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## Trade logistics and regional integration in Latin America and the Caribbean

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**ADB Working Paper Series**

**Trade Logistics and Regional  
Integration in Latin America and  
the Caribbean**

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**Abstract**

During the past few decades, the landscape of the world economy has changed. New trade patterns reflect the globalization of the supply chain and intra-industry trade, and increasing flows between neighboring countries and trading blocs with similar factor endowments. Similarly, the approach to production, trade, and transportation has evolved incorporating freight logistics as an important value-added service in global production. This integrated approach has become essential, and as such, both the trade agenda and freight logistics are beginning to converge providing an unparalleled opportunity for countries to deepen their integration with neighboring countries and their national performance in transport related services. Consequently, developing countries are finding themselves hard-pressed to adjust their policy agendas to take into account costs not covered in past rounds of trade negotiations.

This paper focuses on the importance of freight logistics in trade facilitation measures, examines the transport and logistics cost in international trade, addresses logistics performance in Latin America and the Caribbean and regional initiatives to advance the integration process and finally, exchanges views on the potential for trade logistics to impact the regional agenda and to deepen integration.

**JEL Classification: F15**

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## LIST OF ABBREVIATIONS

|          |  |
|----------|--|
| ALADI    | Latin American Integration Association                                     |
| APEC     | Asia-Pacific Economic Cooperation  |
| ASEAN    | Association of Southeast Asian Nations                                     |
| CACM     | Central American Common Market   |
| CAN      | Andean Community of Nations  |
| CARICOM  | Caribbean Community  |
| CIS      | Commonwealth of Independent States   |
| EFTA     | European Free Trade Association  |
| ETI      | Enabling Trade Index   |
| EU-27    | European Union   |
| FTAA     | Free Trade Area of the Americas  |
| GATT     | General Agreement on Tariffs and Trade                                     |
| GDP      | gross domestic product   |
| IDB      | Inter-American Development Bank  |
| IIRSA    | Initiative for the Integration of Regional Infrastructure in South America |
| IMF      | International Monetary Fund  |
| ISI      | import substitution industrialization                                      |
| ICT      | information and communication technologies                                 |
| LAC      | Latin America and the Caribbean  |
| LAFTA    | Latin American Free Trade Association                                      |
| LPI      | Logistics Performance Index  |
| MERCOSUR | Single Market for the Southern Cone  |
| NAFTA    | North American Free Trade Agreement  |
| OECD     | Organization for Economic Cooperation and Development                      |
| PPP      | public private partnerships  |
| PRC      | People's Republic of China   |
| SMEs     | small- and medium-sized enterprises  |
| TEN-T    | Trans-European Transport Network   |
| US       | United States  |
| WB       | World Bank   |
| WTO      | World Trade Organization   |

## 1. SUMMARY

During the past half-century, the world trading system has undergone a substantial transformation. Since the early 1960s, world trade has grown at an average annual rate of 6.5% and trade relative to output has more than tripled.<sup>1</sup> In line with these developments or as a consequence of them, the world trading system has brought about changes in governance and spurred technological innovation. On one hand, the evolution of a rules-based system monitored by the World Trade Organization (WTO) has helped establish an environment where beggar-thy-neighbor policies are all but nonexistent and tariff barriers to trade have substantially declined—globally, tariff rates have fallen from close to 30% in the 1980s to about 10% in 2005 (WB 2009c). On the other hand, the development of long-distance maritime transportation and communication technologies has helped reduce trade costs and time of delivery.

The globalization of the supply chain and intra-industry trade—fueled by increased trading of intermediate and final goods, which accounted for 27% of all trade in 2006—have reached unprecedented levels, with increasing opportunities for developing countries to take on ever more active roles in the global economy (Brühlhart 2008). At the same time, scale economies in transport, advances in infrastructure and transport services, containerization, further streamlined processes, and the production of manufactured goods have all led to economic agglomeration and changed the landscape of the world economy. Trade patterns have shifted, with increasing flows between neighboring countries and trading blocs with similar factor endowments.

As a result, countries are rethinking the value of regional trading blocs and creating stronger incentives to deepen integration. Similarly, freight logistics, specialized infrastructure, and trade facilitation measures have become of increasing importance in reducing non-tariff barriers and transportation costs to reap benefits from increased integration. A 10% decrease in freight costs and tariffs would boost bilateral imports of Latin America and the Caribbean (LAC) by 46% and intraregional exports by an average of 60% (IDB 2003). Consequently, developing countries are finding themselves hard-pressed to adjust their trade policy agenda to take into account trade costs not covered in past rounds of trade negotiations.

LAC have been no exception to the new trends in regional trade and transport logistics. Tariffs in the region have declined from over 40% in the mid-1980s to about 10% in 2008, while more than 57 regional integration initiatives have been subscribed between countries and trading blocs since 1990 (WB 2009b; WTO 2009b). Nevertheless, the share of intra-regional trade within the region's major trading blocs has declined—when compared with the commodities trade—or remained at about the same level as in 2000, pointing to limitations in the integration process (WTO 2009b). In part, these have been caused by limited progress in trade facilitation measures, but difficulties have also arisen from deficiencies in funding opportunities and political deadlocks in advancing a more integrated trade and policy agenda.

Thus, despite efforts to increase regional cooperation in trade and infrastructure, LAC shows weak performance when compared not just with industrial countries but also with other developing regions. Logistics performance indicators consistently show LAC countries underperforming relative to other emerging markets, not to mention the member countries of the Organisation for Economic Co-operation and Development (OECD). According to the World Economic Forum's Enabling Trade Index (ETI), which measures and analyzes institutions, policies, and services enabling trade in national economies around the world, LAC ranks above the less-developed Central Asia and sub-Saharan Africa countries.

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<sup>1</sup> Authors' calculation based on WDI (2009).

Furthermore, intra-regional trade within the region's largest trading blocs represented only 13% of total merchandise exports compared with 74% for the 27 members of the European Union in 2007.<sup>2</sup> In large part, physical integration to facilitate intra-regional trade has proved difficult to consolidate due to geographical limitations, complex environmental concerns, and financial restrictions that increase the associated commercial risk of transnational and regional projects and impede a regional physical integration agenda from flourishing.

Nevertheless, although the challenges posed by deepening the process of integration through trade facilitation measures are great and can be costly, the potential benefits of such efforts far outweigh their costs (see Milner, Morrissey, and Zgovu 2005 for a review of associated literature). Increased efficiency in freight logistics and the advancement of trade facilitation infrastructure enables new regional players to enter the global economy—promoting competition, improving distribution thereby reducing logistic costs for companies, and allowing firms to take advantage of market access opportunities created through regional and multilateral trade agreements. However, without a renewed focus on the costs of trade transactions, the region will be unable to take advantage of self-reinforcing production and trade networks. Additionally, economies of scale in production and transportation performance elsewhere may raise the relative costs of doing business in the region and make it more difficult for LAC to compete globally. As such, freight logistics and trade facilitation measures are of paramount importance for the LAC.

Here the role of the Inter-American Development Bank (IDB) is of increasing importance. As political agendas between member states require balance with the development of a cohesive regional political and economic architecture, the IDB can spearhead many of these initiatives as an efficient vehicle for policy, projects, and regional cooperation. The policy recommendations and the agenda developed have been expanded to increase coordination of national trade and freight logistic initiatives while emphasizing the harmonization of cross-border interactions. Policy recommendations included in the Bank's agenda place emphasis on: provision of basic infrastructure, particularly road networks and development of the trucking service industry; improvements in services and regulations that facilitate public-private partnerships, as in port and railroad infrastructure; improved services delivered by the State, such as customs management, border crossings, information and communication technologies (ICT), and security; support for logistic and value chain management development in small and medium-size enterprises, operators, and intermediaries; implementation of an institutional organization for high-quality logistics; integration of an "axis-based" regional infrastructure development criteria, giving priority to projects of greater regional impact; development of financial mechanisms to increase investment in key areas; and commitment to an agenda for productive regional integration and freight logistic services, supporting national and subnational entities in the public and private sectors.

Overall, these initiatives will help the region better cope with a changing international environment and allow it to exploit the positive links between trade, integration, and economic growth.

## 2. INTRODUCTION

The last decades have seen a remarkable opening of international barriers to trade, led in large part by the preceding trade rounds establishing the WTO as well as significant improvements in maritime transportation, freight containerization, and ICT that have helped reduce the time and cost of international commercial exchanges. At the same time, international trade has been widely recognized as one of the most important drivers of economic development, as seen by the experiences of the newly industrialized countries of Asia, specifically the People's Republic of China (PRC), in increasing economic output

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<sup>2</sup> Authors' calculations based on WTO International Trade Statistics (2007). The figures for LAC include MERCOSUR, CARICOM, and CAN.



achieved in large part through export-led growth strategies. Correspondingly, countries searching to expand their markets through increased bilateral trade agreements have also begun to look within their regions. More than a third of world trade occurs within the 32 regional trading blocs currently ratified by the WTO—most countries are members of at least one of these blocs (WB 2009b). In many cases, deeper regional integration has not only increased the bargaining power of developing countries at the global level but has also created opportunities to exploit intra-regional trade and the positive links between trade and economic growth.

Recognizing the potential benefits of increased trade liberalization, countries in LAC have embarked on a transformational process to reduce their trade barriers, increase bilateral trade agreements, and deepen their integration process. Since the mid-1980s, the region reduced its average tariffs from around 40% to 9.7% in 2007 while its export share of gross domestic product increased from 13% in 1980 to 23% in 2008 (WB 2009b). For the same time period, the region increased its exports by an average growth rate of 6%, with manufacturing goods representing 16% of exports at the beginning of the period and 54% by 2007 (WB 2009b). Since 1990, 31 south-south and 26 north-south bilateral and multilateral trade agreements have been signed and ratified, while a further 17 are currently under negotiation (WTO 2008).

Despite these achievements, the region continues to lag behind most industrialized countries and many developing regions in its efforts to secure the benefits from increased trade liberalization and deeper regional integration.

The region's reduction in average applied tariffs on manufacturing remained over the world average (8.9%) for 2007 as well as over that of middle-income developing countries (8.7%) and considerably higher than high-income OECD countries (2.9%, with the United States (US) having an average tariff of 2.7% and the EU-27 1.6%).<sup>3</sup> The region has been unable to maintain its share of world merchandise exports and has seen its participation drop from 11.3% in 1948 to 3.7% in 2007, while Asia increased its share from 14% to 28% in the same time period (WTO 2008).

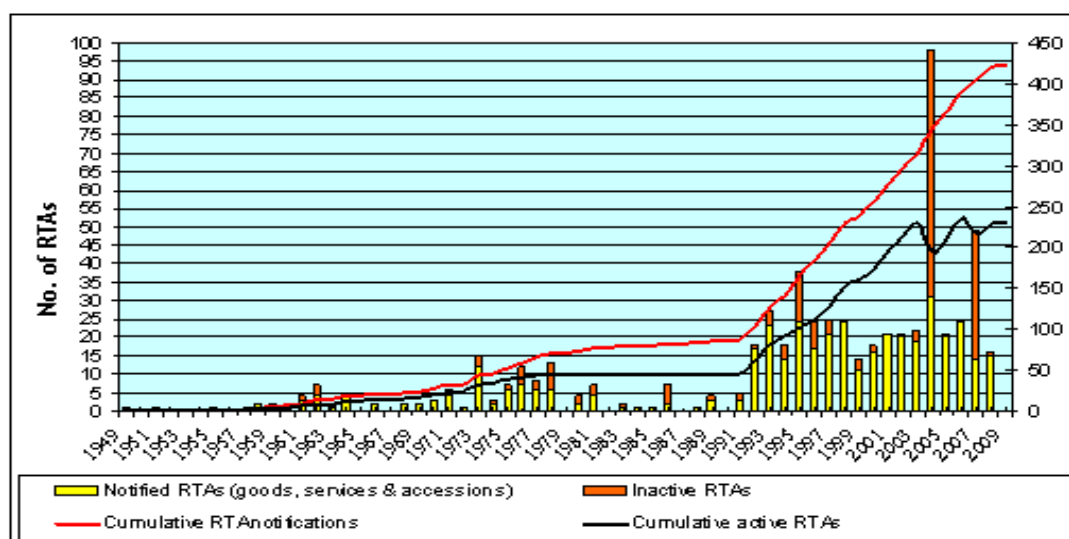
Despite efforts toward increased regional integration, intra-regional trade within the largest trading blocs represented only 13% of total merchandise exports, compared with 25% for the Association of Southeast Asian Nations (ASEAN), 51% for the signatory countries of the North American Free Trade Agreement (NAFTA), and 74% for the European Union (EU-27) in 2007.<sup>4</sup> In 2008 the Union of South American Nations (UNASUR), modeled on the EU-27, was ratified by the 12 countries of South America as an intergovernmental union integrating the regional agreements in the region (the Common Market for the South (MERCOSUR) and the Andean Community of Nations (CAN)), as part of a continuing process of South American integration.

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<sup>3</sup> World Bank dataset on trends in average applied tariff rates. See <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:21051044~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html> for more information.

<sup>4</sup> WTO International Trade Statistics (2009). The figures for LAC include MERCOSUR, CARICOM, and CAN.

**Figure 1: Regional Trade Agreements Notified to General Agreement on Tariffs and Trade/WTO (1948–2008), Including Inactive Agreements, by Year of Entry into Force<sup>5</sup>**



Source: WTO Secretariat (2009).

**Table 1: Intraregional Exports of Major Trading Blocs (percentage of merchandise exports, (1990–2007))**

| Trading Bloc     | Intraregional Exports            |      |      |
|------------------|----------------------------------|------|------|
|                  | (% of total merchandise exports) |      |      |
|                  | 1990                             | 2000 | 2007 |
| ASEAN            | 20                               | 24   | 25   |
| EU-27*           | 71                               | 74   | 74   |
| ANDEAN COMMUNITY | 4                                | 8    | 8    |
| CARICOM**        | 12                               | 20   | 16   |
| MERCOSUR***      | 9                                | 21   | 14   |
| NAFTA****        | 43                               | 56   | 51   |

\* EU-27 1990 data corresponds to trade within Western Europe .

\*\* CARICOM data for 2006 was used since 2007 was still unavailable.

\*\*\* MERCOSUR was signed in 1991.

\*\*\*\* NAFTA was signed in 1994

Source: WTO (2000, 2008); CARICOM (2000, 2009).

One explanation for why LAC countries have lagged in their integration into the world trading system is their inability to cope with a globalization process that is inherently transport-intensive and where supply chains are now being organized on a global scale. Technological innovations driven by transport technology developments have changed the economic landscape of the world, allowing countries to exploit economies of scale in both the transport and the production of manufactured goods. However, the region does not invest enough in infrastructure and logistics to benefit from these economies of scale, particularly since their investment is outpaced by investments into infrastructure and logistics in other regions.

During the past two decades, infrastructure investment in LAC has been shaped by drastic fiscal adjustment measures arising from macroeconomic crises, by incorporation of private investment in infrastructure that has not increased enough to cover the substantial decline in public financing, and by a concentration of financing in a limited number of countries and

<sup>5</sup> WTO Secretariat. See [http://www.wto.org/english/tratop\\_e/region\\_e/regfac\\_e.htm](http://www.wto.org/english/tratop_e/region_e/regfac_e.htm) for more information.

sectors.<sup>6</sup> In 1980, the region's coverage of productive infrastructure, including roads, electricity, and telecommunications networks was higher than in the newly industrialized countries of Asia. Today, they lead LAC by a factor of three to two. While LAC spent on average less than 2% of gross domestic product (GDP) in 2005 on infrastructure, down from 3.7% from 1980–85 (WB 2005), Asian countries invested 7% (ADB 2005).

An array of logistic performance indicators shows the region lagging behind most industrialized countries and several developing regions. The 2009 ETI shows LAC achieving an overall score of 3.76 out of 6, with the global average 4.27. Similarly, the Logistics Performance Index overall ranking positions LAC countries behind those of the Middle East and Northern Africa as well as the industrialized countries of Asia, with its lowest scores in customs performance (2.37 out of 5) and infrastructure (2.38). Poor logistics performance has also led to higher transportation costs for the region relative to its counterparts—currently, logistics costs in LAC range between 18 and 34% of product value, while the OECD benchmark is 9% (Guasch and Kogan 2006).

Increasingly, the infrastructure and freight logistics gap between LAC and other regions is being analyzed as one of the root causes of the limited potential output gains from economic and trade related policies. Calderón and Servén (2004) suggest that if LAC countries caught up to the region's leader in terms of infrastructure quantity and quality, their long-term per capita growth gains would range between 1.1 and 4.8% per annum. Furthermore, if they caught up to the East Asian median country (Republic of Korea), the potential growth rate gains would range from 3.2 to 6.3%. This scenario requires the region to have an uninterrupted infrastructure investment rate between 5 and 7% of GDP for 20 years to maintain current infrastructure and to further expand the network. However, achieving this requires substantial investment and sound policies, strong and robust institutions, and sensible investment planning.

As a result of underinvestment in infrastructure and poor performance in freight logistics, the LAC region is pressed to rethink its trade facilitation agenda to incorporate physical integration projects, transport services, and specialized logistic infrastructure in an effort to reduce non-traditional trade costs. Djankov, Freund, and Pham (2006) show that each additional day that a product is delayed prior to being shipped reduces trade by more than 1%—equivalent to a country distancing itself from its trading partners by about 70 kilometers.

Without a renewed focus on trade facilitation measures—including physical infrastructure and overall land use, planning for logistic corridors and multimodal transport services, and regulatory frameworks to simplify international trade procedures—the region will continue to be left out of self-reinforcing production and trade networks while transport and logistics costs will make it more difficult to compete globally.

This paper is organized as follows. The first section focuses on the historical process of regional integration experienced by LAC countries, highlighting future concerns for deeper integration. The second section highlights recent developments in the global economy and its effects on international trade with and within LAC countries. The third and fourth sections look at the increasing importance of trade logistics and transport costs in the global economy. The fifth section analyzes the region's performance in terms of logistics and physical integration. The sixth section looks at existing regional initiatives to advance the physical integration of the region. The final section examines the future of trade logistics in LAC and the agenda to deepen regional integration, with particular emphasis placed on the actual and potential role of the IDB.

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<sup>6</sup> According to the World Bank, between 1990 and 2003, 93% of private investment (by total project value) in LAC infrastructure went to just six countries (Argentina, Brazil, Chile, Colombia, Peru, and Mexico) and was concentrated in telecommunications and energy sectors (WB 2005).

## 2.1 Trade agreements and regional integration in LAC

The postwar period has been marked by two important phenomena in the political economy of trade relations. First, globalization has changed the economic geography of the world, with increased population density, larger concentrations of populations in urban spaces, and far better and more complex transport networks. These have led to cost reductions and just-in-time production methods. Second, regionalism has marked developments in the global trading system, driven by the same forces as globalization and by the democratization of political power and the search for stability in once-volatile areas of the world. Currently there are over 200 regional trade agreements, 90% of which have been notified to the WTO since 1990 (WTO 2009a).

These phenomena are in large part a result of successive efforts to establish a rules-based world trading system. Multilateral negotiations through the General Agreement on Tariffs and Trade in 1947 led to the establishment of the WTO in 1995, whose membership is growing (153 countries to date). The reduction in tariffs across the world has significantly expanded opportunities for countries to participate in the world economy. LAC have been active participants in these transformational processes which deepened considerably since the 1990s, with unilateral opening of economies and increased regional trade agreements.

Latin America has had a long tradition of regional cooperation and integration strengthened in the 1960s through the rise of import-substituting industrialization (ISI) development strategies and the creation of the Latin American Free Trade Association (LAFTA) in South America and the Central American Common Market (CACM).<sup>7</sup> Briefly, ISI strategies focused on promoting infant industries through high levels of external protection, state participation, and investment regulation, with the promise of achieving export-led growth and decreased dependence on industrial countries. Regional integration provided an opportunity to deepen the potential of ISI through a larger market. This allowed the infant industries to grow in size and create production efficiencies until they were able to compete. Consequently, LAFTA and CACM became the first formal attempts to harmonize trade flows and increase regional integration in Latin America.

However, ISI policies did not establish macroeconomic stability and economic growth; the first attempt at regional integration was unsuccessful due to a complicated political and economic climate. Among many factors, the region had an intrinsic tendency for national protectionism marked by tension between the state and private sector. Trade negotiations did not provide sufficient incentives to create a rule-based system whereby the benefits accrued from increased exchange would be evenly distributed to member countries. Finally, the development of national and regional infrastructure, coupled with low levels of investment and maintenance as well as poor transport services, limited gains from increased regional cooperation.

Caribbean states had a remarkably different history of economic integration, given the late independence of many of the islands from primarily Anglo-Saxon colonial rule, which stymied the first attempts at economic integration (the West Indies Federation was established in 1958 under British dictate but collapsed with the withdrawal of Jamaica in 1962).

With independence, the Caribbean Free Trade Association was established in 1968 (modeled on the European Free Trade Association) to promote liberalized trade between its members, although few efforts were made to establish extra-regional trade relations. As a result of this, as well as of the uneven benefits accrued by its member nations, the free trade agreement was dropped in favor of the Caribbean Community (CARICOM), which was established in 1973.

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<sup>7</sup> In 1980, LAFTA gave way to the Latin American Integration Association (or ALADI).

In the 1990s, following what is now commonly referred to as the debt crisis and the structural reforms promoting trade and financial liberalization that ensued, LAC entered into a period of revived regionalism still present today. The policy framework established during this period set the stage for unilateral measures to reduce traditional barriers to trade while promoting open and competitive economies (see Devlin and Estevadeordal 2001). Furthermore, it encouraged a development strategy based on recognition of the economic and political benefits of increased cooperation and trade by securing reform through institutional and rules-based arrangements.

This cooperation initially led to an increasing number of North-South reciprocal trade agreements, followed by a rethinking of traditional approaches to integration in the region. Since 1960, a total of 37 south-south and 26 north-south bilateral and multilateral trade agreements have been notified to the WTO and a further 17 are currently under negotiation (WTO 2009a). Simultaneously, average tariffs in the region have declined from over 40% in the mid-1980s to about 10% in 2008.

Importantly, sub-regional initiatives, including MERCOSUR, CAN, and CARICOM, did not limit their agreements to trade but incorporated structural aspects to reform their institutional environment and build longer-term strategic policies to compete in the world trading system. These included agreements in standards, transport, customs cooperation, services, investment, dispute settlement, labor (except for MERCOSUR), and competition, while none included agreements concerning intellectual property rights—a clause included in all North-South trade agreements with Latin America except for the Canada-Chile agreement signed in 1997 (WB 2005). Through these agreements, countries sought to enforce internal regulatory measures as well as capture the benefits of increased opportunities for export diversification, foreign direct investment, greater specialization, product differentiation, and intra-industry trade resulting from increased market access and a clear regulatory framework.

**Table 2: Major Regional Trading Blocs in the World**

| Regional Trade Agreement by Region                     | Year of Notification | Type     | % of World Merchandise Exports |      |      |      |
|--|----------------------|----------|--------------------------------|------|------|------|
|  |                      |          | 1990                           | 1995 | 2000 | 2007 |
| <b>High-income and low-and middle-income economies</b> |                      |          |                                |      |      |      |
| APEC   | 1989                 | None     | 68.7                           | 71.7 | 73.1 | 67.4 |
| EEA  | 1994                 | EIA      | 69.4                           | 67.3 | 68.6 | 69   |
| EFTA   | 1960                 | EIA      | 0.7                            | 0.7  | 0.6  | 0.7  |
| EU-27  | 1957                 | EIA, CU  | 67.8                           | 65.8 | 67.3 | 67.5 |
| NAFTA  | 1994                 | FTA, EIA | 42.2                           | 46.2 | 55.7 | 51.3 |
| SPARTECA   | 1981                 | PTA      | 10.5                           | 12.9 | 10.7 | 10.5 |
| Trans-Pacific SEP                                      | 2006                 | EIA, FTA | 1.5                            | 1.7  | 0.8  | 0.8  |
| <b>East Asia, Pacific, and South Asia</b>              |                      |          |                                |      |      |      |
| APTA   | 1975                 | PTA      | 3.3                            | 6.8  | 8    | 11.2 |
| ASEAN  | 1967                 | FTA      | 19.8                           | 24.5 | 23   | 25.2 |
| PICTA  | 2001                 | FTA      | 0.2                            | 1    | 1.7  | 2    |
| SAARC  | 1985                 | FTA      | 3.6                            | 4.4  | 4.2  | 5.3  |
| <b>Europe, Central Asia, and the Middle East</b>       |                      |          |                                |      |      |      |
| CEFTA  | 1992                 | FTA ..   |                                | 7.8  | 15.3 | 16.8 |
| CIS  | 1991                 | FTA ..   |                                | 28.6 | 20   | 19.8 |
| COZ  | 2003                 | FTA ..   |                                | 23.8 | 17.1 | 16.2 |
| EAEC   | 1997                 | CU ..    |                                | 14.8 | 12.5 | 11.8 |
| ECO  | 1985                 | PTA      | 3.2                            | 7.9  | 5.6  | 9.2  |
| GCC  | 1981                 | CU       | 5.8                            | 6.8  | 4.8  | 5.4  |
| PAFTA (GAFTA)  | 1997                 | FTA      | 8.9                            | 9.8  | 7.2  | 10.6 |
| UMA  | 1989                 | NNA      | 3.3                            | 3.8  | 2.2  | 2.3  |
| <b>LAC</b>   |                      |          |                                |      |      |      |
| CAN  | 1969                 | CU       | 5.6                            | 8.6  | 7.7  | 7.4  |
| CACM   | 1961                 | CU       | 17.6                           | 21.8 | 19.1 | 17   |
| CARICOM  | 1973                 | CU       | 8.2                            | 12.1 | 14.4 | 15.7 |
| LAIA (ALADI)   | 1980                 | PTA      | 12.2                           | 17.3 | 13.2 | 15.1 |
| MERCOSUR   | 1991                 | CU       | 9.9                            | 18.9 | 16.4 | 12.8 |
| OECS   | 1981                 | NNA      | 9                              | 12.6 | 10   | 8.1  |
| <b>Sub-Saharan Africa</b>                              |                      |          |                                |      |      |      |
| CEMAC  | 1994                 | CU       | 2                              | 2.1  | 1    | 1.1  |
| COMESA   | 1994                 | FTA      | 3.6                            | 6.1  | 4.6  | 4.7  |
| EAC  | 1996                 | CU       | 7.4                            | 19.5 | 22.6 | 20.4 |
| ECCAS  | 1983                 | NNA      | 1.3                            | 1.5  | 1    | 0.6  |
| ECOWAS   | 1975                 | PTA      | 9.7                            | 9    | 7.6  | 9.4  |
| Indian Ocean Commission                                | 1984                 | NNA      | 4.8                            | 5.9  | 4.4  | 5.7  |
| SADC   | 1992                 | FTA      | 17.9                           | 32.8 | 9.5  | 10.1 |
| UEMOA  | 1994                 | CU       | 11.3                           | 10.3 | 13.1 | 15.2 |

Types: CU is customs union; EIA is economic integration agreement; FTA is free trade agreement; NNA is not notified agreement; and PTA is preferential trade agreement.

Source: WTO Secretariat (2009); WB (2005).

Note: Regional bloc memberships are as follows: Andean Community, Bolivia, Colombia, Ecuador, and Peru; Arab Maghreb Union (UMA), Algeria, Libyan Arab Republic, Mauritania, Morocco, and Tunisia; Asia Pacific Economic Cooperation (APEC), Australia, Brunei Darussalam, Canada, Chile, PRC, Hong Kong, China, Indonesia, Japan, the Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Taipei, China, Thailand, the United States, and Vietnam; Asia-Pacific Trade Agreement (APTA); formerly Bangkok Agreement), Bangladesh, PRC, India, the Republic of Korea, the Lao People's Democratic Republic, and Sri Lanka; Association of South East Asian Nations (ASEAN), Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam; Caribbean Community and Common Market (CARICOM), Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago; Central American Common Market (CACM), Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua; Central European Free Trade Area (CEFTA), Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Moldova, Montenegro, and Serbia; Common Economic Zone (COZ), Belarus, Kazakhstan, the Russian Federation, and Ukraine; Common Market for Eastern and Southern Africa (COMESA), Burundi, Comoros, the Democratic Republic of Congo, Djibouti, the Arab Republic of Egypt, Eritrea, Ethiopia, Kenya, Libyan Arab Republic, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, and Zimbabwe; Commonwealth of Independent States (CIS), Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan; East African Community (EAC), Burundi, Kenya, Rwanda, Tanzania, and Uganda; Economic and Monetary Community of Central Africa (CEMAC; formerly Central African Customs and Economic Union -UDEAC), Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Guinea, and Gabon; Economic Community of Central African States (ECCAS), Angola, Burundi, Cameroon, the Central African Republic, Chad, the Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea, Gabon, and São Tomé and Príncipe; Economic Community of West African States (ECOWAS), Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo; Economic Cooperation Organization (ECO), Afghanistan, Azerbaijan, the Islamic Republic of Iran, Kazakhstan, the Kyrgyz Republic, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan; Eurasian Economic Community (EAEC), Belarus, Kazakhstan, Kyrgyz Republic, the Russian Federation, Tajikistan, and Uzbekistan; European Economic Area (EEA), European Union plus Iceland, Liechtenstein, and Norway; European Free Trade Association (EFTA), Iceland, Liechtenstein, Norway, and Switzerland; European Union (EU; formerly European Economic Community and European Community), Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom; Gulf Cooperation Council (GCC), Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates; Indian Ocean Commission, Comoros, Madagascar, Mauritius, Réunion, and Seychelles; Latin American Integration Association (LAIA; formerly Latin American Free Trade Area), Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Bolivarian Republic of Venezuela; North American Free Trade Agreement (NAFTA), Canada, Mexico, and the United States; Organization of Eastern Caribbean States (OECS), Anguilla, Antigua and Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines; Pacific Island Countries Trade Agreement (PICTA), Cook Islands, Fiji, Federated States of Micronesia, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu; Pan-Arab Free Trade Area (PAFTA); also known as Greater Arab Trade Area [GAFTA]), Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, Tunisia, the United Arab Emirates, and Yemen; South Asian Association for Regional Cooperation (SAARC), Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka; South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA), Australia, Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, New Zealand, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western Samoa; Southern African Development Community (SADC), Angola, Botswana, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe; Southern Common Market (MERCOSUR), Argentina, Brazil, Paraguay, Uruguay, and Bolivarian Republic of Venezuela; Trans-Pacific Strategic Economic Partnership (Trans-Pacific SEP), Brunei Darussalam, Chile, New Zealand, and Singapore; West African Economic and Monetary Union (UEMOA), Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo.

**Table 3: Trade Agreements in LAC, South–South Agreements**

| <b>South - South Agreements</b>  |                          |                                      |
|--|--------------------------|--------------------------------------|
| <i>Participating Countries/Trading Blocs</i>                           | <i>Year of Signature</i> |                                      |
| Central American Common Market (CACM)                                  | 1961                     | <b>Customs Union</b>                 |
| Caribbean Community (CARICOM)  | 1973                     |                                      |
| Andean Community (CAN)   | 1988                     |                                      |
| Southern Cone Common Market (MERCOSUR)                                 | 1994                     |                                      |
| Latin American Integration Association (ALADI)                         | 1980                     | <b>Preferential Trade Agreements</b> |
| Global System of Trade Preferences among Developing Countries (GSTP)   | 1989                     |                                      |
| Chile - India  | 2007                     |                                      |
| Programa de Integración y Cooperación entre Argentina y Brasil (PICAB) | 1986                     | <b>Free Trade Agreements</b>         |
| Central American Integration System (SICA)                             | 1993                     |                                      |
| Chile-Venezuela  | 1993                     |                                      |
| Bolivia-Mexico   | 1994                     |                                      |
| Group of Three (G-3)   | 1994                     |                                      |
| Costa Rica - Mexico  | 1995                     |                                      |
| Bolivia-MERCOSUR   | 1996                     |                                      |
| Chile-MERCOSUR   | 1996                     |                                      |
| Chile-Peru   | 1998                     |                                      |
| Mexico - Nicaragua   | 1998                     |                                      |
| Chile - Mexico   | 1999                     |                                      |
| Chile- Central American Common Market (CACM)                           | 1999                     |                                      |
| CARICOM-Dominican Republic   | 2000                     |                                      |
| Mexico-Northern Triangle of Central America                            | 2000                     |                                      |
| El Salvador - Mexico   | 2001                     |                                      |
| Guatemala - Mexico   | 2001                     |                                      |
| Chile - Costa Rica   | 2002                     |                                      |
| Costa Rica-Trinidad and Tobago   | 2002                     |                                      |
| MERCOSUR - Comunidad Andina  | 2002                     |                                      |
| MERCOSUR - Perú  | 2003                     |                                      |
| Panama - El Salvador   | 2003                     |                                      |
| Bolivarian Alliance for the Americas (ALBA)                            | 2004                     |                                      |
| CARICOM - Costa Rica   | 2004                     |                                      |
| MERCOSUR - India   | 2004                     |                                      |
| MERCOSUR - Colombia  | 2005                     |                                      |
| Chile - PRC  | 2006                     |                                      |
| Panama - Chile   | 2008                     |                                      |
| Panama - Costa Rica  | 2008                     |                                      |
| Union of South American Nations (UNASUR)                               | 2008                     |                                      |
| Chile - Colombia   | 2009                     |                                      |
| Brazil-PRC   | T.B.A                    | <b>Under Negotiation</b>             |
| Brazil-Russia  | T.B.A                    |                                      |
| Central American Common Market - Dominican Republic                    | T.B.A                    |                                      |
| Mexico-Ecuador   | T.B.A                    |                                      |
| Mexico-Panama  | T.B.A                    |                                      |
| Mexico-Peru  | T.B.A                    |                                      |
| Mexico-Trinidad and Tobago   | T.B.A                    |                                      |

**Source:** WTO Secretariat ; IDB (2002).



**Table 4: Trade Agreements in LAC, North–South Agreements**

| North - South Agreements   |                              |
|--|------------------------------|
| Participating Countries/Trading Blocs  | Year of Signature            |
| North American Free Trade Agreement (NAFTA)  | 1994                         |
| Canada - Chile   | 1997                         |
| Mexico-European Union  | 1999                         |
| Israel - Mexico  | 2000                         |
| European Free Trade Association - Mexico   | 2001                         |
| Canada - Costa Rica  | 2002                         |
| Chile-European Union   | 2002                         |
| European Free Trade Association - Chile  | 2004                         |
| Korea, Republic of - Chile   | 2004                         |
| Panama and the Separate Customs Territory of Taipei,China, Penghu, Kinmen and Matsu    | 2004                         |
| United States - Chile  | 2004                         |
| Japan - Mexico   | 2005                         |
| Dominican Republic - Central America - United States Free Trade Agreement (CAFTA-DR)   | 2006                         |
| Panama - Singapore   | 2006                         |
| Trans-Pacific Strategic Economic Partnership   | 2006                         |
| Chile - Japan  | 2007                         |
| MERCOSUR- Israel*  | 2007                         |
| United States - Panama   | 2007                         |
| Canada - Colombia  | 2008                         |
| EC - CARIFORUM States Economic Partnership Agreement                                   | 2008                         |
| European Free Trade Association - Colombia   | 2008                         |
| Nicaragua and the Separate Customs Territory of Taipei,China, Penghu, Kinmen and Matsu | 2008                         |
| Australia - Chile  | 2009                         |
| Canada - Peru  | 2009                         |
| Peru - Singapore   | 2009                         |
| United States - Peru   | 2009                         |
|  | <b>Free Trade Agreements</b> |
| Canada - El Salvador - Guatemala - Honduras - Nicaragua                                | T.B.A.                       |
| Korea, Republic of - Mexico  | T.B.A.                       |
| Canada - Caribbean Community   | T.B.A.                       |
| Canada - Dominican Republic  | T.B.A.                       |
| European Free Trade Association - Peru   | T.B.A.                       |
| Andean Community - European Union  | T.B.A.                       |
| Central American Common Market - United States   | T.B.A.                       |
| Caribbean Community-European Union   | T.B.A.                       |
| Mercosur-European Union  | T.B.A.                       |
| Uruguay-United States  | T.B.A.                       |
|  | <b>Under Negotiation</b>     |

\* Not signed by Venezuela.

**Source:** WTO Secretariat IDB (2002).

More recently, initiatives aimed at establishing a hemispheric cross-continental market, namely the Free Trade Area of the Americas (FTAA), have met with less success. These highlight the political limitations the region faces in moving forward on a common agenda for deeper integration (Estevadeordal et al. 2003). Equally important to note are some of the potential costs of increased regional commercial integration, such as trade and investment diversion away from other world markets, conflicts arising from asymmetric development impacts of regional integration, and, perhaps most important, the administrative and institutional strain caused by a web of different trade arrangements.<sup>8</sup>

Only four of the 39 countries in LAC are not part of any regional trade agreement, while the average number of regional trade agreements per country is eight (WTO 2009a). Complex trade agreements can increase trade costs through customs procedures, technical standards, and complex rules of origin that undermine efforts to facilitate trade between countries. A recent study by Estevadeordal and Robertson (2009) finds significant evidence of an increasing tariff effect that is consistent with trade diversion as a result of the proliferation of bilateral agreements in LAC that has coincided with declining enthusiasm for further multilateral liberalization, in particular, the FTAA. These findings present a challenge

<sup>8</sup> For more on this see Bhagwati and Krueger (1995).

to policy makers to develop a framework where trade agreement costs are minimized and productivity gains from increased trade and regional cooperation are better distributed.

Among the most important challenges the region faces for the future of integration is the development of regional infrastructure. Given the size, complex geographical limitations, and environmentally sensitive areas of rainforest and valuable biodiversity, the region has consistently lacked quality infrastructure for regional integration. Traditional urban settlement principles that clustered along valleys and “internal regions” have prevented countries from effectively pursuing a more systematic approach to infrastructure development and long distance land-based transport networks.

As a result of encroaching development principles and a lack of combined land and territorial planning, the region underperforms in a series of indicators. This reflects a chronic underinvestment in new infrastructure and maintenance of existing projects, especially in terms of the road network, efficiency and capacity of ports, and readiness of airport infrastructure. In both the Logistic Performance Index (LPI) and the ETI, LAC ranks below the world average in terms of transport and communications infrastructure and related national and international transport shipment services. Furthermore, according to a 2007 ranking of ports, only eight out of 125 ports by total cargo volume were located in LAC while 11 made the ranking in terms of container traffic (Lloyds 2009).

Recent developments in the global economy shed light on international trade trends in LAC and the role that the PRC and India will play in driving the demand for commodities. In 2008, the global economy entered the most severe economic recession in the post-war period. The gross world product contracted by 6.25% (annualized) in the fourth quarter of 2008 (representing a remarkable turn of events, given the 4% growth a year earlier) and global activity was projected to decline by 1.3% in 2009 (IMF 2009). Even countries with largely diversified export sectors and trading partners are being adversely affected by the contraction. Global production and supply chains are by and large more integrated than in the past, which has been an added shock for productive forces. In addition, given the nature of the present crisis and its roots in financial markets, the availability and affordability of trade finance, which has been substantially reduced, has further weakened prospects of recovery, although coordination from international institutions and financial centers is ongoing and could alleviate the need for long-term financing.

While LAC countries are not as reliant on foreign trade as other regions, they have not been exempt from the severity of the global economic recession, despite the fact that exports as a percentage of GDP represent only 23% for the region, 10% below the world average and far from the Euro area (41%) and East Asia (35%) (WB 2009b). Commodity prices reached record peaks, expected to drop by over 33% compared with 2008 and recover only 3% in 2010. For Central American and Caribbean countries, which are net commodity importers, the overall effect of declining commodity prices on their terms of trade has been positive, enabling them to maintain healthy balances in their international reserves from the low cost of fuel imports. Their external financial linkages are generally limited and the impact of the crisis was not as significant as in other areas of the region. Net commodity exporters with inflation-targeting regimes (Brazil, Chile, Colombia, Mexico, and Peru) have been adversely affected by declining commodity prices, causing their terms of trade to shift.

As a consequence of the crisis, a rise in protectionist measures threatens recovery of world trade growth to its pre-crisis levels. In 2008, anti-dumping investigations increased by 28% from the year before (WTO 2009b). Many countries have adopted policies to maintain production and consumption within their national borders—usually through non-tariff trade barriers, which are easier to disguise and more difficult to sanction, and contingency measures, including increased anti-dumping measures. Although these have proved in most cases to be transitory measures and closely linked to falling economic activity, their widespread use reduces the possibility of negotiating international arrangements and limits

the rapidity and depth of substantial recovery in international trade flows. The Doha round<sup>9</sup> of trade talks, will be difficult to revive in such an environment.

Developing countries—led by Brazil, India, the PRC, and Russia—are feeling empowered to take a leading role in negotiations concerning the international financial architecture and world trading system after this most recent crisis. Most important, and spearheaded by Brazil, Chile, and Peru in the region, Asia has risen as a new player with growing importance for future trade relations with LAC. Trade along the Pacific Rim is growing, with important contributions of the Asia-Pacific Economic Cooperation, which has deepened the process of integrating emerging markets in Asia and LAC. South American commodity exporters see this mostly as a new market, lifting export volumes and world prices, while Mexico and Caribbean countries perceive these linkages as an increased source of competition, especially from the PRC and its ability to attract foreign direct investment flows.

The importance of India and the PRC as a destination for LAC exports has increased fourfold since 1990. Trade with the PRC has grown at an annual rate of 40% since 2003, the same year that the nation became Brazil's largest trading partner (The Economist 2009). Lederman, Olarreaga, and Soloaga (2007) show that, overall, the growth of the PRC and India in world markets is an opportunity for LAC exporters and importers—accounting for up to 8% of LAC exports in 2004, mainly driven by the PRC. Furthermore, they study concluded there is no robust evidence of substitution between the PRC's trade flows and LAC exports to third markets (Lederman, Olarreaga, and Soloaga 2007). As trade relations grow and the PRC continues to play an ever more important role in the world economy, and in LAC in particular (becoming a member of the IDB in 2008), economic cooperation with the PRC will be a source of increased value to trade relations through knowledge-sharing and technology transfers (Devlin, Estevadeordal, and Rodríguez-Clare 2006).

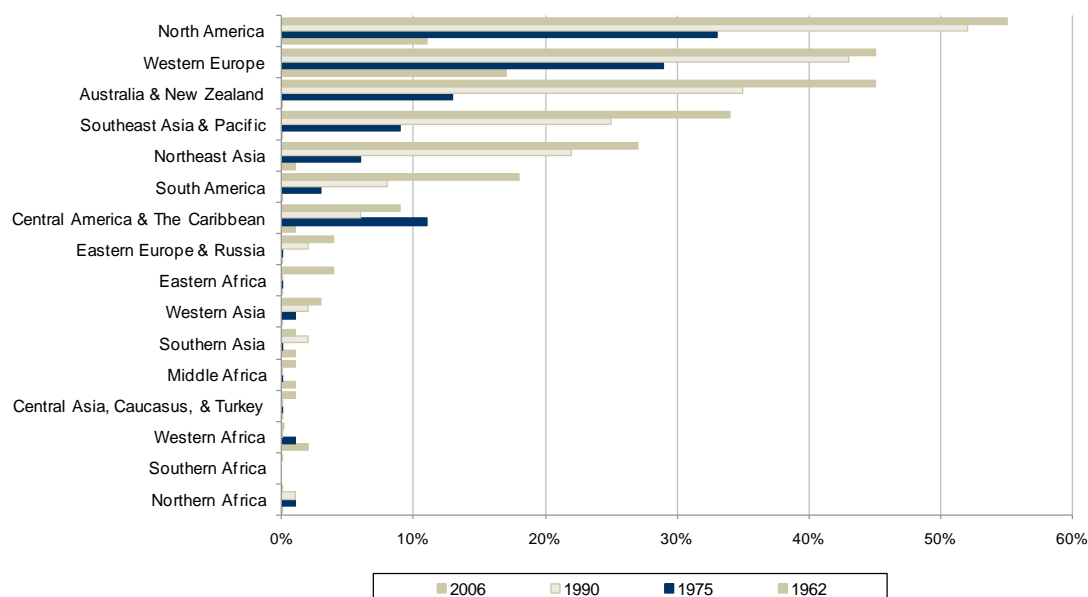
Nonetheless, these opportunities have yet to be fully exploited, given the size of the markets served. In order to do so, the region needs to address deficiencies in the quality of infrastructure together with rigid regulatory frameworks and weak freight logistics.

## 2.2 Transport and Logistics Costs in International Trade and Logistic Performance in LAC

World trade patterns are constantly changing due to advances in technology, including those in the area of logistics services and transport. As technologies for manufactured production have become more available, trade in intermediate and final goods has increased, creating greater opportunities for countries to reap benefits from specialization. In 2006, intra-industry trade accounted for 27% of all trade; however, it is highly concentrated in North America, Europe, and Australia (accounting for half of all intra-regional trade) as well as Southeast Asia (roughly 35%), while the figure for LAC is closer to 15% (Brühlhart 2008).

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<sup>9</sup> The WTO Doha Development Round or Doha Development Agenda (DDA) is the current trade-negotiation round which commenced in November 2001 in Doha, Qatar. Though its objective is to lower trade barriers to goods, open up services markets, and strengthen rules to mitigate against protectionism, the talks have been unable to overcome entrenched positions on major issues, such as [agriculture](#), industrial [tariffs](#) and [non-tariff barriers](#), services, and trade remedies.

**Figure 2: Grubel-Lloyd Index of Intra-industry Trade by Region**

Source: Brühlhart (2008).

As countries increase their trade in manufactured goods and as supply chains become vertically integrated in a global production process, international trade patterns reflect increased commerce with neighboring markets with similar production and consumption capabilities. In 2009, more than 24% of world trade will occur between bordering countries; this accounts for 21% of all trade in LAC, while North America tops the list with 52% and Western Europe, 40% (WB 2009b). In the latter countries, the benefits of a well-developed integration infrastructure and development mechanisms along the borders of each country are key to trade and freight logistic development. Another factor influencing trade patterns through technological innovations in transport is the significant rise in intermodal transport—mainly in high capacity and more efficient modes such as maritime, waterway, and railway transport—and the integration of separate transport systems through the use of at least two different modes of transportation. This has shifted the freight logistic components to the entire supply chain, as these processes are increasingly seen as whole rather than as a series of sequences, each with its particular documentation and cost structure.

From the regulation of infrastructure and the provision of well-developed transport services, a robust and strategic approach is needed to enable better infrastructure quality and transport services. For international trade, a more efficient, reliable, and secure interaction between different transport modes is of paramount importance, given the geographic space and volume the global economy now occupies. These trends further support the view that globalization has been transport-intensive, as economies of scale have affected not only production but also transport costs, further reinforcing trade in a virtuous and mutually enforcing cycle.

Over time, the main reductions in transportation costs, due to higher investments in transportation infrastructure, technological innovation, transportation reform, and lower overall trade barriers, have been in road and air transport, while maritime transport was revolutionized by containerization. In particular, innovations in air and maritime transport, the two modes of transport that have most influenced the growth of international trade and globalization, have been of particular importance. For instance, advances in technologies for air shipping—which accounts for about 40% of the value of international trade—have caused the average revenue per ton-kilometer shipped to drop by a factor of 10 between 1955 and 2004 (Hummels 2007; Rodrigue 2007). Similarly, ocean shipping, which constitutes 99% of world trade by weight, has seen its costs consistently decline during the last 20 years in

large part through containerization—with estimates showing that using containers can lower shipping costs by 3–13% (Hummels 2007)—and the advent of larger than post-Panamax vessels (the largest ships that can pass through the Panama Canal). Lower vehicle costs and the deregulation of the trucking industry have pushed road transport costs down by almost 40% during the past three decades (WB 2009c).

Nonetheless, transport and trade costs have traditionally been hard to measure due to limited information of varying quality.<sup>10</sup> Over the past three decades transport costs have fluctuated due to changes in the price of fuels, the uneven regulatory frameworks in which many of these industries develop, and rising concerns about security costs. Air transport has been characterized by technological developments, monopoly power of large state operators, and fluctuations in price depending on the commodity being shipped. For maritime freight operations, costs have been reduced in large part through containerization, the rise of large maritime vessels, and the advent of fewer freight lines, together with efficiency gains in port operation and infrastructure that allow for reduced direct port costs from greater storage capacity. Competition for transshipment services has also contributed to reducing the cost of international shipping while sometimes negatively affecting internal trade with higher tariffs than those offered to international freight.

Since the transport sector is generally characterized by high entry and maintenance costs, owning physical infrastructure consolidates economic power. In 2003, some 20% of the world's carriers owned or controlled close to 60% of global port slot capacity (WB 2009c). Maritime markets have had limited competition in part due to the high entry costs into the market, compounded by the indivisibility of infrastructure facilities when providing transport services. As a result, markets for these services are rarely competitive and are usually owned by the state (in the case of seaport and airport infrastructure) or by large international companies (for transport services).

At a more aggregated level, the lack of well-regulated markets creates disincentives for investments to provide spatial transformation in ICT, in transport infrastructure, and in the development of new transport services—all essential for output and productivity growth. Although at early stages market concentration is more likely, given the high fixed costs associated with transport projects, as spatial economies deepen incentives for competitive forces to enter the market become more apparent. Without public policy focusing on the appropriate possibilities for exploiting these links, the ability of developing countries in LAC to compete globally will remain compromised.

Another phenomenon in the globalized economy is the falling cost of communications due in large part to innovations in ICT and the sophistication of the Internet. The reduced costs in communication have minimized search costs associated with finding potential customers and trading partners as well as variable costs, which tend to be more important for intra-industry trade, from interactions regarding product quality and specifications. Importantly, falling communication and transport costs have led to a fragmentation of production processes, the globalization of the supply chain, and the outsourcing of intermediate production and certain services across countries. Initially, these processes were driven by low wage costs, but mutually reinforcing international transportation services and shorter production cycles are beginning to outweigh wage savings, causing further relocation. The notion of a mutual interdependence between trade and transport is fundamental to the freight logistics and trade facilitation conundrum, “for as long as there has been trade, transportation activities have been there to support it” (Rodrigue 2007: 1).

Finally, it is important to recognize the development costs associated with improvements in transportation, freight logistics, and trade over the past decades. The challenge to public policy is to find ways of creating incentives for the transport industry to internalize these development costs and of increasing fuel efficiency and safety standards. Several estimates,

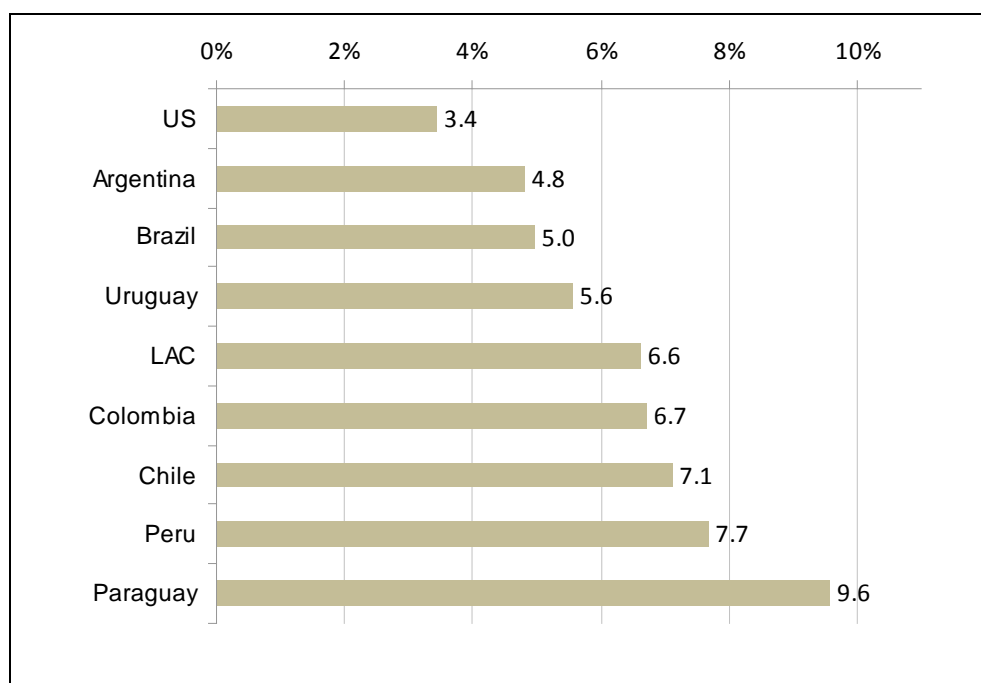
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<sup>10</sup> For recent surveys of trade costs across the world see Hummels (2001) and Anderson and Wincoop (2004).

including the *Stern Review* on the economics of climate change (Stern 2006), have placed the current cost of internalizing emissions well within historical variations in fuel prices. Recently, the UN Climate Change Conference in Copenhagen has shown increased political will from industrial and emerging markets to tackle emissions, with the transport sector representing close to 13.5% of total greenhouse gases. Controlling the development costs derived from transport will play an increasingly important role in the development of future trade logistics and is likely to lead to renewed economies of scale in both transport and production through increased efficiency.

Unfortunately, LAC countries have not fully benefited from positive trends in transport and logistics development. During the 1970s, the region experienced high levels of infrastructure investment relative to other regions, reaching higher coverage of productive infrastructure than East Asia by 1980. But after experiencing a decade of economic adjustments, with substantial gains in transport infrastructure specifically, logistics services only emerged in the 1990s. Today, many of these gains have rapidly reversed. The region continues to spend nearly twice as much as the to import goods, while airfreight costs in 2006 actually rose in relation to their level in 1995—with the Caribbean seeing an increase of as much as 36% (Mesquita Moreira, Volpe, and Blyde 2008). The region's exports, with their reliance on abundant natural resources (including a weight-to-value ratio much higher than many capital-intensive goods) and proximity to the world's largest markets, are much more transport-intensive than competitor exports. Thus LAC countries, whose economies mainly depend on the export of large and bulky raw materials, are more exposed to changes in demand as well as being more sensitive to the quality and quantity of their transport infrastructure.

**Figure 3: Total Import Freight Expenditures as a Share of Imports, 2006 (%)**

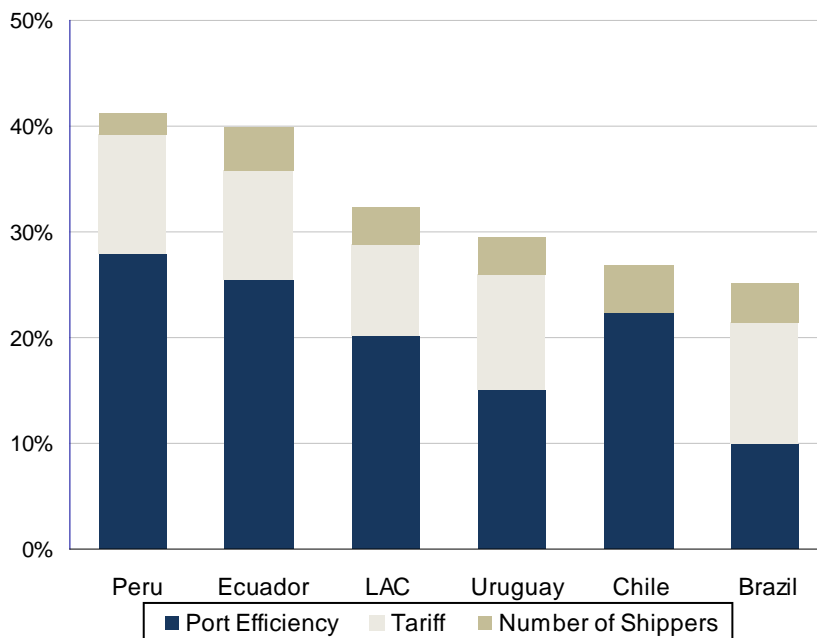


Source: Mesquita Moreira, Volpe, and Blyde (2008).

Overall, about 40% of the difference in shipping prices between the region and the US and Europe can be explained by port and airport efficiencies, while only 17% of these differences are accounted for by higher tariffs (Mesquita Moreira, Volpe, and Blyde 2008). For example, LAC exports to the US pay ocean freight rates that are on average 70% higher than those paid by exports from the Netherlands. As result, for a typical LAC country, improving port efficiency to the US level would lower costs by 20%. Reducing tariff rates and increasing competition to US levels would further reduce transport costs by 9% and 4%, respectively.

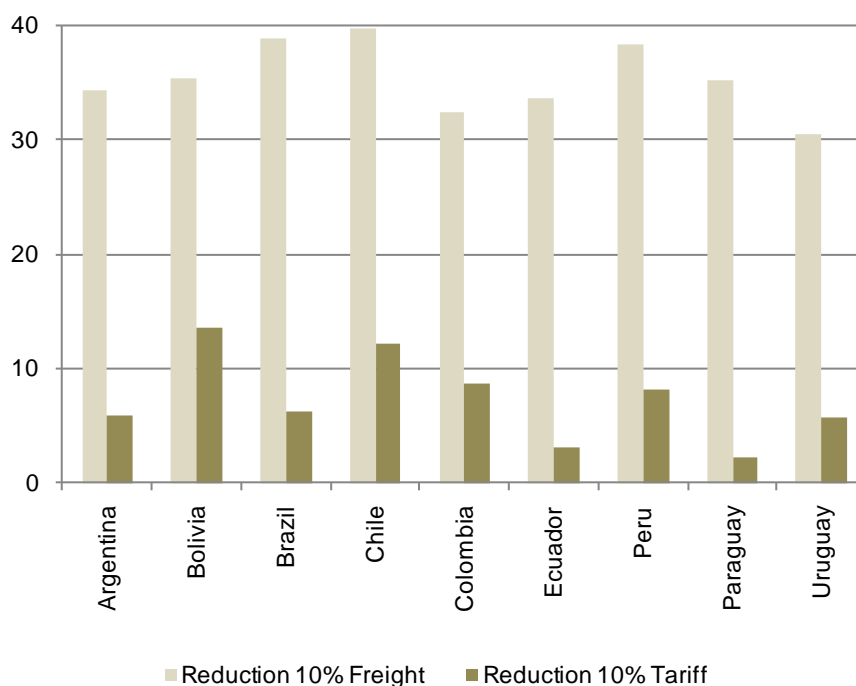
Intra-regional exports largely depend on the development of transport infrastructure in general and regional integration transport infrastructure more specifically. In contrast, the same reduction would allow exports to the US to increase by 39% on average compared with less than 2% from a reduction in import tariffs by 10% (Mesquita Moreira, Volpe, and Blyde 2008). Reducing trade costs by 10% would cause an average increase of 60% (with substantial variations with respect to different commodities' weight-to-value ratios) (Mesquita Moreira, Volpe, and Blyde 2008).

**Figure 4: Percentage Reductions in Transport Costs from Change in Port Efficiency, Tariff Rates, and Number of Shippers to US Levels, Base Year 2005**



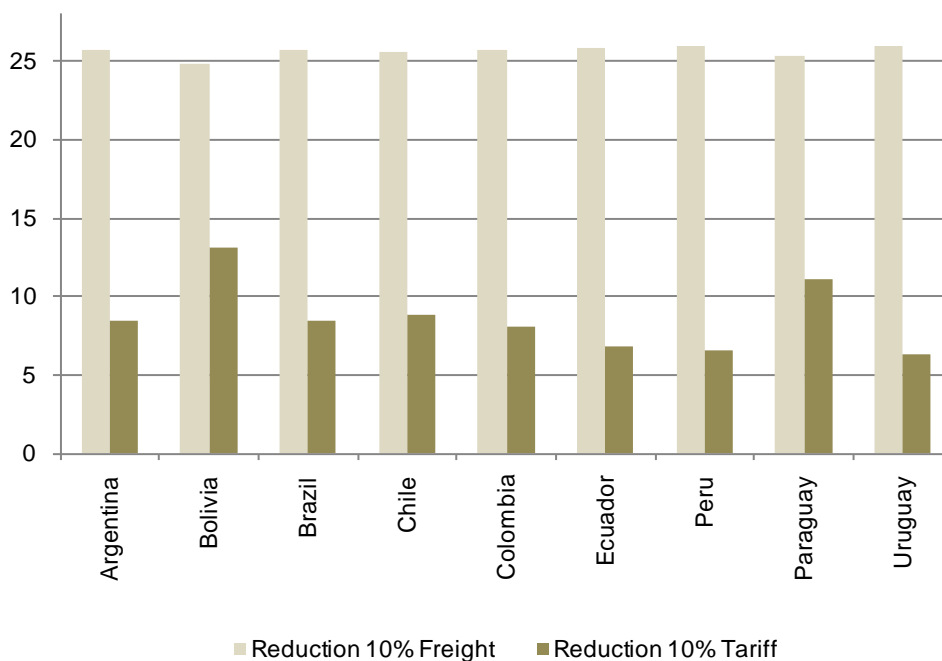
Source: Mesquita Moreira, Volpe, and Blyde (2008).

**Figure 5: Median Increase in Sectoral Exports to Reductions in Transport Costs and Tariffs**



Source: Mesquita Moreira, Volpe, and Blyde (2008).

**Figure 6: Median Increase in Export Diversification to Reductions in Transport Costs and Tariffs**



Source: Mesquita Moreira, Volpe, and Blyde (2008).



These findings highlight not only the importance of improved freight logistics and transport infrastructure for the development of national export sectors (with corresponding productivity and output growth) but also how limited transport development has inhibited regional integration. Despite geographical constraints and the long distance between populous urban centers, people in LAC currently live within 25 kilometers of a border (16% in mountainous areas) or a coastline (48% in tropical areas), respectively—figures that increase to 37% and 54% living within 75 kilometers (WB 2009b). Nonetheless, very few urban settlements have been developed along border regions (a contrast when compared to North American cities), and therefore few productive centers are located less than 200 kilometers from borders. Accordingly, since urban settlements house economic activities further from borders, transport costs to and from borders hinder the development of infrastructure.

After the surge of regional initiatives in the early 1990s and the corresponding progressive reduction in non-tariff barriers, the region's new trade agenda needs to focus on more practical issues, centered on measures to reduce transport and logistics costs, which will increase productivity growth and competitiveness internally and externally. Potential gains from spatial economies in remote areas are limited due to the highly complex coordination needed at the regional level. Several efforts are currently under way, including the development of strategic corridors such as the Initiative for the Integration of Regional Infrastructure in South America (IIRSA) and the Mesoamerica Project.

Shorter supply chain processes including just-in-time production and the outsourcing of logistics procedures have set the stage for substantial improvements in the modernization of supply chain and logistics management in sector firms. As a result, the demand for freight transport has changed substantially, incorporating the need to minimize logistics costs in line with inbound and outbound traffic, warehousing, inventory costs at different stages of the production cycle, damaged stock, and other costs associated with the physical flow of goods. Furthermore, as freight logistics technology and its associated costs are consistently present throughout the entire product life cycle, the quality of service and efficiency associated with these is of increasing importance in competitive international markets.

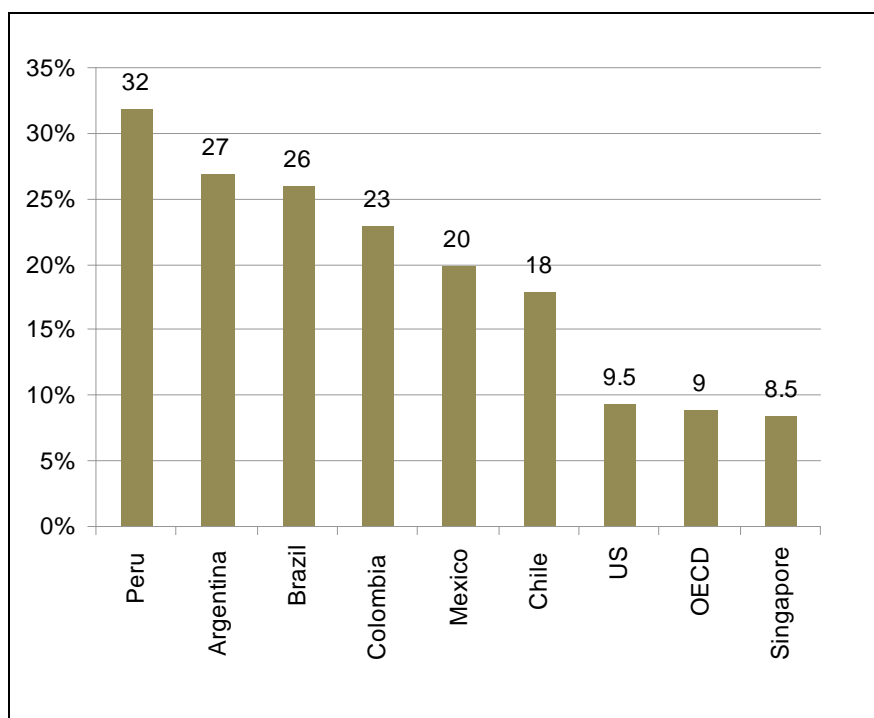
Nonetheless, the development of a comparative metric system and associated measurement for logistic services on international shipments is an increasingly complex process given the nature of the services, the array of procedures involved and their many combinations. As one United Nations Economic Commission for Europe study concludes, the volume of information about the link between logistics and competitiveness is growing however there is a persistent inadequacy of tools and methodologies to effectively assess the transport sector's contribution to competitiveness in the context of transport's role in supply chains (Economic Commission for Europe 2009). As the supply chain uses different modes of transport (maritime, air, rail, and truck) for both international and national trade and deliveries and the fragmentation of production across different countries increases the amount of freight in circulation, measuring logistics performance is neither an easy task nor one safe from controversy.

Correspondingly, logistics performance has been measured in several ways: macro-based approaches based on national accounts and looking at costs relative to a country's balance of payments; micro-based approaches that use firm surveys to measure cost, quality, and productivity relative to sales value; and perception-based approaches, which develop global indicators based on surveys of qualified stakeholders in the logistics industry. One novel approach uses stock estimations as a proxy to determine the relative impact of transport services and freight logistics on companies. LAC countries perform poorly across all indicators and are becoming increasingly less competitive relative to their industrial and developing country counterparts. Overall, these indicators all point to the same conclusion: there is ample room for trade logistics improvement in LAC countries.

Guasch and Kogan (2006) analyzed logistic performance indicators at the macro level as well as inventory stocks for developing countries to assess their impact on countries' growth

and competitiveness. Their findings in terms of logistic performance indicators show that countries in LAC spend on average two or three times as much as OECD countries on logistics; inventory stocks show that they are on average 15% of GDP, two to five times larger than OECD averages. As a result, the logistics cost as percentage of product value for LAC countries is twice that of OECD countries and the US. Overall, their results indicate LAC countries' competitiveness suffers from poor transportation services and from the large financial costs required to maintain stock at an efficient level, which affect the ability of companies to streamline internal processes (Guasch and Kogan 2006).

**Figure 7: Logistics Costs as Percentage of Product Value for Selected Economies, 2004**



Source: Guasch and Kogan (2006).

**Table 5: Comparison of Average Inventory Levels, Losses to Markets, and Logistics Costs in Latin America and the OECD, 2004**

| Country   | <i>Inventory level in Latin America: ratio with US inventories (mean)</i> |                   |
|-----------|---|-------------------|
|           | Raw material  | Finished products |
| Chile     | 2.17  | 1.76              |
| Venezuela | 2.82  | 1.63              |
| Peru      | 4.19  | 1.65              |
| Bolivia   | 4.2   | 2.74              |
| Colombia  | 2.22  | 1.38              |
| Ecuador   | 5.06  | 2.57              |
| Mexico    | 1.58  | 1.46              |
| Brazil    | 2.98  | 1.98              |

Source: Guasch and Kogan (2006).

Micro-level indicators developed by Georgia Tech-Cap Gemini-Oracle-DHL and the World Bank in *Doing Business* show that the outsourcing of logistics services in LAC is generally weaker than in more developed countries. Of the firms surveyed in LAC, 70% outsource their national and international transport and 62% their storage and stock management,

while for East Asia and Pacific countries the figures are 92% and 75% respectively (WB 2009a). The indicators also highlight a clear gap between LAC and the OECD in international trade related logistics performance.

The LPI elaborated by the World Bank uses perception-based indicators that point to the negative relative logistic performance of LAC countries. The results cover seven areas: customs performance, infrastructure, international shipments, logistics competence, timeliness, tracking and tracing, and domestic logistics costs. Of the 150 countries ranked, LAC countries occupy positions ranging from 32 (Chile) to 141 (Guyana), showing significant variation in the region.

Another perception-based index is the ETI 2008, elaborated by the World Economic Forum. Similar to the LPI, the ETI is developed in collaboration with international trade experts and leaders from the logistics and transport industry, providing a comprehensive index intended to capture the full range of issues that contribute to impeding trade and ranking nations according to factors that facilitate the free flow of goods across borders.

Recognizing the gap in infrastructure investments by the private sector in LAC, another set of indicators was developed by the World Economic Forum, the Infrastructure Private Investment Attractiveness Index, considering the investment environment for infrastructure in 12 LAC countries. The index assesses the main drivers of private investment in infrastructure projects for ports, airports, roads, and electricity by looking at macroeconomic performance, legal framework, political risk, the track record of private investments in infrastructure, and the willingness of government and society to pay for infrastructure, among other factors. The results are summarized in an overall index of infrastructure and private investment and two sub-indexes covering environmental factors impacting general investment and infrastructure-investment-specific factors ranked on a scale of 1 to 7, with 1 being the “worst possible scenario” and 7 the “best possible scenario” for each set of variables. The overall results show Chile ranking highest in the region, followed by Brazil, Colombia, and Peru while the bottom slots are occupied by Venezuela, Bolivia, and the Dominican Republic.

Finally, an Infrastructure Quality Gap Index analyses the relative needs and deficiencies of infrastructure development in each of the 12 countries covered. The gap is computed with respect to Germany, ranked first in the infrastructure pillar of the Global Competitiveness Report (2006–07), where 0 means that the country has achieved world-class levels of infrastructure development and therefore does not need additional investment in the sector. The results show Bolivia, Peru, and Colombia having the largest gaps, with the most developed infrastructure sectors in LAC occupied by Chile, El Salvador, and Mexico.

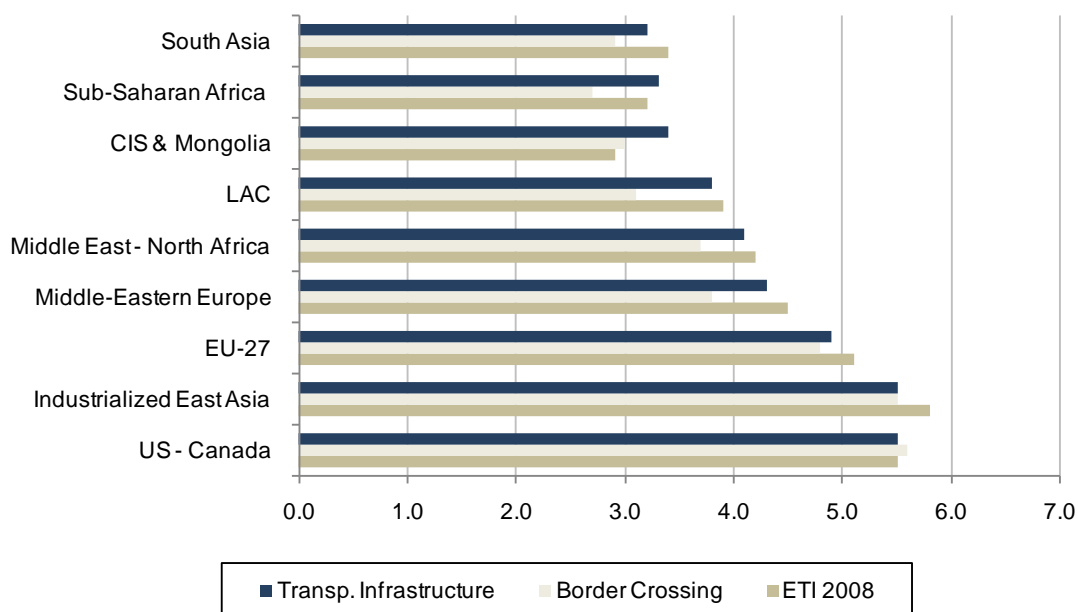
**Table 6: Trading Across Borders<sup>11</sup>**

| Region                          | Export                        |                        |                                     | Import                        |                        |                                     |
|---------------------------------|-------------------------------|------------------------|-------------------------------------|-------------------------------|------------------------|-------------------------------------|
|                                 | <i>Documents<br/>(Number)</i> | <i>Time<br/>(Days)</i> | <i>Cost<br/>(USD<br/>container)</i> | <i>Documents<br/>(Number)</i> | <i>Time<br/>(Days)</i> | <i>Cost<br/>(USD<br/>container)</i> |
| Far East and the Pacific        | 6.7                           | 23.1                   | 909.0                               | 7.1                           | 24.3                   | 925.8                               |
| East Europe and Middle Asia     | 6.5                           | 26.8                   | 1,581.0                             | 7.8                           | 28.4                   | 1,773.0                             |
| LAC                             | <b>6.8</b>                    | <b>18.6</b>            | <b>1,243.0</b>                      | <b>7.3</b>                    | <b>20.9</b>            | <b>1,481.0</b>                      |
| Middle East and Northern Africa | 6.4                           | 22.5                   | 1,034.0                             | 7.4                           | 25.9                   | 1,221.7                             |
| OECD                            | 4.3                           | 10.5                   | 1,089.0                             | 4.9                           | 11.0                   | 1,145.9                             |
| South Asia                      | 8.5                           | 32.4                   | 1,364.0                             | 9.0                           | 32.2                   | 1,509.0                             |
| Sub-Saharan Africa              | 7.8                           | 33.6                   | 1,941.0                             | 8.8                           | 39.4                   | 2,365.0                             |

Source: World Bank (2009a)

<sup>11</sup> On average, LAC countries' export and import requirements are more bureaucratic than those of OECD countries but on a par with those of Southeast Asia and the Pacific; LAC requires 6.8 documents for export and 7.3 documents for import, while OECD countries only require 4.3 and 4.9, respectively. In terms of import and export times, the region performs relatively well in comparison with other regions, but its costs remain one of the most expensive in the world (with the exception of South Asia and sub-Saharan Africa). Within the region, Venezuela lags significantly, while Panama leads with an average nine days to import or export a product.

**Figure 8: Enabling Trade Index 2008: LAC Compared with Other Regions 12**



Source: World Economic Forum (2009b).

<sup>12</sup> The LPI ranks 150 countries based on a survey of operators (global freight forwarders and express carriers), providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade. Feedback from these operators is then supplemented with data on the performance of key components of the logistics chain in the home country, resulting in an index based on a 1 to 5 scale (lowest to highest performance). Overall, the index shows LAC countries’ performance lagging behind OECD countries, industrialized Asia, the PRC, the Middle East, and North Africa in most measures. Its weakest performances are in customs, infrastructure, and logistics competence.

**Table 7: Most Fragile Components in Trade Facilitation Performance 13**

| Country            | ETI 08 | Customs efficiency | Export - Import processes efficiency | Customs transparency | Transport infrastructure | Transport services | ICT |
|--------------------|--------|--------------------|--------------------------------------|----------------------|--------------------------|--------------------|-----|
| ARGENTINA          | 78     | 60                 | 69                                   | 96                   | 80                       | 51                 | 49  |
| BOLIVIA            | 94     | 93                 | 80                                   | 75                   | 93                       | 85                 | 101 |
| BRASIL             | 80     | 73                 | 61                                   | 58                   | 91                       | 42                 | 56  |
| CHILE              | 27     | 17                 | 30                                   | 18                   | 45                       | 38                 | 45  |
| COLOMBIA           | 75     | 37                 | 73                                   | 55                   | 83                       | 67                 | 63  |
| COSTA RICA         | 44     | 65                 | 53                                   | 42                   | 68                       | 88                 | 52  |
| ECUADOR            | 96     | 118                | 87                                   | 108                  | 89                       | 87                 | 75  |
| EL SALVADOR        | 55     | 72                 | 64                                   | 49                   | 94                       | 68                 | 73  |
| GUATEMALA          | 54     | 19                 | 81                                   | 63                   | 84                       | 84                 | 72  |
| HONDURAS           | 64     | 77                 | 77                                   | 74                   | 70                       | 105                | 90  |
| MEXICO             | 65     | 63                 | 76                                   | 57                   | 87                       | 55                 | 58  |
| NICARAGUA          | 67     | 85                 | 65                                   | 73                   | 96                       | 107                | 100 |
| PANAMA             | 46     | 41                 | 20                                   | 67                   | 26                       | 57                 | 70  |
| PARAGUAY           | 83     | 64                 | 83                                   | 95                   | 101                      | 100                | 94  |
| PERU               | 69     | 113                | 55                                   | 50                   | 92                       | 69                 | 77  |
| DOMINICAN REPUBLIC | 63     | 50                 | 47                                   | 78                   | 73                       | 109                | 66  |
| URUGUAY            | 56     | 75                 | 79                                   | 28                   | 61                       | 83                 | 51  |
| VENEZUELA          | 115    | 112                | 106                                  | 115                  | 95                       | 91                 | 57  |

Source: World Economic Forum (2009b).

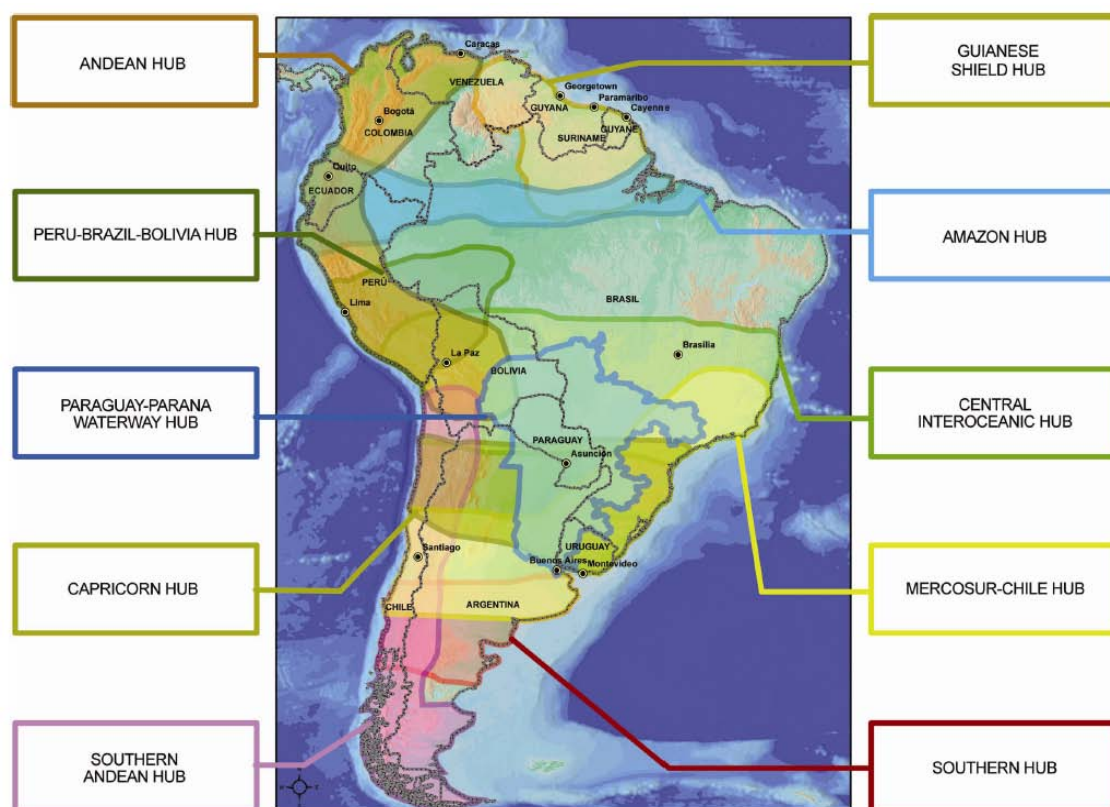
### 3. REGIONAL INITIATIVES TO ADVANCE THE INTEGRATION PROCESS

Despite lagging trade logistics performance in the region, there have been considerable achievements toward an integrated regional agenda and improved connectivity. LAC has undergone a process of commercial and political integration that has encouraged physical integration initiatives to ensure the connectivity of infrastructure networks. In this sense, the most important regional initiatives have been the IIRSA and the Mesoamerica Project. The objective of both initiatives is to increase intra-regional trade through trade facilitation measures and to give priority to economic geography approaches and regional planning as a means of deepening integration at the regional level.

IIRSA, the largest of these initiatives, encompassed 514 infrastructure projects by the end of 2008, totaling 69 billion USD. It originated in 2000 with a view to advancing the physical integration of the South American continent. It is an institutional mechanism for intergovernmental coordination that incorporates novel methodological approaches, developing a strategic vision to align the regional portfolio of infrastructure projects through increased coordination and harmonization of standards in infrastructure and border crossing services as well as infrastructure investment. This is carried out through the identification of 10 strategic sub-regional corridors for cross-country infrastructure development.

<sup>13</sup> The index covers four main sub-indexes that include measures of market access, border administration, transport and communications infrastructure, and business environment. Each of the 121 countries covered by the index is ranked on a scale from 1 to 7 (lowest to highest performance). Again, the rankings show substantial variations within the region, with Chile ranked 19th and Venezuela 119th.

**Figure 9: IIRSA Corridors**

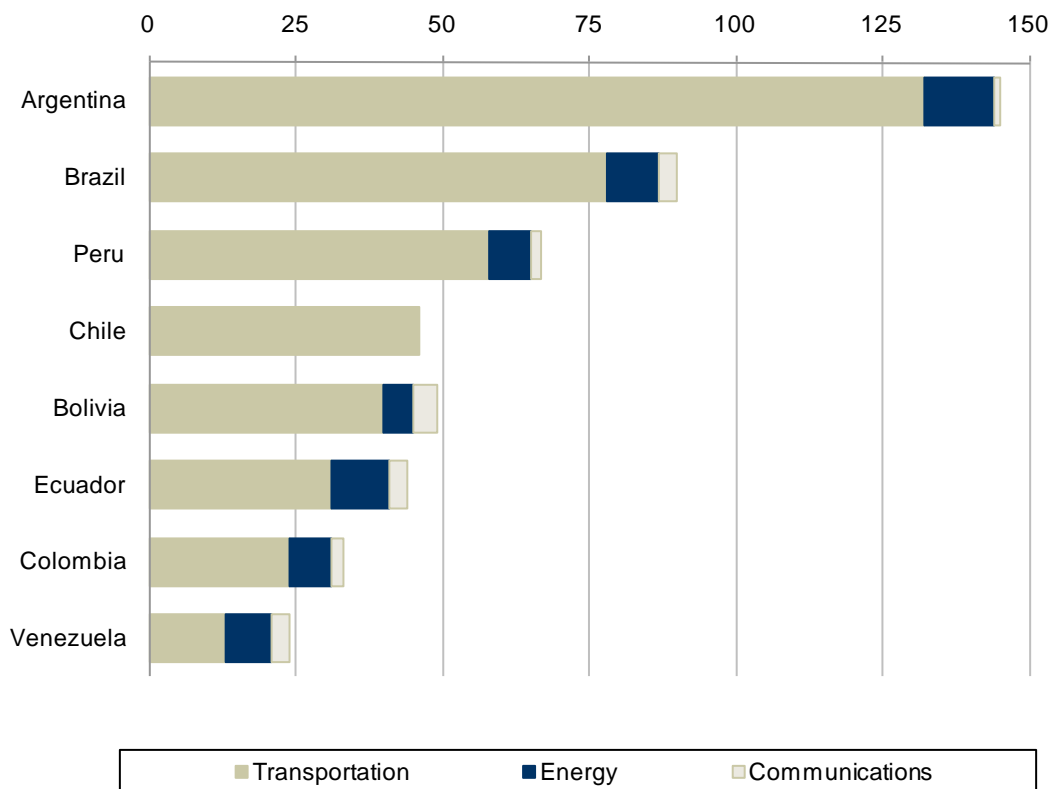


Source: Guerrero (2009).

These are complemented by key initiatives aimed at unleashing potential synergies from scale economies in transport and knowledge transfer while emphasizing monitoring and evaluation procedures to recover important lessons learned and improve future performance. As a result of these initiatives, IIRSA has identified key processes for integration that require normative harmonization, such as the regulation of transport and energy markets, ICT infrastructure, and border crossing management.

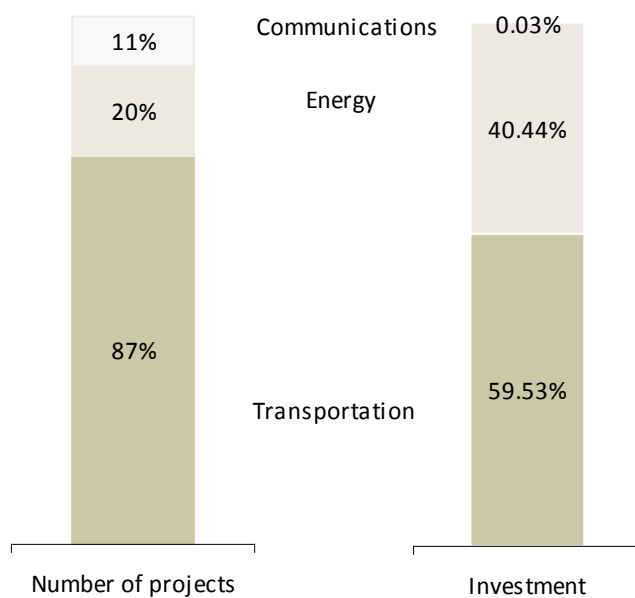
Importantly, the IIRSA-established financial structure has helped incorporate the private sector into transport investments with the backing of regional multilateral funding. The IDB, Andean Development Corporation, and the Fund for the Development of the River Plate Basin support more than 25% of the total investment (9.7 billion USD) required by 247 projects currently in progress or finished—about 70% of the entire portfolio. Furthermore, 46% of its financing capital is derived from the public sector, 35% from public-private partnerships (PPPs), and 19% from the private sector.

**Figure 10: IIRSA Project Portfolio by Country**



Source: Guerrero (2009).

**Figure 11: IIRSA Project Portfolio by Sector**



Source: Guerrero (2009).



**Table 8: IIRSA Project Status and Financing Structure**

| <b>Project status</b> | <b>Projects (#)</b> | <b>Million USD</b> | <b>%</b> |
|-----------------------|---------------------|--------------------|----------|
| Completed *           | 190                 | 7.506              | 10%      |
| In execution *        | 29                  | 30.728             | 38%      |
| In preparation        | 28                  | 17.38              | 20%      |

| <b>Financing</b> | <b>Projects (#)</b> | <b>Million USD</b> | <b>%</b>    |
|------------------|---------------------|--------------------|-------------|
| Public           | 190                 | 17,641             | 46%         |
| PPP              | 29                  | 52.2               | 35%         |
| Private          | 28                  | 6.6                | 19%         |
| <b>TOTAL</b>     | <b>247</b>          | <b>38,234</b>      | <b>100%</b> |

\* Financing structure of projects.

Almost 70% of the portfolio shows substantial progress.

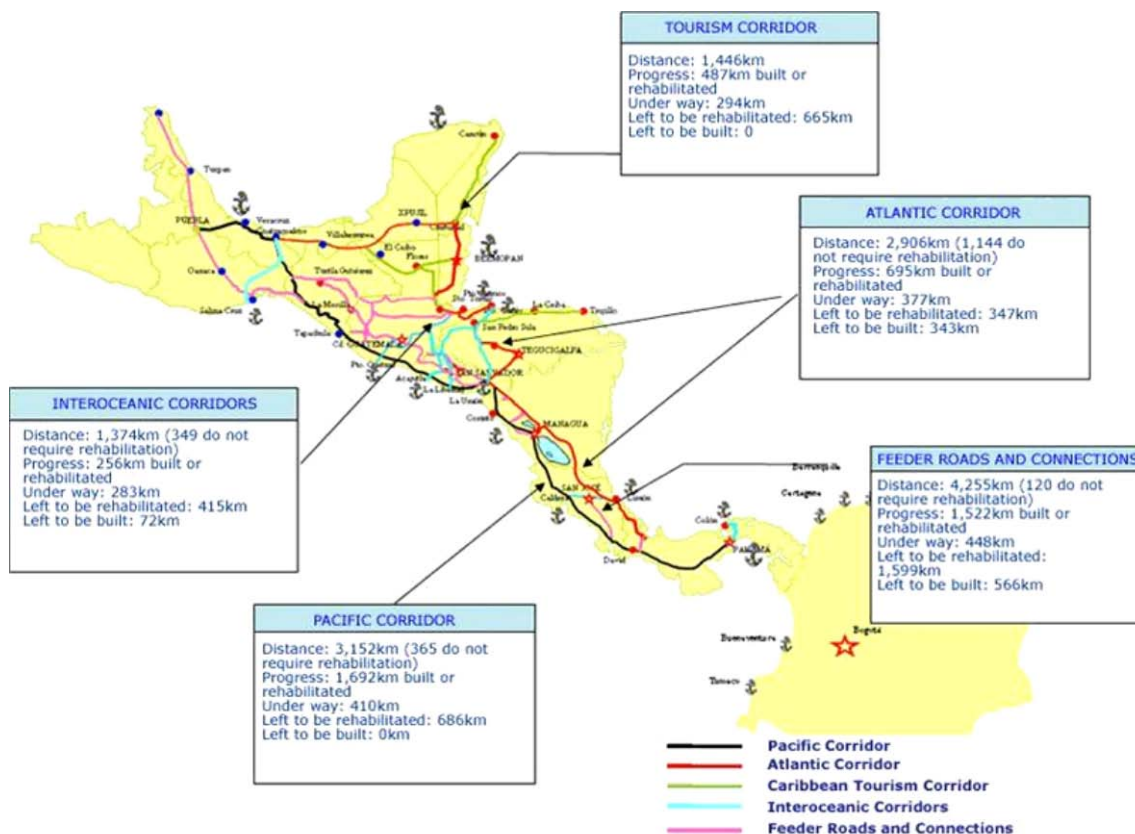
Source: Guerrero (2009).

Finally, IIRSA has deepened the development of methodologies for integration projects with increased economic assessments of transnational projects, strategic environmental assessments, productive and logistic integration, and development of digital maps and geographic information systems. Productive integration has been further developed by taking advantage of potential linkages between the removal of physical barriers and increased logistic and economic integration, extending the scale of production and markets, promoting competitiveness, and taking advantage of agglomeration economies. Furthermore, the development of logistic services is helping add value to IIRSA projects through knowledge transfer, capacity-building initiatives, and improved local and regional institutional performance and competitiveness.

In 2008, the Mesoamerica Project was born from the original Plan Puebla Panama (established in 2001) as an effort to integrate the Central American Corridor and Mexico through infrastructure and social projects. Currently the project includes nine countries<sup>14</sup> from Mexico to Colombia, coordinating over 100 regional integration projects worth 8 billion USD. Importantly, the initiative seeks to move beyond the physical integration of participating countries and into areas of trade facilitation and increased investment in social services, such as health, education, and environmental protection. As a result of these efforts, strong synergies have become apparent in the integration projects, particularly in the smaller countries, where infrastructure has traditionally been a bottleneck. It has integrated other regional initiatives, such as the Central American Integration System, while attracting the multilateral participation of the IDB, the Central American Bank for Economic Integration, the Andean Development Corporation, and the Secretariat for Central American Economic Integration.

<sup>14</sup> Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and Colombia.

**Figure 12: Mesoamerica Project Corridors**



Source: Guerrero (2009).

#### 4. REGIONAL AGENDA TO DEEPEN INTEGRATION: THE IMPORTANCE OF FREIGHT LOGISTICS IN TRADE FACILITATION

Over the past two decades, multilateral and bilateral trade negotiations have reduced bound tariff rates and, to a lesser extent, softened non-tariff barriers to trade. Increasingly, however, trade transaction costs such as those resulting from poor transport infrastructure have proved to be more costly; Djankov, Freund, and Pham (2006) found that on average each additional day of delay in shipping reduced trade by at least 1%. As a result, developing countries are being forced to rethink their trade policy agenda to take into account trade costs not covered in past rounds of negotiations. Without a renewed focus on non-policy trade costs and the relevance of freight logistics and specialized transport infrastructure to the trade facilitation agenda, developing countries will continue to be left out of self-reinforcing production and trade networks.

The incorporation specific measures oriented toward transportation in trade facilitation has become a key policy initiative to enhance future gains from trade. Activities include both services provided by the state and the flow of freight internally and externally. Clearly, developing countries have much to gain, given the high transaction costs of their trading patterns. Trade facilitation measures focusing on customs procedures and regulatory environments can lead to improved controls, reduced administrative costs, and increased cooperation between the public and private sectors even when applying these measures implies costs (OECD 2005).

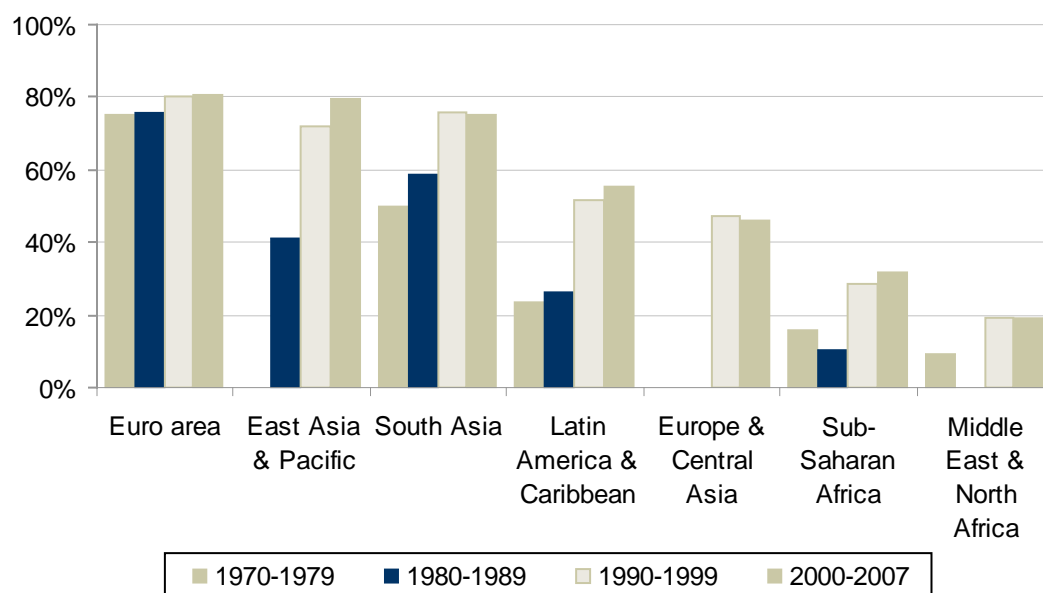
For example, Otsuki, Mann, and Wilson (2003 and 2004), using a sample of 75 countries (weighted toward developing economies) found that improving these countries' trade

facilitation records to the global average resulted in trade gains equivalent to 377 billion USD, representing an increase of about 9.7% in total trade—with Latin America accruing about 20% of these gains (South Asia got the largest share, 40%). A little over 40% of these gains would come from improved service sector infrastructure, while nearly 20% are due to improvements in the regulatory environment.

Firms in developing countries also witness delays in inventory holdings, an area of particular concern for countries that rely on exports of bulky natural resources with short shelf lives, as is the case for many LAC countries. The implied costs of holding inventories through tied-up capital, increases in unit costs, and diminished competitiveness can be detrimental to the development of export sectors in LAC and increases shipping delays. Guasch and Kogan (2003) found that while US businesses typically hold inventories of around 15% of GDP, inventories in Latin America and other developing regions are often twice that. In addition, if the interest rate for financing holdings is between 15 and 20%, the cost to an economy of additional inventory holdings is more than 2% of GDP. Developing reliable and efficient transport networks, affordable and available transport services, and required logistic services will help to eliminate these excess inventories. Consequently, excessive inventory costs provide a further example of how improvements in trade facilitation and freight logistic measures such as port efficiency, ICT, infrastructure, harmonization standards, and customs procedures can benefit trade through a virtuous circle that allows countries to exploit economies of scale in both transport and production.

Unfortunately, much remains to be done in order to improve the region's weak trade facilitation measures and close both the trade and infrastructure gap it has with other regions. In large part, the region's relatively weak trade performance is aggravated by its infrastructure and income gap relative to other regions; in relation to East Asia, for example, the infrastructure gap could account for as much as one-third of the income gap (Easterly and Servén 2003).

**Figure 13: Manufactured Exports by Region (% of merchandise exports)<sup>15</sup>**



Source: World Development Indicators 2009

<sup>15</sup> In LAC, manufactured goods as a percentage of total merchandise exports have risen from 24% in 1970–1979 to 55% in 2000–2007. However, this remains substantially lower than in Southeast Asia (80%) and the high-income OECD countries (79%) for the latter period.

Overall, a renewed focus on trade facilitation measures has become of increasing importance to the region's trade agenda as traditional trade restrictions have been substantially reduced and trade benefits have not been fully realized. Furthermore, through increased coordination and harmonization of customs and border procedures, trade facilitation supports efforts toward increased regional integration. Similarly, these measures tend to enhance the efficiency of revenue collection agencies and are associated with increased government revenue while at the same time incorporating the private sector into productive activities.

If better provision of transport infrastructure from the public sector and the enabling of more efficient transport services from the private sector are key to spurring national trade, investment in regional physical infrastructure projects is essential to reducing costs of international land-based transport. This is particularly true for landlocked countries and for the development of regions closer to international borders and distant from national ports.

Improving trade logistics through deepened trade facilitation measures has become of increasing importance to LAC's regional integration agenda. Given the substantial decline in tariffs and other traditional barriers to trade, logistics performance and the institutional capacity to provide it seem fundamental to expanding productivity gains and benefiting from existing trade agreements. Reforming the current institutional climate to promote much needed transformations in terms of increased human capital, private-sector development, logistic services, infrastructure quality, and increased investment in transport infrastructure is a costly and sometimes lengthy process. The challenges to public policy in designing, executing, and evaluating a successful strategy that gives priority to key issues and efficiently tackles the many problems intrinsic to the current logistics performance of LAC countries are many. Nonetheless, the future benefits of these processes are more likely to exceed their costs in most aspects of economic and political activity.

What limitations help explain the weak logistics performance in LAC countries? First, the region is underserved by a weak institutional capacity that limits its ability to cope with the demands of accessible and reliable transport infrastructure and the services provided by the state are inadequate to serve a rapidly growing trade facilitation agenda. In particular, scarce human resources, weak ICT infrastructure and regulation, and monitoring and evaluation systems adversely affect the reform agenda needed to expand institutional arrangements. Consequently, the coordination capacity of LAC countries is weak and impedes the necessary development of the logistics agenda.

Second, the region's infrastructure network in general and transport infrastructure in particular have suffered from chronic underinvestment. Estimates of the investment needs of the current infrastructure framework are between 5% and 7% of the region's GDP over 20 years in order to satisfy construction and maintenance requirements, increase coverage, and tap growing demand (WB 2005). Nevertheless, in 2000–2001, the investment rate in the sector was about 4%, with 3% coming from the public sector and 1% from private investments. At the peak of private investments in 1998, the total value of participation only reached 1.7% of GDP (WB 2005). The latest figures show that the region is investing about 3–4% of GDP in infrastructure while East Asian economies are committing 6–10%, with the PRC at 8% and India at 4% (Latin Business Chronicle 2008, 2009). Finally, the infrastructure gap in LAC countries is exacerbated by poor project preparation in the public sector matching a weak private sector adversely affected by chronic shortages of human resources and limited access to technology.

Restrictions of investment capital have also contributed to the underdevelopment of small- and medium-size enterprises (SMEs) as providers of logistics services. Land transportation services, mostly trucking and logistics operators, have had limited expansion and remain relatively weak performers in the logistics chain, with room to improve and modernize the industry. Another limitation on the logistics performance of SMEs is their inability to exploit economies of scale and substantial institutional roadblocks. Finally, performance across

countries has remained uneven, with limitations ranging from demand-related obstacles such as freight imbalances and seasonality to a lack of harmonization in the organization of the logistics supply chain across borders. In addition, there is also significant heterogeneity within countries, especially the geographically larger countries of the region that have the highest potential opportunities to exploit scale economies and increase agglomeration. As a consequence of these limitations, the logistics gap is widening, aggravated by weak performance in multiple components of the logistics chain, engendering greater heterogeneity across LAC countries.

In response to the limitations and weak performance of LAC countries as a whole, a rethinking of the current agenda to transform trade logistics requires actions at the national, subnational, and regional level. Specifically, it requires project and program coordination in the areas of transport infrastructure and related transport services, specialized logistic infrastructure, trade policies, and in sectors where agendas converge.

Improvements in trade logistics must focus on the provision of basic infrastructure, particularly in the road network, in order to expand coverage and maintain quality standards. Importantly, regulations that facilitate and encourage private-public partnerships, especially for large regional infrastructure projects such as ports and railroads, need to be improved. Well-functioning specialized logistic infrastructure is also needed to ease freight handling, streamline inspection processes, and provide value-added services in areas closer to ports, airports, and border crossings. Equally important is the establishment of clear guidelines to support logistics management development for SMEs, logistic operators, and intermediaries. At the same time, services delivered by the state, including customs and cross-border crossings and security provisions, need to be substantially improved. Additionally, efforts need to be formalized to implement institutional organizations to promote high quality logistics.

In the area of ICT, there is ample room to capture the benefits of improved routing, packing, and retrieval that could effectively reduce kilometers traveled per vehicle, contributing to reduced carbon dioxide emissions. There is also a transformation in the economic environment in which businesses work when these technologies are incorporated: job transformation (wholesalers, postal operators, and carriers/logisticians) and job creation, such as virtual links in the delivery chain, supply-demand interfacers, and suppliers of complete logistics solutions (EC 1998).

The agenda for physical integration, on the other hand, must facilitate the coordination and harmonization of standards across borders to further reap the benefits of economic agglomeration. Projects of greater potential impact must be given priority, while regional integration of infrastructure projects should be axis-based, with clear development criteria that equitably distribute the costs and benefits of integration among members. In order for this strategy to achieve its full potential impact, it must be accompanied by a significant allocation of resources.

Hence, the region must develop financial mechanisms to provide affordable financial resources for these projects, such as a common fund or earmarked resources for infrastructure integration. In this respect, the experience of the EU-27 is of particular importance: a cohesive policy for transport infrastructure was developed to allow countries to catch up to regional standards and funds were earmarked for integration projects.

Finally, in areas where agendas converge, transport and trade facilitation measures need to be deepened to allow for further coordination and gains from cooperation. Continued emphasis on key processes regarding the development and harmonization of border crossings and the regulation of diverse transport modalities is of particular importance. Furthermore, the agenda for the expansion of productive integration and intra-regional logistics services must support both national and subnational organizations in order to fully achieve the economies of agglomeration necessary to reap the most benefits from these costly reforms.

### **The European Union's Infrastructure Integration**

Until the 1990s, the EU-27's transport networks were characterized by their independent nature, dominated by national interests and inward developments. Nonetheless, since the Treaty of Rome, the region has developed a network where access, mobility, and travel are available for all cities on the continent (Giaoutzi and Nijkamp 2008). As a result, the EU-27 currently has 5 million kilometers of paved roads (out of which 61,600 kilometers are motorways), 215,400 kilometers of rail lines (out of which 107,400 kilometers are electrified), and 41,000 kilometers of navigable inland waterways (EC 2009b). These developments have been the result not only of substantial infrastructure investments but also of a common transport policy aimed at developing transnational and pan-European networks.

During the mid-1990s, the EU-27 began the development of its Trans-European Transport Network (TEN-T) designed to connect all major modes of transport across the continent for the transport of people and freight. The first action plan for a coordinated continental transport policy was not adopted until 1996 and has only recently been institutionalized with the creation of the TEN-T Executive Agency in 2006. Nevertheless, since the Helsinki Declaration of 1997, when the EU-27 set aside €62 billion for 56 integration projects (31 in transport, 17 in energy, and 8 in high-speed communications networks, research and development, and innovation), the region has coordinated funding to integrate its infrastructure network (Tanzi 2005). Importantly, the European Commission was able to estimate funding for these projects along the lines of a 60/40 public-private resource structure.

For the period 2000–2006, the total investment in transport infrastructure was €859 billion (EC 2009b). These developments occurred in most part through national transport policies; however, with the creation of the TEN-T Executive Agency, these will now be coordinated regionally. As a result of the EU-27 expansion and other demographic developments, the growth of traffic within the EU-27 is expected to double by 2020. Consequently, in order to complete and modernize the TEN-T, it will require an estimated €500 billion in infrastructure investments from 2007 to 2020, including €270 billion for priority axis and projects (EC 2009b). Financing for the transport network is orchestrated through a number of common financial instruments and loans from the European Investment Bank. The most important instruments are the Structural Fund and the Cohesion Fund, which allow EU-27 members whose gross national income per capita is below 90% of the EU-27 average to tap over €277 billion and €70 billion respectively for 2007–2013. The latter of these funds is used specifically for environment and transport projects.

Here the IDB can support the development of a cohesive regional political and economic architecture by helping to strengthen institutional capacity at the national and subnational levels. Furthermore, the IDB can add value as a knowledge bank of ideas, thereby facilitating the coordination of thematic agendas by calling on regional experts in various fields and disciplines. Private-sector reasoning should influence state-led integration. Deepening regional ties is important to the process, as are the costs of non-trade issues in regional development integration, such as transportation infrastructure. As such, there is huge potential for closing the gap between LAC regional trade and other regions worldwide by sharing experiences, drawing from state modernization and private-sector development initiatives, and developing comprehensive joint approaches which incorporate territorial and transport planning and spatial and scale economies.

The IDB is prepared to spearhead many of these initiatives as an efficient vehicle for policy, projects, and regional cooperation. Importantly, the IDB's agenda has been expanded to support the coordination of national initiatives while emphasizing the harmonization of cross-border interactions. This agenda places emphasis on provision of basic infrastructure, particularly road networks; improvements in services and regulations that facilitate PPPs, like ports and railroads; improved services delivered by the state, like customs management, border crossings, and security; support for logistic management development in SMEs, operators, and intermediaries; implementation of an institutional organization for high-quality logistics; integration of "axis-based" regional infrastructure development criteria, giving

priority to projects of greater regional impact; development of financial mechanisms to increase investment in key areas; and commitment to an agenda for productive integration and logistics services, supporting national and subnational organizations. Overall, these initiatives will help the region better cope with a changing international environment and allow it to exploit the positive links between trade, integration, and economic growth.

## APPENDIX: ANNEX COMMONLY CITED LATIN AMERICAN REGIONAL TRADE AGREEMENTS

| <b>Name</b>                                    | <b>Established</b>  | <b>Members</b>  |
|--|---|---|
| Latin American Integration Association (ALADI) | The Treaty of Montevideo (1980) established ALADI as a successor for LAFTA.   | Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela. |
| Andean Community of Nations (CAN)              | The Cartagena Agreement was signed by Bolivia, Chile, Colombia, Ecuador and Peru in May 1969. Venezuela acceded in February 1973 and withdrew in 2006 while Chile withdrew in October 1976. | Bolivia, Colombia, Ecuador, and Peru.   |
| Central American Common Market (CACM)          | The General Treaty on Central American Economic Integration was signed by Guatemala, Honduras, El Salvador and Nicaragua in December 1960. Costa Rica acceded in July 1962.                 | Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.  |
| North American Free Trade Agreement (NAFTA)    | The agreement was signed in December 1992, ratified by the three national legislatures in 1993, and entered into force in January 1994.   | Canada, Mexico, and the US.   |
| Southern Cone Common Market (Mercosur)         | The four member states signed the Treaty of Asunción in March 1991.   | Argentina, Brazil, Paraguay, and Uruguay.   |



|   |   |  |
|---|---|--|
| Union of South American Nations (UNASUR)                      | The agreement was signed in May of 2008 after negotiations dating to the creation of the South American Community in 2004.  | Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela.  |
| FTAA*   | Talks began with the Summit of the Americas in Miami on December 11, 1994, subsequent meetings (Santiago 1998, Quebec City 2001, Miami 2003, and Mar de Plata 2005) have not been able to establish an agreement on the FTAA. | Antigua and Barbuda, Bahamas, Barbados, Belice, Canada, Colombia, Costa Rica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Jamaica, Mexico, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, US, and Uruguay. |
| The Bolivarian Alliance for the Peoples of Our America (ALBA) | The first agreement establishing ALBA comes about through the Cuba-Venezuela Agreement signed in December of 2004. Subsequently, the People's Trade Agreement was signed in April of 2006.                                    | Antigua and Barbuda, Bolivia, Cuba, Dominica, Ecuador, Honduras, Nicaragua, Saint Vincent and the Grenadines, and Venezuela.   |

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\* The following countries retracted from the FTAA: Argentina, Brazil, Bolivia, Chile, Ecuador, Dominica, Honduras, Nicaragua, and Venezuela.

When it was launched, ALBA had two member states, Venezuela and Cuba. Subsequently a number of other Latin American and Caribbean nations have entered into this Peoples' Trade Agreement (Spanish: Tratado de Comercio de los Pueblos, or TCP) which aims to implement the principles of ALBA.

**Source:** WTO Secretariat ; IDB (2002).

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