
iea
Institute of
Economic Affairs
Current Controversies No. 60
GROWING PROTECTIONISM AFTER THE FINANCIAL CRISIS
What is the evidence?
By Fabian Wallen and Magnus Wiberg
April 2018
EPICENTER
European Policy Information Center
TIMBRO

IEA Current Controversies papers are designed to promote discussion of economic issues and the role of markets in solving economic and social problems. As with all IEA publications, the views expressed are those of the author(s) and not those of the Institute (which has no corporate view), its managing trustees, Academic Advisory Council or other senior staff.

Contents

About the author

Fabian Wallen is the CEO of Wallen Economics, based in San Antonio, and an international trade and investment policy advisor. He has a degree in economics from Stockholm University and previously worked at the Confederation of Swedish Enterprise.

Magnus Wiberg has a PhD in economics. His thesis concerned trade policy, international economics and political economics. He is currently an Adjunct Associate Professor in Economics at Hunter College, New York. Previous positions include Stockholm University, Harvard University and the Swedish Ministry of Finance.

Executive summary

- The weak global GDP growth since the financial crisis in 2007-2009 has coincided with unusually weak growth in global trade.

- Organisations that monitor international macro-economic development have identified growing protectionism – not least the increase in non-tariff barriers to trade, such as local regulations or subsidies – as a potential cause of the weaker growth in global trade.

- Non-tariff barriers to trade are a significant element of countries' trade policies and may often be more harmful than tariff trade barriers. In particular, technical trade barriers and other administrative costs that export companies encounter can inhibit trade.

- The number of initiated and introduced technical trade barriers increased at the beginning of the financial crisis. Both initiated and introduced technical trade barriers have since remained at high levels. At the same time, the number of international health and safety requirements for food, animal and vegetable products has increased.

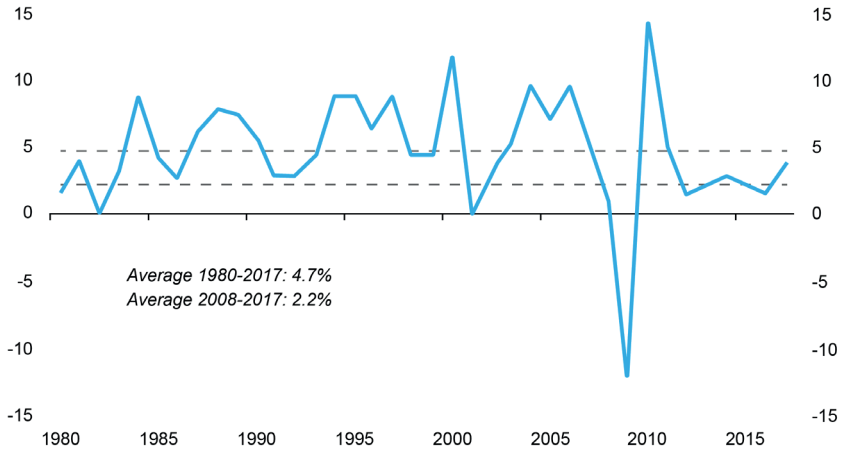
- The average global tariff level has decreased somewhat since the mid-2000s, which is in contrast to the strong increase in various non-tariff barriers to trade. However, according to a report by Global Trade Alert, since the financial crisis the number of policy measures that restrict trade has increased significantly faster than the number of policy measures that liberalise trade.

- Research shows that protectionist measures affect international trade negatively. There is thus good reason to believe that the sharp increase in non-tariff barriers in recent years is an important contributing factor to the weaker growth in global trade.

Background

The recovery of the global economy after the financial crisis in 2007-2009 has been surprisingly slow. Weak global GDP growth has coincided with unusually weak growth in global trade. The annual growth of global export volumes has been fallen by more than half since 2008 compared with the past three to four decades (Figure 1). Not even in 2017, a year of robust economic expansion, did global export growth reach the long-term average.

Figure 1: Global export volume, annual percentage growth, 1980–2017



Source: World Bank (1980-2000) and CPB World Trade Monitor (2001-2017). The figure for 2017 is based on the first 10 months of global export volume.

Organisations that monitor the global macro-economy have identified growing protectionism – not least the increase in non-tariff barriers to trade – as a potential cause of the weaker growth in global trade (see IMF 2016). However, few empirical studies have systematically examined the development of non-tariff barriers to trade in recent years (Rose and Wieladek 2011). Examples of non-tariff barriers to trade are laws and rules that require certain products to be produced and distributed in a certain way in order for them to be sold in the country. This may, for example, be standards, special certifications and inspection requirements, or lengthy handling and bureaucracy upon bringing in an imported product.

Compared with tariff trade barriers (customs tariffs, taxes and fees), non-tariff barriers to trade are hard to quantify, which means that protectionism may increase without being clearly noticed. In combination with non-tariff barriers to trade affecting exporters from different countries in different ways, this explains why the OECD considers them to be more harmful than tariffs (OECD 2005).

There are indications that non-tariff barriers to trade have increased in the past decade. An increase in protectionism when global growth in GDP is already weak can lead to even weaker global trade and growth, which can have negative consequences for the world in general and, especially. for small open economies.

The objective of this paper is to map how various kinds of non-tariff barriers to trade have developed since the financial crisis in 2007-2009. The next section describes the research literature on how trade barriers affect economic growth, both from a theoretical and an empirical perspective. This is followed by a discussion of various kinds of trade barriers. The fourth section presents a description and analysis of data on various kinds of non-tariff barriers to trade at a global level, based on the period after the financial crisis. Finally, the paper presents its conclusions.

Trade policy's socio-economic effects

There is consensus in economics that trade between countries is accompanied by positive economic effects for society as a whole. Nearly 200 years ago, British economist David Ricardo formulated the theory of comparative advantage, where trade is explained by differences in technology between different countries. In the 1920s, Swedish economists Eli Heckscher and Bertil Ohlin developed a new theory, where trade is explained by differences in the relative supply of production factors, such as labour and capital. According to this theory, a country tends to export a good that uses a relatively more abundant production factor intensively (Findlay et al. 2006).

Among others, Paul Krugman and Elhanan Helpman refined the theory of international trade at the end of the 1970s and beginning of the 1980s, based on intra-industry trade between similar economies. A central explanation is that there are economies of scale in production. Another explanation is that consumers prefer differentiated products. This means that trade makes it possible to replace small-scale local production with large-scale global production, where the firms produce differentiated products in competition at an international level (see Krugman 1979; Helpman 1981).

Issues regarding the causes and effects of foreign trade are among the classical areas of research in economics. A fundamental question is how economic growth is affected by higher trade barriers and reduced trade. Higher trade costs affect economic growth through several different channels. These channels have been illustrated in a number of economic models, which are discussed below.

Theoretical studies of trade and economic growth

According to neoclassical growth theory, the capital stock in an economy adjusts to a steady state given a fixed amount of labour (see Solow 1956). This theory explains what determines capital intensity (i.e. the ratio between capital and labour) in equilibrium and the transition towards a new steady state.

An important conclusion that follows from neoclassical growth theory is that international trade results in higher capital intensity in the economy. For example, assume that a country liberalises trade with the rest of the world by lowering import tariffs. This allows the country to specialise according to its comparative advantages, which in turn leads to a higher income and production level. The higher income generates greater savings, which has a positive impact on investments. The higher investments increase the capital stock, which in turn leads to a further increase in the production level.

The initial welfare effect of international trade accordingly leads to a dynamic growth effect during the transitional period when capital adjusts to a new steady state. A number of studies have estimated the size of these kinds of dynamic effects. According to one of these, the economic gains that resulted from the implementation of Europe's internal market were roughly doubled if consideration was given to such effects (Baldwin 1992). In contrast to the neoclassical theory, the so-called endogenous growth theory aims to explain what determines long-term economic growth. According to the endogenous growth theory, long-term economic growth is mainly driven by research and innovation.[1] The idea is that research and development does not have diminishing returns to scale since more knowledge or knowledge capital contributes to producing even more knowledge. This leads to constant long-term growth in GDP per capita, with the growth rate increasing if more resources are devoted to research and development.

Endogenous growth theory implies that lower trade barriers can have several positive effects on economic growth.[2] Firstly, freer trade means that the potential market for businesses and their products expands. The possibility to reach a larger and more varied set of customers makes it more profitable to develop new products. More resources are thereby devoted to

1 See for example Romer (1986), Lucas (1988), Romer (1990), and Aghion and Howitt (1992).

2 See for example Grossman and Helpman (1991), Riviera-Batiz and Romer (1991a, 1991b), and Baldwin and Forslid (1999, 2000).

research and development, which in turn leads to higher economic growth. Secondly, the cost of research and development decreases through better access to international knowledge. This increases productivity, which leads to higher economic growth. Thirdly, it becomes cheaper to import input goods that are either used in the companies' production or for research and development, which again leads to higher growth.

International trade also has an indirect effect on economic growth because the geographical location of industry is influenced when the costs of trade decrease.[3] More specifically, industry tends to cluster in large regions since it is an advantage for companies to be close to customers and suppliers, given trade and transportation costs. Such clustering facilitates knowledge transfer between individuals and companies, which increases growth and generates a self-reinforcing process whereby companies and individuals are drawn to an expanding region. The tendency for concentration of industrial activity is strongest for trade costs at an intermediate level. When trade costs are high, it is costly to export, which means that the companies mainly produce for the local market and that production is geographically dispersed. When trade costs are low, firms become indifferent to geographical location since they roughly have the same access to all markets. The concentration of companies and economic growth are highest when the trade costs are at a moderately high level and then lowered.

Empirical studies of trade and economic growth

Empirical studies that are based on cross-sectional data for countries generally find a positive correlation between freer trade and economic growth. Several of these studies investigate if growth in GDP per capita is affected by variables that can conceivably have a connection to lower trade costs, such as lower customs tariffs and more trade as a share of GDP.[4] For example, according to estimates by Frankel and Rose (2002), GDP per capita increases by one-third of a per cent for every percentage point increase in trade as a share of GDP.

3 See for example Krugman (1991), Krugman and Venables (1995), Fujita et al. (1999), and Baldwin et al. (2003).

4 See for example Dollar (1992), Edwards (1992), Sachs and Warner (1995), and Frankel and Romer (1999). In these studies, the share of trade is defined as the sum of exports and imports as a share of GDP.

A problem with these kinds of studies is that the variables intended to explain the GDP growth cannot be viewed as exogenous. For example, economic growth can in itself lead to higher trade. Later research has in various ways tried to control for this, and the majority of these studies conclude that there is a positive correlation between lower trade costs and economic growth.[5]

Wacziarg and Welch's influential report on the effects of trade costs on economic growth is based on data for 141 countries for the period 1950–1998. The authors create a variable that, among other things, is based on data on customs tariffs and non-tariff barriers to trade. According to the study, the countries that in varying degrees have liberalised trade policy during the period show an economic growth rate that on average is around 1.5 percentage points higher compared with the period before the trade liberalisation (Wacziarg and Welch 2008). Wacziarg and Welch also find that the foreign-trade-to-GDP ratio on average increases by around five percentage points as a consequence of trade liberalisations, which means that foreign trade tends to increase faster than GDP. The share of investment also increases, i.e. gross fixed capital formation as a share of GDP, by between 1.5 and 2 percentage points as a result of the trade liberalisation, which in turn may be an important explanation for the stronger economic growth (ibid.).

There are some methodological problems in the research[6] but the overall conclusion in the research reviews of recent years is that openness to trade has a positive influence on economic growth. One example of this is the following quote from a research overview by the IMF economist Jean-Jacques Hallaert (2006):

> 'More recent empirical studies have focused on cross-country and panel regressions and, although their methods can be criticized, they usually suggest that trade openness strongly enhances economic performance.'

5 See for example Dollar and Kraay (2003), and Alcala and Ciccone (2004).

6 Dummy variables that measure the degree of openness, for example foreign trade to GDP, can give rise to endogeneity problems, as the likelihood is large that they co-vary with other variables that affect economic growth, such as a certain type of economic policy or economic reforms. If such variables are not controlled for, it can be difficult to determine if it is the trade liberalisation that is affecting economic growth (Andersen and Babula 2008).

Andersen and Babula (2008) come to a similar conclusion in their overview of the empirical research:

> 'Is there a link between openness and growth? Based on this survey of the more recent empirical and theoretical literature, we believe that the answer is yes. Nearly all the empirical analyses confirm this.'

Tahir et al. (2014) also find strong support for the result that lower trade costs affect economic growth positively:

> 'In this paper, it is concluded that the available literature provides an affirmative answer to the question whether or not there is a positive relationship between trade openness and economic growth.'

These conclusions are also supported by Swedish research. According to Halvarsson, Kokko and Gustavsson (2014), EU membership and the recent decades of increased openness have had significant positive effects on the Swedish economy:

> 'The estimated effects of the EU and greater openness on incomes in Sweden are relatively uncertain, and a low estimate is that without the EU and greater openness, Sweden's GDP per capita would be at least 3 percent lower. It must be emphasized that this is a threshold value based on empirical models that do not capture all of the dynamic effects identified in modern theory of economic integration. On the basis of earlier studies, there is reason to believe that the actual underlying effect on per capita incomes may be as large as 15-20 percent.'

In terms of the relationship between industrial concentration, trade costs and economic growth, there are empirical studies based on international data that have found a positive relationship between industrial concentration and productivity.[7] Based on Swedish data, Braunerhjelm and Borgman (2004) find a positive relationship between industrial concentration and workforce productivity in manufacturing industry. This indicates that industrial concentration generates effects that increase long-term growth through lower trade costs.

7 See for example Ciccone and Hall (1996), Henderson (2003) and Combes et al. (2004).

Non-tariff barriers to trade

International trade can be limited by both tariff and non-tariff barriers to trade. Examples of tariff trade barriers are customs tariffs, taxes and other fees levied on imported goods. Examples of non-tariff barriers to trade are laws and rules that require that certain products are produced and distributed in a certain way in order for them to be allowed to be sold in the country, standards, special certifications and inspection requirements (so-called technical trade barriers), and lengthy handling and bureaucracy upon bringing imported products in.

An important distinction between tariff trade barriers and non-tariff barriers to trade is that the latter are difficult to quantify. This means that protectionism may increase without it being clearly noticed as the volume of non-tariff barriers to trade increases. There are indications that the global volume of non-tariff trade measures has increased in recent decades. According to the WTO (2014), for example, the number of technical regulations that countries report according to WTO agreements on technical trade barriers has increased sharply since the financial crisis in 2007–2009.

There are also indications that non-tariff barriers constitute a relative large barrier to the international flow of trade. Bratt (2014) estimates that non-tariff barriers currently increase global trade costs by more than 15 per cent. This can be compared with the average global tariff level for goods and services that amounted to around three per cent in 2012 (World Development Indicators 2016).

Various kinds of administrative costs comprise a particularly large cost item in international trade. These costs are usually categorised as non-tariff barriers and consist of, for example, complicated customs procedures and border controls, various national regulatory requirements in the production and distribution of industrial products, and differences in national product

regulations. Two significant trade barriers in this context are the international health and safety requirements for food, animal and vegetable products that entered into effect in connection with the WTO agreement in 1995, and technical trade barriers in the form of various standardisation rules for exported industrial products. These costs have a significant negative effect on global trade, even if it is difficult to estimate the actual cost of these kinds of trade policy measures at an aggregated level.

The Swedish National Board of Trade argues that the administrative costs associated with international trade are higher in relative terms for small and medium-sized enterprises. The Board also reports estimates from a number of different sources that assess that the total administrative costs for international trade at a global level amount to between 2.5 per cent and 15 per cent of the total value of trade transactions (National Board of Trade 2003). The corresponding cost is 5-10 per cent for less developed countries (Hornok and Koren 2015). Djankov et al. (2010) estimate that a one-day delivery delay in international trade – for example, due to complicated customs procedures and border controls - reduces trade flows by more than one per cent.

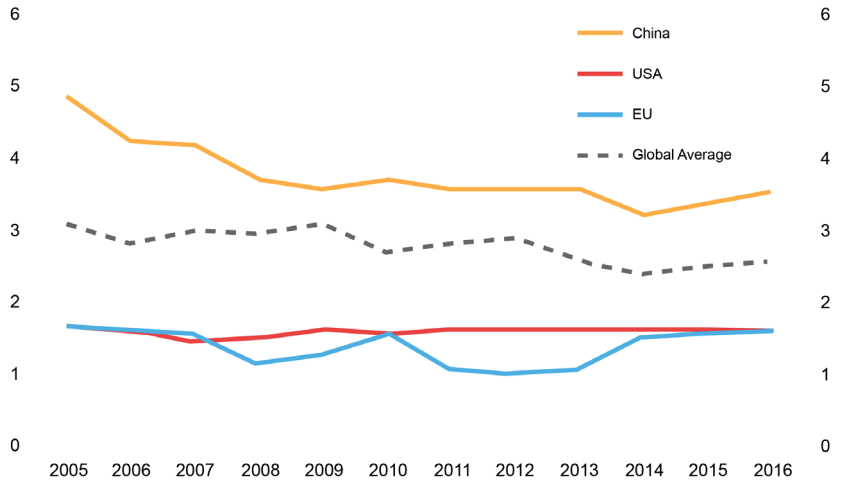
Altogether, it is clear that international trade affects GDP growth positively. It is also clear that non-tariff barriers to trade are a significant element of most countries' trade policies, especially the imposition of administrative costs in the form of technical trade barriers and international health and safety requirements for food, animal and vegetable products. This indicates that lower administrative costs in international trade could increase GDP growth. This conclusion finds support in the so-called Cecchini report, which was published by three independent researchers on behalf of the European Commission with the aim of analysing the expected effects of the creation of the internal market. The report estimated the total gains from the free movement of goods, services, capital and labour at 4-6 per cent of the twelve EC countries' GDP at the time. According to the report, the main effects were expected to arise on the basis of harmonised national regulations for the production and distribution of goods and services, and through less extensive border controls in international trade (Cecchini 1988).

In the following section, data on various kinds of non-tariff barriers to trade are analysed at an international level, mainly with a focus on the administrative costs that companies encounter in international trade.

Large increase in non-tariff barriers to trade

A common observation in studies of global trade policies is the declining tariff levels in recent decades. Since the mid-2000s, the average global tariff level has decreased by half a percentage point, from 3.1 per cent to 2.6 per cent. The average tariff level in the US and the EU has remained more or less unchanged during the period, while it has been reduced by just over one percentage point in China.

Figure 2: Average tariff level, per cent



Source: World Development Indicators (2017). The average global tariff level for the years 2013-2016 is estimated by weighting the average effective customs duty in 217 countries with the countries' total imports as a share of global imports.

The weaker growth of world trade since the financial crisis can in other words not be explained by higher tariff levels. In light of this, there is reason to investigate if non-tariff barriers to trade have increased in scope. There are however few sources that report data on non-tariff barriers to trade. The lack of data reflects the difficulty of quantifying non-tariff barriers to trade, which are often based on regulations and laws, the purpose and function of which vary between countries and over time. Nevertheless, one of the more reliable sources in the area is the World Trade Organization (WTO).

The WTO compiles both general and detailed data on various countries' and regions' trade barriers in the database I-TIP (Integrated Trade Intelligence Portal). By compiling data on non-tariff barriers to trade at a global level together with the average global tariff level, the protectionism of recent years can be analysed. I-TIP's dataset builds on the number of trade barriers reported to the WTO, which in cooperation with UNCTAD and the World Bank categorises the reports according to a joint standard for defining and quantifying non-tariff barriers to trade.[8] The data have been used in several research reports that analyse the economic implications of non-tariff barriers to trade.[9]

The WTO distinguishes between initiated and introduced non-tariff barriers to trade and determines if a trade barrier can be introduced or if it conflicts with a WTO agreement. Up to twelve months can pass from the time an investigation on the introduction is initiated and the protective measure can enter into effect (be introduced). This means that the number of measures introduced is lower than the number of those initiated. The number of measures initiated can give an indication of upcoming protectionist measures, while the number of introduced measures indicates the actual protectionism. It cannot be ruled out that the number of initiated trade barriers has increased over time as a result of countries gradually becoming more inclined to report trade barriers to the WTO. Thus there is reason to place greater importance on the number of introduced non-tariff barriers to trade.

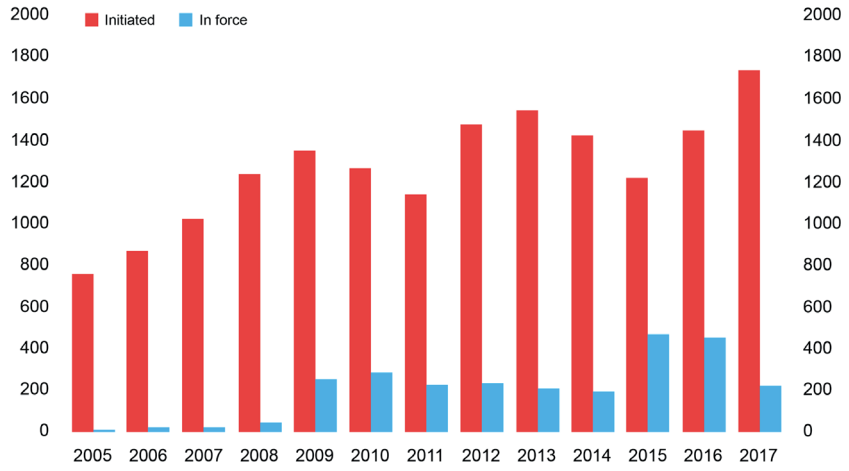
8 For a more detailed description of the data, see https://i-tip.wto.org/goods/Forms/Methodology.aspx

9 See for example Ghodsi et al. (2017), Medin and Melchior (2015) and Disdier et al. (2015).

Figure 3 illustrates the number of technical trade barriers initiated and introduced between 2005 and 2017. Altogether, the number of initiated measures increased sharply during the period. The fastest increase took place between 2007 and 2008, i.e. during the initial phase of the financial crisis. The number of initiated measures has subsequently remained at a high level.

The number of introduced measures increased sharply between 2005 and 2017. The fastest rate of increase took place during the latter part of the financial crisis, but the rate of increase was tangible even during the years after the financial crisis. In 2017, the number of measures introduced decreased, while the number of initiated measures increased substantially.[10]

Figure 3: Technical trade barriers, 2005–2017
Number of initiated and introduced measures

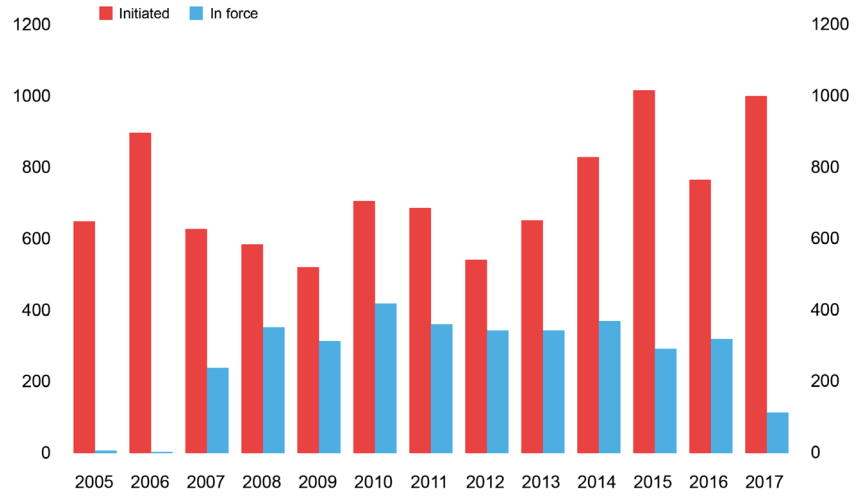


Source: I-TIP (WTO)

10 The increase in the number of introduced measures in 2008–2009 is probably due to the number of initiated measures increasing sharply in 2007–2008.

Figure 4 shows the number of international health and safety requirements initiated and introduced since 2005 for food, animal and vegetable products. These requirements or standards can, according to the WTO, be classified as non-tariff barriers to trade. Initiated measures increased during the period, and the increase was particularly steep in the year immediately after the financial crisis, i.e. between 2009 and 2010. The number of introduced measures increased markedly at the beginning of the financial crisis in 2007 and has since remained high during the entire period despite a noticeable decrease in 2017.

Figure 4: International health and safety requirements, 2005–2017
Number of initiated and introduced measures



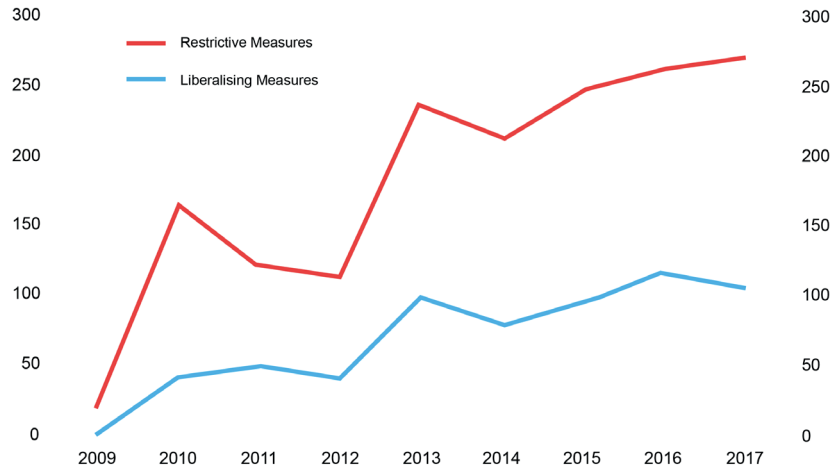
Source: I-TIP (WTO)

Based on our analysis of the data from the I-TIP database, a number of important non-tariff barriers to trade have increased sharply since the financial crisis. In light of the difficulty of quantifying non-tariff barriers to trade, there is, however, reason to investigate if other sources confirm this increase, and if trade policies in other areas have potentially been liberalised at the same time.

Global Trade Alert, which was founded in 2009 by the British think-tank Centre for Economic Policy Research (CEPR), reports policy measures among the G20 countries that in various ways restrict or liberalise trade with other countries. This may involve both changes in tariff levels and the introduction/repeal of non-tariff barriers to trade, as well as discriminatory government support and export subsidies to domestic companies.

According to the latest report from Global Trade Alert, the number of policy measures that restrict trade between countries increased at a significantly faster rate after the financial crisis than the number of policy measures that liberalise trade (Figure 5).[11] This tendency of increasing protectionism is also confirmed by studies by the Swedish National Board of Trade and UNCTAD.[12]

Figure 5: Number of implemented trade policy measures in G20 countries, 2009–2017



Source: Global Trade Alert

11 See Global Trade Alert (2017) for a more in-depth analysis of the G20 countries' trade policies.

12 National Board of Trade (2016) and UNCTAD (2015).

There may be other reasons for the weaker growth in world trade. Among other things, it has been asserted that a weakening has occurred in the trend towards higher international specialisation, which if so will have reduced the economic gains of trade (IMF 2016).

Another possible explanation for the relatively weak growth in global trade is the greater uncertainty that the financial crisis brought with it. According to economic theory, uncertainty has negative effects on demand through different channels for both companies and households. Studies by Bernanke (1983) and Dixit and Pindyck (1994) show that companies choose to postpone investments in times of high economic uncertainty. Households react to uncertainty in a similar manner by reducing their consumption of durable consumer goods, such as cars, refrigerators, washing machines and TVs. The negative effects of uncertainty, which are due to an increased value of delaying consumption and investment, therefore mainly affect trade-intensive GDP components.

China's policy of rebalancing its economy towards more consumption and less investment has also been presented as an explanation. The rebalancing means that China's import demand has increased at a slower rate since consumption has tended to have a lower import content than investment. This may have contributed to dampening the growth of world trade and holding back exports from the rest of the world to China (IMF 2016).

Given the strong evidence in the research literature that protectionist measures have a negative effect on international trade, there is nevertheless good reason to believe that the dramatic increase in non-tariff barriers to trade in recent years has been an important contributing factor to the weaker growth of global trade.

Conclusions

The evidence presented in this paper supports the view that growing protectionism - in particular an increase in non-tariff barriers – may have been an important contributing factor in the unusually weak growth in global trade observed since the financial crisis.

The number of initiated technical trade barriers increased substantially at the beginning of the financial crisis and has since remained at a high level. The number of measures introduced increased dramatically in 2008-2009, i.e. during the latter part of the financial crisis. International health and safety requirements on food, animal and vegetable products increased during or shortly after the financial crisis. These trade barriers have since remained high.

The average global tariff level has decreased somewhat since the mid-2000s, which is in contrast to the strong increase in the various non-tariff barriers to trade. If the weaker growth of global trade can be attributed to an increase in protectionism, it seems the weaker performance is mainly due to an extension of non-tariff barriers, such as technical trade barriers and other administrative costs. This conclusion is also supported by data from Global Trade Alert on the number of restrictive and liberalising trade policy measures among the G20 countries.

There is consensus in the research on the economic advantages of international trade. It is also clear that non-tariff barriers to trade are a significant element of countries' trade policies. This indicates that reducing non-tariff barriers could contribute to higher GDP growth. An increase in non-tariff barriers in a situation when global GDP growth is already weak can lead to even weaker global trade and growth.

Instead of limiting international trade, the focus should be on creating functioning trade agreements that improve the institutional conditions for a long-term increase in trade. Sweden, for example, has traditionally been a free-trade-oriented country, with a political consensus on the value of liberal trade agreements. In other countries, trade policy is more controversial, and often differs depending on which parties are in government. This means that levels of tariff and non-tariff barriers to trade have varied from election to election.

One way of ensuring a trade policy that more lastingly facilitates trade between countries may be to agree special clauses that guarantee that foreign investors and companies have the same terms as domestic investors and companies in trade and investment. Research has shown that trade and investment agreements that include investment protection clauses and so-called ISDS clauses (investor-state dispute settlement) have a positive effect on international trade.[13] By reducing the long-term costs associated with international trade, such agreements and clauses can stimulate more trade, despite the short-term variation in protectionism that can arise from changes of government.

13 ISDS clauses describe how a situation will be handled if the terms for an investment change in a way that can be considered to conflict with the investment protection agreement and when the state in the host country is considered to be responsible for the changed terms. See, for example, Wallen and Wiberg (2017).

References

Alcala, F. and Cicone, A. (2004) Trade and Productivity. *Quarterly Journal of Economics* 119(2): 613-646.

Aghion, P. and Howitt, P. (1992) A Model of Growth through Creative Destruction. *Econometrica* 60(2): 323-352.

Andersen, L. and Babula, R. (2008) The Link Between Openness and Long-Run Economic Growth. J*ournal of International Commerce and Economics*. United States International Trade Commission, July.

Baldwin, R. (1992) Measurable Dynamic Gains from Trade. *Journal of Political Economy* 100(1): 162-174.

Baldwin, R. and Forslid, R. (1999) Incremental Trade Protection and Endogenous Growth: A q-Theory Approach. *Journal of Economic Dynamics* 23(2): 797-822.

Baldwin, R. and Forslid, R. (2000) The Core-Periphery Model and Endogenous Growth: Stabilizing and Destabilizing Integration. *Economica* 67(267): 307-324.

Baldwin, R., Forslid, R., Martin, P., Ottaviano, G. and Robert-Nicoud, F. (2003) *Economic Geography and Public Policy.* Princeton, NJ: Princeton University Press.

Bernanke, B. (1983) Irreversibility, Uncertainty, and Cyclical Investment. *Quarterly Journal of Economics* 98(1): 85-106.

Bratt, M. (2014) Estimating the Bilateral Impact of Non-Tariff Measures (NTMs). Working Paper Series No. 14-01-1, Université de Genève.

Braunerhjelm, P. and Borgman, B. (2004) Geographical Concentration, Entrepreneurship and Regional Growth: Evidence from Regional Data in Sweden, 1975-99. *Regional Studies* 38(8): 929-947.

Cecchini, P. (1988) *The European Challenge – the Benefits of a Single Market.* Aldershot: Wildwood House.

Ciccone, A. and Hall, R. (1996) Productivity and the Density of Economic Activity? *American Economic Review* 86(1): 54-70.

Combes, P-P., Duranton, G. and Gobillon, L. (2008) Spatial Wage Disparities: Sorting Matters! *Journal of Urban Economics* 63(2): 723-742.

Disdier, A. C., Emlinger, C. and Fouré, J. (2015) Atlantic versus Pacific Agreement in Agri-food Sectors: Does the Winner Take it All? CESifo Working Paper No. 5460.

Dixit, A. and Pindyck, R. (1994) *Investment under Uncertainty*. Princeton, NJ: Princeton University Press.

Djankov, S., Freund, C. and Pham, C. (2010) Trading on Time. *Review of Economics and Statistics* 92(1): 166-173.

Dollar, D. (1992) Outward-Oriented Developing Economies Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985. *Economic Development and Cultural Change* 40(3): 523-544.

Dollar, D. and Kray, A. (2003) Institutions, Trade and Growth. *Journal of Monetary Economics* 50(1): 133-162.

Edwards, S. (1992) Trade Orientation, Distortions and Growth in Developing Countries. *Journal of Development Economics* 39(1): 31-57.

Findlay, R., Henriksson, R. G. H., Lindgren, H. and Lundahl, M. (2006) *Eli Heckscher, International Trade, and Economic History*. Cambridge, Mass.: MIT Press.

Frankel, J. and Romer, D. (1999) Does Trade Cause Growth? *American Economic Review* 89(3): 379-399.

Fujita, M., Krugman, P. and Venables, A. (1999) *The Spatial Economy: Cities, Regions and International Trade*. Cambridge, Mass: MIT Press.

Ghodsi, M., Grübler, J., Reiter, O. and Stehrer, R. (2017) The Evolution of Non-Tariff Measures and their Diverse Effects on Trade. The Vienna Institute for International Economic Studies, Research Report 419, May 2017.

Global Trade Alert (2017) Will Awe Trump Rules? The 21st Global Trade Alert Report.

Grossman, G. and Helpman, E. (1991) *Innovation and Growth in the World Economy*. Cambridge: MIT Press.

Hallaert, J-J. (2006) A History of Empirical Literature on the Relationship Between Trade and Growth. *Mondes en développement* 135(3): 63-77.

Halvarsson, D., Kokko, A. and Tingvall, P. (2014) Sverige och EU: Handel och tillväxt. EU:s effekt på handel och ekonomisk tillväxt bland medlemsländerna. Ratio.

Helpman, E. (1981) International Trade in the Presence of Product Differentiation, Economies of Scale and Monopolistic Competition: A Chamberlin-Heckscher-Ohlin Approach. *Journal of International Economics* 11(3): 305-340.

Henderson, V. (2003) Marshall's Scale Economies. *Journal of Urban Economics* 53(1): 1-28.

Hornok, C. and Koren, M. (2015) Per-Shipment Costs and the Lumpiness of International Trade. *Review of Economics and Statistics* 97(2): 525-530.

IMF (2016) Global Trade: What's Behind the Slowdown?

Krugman, P. R. (1979) Increasing Returns, Monopolistic Competition, and International Trade. *Journal of International Economics* 9(4): 469-479.

Krugman, P. R. (1991) Increasing Returns and Economic Geography. *Journal of Political Economy* 99(3): 483-499.

Krugman, P. and Venables, A. (1995) Globalization and the Inequality of Nations. *Quarterly Journal of Economics* 110(4): 857-880.

Lucas, R. (1988) On the Mechanics of Economic Development. *Journal of Monetary Economics* 22(1): 3-42.

Medin, H. and Melchior, A. (2015) Trade Barriers or Trade Facilitators? On the Heterogeneous Impact of Food Standards in International Trade. Norwegian Institute of International Affairs, and TIK Centre, University of Oslo.

National Board of Trade (2003) Trade Facilitation – Impact and Potential Gains.

National Board of Trade (2016) Protectionism in the 21st Century.

OECD (2005) Looking Beyond Tariffs: The Role of Non-Tariff Barriers in World Trade. OECD Trade Policy Studies.

Riviera-Batiz, L. and Romer, P. (1991a) Economic Integration and Endogenous Growth. *Quarterly Journal of Economics* 106(2): 531-555.

Riviera-Batiz, L. and Romer, P. (1991b) International Trade with Endogenous Technological Change. *European Economic Review* 35(4): 971-1004.

Rose, A. and Wieladek, T. (2011) Financial Protectionism: the First Tests. NBER Working Paper No. 17073.

Romer, P. (1986) Increasing Returns and Long-Run Growth. *Journal of Political Economy* 94(5): 1002-1037.

Romer, P. (1990) Endogenous Technological Change. *Journal of Political Economy* 98(5): S71-S102.

Sachs, J. and Warner, A. (1995) Economic Reform and the Process of Global Integration. *Brookings Papers on Economic Activity* 26(1): 1-118.

Solow, R. (1956) A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics* 70(1): 65-94.

Tahir, M. and Ali, H. (2014) Trade Openness and Economic Growth: A Review of the Literature. *Asian Social Science* 10(9): 137-142.

UNCTAD (2015) Reforming International Investment Governance. World Investment Report.

Wacziarg, R. and Horn Welch, K. (2008) Trade Liberalization and Growth: New Evidence. *World Bank Economic Review* 22(2): 187-231.

Wallen, F. and Wiberg, M. (2017) Ekonomiska och politiska effekter av ISDS-klausuler. Timbro Briefing Papers.

WTO (2014) The WTO Agreements Series: Technical Barriers to Trade.

The Institute of Economic Affairs
2 Lord North Street
London SW1P 3LB
Tel 020 7799 8900
Email iea@iea.org.uk