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Tariffs, Transport Costs and the WTO Doha Round: The Case of Developing Countries

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The WTO Doha Round of multinational trade negotiations is labelled the “development round” to highlight the fact that progress could be achieved through the enhanced integration of the poor countries into the world economy. Since the trade agenda focuses to a large extent on the levels of direct and indirect trade barriers as well as other aspects of trade and competition policy, an important aspect of the relative trade performance of developing countries has been neglected somewhat. This paper argues that, in addition to trade barriers, other trade costs, such as communications and transport costs, have to be taken into account. These other costs can be significantly higher in developing countries, which impedes their successful integration into world markets.

Keywords: developing countries, transport costs, WTO Doha Round

Introduction

The economic consequences of the increasing globalisation of the world economy, that is, a closer integration of production and markets, have been discussed intensively over the last decade (Krugman and Obstfeld, 2000). The growing interdependence of countries around the world has been the result of, among other things, lower trade barriers, the fall in communications and transport costs, and the revolution in information and communications technologies – in short, lower transaction costs. Transaction costs are roughly defined as the costs of collecting and evaluating information about alternative exchange options, of negotiating the conditions of exchange transactions and of enforcing exchange contracts (Williamson, 2001).¹

Due to several successful General Agreement on Tariffs and Trade (GATT) rounds of multilateral trade negotiations after World War II, tariff barriers have fallen dramatically. More specifically, since the establishment of the General Agreement on Tariffs and Trade in 1947, average tariff rates were reduced from 40 percent to 4 percent in 1999 (Senti, 2000). Combined with worldwide deregulation in a number of financial and product markets, the internationalisation of capital and financial flows and enormous acceleration in the progress of key technological innovations such as containers and modern telecommunication, this has increased competition on world markets and has led to more trade and international investment. For example, whereas world production grew by an annual average of 1.5 percent in the period 1990 to 2000, trade rose by 6 percent and foreign direct investment (FDI) by 23 percent (World Bank, 2002a).

Yet there is a growing concern over whether developing countries are benefiting from that process, and the likely welfare gains associated with it, to the same degree as high-income industrialised countries. For instance, most international investments and trade take place within high-income OECD countries. In 2000, these countries accounted for 85 percent of FDI inflows and 74 percent of exports – which are figures that are much higher than their share of the world population (14 percent) (World Bank, 2002a). If the view is accepted that FDI and trade are indeed beneficial for the poor countries, it is possible to ask what can be done to enhance their levels for developing countries. A common starting point for trade activists is the statement that the world trading system is “unfair”, because the poor countries face protectionist trade barriers in the markets of the rich countries that are more acute than their own. In fact, developing countries do face above-average trade barriers in high-income

countries for products for which they have a comparative advantage, such as textiles, clothing or agricultural commodities, which thus harms their growth potential in exports (Milner, 2002).

To address this issue, the World Trade Organisation, the successor to the GATT, launched a new round of multilateral trade negotiations at Doha in November 2001. The new round is called the “development round” to focus on the fact that development, namely the enhanced integration of the poor countries into world markets, is the round’s central objective.² While the WTO trade agenda predominantly concentrates on the level of tariffs and on non-tariff barriers, as well as other aspects of trade and competition policy, an important aspect of the relative trade performance of developing countries has been neglected to some extent. In fact, tariffs and non-tariff barriers make up only a certain fraction of total trade costs, since, among other things, communications and transport costs have to be taken into account as well. To make the results clear right from the start, this paper will argue that – in comparison to the situation in industrialised countries – these “other trade costs” can be much higher in developing countries, which impedes their successful integration into the world economy. Reducing trade costs could yield significant welfare gains, as the competitiveness, and thus exports, of poor countries would increase (Bougheas et al., 1999; Trefler, 1995).

Accordingly, this paper will concentrate on the different forms of transaction costs and their relative levels in developing countries. The paper is structured as follows: The following section provides an outline of the entire range of transaction costs, whereas section 3 focuses on the relative levels of transaction costs and development of important types of related technologies. For instance, advances in communications and information technologies have significantly influenced the level of transaction costs. Also, the question of whether these advances benefit developing countries to the same degree as industrialised countries will be posed. Finally, section 4 critically reviews these issues with respect to domestic and international policy implications and the current WTO Doha Round.

Transaction Costs in International Trade

The international exchange of commodities and services involves basically three kinds of transactions, namely the flows of information, goods, and capital. As can be seen in figure 1, information and communications costs cover all resources that domestic firms allocate towards the gathering of information on other (foreign) competitors, products and foreign countries (information costs) and the supply and

processing of information to the international market and trading partner (costs of dissemination). Predominantly, information and communications costs occur before the actual international trade has taken place, namely, before and during business negotiations and on settlement of a contract (Bougheas et al., 1999). Moreover, these are expenses relating to an optimal flow of information to decision makers.

Aside from information and communications costs, companies involved in international trade must pay for the actual transport (transfer) of commodities and services, that is, transport costs and insurance. The former include terminal costs, which are a fixed-cost component, and freight costs, which are (usually) a function of distance between trade partners. Besides distance, there are some other factors that may influence the level of transport costs, notably transport infrastructure. Moreover, firms may face trade barriers such as customs duties and non-tariff barriers such as import licensing, health and product standards, or antidumping and antisubsidy measures. Conditional on a particular good or service, these non-tariff trade barriers can be quite substantial and even surpass tariffs or transport costs (Amelung, 1991).

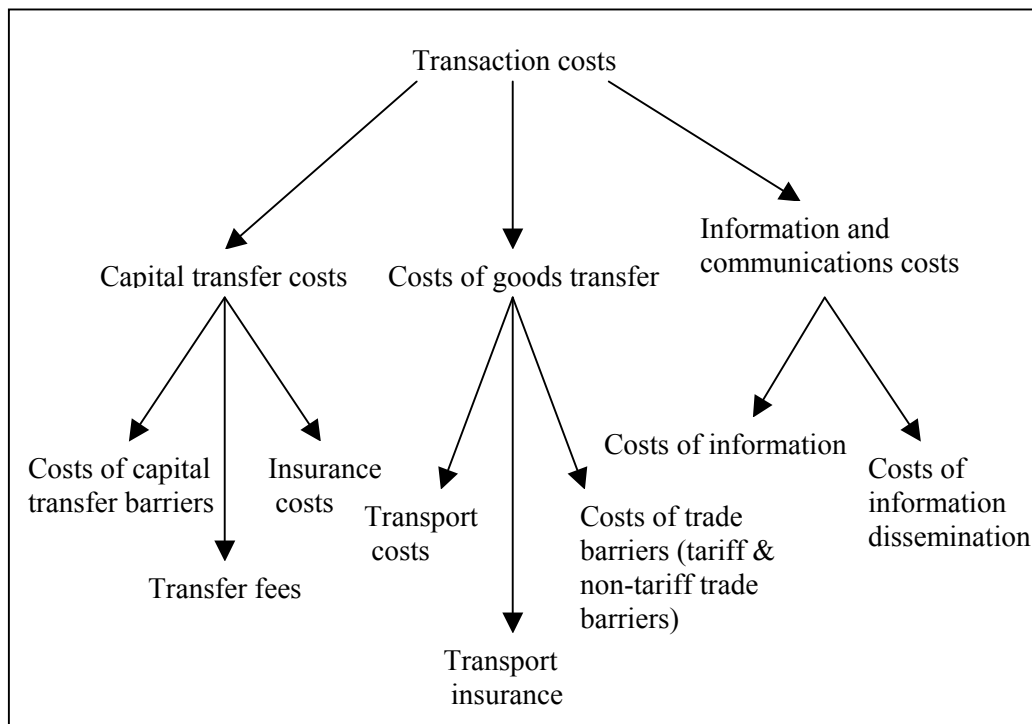


Figure 1 Transaction costs in international trade

Source: Amelung (1990)

Finally, capital (or monetary) costs arise due to financial transactions from, for instance, the actual payment for received goods. They consist of transfer (banking) fees and expenses of getting through capital-transfer barriers such as special forms of capital controls. Also, international trade of commodities deliberately includes risks due to the lack of enforceable property rights and contracts. Foreign governments or contracting parties may abuse this lack of enforcement and may default on a contract. In order to protect firms against these risks, they may seek special assurances against default, such as letters of credit or export guarantees by governments and banks. To sum up, apart from tariffs and transport costs, there are many other sorts of transaction costs involved in international trade that have to be taken into account.

Level of Transaction Costs with Respect to Development

Obviously, the international exchange of commodities and services does not always include all these different forms of transaction costs. Also, the level and significance of individual components have changed considerably over the last decades. As was mentioned in the first section, tariff rates have decreased significantly since World War II. Yet average tariff rates in developing countries are still high in comparison to those in industrialised countries (see figure 2).

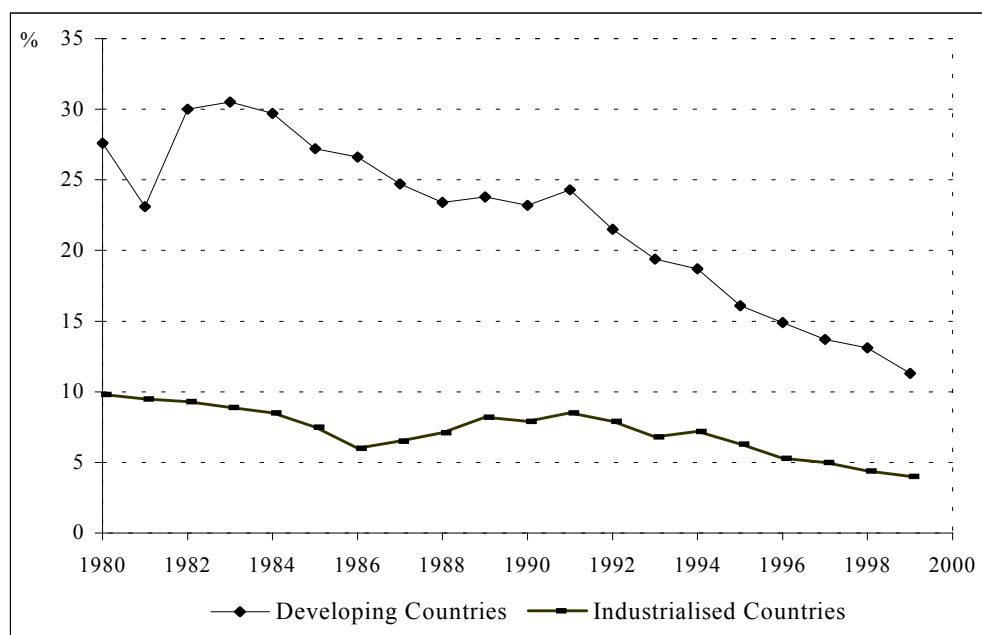


Figure 2 Trends in average tariff rates for developing and industrial countries, 1980–99 (unweighted in %)

Source: World Bank (2002c)

Note: All tariff rates are based on unweighted averages for all goods in *ad valorem* rates, or applied rates, or MFN rates, whichever data are available in a longer period.

Whereas average tariff rates have fallen, sector-specific tariffs can still be a considerable cost factor in international trade. As can be seen in figure 3, average unweighted tariff rates in agricultural commodities are far above average. Due to protectionist trade policies in high-income countries, products in this sector face higher trade costs and, therefore, transaction costs. In addition, tariffs often increase significantly with the level of processing (tariff escalation). Tariff escalation in high-income countries has the potential of decreasing demand for processed imports from developing countries, hampering diversification into higher-value-added exports (Blackhurst et al., 1996). In industrialised countries, tariffs escalate sharply, particularly in agricultural products. Although less prevalent, tariff escalation also affects certain industrial commodities – especially at the fully processed stage. Examples are leather products, furniture, toys, sporting goods, and clothing. These are

(labour-intensive) commodities in which many developing countries have a comparative advantage.

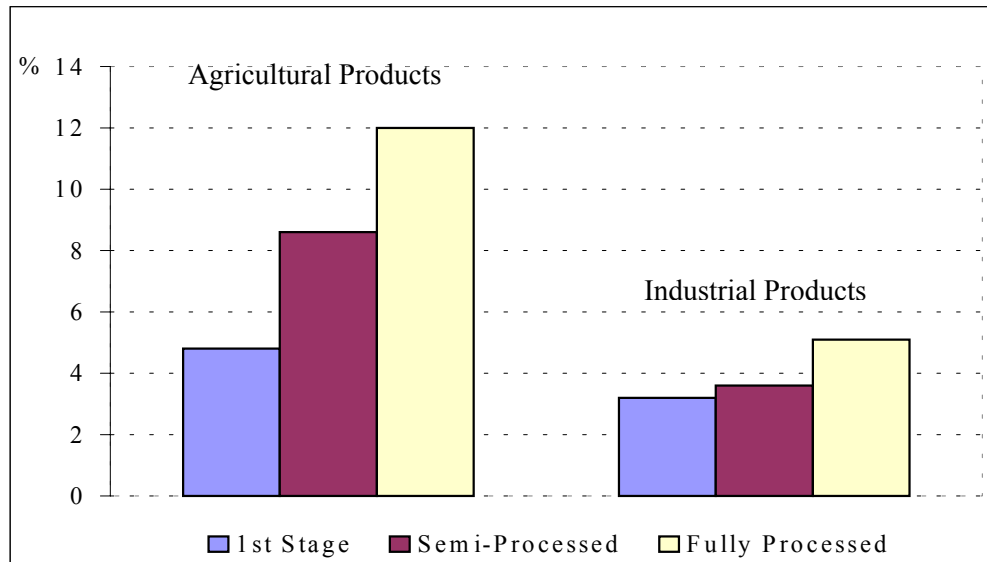


Figure 3 Tariff escalation in industrialised countries

Source: World Bank (2002c)

Note: Tariff rates (in %) refer to unweighted averages for the period 1994–2000.

As can be seen in figure 4, average tariff rates for semi- and fully processed agricultural products and manufactures in developing countries are also higher than for unprocessed products. The trade barriers the poor countries raise against one another further restrain their own development, as export opportunities are negatively affected and imports of semi-finished goods for further processing become more expensive. At least during the current WTO Doha Round of multilateral trade liberalisation negotiations, agriculture and some labour-intensive products are high on the agenda (WTO, 2001).

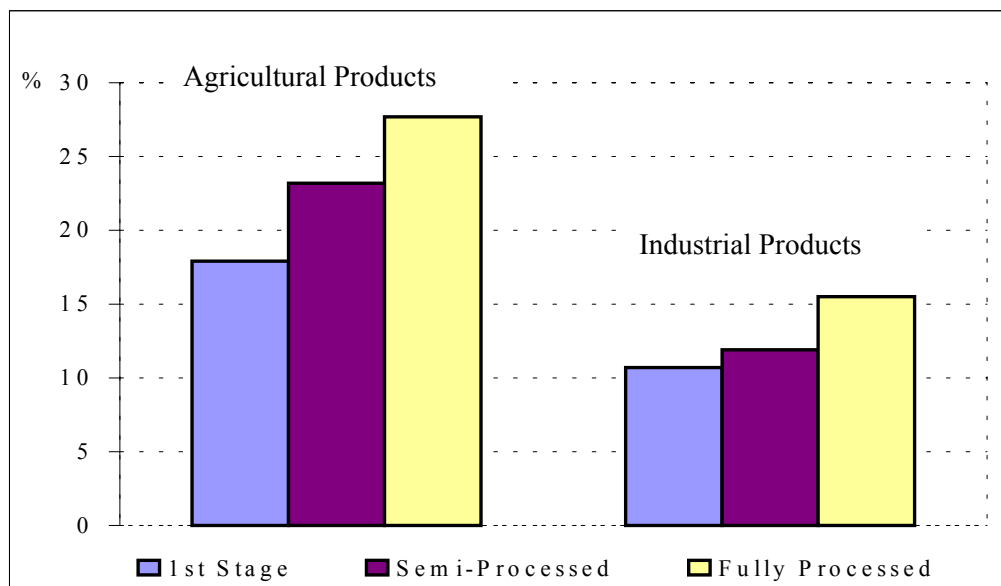


Figure 4 Tariff escalation in developing countries

Source: World Bank (2002c)

Note: Tariff rates (in %) refer to unweighted averages for the period 1994–2000.

While the overall importance of tariffs has declined in recent decades, governments all over the world frequently prefer to protect domestic industries through a variety of non-tariff barriers such as import quotas (restrictions on the quantity of imports) and export restraints (limitations on the quantity of exports). Non-tariff trade barriers were increased in particular in the 1970s and 1980s in the United States and the European Union (or its predecessor, the European Community) (Laird and Yeats, 1990).

One of the most important forms of non-tariff barriers is antidumping duties. In most cases, countries may develop and enforce measures designed to protect domestic industries from imports they allege are “unfairly” priced. Unfair pricing results when foreign importers “dump” their goods onto a market at a price below average cost (Krugman and Obstfeld, 2000). Governments may introduce antidumping duties against such imports in order to offset their damaging effects on domestic companies. Conversely, antidumping measures can act as a protectionist policy, not only in developed but also in developing countries. New users of antidumping measures, that is, developing or emerging market economies like Argentina, Brazil, India, South Korea, Mexico, or South Africa, are using more and more of these non-tariff barriers

to protect their domestic companies (see figure 5). Since the early 1990s, these countries have even surpassed the traditional users of this protectionist instrument with respect to the total number of filed antidumping measures. As a result, the overall number of antidumping complaints has increased even further.

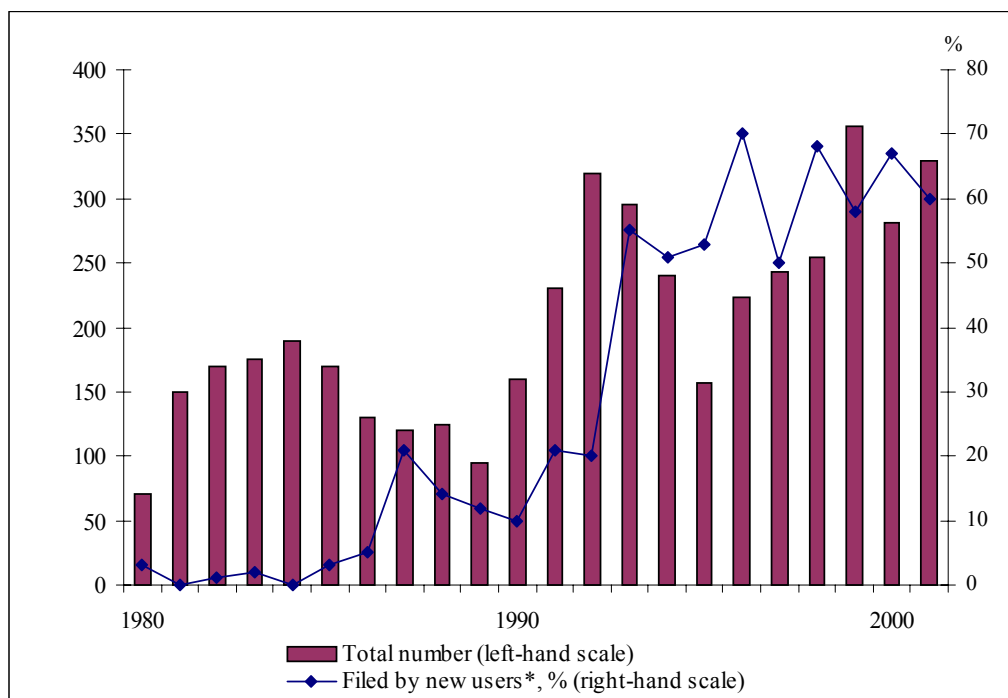


Figure 5 Antidumping complaints, 1980–2001

Source: WTO (2002)

Note: *Argentina, Brazil, India, South Korea, Mexico, and South Africa.

As shown in section 2, apart from tariff and non-tariff barriers, transport and communications costs are additional relevant types of transaction costs in international trade. Similar to tariffs, they have fallen enormously since the 1930s (see figure 6). Extensive technological advances in both transportation and microelectronics have led to a vast reduction in transaction costs. To give an example, the introduction of containers for maritime transport in the 1950s led to a dramatic drop in international transport costs and thus facilitated the integration of international markets. For instance, average real port charges and ocean freight per short ton of cargo (in 1990 \$US) decreased by approximately two thirds in the period between 1930 and 2000. Due to mass production of aeroplanes and associated services, real

costs for transport by air, measured as average air transport revenue per passenger mile, have declined too (Baldwin and Martin, 1999; Bordo et al., 1999).

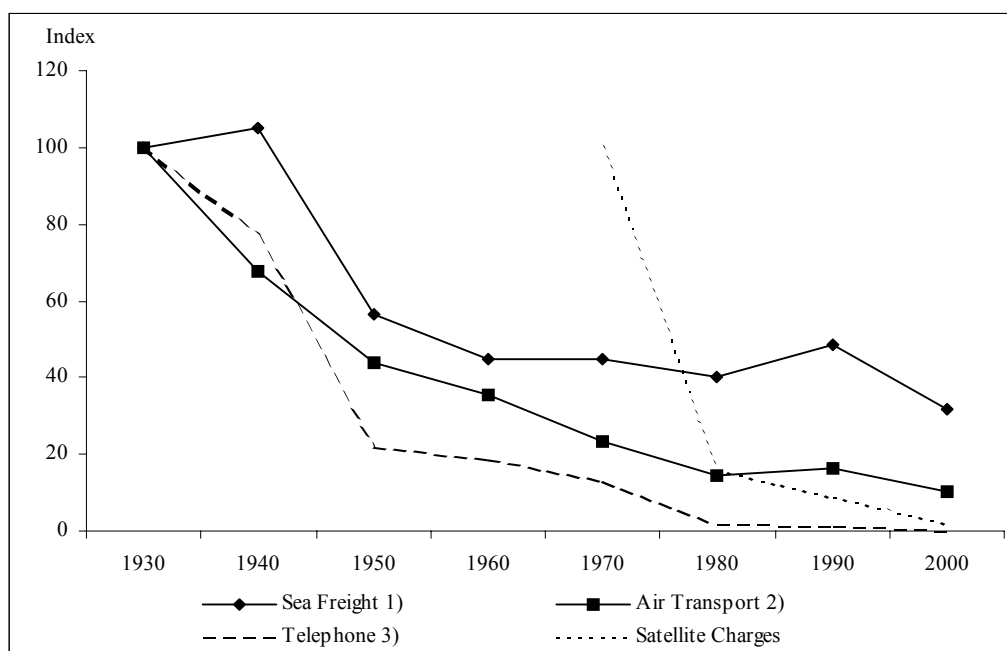


Figure 6 Transport and communications costs, 1930–2000 (in 1990 \$US)

Sources: Hufbauer (1991), US Department of Commerce (2001), World Bank (2002a), and own calculations.

Note: ¹⁾ Average ocean freight and port charges per short ton of import and export cargo.

Note: ²⁾ Average air transport revenue per passenger mile.

Note: ³⁾ Cost of a three-minute telephone call from New York to London.

Above all, the steepest decline in real costs has been observed in communications costs. Supported by deregulation of international telecom markets in various countries, new communications technologies are significantly lowering long-distance communications costs and in particular the cost of rapidly accessing and processing information from any place in the world. For instance, real costs (in 1990 \$US) for a three-minute telephone call from New York to London in the period 1930 to 2000 dropped by no less than 99.9 percent. Because of the current digital revolution in communications technology that began at the end of the 20th century, and the rapid worldwide spread and use of the Internet, communications costs are still declining.

Though developing countries also benefit from these advances, they still face considerably higher transport costs. Shipping costs, for instance, can vary dramatically across countries. According to price quotes from international freight forwarders, it costs US \$1,500 to ship a standard 40-foot container from Baltimore to Rotterdam (Netherlands) (figure 7). Yet the price of shipping the same container to Lima (Peru) is US \$4,000, though the distance from Baltimore is somewhat shorter. The price goes up to US \$13,000 for Beijing (China), Ashkhabad (Turkmenistan), or Kathmandu (Nepal). Even with advances in transport technology, a large number of developing countries continue to be challenged by geography in terms of being landlocked or remote from major world markets.

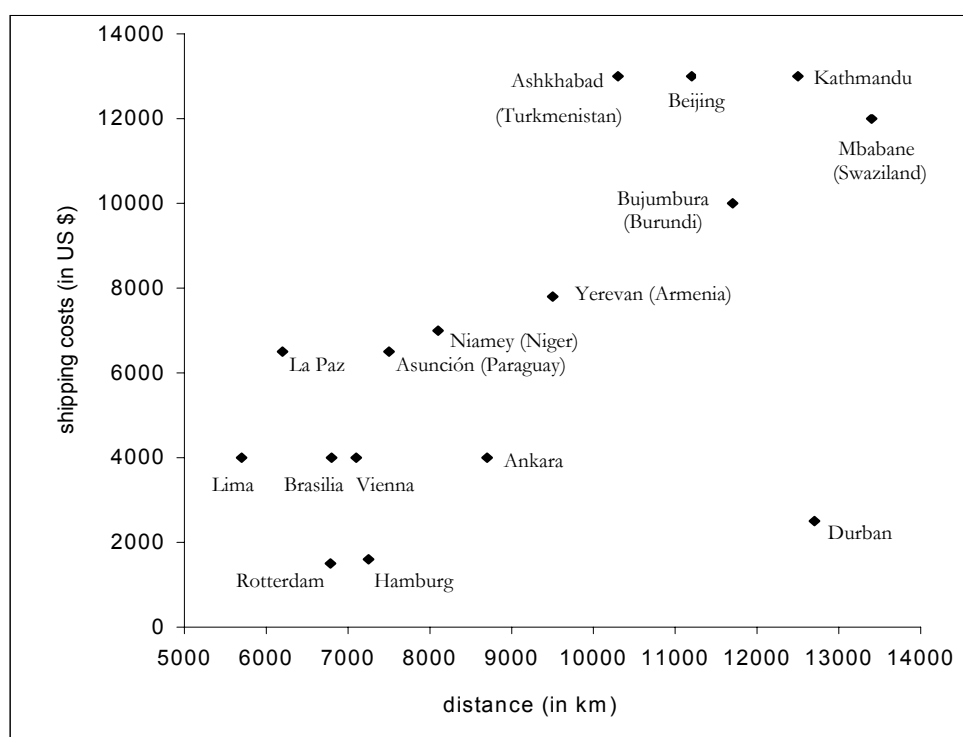


Figure 7 Comparison of shipping costs, October 2002

Source: Limao and Venables (2000 and 2002) and own calculations.

Note: The data refer to the cost of shipping a 40-foot container from Baltimore (United States) to each considered destination. The numbers have been updated and complemented in October 2002 with price quotes of MAERSK, an international freight forwarder. Shipments refer to loosely packed freight and do not include insurance costs.

The (geographic) distance from Baltimore itself cannot justify these remarkable price differences. Apart from geography, transport costs are also determined by the transport infrastructure and the intensity of competition. The relatively poor physical infrastructure and thin traffic densities typically associated with poor developing countries represent important determinants of transport costs. Depending on the particular country involved, relatively high shipping costs thus unquestionably represent a constraining factor for trade and development prospects.

In addition to transport costs, communications expenses also can be considerably higher in developing countries. On average, the cost of a three-minute telephone call from one of the developing countries to the United States is three times as much as from one of the high-income (OECD) countries (see table 1). A comparison on the basis of the communications infrastructure – the numbers of telephone mainlines, fax machines, and Internet hosts per capita – also shows the advantage enjoyed by high-income countries. Again, the relatively poor physical infrastructure typical of the developing countries, combined with lower competition and thinner traffic densities, leads to higher communications costs and therefore higher transaction costs. Within the group of developing countries, the situation with respect to communications infrastructure worsens in the least-developed countries.³ Communications costs are thus even higher in the poorest countries.

Table 1 Comparison of Communications Costs and Infrastructure in Developing and High-Income Countries in Recent Years

Country Group	Average cost of telephone call to US (US\$ per 3 min.) (1998)	Telephone mainlines (per 1,000 people) (2000)	Fax machines (per 1,000 people) (1997)	Internet hosts (per 10,000 people) (1999)
Least-developed countries ^{a)}	7.1	5.3	0.1	0.1
Developing countries ^{b)}	4.7	78.7	1.3	4.2
High-income OECD	1.6	609.1	73.9	629.5
World	4.0	163.1	12.3	94.4

Source: World Bank (2002a)

Note: ^{a)} Currently, there are 48 countries on the United Nations list of least-developed countries, with the majority in sub-Saharan Africa (UNCTAD, 2002); all of them had GDPs per capita of less than US \$900 in 2000 and very low levels of capital, human, and technological development.

Note: ^{b)} According to a World Bank definition, this group consists of 155 low- and middle-income developing countries, each with a GDP per capita of US \$9,265 or less in 2000.

Policy Implications and the WTO Doha Round

Considering the significant differences in the level of transaction costs between poor and high-income countries, the main focus of policy action for developing countries should be on (1) public and private infrastructure investments, (2) competition policy, and (3) international market access in services. Domestic policy action in poor countries is crucial, since government policies play a central role in improving the efficiency of international transport services. Creating a favourable climate for private investments, targeted public infrastructure investments, and regional cooperation on transport matters can lessen limitations imposed by adverse geographic or economic circumstances (World Bank, 2002b). More specifically, the liberalisation of service markets has to focus on the removal of entry barriers in the form of public monopolies or specifically government policies that directly limit

competition. Such policy-imposed restrictions are present in a large number of countries and can apply to nearly all transport services, ranging from port monopolies, public shipping lines, and national flag air carriers, to controlled agency and third party logistics markets and freight forwarding.

Liberalisation of transport services has to be tied in with a strong regulatory and competition policy framework. Regulations are necessary to avoid market failures, and to protect consumer interests and the environment. Adequate regulation can be the key to successful liberalisation of transport services. Even though there is no exclusive model of a good regulator, the experience in many developed and developing countries has shown that clearly defined responsibilities, institutional and some degree of financial independence, well-trained staff, and credibility in the market are important ingredients for the effectiveness of regulations (World Bank, 2002b). Assistance from multinational institutions for the least-developed countries can be supportive, if there is lack of resources or staff within the country.

Both liberalisation and well-designed regulations should help to reduce various forms of transaction costs. Lower costs then translate into lower prices and increase the international competitiveness of products from developing countries. Moreover, multilateral negotiations can be supportive of domestic reforms. Transport services are part of the General Agreement on Trade in Services (GATS). This agreement was one of the outcomes of the Uruguay Round of trade negotiations. It includes, for example, negotiations on cargo reservation policies, discriminatory taxes and subsidies, foreign ownership limitations of service providers and the terms of access to port services (Senti, 2000).

Though the coverage of the GATS is rather broad, not much has been achieved to date on integrating transport services by multilateral trade rules. For example, negotiations on maritime transport services lasted nearly ten years (Fink et al., 2002). Yet only 39 member countries of the WTO were willing to offer commitments, and even those commitments were often encumbered with severe limitations. Also, negotiations in telecommunications and financial services were finally suspended, as no agreement could be achieved.

Considering the slow or nonexistent progress in negotiations on trade in services during and after the Uruguay Round, this leaves much to achieve for mutually beneficial negotiations in the new WTO Doha Round. As called for in the GATS, negotiations on services were resumed in January 2000 (WTO, 2001). The scope was substantially widened and WTO member countries were encouraged to both broaden

and deepen the exchange of commitments in services. Yet it remains to be seen whether the negotiations will be more successful this time.

Even though specific negotiating interests with regard to transport services are still likely to vary from country to country, the benefits of a comprehensive GATS are particularly large for developing countries. Producers and exporters in poor countries would be able to gain better access to world-class services. Based on foreign investment and expertise, they could also advance in international services markets, such as transport services. Above all, transaction costs could fall significantly with an efficient transport and services infrastructure, which is one of the preconditions for economic development. In fact, services such as telecommunications, insurance, banking and transport provide important inputs for all goods and services in the economy. Without the spur of competition, adequate infrastructure and binding multinational GATS rules, transaction costs are unlikely to fall – to the detriment of economic efficiency and growth.

References

- Amelung, Thorsten (1990) *Explaining Regionalization of Trade in Asia Pacific: A Transaction Cost Approach*, Kiel Working Paper No. 423. Kiel: Institute of World Economics.
- Amelung, Thorsten (1991) The Impact of Transaction Costs on the Direction of Trade: Empirical Evidence for Asia Pacific, *Journal of Institutional and Theoretical Economics*, Vol. 147, No. 4, pp. 716-732.
- Baldwin, Richard and Martin, Philippe (1999) Two Waves of Globalization: Superficial Similarities, Fundamental Differences, in Siebert, Horst (ed.), *Globalization and Labour*. Tübingen: Mohr Siebeck, pp. 3-58.
- Blackhurst, Richard; Enders, Alice and Francois, Joseph (1996) The Uruguay Round and Market Access: Opportunities and Challenges for Developing Countries, in Martin, Will and Winters, Alan (eds.), *The Uruguay Round and the Developing Countries*. Cambridge (MA): Cambridge University Press, pp. 125-155.
- Bordo, Michael; Eichengreen, Barry and Irwin, Douglas (1999) *Is Globalization Today Really Different Than Globalization a Hundred Years Ago?* NBER Working Paper No. 7195. Cambridge (MA), June.
- Bougheas, Spiros; Demetriades, Panicos and Morgenroth, Edgar (1999) Infrastructure, Transport Costs and Trade, *Journal of International Economics*, Vol. 47, No. 1, pp. 169-189.
- Fink, Carsten; Mattoo, Aaditya and Neagu, Ileana (2002) Trade in International Maritime Services: How Much does Policy Matter? *The World Bank Economic Review*, Vol. 16, No. 1, pp. 81-108.
- Hufbauer, Gary (1991) World Economic Integration: The Long View, *International Economic Insights*, Vol. 2, No. 3, 26-27.
- Krugman, Paul and Obstfeld, Maurice (2000) *International Economics: Theory and Policy*, 5th edition. New York: Addison Wesley.
- Laird, Sam and Yeats, Alexander (1990) *Trends in Non-tariff Barriers of Developed Countries, 1966-1986*, World Bank Policy Research Paper 137. Washington, DC: World Bank.
- Limao, Nuna and Venables, Anthony (2000) *Infrastructure, Geographical Disadvantage, Transport Costs and Trade*, World Bank Policy Research Paper 2257. Washington, DC: World Bank.
- Limao, Nuna and Venables, Anthony (2002) Geographical Disadvantage: A Heckscher-Ohlin-von Thünen Model of International Specialisation, *Journal of International Economics*, Vol. 58, No. 2, pp. 239-263.
- Milner, Chris (2002) *Protection by Tariff Barriers and International Transport Costs*, Research Paper Series 2002/01, University of Nottingham, mimeo.

- Senti, Richard (2000) *WTO – System und Funktionsweise der Welthandelsordnung (System and Functionality of the World Trade Organisation)*. Zürich: Schulthess.
- Trefler, Daniel (1995) The Case of the Missing Trade and Other Mysteries, *American Economic Review*, Vol. 85, No. 5, pp. 1029-1045.
- UNCTAD (2002) *World Investment Report 2002*. New York and Geneva: United Nations.
- US Department of Commerce (2001) *Statistical Abstract of the United States*. Washington, DC: US Government Printing Office.
- Williamson, Oliver (2001) Transaction Cost Economics, in Schmalensee, Richard and Willig, Robert (eds.), *Handbook of Industrial Organisation, Vol. 1*. Amsterdam: North-Holland.
- World Bank (2002a) *World Development Indicators*, Data on CD-ROM. Washington, DC: World Bank.
- World Bank (2002b) *Global Economic Prospects and the Developing Countries 2002*. Washington, DC: World Bank.
- World Bank (2002c) International Trade and Development: Data on Import Tariffs and NTBs, Internet Posting:
http://www1.worldbank.org/wbiep/trade/TR_Data.html.
- WTO (2001) WTO Ministerial Declaration, Doha, Qatar, 14 November 2001, Internet Posting: <http://www-svca.wto-ministerial.org>.
- WTO (2002) WTO Statistics on Anti-Dumping, Internet Posting:
http://www.wto.org/english/tratop_e/adp_e/adp_e.htm.

Endnotes

1. In this paper, a broader definition of transaction costs has been used, which includes also transportation, communications and border measure costs (see Section 2).
2. See WTO (2001) for an overview of the WTO trade agenda.
3. See Note a) below Table 1 for a definition of least-developed countries.

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