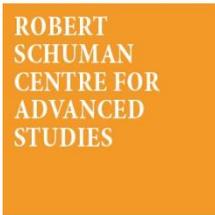




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Supply Chains and International Cooperation:  
Thinking Outside the Box

Bernard M. Hoekman



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European University Institute

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I – 50014 San Domenico di Fiesole (FI)

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## **Abstract**

The value of world trade has increased 27-fold since 1950, three times more than the growth of global GDP. An increasing share of that trade involves international supply chains and the global fragmentation of production. But many countries do not participate intensively in this process. One reason is that a variety of policies increase supply chain costs and inhibit firms from locating part of their supply chain to a country or region. This paper argues for a new approach by governments and the business community to identify and reduce supply chain barriers, including in the context of international trade agreements. Using trade agreements to lower trade costs that negatively affect the operation of supply networks would help increase their welfare impact and their relevance to business.

## **Keywords**

International supply chains, trade agreements, WTO, logistics, trade negotiations



## **Introduction\***

Over the last 30 years, governments have greatly reduced barriers to trade. Average tariff levels have fallen to the 5 to 10 percent range, and many products today enter markets free of import duties. Trade liberalization has been complemented by technological and managerial advances that have led to an ever increasing share of world trade comprising intermediate inputs, reflecting the ability of firms to splinter the production process of goods and services into ever finer parts and to locate different activities (tasks) in different countries so as to minimize total costs of production. International supply chains and production networks are the mechanisms through which this process of specialization is organized, with goods being processed – and value being added – in multiple countries that are part of the chain.

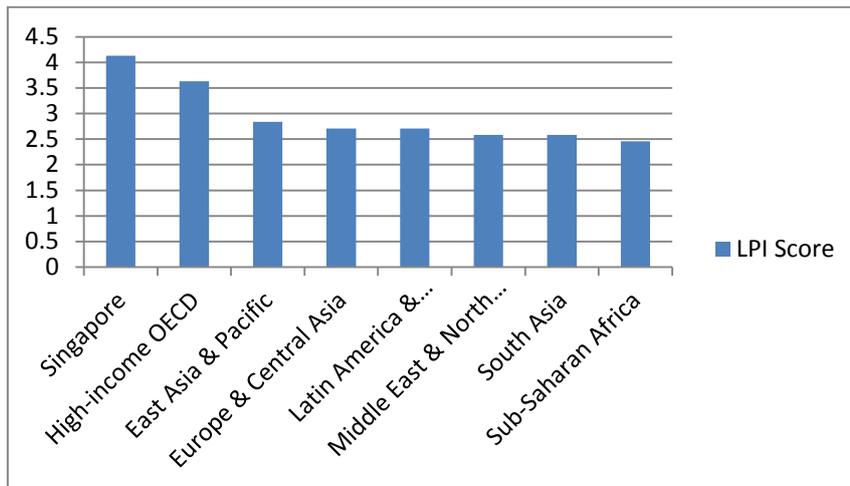
The ability of firms in a country to participate in – and contribute to – supply chains depends in part on government policies that determine the level of trade and operating costs. These include trade policies such as import tariffs, export restrictions and local content requirements. But in most countries other factors have a more significant impact on trade costs—the efficiency of border management; the quality of transport and logistics services; the need to comply with a plethora of overlapping regulatory requirements, etc. Even if tariffs are zero, if firms confront high and uncertain border costs and inefficient and unpredictable logistics they will not be able to compete with firms in other countries that benefit from operating in a more efficient economic environment.

Research has shown that the different dimensions of national logistics efficiency have a big impact on trade costs and trade performance. Every extra day it takes in Africa to get a consignment to its destination is equivalent to a 1.5% additional tax (Freund and Rocha, 2011). The World Bank's Logistics Performance Indicators (LPI) provides a comprehensive measure of the overall quality of logistics services across more than 150 countries (World Bank, 2012). It illustrates that there are large differences in logistics performance and quality across regions. Figure 1 plots the most recent data on the LPI (for the year 2012) by region and country group, as well as for the best performing country in the sample, Singapore, a nation that is well-known for the high quality of its logistics services. There is very significant variation in performance within regions, but the large difference in average performance between high income OECD countries as a group and the various developing country regions illustrate that there is still a big gap to be overcome. The level of the LPI is an important determinant of the trade costs that prevail between any given pair of countries. Improving LPI performance would reduce average bilateral trade costs ten times more than an equivalent percentage reduction in average tariffs (Arvis et al. 2013).

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\* This paper draws in part on a report by the World Economic Forum, Bain & Co. and the World Bank that the author was involved in as a team member.

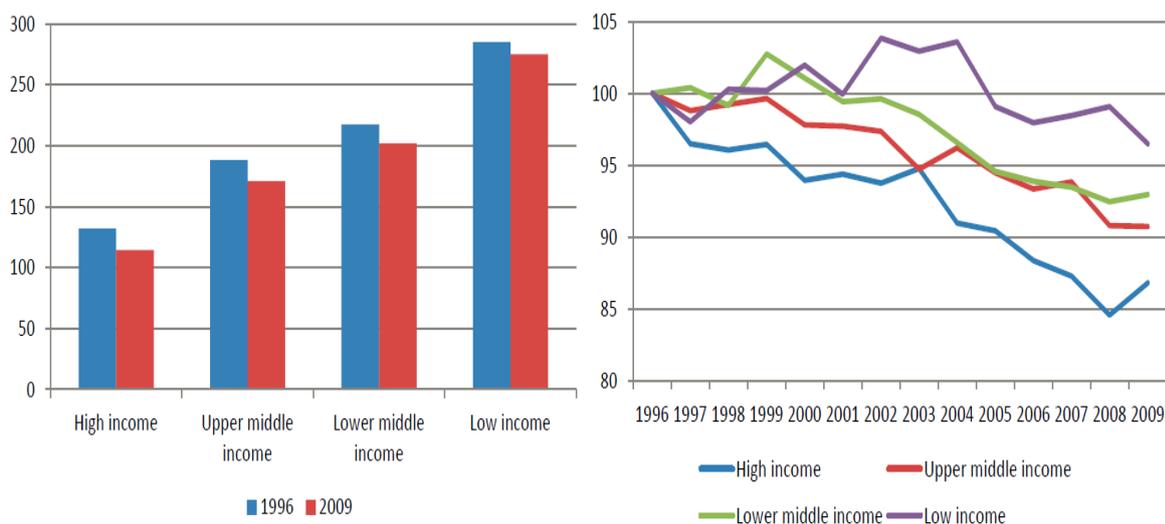
**Figure 1: Logistics performance index, 2012**



Source: World Bank, 2012.

Many developing countries have not seen the shift toward participation in international supply networks that has been a driver of trade growth in East Asia, Mexico, Turkey, and Central and Eastern Europe. From the perspective of the “average” global citizen, much therefore depends on his or her physical location: geography matters. One reason for this is that although barriers to trade have fallen dramatically, the costs associated with international transactions remain much higher than those that arise within countries, and average trade costs are much higher for low-income countries than richer ones. In the last 15 years trade costs have fallen much more in richer nations (Figure 2). Fostering greater diversification and participation by African, Latin American and Middle Eastern economies in international supply networks is one of the great challenges confronting governments of the countries concerned as well as the international community.

**Figure 2. Average trade costs for manufactured exports by income group, 1996-2009**



Note: Bars indicate average trade costs as percent ad valorem equivalents for the 10 largest importing partner nations for each country in the sample; trend over time is an index with 1996 = 100

Source: Arvis et al. 2013.

## **From Why to How to Lower Trade Costs**

Trade costs result from a variety of factors that drive a wedge between domestic and world prices for a product. Some of these factors are difficult or impossible to change, e.g., geography. Thus, a small island state located in the middle of the Pacific Ocean or a land-locked country may always have higher trade costs than countries or regions that have access to nearby ports or are located close to large and dynamic economic agglomerations. But a large share of observed trade costs reflect policies and factors that can be affected by policy. Thus, governments continue to impose trade restrictions in some sectors. They also may limit the ability of foreign firms to contest markets through foreign direct investment or reserve sectors for national firms. Maritime cabotage is a common example, as is public procurement, with governments giving preference to national firms for public purchases of goods or services.

While such explicitly discriminatory policies can result in significant barriers to competition, the policies that restrict (raise the cost of) international flows of goods, services and knowledge are increasingly of a regulatory nature—so-called nontariff measures (NTMs). Examples are product regulation (to achieve health, safety or security objectives), licensing requirements, certification and conformity assessment procedures, data reporting standards, border management procedures, the quality of transport and communications infrastructure, and the degree of competition that prevails on services markets. Frequently, one cause of excess cost is a multiplicity of regulatory norms and related enforcement requirements that are pursued independently by many different government agencies. Many of these regulatory policies often apply equally to local and foreign firms and products, but they generally increase trade costs more for foreign than for domestic suppliers simply because regulations differ across countries or because foreign firms are subject to a multiplicity of requirements that are redundant (duplicative). More important however is that regulatory policies can raise costs across the board – for domestic and foreign firms – and thus the price of goods and services for buyers, whether firms or households. Given that the value added that is embedded in goods is increasingly generated by services and knowledge, assessments of the trade costs that are created by regulatory measures need to include a strong focus on services.

A recent report by the World Economic Forum, in collaboration with Bain & Co. and the World Bank (WEF 2013), analyzes the incidence of some of the major nontariff measures that affect the operation of international supply chains. The focus of the analysis is on the impact of two types of factors that can increase operating costs for international firms: border management (Customs clearance and other regulatory requirements and processes that pertain to goods entering or leaving a country) and transport and communications infrastructure services. The report concludes that concerted action to raise the average performance of countries to halfway the level of best practice (defined by Singapore) could increase global GDP by almost 5%, six times more than would result from removing all remaining import tariffs.

Why is lowering supply chain barriers so much more effective in increasing real incomes? The reason is that it eliminates resource waste, whereas abolishing tariffs mainly reallocates resources. Reducing supply chain barriers lowers costs and hence lowers prices, both to consumers and to firms that import production inputs. Consumers gain access to a wider variety of goods. Workers benefit as well, as the boost to GDP is likely to stimulate employment growth. In the long run, trade facilitation promotes a shift in resources to more productive industries and firms, thereby increasing productivity and wages. Of course, reducing supply chain barriers requires investment, while tariff reductions require only the stroke of a pen, i.e., a political decision. However, many supply chain barriers can be traced to regulation. Detailed analysis can enable policymakers to prioritize the investments that are most critical and cost-efficient.

The core of the WEF (2013) report comprises 18 detailed company case studies. These highlight that clusters of policies jointly impact supply chain performance, suggesting that a concerted approach is needed to cut across different policy domains that collectively generate supply chain barriers to

trade. A key problem highlighted by the case studies is that many different policies and administrative procedures can artificially “break” the supply chain by introducing discontinuity and affecting reliability. Supply chain efficiency is not simply about trade facilitation at the border; it also involves the ability to invest in facilities and protect intellectual property, and the costs of complying with regulatory requirements regarding health, product safety, security, etc. The exercise of market power by a dominant entity that controls access to key services or a lack of competition may hinder the functioning of some parts of a supply chain; examples include port operations, airport cargo handling and freight transport providers. The policy-related factors that affect the operation of supply chains are numerous and interrelated. The cases also illustrate that in practice there may be specific “tipping points” that need to be achieved for reductions in supply chain barriers to have a significant impact on trade: fixing some barriers may be insufficient to trigger investment or scaling up of existing activities if other policies continue to generate significant supply chain costs.

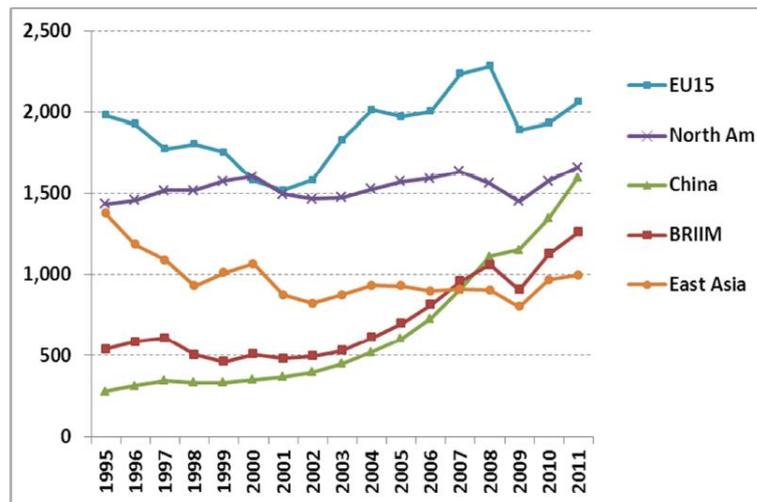
Small and medium enterprises (SMEs) may suffer disproportionately from supply chain barriers to trade because of the magnitude of the fixed costs that are independent of volumes shipped (Olarreaga et al., 2012). For example, small firms often cannot spend the staff time needed to understand a given country’s idiosyncratic policies and procedures, much less multiple countries. One of the case studies uses eBay data to show that merchants who use the eBay platform to sell goods internationally stick to countries where regulations are easiest to navigate. A pilot project implemented by eBay shows that helping SMEs navigate the regulatory regimes of importing countries could expand their volume of international sales by 60 to 80 percent. Given that SMEs account for a large share of total economic activity, this type of targeted trade facilitation could have significant positive spillover effects on employment.

### **Trade Facilitation Revolves Around Services**

An important implication of supply chain trade is that international commerce increasingly involves ever greater specialization by companies in specific tasks and activities. More often than not these tasks and activities will involve business, intermediation and knowledge services (R&D, design, engineering, etc.). Moreover, much of the value of the goods that is recorded when products cross borders comprise the value of imported parts and components. Simply looking at the gross value of a country’s exports can therefore be very misleading as a measure of competitiveness or economic development. Most value originates at the upstream (R&D, design) and downstream ends (retail, branding) of value chains, and much of this is created through services-related activities.

This does not mean that the countries that have been most successful at moving into the production of manufactured goods by integrating into international supply chains are not increasing the amount of value added that is generated in their countries. China and other emerging market developing countries have been generating an increasing share of global manufacturing value added. But supply chain trade has allowed the technology leaders – Europe, North America – to maintain the aggregate value of manufacturing value added (Figure 3).

**Figure 3. Regional contribution to global manufacturing value added (1995 US\$ billion)**



Note: East Asia includes Japan, South Korea and Taiwan. BRIIM includes Brazil, Russia, India, Indonesia, Mexico and Turkey. EU15 spans the states that joined the EU before 2004.

Source: Timmer, Erumban, Los, Stehrer and de Vries, 2013.

But, as mentioned, a focus on only manufacturing is too narrow a view. High-income countries are services economies. And services account for a large share of the value added that is embodied in goods (Figure 4). Services comprise two-thirds of GDP or more in developed economies, but trade in services typically accounts for less than one-quarter of total trade. The reason of course is that notwithstanding technological advances in the ICT sector many services remain nontradable. This means that they must be embedded in people or in products in order to be traded. This helps to explain why much of the value of a good reflects the value of the services that go into producing it. Recent efforts by the OECD and the WTO to account for the value added by services in the production of goods shows that the service sector contributes over 50% of total exports in the United States, the United Kingdom, France, Germany and Italy, with a significant contribution (typically one-third) across all manufactured goods (Figure 4). The importance of services in global trade suggests they should be front and center in national trade strategy discussions and international negotiations as barriers to trade and investment in services will impact on value chain performance and potential.

**Figure 4: Services embedded in exports**



Source: <http://www.oecd.org/sti/industryandglobalisation/whatcantivadatabasetellus.htm>.

## Moving Forward in Lowering Trade Costs

Given the significance of supply chain barriers and the potential gains from reducing them, governments and the international community should focus more on actively managing the effects of policies on trade costs. The WEF (2013) report suggests several general policy recommendations for governments seeking to lower supply chain barriers:

- Create a national mechanism to identify policy priorities for improving supply chain efficiency based on objective performance data and feedback loops between government and enterprises. Governments must work with business groups and associations to create mechanisms to collect data on the various factors affecting supply chain operations. These data can then be used to identify the sets or ‘clusters’ of policies that jointly determine key supply chain barriers. They are also critical inputs into any assessment of progress made in addressing the barriers.
- Establish a focal point within government with a mandate to monitor and assess all regulation that directly affects supply chain efficiency. Reducing the cost-raising effects of policies and improving supply chain performance requires coherence and coordination across many government agencies and collaboration with industry.
- Ensure that SME interests are represented in the policy prioritization process and that solutions are designed to address specific constraints that impact disproportionately on SMEs. For example, one relatively straightforward policy would be to raise *de minimis* provisions in Customs regulations to facilitate small-business engagement in international markets by exempting relatively small value goods from import duties; another is to ensure that initiatives to reduce regulatory compliance costs such as ‘trusted trader’ programs are open to smaller firms and are complemented by programs to help them address regulatory complexity and lower their costs.

## Using Trade Agreements to Address Supply Chain Barriers

Governments could complement such initiatives at the national level by pursuing a “whole of the supply chain” approach in international trade negotiations. Greater coherence of domestic policies is important, but a key insight derived from the case studies and economic research more generally is that joint action by countries will increase the overall gains from lower supply chain barriers. International trade negotiations usually take a silo approach, addressing specific policy areas in isolation – such as product standards; licensing; tariffs; or sectoral policies. The impacts of different NTMs on trade are certainly recognized by governments. One reflection of this is that trade agreements often deal with specific policies such as product regulation and customs valuation. But the current approaches pursued by governments arguably are not optimal because they focus on specific policy instruments independently. To be more effective in lowering supply chain barriers a more comprehensive and integrated approach is needed that spans all of the key sectors that impact on trade logistics, including services such as transport and distribution, as well as policy areas where the actions (or non-action) by a trading partner determines supply chain performance – the most obvious examples being policies related to border protection and management, product health and safety regulations and related testing and certification requirements, the ability to invest in foreign facilities, and the movement of business people and service providers.

To a limited extent such a broader, cross-cutting approach is beginning to be pursued in some fora. An example is that international trade agreements increasingly include a focus on “trade facilitation.” Trade facilitation means different things in different contexts. In the World Trade Organization (WTO), it refers to quite a narrow set of policies that revolve around border clearance processes and transit regimes. There is no effort to also consider the role that services-related policies may play in impacting on supply chain costs. Services negotiations are conducted independently, and within those negotiations each service sector is considered separately. A number of the policy areas that matter for supply chain performance are not on the table at all – such as competition policy, the existence of

dominant suppliers that can foreclose entry by new suppliers, or restrictions on foreign investment in certain activities.

A broader approach has been taken in other fora. For example, in the Asia Pacific Economic Cooperation (APEC) context trade facilitation refers to any measure by government that aims to reduce trade costs. APEC member governments have agreed to a common trade facilitation performance target in two consecutive trade facilitation action plans— committing to a total 10% reduction in trade costs. How this goal is to be attained is left to each individual government to determine. This is superior to the narrow approach taken in the WTO, as it increases the likelihood that important policy areas are addressed, including those affecting the operation of services markets. But because no effort is made to identify what set of policies across different areas of regulation have the greatest negative impacts, it is not necessarily the case that actions by governments target measures that would have the biggest effect on lowering trade costs. The APEC approach is superior to the approach of the WTO and the plethora of preferential trade agreements (PTAs) that have been negotiated by governments around the globe because they set specific performance indicators that can be measured thus ensuring that governments can be held accountable for results – and that they are able to determine if their actions are having the desired effects in moving trade costs down. But the lack of guidance given to governments on what actions will lower trade costs the most may lower the effectiveness or increase the cost of the actions that are taken. Moreover, the non-binding nature of the APEC approach may lead to governments missing opportunities to cooperate in areas where joint (concerted) action can have large impacts in lowering supply chain barriers and costs. No effort is made to cooperate across countries and to develop a joint action plan to address the most binding (most important sources of) supply chain barriers.

A “whole of the supply chain” approach would address these weaknesses. It can be pursued both at the multilateral (WTO) level and in regional trade agreements. Doing so could significantly enhance the relevance of international trade cooperation for businesses and help generate the engagement that is needed to obtain the political support needed for trade agreements to be adopted by national legislatures and to be implemented by governments. As has been argued by many observers, one lesson of the failure to conclude the Doha Round negotiations by the WTO is that what is on the table is not seen to make enough of a difference from an operational business perspective for businesses. A supply chain approach can help to address this failure and in the process provide a low cost economic stimulus for the world economy in the medium term.

“Thinking supply chain” when considering the design of trade agreements, could help increase the relevance of whatever is agreed for businesses and do more to increase incentives for investment and job creation in tradable activities (Hoekman and Jackson, 2013). What is needed is to focus explicitly on how the various policy areas being negotiated in trade agreements – tariffs, border management (e.g., customs clearance-related reforms such as the implementation of national single windows), or technical barriers to trade (e.g., mutual recognition agreements) and transport and distribution (logistics) services—jointly affect supply chains.

A supply chain approach would be not so much product, sector or policy instrument-specific but would address policies of the different domestic agencies responsible for NTMs, services regulation, etc. which together constitute major barriers to developing effective supply chains. Processes are needed that will identify priorities for action across the different regulatory “silos”, establish baselines and put in place effective monitoring mechanisms to track progress and hold governments accountable for achieving the agreed targets. As argued in WEF (2013) this must involve the business community at all stages, as firms are the primary source of the information and data that is needed to set priorities and to monitor outcomes to allow stakeholders to track progress. An immediate question that needs to be asked by governments and stakeholders in the context of PTAs such as ASEAN, the TPP, or the recently launched Transatlantic Trade and Investment Partnership is to what extent existing regional mechanisms are fit for this purpose, and how can they be adapted to play such a role.

A key need arguably is to put in place processes that can cut across government and regulatory agencies. We need more than technical regulatory impact assessments and NTM committees and working groups. A supply chain perspective will facilitate a focus on how different types and combinations of regulation/policies affect key dimensions of supply/production chains and reduce efficiency / raise costs. While it is important to analyze the effect of specific measures, a more cross-cutting approach is likely to be more relevant to business. Business needs to be part of the process in a way that goes beyond “consultations” and “dialogue”. They have a key role to play at the front end – helping to identify what the most binding policy constraints are – and at the back end – through active participation in the monitoring of progress by providing data to governments and holding them accountable for results.

An important question is whether an integrated, “whole of the supply chain” approach that includes services are best pursued through a cross-cutting/horizontal approach or if sectoral initiatives may yield better results. Bottlenecks may be very value-chain specific – automotive chains are very different from textiles – and the political economy forces that drive policies are likely to differ with the level of logistics performance and the trade potential this implies in the short to medium term. While a differentiated approach makes sense conceptually, in practice certain common commitments could be applicable to all and could be pursued through international agreement so that the resulting value chains can be truly global.

A specific option that could be considered is to negotiate so-called plurilateral agreements in the WTO. These allow groups of countries to move forward in areas that are of interest to them but not necessarily to the whole of the WTO membership. As long as such agreements do not involve the granting of discriminatory preferential treatment for signatories in areas that are covered by WTO disciplines they will not erode the rights of countries that do not join them. More feasible in the near term is to pursue a supply chain approach in the context of regional agreements. For the EU the most obvious opportunity is the Transatlantic Trade and Investment Partnership negotiations that have recently been launched with the United States. Doing so will require leadership by the business community to help develop templates and processes to implement a new approach towards defining policy commitments, and to provide the feedback and data that is needed to determine priorities and to monitor and assess the extent of progress that is made over time to reduce the targeted supply chain barriers and trade costs.

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