanistan
 Algeria
 Andorra
 Azerbaijan
 Bahamas
 Belarus
 Bhutan
 Bosnia and Herzegovina
 Comoros
 Equatorial Guinea
 Ethiopia
 Holy See (Vatican)
 Iran
 Iraq
 Kazakhstan
 Lao People's Democratic Republic
 Lebanese Republic
 Liberia, Republic of
 Libya
 Montenegro
 Russian Federation
 Samoa
 Sao Tomé and Príncipe
 Serbia
 Seychelles
 Sudan
 Syrian Arab Republic
 Tajikistan
 Uzbekistan
 Vanuatu
 Yemen

Note: With the exception of the Holy See, observers must start accession negotiations within five years of becoming observers.

9.2. List of Least Developed Countries (LDCs) in the WTO.

“The WTO recognizes as least-developed countries (LDCs) those countries which have been designated as such by the United Nations. There are currently 48 least-developed countries on the UN list, 31 of which to date have become WTO members” (WTO 2012).

Angola
Bangladesh
Benin
Burkina Faso
Burundi
Cambodia
Central African Republic
Chad
Congo, Democratic Republic of the
Djibouti
Gambia
Guinea
Guinea Bissau
Haiti
Lesotho
Madagascar
Malawi
Mali
Mauritania
Mozambique
Myanmar
Nepal
Niger
Rwanda
Senegal
Sierra Leone
Solomon Islands
Tanzania
Togo
Uganda
Zambia

Twelve more LDCs are negotiating to join the WTO. These are: Afghanistan, Bhutan, Comoros, Equatorial Guinea, Ethiopia, Laos, Liberia, Sao Tomé & Príncipe, Samoa, Sudan, Vanuatu and Yemen.

9.3. List of OECD countries in the WTO

The Convention on the Organisation for Economic Co-operation and Development was originally signed by 20 countries on 14 December 1960 and since then 14 countries have become members of the organisation. The OECD countries today consist of 34 countries (OECD 2012).

Country	Date of joining the OECD
Australia	7 June 1971
Austria	29 September 1961
Belgium	13 September 1961
Canada	10 April 1961
Chile	7 May 2010
Czech Republic	21 December 1995
Denmark	30 May 1961
Estonia	9 December 2010
Finland	28 January 1969
France	7 August 1961
Germany	27 September 1961
Greece	27 September 1961
Hungary	7 May 1996
Iceland	5 June 1961
Ireland	17 August 1961
Israel	7 September 2010
Italy	29 March 1962
Japan	28 April 1964
Korea	12 December 1996
Luxembourg	7 December 1961
Mexico	18 May 1994
Netherlands	13 November 1961
New Zealand	29 May 1973
Norway	4 July 1961
Poland	22 November 1996
Portugal	4 August 1961
Slovak Republic	14 December 2000
Slovenia	21 July 2010
Spain	3 August 1961
Sweden	28 September 1961
Switzerland	28 September 1961
Turkey	2 August 1961
United Kingdom	2 May 1961
United States	12 April 1961

9.4. List of countries that had to be excluded because of lacking data

Country	Reason for being excluded
Australia	Joined the GATT before 1965
Austria	Joined the GATT before 1965
Belgium	Joined the GATT before 1965
Benin	Joined the GATT before 1965
Brazil	Joined the GATT before 1965
Burkina Faso	Joined the GATT before 1965
Burundi	Lack of data
Cameroon	Joined the GATT before 1965
Canada	Joined the GATT before 1965
Cape Verde	Did not join until 2008
Central African Republic	Joined the GATT before 1965
Chad	Joined the GATT before 1965
Chile	Joined the GATT before 1965
Congo, Republic of	Joined the GATT before 1965
Côte d'Ivoire	Joined the GATT before 1965
Cuba	Joined the GATT before 1965
Cyprus	Joined the GATT before 1965
Czech Republic	Lack of data
Denmark	Joined the GATT before 1965
Djibouti	Lack of data
Dominican Republic	Joined the GATT before 1965
Finland	Joined the GATT before 1965
France	Joined the GATT before 1965
Gabon	Joined the GATT before 1965
Gambia	Lack of data
Ghana	Joined the GATT before 1965
Germany	Joined the GATT before 1965
Greece	Joined the GATT before 1965
Haiti	Lack of data
India	Joined the GATT before 1965
Indonesia	Joined the GATT before 1965
Ireland	Lack of data
Israel	Joined the GATT before 1965
Italy	Joined the GATT before 1965
Jamaica	Joined the GATT before 1965
Japan	Joined the GATT before 1965
Haiti	Lack of data
Kenya	Joined the GATT before 1965
Kuwait, the State of	Joined the GATT before 1965
Madagascar	Joined the GATT before 1965
Malaysia	Joined the GATT before 1965
Maldives	Lack of data
Malawi	Joined the GATT before 1965
Malta	Joined the GATT before 1965
Mauritania	Joined the GATT before 1965
Mauritius	Lack of data
Myanmar	Joined the GATT before 1965

Netherlands	Joined the GATT before 1965
New Zealand	Joined the GATT before 1965
Nicaragua	Joined the GATT before 1965
Niger	Joined the GATT before 1965
Nigeria	Joined the GATT before 1965
Norway	Joined the GATT before 1965
Pakistan	Joined the GATT before 1965
Peru	Joined the GATT before 1965
Poland	Lack of data
Portugal	Joined the GATT before 1965
Qatar	Lack of data
Romania	Lack of data
Senegal	Joined the GATT before 1965
Sierra Leone	Joined the GATT before 1965
Slovenia	Lack of data
Solomon Islands	Lack of data
Spain	Joined the GATT before 1965
South Africa	Joined the GATT before 1965
Sri Lanka	Joined the GATT before 1965
Suriname	Lack of data
Sweden	Joined the GATT before 1965
Switzerland	Lack of data
Tanzania	Joined the GATT before 1965
Togo	Joined the GATT before 1965
Tonga	Lack of data
Trinidad and Tobago	Joined the GATT before 1965
Turkey	Joined the GATT before 1965
Uganda	Joined the GATT before 1965
Ukraine	Did not join until 2008
United Kingdoms	Joined the GATT before 1965
United States	Joined the GATT before 1965
Uruguay	Joined the GATT before 1965
Vietnam	Did not join until 2007, lack of data
Zimbabwe	Joined the GATT before 1965

9.5. Results

GATT members – Annual GDP growth (%)

Country	1	2	3	4	5	6 (Year of joining)	7	8	9	10
Albania	13	9	-10	13	10	7	7	3	6	6
Angola	0	0	-1	-7	-25	3	10	11	8	7
Antigua and Barbuda	0	5	10	8	13	8	5	6	3	2
Argentina	-1	-5	10	11	-1	3	5	10	3	6
Armenia	7	3	6	10	13	14	10	14	13	14
Bahrain, Kingdom of	7	0	4	11	7	13	0	4	4	3
Bangladesh	-2	9	1	6	-5	-14	3	10	-4	6
Barbados	9	-5	5	11	4	11	7	8	10	4
Belize	8	8	15	1	0	-2	2	1	5	11
Bolivia	-2	-3	2	3	4	5	5	2	4	5
Botswana	12	13	9	7	8	12	19	13	7	7
Brunei Darussalam	1	-1	1	3	5	0	3	4	3	-1
Bulgaria	-8	-7	-1	2	3	-9	-2	5	2	6
Cambodia	12	9	8	7	9	10	13	11	10	7
China	10	9	8	8	8	8	9	10	10	11
Colombia	5	4	8	5	4	2	1	2	3	3
Costa Rica	1	6	7	4	5	4	3	9	7	5
Croatia	7	6	7	2	-1	4	4	5	5	4
Democratic Republic of Congo	7	-1	4	9	0	6	0	8	3	-5
Dominica	9	0	5	1	2	2	1	2	3	1
Ecuador	5	2	0	5	2	2	4	2	-6	3
Egypt	9	1	1	3	7	6	3	2	1	2
El Salvador	0	3	2	1	5	4	8	7	6	6
Estonia	-2	5	5	11	5	0	10	9	8	8
Fiji	1	7	6	-3	6	2	5	3	5	-2
Georgia	3	11	11	3	3	2	5	5	11	6
Grenada	6	5	2	0	-3	3	3	4	5	7
Guatemala	0	4	4	4	3	4	5	4	4	5
Guinea	4	4	3	3	5	4	5	5	5	5
Guinea-Bissau	6	6	5	1	2	3	4	12	7	-28
Guyana	5	1	-12	11	11	5	4	1	7	4
Honduras	4	0	3	6	6	-1	4	4	5	3
Hong Kong, China	9	3	6	10	1	11	13	8	2	4
Hungary	5	7	5	6	6	7	6	6	4	8
Iceland	10	10	7	9	-1	-5	2	7	13	6
Jordan	6	2	3	3	3	4	5	6	4	9
Korea, Rep. Of	2	10	8	5	13	6	12	14	8	8
Kyrgyz Republic	15	-20	-5	7	10	2	4	5	5	0
Latvia	2	-1	4	8	5	5	7	8	6	7
Lesotho	-3	10	5	1	-7	9	7	6	2	7
Liechtenstein	4	2	2	4	4	7	6	7	7	8

Lithuania	5	7	8	-1	3	7	7	10	7	8
Macao	7	14	8	5	8	4	13	5	4	3
Macedonia, FYR	3	4	5	-5	1	3	5	4	5	6
Mali	1	12	-2	2	8	-2	1	6	3	7
Mexico	9	-1	-4	4	3	-4	2	1	4	5
Moldova, Republic of	-5	2	-7	-3	2	6	8	7	7	8
Mongolia	-9	-3	2	6	2	4	3	3	1	3
Morocco	10	-1	4	6	8	-3	10	2	4	7
Mozambique	15	8	7	1	5	-5	9	7	3	7
Namibia	4	1	2	2	8	7	-2	7	4	3
Nepal	4	6	5	0	4	5	3	3	3	6
Oman	5	3	6	3	0	5	7	3	0	3
Panama	8	5	3	2	3	6	7	4	3	1
Papua New Guinea	-1	-3	10	14	18	6	-3	8	-4	-4
Paraguay	6	3	2	3	4	4	5	0	3	1
Philippines	4	6	9	6	5	6	5	3	4	2
Rwanda	-4	11	-10	-12	7	7	7	7	11	6
Saint Kitts and Nevis	8	2	0	3	7	5	4	7	7	1
Saint Lucia	12	9	24	3	7	3	1	3	5	0
Saint Vincent and the Grenadines	15	2	5	1	8	0	-3	1	1	13
Saudi Arabia, the Kingdom of	5	1	0	8	5	6	3	2	4	0
Singapore	14	14	14	12	13	11	6	4	7	7
Slovak Republic	2	1	-3	-15	-7	-4	6	6	7	4
Swaziland	7	13	21	2	3	3	2	5	4	3
Thailand	10	10	5	5	6	5	6	6	5	6
Tunisia	6	-1	7	0	2	8	4	8	2	3
United Arab Emirates	12	18	1	3	1	7	7	6	8	0
Venezuela	0	7	4	6	-9	6	10	6	0	-2
Zambia	-5	1	-3	3	6	-3	-2	0	2	1

WTO members joining in 1995 - Annual GDP growth (%)

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Antigua & Barbuda	3	2	1	5	6	-4	7	5	4	4
Argentina	-2	13	12	6	6	-3	6	8	4	-3
Australia	4	0	0	4	4	4	4	4	5	5
Austria	4	3	2	0	2	3	2	2	4	4
Bahrain	4	11	7	13	0	4	4	3	5	4
Bangladesh	6	3	5	5	4	5	5	5	5	5
Barbados	-5	-3	-5	1	4	1	2	6	4	3
Belgium	3	2	2	-1	3	2	1	4	2	4
Belize	11	10	12	6	0	1	1	4	4	9
Bolivia	5	5	2	4	5	5	4	5	5	0
Botswana	7	7	3	2	4	4	6	10	11	5
Brazil	-4	2	0	5	5	4	2	3	0	0
Brunei Darussalam	1	3	5	0	3	4	3	-1	-1	3
Burkina Faso	-1	9	0	3	1	6	11	6	7	7
Burundi	3	5	1	-6	-4	-8	-8	-2	5	-1

Cameroon	-6	-4	-3	-3	-3	3	5	5	5	4
Canada	0	-2	1	2	5	3	2	4	4	6
Central African Republic	-2	-1	-6	0	5	7	-4	5	5	4
Chile	4	8	12	7	6	11	7	7	3	-1
Colombia	6	2	5	2	6	5	2	3	1	-4
Costa Rica	4	3	9	7	5	4	1	6	8	8
Côte d'Ivoire	-1	0	0	0	1	7	8	6	5	2
Cuba	-3	-11	-12	-15	1	2	8	3	0	6
Cyprus	7	1	9	1	6	6	2	2	5	5
Denmark	2	1	2	0	6	3	3	3	2	3
Dominica	5	1	2	2	1	2	3	1	5	1
Dominican Republic	-5	1	11	7	2	5	7	8	7	7
Egypt	6	1	4	3	4	5	5	5	4	6
El Salvador	5	4	8	7	6	6	2	4	4	3
European Union	3	1	1	0	3	3	2	3	3	3
Finland	1	-6	-3	-1	4	4	4	6	5	4
France	3	1	1	-1	2	2	1	2	3	3
Gabon	5	6	-3	4	4	5	4	6	3	-9
Germany	5	5	2	-1	2	2	1	2	2	2
Ghana	3	5	4	5	3	4	5	4	5	4
Greece	0	3	1	-2	2	2	2	4	3	3
Guatemala	3	4	5	4	4	5	3	4	5	4
Guinea-Bissau	6	5	1	2	3	4	12	7	-28	8
Guyana	-3	6	8	8	9	5	8	6	-2	3
Honduras	0	3	6	6	-1	4	4	5	3	-2
Hong Kong, China	4	6	6	6	6	2	4	5	-6	3
Hungary	-3	-12	-3	-1	3	1	0	3	4	3
Iceland	1	0	-3	1	4	0	5	5	6	4
India	6	1	5	5	7	8	8	4	6	7
Indonesia	9	9	7	7	8	8	8	5	-13	1
Ireland	8	2	3	3	6	10	8	11	8	11
Israel	7	8	6	6	7	7	6	3	4	3
Italy	2	2	1	-1	2	3	1	2	1	1
Jamaica	4	5	2	9	1	2	0	-1	-2	1
Japan	5	3	1	0	1	2	3	2	-2	0
Kenya	4	1	-1	0	3	4	4	0	3	2
Korea, the Republic of	9	9	6	6	9	9	7	5	-7	9
Lesotho	6	2	7	3	6	2	5	3	5	0
Liechtenstein	2	2	4	4	7	6	7	7	8	10
Luxembourg	5	9	2	4	4	1	2	6	6	8
Macao SAR, China	8	4	13	5	4	3	0	0	-5	-2
Madagascar	3	-6	1	2	0	2	2	4	4	5
Malawi	6	9	-7	10	-10	17	7	4	4	3
Malaysia	9	10	9	10	9	10	10	7	-7	6
Mali	-2	2	8	-2	1	6	3	7	6	7
Malta	6	6	5	4	6	6	4	5	5	5
Mauritania	-2	2	2	6	-3	10	6	-4	5	8
Mauritius	7	4	7	5	4	4	6	6	6	3
Mexico	5	4	4	2	4	-6	5	7	5	4
Morocco	4	7	-4	-1	10	-7	12	-2	8	1

Mozambique	1	5	-5	9	7	3	7	10	11	8
Myanmar	3	-1	10	6	7	7	6	6	6	11
Namibia	2	8	7	-2	7	4	3	4	3	3
Netherlands	4	2	2	1	3	3	3	4	4	5
New Zealand	0	-1	1	6	5	4	4	2	0	5
Nicaragua	0	0	0	0	3	6	6	4	4	7
Nigeria	8	5	3	2	0	3	4	3	2	1
Norway	2	3	4	3	5	4	5	5	3	2
Pakistan	4	5	8	2	4	5	5	1	3	4
Paraguay	3	2	3	4	4	5	0	3	1	-1
Peru	-5	2	0	5	13	9	3	7	-1	1
Philippines	3	-1	0	2	4	5	6	5	-1	3
Portugal	4	4	1	-2	1	4	4	4	5	4
Romania	-6	-13	-9	2	4	7	4	-6	-5	-1
Senegal	-1	3	1	1	0	5	2	3	6	6
Sierra Leone	3	2	-19	1	-2	-8	5	-17	-1	-8
Singapore	10	6	7	11	11	7	8	9	-2	6
Slovak Republic	-3	-15	-7	-4	6	6	7	4	4	0
South Africa	0	-1	-2	1	3	3	4	3	1	2
Spain	4	3	1	-1	2	3	2	4	4	5
Sri Lanka	6	5	4	7	6	6	4	6	5	4
St. Lucia	24	3	7	3	1	3	5	0	6	2
St. Vincent and the Grenadines	5	1	8	0	-3	1	1	13	5	4
Suriname	0	3	0	-7	3	1	1	6	2	-1
Swaziland	21	2	3	3	2	5	4	3	3	3
Sweden	1	-1	-1	-2	4	4	2	3	4	5
Switzerland	4	-1	0	0	1	0	1	2	3	1
Tanzania	7	2	1	1	2	4	5	4	4	5
Thailand	11	9	8	8	9	9	6	-1	-11	4
Togo	0	-1	-4	-15	15	8	9	14	-2	2
Trinidad and Tobago	2	3	-2	-1	4	4	4	3	8	4
Tunisia	8	4	8	2	3	2	7	5	5	6
Turkey	9	1	5	8	-5	8	7	8	2	-3
Uganda	6	6	3	8	6	12	9	5	5	8
United Kingdom	1	-1	0	2	4	3	3	6	4	4
United States	2	0	3	3	4	3	4	5	4	5
Uruguay	0	4	8	3	7	-1	6	9	5	-2
Zambia	0	0	-2	7	-9	-3	7	3	-2	2
Zimbabwe	7	6	-9	1	9	0	10	3	3	-1