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The purpose of the *Review* is to contribute to the discussion of socio-economic development issues in the region by offering analytical and policy approaches and articles by economists and other social scientists working both within and outside the United Nations. Accordingly, the editorial board of the *Review* extends its readers an open invitation to submit for publication articles analysing various aspects of economic and social development in Latin America and the Caribbean.

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The following symbols are used in tables in the *Review:*

… Three dots indicate that data are not available or are not separately reported.

(–) A dash indicates that the amount is nil or negligible.
A blank space in a table means that the item in question is not applicable.

(-) A minus sign indicates a deficit or decrease, unless otherwise specified.

(.) A point is used to indicate decimals.

(/) A slash indicates a crop year or fiscal year; e.g., 2004/2005.

(-) Use of a hyphen between years (e.g., 2004-2005) indicates reference to the complete period considered, including the beginning and end years.

The word "tons" means metric tons and the word "dollars" means United States dollars, unless otherwise stated. References to annual rates of growth or variation signify compound annual rates. Individual figures and percentages in tables do not necessarily add up to the corresponding totals because of rounding.

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SUMMARY

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Foreign direct investment and development:
the MERCOSUR experience

Daniel Chudnovsky and Andrés López

This article analyses the impact of foreign direct investment (FDI) on the MERCOSUR countries in the light of key variables such as productivity, foreign trade, innovation and growth. The macroeconomic impact is not found to have been significant, whereas the microeconomic effects seem to have been more noticeable, though varied. Generally speaking, the subsidiaries of transnational corporations operate at higher levels of productivity, engage in more international trade and are more innovative than local companies. The indirect effects of FDI, on the other hand, are less clear. The sign (positive or negative) and magnitude of productivity spillovers to domestic competitors vary, apparently depending on the characteristics of the local businesses and on the markets in which they operate. Finally, only in Brazil is there evidence of spillover effects —although those effects have been both positive and negative— on the export activities and innovation of local companies, as well as productivity spillovers from foreign subsidiaries to their national suppliers.

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I
Introduction

Since its creation, MERCOSUR has been one of the top attractors of foreign direct investment (FDI) among the developing countries. Between 1990 and 2004, the MERCOSUR countries received almost US$ 300 billion in FDI.

Indeed, even during their agricultural export period, Argentina and Brazil had adopted development styles in which FDI played a very important role. This role was reinforced during the final phase of import substitution industrialization —from the mid-1950s to 1970— when foreign companies, together with State-owned companies, led the transition to capital- and technology-intensive industries in both countries.

Although FDI flows declined considerably in the 1980s as a consequence of the severe macroeconomic difficulties that beset the region, in the 1990s, with the improvement in the macroeconomic climate, investment flows rebounded and the region became an active participant in the global FDI boom. However, this renewed interest by transnational companies in investing in Argentina and Brazil occurred in a very different context from the one that had prevailed during the import substitute industrialization period.

In the first place, globalization escalated in the 1990s, bringing with it growing interdependence of countries as a result of the strong growth in international trade, investment and technology flows; consolidation of the trend towards the emergence of international disciplines in various areas —particularly within the World Trade Organization (WTO), but not only there— and the proliferation of a variety of binational and multinational trade arrangements, ranging from regional integration processes to investment treaties.

The FDI boom of the 1990s was inextricably linked to globalization. In 2000, FDI reached a record figure of US$ 1.4 trillion globally, and although investment flows subsequently dropped sharply, today they still significantly exceed the averages of recent decades. At the same time, the number of multinational corporations grew. Whereas in the early 1990s it was estimated that there were around 37,000, with at least 170,000 foreign subsidiaries, by 2004 the number of such companies had increased to nearly 70,000 and the number of foreign subsidiaries had risen to 690,000. Almost half of those subsidiaries were located in developing countries (UNCTAD, 2005).

In this context, transnational companies began to change their strategies, moving towards the creation of integrated international production systems.

In the second place, a fundamental change also occurred in the recipient countries of MERCOSUR, which moved from semi-closed economies with strong government presence —a characteristic of import substitution industrialization— to the adoption of structural reforms prompted largely by the Washington consensus. These reforms sought to open up the economy and reduce the weight of the State, a process that had its clearest expression, in terms of the depth and speed of reform, in Argentina.

The change in the local and international scenarios, coupled with the new trends in the strategies of transnational companies, should have given rise to major changes in the dynamics of FDI within MERCOSUR. In theory, it would have been reasonable to expect not only a change in the objectives of the transnational companies investing in the region, but also a change in the organization of the activities of their subsidiaries. Whereas during the era of import substitution industrialization, FDI was aimed primarily at enhancing access to protected domestic markets by investing in subsidiaries that were not very closely linked with the rest of the company's activities, in the 1990s FDI should have been much more oriented towards international trade, with local subsidiaries incorporating more of the logic of the production chains of each transnational company.

Moreover, the effects of FDI should have been different. During import substitution industrialization,

☐ This article grew out of a research project financed by the International Development Research Centre (IDRC) through the MERCOSUR Economic Research Network. The valuable comments of Gustavo Bittencourt, Rosario Domingo, Celio Hiratuka and Mariano Laplane are gratefully acknowledged, as are the contributions of Eugenia Orlicki and the assistance of Mara Pedrazzoli. This process was facilitated both by the greater liberalization of trade and investment flows and by the rapid spread of information and communications technologies, which facilitate interconnection between the various business units of each company and between those units and their subcontractors, suppliers and clients.

transnational companies exhibited higher levels of productivity than local companies, but they were generally still far below international standards. At the same time, in the face of strong import protections, the subsidiaries of transnational companies (which, in the interest of brevity, will be referred to in the remainder of this article simply as "subsidiaries") tended to operate with a high-level of national integration.

In the scenario of the 1990s, these subsidiaries could have been expected to raise their productivity to international levels and to move forward in trade integration along with the rest of the world, tending to specialize in a smaller number of business segments in order to make themselves more competitive. They should also have exhibited a lower degree of national integration than in the past because they were operating in a more open economic environment and because of the tendency of transnationals to use "global suppliers".

But the new scenario of the 1990s did not affect only the strategies of transnational companies. Domestic companies in all of the MERCOSUR countries also had to contend with new rules of the game, including increased competition in their respective markets as a result both of the larger influx of foreign products and of the considerable growth in FDI inflows.

In this general context, the greater presence of transnational companies alone could have generated both positive and negative impacts on local companies. One of the basic mechanisms for transmission of such impacts is "spillovers". In the specialized international literature on the subject, these mechanisms were originally assumed to yield benefits for local companies —for example, through new knowledge acquired from subsidiaries that would allow them to improve their productivity or through easier access to export markets opened up by transnational companies. However, later on, empirical studies in various countries have shown that spillovers can also produce harmful effects (i.e., spillovers can be negative). Those studies also suggest that the sign (positive or negative) and magnitude of spillovers may vary depending on the capacity of local companies and their responses to the presence of transnational companies.

Against the above context, this article seeks to examine the direct and indirect impacts of the massive presence of transnational companies in the MERCOSUR countries. This examination will yield not only lessons about the factors that determine the magnitude of these impacts and whether they are positive or negative, but also valuable policy suggestions for improving the cost-benefit balance of FDI in the recipient economies, including not just those of MERCOSUR but those of developing countries in general.

The article is organized as follows. After this introductory section, section II describes the main features of and the decisive factors in FDI in the countries of MERCOSUR. Section III analyses the impact of FDI on the MERCOSUR countries in the light of key variables such as productivity, foreign trade, technological change and growth. Lastly, section IV presents the main conclusions of the analysis and offers some policy suggestions.

II

Foreign direct investment trends in MERCOSUR

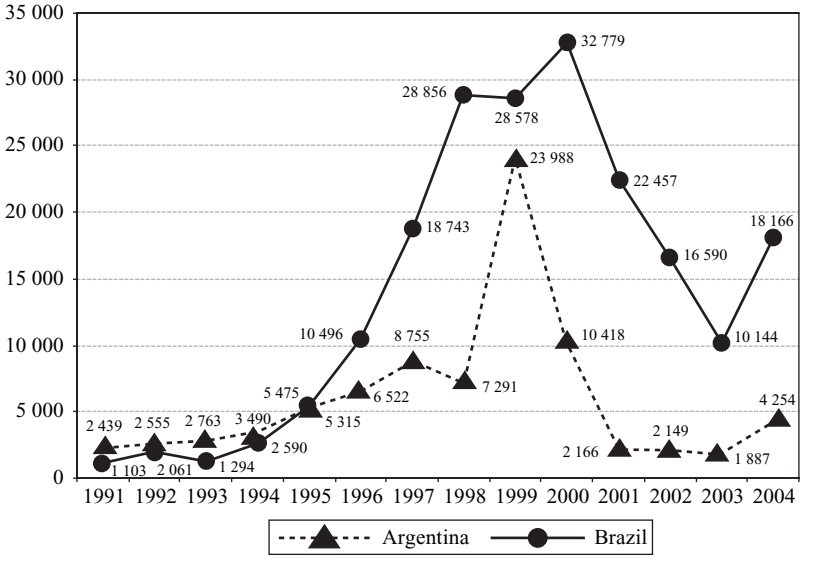
Investment flows to MERCOSUR in the second half of the 1990s were, in constant values (1982 dollars), more than tenfold greater than in the 1970s. Virtually all of this investment went to Argentina and Brazil. During the 1990s, both countries, but especially Argentina, saw an increase in their already large share of the total FDI flows to the MERCOSUR countries. Figures 1 and 2 illustrate the trend of FDI in MERCOSUR between 1991 and 2004.

At the same time, the relative weight of FDI in the MERCOSUR economies increased markedly in the 1990s. In 2004, in both Argentina and Brazil, FDI as a proportion of gross domestic product (GDP) was clearly higher than the global average (table 1). Naturally, the large inflow of FDI brought with it huge growth in the transnational companies operating in the region in the 1990s (figure 3). In Argentina and Brazil, the market share of such companies reached levels that were among the highest in the world (Chudnovsky and López, 2001).

During the 1990s, the bulk of the FDI flowing into MERCOSUR went to the services sector, a phenomenon which was largely linked to the wave of privatizations and deregulation taking place in the region at the time.

FIGURE 1

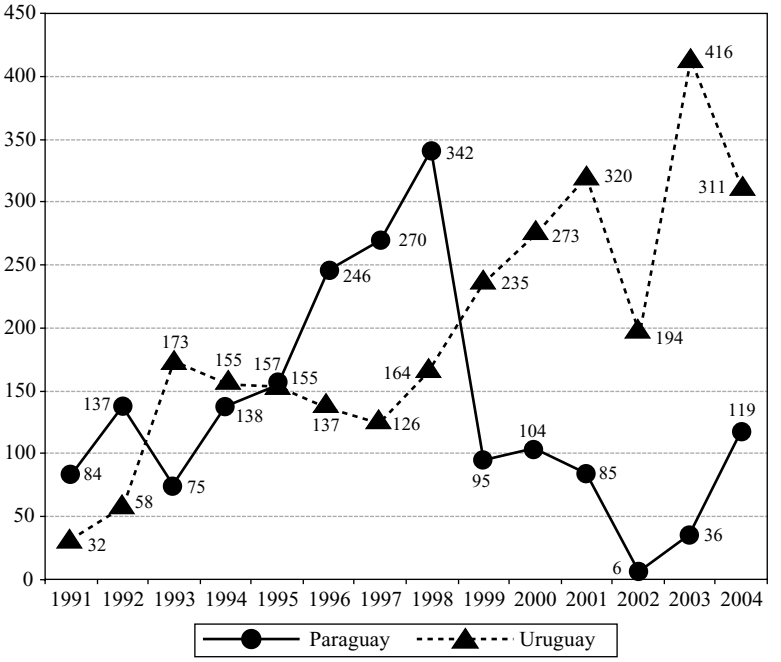
MERCOSUR: trend of foreign direct investment flows to Argentina and Brazil, 1991- 2004
(Millions of current United States dollars)



Source: Prepared by the authors using data from the United Nations Conference on Trade and Development (UNCTAD).

FIGURE 2

MERCOSUR: trend of foreign direct investment flows to Paraguay and Uruguay, 1991- 2004
(Millions of current United States dollars)



Source: Prepared by the authors using data from UNCTAD.

TABLE 1

MERCOSUR countries and other countries: foreign direct investment, 1980-2004
(Percentage of GDP)

	1980	1990	2000	2004
Argentina	2.6	6.2	23.8	35.3
Brazil	7.1	8.0	17.1	25.2
Paraguay	4.8	7.6	17.2	14.6
Uruguay	4.4	7.2	10.4	17.5
Developing countries	4.9	9.8	26.2	26.4
Developed countries	5.0	8.2	16.3	20.5
World	4.9	8.4	18.3	21.7

Source: Prepared by the authors using data from UNCTAD.

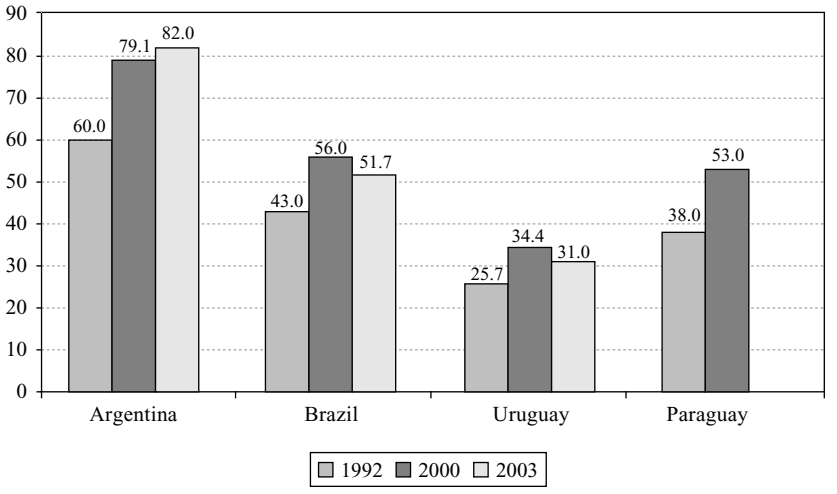
Industry received only slightly over 20% in Argentina and Brazil —far below the level observed during the import substitution industrialization period. In the smaller countries, on the other hand, most FDI went to agriculture and related activities, although natural resources also attracted investment in Argentina, where the petroleum and mining sector absorbed more than a third of all FDI.

It is interesting to contrast the pattern of FDI in MERCOSUR with the pattern prevailing in other parts of the Americas. Within MERCOSUR, availability of raw materials and access to markets (national or regional) were the main factors in the attraction of resource- and market-seeking FDI. In Mexico and Central America, on the other hand, investment was driven mainly by a quest for efficiency and was directed towards the industrial sector (including the automobile, textile and garment, and electronics industries). This investment was strongly export-oriented, motivated by low labour costs and had little linkage to the recipient economies (CEPAL, 2000).

The FDI boom in MERCOSUR during the 1990s was largely a reflection of a similar global trend. However, it was also related to internal factors, as a result of which the region received more FDI than other parts of the world. The findings of Chudnovsky and López (2002) suggest that the size and growth of the domestic markets of the MERCOSUR countries, coupled with export dynamics, macroeconomic stability and the availability of natural resources, especially in Argentina, Paraguay and Uruguay, were among the main factors attracting FDI.

FIGURE 3

MERCOSUR: share of transnational corporations in sales of leading firms in member countries, 1992, 2000 and 2003
(Percentages) [a] [b]



Source: Prepared by the authors using data from the Encuesta Nacional a Grandes Empresas (National Survey of Large Corporations), Instituto Nacional de Estadística y Censos (INDEC) (Argentina); *Exame* magazine (Brazil) and MC Consultores (Uruguay).

[a] For Argentina, data for 1993 were used because no data for 1992 were available. This information also applies to figures 4 and 5.
[b] Data on the share of multinational firms is calculated on the basis of a universe of 500 companies in Argentina and Brazil and 300 in Uruguay. This information also applies to figures 4 and 5.

Some policy instruments, together with privatization, deregulation and trade liberalization, as well as debt-swapping mechanisms (used extensively in the late1980s), had a positive effect on FDI inflows into MERCOSUR. Nevertheless, MERCOSUR's impact in attracting FDI does not appear to have been particularly significant, except in the automobile sector, where specific policies were applied in Argentina and Brazil (Chudnovsky and López, 2002).

Figures 1 and 2 show the sharp drop in FDI flows to MERCOSUR after 2000, especially in Argentina. However, the flows remain high in comparison with previous periods and the relative weight of FDI continues to increase in the economies of all the countries of the region, except Paraguay (table 1). In other words, even after the crises suffered by the countries of the bloc, the presence of transnational companies continues to be of crucial importance for the economic advancement of MERCOSUR. This makes it all the more important to assess the impact of FDI, which will be examined in the next section.

III
Impact of foreign direct investment on the MERCOSUR countries

1. General considerations

FDI's contribution to the economic development of recipient countries depends essentially on the impact that the presence of transnational companies —which receive the lion's share of foreign investment— has on domestic economies.

Subsidiaries of transnational companies (called simply "subsidiaries" here for the sake of brevity) enjoy "ownership advantages" thanks to their access to product and process technologies and to the organizational, production, business and environmental practices of their parent companies. Such subsidiaries —especially when they operate in developing countries— thus generally have advantages over their local competitors in terms of higher productivity and greater capacity for launching new products and productive processes on the market.

FDI can be expected to influence trade flows in recipient countries because subsidiaries are part of corporate networks which, theoretically, facilitate the exchange of goods and services with other subsidiaries, with the parent company and even with third parties (suppliers and others). With their higher levels of productivity and easier access to foreign markets, it is reasonable to assume that subsidiaries will have a greater propensity to export than local companies. And because it is easier for them to purchase from foreign suppliers, including both inputs and finished goods and capital goods, they will also, presumably, be more likely to import than local companies.

In addition to its direct effects, FDI also has significant indirect effects (also called spillover effects or spillovers) on domestic companies. In the area of productivity, for example, there may be positive spillovers for companies in the recipient countries, which may take various forms. For example:

(i) Human capital may be improved when local companies and institutions gain access to operators, technicians and engineers trained by subsidiaries of transnational companies in production, marketing and/or innovation activities.

(ii) The level of competition on the domestic market may increase when new transnational companies enter the market or existing subsidiaries become more competitive, prompting local companies that compete with the foreign firms to boost their productivity and/or enhance the quality of their products, either by making investments or by taking advantage of knowledge that trickles down from subsidiaries –i.e., through horizontal or intrasectoral spillovers.

(iii) Local companies may benefit from the technologies and organizational practices of transnational companies, both as a result of the more stringent demands for quality, price and/or delivery time that subsidiaries generally place on their suppliers and as a result of the technical assistance that they may provide in order to ensure that those demands are met —i.e., vertical or intersectoral spillovers.

While subsidiaries would have incentives for avoiding horizontal spillovers, they might be inclined to promote vertical or intersectoral spillovers. This

type of spillover will probably not have any adverse effect on the subsidiaries and indeed might well benefit them by making their customers and/or suppliers more productive and more efficient (Kugler, 2001).

Subsidiaries can also generate positive spillovers in terms of access to external markets if their export activities reduce the cost of acquiring information on such markets or make it easier for local companies to learn to export, either through demonstration effects or through generation of greater competition.

However, spillovers will not always be positive. For example, productivity can be negatively impacted when local companies are forced to cut their production —thus lowering productivity in their establishments— in the face of a growing foreign presence in the market (Aitken and Harrison, 1999). Negative vertical spillovers can occur when, for example, local suppliers are displaced from the market as a result of subsidiaries' preference for foreign suppliers.

Empirical studies in recent years have attempted to assess the existence and magnitude of direct and indirect effects of FDI in recipient countries and determine whether those effects have been positive or negative. The methodology used in such studies has changed over time, with case studies of countries or industries in which transnational companies play a significant role increasingly giving way to econometric studies, as it is essential to employ procedures that make it possible to analyse both observable and non-observable characteristics of companies in order to isolate the importance of the foreign ownership variable in performance differences. This means analysing the problem of endogeneity (Barba Navaretti and Venables, 2004).

The same is true of spillovers. In the case of productivity spillovers, which were the first to attract the attention of the specialized literature, most of the pioneer studies found evidence of positive indirect effects, but they were based on cross-section data, which did not capture heterogeneity at the company level. Moreover, these studies did not take into account the effect of the sectoral composition of FDI, so even in the absence of spillovers there could be a positive correlation between presence of transnational companies and productivity of local companies, simply because transnationals tend to invest in high-productivity sectors.

The most recent studies, most of which have employed panel data techniques, have tended to show a more heterogeneous reality. With panel data models using fixed effects at the company level, non-observable factors that may affect the investment decisions of transnational companies can be taken into account, as can changes that may affect the productivity of such companies over time —for example, changes in the institutional or macroeconomic context or possible slowness on the part of local companies in absorbing knowledge spillovers from subsidiaries.

Up to this point, we have been discussing mainly the microeconomic effects of FDI. Analogously, the aforementioned empirical studies have generally been based on firm-level data. However, those studies have also examined the relationship between FDI and growth, a topic which, obviously, must be treated at country level.

In such cases, the analysis generally explores not just the impact of FDI on gross domestic product (GDP) growth in recipient countries, but also inverse causality —in other words, whether it is growth that attracts FDI (a plausible hypothesis in the light of the aforementioned prevalence of horizontal, or market-seeking, FDI in recent decades). As we will see later on, in this area, too, the empiric evidence shows a positive-to-negative shift —from general optimism to general scepticism— as increasingly advanced econometric techniques have been used.

2. Productivity

Although many empirical studies have indicated that subsidiaries exhibit higher levels of productivity than local companies, when the analysis is controlled for other observable and non-observable characteristics of companies, the size of the gap shrinks considerably: from between 30% and 70% to between 1% and 7% (Barba Navaretti and Venables, 2004). In addition, when it is taken into account that transnational companies may acquire the local companies that already have the highest productivity, in some cases the "nationality effect" vanishes, although in no case are negative effects observed.

With regard to horizontal spillovers, the most recent studies, employing advanced econometric procedures, have not found much evidence of positive effects, especially in developing countries. Some of these studies have highlighted the fact that the magnitude of such spillovers, and whether their impact is positive or negative, may depend mainly on the capacity of domestic companies and/or the size of the technology gap between local firms and foreign subsidiaries.[1]

In contrast, with regard to vertical spillovers —which have been much less studied than horizontal

[1] See reviews and critical assessments on the topic in Görg and Greenaway (2004) and Lipsey and Sjoholm (2005).

spillovers— Javorcik (2004) and Blalock and Gertler (2005) suggest that subsidiaries of transnational companies may have positive effects on their local suppliers, confirming the intuitive assumption alluded to earlier that such spillovers could, unlike their horizontal counterparts, be beneficial for the subsidiaries.

In the case of MERCOSUR, studies on the indirect effects of transnational companies in Argentina, Brazil and Uruguay —the findings of which have been published in Laplane (2006)— apply mainly an econometric methodology for the analysis of spillovers, but they also take into account the local context in explaining the results obtained.

In Argentina, panel data on manufacturing companies for the period 1992-2001 reveal that subsidiaries exhibit higher levels of productivity than local companies. There is no evidence of any spillovers to local companies —positive or negative, horizontal or vertical— resulting from the presence of transnational companies. However, local companies that have high absorptive capacity —as measured by an indicator that combines variables related to human capital, innovation activities and use of modern management techniques— are better positioned to receive positive spillovers from the presence of transnationals than those with low absorptive capacity (Chudnovsky, López and Rossi, 2006).

In the case of Brazil, panel data from industrial firms for the period 1997-2000 show that domestic enterprises received neither positive nor negative spillovers from the presence of transnational companies. As in Argentina, it was found that the response capacity of domestic companies determined the results of their interaction with subsidiaries: those that had smaller differences in productivity vis-à-vis the foreign firms experienced negative spillovers from the presence of transnational companies, while the presence of such companies tended to enhance the productivity of domestic firms that exhibited a larger productivity gap (Laplane, Padovani Gonçalves and Dias de Araújo, 2006).

In interpreting this finding, it should be borne in mind that, during the period under study, most of the subsidiaries were oriented towards the Brazilian domestic market. Hence, their presence would have had the effect mainly of downscaling the activities of the most efficient local companies, with a consequent loss of productivity. This hypothesis is reinforced by the finding that the presence of market-seeking subsidiaries has a negative effect on the productivity of domestic companies. As for vertical effects, the Brazilian study found evidence of positive spillovers for domestic companies.

In Uruguay, as in Brazil, negative horizontal effects were found (although not in all the exercises carried out in the course of the study). These effects were attributed to competition for the domestic market between local companies and subsidiaries. At the same time, it was found that the domestic companies with the greatest learning capacity —as measured by number of personnel engaged in research and development (R&D) activities— were able to benefit from the foreign presence, although the companies that were spending the most on R&D saw their productivity decline as a result of this presence (Bittencourt and Domingo, 2006). Transnational companies were found to be more productive than local firms when sector-level fixed effects were included in the analysis, but not when firm-level fixed effects were considered.

Although transnational companies in Argentina also employed mainly market-seeking strategies, unlike in Brazil and Uruguay, there was no evidence of negative horizontal spillovers. However, Chudnovsky, López and Rossi (2006) found that in sectors with high effective protection rates the presence of transnational companies had negative effects on the productivity of domestic companies. This finding also serves to underscore the negative impact of FDI when its purpose is mainly to gain access to markets in recipient countries.

3. Foreign trade

There have been relatively few studies of the impact of FDI on the foreign trade behaviour of recipient countries.[2] Some studies have found that subsidiaries export more than domestic companies.[3] We have found no evidence from empirical studies using econometric techniques that transnational companies import more than domestic firms (although very few studies appear to have dealt with this topic), except for those conducted in Argentina, Brazil and Uruguay (see below).

With regard to spillovers, some studies point to positive effects, while others find no evidence of such effects.[4]

[2] See Görg and Greenaway (2004) for a review of the literature.

[3] See Roper and Love (2001) for a study using data on the Republic of Ireland and on Northern Ireland; Aitken, Hanson and Harrison (1997) for a study using data on Mexico; and Kneller and Pisu (2004) for a study using data on Great Britain.

[4] The first group includes Aitken, Hanson and Harrison (1997), with data on Mexico; Greenaway, Sousa and Wakelin (2004), on Great Britain; and Alvarez (2005), on Chile. The second group includes a study by Barrios, Görg and Strobl (2003) using panel data on Spanish companies.

The issue is of great importance for MERCOSUR, considering the major role that multinational companies play in the foreign trade of the countries of the region. Their role is largest and is clearly growing in Argentina, particularly with regard to exports; Brazil and Uruguay are second and third in terms of the participation of multinationals in international trade (figures 4 and 5).

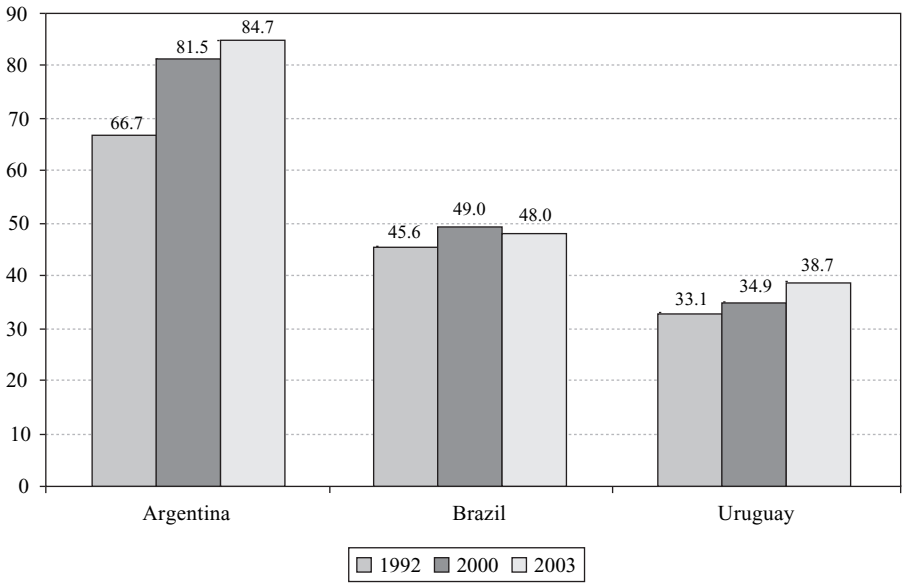
What does the empirical evidence say about the international trade propensity of subsidiaries and possible spillovers to domestic companies in the MERCOSUR countries? In a study on a panel of manufacturing companies in Argentina, using data from the period 1992-2001, Chudnovsky, López and Orlicki (2006) find that companies that were acquired by foreign investors, showed, after the change of ownership, a tendency both to export and to import more than domestic companies (both in absolute values and in terms of turnover) when various observable and non-observables characteristics of the companies analysed are taken into account. This effect occurs gradually and is robust to various specifications of the model. That study found no evidence of vertical or horizontal spillovers to domestic companies.

In contrast, there have been several studies on the trade performance of transnational corporations in Brazil, employing different databases and methodologies. Using data from 1997, Pinheiro and Moreira (2000) found that foreign companies were more likely to export and that the expected value of their exports was 32% higher than that of domestic firms. De Negri (2003), meanwhile, analyses a panel of almost 54,000 companies during the period 1996-2000 and finds that foreign firms exported 70% and imported 290% more than domestic companies.

As for spillover effects, a recent study shows that they exist but that they are generally very small in magnitude and they may be either positive or negative (Hiratuka and Dias de Araújo, 2006). On the one hand, the foreign presence seems to make it more likely that domestic firms in the same sector will export their products; however, when the authors disaggregate the analysis, classifying domestic companies according to their levels of productivity vis-à-vis transnational

FIGURE 4

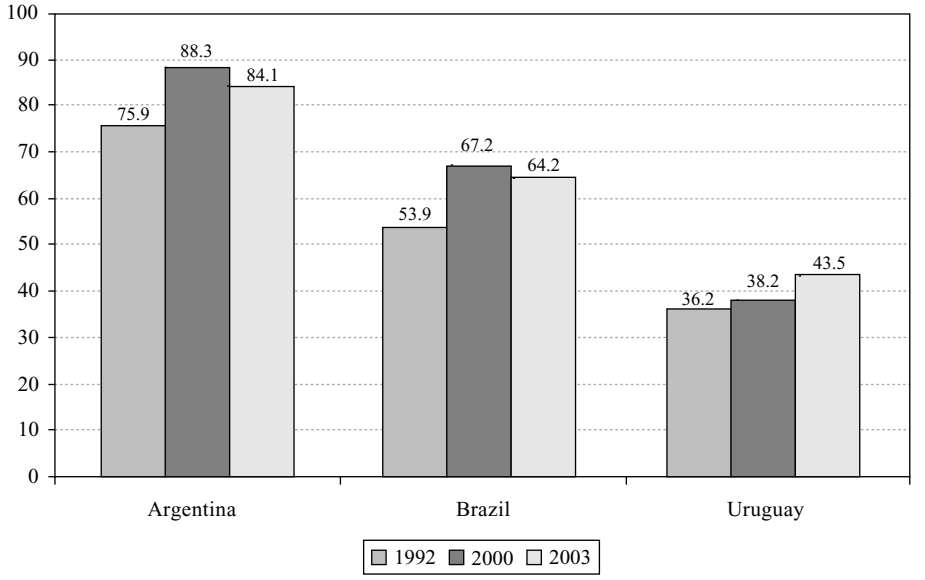
MERCOSUR: share of transnational corporations in exports of leading firms in member countries, 1992, 2000 and 2003
(Percentages)



Source: Prepared by the authors using data from the Encuesta Nacional a Grandes Empresas (National Survey of Large Corporations), Instituto Nacional de Estadística y Censos (INDEC) (Argentina); *Exame* magazine (Brazil) and MC Consultores (Uruguay).

FIGURE 5

MERCOSUR: share of transnational corporations in imports of leading firms in member countries, 1992, 2000 and 2003
(Percentages)



Source: Prepared by the authors using data from the Encuesta Nacional a Grandes Empresas (National Survey of Large Corporations), Instituto Nacional de Estadística y Censos (INDEC) (Argentina); *Exame* magazine (Brazil) and MC Consultores (Uruguay).

companies, the effects turn negative. On the other hand, when the effects of the foreign presence on the amounts exported by local companies are examined, positive spillovers are observed in those with high levels of productivity and negative spillovers in the rest.

In the case of Uruguay, a cross-sectional study finds that the presence of transnationals increases the probability that local companies will export, although this effect only occurs for exports to the global market, not for those to Argentina and Brazil. Interestingly, only subsidiaries established after 1973 have a positive effect on the likelihood of local companies' exporting, whereas this does not occur with those that came to Uruguay during the import substitution industrialization period (Kokko, Zejan and Tansini, 2001).

More recently, Bittencourt, Domingo and Reig (2006a), based on data from two panels of Uruguayan companies for different periods in the 1990s, show that transnational companies have a greater propensity to export than local ones, but they do not find any resulting spillovers to the export behaviour of local companies. As for the propensity to import, looking only at purchase of inputs, the study finds that transnational firms imported more than local firms in only one of the two periods examined. In addition, in one of the two periods, the foreign presence in one sector of the economy may have increased the import propensity of local companies.

Studies have also been conducted with a view to analysing not only the general trade performance of transnational companies but also the characteristics of their foreign trade. Chudnovsky and López (2001) found, through a descriptive statistics analysis, that subsidiaries operating in MERCOSUR countries had an essentially asymmetrical trade pattern, the technology content of their exports being clearly inferior to that of their imports. At the same time, the weight of the developed countries —and in particular of the respective regions of origin of the subsidiaries— in the import patterns it was greater than in the case of exports, particularly with respect to manufactured goods.

A recent study by Hiratuka and De Negri (2004) examined this topic in Brazil, applying econometric techniques. The authors show that subsidiaries with parent companies in the United States, Canada and Europe import more products from their regions of

origin than other companies, but they do not exhibit any significant differences with respect to the destination regions for their exports. However, the technology content of the transnationals' imports from their regions of origin is higher than that of their overall imports. Hence, the higher volume of imports from their regions of origin may be due to subsidiaries' technological dependence on their parent companies.

According to Hiratuka and De Negri, one of the main factors in understanding these findings is the high proportion of intra-firm trade by subsidiaries, which, according to official figures, accounts for as much as 63% of their exports and 57% of their imports. In 2000, intra-firm trade represented almost 38% of total exports and 33% of total imports in Brazil.

These data reflect the positioning of Brazilian subsidiaries within the production and trade networks of transnational companies. However, it should be noted that Brazil enjoys a relatively privileged situation in that regard compared to the other MERCOSUR members. In fact, the share of manufacturing exports in the trade of transnationals is larger in Brazil, the weight of FDI in high-technology sectors is greater and, as will be seen later on, most of the innovative effort by subsidiaries in the region is concentrated in Brazil. In addition, many of transnational corporations have their regional headquarters in Brazil (Chudnovsky and López, 2001). Hence, the impacts of FDI in this country may differ from those in the other MERCOSUR countries.

Hiratuka and Sabatini (2006) also examine the extent to which transnational companies are more likely than domestic companies to trade with MERCOSUR. A previous study (Chudnovsky and López, 2002), using trade data for the year 2000, had not found any statistically significant differences in that respect. The more recent study, however, which used data from 2003, found that in Argentina transnational companies are more likely both to import from and export to MERCOSUR. In Brazil, on the other hand, the differences are statistically significant only in the case of imports. This greater intra-regional trade orientation on the part of transnationals in MERCOSUR might reflect the consistent application and even the intensification of efficiency-seeking strategies within the bloc, as well as possible effects of the financial crisis in Argentina.

4. Research, development and innovation

Although the R&D activities of transnational companies have traditionally been concentrated in their parent companies, and in some cases in their subsidiaries in industrialized countries, in recent years there has been a trend towards decentralizing these activities to some developing countries in Asia and, to a lesser extent, in Latin America, especially Brazil (UNCTAD, 2005).

This is noteworthy because enhancing productivity and competitiveness in developing countries depends not only on their adopting imported modern technologies, but also on their engaging systematically in R&D at the local level.

It is worth asking, in this context, what contribution FDI has made to R&D activities in the MERCOSUR countries, and, as in the preceding sections, examining whether there have been spillovers to local companies.

Generally speaking, there have not been many studies focusing on developing countries that have looked at whether transnational companies conduct more or less R&D in the recipient country than local companies, and there are even fewer that have examined the possible spillovers of such activities to national firms. And we are not speaking here of productivity spillovers, but of whether or not the fact that subsidiaries carry out R&D activities increases the probability that domestic companies will do likewise.

A study using data from Turkey (Erdilek, 2005) shows that subsidiaries in that country are more likely to undertake R&D activities than local companies. However, the same study also offers evidence, at least from some of the exercises conducted in connection therewith, that the foreign presence stimulates R&D activities by local companies operating in the same sector.

In contrast, in a study using data on India, Kumar and Aggarwal (2000) find that subsidiaries spend less on R&D than their local counterparts. Similarly, Srholec (2005), working with data from the Czech Republic, finds that multinational companies are less likely than local ones to engage in R&D activities. A similar finding appears in Jefferson, Huamao et al. (2002) for a panel of data from Chinese companies.

What does the evidence say about MERCOSUR? Using quantitative data from a Brazilian survey of innovation for the year 2000, Laplane, Padovani Gonçalves and Dias de Araújo (2006) conducted various cross-sectional econometric exercises on the topic, and found that subsidiaries spend proportionally less on R&D than domestic firms, taking into account factors such as size, personnel training and propensity to export. Dias de Araújo (2005) also finds that transnational companies are less likely to invest in R&D than their local counterparts. However, as the authors point out, this does not mean that subsidiaries are less innovative than their national counterparts (the aforementioned

survey reveals that 68% of foreign subsidiaries are innovative,[5] versus 30% of domestic firms), but rather that they innovate mainly by using knowledge supplied by their respective parent companies.

At the same time, Laplane, Padovani Gonçalves and Dias de Araújo (2006) found that both the foreign presence and the average intensity of spending on R&D by transnational companies operating in a particular sector stimulate R&D by local companies. However, the spillover effects are relatively minor. Dias de Araújo (2005) finds mainly positive spillovers (although, because he differentiates local and foreign companies by sector and levels of productivity, he also finds a few cases of negative spillovers).

In the case of Argentina, a study on inputs into and results of the innovation process in the manufacturing industry in 1992-2001, using data from two recent surveys of innovation, found that whether the company was foreign or domestic was not an explanatory variable in either the level of R&D spending as a proportion of sales or the likelihood of introducing innovations into the market (Chudnovsky, López and Pupato, 2006).

Another study showed that companies acquired by foreign investors were more likely than local companies to put new products or processes on the market, but that acquisition of local companies by transnational companies did not influence the level of expenditure on R&D, nor did it result in horizontal or vertical spillovers to domestic firms (Chudnovsky, López and Orlicki, 2006). These findings are consistent with what was found in Brazil: subsidiaries of a transnational company may be more innovative because of knowledge they receive from their parent company.

Within MERCOSUR, subsidiaries in Brazil are clearly the leaders in the area of R&D, at both the regional and the international levels.[6] This could be because the application of efficiency-seeking strategies in the region has led to the discontinuation of certain innovative activities of an adaptive nature that were being carried out in Argentine subsidiaries and to the transfer of those activities to their Brazilian counterparts. It should also be remembered, however, that Brazil has attracted more FDI in high-tech sectors —where R&D expenditures tend to be higher than average— than the other members of MERCOSUR. In addition, under current regulations in Brazil, multinational corporations that invest in sectors such as electronics and computers are required to invest a certain proportion of their sales revenues in R&D.

5. Growth

The relationships between FDI and growth have been widely discussed in recent years. Some studies have shown that FDI is a causal factor in growth in developing countries, particularly when certain minimum thresholds for human capital and/or trade openness are met in the recipient countries (Borenzstein, de Gregorio and Lee, 1998; Blonigen and Wang, 2005; Zhan, 2001).

In contrast, Carkovic and Levine (2005), using new econometric techniques, find no evidence of a positive impact of FDI on growth, while Calderón, Loayza and Serven (2004)[7] find that the causal relationship goes in the other direction: growth leads to FDI. Mencinger (2003), who studied the transition economies of Eastern Europe, concludes that FDI had a negative impact on growth, attributing this finding to the prevalence of merger-and-acquisition FDI in that region.

Other studies show more varied evidence. For example, Chowdhury and Mavrotas (2005) find a bidirectional causal relationship between FDI and growth in the cases of Thailand and Malaysia, but conclude that in Chile the direction of causality is from growth to FDI. Working with data from several Latin American countries, Cuadros, Orts and Alguacil (2004) find that FDI has had a positive effect on growth only in Mexico. Basu, Chakraborty and Reagle (2003) conclude that in more open economies the relationship between FDI and growth is bidirectional, but that in more closed economies it is unidirectional: from growth to FDI. Choe (2003) also finds evidence of a bidirectional correlation between FDI and growth, but points out that the strongest effects run from growth to FDI.

What does the available information say about the relationship between growth and FDI in MERCOSUR? A study by Bittencourt, Domingo and Reig (2006b) explores this question by means of two methodologies: analysis of co-integration and causality between FDI, investment and GDP series for the MERCOSUR countries and growth modelling using panels of countries (the same methodologies applied in the above-mentioned

[5] An "innovative" firm is defined as one that launched new products or processes on the market during the period under study.

[6] A recent UNCTAD survey of a group of large multinational firms found that Brazil ranked 12th among foreign locations for conducting R&D activities, whereas Argentina was mentioned only once and Paraguay and Uruguay were not mentioned at all.

[7] The studies by Calderón and Levine (2005) and by Calderón, Loayza and Serven (2004) cover both developed and developing countries.

studies). In neither case do they find evidence that FDI generates growth.

Exploring the dynamics of the relationships between the aforementioned series for the period 1950-2004, the authors of that study conclude that FDI has not contributed to GDP growth in any of the MERCOSUR countries, although the inverse relationship is found for Uruguay and, weakly, for Argentina. Only in Uruguay does there appear to be a positive bidirectional correlation between FDI and domestic investment.

On the other hand, using a panel of data from four MERCOSUR member countries for the period 1970-2004, the same study finds that variables representative of physical and human capital accumulation had positive effects on growth, as did the growth rate in the preceding period, but that FDI is not a significant explanatory variable. In short, FDI does not appear to have had a positive impact (although it has not had a negative impact, either) on growth in the MERCOSUR countries in recent decades.

IV

Conclusions and policy recommendations

The preceding analysis suggests that the macroeconomic impacts of FDI in the MERCOSUR countries have not been significant, since its effect on growth in the countries of the region was neither positive nor negative. This is not surprising, as many of the most recent studies on the topic in other regions have yielded similar findings. The microeconomic impacts of FDI, on the other hand, appear to have been much stronger, although they have not been uniformly positive or negative.

In the three countries examined in this study, there is evidence that subsidiaries are more involved in international trade than domestic companies, in terms both of imports and of exports. As previous studies have not found evidence that subsidiaries have a greater propensity to export, the change could be due to a learning process and to improvements in efficiency stemming from efforts to adapt to the new conditions in the domestic and international environments, which enabled subsidiaries gradually to increase their export capacity.

At the same time, the participation of subsidiaries in the intra-firm trade of transnational companies shows some asymmetrical patterns. In Brazil, in particular, it has been shown that subsidiaries of transnational companies headquartered in developed countries tend to import mainly from their countries of origin —but they do not show the same tendency with regard to exports— and that such imports had a higher technology content than their imports from other regions.

Considering that most trade by subsidiaries of multinationals is intra-firma trade, and in the light of the findings of previous studies on the topic,[8] it can be concluded that there is a sort of intra-firm international "division of labour" in a substantial proportion of the foreign companies with operations in the region.

The technology content of subsidiaries' exports is lower than that of their imports, and most such exports go to developing countries, mainly in Latin America. This means that advantage is not being taken of the possibilities that might be available to subsidiaries in the markets of origin of their respective parent companies. On the other hand, subsidiaries tend to purchase mainly from suppliers in their countries of origin, particularly in the case of goods with high technology content.

As for the spillover effects of FDI on domestic companies, the available evidence paints a varied picture. Only in the case of Brazil do there appear to be productivity spillovers from subsidiaries of transnational corporations to their domestic suppliers. The productivity of these Brazilian firms appears to have been enhanced by the foreign presence, which could be the result of conscious effort by the subsidiaries to help boost the efficiency of their suppliers.

In contrast, horizontal productivity spillovers —i.e., spillovers between companies competing in the same area of activity— seem to depend on certain characteristics of the local companies and of the markets in which they operate. Generally speaking, no evidence was found of either positive or negative horizontal

[8] See Chudnovsky and López (2001 and 2002).

spillovers, although when various features of domestic companies were examined, some differential effects emerged. For example, in Argentina it was the domestic companies with the greatest absorptive capacity that most benefited from the presence of transnational firms, whereas in Brazil the biggest beneficiaries were the domestic firms that had the largest productivity gap vis-à-vis the transnationals. While the finding in Argentina is presumably explained by the fact that greater absorptive capacity facilitates the transfer of knowledge from subsidiaries of transnational companies to local firms, the situation in Brazil appears to have more to do with the massive influx of market-seeking FDI, which displaced the local companies competing directly with foreign subsidiaries in the same markets.

There is no evidence of spillovers on the export activity of national firms as a result of the presence of subsidiaries of transnational companies, except in Brazil, where spillovers do seem to have occurred, but they were very small in magnitude and were both positive and negative, generally benefiting the most productive local companies and hurting the least productive ones.

In Brazil, there is also evidence of positive spillovers from the foreign presence on the R&D expenditures of local companies. Curiously, this was true even though subsidiaries in Brazil spend less on R&D than domestic companies. This does not, however, mean that they are less innovative. Indeed, in both Brazil and Argentina, transnational companies are more likely to introduce innovations into the market than their domestic counterparts, a phenomenon explained by the fact that knowledge existing within transnational companies can be utilized at low cost by their subsidiaries.

How should these findings be interpreted? Clearly, they do not suggest that FDI automatically leads to growth or brings about widespread improvement in the performance of companies in recipient countries, as has been assumed, explicitly or implicitly, to be the case by advocates of the so-called Washington consensus, which spawned the wave of reforms of the 1990s. However, neither do these findings bear out the current mainly negative view of FDI that has become increasingly widespread in some countries of the region in recent years.

Moreover, the available evidence indicates that the effects of FDI in the MERCOSUR countries have not necessarily been uniform. Brazil seems to have been the biggest beneficiary, as evidenced by the following findings: (i) key functions for multinational enterprise at the regional level, and, in a handful of cases, at the global level, tend to be concentrated in Brazil; (ii) Brazil accounts for the bulk of high-tech FDI in MERCOSUR; (iii) the technology content of the exports of multinational companies located in Brazil is higher. These trends result from a combination of structural factors (the greater size of the Brazilian economy and its higher degree of industrial development) and public policy factors (existence of regulatory frameworks that encourage multinationals to engage in R&D activities in Brazil and that attract investment to high-tech sectors).

Against this backdrop, what should the public policy agenda for the future be? First, it is worth noting that despite the financial crises in Argentina —where there have also been intense conflicts with foreign investors in connection with the privatization process— and in Brazil, and despite the global decline of FDI after 2001, investment flows into the region remain high in comparison with the past. Furthermore, although the process of "de-nationalization" of the leading firms seems to have slowed in recent years, subsidiaries of transnational companies continue to carry a lot of weight in the economies of the region. Hence, the public policy agenda must address not only what should be done about the FDI assets existing in the region, but also the strategies to be applied with respect to foreign investors who continue to be attracted by the opportunities that MERCOSUR has to offer.

It should also be noted that, unlike what happened in the 1990s —when policies aimed at promoting competitiveness and innovation faded into the background, or were assumed to be identified with the structural reforms of that decade— in recent years there has been a healthy return to discussion of whether such policies have a place on the agenda of developing countries.

The foregoing suggests several areas in which policy measures might be applied in order to enhance the direct and indirect impacts of FDI in the countries of MERCOSUR. For example, policies might be aimed at:

(i) boosting the capacity and competence of local companies, in particular SMEs, to enable them to take better advantage of the spillover effects from the foreign presence by, among other measures, strengthening technology transfer mechanisms, stepping up capacity-building activities and promoting modern methods of production and business organization;

(ii) strengthening incentives for R&D activities, for both transnational and domestic companies;

(iii) initiating negotiations aimed at persuading transnational companies to locate more of their

corporate strategic activities in their MERCOSUR subsidiaries and to entrust those subsidiaries with greater responsibility, for example, with regard to the development of "global products" for worldwide export;

(iv) encouraging schemes for developing or improving suppliers, which could lead to significant vertical spillovers to local companies; and

(v) promoting various ways of integrating local companies into the value chains led by multinational corporations, including outsourcing, partnerships and other modalities that have become commonplace in the rest of the world level but whose development remains limited in the MERCOSUR countries.

From the list above it is quite clear that much of the policy action needed to ensure a greater spillover effect from FDI flows to MERCOSUR is related to the level of business development in the countries of the region. Certainly, this is a crucial issue that encompasses problems ranging from lack of access to financing —which basically affect capital and technology investment by local companies— to human capital deficiencies, limited absorptive capacity and generation of knowledge, and lags in adopting modern methods of business management.

"Active" policies on FDI are likely to yield better results if the transnational companies operating in MERCOSUR are seeking efficiencies (but without becoming cheap labour enclaves), rather than seeking only to exploit natural resources or domestic markets, as was largely the case in the 1990s. Accordingly, some thought needs to be given to how to create conditions that will attract a larger proportion of "quality" FDI —i.e., efficiency- and strategic-asset-seeking FDI— to MERCOSUR. Such conditions include access to skilled human resources, availability of adequate physical and logistic infrastructure, existence of a good science and technology base, and, of crucial importance, a stable regulatory framework and solid institutions (CEPAL, 2006).

Policy development in these areas cannot take place only in the national sphere, however. At the very least, it is essential for the countries involved to coordinate their actions in order to avoid the sort of zero-sum game that can result when the existence of certain policies or incentives in one country causes activities or investments simply to be relocated to another country, as a result of which some countries "win" at the expense of others.

In conclusion, we want to stress that, according to the empirical evidence, FDI is not, in and of itself, a positive or a negative phenomenon; its impact depends basically on prevailing conditions and policies in the recipient countries. Hence, policy-making in this area should not be founded on a position that is unconditionally (and ideologically) friendly or hostile to FDI, but rather on the need to build on the results of past experience in order to design instruments and strategies that will maximize the contribution that FDI can make to economic development in the countries of MERCOSUR while avoiding its possible adverse consequences.

(Original: Spanish)

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KEYWORDS

Small enterprises
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Developing competitive advantages: successful export SMEs in Argentina, Chile and Colombia

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This article analyses the specialization patterns of export SMEs in Argentina, Chile and Colombia in the 2001-2004 period with a view to identifying the factors that influence the level of success achieved by such companies. To this end, an indicator of export success is applied to the universe of export SMEs in the three countries and two groups of agents are differentiated: the successful and the unsuccessful. These factors are identified using information from surveys applied to some 300 export SMEs (both successful and unsuccessful) in the countries studied, covering trade, production, technology and the institutional environment. This study compares the relative situation of these countries and analyses the potential contribution their successful export SMEs can make to modifying their exportable goods baskets.

I
Introduction

The purpose of this article is to carry out an analysis for the 2001-2004 period of the specialization patterns of small and medium-sized enterprises that export to outside markets (hereinafter "export SMEs") in Argentina, Chile and Colombia, together with the factors that determine how successful these businesses are in export markets. To this end, it compares the relative situation of the three countries and provides information illustrating the potential contribution that dynamic export SMEs can make to modifying the basket of exportable goods, particularly following the post-reform crises and the profound macroeconomic changes of the late 1990s. The analysis of these issues is based on foreign trade data and on information about trade, production and technology factors affecting export performance drawn from surveys of some 300 export SMEs (successful and unsuccessful) in those countries.

This article is part of the new literature on innovation and growth that emphasizes the importance of increasing returns to scale, multiple equilibria, network externalities, the potential for accumulating capabilities and the key role of specialization profiles in the development of technological and organizational capabilities that can drive dynamic competitive advantages (Reinert, 2000; Amsden, 2004; Ocampo, 2005; Palma, 2005; Ross, 2005; Cimoli and Correa, 2005). It is also part of the debate on the need for structural change to drive innovation processes and complementarities between agents, and to reduce the structural dualism characterizing the economies of the countries studied (Ocampo, 2005).

Strategies for developing the technological and organizational capabilities of economic agents have a vital role to play in generating successful routes to development and changes in external specialization profiles (Lall, 1994). The role that SMEs might play in this process by bringing a higher level of complexity and sectoral diversification to the external profile of the region's countries is now starting to be reappraised.

In the sections that follow, this article presents the analytical framework and main hypotheses underlying the work done (section II). It examines the macroeconomic context of the countries analysed and their export structure, focusing particularly on smaller agents (section III). It describes the methodology used to identify export success among SMEs and the main results of its application to the external trade data of Argentina, Chile and Colombia (section IV). It identifies the main features of the firms surveyed and uses descriptive statistics and non-parametric tests to conduct an exploratory analysis of the principal determinants of a company's export success (section V). It then presents a binary logistic regression model for multivariate identification of export success factors among SMEs (section VI). Lastly, it sets forth the main conclusions (section VII).

II
Analytical framework

The evidence available on the factors determining export activity at the firm level relates almost exclusively to industrialized countries (including newly industrializing Asian countries). Developing countries, particularly those of Latin America, have been less studied. Most of the information on the subject has been produced on the basis of an evolutionary approach to economics that stresses the role of technology and knowledge in the development of dynamic competitive advantages. Some stylized facts relating to the incidence of these factors on companies' export activity can be summarized into four main points.

First, at the aggregate level the evidence shows that differentiated and higher-technology goods

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(Pavitt, 1984; Hatzichronoglou, 1997) are the most dynamic in international trade (Dosi, Pavitt and Soete, 1990; Guerrieri and Milana, 1995; Lall, 2001, among others). Consequently, firms that produce these goods tend to have a greater propensity to export.

Second, innovation theory suggests that, besides differences between industries resulting from different productive specialization profiles, technological differences within industries are also very important (Dosi, 1988; Nelson, 1991; Freeman, 1994). Against this background, the evidence available on the relationship between innovation and exports at the firm level systematically shows that the former (measured by innovative inputs, innovative outputs or both) is positively associated with the likelihood of the firm being an exporter (Aw, Chung and Roberts, 1998; Barrios, Görg and Strobl, 2001; Basile, 2001; Chetty and Hamilton, 1993; Brouwer and Kleinknecht, 1993, among others).

Third, while innovation measured as an input or an output refers to flows, the evolutionary literature highlights the possibility of knowledge (learning) being accumulated so that not only flows but stocks too play a decisive role in generating dynamic competitive advantages. These stocks, generally known as technological capabilities, involve aspects such as the qualifications of human resources (skills), the way work is organized and the existence of formal and informal research and development structures (Bell and Pavitt, 1995; Pietrobelli, 1996). The evidence from studies on export determinants once again reveals a positive relationship between these capabilities and exporting (Estrada and Heijs, 2003). These capabilities are more important still for developing countries, where they are less widespread than in the developed countries (Lall, 1994). This being so, technological capabilities can be a significant discriminating factor for export activities by firms in developing countries.

Lastly, economic activity is systemic in character. This means that competitiveness at the firm level depends on a wide variety of external sources which strongly impact the range of activities that firms operating in a specific environment can hope to carry out successfully. Thus, vertical interactions with customers (Von Hippel, 1978; Lundvall, 1988) or providers (Lundvall, 1988) and horizontal interactions with competitors and colleagues (Yoguel and Moori Koenig, 1999), together with the activities of institutions and specific policies to support companies' operations in external markets, become vitally important to competitiveness.

At the same time, while the evolutionary literature stresses product and process innovation (technological innovation), exporting also requires a specific type of management and particular organization and marketing skills. According to RICYT (2001), the Latin American countries are better positioned with these than with technological innovation. The non-technological factors affecting exports are the central concern of the well-known Uppsala model. According to that model, the internationalization of a firm is a process whereby it becomes increasingly involved in export activity (Johanson and Wiedersheim, 1975; Johanson and Vahlne, 1977; Welch and Luostarinen, 1988). This process generally takes place through successive stages in which increasing financial and human resources are committed to exporting.[1] The successive stages may be reflected, among other things, in an increasing presence in distant markets,[2] in a shift from indirect channels (trading companies or representatives) to more complex ones requiring greater investment and closer links with customers (direct presence in the form of warehouses and offices, formal agreements with companies abroad), and in a gradual formalization of the arrangements used to operate the export business.

Compelling though it is, this approach has been challenged recently by the impact of globalization and the behaviour of firms. There are now new studies focusing on firms conceived as global from their foundation ("born global"), having been created from the outset to supply the international market (Luostarinen and Gabrielsson, 2002; Westhead, Wright and Ucbasaran, 2001, among others). Thus, time or the temporal duration of the learning process, which is crucial for the evolutionary framework and the Uppsala model, could be losing importance because the globalization of the economy is facilitating access to information and speeding up the knowledge acquisition process.[3]

[1] Taken to the extreme, the firm's internationalization may involve producing in the destination market so that, at a very advanced stage in the process, the transnationalization of production may partly displace exports. This stage in the internationalization process is more likely to be found among large enterprises than among SMEs, however.

[2] The concept of distance does not relate strictly to geography here, but refers rather to cultural, political and religious differences that impede the penetration of particular markets by companies with only limited exporting experience, but that can be overcome by firms which do have such experience and are prepared to invest resources in learning the codes of these markets.

[3] However, a recent study of the export dynamic and job creation in Argentina since the late 1990s shows that the contribution of companies "born global" to export growth has been very small, even since the 2002 devaluation of the peso (Rivas and Yoguel, 2007).

This article considers most of the approaches mentioned and introduces some new perspectives on the factors determining the export performance of firms. While many studies compare exporters with non-exporters, in the countries analysed the mere fact of being an exporter may not be a good indicator of SME performance, since most such enterprises in the region do not have a stable presence in external markets (Moori Koenig, Milesi and Yoguel, 2001; Moori Koenig, Rodríguez and others, 2005; Moori Koenig, Yoguel and others, 2004). Accordingly, in this case it was considered more helpful to compare successful exporters with unsuccessful ones, and for this it was necessary to identify a set of quantitative and qualitative indicators that could be used to ascertain the degree of exporting success. It should be pointed out that the firms which are categorized as unsuccessful in this article and constitute the control group form part of the target group in most normal studies distinguishing between exporters and non-exporters.

This special focus is justified by the goal of obtaining results that are as relevant as possible for the countries studied while at the same time highlighting the importance of identifying the determinants of different levels of export performance rather than of the mere fact of being an exporter.[4]

On the basis of this analytical approach and a large body of material on the position of SMEs in the countries considered (Garay, 1998; Gatto, 1995; Grecco, 2001; Iannariello-Monroy, León and Oliva, 1999; Moori Koenig and Yoguel, 1996; Agosin, 1999; Benavente, 2001; Ocampo, Sánchez and Hernández, 2004; Silva, 2001), the following five hypotheses are proposed in relation to the factors determining a strong export performance: (i) export success is an evolutionary process that takes time, (ii) export success is underpinned by the development of substantial technological and production capabilities, (iii) export success is based on the creation of significant commercial and organizational capabilities, (iv) successful exporters interact intensively with public and private bodies that promote technological development in production and business methods, and (v) successful exporters have greater access to financing.

III

Some characteristics of the trade profiles of the countries studied and firms within them

The three countries considered have different-sized economies and differ too in their export orientation and in their openness to trade (table 1). While Colombia and Chile have similar-sized economies, Argentina's is about three times as large. Chile is the strongest exporter, with a ratio of 36%, followed by Argentina (25%) and then Colombia (21%). The index of openness also shows that Chile is the most exposed to international trade (70%), followed by Colombia (44%) and Argentina (39%).

TABLE 1

Argentina, Chile and Colombia: Macroeconomic indicators

Variable	Argentina	Chile	Colombia
Gross domestic product (2005, at constant 1990 prices, millions of dollars)	215 961	72 395	69 087
Export ratio (2003)	25	36	21
Index of openness (2003)	39	70	44

Source: Prepared by the authors using data from institutions in the countries studied. For Argentina, National Institute of Statistics and Censuses (INDEC) and Chamber of Exporters of the Argentine Republic (CERA); for Chile, Export Promotion Bureau (PROCHILE); and for Colombia, National Administrative Department of Statistics (DANE), Export Promotion Office (PROEXPORT) and Foundation for Sustainable Development (FUNDES Colombia).

The trend in the export totals of these countries between 2001 and 2004 shows that Chile was the most dynamic of the three, with a cumulative annual growth rate of 15%, approximately double the figures for Colombia (8%) and Argentina (7%).[5]

[4] This is not to say that placing products in external markets is an unimportant achievement for a firm; rather, it is a case of focusing on export sustainability over time.

[5] In the case of Argentina, the growth rate rises to a little over 9% if the 1998-2005 period is taken.

Against this background, differences can be identified in the composition of total exports when broken down by major aggregates. Around 2004, manufacturing industry accounted for a particularly large share in Argentina (69%), and commodities were also important (24%). Exports in these categories grew faster than the average in the period studied, tending to reinforce this specialization profile.

Manufacturing also dominates in Colombia (62%), followed by mining and extraction (29%), which grew more slowly than the Colombian economy as a whole. Extractive exports were of particular importance in Chile (54%), and manufacturing industry accounted for a smaller share than in the other two countries (39%). In this case, mining exports, mainly copper, were the most dynamic, suggesting an entrenchment of this external specialization profile (table 2).

SMEs generate only a small proportion of industrial exports in the three countries (table 3); Chile leads here, since the SME share of 15% is higher than in Argentina (11%) or Colombia (9%). Nonetheless, this group of export SMEs includes a large proportion of all companies participating in external trade: 34% in Argentina, 46% in Colombia and 58% in Chile.[6] In all three countries, conversely, industrial exports are heavily concentrated among a small number of major firms, which accordingly conduct export business on a much larger scale: between 16 and 53 times as great, depending on the country (table 3).

[6] The differences in the SME share of each country's total exports need to be treated with caution, as the criteria for categorizing firms by size vary from one country to another in accordance with the classifications employed in each.

TABLE 2

Argentina, Chile and Colombia: Total export composition and growth
(Percentages and millions of dollars)

	Composition in 2004			Annual growth rate (2001-2004)		
	Argentina	Colombia	Chile	Argentina	Colombia	Chile
Agriculture, hunting, fisheries and forestry	24	8	6	8	5	8
Mining and extraction	7	29	54	-4	6	21
Manufacturing	69	62	39	8	8	9
Other goods	0	1	1	-	51	13
Total	*100*	*100*	*100*	*7*	*8*	*15*
Total in millions of dollars	*34 550*	*16 483*	*30 641*			

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile), DANE, PROEXPORT and FUNDES Colombia (Colombia) and ECLAC.

TABLE 3

Argentina, Chile and Colombia: Manufacturing exports, by size of firm, 2004
(Amount exported in millions of dollars and number of firms)

	Argentina		Colombia		Chile	
Firms by size	Amount exported per firm	No. of firms	Amount exported per firm	No. of firms	Amount exported per firm	No. of firms
Large	32.40	649	8.59	1 026	13.11	697
SMEs	0.61	4 196	0.20	4 300	0.77	2 090
Microenterprises	0.01	7 432	0.02	3 659	0.02	814
Other	1.14	267	0.69	277	0.32	393
Total	*1.91*	*12 544*	*1.10*	*9 262*	*3.00*	*3 994*

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile) and DANE, PROEXPORT and FUNDES Colombia (Colombia).

TABLE 4

Argentina, Chile and Colombia: Sectoral concentration of manufacturing exports by company size,[a] 2004
(Percentage of the total in each stratum)

Company size	Argentina	Colombia	Chile
Large	Foods	Foods	Foods
	Chemicals	Oil refining	Paper and paper products
	Oil refining	Chemicals	Wood products
	Transportation equipment	Iron and steel	Oil refining
	Iron and steel	Non-ferrous materials	Beverages
	(77% of stratum)	(58% of stratum)	(80% of stratum)
SMEs	Foods	Wearing apparel	Foods
	Non-electrical machinery	Textile products	Beverages
	Chemicals[b]	Leather products	Wood products
	Chemicals	Foods	Non-electrical machinery
	Metal products	Other manufactures[b]	Plastic products
	(56% of stratum)	(50% of stratum)	(78% of stratum)

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile) and DANE, PROEXPORT and FUNDES Colombia (Colombia).

[a] Five main sectors to three digits of the International Standard Industrial Classification of All Economic Activities (ISIC/Rev. 2).
[b] Previously unclassified.

The share of SME industrial exports in the export structure has tended to diminish in recent years, particularly in Argentina and Colombia, as they have grown more slowly than those of large exporters.

The sectoral profile of SMEs in external markets differs from that of large exporters.[7] Whereas most of the latter's sales are in capital— and natural resource-intensive sectors with large economies of scale, in the case of SMEs there is a greater presence of sectors that make intensive use of labour (skilled or unskilled), manufacture differentiated products subject to economies of scope, and have more linkages with local suppliers of goods and services (table 4). In any event, when the classification proposed by Hatzichronoglou (1997) and applied by the Organisation for Economic Co-operation and Development (OECD) is employed, exports are dominated by medium- and low-technology products.[8]

Exports by SMEs in the three countries present similarities and differences in respect of the shares of the different sectors and the diversification of supply, partly because of the productive specialization profile in each country. Over half of Chile's exports are foods, especially fish and seafood and wine; different leather manufactures and wearing apparel feature heavily in Colombia's (40% of the whole stratum); and Argentina's are more diversified, with food products, chemicals and metallurgical products well represented (table 4).

The distribution of SME exports by trade bloc tends to be similar to that of large firms, showing that smaller exporters in the three countries do not just export to easily accessible markets nearby.[9] As might be expected, the composition by destination of SME exports also differs between the three cases analysed (table 5).

[7] The index of similarity in sectoral export structures between SMEs and large firms is high: between 0.35 and 0.5, depending on the country. This index is calculated as the sum of the differences in structures (absolute values) divided by 2. Its value ranges from 0 when the structures are the same to 1 when they are wholly unlike.

[8] The share of low-technology products in the export total of the SME sector in 2004 was 69% in Chile, 51% in Argentina and 42% in Colombia. The figures are 85%, 73% and 76%, respectively, when manufactures with a medium-low technology content are included. The situation with the manufacturing exports of large firms is similar, however.

[9] The index of similarity in export structure by trade bloc between SMEs and large firms is low: depending on the country, it ranges from 0.09 to 0.17.

TABLE 5

Argentina, Chile and Colombia: Composition of manufacturing exports by destination, 2004
(Percentages)

Trading bloc	Argentina		Colombia		Chile	
	Large firms	SMEs	Large firms	SMEs	Large firms	SMEs
MERCOSUR	28	39	3	2	6	8
Andean Community	6	8	28	30	11	11
NAFTA[a]	16	17	33	36	29	32
European Union	19	16	11	8	17	26
Other America	3	5	13	17	6	4
Other Europe	3	4	2	1	1	2
Asia and Oceania	18	7	7	3	26	16
Africa and other	7	4	3	3	5	2
Total	*100*	*100*	*100*	*100*	*100*	*100*

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile) and DANE, PROEXPORT and FUNDES Colombia (Colombia).

[a] North American Free Trade Agreement.

Argentina's SMEs make most of their external sales in MERCOSUR, the North American Free Trade Agreement (NAFTA) countries and the European Union; Colombia's in the NAFTA countries, the Andean Community and other American countries; and Chile's in the NAFTA countries, the European Union, and Asia and Oceania.

IV
Identifying export success

To identify SMEs that were highly dynamic and well positioned in external markets, an export performance index (EPI) was constructed and applied to the universe of export SMEs in the three countries.[10] Information on companies' exporting activity in the 2001-2004 period was used to differentiate between two groups of agents: the successful and the unsuccessful.

The EPI classifies companies' exporting activity in 2001-2004 on the basis of a weighted combination of six qualitative and quantitative indicators previously

[10] Other than in Chile, company size classifications were based on the legal definitions in each country and the information available. In Colombia, the classification is based on the parameters laid down in Law 905/2004: employees and assets. In the case of Chile, the upper limit established by the Production Development Corporation (CORFO) was raised so that the stratum of medium-sized enterprises included those with annual turnover of up to US$ 7.5 million, taking into account the conclusions of the "Re-examen de las pymes exportadoras chilenas" seminar of 15 May 2003. This definition was also recommended by PROCHILE (see Moori Koenig, Yoguel and others, 2004). Note that the CORFO size stratification based on the development unit (UF) was switched to the dollar equivalent in 2001. In the case of Argentina, a number of proxies were used to produce the stratification. The first of these was the amount exported, taking into account the criteria applied by the Department of Small and Medium-sized Enterprises and Regional Development to categorize the SME stratum by total turnover (resolutions No. 24 of 15 February 2001, No. 22 of 26 April 2001 and No. 675 of 25 October 2002). Second, because this definition could include large firms with a low export ratio, the original classification was corrected using secondary data on the country's large firms. In Colombia and Chile, the amount exported was taken when the information used for the official definition was unavailable.

TABLE 6

Argentina, Chile and Colombia: Average values of the components in the export performance index (EPI)

Components of the EPI	Argentina	Chile	Colombia
Continuity	7.6	7.8	6.0
Dynamism	5.9	4.6	3.6
Sustained dynamism	5.5	4.7	3.7
Diversification	6.2	5.1	4.2
Complexity	5.1	6.1	6.4
Change in complexity	1.0	0.4	0.2
Average export performance	5.9	5.7	4.9

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile) and DANE, PROEXPORT and FUNDES Colombia (Colombia).

used in other studies (Moori Koenig, Milesi and Yoguel, 2001; Moori Koenig, Rodríguez and others, 2005; Moori Koenig, Yoguel and others, 2004). These indicators are: (i) export continuity, which measures stability in the export trade (weighting factor 0.25); (ii) export dynamism, which measures growth in the amount exported between the first year taken and 2004 (0.15); (iii) sustained export dynamism, which measures the stability of growth in the amount exported (0.1); (iv) market diversification, which rates firms by the number of external markets served in 2004 (0.2); (v) market complexity, which rates firms by the percentage of exports going to their regional market and to destinations outside this in 2004 (0.25);[11] and (vi) the change in destination market complexity between the first year with data available and 2004 (0.05). Different weightings were tested and this structure proved to be the one that best explained the changes in the number of firms considered. This weighting structure also reflects the fact that continuity, market diversification and market complexity are the factors that best account for export performance.

A general finding from the EPI calculation is that Argentine and Chilean SMEs performed better than Colombian ones in the period considered. Argentine SMEs recorded the highest values for the export dynamism, sustained export dynamism and external market diversification variables, while Chilean and Colombian SMEs appear to have exported to more complex markets. However, the complexity of the destination markets served increased by more in the case of Argentine firms than in that of Chilean and Colombian firms, something that may have been influenced by the depreciation of the real exchange rate in Argentina from 2002 onward.[12] Lastly, while continuity is high in the three countries, it is higher in Argentina and Chile than in Colombia (table 6).

To identify successful and unsuccessful firms in the universe of export SMEs in each country, firms were considered successful if they scored 6.5 or more on the EPI and unsuccessful if they scored less. This cut-off point was arrived at by considering a weighted average ideal type of exporter achieving what could be considered successful scores in each of the components of the EPI. Thus, the cut-off point of 6.5 follows the probability distribution of successful firms in the original studies from the three countries analysed. For example, this EPI score will be achieved by a firm: (i) which exported in three of the four years considered; (ii) whose exports have grown by over 12%; (iii) whose external sales showed positive growth in the last two years; (iv) which exports to three or more countries; (v) which sends more than 30% of exports by value to destinations outside the region; and (vi) which has increased the complexity of its destinations. The successful exporters identified are a minority among export SMEs (between 40% and 24%, depending on the country), but account for some

[11] By regional markets are meant the enlarged MERCOSUR for Argentina and Chile and the Andean Community for Colombia.

[12] The low value of the indicator for the change in complexity is explained by the fact that in the short period covered (four years) most companies did not see any significant change in the make-up of their exports by destination.

TABLE 7

Argentina, Chile and Colombia: SME manufacturing exports, by level of success, 2004
(Millions of dollars and number of firms)

Degree of success	Argentina		Colombia		Chile	
	Amount per firm	No. of firms	Amount per firm	No. of firms	Amount per firm	No. of firms
Successful SMEs	0.87	1 769 (42%)	0.46	1 036 (24%)	1.46	802 (38%)
Unsuccessful SMEs	0.42	2 426 (58%)	0.12	3 264 (76%)	0.33	1 288 (62%)
All SMEs	*0.61*	*4 196*	*0.20*	*4 300*	*0.77*	*2 090*

Source: Prepared by the authors using data from INDEC and CERA (Argentina), PROCHILE (Chile) and DANE, PROEXPORT and FUNDES Colombia (Colombia).

60% of exports in the stratum. This is reflected in an average export amount per firm that is between twice and four times the amount exported by those classified as unsuccessful according to the criteria synthesized in the EPI (table 7).

Other than the obvious differences in performance, the sectoral profile of successful export SMEs is similar to that of unsuccessful ones in the three cases studied. The same is not true of their destination profile, as is obvious from the construction of the EPI.

V

Export SMEs and the factors underlying export success

This section first describes the criteria used to select the export SMEs that were to be surveyed in the three countries in order to collect information on the factors influencing export performance. It then presents the stylized results arising from analysis of this information, with special emphasis on the microeconomic and mesoeconomic aspects that most influence the differentiated dynamic of companies in external markets. These results are based on the use of descriptive statistics and non-parametric tests and are in the nature of an exploratory foray yielding information that is helpful in constructing the binary logistic regression model given in section VI. The purpose of this model is to conduct a multivariate identification of the factors determining export success among SMEs.

1. The company selection criteria

The SMEs considered were manufacturing exporters that were still exporting at some point during the fieldwork stage. After the EPI had been applied to the entire universe of export SMEs, firms were classified using a sectoral criterion and random samples were selected within the sectoral strata. On this basis, interviews were conducted with a group of successful export SMEs (210) and a smaller control group of unsuccessful SMEs (81) located in the largest metropolitan and industrial areas of the three countries (table 8). The number of firms interviewed varied from one country to another, but in all cases a rough proportion of seven successful firms to three unsuccessful ones was maintained. The surveys were conducted in the second half of 2003 in Chile, the first half of 2005 in Colombia and the fourth quarter of 2005 in Argentina. Although the fieldwork was conducted two years earlier in Chile than in Colombia and Argentina, the stability of the Chilean macroeconomic and institutional environment suggests that the business practices and behaviour differentiating successful export SMEs from the rest did not vary significantly.

To carry out the fieldwork in each case, use was made of a similar questionnaire that was completed in personal interviews. This questionnaire asks for detailed information on a wide range of aspects of each company's business, with particular stress on the development of their commercial and technological capabilities. Of course, there are specific aspects in each country that are not strictly comparable, concerning particularly the business environment and the instruments used to promote production and exports, although patterns are comparable for the purposes of the study.

The representativeness of the sample is ensured by the random selection method. The high level of variance in the type of firms interviewed (diversity of SME sectors and size), ensured in part by stratified sampling, is evidence of this representativeness. The sectoral profile of exports by the group of successful export SMEs is similar to that of the other firms in the stratum in all three cases studied. The situation that the sample does not reproduce (given the object of the study) is the proportion between successful and unsuccessful firms. As we have mentioned, strongly performing, well-positioned export SMEs are a minority of such firms, whereas they make up some 70% of the panel of SMEs interviewed.

2. Microeconomic and mesoeconomic factors influencing SME export performance

The comparative analysis of the business practices and structural characteristics of export SMEs in the three countries, based on the information collected in the surveys and employing descriptive statistics and bivariate non-parametric tests, showed that it was possible to distinguish in a stylized way between two types of situations.

Firstly, there are factors that are common to all exporters, successful and unsuccessful. This reveals that certain structural features of company organization and certain business practices are necessary if exporting is to take place with any regularity, but are not sufficient for successful positioning in external markets as measured by the indicators of success employed (continuity in external trade, export dynamism, diversification and complexity of the external markets served). The results also reveal that, apart from their export performance and country of origin, firms are constrained in their ability to internationalize further by factors of a mainly macroeconomic nature.

Secondly, there are factors that are associated with export success in at least two of the three countries studied. These factors, however, are heavily

TABLE 8

Argentina, Chile and Colombia: Basic fieldwork information

	Argentina	Chile	Colombia
Number of export SMEs interviewed	88	88	115
Successful	62	63	85
Unsuccessful	26	25	30
Interview type	Personal interviews to complete a comparable form		
Period in which interviews held[a]	2nd half 2005	2nd half 2003	1st half 2005
Sample selection method	Random sampling stratified by sectoral structure (two-digit ISIC/Rev. 2) of exports by all export SMEs in each country		
Geographic location of firms	Metropolitan Region of Buenos Aires	Regions V, VI and VIII and Metropolitan Region	Barranquilla, Bogotá, Cali, Bucaramanga and Medellín

Source: Prepared by the authors.

[a] In the case of Chile, the two-year time difference does not constrain the comparison since changes in the country's economic environment have not been great enough to alter the business practices of export SMEs.

influenced by the specialization and external trade pattern of the country concerned, and by its particular macroeconomic and mesoeconomic conditions. This explains why specific factors are also associated with good export performance by SMEs in each country. In other words, the factors determining performance are linked to the characteristics of the country —not just its firms, but different business scenes, internationalization of the economy, regional and international negotiations, regulatory arrangements, macroeconomic predictability, support systems to stimulate the creation of competitive advantages, and the degree of intrasectoral heterogeneity.

Table 9 gives a stylized presentation of both types of factors, organized into seven levels: (i) structural variables (branch of activity and company size); (ii) evolutionary path (time for which firm has been exporting); (iii) production and trade measures taken in order to be able to export; (iv) trade promotion; (v) technological and production capabilities (research and development team, certification of quality standards, investment in machinery and equipment); (vi) trade management and intelligence (foreign trade team, marketing channels, knowledge of the external market and performance monitoring); and (vii) influence of the business environment (use of promotional instruments and access to export financing).

The variables mentioned will now be reviewed:

(i) *Structural variables*. The results indicate that the sectoral profile of the successful export SMEs group is similar to that of export SMEs generally in the three cases studied, so that it is not possible to establish a

TABLE 9

Argentina, Chile and Colombia: Influence of different variableson export success, by country[a]

Variable[b]		Argentina	Colombia	Chile	Total sample
Structural variables	Branch of industry[c]		**	***	***
	Size (number of employees)	*		*	*
Evolutionary path	Length of time exporting	*			
Measures taken for export purposes	Number of production and trade measures	*	***	**	***
Trade promotion	Number of promotion measures		*	**	***
Technological and organizational capabilities	R&D team	***	**	**	***
	Size of R&D staff[d]	***		*	***
	Investment in machinery		*		
	Quality certification			*	
Commercial skills and foreign trade management	Foreign trade team				
	Size of foreign trade staff[d]	*			***
	Number of channels		***	*	***
	Complex channels	**	**	**	**
	Number of customers	***		**	***
	Market knowledge		**	**	***
Institutional environment	Use of production development instruments			*	
	Use of export incentives			*	
	Access to financing			***	***
	Linkages with firms and institutions			*	

Source: Prepared by the authors.

[a] Chi-square test: *differences significant at 10%, **differences significant at 5%, *** differences significant at 1%.
[b] See the text box in section VI for a description of the variables.
[c] Using the Organisation for Economic Co-operation and Development (OECD) classification.
[d] As proportion of all staff working at the company.

significant relationship between the type of product exported and a company's export success, either for the sample as a whole or for each of the countries studied. Significant relationships have been detected between the technology content of individual industries and their export success, however, particularly in the cases of Chile and Colombia, since high-performing companies are distinguished from the rest by the fact that they export low-technology manufactures. Company size, meanwhile, would also appear to be a variable that makes a difference;[13] this seems to suggest a need for minimum size thresholds to achieve scales of operation which are sufficient in terms of both production and trade to allow firms to maintain a sustainable foreign presence according to the criteria of success employed.

(ii) *Evolutionary path*. The data indicate that a fairly extensive export learning process is required for firms to consolidate external sales as a more or less routine activity. Although not a factor of discrimination, this does emerge as a necessary precondition for the ability to export, partly because companies have to develop operational capabilities and skills to understand and satisfy customers with needs and cultures different from those of the home market, even when the products exported have a clear price advantage and go to easily accessible markets. The amount of time for which a company has been producing, meanwhile, is not a factor associated with success in two of the three countries studied (Chile and Colombia) and is generally long in all cases, with an average of 21 years' production experience. The evidence gathered shows that successful export SMEs in all three countries are more likely to have exported from the outset, i.e., to have incorporated export activities into their business strategy at an earlier stage.

(iii) *Measures taken in order to be able to export*. To be able to export at all, export SMEs have had to improve their basic capabilities, irrespective of the degree of success achieved in external markets. This probably creates externalities for the domestic market, since the improvement would be unlikely to have taken place had it not been for the pressure of competition in external markets. This is manifested particularly in certain measures commonly taken to improve products, comply with technical and quality standards, train staff, assign human resources permanently to external trade activities, use different sources to detect opportunities, and employ methods entailing personal contact with potential customers to promote products abroad. The results suggest that exporting requires a specific type of management, particular organization and marketing skills and certain technological capabilities.

However, the main conclusion from the fieldwork in the three countries is that successful exporters applied a larger number of measures in the spheres of production, technology and trade; this indicates not only that they made more effort, but also that they had a more comprehensive external positioning strategy to allow them to participate sustainably in foreign markets. One finding is that certain measures taken with a view to exporting are associated with export success in general, while others, complementary in character, are only associated with export success in one or two of the countries. The former include, for example, bringing out Web pages (Argentina and Colombia), arranging for warehousing abroad (Argentina and Chile) and improving product design (Argentina, Chile and Colombia). Among the latter, efforts to train technical staff, build up local suppliers and obtain certification from the United States Food and Drug Administration (FDA) are particularly important in Chile. In Argentina, the need for packaging changes is more significant, while Colombia needs to target efforts on product advertising.

(iv) *Export promotion*. The efforts put into export promotion are a significant distinguishing feature of successful export SMEs, especially in Chile and Colombia, and may possibly be associated with a higher value of the indicator for the complexity of the markets served, revealing a more comprehensive and systemic strategy. Successful firms are characterized by the prevalence of practices centred on fluid and continuous communication with customers abroad, manifested in a larger number of visits and invitations to potential customers and a greater presence in trade fairs and missions.

(v) *Endogenous technological and organizational capabilities*. As they have internationalized, export smes have developed endogenous capabilities in the areas of technology and organization and trade intelligence. Different variables used to evaluate these capabilities serve as differentiating factors of success (see numbers vi and vii). Where technological and organizational capabilities are concerned, successful SMEs as a group are differentiated from the rest by having in-house research and development (R&D) teams and

[13] Differences that are statistically significant for the panel as a whole and for the cases of Argentina and Chile (see table 9).

large numbers of staff assigned to the area; by their investment in machinery and equipment as a proportion of the total invested by them; by the introduction of changes in production processes and product design; by certification of quality standards; by technical training for staff; by the participation of operatives in process, product and design improvements; and by their willingness to enter into cooperation agreements with other companies both locally and abroad. However, the degree to which these factors are in place in successful SMEs differs between the three countries, revealing once again the existence of national specificities in these areas.

(vi) *Endogenous commercial and foreign trade management skills*. The first point to be made is that the export SMEs studied (especially in Colombia and Chile) are alike in their tendency to make a high proportion of their external sales to one main customer and to market their products by means of direct sales and distributors. Successful ones, however, operate with a more diversified customer portfolio (13 customers on average, as against 9), use more marketing channels and, in particular, deploy other more complex methods requiring greater investment and closer ties to customers (direct presence through warehouses and offices and formal agreements with companies abroad). All this influences the exporting success of SMEs in the three countries studied.

Second, it can be concluded that success is associated with greater knowledge of destination markets and performance monitoring of the products exported. This is seen particularly in the cases of Colombia and Chile, although the emphasis in the two countries is on different aspects, especially where markets are concerned.

(vii) *Influence of the institutional environment*. The greater commercial and productive capabilities of successful export SMEs reveal the importance of the microeconomic factors involved in the export trade, over and above the specific characteristics of the country concerned. For the development of operational capabilities that generate dynamic competitive advantages in external markets, however, certain macroeconomic and mesoeconomic elements (institutional environment) need to be in place, given the systemic nature of competitiveness.

The evidence analysed indicates that, in the countries considered, these elements are viewed by the businesses surveyed as constraints rather than as factors that can enhance companies' competitiveness. Generally speaking, the export SMEs studied are faced with limitations that they perceive as major obstacles to the maintenance and further development of their external profile, most of them macroeconomic in nature (the level of the exchange rate, high tax burden, instability in the economic and political framework, etc.). Within this framework, access to financing is one of the stumbling blocks most often mentioned by exporters generally and, albeit only in the case of Chile, a factor that influences their success or lack of it.

Nonetheless, export success proved to be influenced neither by familiarity with the development policies asked about in the questionnaire nor by the degree to which advantage was actually taken of them. Export tax incentives are taken up by most firms, not just with a view to improving their export performance, while production and technology development incentives have had limited reach. Only in Chile are successful SMEs distinguished by greater recourse to the benefits of development policies in general. The density of linkages with other firms and with public and private institutions to improve on exporters' endogenous capabilities is also limited, indicating that these features of the institutional environment, with all their potential to enhance a company's foreign trade position, are somewhat lacking.

Thus, that the findings of the exploratory analysis brought to light the factors that have a statistically significant influence on the export success of SMEs, irrespective of their country of origin. These factors often have a reciprocal influence upon one another, however, making it harder to describe the determinants of export success systematically.[14] In section VI we propose the use of a *Logit* model to study these determinants, both for the whole sample and for each of the countries analysed individually, with a view to obtaining a better general understanding of SME export success in Latin American countries.

[14] This is because the type of analysis used deals exclusively with the relationship between two variables and thus does not evaluate the possibility of spurious relationships owing to the presence of multicolinearity. Consequently, the results yielded by this section should not be seen as conclusive but as a necessary input for specifying the model presented in section VI.

VI
The model

1. The econometric model

The logistic regression is used when the dependent variable is dichotomous, i.e., may have the value one or zero when some characteristic is present or absent; these values are determined with reference to a series of predictors or independent variables. In essence, the logistic regression is similar to a model of linear regression where the dependent variable is dichotomous. The coefficients yielded by the logistic regression can be used to estimate the quotient of the probabilities of occurrence/non-occurrence for different values of the independent variables. In models of this type, the dependent variable has to be dichotomous, while independent variables can be defined as continuous, interval or categorical variables[15] (Long, 1997).

It must be remembered that the model does not directly estimate the likelihood of success or failure for any event. This regression model predicts the natural logarithm of the quotient of probabilities for the occurrence/non-occurrence of an event. This is:

$$Ln\left(p/(1 - p)\right) = a + B_1x_1 + B_2x_2 + \ldots + B_kx_k,$$

where p is the estimated probability of success and $(1 - p)$ the estimated probability of failure, and $x_1, x_2, \ldots, x_k$ are the predictor variables.

Both to carry out estimations and to interpret the Bi coefficients, it is thus necessary to apply a logarithmic transformation of the model estimated.

$$p = 1/\left(1 + e^{-(a + B_1x_1 + B_2x_2 + \ldots + B_kx_k)}\right)$$

2. The model specification

The model encompasses four dimensions that group a number of interrelated variables yielded by the exploratory analysis and the theoretical framework discussed in the previous section. These four dimensions are: (i) technological capabilities, (ii) commercial capabilities, (iii) the learning path and (iv) the institutional environment. The definitive forms of presentation of the variables were settled upon after a number of trial runs. Different ways of approximating to the concepts defined in the theoretical framework were tried out, allowing us to discard less effective ways of determining the dependent variables, such as those that presented colinearity problems. Besides the variables included in the four dimensions referred to, the model specification encompassed a set of variables that, while they do not conclusively account for exporting success, can be used to control the results of the regression and avoid distortions due to sample bias.

To determine the influence of the technological dimension, a stock variable and a flow variable were used. The stock variable chosen was a proxy variable for the cumulative technological capabilities of a firm: the size of the R&D team as a proportion of all staff working there. The flow variable used was the number of specific strategic production-related actions that firms had to undertake to be able to export with some degree of regularity.

The trade dimension also included stock and flow variables. In the first case, the variable used was the number of people working directly in the foreign trade area. In the second case, alongside the variable for the technological dimension, use was made of the number of specific strategic actions relating to the marketing area that firms had to implement to be able to sell their products in external markets.

It seemed appropriate, given the importance assigned to it by studies on capability-building, to include a dimension that would capture the learning process of export firms. Different proxies were tried out, but it was the length of a firm's exporting evolutionary path, measured by the year exports began, that came closest to explaining the dependent variable. It should be pointed out that in unstable macroeconomic contexts like those of the Latin American countries, the decision to begin exporting may depend more on the domestic business cycle and the vagaries of the exchange rate than on the outcome of the learning process over the course of a company's development.

[15] By contrast with the analysis of discriminating factors, the logistic regression does not require assumptions about the distribution of the variables, making it a more versatile tool.

Something similar is true of the dimension encompassing the institutional environment variables. While the specialist literature treats this dimension as crucial to capability-building, the weakness of the local institutional environment and the low level of linkage between firms prevent it from being a determining factor in export success. Accordingly, use was made of three institutional environment variables that proved to have little influence on the dependent variable: a firm's linkages with other firms and with technology, production and trade promotion institutions; the take-up of export promotion instruments designed and implemented by the State or private organizations; and access to financing.

Three control variables were included in the model to eliminate the possible influence of sample bias on the results. These variables are the branch of industry as defined by technology content; company size; and the existence or otherwise of quality standards.[16]

The following box shows the model variables included in the four dimensions examined, plus the control variables. Consequently, the model is specified as follows:

$$Ln\ (p/(1 - p)) = Constant + B_1PSRD + B_2PRODME + B_3NPEXTR + B_4TRAME + \mathbf{b}_5EXBEG + B_6LINK + B_7EXPROM + B_8FINANC + B_9BRATECH + B_{10}SIZE + B_{11}QUAL$$

where p is the probability of export success and B_i the coefficients accompanying each of the variables.

[16] The inclusion of this variable as a control is justified because it is a necessary condition for exporting to begin.

Box
MODEL VARIABLES

Technology dimension	
PSRD	Stock variable: proportion of staff employed on R&D (in five intervals: no R&D staff; up to 3%; between 3% and 6%; between 6% and 10%; over 10%)
PRODME	Flow variable: number of production measures that had to be taken for exporting to begin
Trade dimension	
NPEXTR	Stock variable: number of people involved in managing external trade (in three intervals: up to 2; 3 or 4; 5 or more)
TRAME	Flow variable: number of trade measures that had to be taken for exporting to begin
Evolutionary path	
EXBEG	Year exporting began (in three periods: before 1980, between 1980 and 1990 and after 1990)
Institutional environment	
LINK	Linkages with other firms and institutions (in three intervals: no linkages, linkage with one institution or firm, linkages with more than one institution and/or firm)
EXPROM	Use of export promotion instruments
FINANC	Export financing used or not used
Control variables	
BRATECH	Branch of industry by technology content (two levels: low and high)
SIZE	Company size by number of employees
QUAL	Existence or otherwise of quality standards
Constant	Constant

Source: Prepared by the authors.

The model was estimated for all the panel data and separately for each country considered. This econometric exercise provides a way of comparing the importance of the dimensions included in the model in each of the different institutional environments.

3. Findings

As can be seen from table 10, which summarizes the results of the model estimates, the variables involved in the first three dimensions are important for understanding a firm's export success. Conversely, as indicated in the previous section, the institutional environment variables do not emerge as significant.

Where the general model is concerned, the first three hypotheses of the study are confirmed insofar as the proxy variables taken have a significant influence on a company's export success. Conversely, of the five hypotheses put forward at the end of section II, the fourth and fifth could not be corroborated; this shows that success is achieved in the face of an unhelpful institutional framework and the very isolated position of

TABLE 10

Argentina, Chile and Colombia: Significance of the parameters estimated in the logistic model
(Dependent variable: level of success)

Independent variable	Total		Colombia		Argentina		Chile	
	β	Significance	β	Significance	β	Significance	β	Significance
Technology dimension								
PSRD	0.443	**0.000**	0.23	0.209	1.005	**0.003**	0.528	**0.023**
PRODME	0.336	**0.018**	0.113	0.659	0.875	**0.035**	0.037	0.883
Trade dimension								
NPEXTR	0.432	**0.072**	0.432	0.225	0.931	0.147	-0.451	0.496
TRAME	0.222	**0.052**	0.492	**0.02**	0.094	0.761	0.251	0.214
Development path								
EXBEG	-0.521	**0.101**	-0.551	0.468	-1.502	**0.031**	0.921	0.189
Institutional environment								
FINANC	-0.518	0.177	0.044	0.935	-0.242	0.839	3.329	**0.009**
LINK	-0.077	0.702	-0.23	0.511	-0.984	0.156	0.422	0.262
EXPROM	0.019	0.932	-0.284	0.441	0.176	0.77	0.422	0.392
Control variables								
BRATECH	0.73	**0.026**	1.071	**0.04**	-0.182	0.845	0.655	0.352
SIZE	0.002	0.275	0.001	0.785	0.003	0.476	0.021	**0.045**
QUAL	0.465	0.248	-0.044	0.951	1.251	0.243	0.432	0.592
Constant	-1.045	0.499	0.245	0.941	-2.459	0.533	-0.121	0.971
Number of cases and statistical tests								
No. of cases	256		103		69		84	
Missing data	35		12		19		4	
Percentages explained by model	74.8		72.5		90.6		85.0	
-2 log-likelihood[a]	242.5		101.65		43.9		63.8	
Cox and Snell's R^2	0.202		0.17		0.38		0.37	
Nagelkerke's R^2	0.292		0.24		0.57		0.52	
HoSMEr-Lemeshow test	0.158		0.51		0.60		0.64	

Source: Prepared by the authors on the basis of surveys conducted in Argentina, Chile and Colombia.

[a] A measure of how well the model fits the data, also known as deviation. The lower the value, the better the fit. In "step-by-step" methods, the change of -2 in the logarithm of the likelihood function tests the null hypothesis that the coefficients of the terms eliminated from the model are equal to zero.

firms, something that clearly limits the development of long-term systemic competitive advantages. This model predicts about three quarters of successes and failures.

The general model used manifests itself differently in each of the three countries. Colombia is characterized by the influence of the trade dimension in determining export success, which could have something to do with a sectoral profile dominated by low-technology activities (such as wearing apparel and leather manufactures) for which it is usually important to consolidate a long-term commercial image, have a constant presence at fashion and design events, develop and renew good advertising material, and keep up a flow of communication with customers to adapt products to their designs. In Argentina, technology and the evolutionary path to date emerge as leading factors. In Chile, lastly, company-specific factors such as technology content and size predominate, while the institutional environment factor of financing also helps to account for export success.

VII
Conclusions

The findings obtained indicate that there are factors associated with the export success of SMEs that are common to all three countries studied, while others are peculiar to each country. They also reveal the existence of factors not associated with success, some of which are so generally encountered that they would appear to be a necessary precondition for exporting at all, while others are generally absent and so would appear to be disadvantages rather than advantages.

The technology dimension is a crucial determinant of export success for Chilean and Argentine SMEs, while the trade dimension is critical in the Colombian case. This outcome may be due in part to the different production and trade specialization profiles of these countries. As already pointed out, whereas foodstuffs represent over half the exports of Chilean SMEs, various leather manufactures and garments account for a large share of Colombia's exports while Argentina's are more diversified, with foods, chemicals and metallurgical products all well represented.

The learning path, which the specialist literature identifies as a key factor in corporate competitiveness, does not seem to be especially associated with export success in the countries analysed, since a learning process is required for exporting to take place at all. This process is a necessary condition for selling products more or less regularly in external markets, but is not enough for exporting success as manifested in the attributes chosen to measure this (export continuity, export dynamism, diversification and complexity of external markets). In the case of Argentina, the high level of macroeconomic volatility that characterized the country until recent years would seem to be lengthening the process of accumulating knowledge with a view to participating successfully in external markets.

A similar situation is found with institutional environment factors. In the countries analysed, firms operate very largely in isolation, irrespective of how successful they are in external markets. Given the systemic character of competitiveness, this shortcoming is a constraint on the development of dynamic competitive advantages and thus on the growth of companies' exports.

In short, export success comes basically from microeconomic differentiation, whether in technology or trade practices, but always in a limited time frame. Conversely, the shortcomings of national innovation systems in the countries examined constrain the workings of competitiveness as a systemic phenomenon integrating the microeconomic, mesoeconomic and macroeconomic levels. In consequence, the situation is mainly one of isolated efforts and powerful constraints on the scope for generating increasing returns to scale, spillover effects and production linkages.

These findings should lead us to reflect on the difficulty of generating processes of structural change that involve innovation and complementarities between agents. These appear to be a necessary condition for changing the external trade profile of these countries so that they can appropriate stable Schumpeterian quasi-rents in the international market.

(Original: Spanish)

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Effects of training on competitiveness
in the manufacturing sector

Ramón Padilla and Miriam Juárez

This article examines the effect of training on competitiveness in the manufacturing sector, drawing a distinction between industries with differing technological and productive characteristics. Using a systemic approach, it studies activities within firms and the impact that training has on them, as well as the organizational and institutional environment that supports training and the effect of the latter on the locality as a whole. An analysis is performed at two levels. At the firm level (micro analysis), econometric tools are used to study the manufacturing sector in Mexico. At the regional level (meso analysis), the electronics industry in one region of Mexico is studied. Empirical evidence shows that enterprise training has different effects on competitiveness in industries with different technological characteristics. It also has a positive impact on the region through knowledge diffusion.

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I
Introduction

Competitiveness at various levels (at the level of a firm, a region, an industry or a nation) has taken on a key role in the development agenda. In the countries of Latin America, whose economies are increasingly open and integrated into global production chains, improved competitiveness is essential to the attainment of greater economic and social development. Competitiveness is linked to the ability to successfully participate in international markets, generate value added and create jobs, among other factors.

Competitiveness can manifest itself in a variety of ways. It may arise from static competitive advantages, such as an abundance of natural resources or low wage costs. It may also be based on dynamic comparative advantages resulting from the introduction of new and improved products, the implementation of new types of corporate organization or increased production capacity (McFetridge, 1995; Spencer and Hazard, 1988; Porter, 1985). Investment in human capital is essential to the creation and strengthening of dynamic comparative advantages, which are sustainable and offer significant potential in terms of economic and social development.

In today's environment, which is dominated by continuous and rapid technological change, enterprise training —as a means of creating human capital— plays a key role in strengthening competitiveness. It supplements formal education, offering workers the knowledge and tools necessary to use, adapt and, in some cases, improve technology (Booth and Snower, 1996). Moreover, since it focuses on providing employees with the knowledge and skills they need to perform their daily functions, enterprise training can also be expected to produce rapid and significant returns for businesses (Tan and Batra, 1995; Mincer, 1994).

This paper will examine the impact of enterprise training on competitiveness in three branches of the manufacturing sector, each of which has different productive and technological characteristics. A systemic approach will be adopted; in addition to studying activities within firms and the impact of training on them, the organizational and institutional environment that supports training will also be studied, as will the impact of training on the surrounding community. An analysis will be performed at the firm (micro) and regional (meso) levels to assess the impact of training on the competitiveness of enterprises and their surrounding region, bearing in mind that competitiveness produces not only private benefits for firms, but also social benefits.

The micro analysis will be based on a statistical and econometric analysis of Mexico's 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC), a public database. Unlike other empirical studies that have made use of this survey, this paper is based on the assumption that the impact of training on competitiveness varies from industry to industry. The meso (regional) analysis will be based on field work carried out in Mexico in October 2005. Since the effects of enterprise training vary from industry to industry, and such training has different characteristics in each case, the meso analysis will focus on a specific industry. The electronics industry was chosen, mainly because it displays a stronger propensity to undertake training, and because training has a greater impact on competitiveness in that industry than in the other two industries studied in this paper.

The rest of the article is divided into four sections. Section II introduces the key issues to be discussed and provides a brief overview of previous studies on the subject. Section III deals with the micro component, which, as mentioned above, includes a statistical and econometric analysis. Section IV addresses the meso component, and section V contains conclusions and policy recommendations.

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II

Competitiveness and investment in human capital

Organizations and researchers agree that stronger enterprise competitiveness is crucial to the attainment of greater economic and social development. Competitiveness can arise at different levels of aggregation: at the level of a firm, an industry or group of industries, a region or a country.

Firm-level competitiveness, which is particularly relevant to this study, is understood to mean the ability of a firm to operate profitably in a given market (McFetridge, 1995). Competitiveness manifests itself in a variety of ways. The literature on the subject usually distinguishes fleeting, artificial or spurious competitiveness from genuine, authentic competitiveness. The former is associated with low wages, non-sustainable exploitation of natural resources, inadequate labour conditions, etc. True competitiveness, on the other hand, is based on the ability to introduce new and improved products, implement new types of corporate organization and increase production capacity, among other skills (Spencer and Hazard, 1988).

This highlights the difficulty of establishing a single, commonly accepted indicator with which to measure or estimate competitiveness. There are, however, a number of factors frequently used for this purpose: profitability, productivity, costs, value added, market share, exports, technological innovation and product quality, among others.

As mentioned above, competitiveness can also be studied at the level of an industry, a region or a country. At the meso or macro level, it is associated with comparative advantages derived from the resources available in a region or a country: an abundance of natural resources or labour, or advantages created through investment in human capital, infrastructure or technological capabilities (IDB, 2004). The concept of systemic competitiveness offers a more comprehensive aggregate analysis.[1]

Firm-level competitiveness is influenced by many factors, including the following: a stable macroeconomic environment; a solid financial system; the ability to utilize, adapt and create new technologies; and the ability to attract, train and retain human capital.[2] The latter is the main topic of this paper.

Human capital, a product of formal education and subsequent learning, is widely recognized in economic theory as a key factor in economic development (Romer, 1989; Mincer, 1981; Becker, 1964). In the current globalized economy, where constant, rapid technological change is the norm and knowledge is considered one of the main determining factors of competitiveness, human capital plays a key role in raising productivity and increasing well-being (Tan and Batra, 1995). By acquiring knowledge and skills, workers are better able to adapt to new demands on the job. In order to remain competitive in an environment of constantly changing preferences and technologies, a firm needs workers who are capable of changing rapidly and innovating (Booth and Snower, 1996).

Enterprise training is one of the main components of a country's investment in human capital. In some middle- and high-income countries, it actually rivals investment in formal education in terms of importance (Tan and Batra, 1995; Mincer, 1994). Enterprise training is defined as a group of formal and informal activities that seek to convey knowledge and/or impart skills to workers. It is a broader concept than on-the-job training, which involves simply passing on knowledge informally through demonstration and practice.[3] It should be noted that enterprise training may include two different factors: general training that is applicable to more than one firm and specific training dealing with concepts and skills that are specific to one company. Given the difficulty of appropriating the results of training, firms tend to invest in the latter (Gallart, 2001).

While previous empirical studies have not directly addressed the impact of enterprise training on

[1] See Altenburg, Hillebrand and Meyer-Stamer (1998).

[2] See Nabi and Luthria (2002).

[3] For more information regarding on-the-job training, see Lara Rivero and Díaz Berrio (2003).

competitiveness, several of them have used econometric tools to show that such training has a positive and significant effect on total factor productivity (Tan and López-Acevedo, 2003; Tan and Batra, 1995; Bartel, 1989). Empirical evidence also suggests that the likelihood that an employer will offer training is linked to several different variables, including firm size, the educational attainment of employees, investment in new technologies, export position, use of quality-control methods and the presence of foreign capital.[4]

III

Training and competitiveness at the micro level

The objective of this section is to use econometric techniques to determine which variables are most closely associated with strong firm-level competitiveness, as well as to analyse the impact of training on such competitiveness.

Competitiveness is a complex concept, and there is no single, commonly agreed quantitative indicator with which to measure it. Economic literature often looks to productivity as the best indicator in this regard. Productivity is generally defined as a ratio of a volume measure of output to a volume measure of input use. The concept can be applied to labour, capital or total factor productivity. Productivity is a useful variable for competitiveness, since it covers many aspects of firm-level, regional or national competitiveness and can be reasonably estimated.[5]

While previous empirical studies have analysed the impact of training on competitiveness in the manufacturing sector as a whole, this study focuses on the fact that the need to acquire knowledge and disseminate it among employees, as well as the main source of knowledge and the factors that determine competitiveness, are different in each branch of industry. Technology-intensive industries acquire new knowledge mainly through internal design and research and development (R&D) activities, whereas low-tech manufacturing industries employ external sources, such as equipment suppliers and consulting firms, to acquire new knowledge.[6]

Bearing this distinction in mind, this section will explore the following questions: (i) Does the impact of training on competitiveness vary in industries with different technological characteristics? (ii) If so, what are the defining features of training in each industry? and (iii) Which variables are associated with high competitiveness in industries with differing technological characteristics?

In order to answer these questions, three branches of industry[7] with different productive and technological characteristics have been selected: the wearing apparel industry, the motor vehicle industry and the electronics industry.[8] The statistical and econometric analysis is based on the 2001 edition of ENESTYC —the most recent version available at the time of this writing. In addition to providing detailed information on enterprise training activities, ENESTYC supplies data on variables associated with competitiveness, as well as their determining factors. The survey focuses on the manufacturing sector, analysing it at the national level by branch and plant size.

1. Descriptive statistics

The following three branches of industry were selected for analysis: 3220 (manufacture of wearing apparel), 3832 (manufacture of radio, television and communication equipment and apparatus) and 3841 (manufacture of motor vehicles). As will be explained below, these industries have different productive and technological characteristics. This paper contends that,

[4] See Tan and López Acevedo (2003); Batra and Tan (2002); Booth and Snower (1996); Lynch and Black (1995); Tan and Batra (1995).

[5] See OECD (2001).

[6] See the seminal work of Pavitt (1984); Giuliani, Pietrobelli and Rabelotti (2005) and Cohen, Goto and others (2002).

[7] According to the International Standard Industrial Classification of all Economic Activities (ISIC/Rev. 2).

[8] For a description of the productive and technological characteristics of the wearing apparel industry, see OECD (2004a); for the motor vehicle industry, see Abdel (2004); for the electronics industry, see Padilla (2005).

as a result of these differences, the impact of training on competitiveness varies from industry to industry.

The manufacture of wearing apparel is the final link in a long value chain. It is labour-intensive and employs mature technology (OECD, 2004a). The motor vehicle industry is scale-intensive, has high quality standards and makes moderate use of technology (Abdel, 2004). The electronics industry is characterized by fast-paced technology, high quality standards and high productive efficiency (Padilla, 2005).

Table 1 provides a list of indicators for the three industries mentioned above. The indicators were computed using ENESTYC data. As of 2000, the wearing apparel industry consisted of 24,084 firms, the vast majority of them (91%) microenterprises. The average value added by manufacturing plants was relatively low (773,000 pesos). The electronics industry was comprised of 397 firms, 71% of which were microenterprises. Average value added by firms was 15.8 million pesos. The motor vehicle industry was comprised of 1,370 firms, 58% of them microenterprises. The average value added by manufacturing plants in that industry was 79.586 billion pesos.

Of the three branches studied, the electronics industry was the largest acquirer, user and generator of technologies. Electronics firms invest a higher percentage of their income in the purchase and transfer of technology, make greater use of automated machines and robots, and are more frequently engaged in R&D. The wearing apparel industry was the least technology-intensive of the three. It should be noted, however, that R&D expenditure in all three branches is significantly lower in Mexico than it is in developed countries.[9] Most innovations in that country are confined to the production process and are novel on the local, but not the global, market (CONACYT, 2003). As for the use of technology to organize production, over 75% of electronics and automotive firms possess quality-control programmes, compared to 53% in the wearing apparel industry (see table 1).

In terms of training, the electronics industry is home to the highest percentage of firms that train their workers (89%). It is followed by the automotive industry (88%) and the wearing apparel industry (62%). Automotive firms expend the highest number of training hours per worker and are the most likely to resort to outside experts for training. The electronics industry possesses the highest average percentage of employees with advanced education and graduate degrees (14.2% and 1.4%, respectively). While these percentages are similar in the figures for the motor vehicle industry (12% and 0.8%, respectively), in the wearing apparel industry they are lower (5% and 0.4%, respectively).

[9] See OECD (2004b).

TABLE 1

Mexico: indicators for the wearing apparel, electronics and motor vehicle industries, 2000

Indicator	Wearing apparel (3220)	Electronics (3832)	Motor vehicles (3841)
Number of firms	24 084	397	1 370
Value added (average, thousands of pesos)	773.0	15 838.6	79 586.2
Acquisition, use and generation of technology			
Percentage of income invested in the purchase and transfer of technology	1.5	3.6	1.8
Percentage of in-service machinery and equipment operated via automated numeric control systems	6.5	23.9	12.3
Percentage of value of in-service machinery and equipment comprised of robots	0.1	9.9	4.9
Percentage of firms engaged in R&D	3.5	25.7	22.8
Percentage of firms with quality control systems	53.6	76.8	76.7
Training and human resources			
Percentage of firms that trained their employees	61.8	89.1	88.0
Workers with advanced educations (as a percentage of regular staff)	5.0	14.2	12.0
Workers with graduate degrees (as a percentage of regular staff)	0.4	1.4	0.8

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

TABLE 2

Mexico: probit estimation for electronics, motor vehicle and wearing apparel industries

	dF/dx	Robust estimated errors	z	P>|z|
Dichotomic variable – motor vehicle industry	-0.509	0.087	-3.58	0.000
Dichotomic variable – wearing apparel industry	-0.591	0.114	-4.15	0.000
Dichotomic variable – acquisition of machinery and equipment	0.310	0.097	3.04	0.002
Size	0.211	0.081	2.59	0.010
Average educational attainment	0.038	0.017	2.12	0.034
Dichotomic variable – labour union	0.336	0.115	2.76	0.006
Dichotomic variable – outsourcing	0.384	0.137	2.49	0.013
Dichotomic variable – quality	0.228	0.130	1.72	0.085
Observations	3 971			
Prob > chi^2	0.00			
Pseudo R^2	0.47			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

2. Econometric model

Multifactor productivity was estimated using an index equivalent to the quotient between value added and spending on capital and labour inputs.[10] Thus computed, multifactor productivity reflects economies of scale, productive efficiency and differences in installed capacity between firms.[11]

In order to determine whether the factors that influence enterprise training decisions vary from industry to industry, a probit model of the determining factors of such decisions was estimated for all three industries. The dependent variable in this model is dichotomic: 1 if a firm trains its employees, 0 if it does not. The results of the estimate are shown in table 2. The model was estimated using a group of variables which includes firm size, educational attainment of workers, presence of labour unions, presence of foreign capital, export activity, outsourcing activities, quality control and the use, acquisition and generation of technology (see appendix A).

The coefficients show dissimilar effects on the likelihood of training in the three industries studied. The dichotomic variables, which have a level of significance of 99% and are negative, suggest that automotive and wearing apparel firms are less likely to train their workers than electronics firms. This is largely attributable to the different technological dynamics of each industry. The electronics industry and, to a lesser extent, the motor vehicle industry, are characterized by rapid technological change in their production processes and their products. Hence the need for trained workers to operate in a flexible, constantly changing environment. Other variables associated significantly and positively with a higher likelihood of training include the introduction of machinery and equipment, the average educational attainment of workers, firm size and the presence of labour unions. These findings are consistent with existing empirical evidence.

The effect of employee training on competitiveness and other related variables, as well as the distinctive features of training, are analysed below, bearing in mind that the industries studied have different technological and productive characteristics. Training cannot be viewed as an exogenous variable, since the decision to train may be based on a firm's existing knowledge of its productivity (self-selection). A three-stage model is therefore suggested in order to estimate the impact of training on competitiveness (productivity as a proxy variable). Such a model would control for the effects of unobserved variables, as well as the endogeneity of the

[10] For more information on productivity indices, see OECD (2001).

[11] The variable most often used in the economic literature to estimate multifactor productivity is derived from the residuals resulting from the estimation of a Cobb-Douglas production function with constant returns. Several authors have found self-selection and simultaneity problems in the estimation of the production function, however. See Pavcnik (2002); Olley and Pakes (1996); and Griliches (1967).

treatment variable (training),[12] in accordance with the procedure developed by Barnow, Cain and Goldberger (1981). The first step is to estimate a selection model using a probit regression. The estimated probabilities obtained during the first stage are then used to compute the selection bias variable using the Heckman-Maddala-Lee adjustment method. Finally, the instrumental variable method is used to adjust the correlation between the probit model residuals and those of the second stage, ensuring consistency between the computed estimators and the standard errors.[13] The model to be estimated is as follows:

$$P_i = \mathbf{B'X_i} + \delta C_i + \gamma HML_i + \mathbf{e_i} \qquad (1)$$

This estimate captures effect B of an X_i set of exogenous variables on P_i; γ captures the effect of self-selection bias (HML) on productivity P_i; C_i captures the effect of an endogenous binary variable that shows whether or not firms trained their workers on productivity variable P_i. This C_i variable is modelled as the result of a latent unobservable C_i* variable.[14]

During the first stage —estimation of probit models— the breakdown for the three industries studied was based on a set of independent variables which included the following: prior education of workers, plant size, indicators showing the acquisition and use of technology, existence of quality-control mechanisms, origin of foreign capital, outsourcing and joint ventures with other firms.[15] Estimates were based on these variables, and progressively adjusted until a consistent estimate was obtained. During the second stage, in which factors associated with firm productivity were estimated, the variables from the preceding stage were introduced, together with other variables representing the various modalities of training[16] and the occupational categories in which it was concentrated (see appendix A). The same methodology was employed during this stage: variables were eliminated until a consistent estimate was obtained.

(a) *Electronics industry (3832)*

Table 3 shows the results of the first stage of probit model estimation for the electronics industry. First of all, R&D spending as a percentage of value added is positively linked to the likelihood of a firm training its employees. The introduction of new technologies and —what is more— the performance of knowledge-intensive activities require an active training strategy. The acquisition of machinery and equipment as a percentage of value added is also positively linked to the likelihood of training. In addition, the purchase of investment goods that require the use of new technology compels firms to train their workers.

The quality-control variable is also positively linked to the likelihood of firms training their workers. Quality assurance, which relies on modern management systems such as "Total Quality Control" and "Six Sigma", requires an active worker-training policy. Firm age is another variable positively linked to the likelihood of worker training. This may suggest that the production experience of a firm enables it to design and implement better training strategies.

Two other variables associated with a greater likelihood of enterprise training are the existence of a labour union and the index of joint ventures with other firms (including joint training initiatives), both of which are significant. The goodness of fit (0.79) is high, considering the cross-sectional nature of the model and the small number of observations.

The second stage of the estimation shows the effects of training and other variables on productivity (as a proxy variable for competitiveness). The coefficient of the effect of training on multifactor productivity is significant and positive, with a confidence level of 90% (see table 4). The selection bias adjustment —which corrects for the endogeneity of the treatment variable (training)— is negative and significant, with a confidence level of 90%. A correlation therefore exists between selection-equation and results-equation errors.

[12] Training cannot be treated as an exogenous variable if a firm's decision to train is based on prior knowledge of its productivity; to do so would be to create a self-selection bias. In the case at hand, estimates resulting from ordinary square minimums would be biased and inconsistent.

[13] This approach employs maximum likelihood methods, maximizing the joint density of the dependent variables observed in order to obtain consistent estimators and standard errors. Estimators resulting from an ordinary least squares regression would be biased and inconsistent. Given the asymptotic properties of maximum likelihood estimators, the number of observations in the sample used in this paper makes a proper adjustment possible.

[14] $C_i^* = \alpha W_i + u_i$, C=1 if $C_i^* > 0$, or C=0 if $C_i^* < 0$; where C_i^* is the net gain (or loss) resulting from training, and its determining factors, while unobservable, are known. W_i is a vector of firm *i* characteristics that affect the costs and benefits associated with the decision to train; u_i is the error term for firm *i*.

[15] See appendix A for a full list of variables employed.

[16] Internal vs. external training, formal vs. informal training.

TABLE 3

Mexico: electronics industry (3832)

(Probit model of determining factors of enterprise training)

	Coefficient	Robust estimated errors	z	P>|z|
Research and development	4.855	1.605	3.03	0.002
Acquisition of machinery and equipment	3.738	1.036	3.61	0.000
Dichotomic variable – quality	1.669	0.974	1.71	0.087
Foreign capital	0.098	0.069	1.43	0.152
Age	0.209	0.043	4.87	0.000
Joint venture index	14.163	3.598	3.94	0.000
Dichotomic variable – labour union	1.533	0.597	2.56	0.010
Constant	-5.377	1.282	-4.19	0.000
Observations	394			
Prob > chi^2	0.00			
Pseudo R^2	0.79			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

TABLE 4

Mexico: electronics industry (3832)

(Instrumental variable method)

	Coefficient	Robust estimated errors	z	P>|z|
Dichotomic variable – training	4.867	2.488	1.96	0.056
Heckman-Maddala-Lee adjustment	-3.827	2.089	-1.83	0.073
Dichotomic variable – R&D	1.862	0.746	2.5	0.016
Basic engineering	-0.199	0.060	-3.28	0.002
Acquisition of machinery and equipment	-0.063	0.034	-1.84	0.072
Dichotomic variable – quality	1.950	1.074	1.82	0.075
Employee training percentage	0.023	0.014	1.66	0.100
Average educational attainment	0.189	0.099	1.91	0.061
Percentage of employees	-0.026	0.012	-2.24	0.029
Labour regulations index	-1.657	1.042	-1.59	0.118
Constant	-2.213	1.794	-1.23	0.223
Observations	394			
Prob > chi^2	0.00			
Pseudo R^2	0.28			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

In addition, firms that possess quality certifications display greater multifactor productivity, on average, than firms that do not. The global electronics industry is characterized by its high quality standards, which are a key factor in competitiveness (see table 4).

The dichotomic variable for R&D spending is significant and positive, which means that spending on R&D is positively associated with multifactor productivity. This is a reflection of the technological and productive characteristics of the electronics industry, as mentioned above. It also reflects internal efforts to generate new technologies in that industry. However, while R&D is positively linked to the likelihood of training and increased multifactor productivity in the electronics industry, one should bear in mind the type of R&D that is conducted in that industry in Mexico. As mentioned above, product improvements in Mexico are usually innovative at the national level only, and a significant amount of technological effort is focused on process innovations.

The average number of years of schooling completed by a firm's regular staff is a significant and

positive variable. This finding —which is to be expected in any industry, and even more so in knowledge-intensive ones— suggests that prior formal education is an important factor in firm productivity.

(b) *Motor vehicle industry (3841)*

The motor vehicle industry (see table 5) is characterized by moderate R&D spending (as a percentage of value added) and intensive use of capital. Variables associated with an increased likelihood of training in this industry include the introduction of new technologies through the use and purchase of patents, as well as the introduction of machinery and equipment. Technological innovation through process improvements (improvements to machinery, production lines, etc.) is particularly important.

A firm's quality certifications and its export orientation (percentage of output exported) are positively and significantly associated with the likelihood of training. The automotive industry in Mexico is characterized by its strong export orientation and high quality standards, and these traits are found along the entire spectrum, from its assembly plants to all of its suppliers. These two factors go hand in hand and make ongoing worker training a necessity. Firms that manufacture products or components for other companies (outsourcing dichotomic variable) are also more likely to train their workers. As mentioned above, automotive industry suppliers are required to possess quality certifications and employ strong quality controls, which may explain the higher likelihood of training among such firms. Finally, the fact that the average educational attainment of a firm's regular staff is a significant and positive variable suggests that higher educational attainment is linked to an increased likelihood of training. This may have something to do with the fact that training is more profitable when it is offered to individuals who possess a higher degree of prior formal education.

The second stage of the econometric estimation shows that enterprise training has a positive and significant impact on firm productivity (though it has less so than it does in the electronics industry). The selection bias adjustment in this case is negative and significant (see table 6). Spending on patent purchases as a percentage of value added is 95% significant, with a high positive coefficient, which shows the importance of such purchases in the adoption of technology in this industry, as well as their positive impact on productivity. Process-improvement activities are also positively associated with productivity.

The average length of service of a company's workers is also positively linked to multifactor productivity in the auto industry. Low turnover probably encourages investment in the development of human capital. Finally, the outside training variable is positive and significant. Since the main sources of technology are external (patents and purchase of machinery and equipment), outside training provided by machinery suppliers or other firms and organizations is closely associated with multifactor productivity.

TABLE 5

Mexico: motor vehicle industry (3841)
(Probit model of enterprise training)

	dF/dx	Robust estimated errors	z	P>|z|
Patents	0.036	0.018	2.03	0.042
Dichotomic variable – acquisition of machinery and equipment	0.206	0.112	1.74	0.082
Dichotomic variable – process improvement	0.535	0.235	1.93	0.054
Dichotomic variable – quality	0.493	0.129	3.43	0.001
Exports	0.009	0.005	2.01	0.045
Average educational attainment	0.068	0.021	3.39	0.001
Percentage of blue-collar workers	0.009	0.003	3.08	0.002
Foreign capital	0.004	0.002	1.60	0.109
Dichotomic variable – outsourcing	0.478	0.233	1.83	0.068
Observations	1 362			
Prob > chi^2	0.000			
Pseudo R^2	0.520			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

TABLE 6

Mexico: auto industry (3841)
(Instrumental variable method)

	Coefficient	Robust estimated errors	z	P>|z|
Dichotomic variable – training	1.147	0.627	1.83	0.068
Heckman-Maddala-Lee adjustment	-0.800	0.409	-1.96	0.052
Patents	7.637	3.350	2.28	0.024
Dichotomic variable – process improvement	0.513	0.296	1.73	0.085
Specialized worker training	0.002	0.004	0.65	0.513
Average length of worker service	0.036	0.020	1.77	0.078
Worker-to-employee ratio	0.236	0.104	2.28	0.023
Installed capacity	0.010	0.003	3.97	0.000
Dichotomic variable – quality	0.189	0.133	1.42	0.157
Dichotomic variable – outside training	0.002	0.001	1.84	0.067
Constant	-1.350	0.425	-3.18	0.002
Observations	1 362			
Prob > chi^2	0.000			
Pseudo R^2	0.22			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

(c) *Manufacture of wearing apparel (3220)*

It should be noted that microenterprises were excluded from the estimation of the model for the wearing apparel industry, since the diversity of the data made estimation adjustment difficult. The variance of variables such as training and use of technology was especially high.[17] In the wearing apparel industry, the acquisition of machinery and equipment is positively associated with the likelihood of training. As with the other two branches, this is attributable to the manner in which firms adopt new technologies. Quality control is also a significant factor associated with a greater likelihood of worker training (see table 7).

In the wearing apparel industry, unlike the automotive industry, the average educational attainment of regular workers is not significant as an explanation for what causes firms to train or not to train their workers. Average length of service, on the other hand, is significant and negative —perhaps because experience reduces the need for training. In addition, much of the training in this industry is basic and seeks to provide new workers with no more than the simple knowledge they need to perform their tasks. Training does not appear to be an ongoing effort. Only the average educational attainment of management personnel is significant and positive. This suggests that managerial capabilities in these firms are a strategic factor that may improve the organization of production and detect training needs in a timely manner.

The results of the second stage of the econometric estimation showed a positive link between worker training and a firm's performance in terms of competitiveness. As expected, the coefficient in this branch is lower than it is in the electronics industry. The selection bias adjustment is significant and negative, with a 90% confidence level. No other consistent findings were possible, however. Other variables associated with competitiveness were contradictory due to the highly diverse nature of the observations. Indeed, the variance of data —especially that of the "use and generation of technologies" and "training" variables— made it impossible to obtain a consistent estimate. An attempt to develop a cluster-based estimation (by firm size) failed to improve the results.

[17] Microenterprises and small firms in this industry possess characteristics that are markedly different from those of larger establishments.

TABLE 7

Mexico: wearing apparel industry (3220)
(Probit model of determining factors of enterprise training)

	dF/dx	Robust estimated errors	z	P>|z|
Dichotomic variable – acquisition of machinery and equipment	0.279	0.174	1.69	0.091
Dichotomic variable – quality	0.429	0.136	2.98	0.003
Percentage of blue-collar and specialized workers	0.009	0.004	2.25	0.024
Average length of service of workers	-0.048	0.023	-1.84	0.065
Average educational attainment of management personnel	0.034	0.013	3.02	0.003
Joint venture index	0.390	0.117	2.76	0.006
Observations	2 215			
Prob > chi^2	0.000			
Pseudo R^2	0.34			

Source: Authors' own research, using data from the 2001 National Survey on Employment, Wages, Technology and Training (ENESTYC).

IV
Training and competitiveness in a regional setting

Section III analysed the impact of training on firm competitiveness. Businesses, however, are not the only economic agents that use and generate new knowledge. A large variety of public and private organizations —universities, vocational schools, chambers of commerce and government agencies, for example— encourage and support enterprise training activities. Enterprise training also has positive effects on the competitiveness of local industries and economies, thanks to the knowledge diffusion that results from interaction between firms and organizations, as well as the mobility of trained workers.

This section will therefore look at the impact of training on competitiveness in the local economy (meso level) and study the role that public and private organizations play in enterprise promotion and training. The basic argument advanced is that training not only increases firm competitiveness, but also has a positive impact on the competitiveness of the surrounding region or locale. From an evolutionary standpoint, the competitiveness of a region – particularly its ability to innovate – is attributable not only to firms, but also to a variety of public and private organizations, and to the strength of the relationships between them (Cooke, Gómez, Uranga and Etxebarria, 1997; Howells, 1999; Carlsson, Jacobsson and others, 2002; Iammarino, 2005).[18]

In order to assess the impact of training on competitiveness at the meso level, field work was conducted in Mexico in October 2005. A regional approach was adopted; the goal was to study organizations and the relationships existing among them in a specific geographic area. This was seen as an issue of particular importance given the role geographic proximity plays in the interaction between agents and the diffusion of knowledge (Cantwell and Iammarino, 2003; Cantwell and Molero, 2003; Malmberg, Sölvell and Zander, 1996).

As explained in section III, both the characteristics of training and its impact on competitiveness vary from industry to industry. Of the three branches studied, the electronics industry is the most likely to train its workers. It also obtains the highest returns from training in terms of productivity. In addition, it is characterized by rapidly changing technology, which means it must work continuously to develop human

[18] This is especially true of regional innovation systems, which have become particularly important in recent years.

capital. This makes it an interesting case study on the main topic of this article: the impact of training on competitiveness.

The field work in question focused on the electronics industry in Jalisco, Mexico, which is the most important in the interior of the country[19] in terms of the number of its firms, the amount of employment it generates and the foreign direct investment it attracts. Jalisco is also an interesting case study in Mexico, given the higher institutional development in terms of industrial policy, the strength of its higher education system and vocational schools, and the stronger links between its businesses, on the one hand, and its universities, vocational schools and research centres, on the other (Padilla, 2005).

The regional case study covers several organizations involved with enterprise training.[20] Two case studies of electronics firms were conducted, and interviews were carried out at universities, vocational schools, government agencies and private-sector organizations.

First of all, the case studies of companies demonstrate the key role of training in firm competitiveness, particularly with regard to quality, productivity and innovation. This confirms the findings of the econometric analysis. In an industry characterized by rapid change, stiff competition and stringent quality standards, training is an essential tool to ensure that products are assembled and/or manufactured in accordance with the highest quality standards. Investment in training also increases productivity, mainly by reducing the need to rework or reject products. The case studies suggest that firms which base their competitiveness on quality and innovation make employee training a key priority. This is reflected in the resources they invest in training, the professionalization of their needs-detection and training systems, the establishment of evaluation mechanisms, etc.[21]

Secondly, enterprise training in the electronics industry in Jalisco is provided and supported by public and private organizations. Three types of organizations are particularly relevant: (i) universities and vocational schools; (ii) government agencies; and (iii) private-sector organizations. Universities and vocational schools not only train human resources through formal education programmes, but also offer short courses for businesses. These courses, which may be of general interest to an industry or group of industries, are taught either at the initiative of the academic organization or at the specific request of a firm. They are tailored to the specific needs of the participants.

The government supports enterprise training through a variety of mechanisms, including tax incentives, training funds, public vocational schools and universities, and legislation and enforcement. Private-sector organizations also offer courses and provide technical assistance to identify training needs and evaluate the results of training. These courses may be of a general nature —courses on quality certification, standardization, motivation and the organization of production, for example— or may be technical courses specifically designed for a firm or group of firms.

Thirdly, enterprise training may have positive effects on regional competitiveness, mainly through knowledge diffusion. An analysis of the electronics industry in Jalisco reveals three main mechanisms in this regard. The first is the movement of workers between firms in the same industry or different industries. Engineers, technicians or workers who switch employers bring with them the training and skills acquired at their previous jobs. This may be beneficial for the competitiveness of their new firm. Trained employees may also start their own companies, known in the literature as "spin-offs", using the knowledge they have acquired at their jobs. The second mechanism is the interaction between skilled employees (engineers, technicians, managers) and the region's universities and vocational schools. Academic institutions tend to hire part-time teachers who also work in the industry. These teachers are trained and conversant with new technologies, and they pass their knowledge on to their students. Courses —in addition to technical assistance, joint research projects and corporate internships, among other factors— provide academic institutions with new knowledge through interaction with employees who have received training. The third mechanism is the interaction that occurs between employees and the private-sector organizations that provide them with services. Joint projects —training and technical-assistance initiatives, for example— are a means of transferring knowledge from company employees to the staffs of private organizations that support the industry.

The mechanisms described above are particularly relevant to high-tech industries in developing countries,

[19] Larger concentrations of electronics firms are found in border states such as Baja California and Chihuahua.

[20] Institutions were selected based on the literature in the field, as well as interviews with experts (see Padilla, 2005; Dussel, Palacios and Woo, 2003).

[21] For a detailed description of enterprise training activities and their impact on competitiveness, see Padilla and Juárez (2006).

such as the electronics industry in Jalisco. These industries are usually dominated by transnational corporations whose technology is either cutting-edge or more advanced than that of local firms, universities, vocational schools and private organizations that support the business sector. Consequently, the knowledge that is initially transferred to the employees of transnationals through formal and informal training may become a valuable source of updated information for the rest of the industry, as well as the local economy in general. Trained employees do, in fact, transfer the knowledge acquired from transnationals to the receiving economy. It should be noted, however, that such spillovers are neither immediate nor direct. Empirical evidence in several developing countries shows that transnationals may operate in enclaves, with few ties to the local economy and basic productive and technological capabilities. In such cases, spillover to the rest of the region is significantly restricted.

V
Conclusions

At the micro level, the econometric analysis presented above shows that enterprise training in each of the three industries studied is positively associated with firm competitiveness. Training enhances competitiveness by improving product quality and increasing efficiency (less reworking and fewer product rejections), flexibility and the ability to develop innovative products and processes.

The variables associated with a higher likelihood of enterprise training vary from industry to industry. However, quality control was significant and positive in every branch, which demonstrates the key role that training plays in the attainment of high quality standards and the fact that quality-control procedures require an active training policy. Training is also closely linked to the introduction and generation of new technologies. Mechanisms in this regard vary from branch to branch: R&D spending in the electronics industry, acquisition of machinery and equipment and patent purchases in the automotive industry, acquisition of machinery and equipment in the wearing apparel industry.

The main result of the econometric model is that training has a positive effect on firm competitiveness, and that the magnitude of its impact is greater in industries characterized by rapidly changing technology. Industries that employ and develop new technologies in their processes and products must invest in training in order to absorb and generate such technologies. This may create a virtuous circle: technological change requires training, which is itself crucial to innovation. Training is therefore linked to an active process of use, improvement and generation of knowledge.

Firm-level competitiveness is also linked to a number of different variables, depending on the productive and technological characteristics of each industry. In the electronics branch, R&D spending (an internal generator of knowledge) and quality control are positively associated with competitiveness. As mentioned above, the type of R&D conducted by electronics firms in Mexico must be borne in mind when interpreting this result. In the motor vehicle industry, the training of specialized workers has the greatest impact on firm competitiveness; patent purchases and quality-control procedures also play a part. No consistent estimation was possible in the wearing apparel industry due to the large variance of independent variables.

Segmentation by technological content was useful in identifying differences in enterprise training strategies and their impact on industry competitiveness. It should be noted, however, that this is not the only type of segmentation that is relevant when analysing the impact of training on competitiveness. Two future lines of research can be pursued on the basis of this study: (a) the lower likelihood of enterprise training among smaller firms, and the limitations they face in terms of developing an active training strategy that meets their needs; and (b) the impact that the position in the value chain (design, R&D, assembly, manufacture, marketing, etc.) has on decisions regarding employee training and the resources available for that purpose. Furthermore, the addition of panel data would be an extension of the econometric model mentioned above and might yield interesting findings regarding changes or trends in the impact of training on competitiveness.

At the meso level, the case study of the electronics industry in Mexico also shows that enterprise training has a positive impact on regional competitiveness. The diffusion throughout the region of the technological

knowledge initially transferred to company employees constitutes a clear social benefit. Worker mobility, ties binding companies with each other and with universities and vocational schools, and the hiring of training services from private firms are some of the mechanisms by which new knowledge is disseminated, improved and generated. All of this may help to significantly increase regional competitiveness.

Consequently, a joint training strategy, based on partnerships or cooperation between firms and public organizations, may have highly positive effects at the macro and meso levels. On the one hand, it may reinforce corporate training strategies; on the other, it may strengthen the regional capabilities that make the local manufacturing sector more competitive and help the region attract new and better investments.

The public sector in particular can play a key role by encouraging and facilitating enterprise training activities and knowledge diffusion. The findings noted above suggest that public initiatives aimed at encouraging or directly supporting enterprise training should consider the specific needs of each industry —namely, its productive and technological characteristics. Public training policies should be designed with a comprehensive, regional approach in mind —one which recognizes the importance of integrating the efforts of universities, vocational schools, private technical-assistance organizations and chambers of commerce, while also acknowledging the particular characteristics and needs of the local community.

Human capital development techniques will have to be adjusted and changed continuously to keep pace with rapid technological transformations, which are accentuated by the expansion and penetration of information technologies. Enterprise training, by its very nature, is better able to absorb new knowledge and skills. Professional training —including enterprise training— must make use of new teaching techniques, such as autonomy development and individual creativity, that are suited to rapid technological change and facilitate learning and the continuous development of skills (Rolf, 2002).

Finally, given the close relationship that exists among training, innovation and quality, public policies that support training must be designed in conjunction with policies to encourage innovation and quality. A comprehensive approach in this regard will lead to a better use of resources and to better results.

APPENDIX A

List of variables

Variables	Variable construction
Total factor productivity (index)	Quotient between value added and capital and labour inputs in production in 2000
Dichotomic variable – training	1 if training took place, 0 if it did not
Dichotomic variable – wearing apparel industry	1 if a firm belongs to the wearing apparel industry, 0 if it does not
Dichotomic variable – electronics industry	1 if a firm belongs to the electronics industry, 0 if it does not
Dichotomic variable – auto industry	1 if a firm belongs to the auto industry, 0 if it does not
Size	Variable with four possible values: 1 if a firm has fewer than 16 employees; 2 if it has between 16 and 100; 3 if it has between 101 and 250; 4 if it has more than 250.
Foreign capital	Percentage of foreign equity in firm
Dichotomic variable – labour union	1 if a labour union exists, 0 if it does not
Dichotomic variable – outsourcing	1 if a firm has engaged in outsourcing, 0 if it has not
Worker-to-employee ratio	Quotient between the number of employees and the number of workers
Percentage of management personnel	Percentage of workers in an occupational category associated with managerial functions
Percentage of employees	Percentage of workers classified as employees (category includes professionals, technicians, administrative staff and supervisors)
Percentage of specialized workers	Percentage of workers in an independent occupational category who are highly skilled at their functions
Percentage of blue-collar workers	Percentage of regular staff classified as blue-collar workers
Installed capacity	Percentage of utilisation of a firm's productive capacity

Variables	Variable construction
Firm age	Number of years a firm has been in operation
Exports	Percentage of production exported
Dichotomic variable – quality	1 if a firm possesses quality control mechanisms, 0 if it does not
Joint venture index	Percentage of activities undertaken jointly with other firms: sales, purchase of raw materials, access to credit, training, R&D, use of machinery and equipment, acquisition of machinery and equipment
Labour regulations index	Shows whether a firm has policies regarding wage categories, staff rotation, hiring of temporary workers, outsourcing, creation of upper management positions, staff cuts, recruitment and employee promotion
Average educational attainment	Average number of schooling years of overall regular staff
Average length of service	Average years of service of regular staff
Training percentage by occupational category	Percentage of man-hours devoted to training of managers, employees, semi-skilled workers or general labourers
Dichotomic variable – internal formal training	1 if firm provided training through a co-worker, 0 if it did not
Dichotomic variable – internal informal training	1 if firm provided training through an instructor, 0 if it did not
Dichotomic variable – outside training	1 if firm provided training through an outside expert, 0 if it did not
Acquisition of machinery and equipment	Spending on the acquisition of machinery and equipment in 2000, as a percentage of value added
Dichotomic variable – acquisition of machinery and equipment	1 if machinery and equipment were acquired in 2000, 0 if they were not
Patent purchases	Spending on patent purchases in 2000, as a percentage of value added
Patents	Spending on patent use in 2000, as a percentage of value added
Basic engineering	Spending on basic engineering in 2000, as a percentage of value added
Research and development (R&D)	Spending on R&D in 2000, as a percentage of value added
Dichotomic variable – process improvement	1 if process improvement took place in 2000, 0 if it did not
Dichotomic variable – R&D	1 if firm engaged in R&D in 2000, 0 if it did not

(Original: Spanish)

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KEYWORDS

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Youth employment: characteristics, tensions and challenges

Jürgen Weller

Youth employment problems affect not only the welfare of young people themselves but also some key elements of socio-economic development in general. This article examines the circumstances, origins and consequences of these problems and reviews the statistical information available on recent trends in youth employment variables. The figures show that the occupational position of young people has deteriorated in absolute terms along with labour markets generally and that, contrary to some expectations, it has not improved in relative terms either. Working conditions are also found to vary greatly by education level, gender and household characteristics, among other factors. The article then identifies a number of tensions between the subjective perceptions of the young and the reality of the labour market, and reviews options for improving the youth employment situation with regard to the issues of employability, equal opportunities for young men and young women, entrepreneurship and employment creation.

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I

Introduction

Right from the beginning of the modern era, youth employment has been the key element in the transition to adult life, since earning their own livelihood gives young people the material basis they need to lessen and then end their financial dependence on their parents and set up a home of their own. Because society tends to rate individuals by their contribution to material, cultural or spiritual development, work also contributes to social cohesion and confers social legitimacy and recognition. Employment provides opportunities for interpersonal development, facilitating contacts and participation in networks while allowing people to involve themselves in collective actions. In short, work can be viewed as a key to social integration, a source of meaning in the lives of individuals, a platform for civic involvement and a driver of material progress (ECLAC/OIJ, 2003, p. 21).

Although the economic, social and cultural changes of recent decades have diminished the status of work in relation to other activities and aspects of life, especially in the eyes of many young people themselves, and the transition from youth to adulthood has been prolonged (Hopenhayn, 2004), employment remains a decisive factor in the sense described, both as a dominant cultural norm and as an individual aspiration for the vast majority of young people.

Recently, however, economic and occupational conditions in the region have not been favourable to young people seeking to participate in the world of work. Indeed, developments in Latin America's labour markets in the 1990s and the first half of the 2000s have been a cause for concern. Numerous opinion surveys indicate that joblessness and other employment issues are among the problems that most exercise the people of Latin America, and it would be hard to find an election campaign that did not include substantial job creation among its stated goals.

This article examines the characteristics, tensions and challenges of youth employment in Latin America.[1] Section II presents the background to the region's youth employment problems, chiefly its macroeconomic performance and structural changes in its markets, and summarizes the debate on the causes and consequences of these problems. Section III illustrates recent developments in the employment situation of the region's young people. Section IV introduces subjective elements, analysing the contrasts between the reality of Latin America labour markets and the characteristics, aspirations and expectations of the young. Section V, lastly, analyses the challenges that will have to be met if the employment situation of young people in Latin America is to improve.

II

The circumstances, origins and consequences of the employment problems affecting the young

In a context of modest and unstable economic growth, few wage-paying jobs were created between 1990 and 2003 (particularly in the formal sector) and the region's unemployment rate rose from 7.5% to 11% before the economic recovery of the following years brought it down to single-digit figures, although it did not return to its 1990 level (ECLAC, 2006). The informal sector expanded and employment conditions deteriorated. Logically enough, the worsening labour market situation also affected the young, and this was reflected in a rising youth unemployment rate, among other things (see section III).

[1] This study is chiefly based on the findings of a project carried out at ECLAC with the cooperation of the German Agency for Technical Cooperation (GTZ) and with financing from the German Federal Ministry of Economic Cooperation and Development. For further details, see Weller (2006a) and the compilations of national studies prepared by Carranza (2006), Chacaltana (2006a), Charlín and Weller (2006) and Martínez Valle (2006).

Besides the vagaries of the economic situation, there are processes of a more structural nature that affect labour markets, and youth employment in particular. These include recent labour supply and demand dynamics, changes in the workings of job markets and economic transformations elsewhere.

On the supply side, the main factors have been the fall-off in demographic growth, the rising education level of the younger generations and the progressive entry of young women into the labour market. All these trends may contribute to more productive and equitable employment for the younger generations.

On the demand side, a key factor is the increasing integration of trade and finance which, directly or indirectly, is intensifying competition in markets. Companies may respond differently to the pressure of ever-growing competition; one response (and one that will probably come increasingly to the fore) is to introduce new technologies and new organizational processes. This response tends to increase relative demand for skilled and flexible labour, which also works to the benefit of young people more than adults, who find it harder to cope with shifts in production methods and technology.[2]

Faster change in markets as a result of global integration and technological progress is also affecting the operation of the labour market. Employment has tended to become more unstable, a process sometimes facilitated by legal reforms. Hitherto, however, there does not seem to have been a sea-change in contractual relationships in most of the countries; rather, change has taken place "at the margin". While open-ended contracts remain the rule in the formal sector, new recruits are more likely to have less job security and inferior terms of employment, and it is the young that are most affected.

Another complicating factor for youth employment is marked (and growing) socio-economic segmentation, both a reflection and a cause of the great inequality found in Latin America. Family background largely determines the employment prospects of the young, as it influences their opportunities for building up human capital (access to good-quality education and training), social capital (social relationships based on trust, cooperation and reciprocity) and cultural capital (familiarity with the codes established by the dominant culture). The situations, problems and prospects of the young, then, are heterogeneous.

The employment situation of young Latin Americans can thus be said to be critical, dynamic and segmented (ECLAC/OIJ, 2003). It should be pointed out, though, that many of these phenomena are not specifically Latin American. Indeed, many international organizations have examined the problems of youth employment in recent years to see if ways can be found to improve the situation.[3] The creation of decent, productive jobs for the young was identified as one of the targets for the Millennium Development Goals.[4] This renewed concern was partly a reaction to the surprising and unwelcome realization that youth employment indicators were not improving even though some of the ongoing changes touched upon above seemed to favour this. Indeed, in 2007 when the different indicators were reviewed for progress towards the Millennium Development Goals, few of them had performed so unsatisfactorily as youth employment and unemployment.[5]

The academic and political debate has considered a number of explanations for the difficulties facing young people in the job market.[6] Regarding supply, one theory often heard is that education and training systems do not properly prepare young people for the world of work. As already pointed out, companies (representing most of the demand for labour) have had to cope with rapid economic and technological changes. To deal with these, many have tended to demand different and increased qualifications from their workforce, this being true not only of technical and professional skills and know-how ("hard skills") but also of social and methodological capabilities, particularly communication, team-working and problem-solving skills ("soft skills").

[2] See Blanchflower and Freeman (2000) for an analysis of this issue in advanced countries.

[3] See, for example, OECD (2002, chapter 1), United Nations (2004, chapter 3), ILO (2006) and World Bank (2007, chapter 4).

[4] This is target 16 of goal 8 ("Develop a global partnership for development"), which reads: "In cooperation with developing countries, develop and implement strategies for decent and productive work for youth". The unemployment rate of 15- to 24-year-olds, by sex and in total, was selected as a key indicator (number 45) (http://www.un.org/millenniumgoals/). A target for productive employment and decent work for all, "including women and youth", was subsequently introduced and target 16 removed.

[5] The only region expected to have met the youth employment target by 2006 was Oceania. In most of the regions, the situation worsened or failed to improve (http://unstats.un.org/unsd/mdg/Resources/Static/Products/Progress2006/MDGProgressChart2006.pdf, last visited 19 February 2007).

[6] For further details, see Diez de Medina (2001), O'Higgins (2001), Fawcett (2002), Tokman (2003), Weller (2003) and Cacciamali (2005).

Education and training systems are struggling to cope with this growing, dynamic demand because they lack resources, have little contact with the world of work and thus little understanding of the characteristics of demand, and have only a limited capacity to adjust. Since there is often uncertainty about the future characteristics of demand, moreover, the signals from the labour market are unclear, and this obviously makes it harder for the education and training supply to adjust. The result is that the young people who come out of these systems are not properly prepared and do not understand the characteristics of the working world; in turn, businesses are reluctant to employ them. Contrary to what is sometimes claimed, furthermore, it can be argued that the profound technological and organizational changes that have occurred have not wholly negated the value of experience. Consequently, although young people may have specific skills, in new technologies for instance, their potential advantages over older people are diminished by other relative weaknesses.

While this first group of employment problems derives from the inadequacy of supply in relation to the characteristics of demand, a second group stems from demand itself. One such problem, which concerns the level of demand, is that when an economic slowdown occurs the first response of company human resources policy is to stop hiring, and this obviously affects the youngest (who are over-represented among job-seekers) more than other people.[7] When the crisis worsens and companies start to lay off workers, young people once again are usually the worst affected; partly because they have spent less time with the firm, and partly for social reasons (protecting heads of households) and financial ones (retention of experienced workers, lower severance payments), they are the first to lose their jobs. Consequently, in situations of great economic volatility like those that have characterized Latin America over recent decades, the environment becomes less favourable to the employment prospects of the young.

There is a problem of incomplete information in the labour market, both among young people in relation to the working world in general and individual companies in particular, and among companies in relation to the young in general and certain young people in particular. Lack of transparency in intermediation procedures, prejudices on both sides and discriminatory practices can make the adjustment between companies' requirements and young people's aspirations even slower and more inefficient than it would otherwise have been, as well as entrenching inequalities.

Regulations such as a high minimum wage that make it more expensive to hire young people, whose lack of experience makes their productivity relatively low, can also reduce the level of youth employment. Other regulations designed to protect workers already in employment ("insiders") tend to block access to jobs for those without employment ("outsiders"), among them the young.

Lastly, the production structure and certain characteristics of employment institutions limit the scope for advancement in the labour market. A large segment of the region's economies is characterized by low productivity, low technology levels and non-compliance with numerous regulations, including employment regulations. Jobs in this segment not only entail poor working conditions and benefits, but the work experience acquired there is not much appreciated in the market and therefore commands little in the way of higher pay. Abuse of certain contractual mechanisms and non-compliance with employment laws are found in more "formal" contexts as well, worsening the quality of youth employment and limiting future prospects.

The specialist literature indicates that all these (often interrelated) factors are influential, but to very differing degrees (Weller, 2003). As we shall see later on, heterogeneity within age groups makes it hard to generalize, and large differences in human, social and cultural capital have to be considered when analysing the youth employment situation and proposals for improving this. To define youth simply by biological age is obviously very confining, but studies that work with statistical sources have no choice but to do so. In this article, accordingly, "youth" is understood to refer to people aged 15 to 29.

That employment indicators should show worse levels for young people than for adults is not in itself a cause for concern. When youth unemployment is high and prolonged, however, and young people are working in poor-quality jobs for which their education and skill levels overqualify them, there are negative economic and social effects:

[7] For example, the averages of the figures for Chile, Ecuador, El Salvador, Paraguay and Peru in the early 2000s indicate that 52.7% of the unemployed who had already held a job at least once and 84.6% of those seeking work for the first time were young people aged between 15 and 29 (author's calculation based on special tabulations of household surveys from the countries concerned).

— The misapplication of human capital which social investment has helped to create limits economic growth and thus the welfare of society as a whole.
— The inability to acquire solid work experience adversely affects both the future earnings of young people and their pensions, especially in individually funded systems.
— It is harder and slower for young people to form households of their own when their employment position is poor and they thus remain dependent upon their parents for longer, with the financial burden this implies. As a result, the present net income of their parents is also reduced, as is their saving capacity and thence their future income.
— Young people from poor households are especially likely to work under substandard conditions or to enter the labour market too early or too late, often because of high drop-out or expulsion rates in the school system. The result is that the potential contribution of employment in releasing them from this situation is not realized and the intergenerational transmission of poverty is reinforced.
— The mismatch between educational characteristics and the demand for labour tends to impede social mobility, thus exacerbating structural problems in the distribution of income and perpetuating the region's inequitable income distribution.
— Substandard employment makes it harder for young people to integrate into society, as their civic rights are not upheld; this discourages participation in other institutional spheres and tends to drive them into confrontational attitudes.
— Young people in substandard employment are a major part of the at-risk population and face problems of social adaptation and marginalization.

III

Recent developments in Latin America's youth employment situation

This section examines the characteristics of youth employment in Latin America and the changes that occurred between the early 1990s and the early 2000s.[8] These data, it must be remembered, are for a period of mediocre economic growth (2.9% a year between 1990 and 2004, giving an annual increase of 1.2% in per capita GDP) and thus of unsatisfactory labour market performance. As will be seen now, youth employment was no exception to these tendencies.

1. Trends in youth activity and inactivity rates

Two trends in particular characterize the participation of young people in the Latin American labour market during the recent period. One is the moderate decline in the male participation rate;[9] the other is the marked rise in the female participation rate. The result is that the participation gap between men and women has narrowed (table 1).

The final outcome of these two opposing tendencies was a small increase in the overall workforce participation rate of young people (except in the youngest group). The fall in the participation rate of young men was due primarily to the decline in the youngest group (15 to 19). A primary cause of this was that they stayed longer in the education system, since the proportion of students rose, particularly in this age group (table 2). At the same time, there was

[8] This section is based mainly on household surveys from 17 countries processed by Carlos Daroch. Since statistical information is not available for the same years in all the countries, the approach taken was to process the most recent information available (2003 or 2004 for most of the countries) plus the data for a year at the beginning of the 1990s or, in the case of countries that did not have this information, a year in the first half of that decade (see the note to table 1 for further details). To identify regional tendencies, simple averages were calculated for countries with comparable information. By the "recent period" is meant the period from the beginning of the 1990s to the early years of the 2000s.

[9] The participation rate is the proportion of working-age people who are employed or seeking work.

TABLE 1

Latin America (17 countries): Participation rate by age group and sex, between around 1990 and around 2003/2004[a]
(Simple averages)

Age group	Around 1990			Around 2003/2004		
	Both	Men	Women	Both	Men	Women
15-19	38.9	52.4	25.5	38.2	48.9	27.5
20-24	64.2	83.3	46.1	68.9	84.0	54.3
25-29	71.5	94.8	50.4	77.2	93.9	61.8
15-29	56.5	74.4	39.7	59.2	72.2	46.5
30-64	68.3	92.8	45.9	74.8	93.1	58.3

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Coverage is the national total for the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Peru; the urban total for Bolivia, Ecuador and Uruguay; and Greater Buenos Aires for Argentina. For the period around 1990, the years are 1989 for Bolivia, Guatemala and Mexico; 1990 for Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Costa Rica, Honduras and Uruguay; 1991 for Colombia and Panama; 1993 for Nicaragua; 1995 for El Salvador; and 1997 for the Dominican Republic, Ecuador and Peru. For the period around 2003/2004, the years are 2001 for Nicaragua; 2002 for Bolivia; 2003 for the Bolivarian Republic of Venezuela, Brazil, Chile, Honduras and Peru; and 2004 for Argentina, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Panama and Uruguay.

TABLE 2

Latin America (15 countries): Inactive youths as a percentage of their age group, by age group, sex and inactivity type, between around 1990 and around 2003/2004[a]
(Simple averages)

Age group	Around 1990			Around 2003/2004		
	Both	Men	Women	Both	Men	Women
Students						
15-19	44.9	42.4	47.3	48.9	46.4	51.5
20-24	12.3	11.9	12.7	13.5	12.4	14.5
25-29	2.7	2.4	2.9	2.9	2.7	3.2
Domestic work						
15-19	13.0	0.8	25.2	9.6	0.9	18.3
20-24	20.2	0.3	38.6	14.8	0.4	28.5
25-29	23.7	0.1	44.9	17.0	0.3	32.3
Other inactive						
15-19	5.3	6.2	4.3	5.1	5.6	4.6
20-24	4.4	4.5	4.2	4.0	3.9	4.1
25-29	3.1	3.2	3.1	3.0	3.0	3.0
Total inactive						
15-19	63.1	49.3	76.8	63.6	53.0	74.3
20-24	36.8	16.7	55.5	32.2	16.8	47.1
25-29	29.5	5.8	50.9	22.9	5.9	38.5

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Brazil and Peru are excluded because of a lack of data in the coverage specified in table 1.

a small decline in the proportion of young men in the "Other inactive" category, the group containing the largest contingent of young people at greatest risk of exclusion and marginalization. In these circumstances, the decline in the youth participation rate is a positive development. There are still problems, however: for example, the high workforce participation rate of young people aged 15 to 19, an age when the great majority ought to be attending educational establishments, and the fact that more than 5% of this age group belong to the "Other inactive" category.

Higher workforce participation among young women did not lead to any decline in their attendance at educational establishments: in all age groups not only did the proportion of women attending educational establishments increase, but women outnumbered men of the same age. This was presumably contributed to by the realization that women with a low level of education have fewer employment options than men in the same position, leading women to make a greater effort to obtain qualifications in order to improve their opportunities of obtaining higher-quality employment.

Conversely, there was a marked decrease in the proportion of young women engaged in domestic work, while the proportion falling into the "Other inactive" category remained quite stable. The fact that employment increased at the same time as attendance at educational establishments can be regarded as another positive development. Once again, this does not mean that the problems of occupational inactivity have been overcome, since over a fifth of 15- to 19-year-olds are engaged in domestic work or are in the "Other inactive" category, which severely limits their options when it comes to taking paid employment in future.

Increased attendance at educational establishments is reflected not only in the rise in the number of students as a proportion of the age groups concerned, but also in the higher proportion of employed and unemployed young people attending such establishments. This group is very large, comprising 35.1% of all employed 15- to 19-year-olds, 20.8% of the 20 to 24 group and 12.2% of the 25 to 29 group in 2003/2004 or thereabouts, with higher rates among women than men.[10] The proportions are similar among the unemployed, with 36.2%, 24.6% and 13.7% of the three age groups, respectively, attending educational establishments.

Lastly, a clear divide can be identified between young men and young women when their participation levels are measured against income in the households to which they belong (Weller, 2006b, p. 9). Specifically, male labour market participation shows an inverted U-curve, with the lowest rates found in the first and fifth household income quintiles, although the differences between quintiles are relatively small.[11] In the case of young women, on the other hand, there is a clear positive correlation between household income level and workforce participation. The participation rate of young women in the poorest households (first quintile) is about 20 percentage points lower than that of women of the same age in the wealthiest quintile.

2. Youth employment trends

Between the early 1990s and the mid-2000s, the employment rate[12] among young people rose slightly, as the decline in the rate for young men was offset by a moderate rise in that for young women (table 3).

The employment rate is more homogeneous across education groups in the case of young men (with the highest rates in the least educated groups) than in that of women (with the highest rates in the most educated groups). Whereas in the former case this is mainly because some young men with intermediate and high education levels are still studying, in the latter case it is basically a reflection of cultural constraints and the lack of job opportunities for less educated young women (who come from low-income families, particularly in the countryside).

Among young women, the employment level rose in all educational groups, with larger increases in the lowest educational groups, resulting in a slight reduction of the difference in the employment rate between women of different educational levels. Owing to composition effects, the divide in the employment rate between young men and women fell quite sharply, from 34 percentage points in the early 1990s to less than 27 points around 2003/2004, although it remained high.[13]

[10] These percentages rose across the board in the recent period. Around 1990, the proportion of working people who also attended educational establishments was 26.6%, 14.9% and 7.7%, respectively, for the three age groups (calculated as a simple average for 13 countries).

[11] About 5 percentage points between the lowest and highest rates.

[12] The employment rate is the proportion of working-age people in paid employment.

[13] The highest educational groups have increased their share of the total among both men and women, but these groups present below-average employment rates in the case of men and above-average rates in the case of women.

TABLE 3

Latin America (16 countries): Occupation rate of youths aged 15 to 29, by education level and sex, between around 1990 and around 2003/2004[a]
(Simple averages)

Years of study	Around 1990			Around 2003/2004		
	Both	Men	Women	Both	Men	Women
0 to 3	52.3	76.7	28.2	54.6	74.7	32.0
4 to 6	55.2	77.1	32.9	56.7	76.4	35.4
7 to 9	40.9	55.8	26.5	41.9	53.9	29.2
10 to 12	48.0	59.6	38.0	48.6	59.0	39.2
13 and over	55.2	59.9	51.1	55.2	59.6	51.8
Total	*49.0*	*66.5*	*32.6*	*50.0*	*63.5*	*36.9*

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Argentina is excluded because of a lack of data in the coverage specified in table 1.

In the recent period, furthermore, there was a general rise in the share of low-productivity sectors within the employment structure, chiefly reflecting weak demand for labour in the more productive sectors at a time of low economic growth.[14] There is a strong negative correlation between the share of low-productivity sectors and the education level of the young (table 4). Indeed, the proportion working in these sectors was more than three times as high among those with the lowest education levels as among those with the highest education level.[15] During the most recent period, however, the share of low-productivity sectors also increased in the intermediate and high educational groups, indicating that, with weak growth in the region's economies at a time when the education level of young people entering the labour market was rising, a growing number of these young people with a good level of education were not finding employment commensurate with that education.

Lastly, the occupational activity status of young people tends to be far more mobile, and their employment in particular more unstable. In the case of Chile, Henríquez and Uribe-Echevarría (2003, p. 93) found that, over six consecutive quarters, just 23.3% of young people who formed part of the economically active population at some point were continuously employed, while 34.3% moved between employment and inactivity and 42.4% had at least one spell of unemployment.[16] By way of comparison, in the 30 to 49 age group the figures reveal far greater stability, standing at 60.4%, 19.8% and 19.8%, respectively.

3. Youth unemployment trends

In Latin America, the youth unemployment rate is more than twice the adult rate (15.9% compared to 6.6% around 2003/2004) and the gap between youths and adults is similar for men and women. Unemployment rose for all groups in the recent period, so that the rise in youth unemployment was more a reflection of the general deterioration in the region's labour markets than of specific issues affecting the young. Indeed, in relative terms unemployment increased by slightly more for adults, so that the gap between these and the young narrowed somewhat.[17] Among young people, the female unemployment rate was almost half as high again as the male rate, with little change in this respect over the recent period (table 5).

[14] These sectors are measured using the proxy variables of own-account workers without professional or technical qualifications, wage earners in microenterprises, unpaid family workers and domestic service workers.

[15] A *probit* exercise has shown that in the cases of Argentina, the Bolivarian Republic of Venezuela and Costa Rica, the more educated people are the less likely they are to be working in low-productivity sectors (Weller, 2003, pp. 50-52). In addition, people from poor households are more likely to work in these sectors.

[16] See Chacaltana (2006, p. 189) for similar data regarding Peru.

[17] In the group of 17 countries with comparable data for the recent period, unemployment rose from 12.8% to 16.1% among the young and from 4.8% to 7% among adults, meaning that the youth rate was 170% higher than the adult rate at the start of the 1990s and 130% higher a decade later.

TABLE 4

Latin America (14 countries): Percentage of youths aged 15 to 29 in low-productivity jobs, by education level, between around 1990 and around 2003/2004[a]
(Simple averages)

Years of study	Around 1990			Around 2003/2004		
	Both	Men	Women	Both	Men	Women
0 to 3	68.4	64.1	77.0	72.3	66.9	83.8
4 to 6	62.7	58.0	72.6	66.3	61.4	77.2
7 to 9	51.0	47.2	59.0	58.5	53.2	68.8
10 to 12	32.9	32.1	34.4	40.0	36.7	44.7
13 and over	15.7	16.4	15.2	19.3	19.3	19.5
Total	*49.9*	*48.3*	*51.6*	*51.4*	*49.6*	*55.1*

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Argentina, Colombia and Mexico are excluded because of a lack of data in the coverage specified in table 1.

TABLE 5

Latin America (17 countries): Unemployment rate, by sex and age group, between around 1999 and around 2003/2004
(Simple averages)

Age group	Around 1990			Around 2003/2004		
	Both	Men	Women	Both	Men	Women
15-19	17.7	15.6	22.1	22.4	19.2	28.1
20-24	13.4	11.2	16.7	16.8	13.9	21.1
25-29	9.0	7.3	11.7	10.6	8.0	14.0
15-29	12.8	10.9	15.9	15.9	13.1	19.9
30-64	4.8	4.3	5.7	6.6	5.3	8.3

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

There is a strong negative correlation between the youth unemployment rate and household incomes. In the early 2000s, the youth unemployment rate in the first quintile was almost 30%, or more than three times the rate in the fifth quintile. In the recent period, however, this last quintile experienced the largest proportional increase in its unemployment rate, possibly in part as a result of rising "educated unemployment" or unemployment among better-educated young people. Of course, people in well-off households are in a position to wait and search for longer without any great sacrifice in the well-being of household members (Weller, 2006b, p. 20).

Interestingly, for unemployed people who have previously worked there is no great difference in the time it takes youths and adults to find employment, suggesting that the former do not generally have greater problems of labour market access than the latter, although there are specific groups that may indeed face more severe problems.[18] As already mentioned, however, the younger cohorts account for the bulk of the unemployed seeking work for the first time, who typically find it harder to enter the labour market and take longer to find work. These two related factors help to account for the higher rate of youth unemployment

[18] For example, it takes young women longer to find work than young men, although the gap is smaller than that between adult women and men (Weller, 2003, p. 34).

and highlight the importance of a first job for the young, especially a first job where they can build up experience that will later be recognized in the labour market.

In any event, once young people have started to build up experience, the specific problems they face (as compared to adults) mainly concern the characteristics of the jobs available rather than access to these jobs as such; this is manifested in greater job instability for young people than for adults, partly because a high percentage of their employment contracts are short-term (Fajnzylber and Reyes, 2005). Table 6 shows how this instability manifests itself in a higher rate of transition from employment to unemployment. The table reveals that the ratio between the number of people who have recently become unemployed and the number of people in work is substantially higher for young people than for adults, and for women than for men.[19]

Thus, the fact that the unemployment rate is higher for young people than for adults is mainly due to the concentration of first-time jobseekers among the young, the access problems experienced by these, and a greater frequency of movement between employment and unemployment or inactivity among young people than among adults.

4. Earnings trends

There is a large earnings gap between young people and adults, as the latter receive an "experience premium". Logically enough, the gap narrows as the age (and experience) of the young increases. While the youngest (aged 15 to 19, with average earnings of approximately 1.5 times the poverty line) earn a third as much on average as adults, those aged 20 to 24 receive more than half (2.6 times the poverty line) and those aged 25 to 29 more than three quarters (3.5 times the poverty line) of average adult earnings, which are 4.6 times the poverty line (table 7).[20] Contrary to expectations of an improvement in the youth employment situation, at least in relative terms, in the recent period both real earnings as measured in terms of the poverty line and the gap between young people and adults remained quite stable.

The earnings gap proves to be significantly larger for young men than for young women, indicating that women receive less of a premium for experience over their working lives than men, either because they really do build up less experience on average by reason of their careers being more interrupted, or because of discriminatory pay practices, or both.

The pay gap between young people and adults tends to be wider at the higher education levels and narrower at low education levels. This is partly because experience plays a preponderant role in the case of skilled workers, whose activities offer more scope for developing additional skills than do simpler occupations. In the case of the latter, physical exertion is a major component of performance.[21]

In this context, it is striking that whereas the specialist literature indicates that the pay gap between the highest-skilled and other educational groups widened in the labour market as a whole in the recent period (IDB, 2003), the evidence for the different age subgroups among the young is mixed. Specifically, the relative earnings of young people with 10 to 12 years of education tended to deteriorate and the best-educated saw their relative earnings improve in the 25 to 29 group, but not in the 20 to 24 group (table 8). In the case of adults, on the other hand, both the group with 10 to 12 years of education and, to an even greater extent, the best-educated group improved their earnings relative to the other educational groups.

These findings contradict the widely held theory that the far-reaching technological changes of recent times have handed a competitive advantage to the best-educated young people with skills in new technological fields, these skills being harder to acquire for adults educated in different technological paradigms. For the group with 10 to 12 years of education, the reason for this unexpected turn of events may possibly be that rising secondary education coverage in the recent period has "devalued" this educational attainment, so that young people educated to this level entered the labour market in large numbers and saw their relative earnings decline. As for the most educated group, the difficulty of finding employment commensurate with their level of education (rising "educated unemployment") must have resulted in some new jobseekers having to take up positions for which they were overqualified, driving down the average earnings of this educational group.

[19] In addition, young people typically move more frequently between employment and inactivity; see Chacaltana (2006b, p. 189) for the situation in Peru, for example.

[20] This improvement is also observed when changes in the earnings of a particular age cohort are tracked (see Weller, 2003, pp. 53-60).

[21] Within each age group, furthermore, less educated people potentially have more years of work experience because they entered the labour market earlier.

TABLE 6

Latin America (16 countries):[a] Percentage ratio between the newly unemployed[b] and the employed, by age group and sex, around 2003/2004
(Simple averages)

	15-19	20-24	25-29	15-29	30-64
Both sexes	4.4	3.2	2.2	2.9	1.2
Men	4.3	2.9	1.9	2.7	1.2
Women	4.7	3.8	2.6	3.3	1.3

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Brazil is excluded because of a lack of data in the coverage specified in table 1.
[b] People previously in employment and now unemployed and seeking work for up to a month.

TABLE 7

Latin America (16 countries): Youth earnings as a multiple of the poverty line and as a percentage of the average earnings of the corresponding adults, by age group and sex, between around 1990 and around 2002[a]
(Simple averages)

	Around 1990			Around 2002		
	15-19	20-24	25-29	15-19	20-24	25-29
Earnings as a multiple of the poverty line						
Both sexes	1.5	2.6	3.5	1.5	2.6	3.5
Men	1.6	2.8	3.9	1.6	2.8	3.9
Women	1.4	2.2	2.9	1.3	2.3	3.0
Earnings as a percentage of the corresponding average adult earnings						
Both sexes	33.0	56.9	78.0	32.6	57.0	77.2
Men	29.6	52.8	74.2	29.6	53.0	73.3
Women	43.6	70.9	92.1	38.7	66.2	86.7

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

[a] Earnings data from around 2002 are used because 2003/2004 data were available for only a few countries.

TABLE 8

Latin America (16 countries): Earnings as a percentage of the average earnings of working people in the age group concerned with 10 to 12 years of education, by age group and education level, between around 1990 and around 2002
(Simple averages)

Years of study	Around 1990				Around 2002			
	15-19	20-24	25-29	30-64	15-19	20-24	25-29	30-64
Total	*74.0*	*86.4*	*89.6*	*82.2*	*89.9*	*92.3*	*100.0*	*95.9*
0 to 3	61.6	58.9	55.6	50.4	84.4	68.6	58.6	50.1
4 to 6	72.2	80.2	67.3	66.3	87.4	79.0	73.5	64.7
7 to 9	77.2	82.0	83.0	79.3	87.4	86.0	84.3	75.9
10 to 12	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
13 and over	...	127.9	148.9	170.7	...	125.8	164.2	214.9

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

There are large earnings gaps between young men and women, both overall and in specific educational groups. The difference widens with age: in 2002, women's earnings were 87% of the average in the 15 to 19 group, 81% in the 20 to 24 group and 76% in the 25 to 29 group (table 9). Once again, then, it transpires that women do not receive the same kind of premium for experience as men.

An interesting finding is that, whereas many studies, such as ECLAC (2001), show that the earnings gap between men and women is usually greater at the high education levels than at the low and intermediate ones, this is not true in the case of the young. Indeed, the earnings gap for young women with a higher level of education as compared to those in the other educational groups is smallest in the three youngest age subgroups. This could mean that the relative earnings of this group of women diminish most afterwards, when highly educated men start to receive a large premium for their experience, typically by way of promotion, whereas the premium for women's experience increases less owing to interruptions in their careers (to have children) and discrimination. An alternative or complementary theory is that young women with a higher level of education tend to be discriminated against less, as they are increasingly succeeding in enforcing their right to equality of pay with similarly able men.[22] This theory would seem to be borne out by the fact that the best-educated young women aged 20 to 29 have been able to narrow the earnings gap with their male counterparts, whereas the predominant pattern among other educational groups has been for the gap to widen.

To conclude this brief review of the most salient statistical information, it can be said that the employment situation of young Latin Americans deteriorated once again in the recent period. This was due to general trends in the region's labour markets, where employment conditions and earnings once again suffered amidst pronounced macroeconomic volatility. Contrary to what might have been expected from theories about young people's competitive advantages in the areas of technology and organization, there was no improvement in their occupational situation as compared to that of adults. This does not mean that the expectations were completely wrong,[23] but that they apply not so much to young people generally as to specific groups.

[22] Schkolnik (2005, p. 37) shows that the employment patterns of highly educated young women are very similar to those of their male peers.

[23] See Campusano (2006, p. 97) on the characteristics attributed to young people by employers.

TABLE 9

Latin America (16 countries): Earnings of young women in relation to the average earnings of their male counterparts, by age group and education level, between around 1990 and around 2002
(Simple averages)

Years of study	Around 1990			Around 2002		
	15-19	20-24	25-29	15-19	20-24	25-29
Total	*91.7*	*81.9*	*76.0*	*87.2*	*80.6*	*76.2*
0 to 3	94.0	76.3	62.8	75.0	62.1	56.6
4 to 6	79.1	64.8	62.4	83.1	67.7	57.8
7 to 9	83.2	68.8	61.1	83.2	68.9	58.5
10 to 12	104.1	85.0	71.7	89.4	78.2	69.8
13 and over	...	77.0	75.4	…	84.4	76.4

Source: ECLAC, on the basis of special tabulations of household surveys from the countries concerned.

IV

Tensions in the youth employment situation

The gap between expectations of an improved outlook for youth employment (because of educational, demographic, technological and economic factors) and actual developments in recent times (see section III above) has given rise to a number of tensions, many of them interrelated.[24] These tensions generally arise between the subjective perceptions of the young and the reality of the labour market. Given the great heterogeneity of the youth cohorts, these tensions obviously do not affect all young people alike. Many of them are being experienced in all the countries, however.

First tension: young people now have higher levels of formal education than the age cohorts that preceded them, but they also face greater problems in obtaining work.[25] The cause of this tension lies mainly in the weakness of aggregate demand, which has meant that a large proportion of new jobs have arisen in low-productivity sectors as these have expanded under the pressure of the labour supply. Clearly, the cause of this tension is not that the new generations are "over-educated" or that there is a surplus of young people with high levels of education, since the widening of the pay gap in favour of the most educated observed for the recent period in Latin America (IDB, 2003) shows that the demand for labour has if anything been shifting towards the most highly qualified workers. On the contrary, progress with educational coverage has been insufficient to achieve equity and development in the region (by comparison with other middle-income countries, for example) and quality is inadequate. Specifically, education and occupational training systems have only half-heartedly addressed the productive and sociocultural changes of recent times, and are thus not facilitating the transition to the world of work.

Second tension: young people place a high value on work as such, but their experience with actual jobs tends to be frustrating. While there is a growing functional perception of work as primarily a source of income (and one that in some cases has to compete with others offering higher returns for less effort), for many young people it is still the cornerstone for the development of their personal identity, not least because of the new social contacts they forge in the workplace. Often, however, the initial experience of work does not live up to expectations, with many young people reporting low earnings, few opportunities to acquire skills and know-how, threats of dismissal, ill-treatment, sexual harassment or unpleasant personal relationships; in short, conditions that do not help them fully realize the potential contribution work can make to their individual and social development.

Third tension, connected with the second: there are major contradictions between young people's expectations of the benefits of participating in the labour market and the conditions they actually experience there. These expectations centre on improvements in the material well-being of themselves as individuals and the parental household, the creation of a basis for setting up homes of their own, social recognition and the opportunity to contribute to the development of their country, among others. The change in gender roles has heightened this tension, since more and more young women are trying to fulfil and develop their potential in order to achieve greater independence and release themselves from traditional roles closely tied to the home. For many young people, however, the reality of the labour market does not satisfy these aspirations or does so only in part. A key element in the frustrations this creates are low earnings, reflected in the large percentages of "working poor".

Fourth tension: taking a dynamic view, the characteristics of the labour market are expressed in the contrast between the need and preference for a working life that provides a minimum of job and earnings stability, especially when young people aspire to start a family of their own, and the volatility and insecurity that are the dominant reality of the labour market. The young people of today have had their first experience of work in this "new occupational norm"

[24] Section IV is based mainly on the results of a number of focus groups organized as part of the ECLAC/GTZ project mentioned in footnote 1 and comprising young people and young adults of different educational levels. See Espinosa (2006), Sepúlveda (2006) and Palau, Caputo and Segovia (2006), plus the relevant chapters in Carranza (2006) and Chacaltana (2006a).

[25] This is the first of the tensions or paradoxes analysed by Martín Hopenhayn in relation to the situation of Latin American youth and discussed in ECLAC/OIJ (2004, pp. 17-21) and elsewhere. The tensions identified in this chapter, which mainly concern aspects of youth employment, can be considered in conjunction with these.

(Sepúlveda, 2006) and some find it a satisfactory framework for their aspirations of independence and creativity. For most, however, the labour market is not a place where dynamic opportunities abound, but one where obstacles are placed in the way of advancement and stable employment. Combined with the weakening of social protection systems in many countries, this gives rise to deep uncertainty that affects the personality development and social inclusion of young people.

Fifth tension: achieving employment aspirations is generally a long-term matter, particularly when it comes to attaining high levels of education. However, many young people face short-term pressures that compel them to leave the school system early, prevent them from resuming their studies and oblige them to accept any job available to generate earnings that their households cannot do without. Whereas for young people from poor households this conflict becomes apparent at an early age, for others the clash between long-term aspirations and short-term pressures comes with the responsibilities entailed by having a family of their own. In these cases, the tension between aspirations and the realities of employment is often "resolved" by transferring the aspirations to the next generation, with the idea that short-term sacrifices will facilitate their accomplishment for the family's offspring.

Sixth tension: young women are showing an increasing desire to lead independent lives. Employment plays a key role in this, but they face special problems in the labour market. Although the situation is particularly difficult for women with low levels of education, who have very few opportunities for productive employment, the employment indicators for young women are less favourable than those for young men in similar age groups at all education levels. Consequently, and despite their higher levels of formal education, average employment indicators for young women as a group are also worse than those for their male counterparts (ECLAC, 2004, pp. 167-171).

Seventh tension: the growing need to combine work with study can create negative tensions, by affecting performance in both spheres, or positive ones, by opening up access to opportunities that would otherwise be closed off. In any event, the growing importance of "lifelong learning" can involve a lasting conflict throughout a person's working life, with potentially negative effects on free time and family and social life, especially in the Latin American countries with their long working days.

Eighth tension: young people experience the conflict between a "meritocratic" discourse, to which they respond with a willingness to make great personal efforts and sacrifices for the sake of advancement in their education and employment, and the reality of a labour market in which personal contacts and recommendations are often an important factor in access to desirable jobs. Occupational exclusion among those who do not have this type of social capital reflects a marked intragenerational segmentation that is intensifying in many countries because of growing differences in the quality of the education available to young people from different socio-economic backgrounds.

Ninth tension: the market demands work experience, among other things; however, many young people seeking work for the first time discover, firstly, that it is extremely difficult to gain experience and, secondly, that the market does not recognize experience acquired in the kind of occupations open to young people of a low educational level. Accordingly, this group finds it almost impossible to embark upon a path of occupational advancement.

Tenth tension: young people are showing more and more interest in self-employment and entrepreneurship and in the arguments advanced in favour of this orientation, which is represented as one way of coping with the scarcity of new wage-paying jobs. However, there are considerable obstacles to starting a business (experience, credit and others), as well as a high risk of failure,[26] while with few exceptions the institutions needed to help young people with ventures of this type, and particularly with the consequences of failure, have yet to be created. In addition, situations of crisis or low economic growth not only limit the creation of wage-paying employment, but also restrict opportunities to create and expand new businesses.

Eleventh tension: young people have to cope with the conflict between their cultural preferences and the standards demanded in a labour market shaped by the dominant culture. They perceive that they are subject to exclusion because of their age and the cultural choices they express, while the market places what young people see as an unfair emphasis on work experience and does not accept certain types of subcultural self-expression that could affect a company's image in the eyes of its customers, and thence its financial results.

These tensions all have their effects on occupational and social integration. Many of them are linked to a deeper contradiction between individual and collective dreams and aspirations and a social and economic

[26] See point 3 in section V below.

reality that does not facilitate their attainment. This contradiction can create conflicts that find more or less powerful expression both at the individual level and in the form of social tensions with generational components. This is obviously a dynamic tension, and the dreams and aspirations of a cohort of young people develop in directions that are usually unpredictable but not entirely disconnected from the shifting social reality. The same thing happens when successive youth cohorts are compared with those coming up behind them, each of which tends to modify the values and goals of its predecessor.

V

Improving the youth employment situation: the challenges involved

A favourable macroeconomic environment is essential for significant progress to be made with the employment situation of the young and for the tensions identified above to be dealt with. No programme to improve the job prospects of the young (through the development of know-how, skills and capabilities for work), increase the efficiency of occupational intermediation or influence other aspects of the employment situation can produce satisfactory results unless there is a dynamic demand for labour generated by high and stable economic growth rates and expectations that lead firms to recruit more staff, and unless there is a favourable environment for self-employment with prospects for advancement.

Many of the tensions described can be put down to labour market volatility and poor conditions of employment for large numbers of those seeking work. The old protection and security mechanisms, which were anyway available only to part of the region's workforce, have lost much of their regulatory power. Consequently, another outstanding task is to establish a new regulatory framework for the employment market so that labour relations are governed by a model that incorporates protection mechanisms appropriate to the new economic conditions, among other things.[27]

However, not all the occupational tensions observed can be blamed on weak growth or labour market institutions. Again, it is not possible to conceive of "solutions" that would resolve all of them satisfactorily for everyone concerned. Furthermore, some are bound up with dynamic intergenerational tensions that public policies cannot easily act upon.

Consideration will now be given to some policy options for helping young people participate successfully in the labour market. This examination is organized around the "4Es" proposed by the High-level Panel of the Youth Employment Network, which are as follows: employability, equal opportunities for young men and young women, entrepreneurship and employment creation (United Nations, 2001).[28]

Of course, any intervention to improve the youth employment situation needs to take account of the great heterogeneity of the region's young people, as clearly revealed by the data presented in section III. There is no one employment problem common to all young people, but rather a variety of specific problems. The challenges faced by young people of different sexes and with different educational, socio-economic, cultural, ethnic and other characteristics vary greatly, so appropriate responses need to be found for different specific needs. There also needs to be better coordination of public, private and non-governmental actors at the national and local levels so that the efforts of young people and their families can be deployed in a more favourable occupational context.

1. Employability

This point turns on the concepts of human capital, social capital and cultural capital. While economists have traditionally worked with the concept of human capital and have recently "discovered" social capital, sociologists tend to distinguish between social capital

[27] ECLAC (2007) analyses a social cohesion pact that provides for labour market interventions of this type.

[28] During the deliberations of the Youth Employment Summit (YES), a further three were proposed: environmental sustainability, empowerment and education.

and cultural capital, the second of which includes the aspects of education, training and work experience that economists identify as determinants of human capital. The position taken here, however, is that successful participation in the job market requires human capital (good-quality education and training), social capital (social relationships based on trust, cooperation and reciprocity) and cultural capital (familiarity with the codes established by the dominant culture).

(a) Human capital

A good education and occupational training are essential for the development of human capital and the employability of the young. The region's education systems still display numerous deficiencies in terms of coverage and quality, however.[29]

The countries of Latin America have made great efforts to universalize primary education, attaining coverage of 93% by 2001 (United Nations, 2005, p. 90). Nonetheless, there is still ground to be made up in the coverage of secondary education, which stood at a simple average of 65% in the region's countries in 2001 (United Nations, 2005), and of preschool education, which is vital to counteract the disadvantages suffered by children from poor households.

Quality levels and quality gaps are another widely recognized problem in the region's education systems (Labarca, 2004; United Nations, 2005), one effect of which has been to devalue academic credentials. A form of "top-down" pressure thus exists: young people with qualifications cannot obtain work in occupations for which their education suits them and so take up less skilled jobs, crowding out young people who have trained for these (Novick, 2004). Young people also face segmentation in the education system, which favours graduates of schools and universities recognized for the quality of their teaching but unaffordable for most students (ECLAC/OIJ, 2004).

Young people have clearly grasped the importance of education, but quite often feel that neither education nor occupational training prepares them properly for employment, owing to a lack of connection between the school curriculum and the world of work.[30] Furthermore, as we have already pointed out, short-term pressures often force young people to enter the labour market early, something that is reflected, for example, in the rising percentage of young people simultaneously studying and working or studying and seeking work. When work affects academic performance because long or tiring working days limit people's ability to learn, this increase represents an adverse trend that jeopardizes the future of the young.

On the other hand, if young people attend an educational establishment whilst carrying out types of work that do not significantly affect their academic performance (during vacations or with short working hours), not only will they generate income but they will familiarize themselves with the working world, as they will be acquiring and applying skills that are not so central in the educational sphere (Krauskopf, 2003). Again, because the transition to the adult working world is often long (Sepúlveda, 2006), a suitable combination of work and study can help young people to develop individual employment strategies and build up the self-esteem and recognition of their own capabilities that they need to take the first steps in their line of work.

It may be supposed that this more benign combination of work and study is likelier to be found among young people from higher-income households, while young people from poor households are faced with the harsher alternative. In the case of the latter, conditional transfer programmes (which reduce the need for children and young people to work) are an appropriate instrument for limiting the negative impact of short-term pressures. More flexibility is also needed in the educational system and employment legislation (part-time contracts with the corresponding social benefits, opportunities to work flexible hours) so that work can be combined with study under benign conditions.

(b) Social capital

It has been pointed out that access to social capital can be both a cause of the inequity that afflicts Latin American societies (because of its unequal distribution) and a solution to this (when more of it is acquired by disadvantaged groups) (Durston, 2003).

When it comes to labour market access, one thing that is striking is the importance given by both businesses and the young themselves to the

[29] Abdala (2004, p. 31) mentions the following shortcomings in the region's education systems: delayed entry to primary education (20% of young people), high repetition rates (40% in the first year), children falling behind their age level (50% at some point in the cycle) and non-attendance at the secondary level (intake of 50% of those qualified). See also ECLAC/OIJ (2004).

[30] Romero-Abreu Kaup and Weller (2006) examine some ideas in this connection.

recommendations of third parties.[31] In a labour market that lacks transparency, which is very often the case in Latin America, this behaviour can make sense as a second-best solution for companies, especially smaller ones that wish to avoid costly selection procedures.

However, these practices involve a dynamic of exclusion for those young people who lack the necessary contacts.[32] In these circumstances, unequal distribution of social capital strongly predetermines opportunities for access to productive jobs and thus the future career paths of many young people. This creates major frustrations, since the reality of the labour market is that education and training efforts are not appreciated unless those making them have the necessary social contacts. Furthermore, those who do enter the labour market in this way strengthen their social capital yet further to the detriment of young people who lack such initial contacts.

To increase the efficiency of labour market intermediation and make recruitment processes more equitable, there is a need to improve the transparency of the labour market, for example through certification of skills, staff (pre)selection agencies, help for disadvantaged young people to develop employment strategies, and quantitative and qualitative improvements in intermediation systems, assisted by new information and communication technologies.

(c) Cultural capital

For companies, the attitudes and values of applicants are a vital factor when recruiting, and young people generally score poorly on many counts (Campusano, 2006). Indeed, a major obstacle to employment for many young people is their unfamiliarity with the prevailing cultural codes insisted on in the working world. Here, a distinction should be drawn between problems caused by unawareness and conflicts arising from subcultural tensions. Regarding the former, many young people are clearly unfamiliar with the attitudes, norms and forms of presentation that companies appreciate, and this is often reflected in poorly presented curricula vitae and mishandled job interviews. Training in this area can certainly be an effective way of improving the employment prospects of young people who possess the qualifications required for a particular post.

Studies of both young people and companies reveal that a proactive attitude is quite common among young people, many of whom stress the importance of personal effort, notwithstanding many adverse factors (Sepúlveda, 2006). This attitude is confirmed by companies, which see the willing attitude of young people towards work in general and new challenges in particular as being among the positive characteristics of the new generations (Campusano, 2006, p. 98).

However, there are many young people who perceive themselves as victims of discrimination because of the forms of cultural self-expression they adopt (clothing, hairstyles, bodily ornaments), which are often rejected by the world of work, particularly in the formal sector.[33] This is obviously a permanent source of tension, although at the same time forms of cultural expression permeate up from subcultures to the dominant culture. It is possible that at some point the dominant culture may come to tolerate forms of self-expression that were once excluded and penalized, and even to adopt them itself; in turn, each generation creates its own cultural expressions that set up new tensions with the dominant context. Young people will have to decide as individuals when and to what extent they are willing to cede to the demands of the traditional working world, or whether they are going to try to find some creative outlet of their own that enables them to earn a living in a manner consistent with their beliefs and values.[34]

In any event, certain recent changes in the production and employment structure, such as the emergence and expansion of numerous activities in the service sector, part-time work and less hierarchical employment structures, are giving some young people new opportunities that are more compatible with their interests and preferences, including teamwork and flexible hours.

[31] See the summaries given in Espinosa (2006, p. 35) and Campusano (2006, p. 94).

[32] The subject of privilege in recruitment often came up in the focus groups with young people and young adults. In countries that lacked an independent civil service, the importance of political contacts for obtaining a job in the public sector was often referred to (see, for example, Palau, Caputo and Segovia, 2006).

[33] See the views of Salvadoran business people cited in Vega and Carranza (2006).

[34] Of course, tolerance towards particular cultural expressions cannot be all on one side. Also, a distinction needs to be made between expressions of an intolerant and repressive ideology and the existence of different social "scenes" that use different codes, without this necessarily entailing discrimination.

2. Equal opportunities for men and women

There are specific barriers to participation in the labour market for many women, often associated with the traditional division of labour: women are relegated to the private sphere and are responsible for reproduction, while men act in the public sphere and are responsible for productive work. Of particular importance here are, first, the roles assigned to young women in poor families in rural areas, as they are often put in charge of younger siblings or other household tasks, and, second, the situation of low-income young mothers in urban areas who usually have difficulty finding and paying for childcare services during the working day. To ensure equality of opportunity between the sexes when it comes to integration into the working world, policies to support youth employment have to take account of these specific needs in the different groups of young women. Reconciliation of household tasks and paid employment cannot be seen as the sole responsibility of women (Batthyány, 2004).

Again, the gender perspective needs to be taken into account in occupational training, both to improve the quality of programmes in occupations to which women have traditionally had access and to increase their access to others (Fawcett and Howden, 1998).

Another measure to improve the employability of young women is help in deciding on personal employment strategies. Among other components, such strategies include establishing contacts and familiarizing themselves with the world of work at an early stage, plus better information on the labour market generally and on employment and training options. These strategies can thereby contribute to the development of cultural and social capital and self-esteem, which are factors of great importance for labour market participation and in which young women are generally at a considerable disadvantage, especially when they come from low-income households.

Generally speaking, employment policies, and specifically those aimed at the young, need to adopt a transversal gender approach that recognizes the numerous obstacles and inequalities faced by women when they are trying to break into the job market and once they are actually in it (Abramo, 2006). These problems are partly due to discriminatory attitudes that need to be identified and confronted. This being so, the role of anti-discrimination laws in stimulating a social and cultural transition towards more equitable societies is at least as important as their role in remedying individual infringements, especially since discrimination is often masked by a rationale of efficiency.[35]

3. Entrepreneurship

Production structures are changing rapidly, largely because of the impact of new information and communication technologies. These technologies not only generate and require greater flexibility in markets (including the labour market), but they also make it easier for people to start their own businesses with much smaller capital investments than previous production methods required. These technological and productive opportunities are reflected in a growing interest among many young people in working more independently, at a time when wage employment is characterized by increasing insecurity and instability (Espinosa, 2006). Partly in acknowledgement of these trends, the promotion of microenterprises and own-account working has recently come to be seen as a strategy for addressing the problem of youth unemployment.

However, many microenterprises are subsistence affairs rather than a reflection of the entrepreneurial spirit of young people (Messina, 2001). In addition, a lack of dynamism in the economy not only affects job creation by established firms, but also limits the scope for setting up and sustaining new businesses.

The data available show that young people who aspire to work on their own account and create their own businesses face greater obstacles than adults. Own-account workers and employers represent a much smaller proportion of young people than of adults, and this is not surprising given that many young people, however much they may wish to work for themselves, prefer to build up work experience in a wage-paying job first. More importantly still, there is greater instability among the young self-employed than among adults. As the data presented in table 10 for Chile, Ecuador and Peru show, a significantly higher proportion of young people who have worked independently, i.e., as own-account workers or employers, switch category than do adults in the same position. In Chile, for example, over an 18-month period 40% of young people who were independent at the start of the period had switched to some employee category by the end of it,

[35] Doing away with discrimination is not just a matter of making and enforcing laws, of course, but they are useful instruments.

TABLE 10

Chile, Ecuador and Peru: Stability of independent employment, young people and adults

(Percentages of all those in work at the start of the period indicated)

	Young people	Adults
Chile, change from start to end of 18-month period, 1996-2003		
Independent employment		
Total (start of period)	12.5	27.8
No change	7.5	22.7
Change (wage employment or other)	5.0	5.1
Ecuador, change between April-May 2000 and April-May 2002		
Independent employment		
Total (start of period)	10.1	37.5
No change	6.6	31.2
Change (wage employment or other)	3.5	6.3
Peru, change between 1998 and 2001		
Independent employment		
Total (start of period)	40.8	63.0
No change	17.8	44.3
Change (wage employment or other)	23.0	18.7

Source: Romero-Kaup Abreu and Weller (2006, p. 263).

while among adults the proportion was only 18%. In Ecuador, meanwhile, the percentages are 35% and 17%, respectively, over a two-year period, while in Peru they are 56% and 30%, respectively, over a three-year period. To sum up, the proportion of independently working young people who subsequently become employees in the three countries is twice that for adults.[36]

These data show how risky it would be to invest massively in programmes to encourage young people to start microenterprises. This is certainly not a universal solution for improving the youth employment situation. It would be advisable to reorient education so that it encourages entrepreneurship, not exclusively with the goal of creating entrepreneurs, however, but also to stimulate skills, capabilities and attitudes that will be useful to young people in the working world generally, community life, voluntary work and political, social, cultural, sporting and other types of organization.

Experience of these activities leaves some young people with a desire to venture into the world of business. Policies and programmes to support these potential entrepreneurs need to be differentiated by the group of young people aimed at, and should be coordinated with general business creation policies.

4. Employment creation

Although some firms claim to recruit well-educated young people even if they lack experience, the fact is that employers tend to make additional demands (experience, personal contacts, familiarity with cultural norms, individual effort and others). For all the positive correlations that might exist at the aggregate level, then, many young people perceive that the relationship between education and access to productive employment is weakening. Thus, young people seeking work for the first time are required to have both education and experience to break into the labour market, but when they lack experience they are not given the opportunity to acquire it. Furthermore, failings in the way the labour market operates (lack of transparency, mechanisms of exclusion and discrimination) exacerbate the obstacles to access for particular groups. This is why it is so important to facilitate access to a first job with prospects of career advancement. In the last few years a number of countries have created programmes that

[36] The comparison between the start and end of the period concerned does not provide any information about what happened in the interim, or whether those who have kept their occupational category unchanged are still working in the same line of business. The data do show significant general trends, however.

use different instruments to help young people into a first formal job.[37]

With the increasing instability of employment, success in breaking into the working world does not necessarily guarantee occupational advancement. Nonetheless, a first formal job can be a powerful signal to the market that useful capabilities and experience are being acquired. These include the learning of new skills, usually through practice rather than via formal training schemes; the accumulation of work experience and cultural capital; and the opportunity to relate to people of all ages in a new context of socialization and thereby establish social networks outside the family.

At the same time, a number of countries have introduced special contracts with reduced employment rights (in respect of pay, social benefits and rules of dismissal) to encourage the recruitment of certain groups, particularly the young. Where the young are concerned, it is imperative for such contracts to provide for verifiable training measures, so that adult labour is not simply replaced by worse-paid youth labour.[38] Many young people believe that these hiring procedures, like work placements, are more a mechanism for taking advantage of their labour at low cost than a means of acquiring knowledge and skills that will be relevant to them in their future working lives. Indeed, the evidence indicates that many firms do not comply with the training requirements laid down in the legislation (Chacaltana, 2006a). Given that wage and non-wage incentives of this type (and tax incentives in the case of employment subsidies) can only be justified socially if they generate investment in human capital, it is vitally important to monitor compliance with the obligations of those involved. This is more feasible in dual occupational training schemes, which create an interaction between theoretical and practical learning.[39]

In conclusion, to improve the employment situation of young people it is necessary to establish a virtuous circle between a more favourable environment (in which macroeconomic conditions that stimulate economic growth and thence the demand for labour are the most important element), new labour market institutions and measures to strengthen the human, social and cultural capital of the young, especially those in a disadvantaged situation. Measures to improve the employment conditions of young women, encourage entrepreneurship and create jobs would make an important further contribution. This would provide greater and more easily accessible opportunities for young people to embark upon a path of occupational advancement and help to reduce the profound inequalities that characterize the region.

(Original: Spanish)

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[37] In 2007, Mexico became the latest country to start such a "first job" programme.

[38] The same is true of age-differentiated minimum wages.

[39] The participation of young people in emergency job creation programmes is not advised, since they generally acquire little relevant experience there and involvement in such programmes often has a stigmatizing effect in the labour market, which could make it harder to find work afterwards.

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KEYWORDS

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The globalization of the health-care industry: opportunities for the Caribbean

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The globalization of the health-care industry is proceeding. It is being driven by the high cost of health care in the developed countries, compounded by the steep rise in demand for health care as a result of the ageing of populations in these countries and the increasing availability of health-care services in developing countries at less expensive rates than in developed countries. Increasingly, patients are sourcing health care globally and opting for the most affordable treatment. In a growing number of fields of treatment, the most cost-effective option is travelling to a developing country. The provision of health care has significant potential for those developing countries that can provide world-class services and facilities at internationally competitive prices. The proximity of the Caribbean to the United States gives it an additional advantage in meeting the rapidly growing demand for health care originating in that country.

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I
Introduction

This article discusses the globalization of the health-care industry and points out the opportunities that this process has created for some developing countries. The gravamen of the argument is that globalization is transforming the worldwide health-care industry into a globally integrated industry with features similar to other global industries and services. The transformation of the health-care sector will entail the continued consolidation of the private segment of this industry in developed countries and the global dispersal of private medical facilities in response to cost differentials, in particular human-resource costs. This process of geographic dispersal creates opportunities for some developing countries.

These opportunities arise from the movement of health-care providers and facilities to less costly locations and the growing willingness of patients to go abroad for more affordable treatment. As costs continue to rise in the developed countries for a variety of reasons, ranging from malpractice insurance to the shortage of nurses, the outsourcing of health-care provision will become more pronounced, giving rise to an "off-shore" health-care industry. This is an opportunity for developing countries that are suitably prepared to export health services to developed countries, especially those with internationally-acceptable quality health-care systems and close physical proximity to developed countries.

The argument is developed in the following sections. The main features of globalization are outlined in section II. An overview of the health-care industry is presented in section III, applying the framework employed in the section on globalization. The factors influencing the globalization of the health-care industry are set out in section IV and the driving forces and the barriers and constraints are identified. In section V, the pattern of globalization of health care is described setting the context for understanding the opportunities for developing countries, which are discussed in section VI.

II
The main features of globalization

Globalization is rapidly transforming in profound ways all aspects of national and global activities and interactions. The pace, character and extent of the economic, social and political aspects of globalization may vary across sectors and local circumstances but the economic thrust of this phenomenon is the erosion or elimination of national barriers to the international flow of goods, services, capital, finance and information. Some of the features of the globalization process are outlined below.

Globalization has proceeded very rapidly in recent years as is evident in the accelerating growth of international trade and capital flows. In the second half of the twentieth century, the rate of growth of world trade exceeded that of output (WTO, 2000a). During the period 1950-1994, world trade (in volume terms) expanded 1.6 times faster than world production, outstripping world production at an increasing rate, moving from 1.2 during the 1970s to 2.8 in the 1980s (Dicken, 1998). World output grew by 2.7% between 1981 and 1990, compared with a growth rate of 4.5% per annum for world trade (World Bank, 2002). Between 1991 and 2000, world GDP increased by 2.6% per annum, while world merchandise trade grew by approximately 7.0% per annum. The ratio of world trade in goods and services to output now stands at 22%, up from 7% in 1950 (WTO, 2001a). From the mid-1960s to the mid-1990s, flows of foreign direct

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investment grew at rates that exceeded the growth rates of international trade and world output (United Nations, 1994).

Competition in global markets has intensified among firms and countries as the world economy has become more integrated. The implication of global competition is that even goods and services that are produced and exchanged within the national markets have to meet standards of quality and compete with costs of production available globally. The fusion of computer technology with telecommunications makes it possible for firms to relocate an ever-widening range of operations and functions to wherever cost-competitive labour, assets and infrastructure are available. These technological developments have transformed organization structures, the nature of work, and the character of products, production techniques and international marketing.

As globalization proceeds **economic units are becoming larger**, as is evident from the enlargement of multinational corporations, and the integration of national economies to form regional economic or trade blocks (Bernal, 1997). These blocs are a prominent feature of the world economy, both in terms of the share of the world trade they encompass and the number of countries that participate in them. It is estimated that they are responsible for a half to two thirds of world trade (WTO, 1995; Carnegie Endowment for International Peace, 1997).

Multinational corporations (MNCs) now account for about a third of world output and a significant share of world trade. They also account for half of world trade in goods (Vernon, 1998), and 80% of the world's land cultivated for export crops (Stopford and Strange, 1991). Their dominance is also evident in the value of foreign assets they control, the volume of foreign sales and size of foreign employment (United Nations, 1998).

The trend towards enlargement of corporate entities and the dominance of the multinational corporation is likely to continue. Estimates of the share of cross-border mergers and acquisitions in world foreign direct investment vary between 76% (Barba Navaretti and Venables, 2004) and 83% (United Nations, 2000); in the European Union, mergers and acquisitions account for over 75% of foreign investment flows (Ietto-Gilles, Mexchi and Simonetti, 2000).

Services are the fastest growing component of the world economy; indeed during the 1990s services exports of developing countries grew more rapidly than exports of manufactured goods (World Bank, 2001). The average annual growth in trade in services between 1990 and 2000 was 7%, compared with 6% for merchandise trade (WTO, 2003).[1] The overall share of services in total trade was 22.2% in 1993 (up from 17% in 1980), and service industries accounted for 50% to 60% of total foreign direct investment flows (World Bank, 1995; United Nations, 2001). Furthermore, services account for 65% of GDP in high-income countries and between 38% of GDP in low-income countries (World Bank, 2000).

The increasing globalization of economic transactions and activities has been facilitated and in some instances promoted by the rapid development of **new information, communications and manufacturing technologies**. The new developments in information-processing, and telecommunications facilitate globalization by reducing the costs resulting from distance, the importance of location and the advantages of large size. The use of electronic technology has altered fundamentally the conduct of financial services, telecommunications, entertainment and various other services and is projected to grow exponentially (WTO, 1998).

As regards **governance**, the process of globalization involves the coalescing of national markets into global markets. For example, the global financial architecture has been transformed from one constituted by nation-States with some transnational links to a predominantly global system in which some residual local differences in markets, institutions, and regulations persist as vestiges of a bygone era. The capability of governments to manage their economies is increasingly constrained by multilateral organizations, multinational corporations and transnational financial institutions, which increasingly wield economic and political influence that is global in scope (Strange, 1996; Korten, 1995).

The policy autonomy of the nation-State is also weakened by the prominence of multinational corporations, which, by their global span, internationally linked production and intra-firm trade, transcend the reach of the nation-State. A quarter of world trade consists of intra-firm transactions, that is, taking place within multinational corporations (UNCTAD, 1994) and consequently this substantial portion of world trade and capital movements is beyond the control of governments and insulated from global and national market forces.

[1] For a more in-depth study of the trends, see Maurer and Chauvet (2002).

As regards **the cultural and psychological dimensions of globalization**, availability of information throughout the world via satellite, computers and telecommunications technology have changed irrevocably all aspects of human life. Technological developments in telecommunications and informatics have eliminated the barriers of distance and time, resulting in the transformation of the world into a single social space. In this milieu there is a greater willingness to live and work all over the world, a growing acceptance of cultural and ethnic diversity and an increasing openness to products and services regardless of origin.

III

Global health-care industry

The character, pattern and development of the global health-care industry do not mirror the characteristics and trends of globalization. This is because each good or service has circumstances which are unique to its nature, history and current trends and therefore parallel the features of globalization to varying degrees. Health-care services are produced in a wide variety of situations and hence exhibit both commonalities with and variations from the general features of globalization. For example, the health-care industry is not as globalized as many other activities that generate products and services (Woodward, Drager and others, 2002) nor has the enlargement of firms proceeded to the extent of many other services such as banking.

1. Emerging global nature of the market

The health-care sector in the global economy has remained predominantly segmented into national health-care systems and hence the process of globalization has not progressed as much as in many other services markets. National health-care systems are by and large public-sector-owned and operated by a private sector whose participation varies with the affluence of the particular country. The private sector share of health care in both demand and supply tends to be much higher in developed countries than in developing countries. The countries of the Organisation for Economic Co-operation and Development (OECD) account for most of total world health expenditure indicative of the level of development, higher per capita income and higher share of GDP spent on health care.

Health care has been largely a nationally-based activity; consequently, health-care units have not been prone to the enlargement that is so pronounced in the private sector and particularly at the global level. The national health-care system run by governments could be construed as a single organization and, unlike the private sector, does not have any impulse to spread beyond national borders and to be involved in strategic cross-border alliances. Similarly, the private sector of these systems displays different tendencies in developed and developing countries. The private medical institutions have exhibited a limited proclivity to merge even nationally, much less internationally. In the United States, however, there has been a growing merger movement among hospitals prompted by rationalization and consolidation. Developments in the United States may portend the future trend in the ownership and operation of private medical facilities. While there is not a worldwide tendency for units in the health-care sector to enlarge or to become transnational in scope, institutions in the United States could pioneer the emergence of transnational institutions.

The growth of health-care expenditure has been extremely uneven with the vast majority of funds being spent by developed country governments and citizens and almost exclusively in developed countries. In contrast the minuscule percentage of global health-care expenditure, which developing countries account for, is a reflection of demand, constrained by low-incomes and inadequate supply of modern medical facilities, equipment and services. Indeed, affluent citizens in developing countries often seek medical treatment in developed countries in particular, for specialized treatment such as that offered by the Mayo Clinic and the Johns Hopkins University Executive Medical Program.

2. Embryonic international competition

There is no evidence of intense competition in the global health-care industry because the market for health-care services has not yet become truly global

in character. The intensification of competition which generally accompanies the increasing dominance of the global market is not a major factor influencing national health-care systems. At the high-income end of the market and in certain specializations a limited number of institutions in developed countries have achieved global reputations as leaders and the demand for their services emanates from all over the world.

3. Nascent enlargement

While the health insurance entities, hospitals and health-care providers in the private sector of developed countries have experienced consolidation and mergers, there are few genuine multinational corporations in this sector. This is largely because of the significant differences in national regulatory regimes, which have inhibited the global expansion of corporations that are sufficiently large to marshal the necessary human and financial resources to undertake such ventures abroad. The global spread of health-care corporations is likely to take place first in jurisdictions where there has been a standardization of regulations among a group of companies and points of entry will be those countries that make it relatively easy for foreign health-care providers to establish and operate. However, several multinational corporations involved in manufacturing pharmaceutical and medical supplies have well-established distribution networks in developing countries.

Many developing countries, particularly in Latin America and Asia have significant private medical sectors. A substantial number of hospitals and other health facilities are privately owned and even in low-income countries more than half of basic health services are provided by private practitioners. Several United States multinational corporations including Aetna, American Insurance Group, CIGNA and Prudential are operating in Latin America. They entered the market in the 1990s by acquiring through purchase or joint venture local companies that provide pre-paid health plans and indemnity insurance (UNDP, 2003). Consortia of corporations and strategic corporate alliances are beginning to emerge; for example, the Apollo hospital group is building 15 hospitals in Malaysia, Nepal and Sri Lanka. The Parkway Group of Singapore, which owns hospitals in the United Kingdom and Asia, has partnered with firms in Indonesia, Malaysia, Sri Lanka and the United Kingdom to form Gleneagles International to operate an international chain of hospitals (Chanda, 2002).

4. Growth of health-care services

Global expenditure on health care in 2005 is estimated to have amounted to US$ 4 trillion (UNCTAD, 1997), with OECD countries accounting for most of this expenditure (WHO, 2002). Spending on health care ranges from 14% of GDP in the United States to 1%-5% of GDP in developing countries, with the OECD countries spending 8% of GDP (Zarrilli and Kinnon, 1998). Per capita expenditure on health exhibits similar disparities ranging from $16 in low-income countries to $2,300 in high-income countries.

Despite rapid globalization, particularly in services, there is limited international trade in health-care services and transborder activity in health care. Most of the international exchange of health-care services consists of purchase of services in developed countries by persons travelling to those countries for treatment. The growth of international trade in health services is accelerating. Cross-border delivery is now worth $140 billion (World Bank, 2005) and is projected to grow at 6% per annum.

Some institutions in developed countries have begun to market their services and facilities internationally thereby boosting the global market. Johns Hopkins and the Mayo Clinics have achieved remarkable growth in foreign patients since they started marketing internationally in the 1990s (Freudenheim, 1996). Referral hospitals in the United States (e.g. Sloane-Kettering) are institutions of worldwide renown and have an international clientele. A growing number of less prestigious United States hospitals, in an effort to utilize their capacity to the full, have contracts with foreign firms, public sector institutions and trade unions throughout Latin America and the Caribbean (Warner, 1998). An interesting new trend is the movement of consumers in the developed countries to developing countries because they can access treatment, which is less expensive than in their home countries.[2] Another reason for seeking treatment abroad is to avoid extended waiting periods in national health systems and because in some cases they cannot afford private health care (Lunn, 2006). Increasingly, health care and tourism are being combined and have been labelled "sun, sea and surgery" (Prosser, 2006; Sankaranarayanan, 2005).

[2] For example, British citizens have traveled to Spain, Turkey, Eastern Europe and India to avail themselves of medical and dental services at prices which are as much as 50% lower than in Britain.

5. Technology

The health-care sector continues to produce new technologies which complement and enhance but do not replace human skills; for example, computers and lasers have not replaced human beings but improved the efficacy of medical practitioners and simplified the task of care givers. Developments in communications technology have led to the emergence and growth of telemedicine, which developed initially in national markets, but is increasingly international in scope. Telemedicine has helped to improve the practice of medicine in both diagnostics and treatment. Developing countries are turning increasingly to telemedicine to supplement and upgrade their capability at relatively inexpensive cost.

6. Governance

Health-care systems are predominantly national and in most cases government is the principal health-care provider and the regulator of the laws governing the health-care system. Naturally the role of the private sector in the health-care system reflects the predominant role of government and its health policy. The twentieth century was marked by the rise to prominence of the social and political philosophy that public health was the responsibility of the State and that the State was best able to execute the task of providing health care to all, and if not to all, then at the very least to those who could not afford private medical treatment. This type of thinking reached its zenith in the welfare State, but was also a firm commitment of socialist countries.

Governance of the health-care sector of the global economy is national with increasing international cooperation through multilateral institutions such as the World Health Organization (WHO) and regional institutions such as the Pan-American Health Organization (PAHO). This cooperation is necessary because of the ease and speed of the spread of diseases from one country to another. In recent years, Governments have increasingly taken cognizance of international health-care standards and participated in, and cooperated on, international health-care issues such as immunization and the control of epidemic disease.

7. The cultural and psychological dimension

The health-care sector is far ahead of most industries in the global economy in terms of its multi-ethnic, multicultural character. Notwithstanding the ethics which derive from the "Hippocratic oath", the medical profession was one of the earliest to abandon the notion of national boundaries, as illustrated by the cases of Florence Nightingale and Mary Seacole[3] in the nursing profession and more recently, collaboration in research and the international mobility of doctors and nurses.

The mindset of the profession is global given that its subject matter —illness and mankind— is not confined by national boundaries and there is a willingness to live and work abroad. However, national professional certification of medical personnel and barriers to migration make global mobility extremely difficult. Patients tend to feel more comfortable with medical practitioners from their own culture, society and ethnic background. Indeed, many patients are suspicious of foreign medical practitioners in many cases fearing that they are not properly trained or too unfamiliar with local conditions and ailments. For example, Spanish-speaking Americans of Latino origin living in southern California often prefer to travel to Mexico for medical attention (Arredondo-Vega, 1998).

IV

Factors influencing the globalization of health care

The globalization of health care has started, albeit at a much slower pace and to a far lesser extent than many other services, but the process is likely to continue. How this will occur and how quickly will depend on a number of factors of a national and international character. The principal factors influencing the globalization of health care are of two kinds: first,

[3] See Seacole (1988).

the driving forces impelling the globalization of the industry and secondly, barriers to globalization.

1. Driving forces

There are a number of factors which are encouraging the globalization of health care. These include:

(a) *Cost differentials*

The cost of providing health care is substantially lower in developing countries than in the developed countries. For example, the cost of coronary by-pass surgery in India is 5% of the cost in developed countries and a liver transplant in India costs one-tenth of that in the United States (Gupta, Golder and Mitra, 1998). A magnetic resonance imaging (MRI) scan costs US$ 60 in India compared with US$ 700 in New York (Lancaster, 2004). Cardiac by-pass surgery in Trinidad and Tobago is about 50% less expensive than in Boston, United States (World Bank, 1996). Hip resurfacing costs US$ 5,000 in India compared with US$21,000 in the United States (Lancaster, 2004). A facelift in the British Virgin Islands is 30% less expensive than in the United States; a 28-day stay for addiction treatment including medical "detoxification" in Antigua is half the cost of a similar treatment in the United States, and many spas in Jamaica and St. Lucia provide comparable services at a lower cost than in Florida, United States (World Bank, 1996).

The cost differentials between developed and developing countries are attributable to various factors as indicated below:

(i) Salary and wage differences are substantial. For example, a nurse in the Philippines earns the equivalent of about 5% of what he or she would be paid in the United States (Stalker, 2001). A registered nurse in the Washington, DC, area can earn three times as much as his or her counterpart earns in Barbados (CARICOM Secretariat, 2006).

(ii) The cost of malpractice insurance is lower in developing countries than in the United States. It is estimated at $100,000 in the United States, compared with $4.000 in India (Lancaster, 2004).

(iii) The cost of inputs and outsourced services tends to be lower in developing countries because of lower labour costs across all sectors. For example, drugs supplied from outside the developed countries, notably from India, Brazil or from less expensive developed country sources, such as Canada, are much less costly than the equivalent medicine made in the United States. Part of the high cost of drugs in the United States is the well-documented exorbitant profits made by pharmaceutical companies (Ledogar, 1975; Greider, 2003).

Given the difficulties involved in the temporary movement of health-care professionals between countries and the even more contentious issues that restrict migration, salary and wage differentials between the developed countries and developing countries will remain high for the foreseeable future. The developed countries when faced by severe shortages in certain categories of skilled workers have liberalized conditions of entry to alleviate the shortage in specific sectors. When faced with (i) investment, jobs and capacity in the rapidly growing informatics sector going overseas in search of qualified labour, (ii) increasing international outsourcing of business or (iii) paying higher wages to attract workers away from other occupations, these countries, developed countries have liberalized access for foreign workers. For example, the United States, under pressure from Congress and the computer industry (Pear, 1998), permitted increased entry of qualified foreigners. In 2000, Congress raised the limit on H-1Bs (temporary visas for skilled foreigners) and exempted certain categories of labour from limits (Alvarez, 2000). In 1998, following representations from the private sector, the Government of Canada implemented speedier processing of approval of entry of temporary workers.

In light of the ageing of the population in developed countries, such as the United States, Canada and the United Kingdom, and the implications for stagnation or shrinkage of the workforce (Robson, 2001), further liberalization may be necessary. This is a probable scenario for the health-care sector in the developed countries where the demand for health services, particularly for the aged, is outstripping supply capacity. Already in the British National Health Service, 31% of doctors and 13% of nurses are foreign born and in London, the figure for nurses is 47%. Of the 16,000 new staff recruited in the last decade, half were trained overseas (Stalker, 2001). In the United States, it is estimated that the shortage of nurses in 2004 was 139,000 and the figure is predicted to increase to 275,000 in 2010[4] and 800,000 in 2020.[5]

[4] According to data from the American Nurses Association.

[5] According to data from the United States Department of Health and Human Services.

(b) *Technology*

The countries with lower salaries and wages are developing countries, however, in most cases they do not have as up-to-date and sophisticated equipment as hospitals and health-care facilities in the developed countries. Moreover, they may not have highly specialized institutions dedicated to a single ailment or disease, or in the case of small countries may not have specialists in all fields of medicine. But modern technology can be used to alleviate some of these deficiencies. Indeed, thanks to modern telecommunications and computer technology,[6] telemedicine (Bashur, Sanders and Shanon, 1995; Norris, 2002) enables health centres in developing countries to access the best expertise, cutting-edge technology and research capabilities in the world.[7] It can strengthen examination, diagnosis, treatment, surveillance, therapy and education by expanding access to information and permitting interactive audio, visual and data exchange between medical practitioners at any stage of patient care. Depending on the circumstances and the need, telemedicine uses a variety of modes of transmission including satellite, microwave, digital wireless and the Internet to communicate between physicians, other medical personnel and patients. Some services require live visual transmission, for example, assisted surgery and psychiatric evaluations.

The prospects for growth of telemedicine are very good because the equipment is affordable and its use is relatively inexpensive. The American Telemedicine Association (1999) reports that costs fell very significantly in the second half of the 1990s with improvements in technology, innovations in data compression and reductions in costs of computing and hardware. Telemedicine is also attractive because it obviates the need for the patient to be present in order to consult a specialist. Up to 80% of consultations with specialists do not require the physical presence of the patient and therefore the services of specialists can be sourced globally.

The constraints to the more widespread use of telemedicine are not the costs of equipment or technology but the traditional attitudes of many involved in the conventional delivery of health care and outdated regulations. Currently governments insist on national registration of all medical practitioners operating within their national jurisdictions. Telemedicine poses a challenge to these national regimes because it allows the practice of medicine across national boundaries. Insurance coverage is also a restraining factor. For example, in the United States, the failure to allow full coverage by Medicare hampers the expansion of telemedicine (American Telemedicine Association, 1999). Telemedicine is well established in Australia, Canada, France, Norway, Japan and the United Kingdom, and in a growing number of developing countries and communist states such as Cuba (Krasnow, 2002).

(c) *Age structure of developed countries*

Over the next 50 years, the global population over 65 years of age will increase by 1 billion, which is estimated to be nearly 50% of total global population growth (Peterson, 1999). A similar decisive demographic shift in population structure in developed countries has already occurred. Approximately 9.2% of the population in these countries was over 65 years old in 1960, with the percentage increasing to 13.3% in 1990 and projected to reach 20.2% in the year 2020 (Peterson, 1999). Between 1960 and 1997 the percentage of the population over 65 years old increased by 169% in Japan, roughly 100% in Greece, Finland, Portugal and Spain, 78% in Italy, 35% in the United Kingdom, 34% in the United States and 31% in France (Rodriguez-Pose, 2002).

Declining fertility rates (Wattenburg, 2004) and improved life expectancy at birth have caused the ageing of the demographic structure, increasing the dependency ratio of the working population. The dramatic increase in the proportion of elderly persons in the population of industrialized countries will also seriously challenge the sustainability of pension systems, health care and economic growth (Stowe England, 2002a and 2002b). The countries most affected by population ageing account for two-thirds of world output and therefore a slowdown in these countries will adversely affect the global economy (Center for Strategic International Studies, 2002).

The high cost of health care in the developed countries makes it cheaper for individuals to travel to developing countries for treatment, for example, from the United States to the northern Caribbean and Central America. An increasing number of United States nationals have been going to Mexico for treatment because the cost of a doctor's visit is as much as 80% lower than in their country and some drugs are up to

[6] For a more detailed discussion of the application of computer technology and digital data networks to medicine see Dawkins and Cary (2000) and Maheu, Whitten and Allen (2001).

[7] For a recent review of the state of telemedicine in both developed and developing countries see Mandil, (1998, pp.79-100).

75% less expensive (Hilts, 1992). There is a growing trend towards persons in developed countries retiring abroad particularly to developing countries with a warm climate because their income purchases more abroad, than for example, in the United States. The market for retirement facilities will increase sharply in the next twenty years (*Business Week*, 1994). The small, developing countries in close proximity to the developed countries and which enjoy warm weather throughout the year and relatively lower wage levels constitute an environment suitable for the development of retirement communities.

(d) *Availability and cost of air travel*

The availability of affordable air travel has increased significantly with the expansion of tourism throughout the world. People are also more willing to travel for medical attention in most cases to developed countries but increasingly to countries with a reputation for quality health-care systems, such as Cuba. By the mid 1990s Cuba was receiving 25,000 foreign patients and earning $25 million from sales of health services (World Bank, 2002).

The cost of air travel will be an important factor in the overall expense of having treatment overseas in preference to having it in one's own country. The cost of air travel has been reduced relative to the growth in levels of income and the availability of air transport has increased. Close location to major developed country markets is only an advantage if there is adequate air transportation. However, if the savings are sufficient the cost of air travel will become irrelevant. For example, a patient in North Carolina in the United States, faced with a bill of US$200,000 for heart surgery, flew 7,500 miles to New Delhi, India, where the operation was successfully performed for a total cost of US$10,000, including airfare (Lancaster, 2004).

(e) *Global pandemics*

Infectious diseases account for one quarter to one third of all deaths globally. In 1999, new HIV infections rose from 40,000 annually to 46,000. The number of passengers travelling in the world has increased several-fold. The number of new diseases, the increasing resistance to known treatments by several existing diseases, and the rapid geographic spread of both are on the rise. Explanatory factors include human manipulation of plant and animal food and genetics, increasing travel of humans and some animals.

In the last 25 years, 20 diseases, which were in decline, have re-emerged and spread geographically and 29 previously unknown diseases have been identified, including HIV/AIDS, Ebola and hepatitis C. With more international trade and more mobility of people via tourism and migration (legal and illegal), the problem requires more international cooperation. It is estimated that in 2000 some 36 million people were living with HIV, the virus that causes AIDS, of whom 90% were in developing countries and 75% in sub-Saharan Africa. Less than 25,000 people in developing countries receive anti-retroviral treatment, which is routinely available in developed countries (WTO, 2001a).

Ultimately, the best defence against the spread of diseases such as tuberculosis and polio is preventative health care, in particular, immunization programs. Such programmes, when properly undertaken and where there is adequate coverage of the population, not only prevent untold human suffering and death but also are far more cost-effective than handling an epidemic or outbreak (Ashley and Bernal, 1985). Multilateral efforts based on cooperation through international organizations such as the World Health Organization (WHO) need to be increased in order to tackle global pandemics. The Global Fund to fight AIDS, Tuberculosis and Malaria is aiming to raise $7 billion. While this is a huge sum, it is nowhere near the $57 billion per annum in additional expenditure required to deliver essential medical services to the world population according to the Commission on Macroeconomics and Health (The Economist, 2001). International cooperation should include agreements on disease identification, containment, and treatment, and standard protocols and cost-sharing structures to ensure that poor and rich countries alike can control outbreaks of the most deadly diseases. Cooperative efforts must improve primary health-care systems and infrastructure in developing countries so that diseases originating in the tropics can be identified and eradicated before they spread (Barks-Ruggles, 2001).

(f) *Multilateral trade rules*

International rules governing trade such as those set out in the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), impinge directly on health care because they regulate the availability of pharmaceuticals. The TRIPS Agreement authorizes patents governing the production and the conditions of sale of drugs. This recently became an acrimonious issue between developing countries and major pharmaceutical manufacturers, all concentrated in developed countries. World production of drugs is concentrated in six countries —France, Germany, Italy,

Japan, the United Kingdom and the United States—while only Brazil and India are significant producers among developing countries (Barks-Ruggles, 2001). The vast majority of developing countries have limited domestic production. Indeed, two thirds import more than 50% of their medicines, and half of the countries in that group are entirely dependent on imported medicines (UNIDO, 1992). Developing countries and humanitarian organizations have severely criticized the TRIPS Agreement for depriving poor countries of affordable drugs, particularly for HIV/AIDS and also contended that the General Agreement on Trade in Services (GATS) constrains the ability of governments to protect public services.

At the WTO Ministerial Conference in Doha, Qatar, in November 2001, it was agreed to permit the flexible application of the TRIPS Agreement so that it does not prevent member States from taking measures to "protect public health and in particular to promote access to medicines for all." Specifically, it permits the right to determine the grounds upon which compulsory licenses can be granted and allows the national determination of "what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics can represent a national emergency or other circumstances of extreme urgency (WTO, 2001b)."

2. Barriers and constraints

The growth and development of international trade in health-care services is constrained by a number of barriers both at the national and international levels. These include:

(a) *Barriers to movement of professionals*

The movement of health-care professionals is severely limited by several barriers such as visas, entry regulations and residence requirements with variations by skill category and length of stay. Some barriers reflect inertia in changing regulations covering the operation of domestic or national health-care systems. Many of the entrenched barriers to entry by foreign, service providers and institutions are part of a deliberate policy motivated by protectionism by local medical practitioners, immigration concerns and differences in regulations governing the medical profession. Other restrictions reflect prejudice, xenophobia and tradition. Where barriers to the movement of medical professionals continue there is likely to be an inability to keep down costs in the developed countries and there may even be insufficient qualified personnel to allow existing facilities to operate at full capacity. The vigorous recruitment by United States institutions of nurses from developing countries such as Jamaica and the Philippines is a clear indication of the urgency of this situation.

(b) *Multilateral rules*

International trade in health services is governed by the General Agreement on Trade in Services (GATS), which covers hospital services, medical and dental services and services provided by nurses, midwives, physiotherapists and paramedical personnel. The GATS defines four modes of supply, namely, cross-border supply, consumption abroad, commercial presence and movement of natural persons. Health-care services are traded through all four modes of supply but there are significant barriers in each mode.

Cross-border supply in the form of telemedicine is expanding rapidly as technology has improved and, given the nature of the technology, it is difficult to impose national restrictions on this type of trade. Developments in technology have increased the range of services, which can be traded and reduced the costs involved.

Consumption abroad, which entails the movement of consumers is the most important mode in the international trade of health care though it is constrained by lack of portability of health insurance. The United States is the largest supplier, with most developed countries having some business from overseas patients and some developing countries, such as Cuba, emerging as regional centres. China and India have long had unique traditions of both formal and folk medical treatment and have a worldwide clientele in treatments such as acupuncture and yoga.

Commercial presence has taken place on a limited scale particularly in treatment of stress, experimental treatment or drugs, for example for cancer (Tuckman, 2005) and plastic surgery. Large-scale investment in full service facilities is a possibility in the future but how quickly this will occur depends on a number of factors, such as the treatment of foreign investment including national treatment, tax regimes and ownership limitations.

The movement of natural persons is subject to sector-specific restrictions, immigration laws and barriers to entry maintained by the national medical professional associations. The shortage of nurses in developed countries and the higher remuneration in these countries will combine to force a review of the current impediments to movement of medical

personnel. Most of the movement of physicians and nurses is from developing countries to developed countries. The international movement of nurses (70% of health-care staffing (CARICOM Secretariat)) also raises issues of gender and international trade in health-care services (Williams, 2003).

The expansion of the coverage of health services in the GATS is an issue which will certainly have to be addressed in the future (Smith, Blouin and Drager, 2006), but at present there is no indication of when this will happen. Currently 54 WTO members have made commitments in medical and dental services, 44 members in hospital services and 29 members in services provided by nurses, midwives and others (Adlung and Carzaniga, 2002). Governments can liberalize trade in health services by unilateral action without making binding commitments in their national schedules under the GATS.

(c) *Lack of portability of health insurance*

A major factor inhibiting the globalization of the health-care industry is the lack of any form of health insurance, which is accepted worldwide; indeed, health insurance both of the public and private varieties are tenable only in the country in which the holder is domiciled. The fact that United States Medicaid and Medicare programmes are not valid for use overseas prevents United States citizens from seeking treatment abroad. Ironically treatment overseas may be less expensive than that available in the United States or drugs manufactured outside the United States may be less expensive or procedures not permitted in the United States may be available. Less costly treatment or drugs available would represent an enormous saving to a system which is under tremendous stress because of the exponentially escalating costs of delivering health care in the United States.

As the pressure grows on the health-care systems of developed countries in terms of both the volume of cases and the cost of services both public and private insurers will reluctantly concede the right of patients to be treated overseas. The overloaded British health-care system has begun referring patients for treatment in France and Spain. For the time being, patients are restricted to hospitals within three hours flying time from Britain (Lancaster, 2004), but even this is likely to be relaxed if patients are willing to bear the additional cost.

For the rich and top corporate executives, costs and health insurance do not constrain their decisions on where to obtain medical attention, their credit card rather than their health insurance cards being the means of payment. However, it cannot be long before an internationally portable form of health insurance is developed for highly paid, internationally mobile corporate executives. What will start at an exorbitant cost will, like all other global services, be reconfigured for the wider, less affluent global mass market. This will be followed by health insurers allowing their customers to source medical attention internationally starting with a restricted approved list of health providers and then extending to nationally accredited medical institutions in an ever-widening range of countries.

(d) *Need for standardization of accreditation*

Systems of accreditation vary widely and even where there are some similarities, for example, in the Commonwealth, systems are essentially national. Temporary or long-term accreditation of medical personnel involves convoluted, complicated and bureaucratic procedures. Much remains to be done in establishing educational equivalence, formalizing mutual recognition of qualifications, standardizing licensing requirements.

V

Pattern of globalization of the health-care industry

The globalization of the health-care industry and the global availability of health services will be influenced by several factors, prominent among which will be proximity between demand and supply, the mindset of those in need of medical care, national measures to promote foreign direct investment in medical facilities and the availability and relative cost of medical professionals.

1. Proximity

Proximity between demand and supply will be a critical determinant of the location and relocation of health-service providers. Relocation abroad is likely to take place first among contiguous or adjacent OECD countries especially in the European Union, which has as a goal the development of Union-wide standards. The next locations which are likely to benefit from the nascent process of global dispersal of health care will be those countries which are close by, for example, two or three hours flying time from major international airports in developed countries and which have internationally acceptable health-care facilities with operating costs lower than the comparable facilities or services in developed countries. Mexico, Cuba, the Bahamas, Jamaica and Costa Rica, given their proximity to the United States, could be early poles of development, especially if their governments put in place the necessary policies to attract and encourage the establishment of internationally recognized health-care institutions.

The movement of patients to receive treatment in overseas health-care facilities is not only motivated by the desire to avail themselves of less expensive medical attention than that available in their country of residence. In many cases, it is prompted by the fact that the type and quality of treatment which they need or want is unavailable in their country of residence. A significant proportion of the worldwide clientele of world famous medical institutions, such as the Mayo Clinic or Sloane Kettering Cancer Centre in the United States, fits into this category. However, there is also a substantial movement of patients between developing countries, because health-care facilities abroad are better or those available in the home country are not adequate. This is the situation which leads patients from Bangladesh to seek treatment in India.

2. Cost and quality of health personnel

There is a global market for health-care professionals leading to migration to countries with the highest salaries. This migration is primarily driven by demand in developed countries (Stilwell, Diallo and others, 2004). The United States and the United Kingdom, for example, have a shortage of health-care professionals and offer higher remuneration and better working conditions. Most doctors working abroad are from developing countries (Mejia, Pizurki and Royston, 1979). WHO estimates that 77% of developed countries are experiencing nursing shortages and nearly all of them are looking abroad to fill the gap (Rutter, 2001). With respect to the United States, estimates of the shortage of nurses range from 110,000 or 6% of the requirement to 126,000 or 11% of the number needed (Gerson and Oliver (2004)). The shortage of nurses is expected to become more acute, affecting both the quantity and quality of health care (Buerhaus, 2002). The remuneration for nurses in developed countries is going to increase in the immediate future because the shortage of personnel is likely to continue, despite overseas recruitment (Buchan and Sochalski (2004)), because of a decline in new entrants to the profession[8] and because of dissatisfaction with salaries.[9] Recruitment of nurses from developing countries for the health-care system in developed countries is not a solution even in the medium term because the shortage of nurses is worldwide.[10] In the United Kingdom during 2001/2002 more foreign nurses were added to the register than nationals.

3. Non-threatening, cost-sensitive treatments

The health-care services that are likely to be among the first to move offshore from the high-cost developed countries are those that are labour-intensive but not life-threatening, for example, rehabilitation. Among the treatments which have already started to move beyond the borders of the developed countries are cosmetic surgery, one of the fastest-growing categories of elective surgery, recovery from stress-related afflictions and treatment involving drugs or procedures not approved in most countries. The trend towards moving from high-cost developed countries to countries where costs are lower will accelerate as more aspects of treatment can be accomplished by telemedicine (Bashur, Sanders and Shanon, 1995).

The world-class health-care facilities and services springing up across the world will eventually cater for serious or life-threatening procedures such as heart surgery. Cost differences will be a critical determinant

[8] This is the situation in Europe and in the United States. See Gathercole (undated) and GAO (2001, p.7).

[9] According to Rutter (2001), only 20% of nurses in England and 26% in Scotland regarded their wages as acceptable.

[10] This is confirmed by 105 nurses' unions representing 69 countries. See "Worldwide nursing shortage has reached crisis proportions (June 2002) www.scienceblob.com.community.

but other factors include logistics, the reputation of the institution and the tenability of health insurance.

4. Policy and regulatory regime

Governments, in wishing to encourage the emergence of strong, internationally competitive health-care sectors, need, among other measures, to remove barriers to entry of professionals, meet developed-country standards, construct modern infrastructure and maintain good air-transport facilities.

Countries seeking to produce health-care services for the global marketplace must create a policy framework and a regulatory environment that facilitates and encourages the necessary investment, technology and staffing. In the case of developing countries, most of the capital and technology required for health-care services that are internationally competitive in price and quality will have to come from abroad. The critical components are a stable policy and regulatory framework that is consistent with current global standards, practices and intellectual property rights and strategic planning to attract and/or create brand-name health-care organization, provide modern infrastructure and a trained labour force. The improvement in physical and telecommunications infrastructure must not only focus on modernization but must take cognizance of the need to close the gap with developed countries. For example, developing countries cannot compete effectively if the number of telephone lines per 100 inhabitants is between 5 and 10, compared with 48 in developed countries (WTO, 1998).

The creation of synergies based on inter-sectoral linkages should be planned: for example, synergies between tourism and health care in countries where an existing tourism industry can be enhanced by the establishment of world-class health-care facilities. Tourism could be enhanced and diversified to include new products such as health tourism,[11] thereby spawning a new industry and reinvigorating an existing sector. This is a distinct opportunity for regions such as the Caribbean and Central America, which have large tourism industries and are in close proximity to a major developed country.

VI

Opportunities for developing countries in the Caribbean

As the health-care industry becomes more globalized, there will be opportunities for developing countries to export health-care services to developed-country markets. Developing countries in close proximity to developed countries and which have an adequate supply of medical personnel at salaries lower than in developed countries have the opportunity to provide health care to foreign patients at a cost below that in the developed countries. These are necessary but not sufficient conditions for creating a world-class offshore health-care industry. Opportunities can be transformed into reality if the government puts in place the type of policy and regulatory regime that stimulates investment by companies that are global brand names in health care. Such possibilities can be illustrated by reference to an actual situation, namely, that of Jamaica (Taylor, 1993).

1. Proximity

Jamaica is in close physical proximity to a major developed country, namely, the United States, which has an ageing population and a high-cost health-care system.

The city of Montego Bay, Jamaica, has an international airport which is one hour's flying time from Miami, 3 hours from Baltimore and 31/2 hours

[11] See Alleyne (1991, pp.291-300). Health tourism has been a largely overlooked issue in the extensive literature on tourism. Some publications do not make the slightest reference to the topic (see Yorghos Apostolopoulos and Gayle (2002) and Jayawardena (2005)). Ironically, the call for more attention to be given to health tourism comes from the health sector rather than the tourism sector. See CARICOM Secretariat (2006, p.23).

from Atlanta, Houston, New York, Philadelphia and Boston. It has a well-developed tourism industry with a range of world-class hotels and villas, restaurants and entertainment. It is the hub of Jamaica's tourist industry, which attracts 2 million visitors per year, 75% of whom originate in the United States. The resident and visitor populations are serviced by a large modern general public hospital and numerous private practitioners and clinics.

2. Business environment

In addition to modern health-care facilities and a cadre of trained and experienced health-care professionals, Jamaica is a well-known tourist destination with which Americans are very familiar. The tourism sector is a perfect complement to the establishment of world-class hospitals and clinics catering to patients from abroad and locals if they are willing to pay for the cost of treatment in foreign currency. The availability of world-class health-care facilities would encourage older tourists to travel to Jamaica. The main source of tourists for Jamaica is the United States, which has a rapidly ageing population, in fact the so-called seniors' travel market, that is over 55 years old, exceeds 100 million and accounts for one in six international trips (Gonzales, Brenzel and Sancho, 2001). The complementarity of tourism and health care could be extended to the retirement home business by sharing certain facilities and services. The retirement community could use the services and facilities of the hotels e.g. beach, dining, gym, entertainment. Their comfort level would be assured by the operation of world-class medical facilities located close by. The potential is enormous. For example, it is estimated that if 3% of the 100 million older persons in the OECD countries retired to developing countries it would generate US$ 30 billion to US$ 50 billion annually in personal consumption and $10 billion to US$ 15 billion in medical expenditures (Warner, 1998).

3. Investment

Investment by United States health-care providers, possibly in joint ventures with Jamaican hotel interests and the local medical fraternity, could fund the establishment of world-class medical facilities in Montego Bay. The incentive to invest arises from the fact that United States institutions can continue to service their clientele rather than lose the business to non-United States competitors. Profitability would derive from the employment of Jamaican doctors and nurses at salaries below those available in the United States but higher than those paid in the local public health system. Local medical personnel could be combined with, or supplemented by, foreign practitioners, some of whom would be resident in Jamaica and others, such as specialists, would have visiting assignments for a specified number of days per month. All of this could be backstopped by expertise made available through telemedicine.

Jamaica will need foreign investment to create facilities to provide offshore health care and to provide brand-name institutions that are accredited in the developed countries from which patients will come. Brand-name[12] institutions from developed countries will provide the advantages of name recognition, acceptance by health insurers and familiarity to consumers. The Raffles Medical Group of Singapore and Kaiser Permanente has established a joint venture to create health-care facilities in the Asia-Pacific region (Diaz Benavides, 2002).

The ability to attract foreign investment will depend in part on the business environment, government regulations and incentives and the availability of the appropriately-skilled human resources. These conditions are either already in place or, in the case of incentives to build and operate medical facilities, can be promulgated quickly to match existing incentives to foreign investors. Skilled medical practitioners are available locally or could be induced to return from overseas for salaries somewhat less than those paid in the developed countries. Lower salaries may be readily accepted given the trade-off of being in their own country. This has been the experience of Jamaicans who have migrated and returned home to live and work. The employment decisions of Jamaican nurses, like nurses in developed countries, depend on several factors in addition to remuneration, in particular working conditions.[13] Future supply of medical personnel could be assured by linking training at the medical school of the University of the West Indies in Kingston with the offshore health-care industry in Montego Bay, as with a number of hospitals that train nurses.

(Original: English)

[12] On the critical importance of brands, see Crainer (1995) and Bedbury (2002).

[13] The labour supply of nurses in the United Kingdom and the United States is influenced by wages and several institutional factors (Askildsen, Baltagi and Holmas (2002). Job satisfaction depends on wages, stress, inadequate staffing, workload, overtime and working conditions (GAO,2001).

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KEYWORDS

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Social protection
in the English-speaking Caribbean

Oliver Paddison

In recent years, issues concerning social protection (particularly pension systems) have become important items on the economic and political agenda in developed and developing countries alike, as demographic projections cast doubt on the financial sustainability of many pension systems currently in place. Substantive reform of pension systems in the Caribbean, however, has yet to materialize. In part, this may be a consequence of the limited amount of research that has been done on pension systems in the Caribbean, since this means that the authorities have not been able to refer to the literature to obtain information about how to tackle the issue of social protection in an environment with similar geographic and geo-climatic characteristics. This paper aims to fill this gap by examining the current status of public pension systems, analysing their recent performance and the challenges faced by schemes in the region, and suggesting ways forward.

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I
Introduction

Social protection systems are a crucial fundament of society. Since consumption continues after retirement, particularly as individuals may be confronted with significant spending on medical treatment and other forms of care, saving for this consumption during one's working life is imperative. However, individuals are unlikely to make sufficient precautionary savings when working. For one, they may lack the ability to act with perfect foresight and/or therefore not fully recognize the need to set sufficient resources aside when working. Others may in fact consciously refuse to take any precautionary measure as they plan to free-ride on the benevolence of governments by assuming that they will not be left to their own devices in old age. Besides those who put forward such short-sighted and morally dangerous arguments, many individuals may simply be unable to save when working due to low income, lack of access to saving mechanisms, or the negative impact of external events that may have wiped out any accumulated savings.[1] Consequently, it is generally accepted that governments should institute some form of compulsory social insurance system. Social protection systems were therefore designed to provide coverage for sickness, disability, old age, maternity and other contingencies.

Whilst social protection systems still maintain these principal functions, they have also been recognized as an appropriate tool for redistributing income from higher income to lower income groups.[2] Despite their initial success, pay-as-you-go (PAYG) schemes, where current expenditure is financed by current contributions, have come under intense scrutiny in recent years as demographic projections cast doubt over their financial sustainability. In particular, whilst life expectancy at birth is increasing in most parts of the world due to improved access to healthcare facilities and advances in medical science, changes in behavioural patterns concerning work have not kept pace. Consequently, the proportion of one's life spent in retirement has increased relative to the proportion spent working. In combination with decreasing fertility, this means that disequilibrium is looming for many public social protection schemes.[3]

Just as the debate on pension reform has intensified in many countries, substantial reform has already been implemented in a large number of countries. In Latin America, structural reform has been enacted (or is in the process of being enacted) in 13 countries: reforms have consisted in either replacing the PAYG scheme with a fully funded one (as in Chile, the Dominican Republic, El Salvador and Mexico),[4] or in introducing a fully funded scheme alongside the PAYG one (as in Argentina, Colombia, Costa Rica, Peru and Uruguay).[5] Overall, however, no significant reforms have been undertaken in the English-speaking Caribbean.

One reason may be that, despite the flurry of research into pension economics over the last three decades, the resulting conclusions and policy recommendations are only of limited use in a region of such particular geographic and geo-climatic characteristics that is prone to natural disasters and where all countries are small island developing States (SIDS).

The need to reform social protection is, however, particularly relevant to the Caribbean as the potential rewards can be considerable. Whilst national pension schemes represent a sizeable part of the respective economies, the fact that each member State has its own scheme limits the potential to exploit economies of

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[1] This is especially true in many developing, rural economies where wealth is particularly vulnerable to natural disasters, such as those based around livestock.

[2] Whilst the term "social protection" usually refers to old age, sickness and disability benefits, this study focuses only on its role in providing pensions. Throughout this study the term social protection thus relates to pension systems, unless otherwise stated. The two terms will be used interchangeably.

[3] The difference between publicly provided and privately provided pension schemes will be elaborated upon below.

[4] In a fully funded scheme contribution revenue is invested such that each generation essentially finances its own pension bill.

[5] See Gill, Packard and Yermo (2005). Note also that implementation of structural reform does not necessarily solve sustainability issues, as many countries in Latin America are finding out.

scale. This is even more relevant since, although current legislation restricts (to varying degrees) international investment of reserve funds, eventual combined investment abroad could reduce costs considerably and strengthen schemes through improved diversification. While pension systems have already been coordinated, thereby improving pension portability within the region, a fresh impetus to regional integration must now take the form of further reductions of labour mobility restrictions.

This study seeks to present an overview of social protection in the Caribbean. In so doing, it presents the structure of social protection schemes, evaluates performance of the schemes and discusses which reform measures, if any, have been taken. Section II looks at the status quo of social protection in the region. Section III presents challenges in relation to social protection that are being faced in the region. Section IV discusses reform options. Section V presents the study's conclusions.

II

Social protection in the Caribbean

Social protection is not a new phenomenon in the Caribbean.[6] Having initially spread from the United Kingdom in the form of provident funds, the majority of *national* social protection schemes were implemented shortly after independence.[7] Whilst only Antigua and Barbuda and Dominica implemented national insurance schemes prior to independence, the oldest national social protection scheme in the region was founded in Jamaica in 1966; the youngest schemes were founded in 1987 in Saint Kitts and Nevis and in Saint Vincent and the Grenadines.

By and large, however, social protection systems in the region have remained largely unchanged ever since. Other than parametric changes made at irregular intervals, no real reform has taken place and there is little evidence that significant reform is currently being considered due to a number of factors that will be presented in this study. One reason for complacency vis-à-vis pension reform in the region may be that national insurance schemes have not yet reached a mature stage due to their relatively recent implementation. This is reflected in the low old-age dependency ratio and in low social protection payments amounting on average to 2% of GDP across the region —a significantly lower rate than in other regions. In addition, over the years all schemes have managed to accumulate rather substantial reserves, equivalent to approximately 19% of total regional GDP, with reserves amounting up to 30% of GDP in individual countries.

Such substantial reserves should, however, be viewed as a window of opportunity for tackling the sustainability of social protection before it becomes more acute.

Understanding these challenges requires an understanding of how social protection functions in the region and which parameters define performance. Given the number of countries in the region, any analysis of schemes in each member State will necessarily imply sacrificing some detail. Without losing sight of the general picture, this section presents an overview of social protection in the region and explains how pension schemes are structured, what contributions are levied and how benefits are calculated. It will also present the costs incurred by national insurance boards and how surplus funds are currently invested.

1. Contributions and benefits

(a) *Contributions*

All public social protection schemes in the region are defined-benefit PAYG schemes.[8] These are characterized

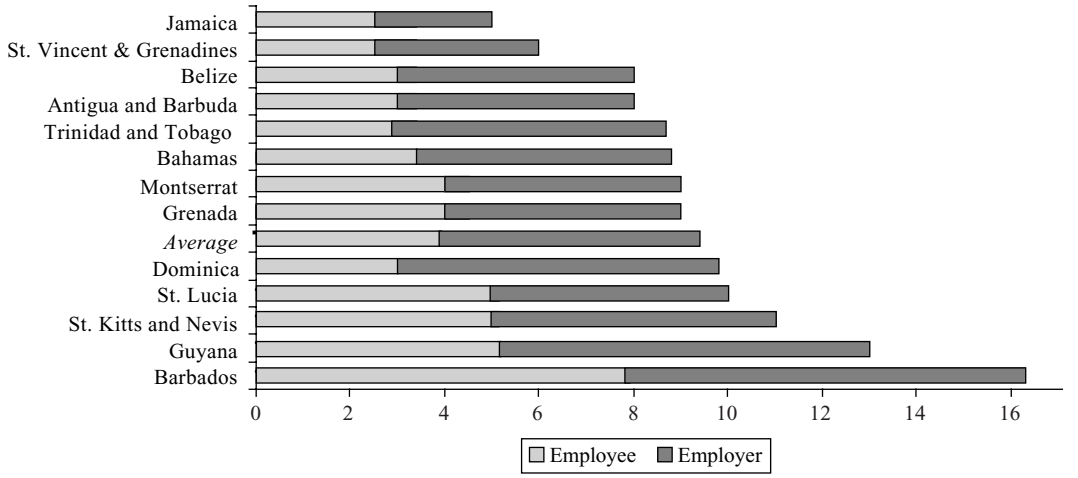
[6] References to the *Caribbean* or alternatively to the *region* refer to the English-speaking members of the Caribbean Development and Cooperation Committee (CDCC) and Suriname, excluding associate members, unless otherwise stated. These core members are Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago.

[7] Several occupational social protection schemes covering various sectors of the economies were introduced during the late 1960s and early 1970s. These were consequently replaced by the newly established national social protection schemes.

[8] In a defined-benefit scheme, contributions are endogenous to the system and vary to balance the pension budget as benefits are defined *a priori*. This is in contrast with a defined-contribution scheme where benefits are endogenously determined by contributions.

FIGURE 1

The Caribbean: contribution rate to social protection, 2003
(Percentages)



Source: Official data.

by parameters relating to how revenue is generated and how benefits (pensions) are calculated. The two most important parameters that define revenue generation are contribution rates and wage ceilings (the wage level above which contributions are no longer levied).

Benefits are financed by contributions from employees and employers, expressed as a percentage of the employees' wages. These rates are on average equivalent to 4% and 6.8%, respectively, in the region. On a country basis there is, however, a wide variation in these rates (see figure 1), with the highest levied on employees and employers in Barbados (7.75% and 8.5% respectively) and the lowest levied in Jamaica (2.5% each).[9]

In addition to the variation in contribution rates, there is considerable variation in insurable wage ceilings, which range from an average of 1.2 times the average wage in Trinidad and Tobago to 3.4 times the average wage in Saint Lucia.[10] Overall, there is no "ideal" wage ceiling on contributions; in fact, there are a number of countries that have done away with any kind of ceiling in recent reform processes.[11] One advantage of a high wage ceiling is that fewer individuals will have to arrange their own precautionary savings to smooth consumption variations over their life cycle in response to more income exceeding the ceiling and therefore not counting as insurable earnings. In such cases, well-developed capital markets or broad-based occupational pension schemes may fill the gap in consumption by smoothing variations when ceilings are low. However, the availability of either in the Caribbean region is limited, which strengthens the case for higher ceilings.

Moreover, with the exception of Guyana, all member States adjust their ceilings in an ad hoc manner rather than relying on an automatic mechanism.[12] Furthermore, adjustments take place at infrequent intervals: the wage ceiling has only been adjusted twice in 30 years in the Bahamas, three times in 20 years in the British Virgin Islands and, in the Turks and Caicos Islands, the ceiling has not been increased since the scheme was introduced in 1992. Consequently, when

[9] These rates nevertheless compare relatively favorably to those levied in mandatory funded schemes in Latin America, which range from 2.75% in Argentina to 12.27% in Uruguay (see Gill, Packard & Yermo, 2005).

[10] To have a common denominator, earning ceilings are normalized using average insurable wages, rather than national average wages, for which data is not available in the majority of countries.

[11] Several Central and Eastern European countries, such as the Czech Republic, Estonia and Slovenia, have no ceiling on contributions to pension schemes (European Union, 2002), and neither do Austria, Finland or Portugal (European Union, 2006).

[12] In Guyana, the ceiling on insurable earnings (and pensions) is adjusted in line with changes in public-sector minimum wages.

increases do take place, they are often substantial, as the case of Belize illustrates: in 2001 the ceiling on insurable earnings was increased for the first time since the scheme was established in 1979, raising the ceiling from BZ$ 130 to BZ$ 320 per week. This is still not considered sufficiently high, and the government is therefore considering an increase to BZ$ 640 per week in the near future following a recommendation of the sixth actuarial review (Montas, 2003). In particular, the need to set appropriate ceilings arises from the fact that low ceilings reduce the progressivity of schemes as high-income people only pay a low contribution relative to their income.

(b) *Benefits*

Social protection benefits are to a large degree uniform throughout the region, consisting mainly of sickness and maternity benefits, retirement, invalidity and survivors' pensions as well as funeral grants. Although several countries offer benefits related to work-related accidents and illness (such as disability pensions, injury benefits and coverage of medical expenses), only Barbados grants unemployment benefits to those eligible. However, as noted above, this study only focuses on the role of pensions in the context of social protection.

The overarching principle of retirement benefits in the region is to maintain income during old age and in the event of disability. This is recognizable by the fact that all PAYG schemes in the region are earnings-related and thus based on the social protection principle of maintaining relative income conditions during old age. However, the success of providing income-security to older persons varies within the region. In particular, there is considerable variation in the coverage of retirement benefits. Thus, estimates of the proportion of persons aged over 65 receiving a pension range from a low of 19% for Saint Lucia to a high of 85% for Barbados; the larger economies such as Jamaica, the Bahamas and Trinidad and Tobago exhibit approximately 38.6%, 53% and 56.8% respectively.[13] The factors underlying low coverage rates in some countries include low compliance rates among the self-employed and a sizeable informal sector in many economies. Moreover, high unemployment and the fact that all schemes are contributory PAYG schemes mean that many of those reaching old age may not meet eligibility requirements. Figures do, however, show that coverage has been increasing gradually, albeit at a moderate pace (coverage in 2000 was 45.2% in the Bahamas and 15.9% in Saint Lucia, for instance).

The generosity of earnings-related systems is measured by the replacement rate. The stance taken towards replacement rates is fairly uniform, so that whilst individual accumulation rules vary to some degree across countries, the majority of schemes grant a replacement rate of 30% for contributions made over approximately 10 years (500 weeks to be precise). Antigua and Barbuda grants the lowest replacement rate of 25%, whilst Barbados grants the most generous replacement rate of 40%. Overall, replacement rates in the region increase relatively more during early contribution years than later years in all schemes; following a 30-year contribution period (1,500 weeks) it reaches between 50% and 55%, with extremes in Barbados (60%) and Antigua and Barbuda (45%). In terms of the maximum replacement rates, Dominica has the highest attainable replacement rate of 70% and Antigua and Barbuda has the lowest maximum of 50% (see table 1).

The merits of a non-linear increase in the replacement rate are debatable. For one, it is useful when a pension scheme is initially introduced as it allows for members to rapidly qualify for a higher pension. As such, it can serve older workers well upon introduction of a scheme. However, a more linear pension formula will reduce the overall pension bill, as those retiring earlier will receive lower benefits. Belize is contemplating replacing the current formula of a 3% increase for the first 10 contributing years, followed by a 2% and 1% annual increase for the following five years and each subsequent year respectively, by a flat-rate 1.5% annual increment in the replacement rate up to a maximum of 60%, which would accordingly be attained after 40 years of contributing to the scheme (Montas, 2003). The 2003 actuarial review in Saint Lucia also recommended that the pension accrual rates be revised so that pensions accrue more gradually than is currently the case.

Replacement rates represent just one dimension of the calculation of pensions. Other aspects include average insurable earnings to which the replacement rates are applied and how they are calculated, as well as eligibility requirements.

[13] Coverage here measures the number of long-term pension benefits (excluding survivor and disability benefits) granted relative to the size of the population over 65 years of age. In countries where the retirement age is below 65, such as Saint Lucia (see table 1), coverage of the actual relevant age group will necessarily be lower.

TABLE 1

The Caribbean: social protection statistics, 2003

	Maximum contributable earnings	Pension to average Insurable Wages		Replacement rates (after … years)			Min. Contributions	Retirement age	
		Average	Min.	10	30	Max.	Number of weeks	Normal	Early
		(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Anguilla	2.02	30.6%	26.3%	30%	50%	60%	250	65	...
Antigua and Barbuda	1.88	22.2%	6.3%	25%	45%	50%	350	60	...
Bahamas	1.36	25.4%	16.0%	30%	55%	60%	150	65	60
Barbados	2.09	49.0%	30.6%	40%	60%	60%	500	65	63
Belize	1.52	25.3%	22.4%	30%	55%	60%	500	65	60
British Virgin Islands	1.42	21.4%	7.5%	30%	50%	60%	500	65	...
Dominica	3.15	28.3%	6.8%	30%	55%	70%	500	60	...
Grenada	2.07	24.5%	12.0%	30%	50%	60%	400 [a]	60	...
Guyana	2.10	28.5%	27.3%	40% [b]	55%	60%	750	60	...
Jamaica				[c]			494	70 [d]	65 [d]
Montserrat	1.26	17.1%	8.4%	30%	50%	60%	350 [e]	60	...
Saint Kitts and Nevis	3.07	28.4%	11.8%	30%	55%	60%	500	62	...
Saint Lucia	3.41	39.0%	13.7%		58%	60%	576 [f]	61	60
Saint Vincent & the Grenadines	3.08	29.9%	19.4%	30%	50%	60%	325 [e]	60	...
Trinidad and Tobago	1.25	37.0%	37.0%	[g]			750	65	60
Turks and Caicos Islands	1.69	19.0%	14.1%	30%	55%	60%	500	65	60
Average	2.10	27.0%	17.3%	33.5%	53.1%	60%	432	63	61

Source: Official data and Osborne (2004).

[a] Increasing to 500 in 2008.
[b] After 15 years.
[c] Flat rate pensions plus earnings related proportion.
[d] Five years less for females.
[e] Increasing to 500 in annual steps of 25.
[f] 144 months, increasing by 12 months every 3 years until 180 is reached on 1 January 2012.
[g] Pension based on average class in which contributions made over career (non-indexed career earnings approach).

Average insurable earnings tend to be calculated by taking the average of the best three to five years of the last 10 to 15 years of each contributor's working life.[14] Calculating benefits in such a way rather than basing pension payments on a complete earnings history is, however, likely to contribute to a scheme's regressiveness by favouring the more skilled who join the labour force later yet also have a wage profile that is higher and rises more quickly than lower-skilled individuals who have a relatively uniform income profile. The Bahamas is, for instance, contemplating moving to a system where the three-year final average pension formula will be replaced by one based on an indexed career earnings approach with a 1.5% annual accrual rate.

(c) *Eligibility*

Across member States the normal retirement age varies between 60 and 65, with Jamaica constituting the sole exception with a retirement age of 70 for men. Although there are no requirements regarding residence or citizenship to obtain a pension, eligibility does depend on having made a minimum required number of contributions. Many countries have set the minimum required to receive a full pension at 500 weeks; workers

[14] Exceptions are Barbados, Trinidad and Tobago and Jamaica. In Trinidad and Tobago, pensions are based on a career average of "earning classes" (income brackets); in Barbados the pension is two-tiered, with a "basic" pension equal to 40% of average insurable earnings (based on the best five years of earning) as well as a supplementary pension equal to 1% of the total weekly insurable earnings represented by the contributions in excess of the first 500; Jamaica also has a two-tier system.

in Saint Lucia are required to contribute for 12 years (144 months). Guyana and Trinidad and Tobago have a minimum contribution requirement of 15 years (750 weekly contributions) before workers are eligible to receive a pension. This is in contrast with Montserrat and Saint Vincent and the Grenadines, where only seven years and six and a half years, respectively, are required, Anguilla, where only five years are required and the Bahamas, where a mere three years (150 weeks) of contribution to the National Insurance Scheme confer pension eligibility (with a replacement rate of 15% of average insurable earnings).

Generally, workers who do not meet the required minimum number of contributions are guaranteed a minimum pension; once again, the generosity of this varies significantly across the region, ranging from 6% of average insurable wages in Antigua and Barbuda, to 31% in Barbados (see table 1).

Several countries in the region have taken steps to address the fact that a relatively low number of contributions confers eligibility to draw a pension. This issue is relevant, not only due to the increasingly globalized environment where labour mobility is on the rise, but also because the Caribbean Single Market and Economy (CSME) will eventually allow for free mobility within the region and could lead to workers' "pension shopping". Montserrat and Saint Vincent and the Grenadines are therefore raising the number of weekly contributions required in steps of 25 annually until a total of 500 required contributions are met. In Grenada the requirement will increase to 500 by the year 2008 and in Saint Lucia the contribution requirement will be raised in increases of 12 months every three years up to a total of 180 months in 2012. In other member States, discussion has commenced on how to tackle this problem. In the Bahamas, the social protection reform commission has recommended that the number of weekly contributions be raised in steps of 50 annually until the requirement is more in line with the rest of the region, i.e. until it reaches 500 contributions.

2. Costs and investment

The success of social protection schemes can be measured in several dimensions. One important dimension relates to the cost of running a scheme, such as those related to financing the managing institutions, paying salaries of its staff, maintaining premises and providing the services expected of the institution.

Operating costs in the region differ substantially. On average, they amount to 18% of income from contributions, although the underlying costs on a per-country basis reveal significant variations, with the highest percentage being 41% of contribution income in Montserrat and the lowest being 6% in Barbados. Overall, a quarter of the sample countries lie more than one standard deviation from the mean. In fact, whilst only Barbados and Trinidad and Tobago have operating expenses that are less than 10% of contribution income, Anguilla, Belize, Montserrat and the Turks and Caicos Islands have expenses in excess of 20% (see table 2).

Costs in this range are clearly too high for PAYG schemes and compared to, for instance, approximately 0.5% of contribution income in the publicly managed

TABLE 2

The Caribbean: administrative expenses as a percentage of contributory income, 2003

Country	Expenses	Country	Expenses
Anguilla[a]	22.8%	Guyana	15.8%
Antigua and Barbuda[a]	17.7%	Jamaica	13.0%
Bahamas	19.9%	Montserrat[a]	48.8%
Barbados	6.1%	Saint Kitts and Nevis[a]	14.6%
Belize	30.5%	Saint Lucia	13.3%
British Virgin Islands[a]	11.9%	Saint Vincent and the Grenadines[a]	16.7%
Dominica[a]	16.7%	Trinidad and Tobago[a]	7.1%
Grenada[a]	12.4%	Turks and Caicos Islands	21.1%

Source: Official data and Osborne (2004).

[a] Figures from 2005.

PAYG scheme in the United States.[15] It comes as little surprise that the region's geographic characteristics play a role in the overall operating expenses: the correlation coefficient between a country's population and its operating expenses for the social protection scheme is significantly negative (-0.47), indicating that social protection systems lack the ability to benefit from economies of scale. In particular, multi-island States, such as the Bahamas and the Turks and Caicos Islands, suffer from proportionally higher costs.[16] Clearly, costs are high due to the inability to benefit from economies of scale.

(a) *Surplus funds*

All in all, social protection systems in the region provide pensions to more than a quarter of a million of the region's 6.5 million inhabitants. While approximately US$ 450 million was paid out by these systems in the form of pensions and other benefits in 2003, overall contributions to the schemes amounted to around US$ 650 million, leading to an increase in reserves. Indeed, this has been characteristic of the region, with accumulated funds in excess of US$ 5.2 billion at the end of 2003 (about 19% of total regional GDP, or approximately 30.1% of GDP in individual countries). The financial position of the region's schemes could be considered good. In fact, despite all schemes in the region being PAYG, the accumulated reserves are higher than the assets of *funded* pension funds in every Latin American country (other than Chile), where assets averaged approximately 13.5% of GDP (Gill, Packard & Yermo, 2005). Moreover, all funds are currently accumulating surpluses. This is desirable as, whilst by design they are all PAYG, accumulated reserves can be drawn upon in the future to meet unexpected shortfalls in contributions or increases in commitments.

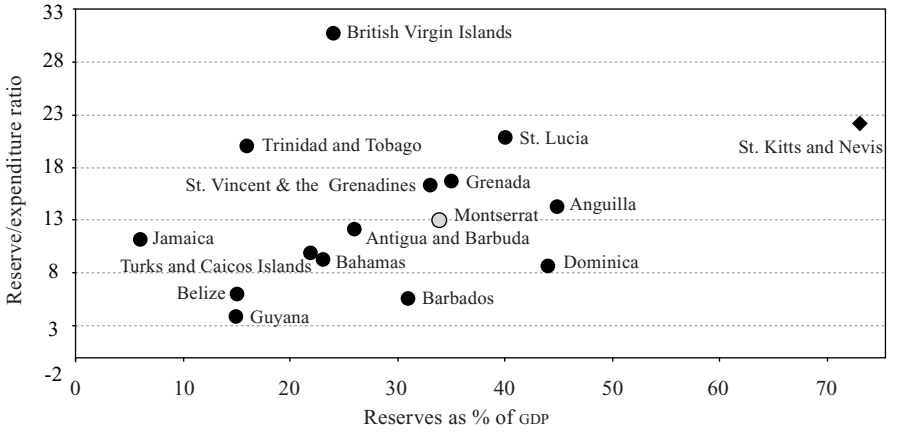
Reserves are negatively correlated (-0.62) with country size. The lowest proportion is in Jamaica, whilst reserves represent more than two thirds of GDP in Saint Kitts and Nevis (figure 2). However, the overall size of accumulated reserves is not an indicator of a financially sustainable scheme as it does not measure any aspect of performance or indicate how long the reserves would potentially cover commitments. A more relevant indicator is therefore the reserve-expenditure ratio, which estimates the number of annual expenditures that could be financed by the reserves. These values, as shown in figure 2, tell a somewhat different story as they reveal that there is seemingly no direct relationship between accumulated reserves as a percentage of GDP and the number of annual expenditures these could potentially

[15] See Thompson (2001, p. 242).

[16] However, Belize, as a non-island economy that is not particularly small in comparison with other countries in the region, also seems to have exceptionally high costs.

FIGURE 2

The Caribbean: reserves and reserve/expenditure ratio, 2003



Source: Official data and Osborne (2004).

TABLE 3

The Caribbean: portfolio investment, 2003

	10-year real yield	5-year real yield	Investment as % of reserves
Anguilla	2.50%	1.50%	91.80%
Antigua and Barbuda	0.80%	1.50%	44.40%
Bahamas	4.80%	4.00%	92.40%
Barbados	5.20%	5.20%	82.40%
Belize	7.40%	7.50%	94.50%
British Virgin Islands	2.20%	2.80%	92.80%
Dominica	4.70%	4.60%	77.00%
Grenada	5.00%	4.90%	92.10%
Guyana	4.80%	4.10%	95.30%
Jamaica	3.50%	9.80%	95.50%
Montserrat	2.40%	2.40%	96.70%
Saint Kitts and Nevis	3.20%	4.00%	94.90%
Saint Lucia	3.80%	4.10%	96.00%
Saint Vincent & the Grenadines	4.30%	5.60%	91.60%
Trinidad and Tobago	4.70%	4.70%	93.40%
Turks and Caicos Islands	1.60%	0.90%	87.50%
Unweighted average	*3.81%*	*4.23%*	

Source: Official data and Osborne (2004).

cover. In fact, actuarial studies have pointed to the need for action to avoid depleting funds. Given the status quo, it has been estimated that expenditure will exceed revenue in 2019 in the Bahamas, leading to an eventual depletion of the fund in 2029. Similarly, the reserve fund in Belize may be depleted slightly sooner (in 2025) if current conditions continue. Likewise, reserves are expected to begin decreasing in 2048 in Saint Lucia, with reserves projected to be depleted by 2062.[17]

(b) *Portfolio investment*

A large proportion of these accumulated reserves are invested (the average rate is 89%). Antigua and Barbuda is the only country where the investment rate, standing at 44%, is below 75%.[18] Consequently, portfolio management is an important aspect of regional social protection schemes and needs to be carefully analysed.

Performance of the various schemes' portfolio management over the last decade has not been particularly outstanding, with an average real return of approximately 3.8%, although returns have increased to around 4.2% over the last five years. Belize and Jamaica performed significantly better than the average, with Belize's 10-year return of 7.4% and 5-year return of 7.5%, and Jamaica's 5-year return of 9.8%. Antigua and Barbuda, Anguilla and the Turks and Caicos Islands scored significantly worse than the average: Antigua's 10-year return was 0.8% (5-year return of 1.5%), that of the Turks and Caicos Islands was 1.6% (0.9%) and Anguilla's 5-year return was 1.5% (table 3).[19]

One reason for such poor performance is undoubtedly the way these investments are allocated. Approximately half of all reserves are invested in fixed-income securities (such as loans and bonds) and a third in fixed deposits. These are investment vehicles that are historically rather stable, yet are also low-yield asset classes. Overall, only 11% of reserves is invested in equities and 4% in real estate (figures relating to the end of 2003).

It should be pointed out that the majority of countries have portfolios that are heavily skewed towards local investment; in fact only the non-independent territories (Anguilla, British Virgin Islands, Montserrat and the Turks and Caicos Islands) have any significant proportion of their assets (i.e. more than

[17] See National Insurance Board of the Bahamas (2001), Montas (2003) and ILO (2005).

[18] This is, however, a result of considerable outstanding receivables to the tune of half of overall assets.

[19] Returns are considered "significantly worse or better", if they are more than one standard deviation lower or higher than the region's average.

5%) invested abroad. In the British Virgin Islands, the figure is more than two thirds of total investment and in the Turks and Caicos Islands more than three quarters. Six countries have exclusively domestic investments, including the larger economies of Trinidad and Tobago, Jamaica, the Bahamas and Belize. Only seven countries have regional investments, which were in each case less than 10% of total investment, except in Saint Vincent and the Grenadines where a fifth is invested regionally.

The reasons for such concentrated portfolio selections are essentially twofold. The principal factor driving such investment decisions is no doubt the fact that legislation in many member States does not allow for social protection funds to be invested abroad. Social protection schemes are seen in many countries as a tool to provide the economy with much-needed funds. Many stakeholders in the region see a large role in economic development for social protection organizations: more than half of all stakeholders interviewed in the Organisation of Eastern Caribbean States (OECS) held this view (see Henry, 2004, p. 194). However, the same study also found that more than 70% of respondents deemed it necessary to diversify portfolios through foreign investment, pointing to the need to review existing legislation. Another reason for such lopsided investment – in particular relating to the concentration on fixed deposits – is that capital markets in the region are, to a large extent, in a nascent stage: there are only three regional stock exchanges, each with a small number of listed securities.[20] This makes any portfolio diversification a daunting task.

III

Challenges for social protection in the Caribbean

In 1994 the World Bank published a report on social protection that dealt with "averting the old age crisis" (World Bank, 1994). This was one of the first publications by an international organization calling for a multi-pillar framework in pension policy. The report advocated the establishment of three main pillars to finance social protection. The first pillar is based on the pay-as-you-go (PAYG) principle. The second pillar is "funded", i.e. mandatory contributions are made by workers into "personal" accounts; these contributions are invested and eventually used to finance workers' pensions. Participation in this pillar is to be mandatory. Finally, a third pillar is meant to encourage savings; this pillar is essentially identical to the second one with the exception that contributions to this one are voluntary (i.e. this pillar replicates private savings).

While this report received some criticism,[21] it had a profound influence on a number of developing countries, notably in Latin America, which has seen a flurry of reforms passed over the last two decades, and it continues to be influential in many regions. In fact, more and more economies are moving away from traditional defined-benefit PAYG schemes, partly due to population dynamics, but also due to the fact that PAYG defined-benefit schemes increase the incentives for early retirement, which has contributed to an untenable situation in terms of financing (see Gruber & Wise, 1999).

Overall, however, these dynamics have had seemingly little impact on the Caribbean agenda of social protection: national schemes in the Caribbean represent the first pillar only. Although all schemes differ in terms of accrual of benefit rights, contribution rates and other parametric features, they are all designed as PAYG schemes in principle. As such, no *mandatory* second pillar exists in the region and there is no clear indication that one will be introduced.

The complacency regarding reform may be due to the current demographic environment, i.e. the fact that populations are relatively young, and the recent inception of these schemes. Thus, national social protection schemes in the region have not yet reached maturity (less mature schemes have a higher ratio of active members to pensioners and deferred pensions) and are consequently receiving contribution income that is more than sufficient to finance current social

[20] The Eastern Caribbean Securities Exchange of the OECS has eight listed securities; the Jamaica Stock Exchange and the Trinidad and Tobago Stock Exchange each have fewer than 50 listed.

[21] See, for instance, Orszag and Stiglitz (1999).

protection obligations; hence they are all currently in the position to invest (*"fund"*) the surpluses.

Although the issue of ageing is not yet as pressing as in other regions, it must nevertheless be addressed as experience shows that the earlier this is tackled, the less painful remedies will be and the lower the political cost of implementing them. There are in fact several challenges to social protection in the region. Some of these challenges pertain to the current schemes, such as how benefits are calculated, a low number of contributions required for eligibility and the lack of automatic adjustment for wage ceilings and wage replacement rates. These challenges (described in the previous section) can be dealt with by changing parameters and/or existing legislation.

Other challenges are, however, more fundamental to social protection and need to be analysed in greater detail. One challenge pertains to labour markets, where particular reference must be made to the Caribbean Single Market and Economy (CSME), which will eventually lead to the free mobility of labour and will necessarily have an impact on social protection. In addition, the general performance of labour markets in the region represents a further challenge to social protection systems: unemployment is high and persistent in some countries, the informal sector is increasing and evasion of social protection contributions is widespread. These are factors that will ultimately lead to an increasing proportion of the elderly being excluded from the benefits of a pension and therefore need to be addressed.

Legislation governing accumulation of social protection assets also needs to be amended. In particular, the issue of whether national investment boards may invest abroad needs to be carefully analysed. For one, the geographic and geo-climatic characteristics of the region —small island economies whose economic fundamentals are only diversified to a limited degree and the fact that the region is extremely prone to natural disasters— may argue for a less restrictive stance on investment of funds abroad. However, any relaxation of legislation must carefully weigh up the benefits of doing so against the cost effects that capital outflows will have on economies' balance sheets in general and on their exchange-rate regimes in particular. These are all issues that will be addressed in the rest of this section.

(a) *Ageing*

As in most regions, ageing is a phenomenon that is affecting populations in the Caribbean. A combination of increasing life expectancy at birth and decreasing fertility rates is leading to a shift in the population structure. Life expectancy at birth increased on average by more than 15 years during the last two decades of the twentieth century alone and currently stands at approximately 73.1 years.[22] It is forecast to increase further to approximately 79 years by the middle of this century (table 4). In addition, the population growth rate will have decreased to 0.1% by this time, down from 1.8% in the mid-twentieth century and from 1% currently.

TABLE 4

The Caribbean: life expectancy at birth

	2000-2005	2025-2030	2045-2050
Bahamas	69.4	75.7	77.3
Barbados	77.2	79.8	81.4
Belize	74.4	77.5	79.7
Guyana	62.4	64.1	71.2
Jamaica	75.7	79.0	80.8
Netherlands Antilles	76.3	79.4	81.0
Puerto Rico	75.6	78.3	80.3
Saint Lucia	73.8	77.2	79.5
Suriname	71.1	75.8	78.6
Trinidad and Tobago	74.8	78.6	80.5
Average	*73.1*	*76.5*	*79.0*

Source: United Nations (2002).

While the causes of such a shift are well-documented,[23] the variation within the region merits closer consideration. Intraregional comparison reveals that the "pensions time bomb" is more relevant in some member States than in others. On an intraregional basis, there is a significant gap between life expectancy in Guyana (62.4 years) and Barbados where life expectancy is the highest at 77.2 years —a gap that is expected to decrease. However, a slowdown in fertility combined with emigration will lead to a substantial increase in the old age dependency rates in countries, as shown in figure 3.[24] The larger this ratio, the greater the number of older adults that the working population needs to support, i.e. the higher the cost of social protection.

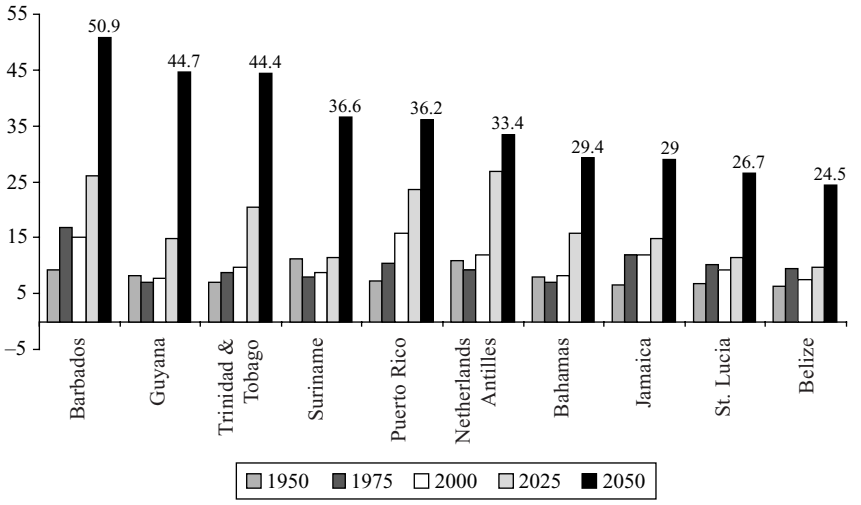
[22] Data pertaining to those English-speaking Caribbean countries with information available (table 4).

[23] See ECLAC (2004) for a recent analysis of population ageing in the region.

[24] The old-age dependency ratio is defined as the number of people aged 65 and above for every 100 people aged 15 to 64.

FIGURE 3

The Caribbean (10 countries): old age dependency ratio



Source: United Nations, 2002.

Other than the Netherlands Antilles, the percentage increase in all other countries will accelerate, with an average increase of 66% during the first quarter of the century and a 118% increase over the second quarter.

The increase in the dependency ratio is expected to continue to accelerate over the next 50 years. While the lowest increase in the old age dependency ratio will be an estimated 130% in Puerto Rico in the first half of the twenty-first century, the ratio will increase by almost 500% in Guyana. This development will have an effect on social protection schemes as an increasingly large proportion of older adults will need to be supported by a shrinking labour force.

The latter point is related to the current state labour markets in the region, as a social protection system needs an effective labour market to function well, especially in a PAYG scheme where today's workers are responsible for those currently retired.

(b) *Labour markets*

Labour markets in the region face several challenges. One major challenge for social protection is unemployment. A second relates to increased labour mobility —both within the region and beyond.

Unemployment is undoubtedly of the most significant economic challenges facing member States in the region. Not only are many member States experiencing unemployment in excess of 10%, but unemployment amongst females is also significantly higher than that of males, while youth unemployment in general is severe. Data from Trinidad and Tobago, Jamaica, Barbados, Saint Lucia and Belize show that the youngest cohorts in the labour force are the most severely affected: every second person aged 15-19 is unemployed in Saint Lucia and Jamaica (see table 6). This holds for every fourth young person in Barbados and Belize and every fifth in Trinidad and Tobago. In addition, figures show that, while more than 60% of the unemployed in Barbados have been jobless for less than six months, and more than 80% have been unemployed for less than a year, in Saint Lucia more than three quarters of the unemployed have been without work for more than a year. In Trinidad and Tobago, the corresponding figure is close to 25%, and in Jamaica it is almost one third of the population (table 7). In fact, approximately a third of Jamaica's labour force has never worked in the formal sector.

The numbers themselves suggest that obtaining employment for labour market entrants is difficult, as is finding reemployment. Preliminary indications suggest that a weak education sector may be the reason behind this (ECLAC, 2005). The implications for social protection are far-reaching. For one, the inability to find employment prevents individuals from meeting eligibility requirements and therefore could have an impact on any future pension claim. In addition, increased unemployment reduces the labour pool that is financing the pensions of those currently retired.

TABLE 5

The Caribbean: unemployment rates

Country	Year	Male	Female	Overall
Anguilla	2002	6.3	9.5	
Antigua and Barbuda	1991	6.4	5.6	
Aruba	1997	6.7	8.4	
Bahamas	2003	5.9	9.6	
Barbados	2002	8.7	12.1	10.3
Belize	2004	8.3	17.4	11.6
British Virgin Islands	1991	3.4	3.1	
Dominica	1997	19.6	27.2	
Grenada	1998	10.5	21.2	
Guyana	1992	8.4	18.1	
Jamaica[a]	2003	9.6	17.5	13.1
Netherlands Antilles	2000	12.0	16.2	
Saint Lucia	2003	17.2	28.1	22.3
Saint Vincent and the Grenadines	1991	18.4	22.1	
Suriname	1999	10.0	20.0	
Trinidad and Tobago[a]	2004	8.0	12.1	10.5

Source: International Labour Organization (2005) and official data.

[a] Second quarter of 2003/second quarter of 2004. According to the ILO definition, overall unemployment would be 7.5%.

TABLE 6

The Caribbean (five countries): unemployment
(Percentage of active cohort affected)

	Trinidad		Jamaica		Barbados		Saint Lucia		Belize	
Age	1991	2004[a]	1991	2001[a]	1992	2000	1993	2003	1993	2004
15-19	43.2	21.2	39.2	50.1	60.9	28.0	41.5	54.3	24.1	24.0
20-24	29.6	15.7	25.3	27.7	33.9	12.8	21.2	31.9	11.0	15.0
25-34	18.6	6.6	14.4	14	23.9	9.9	13.2	21.5	9.3	13.4
35-44	12.4	4.2	8.8	8.3	15.9	6.1	11.2	15.7	4.6	10.1
45-54	9.2	5.0	6.9	5.8	14.8	6.3	6.6	16.7	2.9	9.1
55-64	8.7	4.8	4.7	5.2	10.0	6.5	16.2	15.1	5.6	7.6
65 plus	2.9	2.5	2.9	4.1	4.0	0	11.3	17.6	7.5	6.7

Source: Official data.

[a] Second quarter of 2003/second quarter of 2004.

TABLE 7

The Caribbean: duration of unemployment
(Percentage of unemployed)

	Latest observations	Less than 6 months	6 to 11 months	1 year and over	Never worked	Not stated
Barbados	2002	61.9	21.1	12.9	1.4	2.7
Jamaica	2001	21.8	15.5	31.7	30.7	0.3
Saint Lucia	2000	20.3		77.9 [a]		1.8
Trinidad and Tobago	2002	54.3	9.5	23.7	12.3	0.2
Belize	1999	20.9	23.9	53.8	…	1.9

Source: Official data.

[a] Proportion of unemployed people who worked for more than six months.

Labour mobility both within the region and beyond poses a further challenge to social protection. In terms of the latter, emigration from the region has been substantial, resulting in a significant "brain-drain" phenomenon. Thus, Suriname, Guyana, Haiti, Jamaica and Trinidad and Tobago have the highest emigration rates in the world, at over 80% in the case of the first four. Overall, almost half of the world's 30 countries with the highest emigration rates are Caribbean States. The severity of the situation is underscored by the fact that the equivalent of 10% of Jamaica's current population emigrated between 1991 and 2001 (Docquier & Marfouk, 2004). Significant labour outflows from the region, especially of highly skilled graduates, poses a threat to social protection. Aside from the implications for overall economic growth, such outflows also reduce the pool of labour available to finance the pensions of the current retirees and, in particular, decrease the base of highly skilled, high-income workers.

One reason for the high level of migration out of the region may be the difficulty of migrating within the region. Indeed, anecdotal evidence suggests that workers would prefer to stay in the region were they able to find appropriate employment. Policymakers in the region have recognized this and have reacted by adjusting the institutional framework governing labour mobility. Following a consensus that deepening the integration process in the region, and the establishment of a CSME in particular, would foster growth, the provisional entry into force in May 1998 of the Protocol Amending the Treaty Establishing the Caribbean Community (Protocol II: Establishment, Services and Capital) is a measure that potentially increases the scope for free movement by allowing the free mobility of skilled labour within the region.[25] However, migration within the region remains low compared with immigration from other regions (see ECLAC, 2005).

Regarding social protection and migration, all core member States have entered into the Caribbean Community (CARICOM) Agreement on Social Protection, which was signed in 1993. Prior to this, the OECS member States had entered into the OECS Convention on Social Security; these two agreements co-exist, as do several bilateral agreements between member States and extra-regional States.[26] Although certain shortcomings of the CARICOM agreement need to be addressed (see box 1), these initiatives are laudable for the region as a whole.

(c) *Investment*

As outlined above, performance of investment of social protection reserves in the region has been weak over the last decade. In fact, in many countries in the region the investment of social protection funds is untenable. Governments have considerable reign over such reserves, with government paper frequently accounting for a significant portion of the investment. Although government borrowing from social protection is sometimes used for infrastructure development in countries such as members of OECS, the bulk of these funds is used for current rather than capital expenditure, thereby impeding their long-term growth impact. In addition, the capture of these funds by governments depletes the balance available for funding private-sector activities in tourism, agriculture, niche manufacturing and other areas of potential competitiveness in the region. Whilst the schemes invest in mortgages, housing, education and other social activities, there is seemingly no concerted strategy to facilitate the restructuring of stagnant sectors and for investing in new bankable productive activities. Given the long-term nature of the bulk of their liabilities, social protection schemes could provide some of the equity financing for dynamic production and service enterprises.

In the earlier years of their operation, most regional schemes had limits on the extent to which they could diversify their portfolios. In particular, investment in foreign assets was not allowed in most schemes. One underlying principle of this may have been that capital-deficit countries of the region should not be exporting capital to developed surplus capital markets in the United States, Europe and other countries.

[25] However, the treaty differentiates between wage-earners and non-wage earners. Whereas the latter group enjoys free labour movement —meaning that any (natural or judicial) person can set up a business and be own-account workers in CARICOM member States (the Treaty refers to this as the Right of Establishment), only certain wage-earning categories will enjoy the freedom of free labour mobility. In particular, wage-earners that are university graduates, media workers, sportspersons, artists and musicians are the persons that currently enjoy mobility (Article 46 of the Chaguaramas Treaty). Furthermore, the treaty does not specifically address modalities required by countries to obtain full labour mobility within the region —including a well-defined timeline for the implementation. Consequently, the scheduled launch date to establish and form the CSME in 2000 has passed. The CSME has only been implemented between Jamaica, Barbados and Trinidad and Tobago since 1 January 2005.

[26] Bilateral agreements between member States and non-member States do exist, these are however limited essentially to agreements between the respective member States and Canada and/or the United Kingdom.

Box 1
CARICOM Agreement on Social Security and OECS Convention on Social Security

In principle, two main social security agreements exist in the region: the Caribbean Community (CARICOM) Agreement on Social Security and the Organisation of Eastern Caribbean States (OECS) Convention on Social Security. Overall, the OECS Convention on Social Security is the more comprehensive of the two, as it covers additional short-term social benefits (such as maternity benefits, sickness benefits, funeral grants etc.), whereas the CARICOM Agreement only covers long-term benefits relating to pensions (invalidity, disablement, survivors and retirement benefits). In addition, contributions made in any of the signatories of the OECS Convention are *cumulative*, thus workers will receive a pension as long as their cumulative number of contributions satisfies the eligibility requirements in the State in which they are applying for the pension. This holds even if they do not meet the eligibility requirements in the form of a minimum number of contributions in a *single* country due to having moved between members.

Under the CARICOM Agreement, the total number of contributions is only cumulative if workers do not meet the eligibility requirements in any of the countries in which they have worked. Should they meet the minimum requirements in several countries, they are eligible for a pension in each of those countries; consequently, receiving a total of several pensions from different States may result in an overall pension that is higher than the maximum pension in any of the States. Furthermore, the CARICOM Agreement is not clear on the procedure to be followed in cases where the minimum pension eligibility requirement is met in one State but not in others. This issue needs to be addressed.

More importantly, however, risks associated with the exchange rate, market volatility and other potential dangers associated with a foreign market are feared as they are unknown quantities over which countries have no control.

However, excess liquidity in the regional banking sector has dampened rates of return on fixed and other commercial bank deposits. Compounded by the nascent nature of the regional securities market, foreign investment should be considered a serious alternative source of investment to secure the best returns for schemes. With increasing growth in regional cross-border financial transactions, especially out of Trinidad and Tobago, regional money and capital markets could be considered as options for diversifying risk and improving the returns of social protection schemes. Simultaneously, extra-regional capital markets need to be available to social protection reserves.[27] For one, as pointed out above, there are only a limited number of stock exchanges in the region, each of which carries only a relatively low number of listings. In addition, the considerable vulnerability of the region to natural disasters has profound risk implications for any portfolio located exclusively in the region.

That said, exchange-rate fluctuations remain an issue. Whilst it is possible to hedge against exchange-rates, to a certain extent, outflows of financial resources would nevertheless place pressure on the financial system, given that the majority of countries in the region have either fixed exchange rates or exchange rates fluctuating in a narrow band (fixed *de jure* and *de facto*). In particular, given the significant size of social protection funds in the region, this may well be a potential problem in the short run as funds are invested abroad, placing considerable stress on the reserves of central banks.

Another issue with respect to fund management is whether funds should be managed competitively by a number of private fund managers or centrally by a public agency. Governments have chosen to institute national investment boards that tend to benefit from economies of scale from the pooling of investment funds. It has, however, been argued that these boards are not entirely independent (see Osborne, 2004 and Henry, 2004) as many countries' board members are appointed by the government. In addition, several board members simultaneously hold political office. This clearly has implications for the impartiality of investment decisions taken. Thus, it may be argued

[27] This was in fact the opinion of the majority of specialists interviewed in OECS, namely over three quarters of all board members, or 72% of all those interviewed (see Henry, 2004, p. 194).

that a number of competitive private investment fund managers would do a better job of obtaining attractive returns for beneficiaries and also channel the funds to activities that promote growth. However, it is important to consider whether individual countries are significantly large enough to cater to several private fund managers, as market size is a particularly relevant consideration in the case of social –protection fund administration, which should benefit from economies of scale.[28]

IV
Reforms of social protection

Reforms can essentially be categorized into two categories: parametric reforms and structural reforms. While the former involves changing the parameters of existing schemes (such as increasing contribution rates, wage ceilings or retirement ages, and/or reducing pensions), structural reform refers to a complete overhaul of the social protection system. Although parametric reforms may be easier to implement, a structural change in the system is usually considered more relevant to the long-term viability of such schemes. This section will look at the different options available and how relevant they may be for the region, considering the challenges outlined in the previous section.

In practice, structural reform has taken the form of a move from the traditional one-pillar approach (i.e. a PAYG scheme) to a broader approach encompassing a multi-pillar structure, as advocated by the above-mentioned World Bank report (World Bank, 1994). Thus, most countries in Latin America have introduced such reforms or are planning on doing so. Several countries in Europe and Central Asia have also introduced such a multi-pillar system. However, in general, pension reform is usually associated with a move to a defined-contribution fully funded scheme where workers are required to save a proportion of their income in individualized accounts, to which they only have access once retired (such a move is often referred to as the "privatization" of social protection). Hence, the essential feature of the multi-pillar approach has been the introduction of a fully funded element —be it a mandatory or voluntary element of the new system.

One of the major factors that have been advanced by proponents of reform is the potential to achieve higher savings rates that could augur well for investment. However, on a theoretical level the impact of social protection on savings is inconclusive. This need not imply that such a move in the Caribbean will not affect savings positively.[29] Indeed, increased contribution rates will raise compulsory saving in an environment where financially short-sighted individuals fail to make the necessary savings for their old-age consumption.[30] In addition, it has been argued that savings and investment mobilization are affected by the very structure of social protection schemes, the argument being that fully funded privatized schemes with individual retirement accounts (IRA) allow individuals to shop around for the best returns in placing their funds; this stimulates competition and allocation of funds to high-yield productive activities that promote growth.[31] Experience from Latin America, however, suggests that individuals have limited financial knowledge. Moreover, despite the importance of cost and return, the long-term nature of fully-funded pension schemes has translated into a low elasticity of demand with respect to performance of fund companies. As such, a viable consideration for the region may be the introduction of a centrally managed

[28] For instance, in Bolivia, with a population of more than 8 million, only two pension funds were initially allowed in the market.

[29] There is no simple relationship between pension reform and savings, as the impact depends on the strength of income and substitution effects, the propensity to save of beneficiaries and overall macroeconomic performance. The income effect (wealth effect) of higher contribution rates and increased retirement age could lead to reduced long-term savings as households consume more in earlier years in anticipation of higher future earnings, however the substitution effect may be positive or negative depending on whether investment returns on social security funds are higher or lower than alternative assets.

[30] Thus assuming they will not compensate for the lower income by borrowing against their future income.

[31] Such a scheme still, however, requires public intervention in the sense that there is need for effective public sector oversight and regulation to ensure that funds are not placed in unduly risky speculative investments or captured by corporate fraud.

fund (be it at the national or regional level) to undertake investment on behalf of all participants.

Despite the arguments put forward regarding the potential positive effects on investment, there is no doubt that the true motive for moving from PAYG schemes is the financing issues these schemes are facing in the light of shifts in the population structure and population ageing. However, defined-contribution fully funded schemes are not without criticism. For one, such schemes can cause considerable inequality in old-age/pension income, as the redistribution element in such schemes is usually minimal due to the fact that contributors have their "privatized" accounts. This is even more true considering unemployment in general —particularly the high youth unemployment in the region— as in a fully funded scheme *consistent* contributions are required to build up a significant fund, as are contributions *early* in one's career to be able to benefit from compound interest effects. Defined-contribution fully funded schemes also limit the scope for risk-spreading as they place a large proportion of risk of returns on individuals. Although individuals can safeguard against longevity by purchasing an annuity based on their accumulated pension portfolio upon retirement, stock market volatility, particularly towards the end of workers' working lives, can result in large losses if portfolios are insufficiently diversified, resulting in lower annuity payments and hence making individuals significantly worse off.[32]

Whilst progress has been achieved in Latin America following the introduction of fully funded schemes in many countries, at most such a defined-contribution fully funded scheme should form part of an overall comprehensive package and not be considered as the main pillar to provide for one's own retirement income (Gill, Packard & Yermo, 2005). In fact, research in Latin America has shown that, despite the move to such schemes, social protection systems in the region are not necessarily fulfilling their role in providing effective protection to the elderly. Rofman (2005) points out that in only three of 17 surveyed countries are more than two thirds of older adults covered by social protection, and that in 10 countries the coverage rate is less than a quarter of older adults. In terms of the Caribbean, additional challenges face fully funded schemes; these pertain to the lack of depth in financial markets, reflecting the relatively nascent state of regional capital markets, as well as the fact that large outflows of currency may squeeze international reserves, resulting in exchange-rate pressures.

An alternative to the structural reform of social protection schemes are so-called Notional Defined Contribution (NDC) accounts. These have been introduced in, *inter alia*, Sweden, Latvia, Italy and Poland. They are essentially meant to mimic the structure of a fully funded scheme with "personal accounts", without actually establishing a fund and still encompassing an element of risk-reduction through risk-spreading. The underlying idea is that whilst contributions are used to finance the pensions of those currently retired (i.e. a PAYG scheme), each individual's contributions are registered in "notional" individualized accounts. The "return" on these accounts is in turn linked to productivity changes and/or current and prospective demographic changes. This "notional" value is credited to the notional account.[33] It has been argued that such a system can overcome the issues of political feasibility and policy inconsistencies of parametric fixes, whilst simultaneously maintaining the insurance component by linking benefits to contributions. A further benefit is that individuals no longer bear the risk associated with returns of capital markets as the intergenerational financing mechanism is maintained as in a PAYG scheme (Palmer, 1999).

While the overall recent introduction of NDCs may be too recent to comprehensively assess their performance, closer inspection of NDCs on a theoretical level shows that they are essentially only "thoroughly reformed PAYG defined-benefit schemes" (Scherman, 1999). This point is made particularly clear in Disney (1999), who provides a thorough evaluation of NDCs.

[32] This was in fact the case of workers who retired at the beginning of the 1990s in Chile: many saw large decreases in their fully funded pension wealth

[33] Thus in Latvia the growth of the social insurance contribution wage base is used for the "notional" interest rate; in Sweden it is the growth rate of nominal wages and in Italy it is the growth rate of nominal GDP. In Poland it is the rate of inflation plus three quarters of the growth of the social insurance contribution wage base.

V
Conclusions

While social protection reform has featured prominently on economic and political agendas around the world —both in developed and in developing countries— the Caribbean region seems to have been largely insulated from these developments, such that little reform activity can be observed other than the introduction of relatively small adjustments to existing schemes. One of the reasons for this is undoubtedly the relatively healthy situation of most national schemes: annual surpluses have resulted in an accumulation of social protection reserves that in some cases represent a significant proportion of GDP.

That said, schemes in the region are undoubtedly facing several challenges: while Caribbean populations are, in general, not ageing as rapidly as in other parts of the world, it is nevertheless a phenomenon that will eventually need to be confronted. A wider issue pertains to labour markets in general: unemployment is high and persistent in the region, affecting particularly young people and women. In addition, the informal sector has increased in size in recent years. Such developments impact upon social protection schemes, as neither the unemployed nor those in the informal sector contribute; they may however pose a burden on schemes in the future. Hence, the authorities should react rather sooner than later to confront these issues.

Several options are available to authorities in the region. For instance, they can maintain parametric reforms, move to more structural reform, or indeed combine both. Drawing on experiences from around the world, only a quarter of all countries reforming their pension systems implemented major (structural) reforms, whilst the remainder embarked upon parametric fixes.[34] Rather than advocating a structural reform in the region (such as moving from a defined-benefit PAYG scheme to a defined-contribution fully funded scheme, as advocated in other parts of the world) the characteristics of the region suggest that more nuanced reform may be more appropriate.

The reality is that social protection schemes in the region already hold significant funds. However, there is a portfolio mismatch in that there is excessive holding of short-term instruments (assets) to meet long-term liabilities and funds are to a large degree not invested in productive, growth-generating activities, but rather have been subjected to government capture as evidenced by the significant holdings of low-yield treasury bills in most countries. Whilst it is acknowledged that the region needs a deepening of capital markets to create the required tools for investment, the current status quo has led to a low return on these investments, which is having a negative effect on the potentially beneficial impact that the investment of social protection reserves could have on economies. In addition, many parameters in regional social protection schemes need to be reviewed, and current legislation may need amending.

The first step would be to remove some of the legal restrictions on the investment of these funds, taking into consideration the potential effects on the external balance of economies. This could lead to a significantly improved performance of the funds. As a second step, also linked to the current reserve stock, management of funds should be reviewed. As suggested in World Bank (1994), the best avenue for preventing inflation from eroding the value of the reserves is an international diversification of pension fund investments, which is more likely to occur when private investment managers are in charge. However, the shortage of experienced and trained investment analysts and fund managers in the region is a constraint affecting the efficiency of investment decisions and is limiting portfolio diversification. One potential remedy to overcome this could be to pool the portfolio investment of Caribbean countries outside the region. Taking advantage of economies of scale in this way could result in reduced overall costs for individual countries in terms of fund managers' and investment analysts' remuneration. However, the details of how this could be implemented would need to be addressed.

As alluded to above, several parameters and design features of social protection schemes in the region need to be reviewed. Whilst the non-linear increase in the replacement rate may contribute to people retiring early, basing average insurable earnings on, for instance, the

[34] According to Schwarz and Demirguc-Kunt (1999), of 82 countries reforming their social security, only 21 undertook "major" reform, involving a substantive change of system.

best three to five years of the last 10 to 15 years of each worker's career creates an environment where the link between contributions and benefits may be considered as weak.

On a more general note, the current philosophy of contributory schemes, where contributions to the social protection scheme are required to be eligible for a pension, should be reconsidered. As regional economies are characterized by significant informal sectors and persistent unemployment, particularly amongst young people and women, contributory schemes necessarily exclude large proportions of the population from being able to obtain a significant pension when aged. This has important implications for well-being in a region with extreme pockets of poverty. A more broad-based approach to social protection should therefore be considered, such as a non-contributory system where eligibility is based on residence and/or nationality conditions and benefits are financed by general taxation.[35] The introduction of such a scheme —possibly in conjunction with current schemes— would form an important pillar in the regional fight against poverty

Also, given the large number of countries in the region and hence the large number of social protection schemes, a long-term objective might be to create one umbrella social protection scheme in the Caribbean. Whilst there is little doubt that the diversity of member States in the region results in considerable challenges for such an endeavour, the CARICOM social protection agreement can be considered as a first step to creating such a unified scheme; closer interaction among social protection schemes in the region could potentially be achieved within the CSME. However, until labour mobility within the region is increased, the benefits of such an umbrella scheme, as well as those of the current improved portability due to the CARICOM social protection agreement, will remain limited.

(Original: English)

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[35] Such schemes seem to be successful in Argentina, Bolivia, Brazil and Chile where coverage rates are relatively high. The introduction of such a non-contributory pillar now forms part of the World Bank's revised pillar approach on pension schemes (Gill, Packard & Yermo, 2005). The initial three-pillar approach (see section III) has seen the introduction of two additional pillars: the non-contributory universal pillar and a non-financial pillar corresponding to social policy, as expressed by the availability of housing, health care and other social factors.

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KEYWORDS

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Strengthening a fiscal pillar: the Uruguayan dual income tax

Alberto Barreix and Jerónimo Roca

This paper presents the new system of dual taxation on income that has been introduced in Uruguay to replace the incomplete schedular system applying before. The new system strengthens a pillar of taxation defined as broadly based and capable of generating substantial and stable tax revenues in a country where 60% of fiscal income is consumed by pension and interest payments; in addition, the new system redistributes some 2.5% of total household income. The paper describes the development of the system for taxing income, focusing especially on the four changes it underwent during the twentieth century. It also compares the different models of income tax in use today: (i) the traditional synthetic model, based on the Haig-Simons definition of income; (ii) the flat rate model, derived from Hall and Rabushka's consumption tax; (iii) the Nordic dual model, which provides for separate taxation of capital income at a fixed rate and earnings at progressive rates; and (iv) the Uruguayan dual model.

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I
Introduction

Since July 2007, Uruguay has been applying a new income tax model that is dual in character. This article describes the new model, explains the need for it in Uruguay and analyses its redistributive capacity.

The subjects dealt with in the remaining sections of this article are as follows. Section II presents a brief historical review of income tax, whose structure was adapted to the political, economic and social changes of the twentieth century.[1] Section III analyses the different models of income tax currently in use: the traditional synthetic model, based on the broad Haig-Simons definition of income; the flat rate model, with its roots in the Hall-Rabushka consumption (cash flow) tax; the Nordic dual model, which has separate taxation of capital income at a fixed rate and earned income at progressive rates; and, lastly, the "Uruguayan style" dual model, which takes this central idea of the Nordic dual model and incorporates elements of simplicity taken from the flat rate model. Section IV examines the redistributive capacity of the dual tax introduced in Uruguay. Section V, lastly, describes the pillars of taxation and analyses their potential in Latin America, concluding that there is an urgent need to renew the design of income tax, and especially its personal income component, in the interests of effective collection.

II
A brief historical review

No other tax has undergone the same degree of structural development as income tax (or more accurately, the taxation system applying to income) as it has adapted to changes in international trade and finance, different levels of economic and institutional development, political and cultural conditions, technological advances in the sphere of administration, and different fiscal policy models. This complex flexibility turned it into the largest revenue-raiser in history during the period of greatest revenue growth, the twentieth century.

Unlike value added tax (VAT), an instrument of efficient and fair trade[2] which was pioneered by a fledgling (continental) European community in the belief that economic integration would bring peace after a millennium of conflict, income tax was a result of war and social strain. Following its official introduction in Great Britain in 1799, for almost two centuries this tax was used as an extraordinary income source to defray the costs of war or alleviate social tensions, either directly as an instrument of income redistribution or indirectly for the financing of public expenditure at times of social upheaval. Even the most recent architectures of the late twentieth century, the dual and flat taxes, were motivated by the need to fight for savings and investment in an increasingly competitive globalized economy.

☐ The authors are honorary members of the Uruguayan Tax Reform Commission and proposed the design for the "Uruguayan style" dual income tax in July 2005 in the document "Propuestas para la reforma tributaria de Uruguay 2005". They are grateful to Vito Tanzi, Fernando Velayos, Fernando Díaz Yuberos, Martín Bes, Fernando Rezende, Ernesto Rezk, Bernal Jiménez, Peter Kalil and Luiz Villela for their valuable contributions, and to Patricia Abad for her efficient assistance. This paper does not necessarily represent the views of the Inter-American Development Bank.

[1] Section II summarizes a brief history of income tax included in Barreix and Roca (2006), annex 1.

[2] The idea of VAT can be traced to the papers of the German trader von Seimans in the 1920s and was applied for the first time in France, in the early post-war years. In the version of it where final consumption is used as the tax base following the destination principle, it is possible to avoid taxing investment, exporting taxes or concealing subsidies.

The other great difference from VAT, that other revenue-raising mainstay of our times, concerns simplicity of structure and objectives. In its more than seven decades of development, VAT has had to be simplified[3] on a consumption and credit method basis, and while there are variations in rates and tax bases, the primary objective is still to raise revenue on an essentially neutral basis. Today more than ever, on the other hand, income tax types and rates present the most varied structures, ranging from the most complex comprehensive models to the simplest flat rate systems, with a similar diversity of tax breaks and incentives. These dissimilar formats reflect the unstable equilibrium between the goals of adequacy, efficiency and equity served by this tax.

It is for this reason that income tax was abolished and reinstated a number of times in various forms and in different countries during the nineteenth and twentieth centuries. Continuous wars to consolidate nation-States and expand empires, the pressure of political movements opposed to industrial capitalism, and social and technological change made it necessary to consolidate and renew the tax. During the twentieth century, therefore, income tax, which was the main revenue-raising resource, passed through four major reformulations.

The first was the "technical" introduction of the tax (with the progressive character and administrative form we are familiar with today) in the British budget of 1909 and in the United States federal Income Tax Act of June 1913. The second transformation was the "massification" of the tax during the Roosevelt administration, around the time of the Second World War, in parallel with the spread of democratic participation and public action through social welfare programmes. Sustained by the success of the New Deal and the reconstruction of Western Europe, and by a skewed interpretation of Keynesianism, public spending growth created a huge demand for fiscal resources. This pressure led to a spiral of increases in income tax rates, counteracted by a proliferation of exemptions and special treatment that distorted the structure of the tax. The third phase was a reaction, the "counter-reform" of the Thatcher administration, and to an even greater degree the Reagan administration, in the 1980s, which restored the original composition of the tax by sharply reducing rates and expanding the tax base, without significantly affecting either the tax take or the factor burden. In the fourth reformulation of the early 1990s, lastly, innovations came "from the cold": the dual model of the Nordic countries and the flat tax of the new market economies (countries of the former Soviet bloc) adapted income tax to cope with international competition for saving and investment while maintaining (in part) its progressive character.

1. The four adaptive mutations of income tax in the twentieth century

(a) *Conflicts of region, class and power: the birth of the progressive, personalized income tax*

In June 1913, when 42 states ratified the Sixteenth Amendment to the Constitution allowing the United States Congress to tax income at the federal level, the relationship between classes, between regions and between centres of authority in the country shifted. The approval of income tax marked the end of the "republican system" of taxation built up by the party Lincoln had founded. This system was based on protectionist customs tariffs favouring the industrialization of the country's north at the expense of the south, which was where raw materials were produced. The south did not accept this, but was defeated in the Civil War.

As for class, tariffs represented a subsidy to the great industrial enterprises and a charge on farmers and consumers. In addition, large companies had integrated vertically and made technological advances, tapping a larger market than their European competitors' and an unregulated labour supply fed by large flows of migrants; all this added up to copious profits (Brownlee, 2004; Steuerle, 2004). The "republican system" of taxation was a precursor of the import substitution model, except that the United States succeeded in consolidating a large economic space (market). Latin America, on the other hand, divided into numerous very different jurisdictions, has not succeeded in integrating even to the modest extent of creating subregional free trade areas.

On the other side of the Atlantic, industrialization brought greater democratization (influence of the House of Commons) within the peculiar British political system, leading to the overwhelming Liberal victory of 1906. Under the influence of David Lloyd George, a social reformer, old-age pensions were approved in

[3] It is fair to say that VAT presents problems of (i) revenue reversal, as in the case of financial services or sales of second-hand items; (ii) administration in sectors such as real estate, agriculture and microenterprise; (iii) distribution to lower levels of government, given that it is by nature a national tax; and (iv) regressiveness, as it is a tax on consumption.

1908, and the famous 1911 budget brought in sickness and unemployment insurance of a Bismarckian hue. Politically, the influence of the House of Lords was reduced when the Liberals overcame its opposition to the income tax in the "people's budget" of 1909.

Technically, income tax was driven throughout the twentieth century by the emergence of tax instruments (Tanzi, 2006) based on advances in other disciplines such as bookkeeping and administration. For example, advances with bookkeeping made it possible to record company revenue flows more accurately, and the appearance of large enterprises meant that deductions could be made from the incomes of a growing class of wage earners, reducing administration and compliance costs.

(b) *The new role of the State, the predominance of fiscal policy and the large-scale application of income tax*

President Franklin D. Roosevelt not only revived his country after the greatest crisis capitalism had experienced (the Great Depression) and set in train the military victory over corporative dictatorships around the world, but also expanded the goals and framework of State action, expressing them in a new social contract, the New Deal. One result was an expanded role for the State in stabilizing the economy and thus in running certain activities, and in providing benefits through a more comprehensive social security system.[4] To these two drivers of public spending growth was added the military effort of the Second World War. To finance all this, income tax was applied on a massive scale.

Technically, Simons' definition of economic income (consumption plus change in net wealth) prevailed from the 1930s onward, and this made it possible to establish progressivity with redistributive effects and horizontal equity.

Continually rising rates, accompanied by a shrinking of the tax base due to the introduction of tax breaks and loopholes (whose purpose was to avoid possible negative effects on saving, the labour supply and venture capital investment), were characteristic of the federal income tax during the Roosevelt administration and were to dominate the tax landscape of the developed Western economies for the next 40 years.

In summary, the (reactive) increase in fiscal revenues was once again a consequence of growing demand for public infrastructure and social services stemming from the political maturation of the industrial revolution, and of the war effort. Between 1920 and 1960, on average, fiscal pressure more than doubled in the developed countries, total public spending grew by over 50% and social spending trebled (table 1). And income tax responded once again, growing almost out of recognition but reaffirming its capacity to adapt to social changes and take advantage of technological innovation.

(c) *The "counter-reform": a return to lower rates and a broader base*

From the immediate post-war period to the late 1970s, State activity expanded unceasingly with reconstruction in Europe and the "Great Society"[5] project in the United States. Sustained by an exaggerated version of Keynesianism and the early growth of the planned economies, it took fiscal pressure to levels of close to 50% of gross domestic product (GDP) and upper marginal income tax rates to 90%. The reform of this tax in the United States in 1986, like the earlier reforms by the Thatcher administration in the United Kingdom, broadened tax bases and reduced tax expenditure, particularly "corporate welfare" for large enterprises, while at the same time lowering rates in what constituted a return of income tax to its roots.

One of the most important reasons for reducing very high tax rates in developed countries (averaging over 70% in the 1970s) was to sustain saving and investment in an increasingly open world. These countries had been liberalizing trade and finance for over a quarter of a century. Average customs tariffs were below 5% and trade diversion had also diminished, although there were still some non-tariff barriers affecting agricultural products in particular. Lower tariffs, especially for manufactures, led to a gradual deindustrialization of the developed countries, while at the same time international competition was increasing.

It is important to realize that trade and financial liberalization was also influenced by the need to support the new dynamic sectors ("new economy"). With liberalized trade and less customs protection, the profitability of the manufacturing sector declined. Broad-based income taxes with low rates favoured

[4] The Roosevelt administration promoted the idea of State protection to provide individuals with at least a minimum level of welfare (in respect of poverty, unemployment and pensions) throughout their lives, adding functions to the Hamiltonian version of government that prevailed in the United States.

[5] It aimed for an end to poverty and social injustice (Lyndon Johnson) to build on Roosevelt's mass social security programme.

TABLE 1

Developed countries: Government revenues and total and social public spending,[a] around 1870 and selected years of the twentieth century
(Percentages of gross domestic product)

	Government revenue				Total public spending				Public social spending			
	Circa 1870	1920	1960	1996	Circa 1870	1920	1960	1996	Circa 1880	1920	1960	1995
Australia	17.8	19.4	24.4	35.0	18.3	19.3	21.2	35.9	1.1	2.8	7.4	14.8
Austria[b]	…	9.0	37.9	47.8	10.5	14.7	35.7	51.6	...	3.7	15.9	21.4
Belgium[b c]	11.6	17.0	30.3	49.8	…	22.1	30.3	52.9	1.3	2.6	13.1	27.1
Canada[b]	4.1	16.6	26.0	42.7	…	16.7	28.6	44.7	1.3	1.3	9.1	18.1
France	15.3	17.9	37.3	50.3	12.6	27.6	34.6	55.0	1.3	2.4	13.4	26.9
Germany[b]	1.4	8.6	35.2	45.3	10.0	25.0	32.4	49.1	2.0	7.5	18.1	24.9
Holland[b c]	...	11.8	33.9	47.3	9.1	13.5	33.7	49.3	1.5	2.5	11.7	25.7
Ireland	9.6	23.2	27.5	36.5	...	18.8	28.0	42.0	…	7.0	8.7	18.3
Italy	12.5	24.2	24.8	46.2	13.7	30.1	30.1	52.7	0.6	1.7	13.1	23.7
Japan	9.5	…	18.8	31.7	8.8	14.8	17.5	35.9	0.3	2.3	4.1	12.3
Norway	4.3	11.5	32.4	51.4	5.9	16.0	29.9	49.2	1.2	3.9	7.8	27.5
Spain[b c]	9.4	5.8	18.7	39.0	...	8.3	18.8	43.7	0.3	1.7	13.9	19.0
Sweden[b]	9.5	7.2	32.5	62.1	5.7	10.9	31.0	64.2	2.0	3.6	10.8	33.1
Switzerland[b]	…	3.8	23.3	36.4	16.5	17.0	17.2	39.4	2.8	2.2	4.9	18.9
United Kingdom	8.7	20.1	29.9	37.2	9.4	26.2	32.2	43.0	1.2	6.2	10.2	22.5
United States	7.4	12.4	27.6	31.6	7.3	12.1	27.0	32.4	1.1	2.2	7.3	13.7
Average	9.3	13.9	28.8	43.1	10.7	18.3	28.0	46.3	1.3	3.4	10.6	21.7
Growth %		*49%*	*107%*	*50%*		*72%*	*53%*	*65%*		*160%*	*216%*	*105%*

Source: Tanzi and Schuknecht (2000) and Lindert (2004).

[a] Includes poverty and unemployment relief, education, pensions, health care and housing subsidies.
[b] The figures for Austria, Belgium, Canada, Germany, Holland (later the Netherlands), Spain, Sweden and Switzerland are for central government only up to 1937.
[c] The figures for Belgium, Holland (later the Netherlands) and Spain are for central government only up to 1920.

risk-taking in the new businesses: finance, knowledge technology and entertainment. Thus, investment opportunities increased for higher-income groups and bureaucracies became more active, winning acceptance for the abolition of particular incentives (privileges).

The rate reductions applied in the 1980s in these two leading, harmonized and growing markets led to a realignment of income tax around the world in an increasingly intertwined global economy. Thus, in one decade the average reduction in top marginal personal income tax rates was almost 34%, while the reduction for corporation tax was almost 28%. Yet the fiscal yield and the tax burden on factors of production remained virtually unchanged.[6]

In summary, the old principle of progressive taxation through income tax was asserted without loss of revenue during the Reagan administration, harmonizing with the revolt against the enlargement of the public sector.[7] Although the growth of government was checked during the 1980s, however, fiscal pressure increased by 50% between 1960 and the end of the twentieth century, while public social spending doubled (table 1).

[6] Boscá, García and Taguas (2005) analysed average effective tax rates for capital and labour using a database for 21 countries of the Organisation for Economic Co-operation and Development (OECD) in the 1965-2001 period. What the analysis shows is that the tax burden in the United States has risen since 1986 for both capital and labour, although the tax burden on labour grew by 13% more; in the United Kingdom, meanwhile, both rates fell up to 1997. In the other OECD countries, tax burdens on factors of production changed only very moderately. Data from the OECD and European Union (15 countries) also reveal a slight increase in the income tax take: between 1979/1980 and 1989/1990, it rose from 12.48% and 12.51% of GDP, respectively, to 13.1% and 13.8%.

[7] The richest quintile in the United States paid an effective rate of 27.6% in 1980, falling to 25.5% in 1990, while its share of pre-tax income rose by 4.4% in the same period (from 31.7% to 36.1%).

(d) *The innovation "from the cold": competitiveness without loss of equity*

In the last decade of the twentieth century, for reasons of efficiency and administrative convenience, the Nordic economies, which are among the world's most competitive, introduced a dual system of taxation giving different treatment to income from capital (both saving and investment), which has become increasingly mobile. The Nordic countries formalized "dual income tax", but it is only fair to acknowledge, as will be seen, that most tax laws had already introduced some degree of duality, making the treatment of capital gains and interest more favourable.

In the new market economies, meanwhile, income tax was turned into a single rate (flat) tax for income of all kinds, with a high exemption threshold that conferred vertical equity upon the tax while releasing a large percentage of the population from the obligation of paying it. Combined with the small number of permissible deductions, this considerably facilitated the work of newly created tax administrations. The flat tax was introduced in Estonia in 1994, but became more visible when the Russian Federation adopted it in 2001. Lithuania and Latvia followed their Baltic neighbour in the first wave of this tax and after 2004 it also spread to Slovakia, Georgia, Rumania and Ukraine.[8]

For the first time, change has been led not by the major powers but by small economies whose sights are set on international competitiveness rather than on some external or internal political enemy. The purpose of these changes is to maintain the progressivity of the tax and its ability to raise funds for the financing of social policies (especially growing pension spending) and to simplify compliance and administrative oversight (given the weakness of institutions and the disadvantages they work under by comparison with large multinational and regional corporations, since effective cooperation between jurisdictions is lacking). This latest development in the structure of the tax, in its dual and flat forms, will be analysed in greater detail in the following section.

III

Different models of income tax

In the world generally, and in Latin America in particular, a very wide range of income tax models coexist for all three components of the tax: personal, corporate and international. The range runs from Mexico with its Haig-Simons type income tax system that includes worldwide income, sophisticated taxation of inflation-adjusted capital income and full integration between personal income tax and corporation tax, to Paraguay with an almost flat tax presenting a rate of 10% on personal incomes (the same as the general VAT rate) and 20% on corporate income of Paraguayan origin.

There now follows a comparative analysis of the four income tax models in use: the synthetic (or comprehensive) model, the flat rate model, the Nordic dual model and, lastly, the Uruguayan dual model.

1. Synthetic income tax

This income tax structure, also known as integrated tax, combines (integrates) all the incomes of the taxpayer (the individual or family) and taxes them in accordance with a structure of progressive marginal rates applied to income brackets. The tax follows the Haig-Simons broad definition of income: consumption plus change in wealth over a given period.

The theoretical advantages of this model are clear although, as will be seen later, serious doubt has been cast over them in practice. Among these advantages are: (i) including "all" income (Haig-Simons broad definition), giving equal treatment to income from employment and capital and allowing deductions in the tax base and reductions in the tax amount to be paid facilitates personalization of the tax and serves the interests of horizontal equity (i.e., taxpayers with the same payment capacity actually do pay the same amount) and (ii) conferring progressivity on the tax by means of progressive marginal rates (vertical equity), assuming the tax authority collects it effectively, even at high marginal rates.

[8] Flat rates vary from country to country, ranging from 12% to 33% for personal income tax (with different personal deductions for the taxpayer and per dependent) and from 16% to 37% for corporation tax.

As we have said, though, the facts have cast doubt on these virtues of synthetic personal income tax. For example, its application has usually been associated with "pick and choose" deductions whose purpose is to encourage particular forms of behaviour. In other words, the government indicates what types of activities are to be favoured,[9] in accordance with its policy decisions, and the individual chooses. Leaving aside the issue of whether it is right for the tax system to be used to encourage particular types of behaviour among economic agents, it is clear that a larger number of deductions means a smaller tax base, so that marginal rates have to be higher if revenue loss is to be avoided.

If account is also taken of the opportunities that financial liberalization provides for capital, the most mobile factor, then the stage is set for an outflow of savings. When financial capital (savings) is taxed at very high marginal rates (the marginal rate is what influences the decision to save), those receiving the income from it, who belong to the wealthiest strata, tend to shift savings to jurisdictions with low or zero taxes. This destroys both horizontal and vertical equity.[10] As will be seen, the dual income tax model of the Nordic countries can be viewed as a response to this flight of savings associated with personal income tax.

This problem is compounded by the administrative complexity of synthetic personal income tax. For example:

(i) the welter of deductions generates high administration and/or compliance costs;

(ii) to prevent the unintended incentives of traditional taxation (double taxation of dividends, first at the corporate and then at the personal level), different mechanisms have been sought to integrate corporation tax and personal income tax, which creates administrative difficulties; and

(iii) correcting excessive progressivity when incomes are irregular also creates difficulties in determining tax periods.

2. The response to the administrative complexity of synthetic taxation: the flat tax

Given the administrative complexity of synthetic personal income tax, and to correct the scope for arbitrage created by the difference between corporate and personal income tax rates, Hall and Rabushka (1983 and 1995) proposed a combination of two taxes with the same rate:

(i) a tax on the real financial flows of companies (cash flow type), i.e., on sales (including exports) minus wages, inputs and investment (which can be deducted in full at the time it is carried out), and

(ii) a tax on wages, with a non-taxable personal allowance to provide a degree of progressivity despite the tax being levied at a flat rate.

Saving is not tax-deductible at the time it is carried out, nor is the yield on it taxed subsequently. That is, there is no tax on interest, dividends or capital gains, and companies cannot deduct interest paid.[11] To put it more clearly, banks do not pay corporation tax under this system. It is easy to show that, from a life cycle perspective, this design taxes consumption.[12] Furthermore, it acts as a consumption base VAT working on the origin principle and calculated by the subtraction method.

The only major similarity between the flat tax introduced in some countries (Estonia, Lithuania, Latvia, Russia, Serbia, Ukraine, Slovakia and Rumania) and Hall and Rabushka's system is the existence of a flat tax on wages. The main differences, meanwhile, are in (i) the method of establishing the tax-exempt allowance; (ii) the fact that some have taxed capital income and others have not; and (iii) the fact that they have all kept the traditional corporation tax, and not necessarily at the same rate as the tax on earned income.

Although a long way from Hall and Rabushka's proposal, the flat tax applied does simplify administration. For example: (i) the application of withholding tax is more straightforward; (ii) the problem referred to earlier of excessive progressivity when incomes are irregular is done away with; (iii) there are fewer incentives to shift income between related taxpayers (spouses),

[9] In our view, there are basically two types of deductions (or credits): those that aim to mitigate the effect of the income tax on saving, and those that give privileged treatment to activities believed to have positive externalities (health care, education, etc.), although targeted spending is acknowledged to be the most efficient option.

[10] The special deduction for wage-paying employment applied in many countries is a form of compensation and an implicit acknowledgement of this inequity.

[11] Interest is a transfer that does not generate value added if it takes place between residents. When it is not deductible, taxation ceases to be a consideration in assessing the optimum financial mix.

[12] A tax on wages over the whole life cycle, assuming no stock of savings remains at the end, is equivalent to a consumption tax at present value. If savings do remain, this observation holds true if an inheritance tax is added.

although they do not disappear completely owing to the existence of the personal tax allowance; and lastly (iv) if the corporation tax rate is made the same as the rate for earned income (as in the Slovak Republic and Rumania), there is no longer an incentive for people to set up companies to reduce the tax burden on their economic activities.

As Keen, Kim and Varsano (2006) point out, the greater simplicity of income tax in these countries has nothing to do with its flat rate structure. What they have done is to set a personal allowance level that is high enough to leave a large percentage of the population outside the tax net, and allow only a limited number of deductions.

The main problem with the flat tax is that the rate needed to maintain the pre-reform tax take is too high for capital income. As a result, this flat tax, like the synthetic tax, displaces saving (i.e., causes capital flight).

3. The answer to capital flight: "dualization" of the synthetic tax and the dual tax of the Nordic countries

If Hall and Rabushka's proposal can be seen as a response to the administrative complexity of synthetic personal income tax, the dual system of income tax applied by the Nordic countries can be seen as a response to the capital flight also associated with the synthetic tax. Strictly speaking, some degree of duality began to be applied in the treatment of capital gains and interest during the 1980s as a first response to this mobility of savings. In the case of capital gains, most countries established a differential rate below the top marginal rate of personal income tax. The United States is a typical case: capital gains made over a period greater than a year are taxed at a flat rate of 15%. As for interest, developing countries began to establish a schedular system with lower rates. This was done in Latin America by Argentina, Brazil, Costa Rica and Nicaragua, for example.

In the Nordic countries (Denmark, Finland, Norway and Sweden), the flight of savings was compounded by the problem that their integrated systems had much higher marginal rates than those of other countries (up to 73% in Denmark and Sweden), while at the same time the tax base was narrow because of special treatment and exemptions for certain types of capital income and full deduction of interest payments (mortgage interest in particular) at these high marginal rates. Special treatment for capital income was part of a (disorderly) attempt to make their tax systems more attractive and prevent the flight of savings because of a lack of cooperation between tax administrations. But the integrated system thus designed contained strong incentives for avoidance through tax planning, produced a negative yield on capital income and was more progressive in theory than in practice (Picos Sánchez, 2003).

Consequently, between 1987 and 1993 the Nordic countries formalized the dual income tax. Basically, this gives separate tax treatment to earned income (taxed at progressive rates) and capital income (taxed at proportional rates), whether from business operations or passive investment. As figure 1 shows, the Nordic dual tax "anchors" the rate applicable to corporate income and capital income (around 30%), which in turn is the lower rate for the tax on earned income, this being taxed progressively up to rates of around 50%.

With this design there is no scope for arbitrage, either by abusing capital income to obtain business income (both taxed at the same rate) or by passing off business income as earned income (paying oneself a salary instead of collecting dividends). Nonetheless, physical persons with mixed incomes (own-account workers, sole proprietors and partnerships) do have a strong incentive to pass off their earned income as business income. Many experts regard this as the Achilles heel of the Nordic dual system.

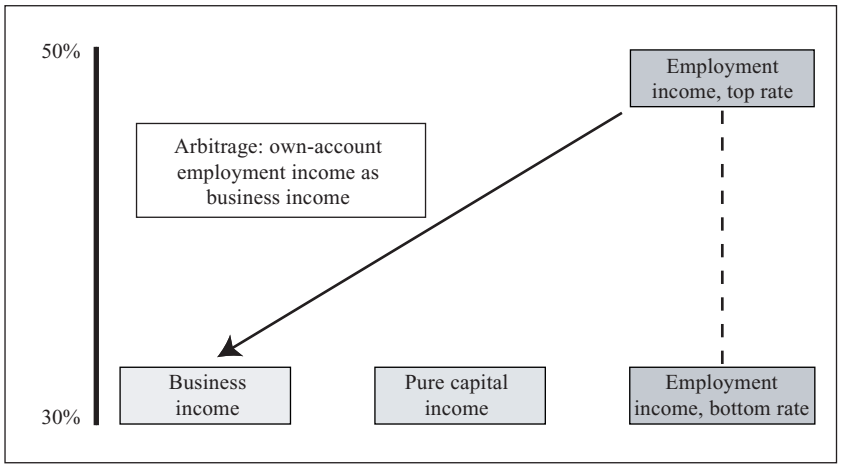
Something similar is true of Chile, where business income is subject to a system of taxation based on withdrawals: retained profits are taxed at 17%, while distributed profits, which are included in the synthetic personal income tax along with the taxpayer's other income, may be subject to the top marginal rate of 40%. This large difference creates a strong incentive to retain profits. According to data from the Chilean Internal Revenue Service (SII), there are more than 30,000 investment companies created exclusively to administer retained profits, and over 50% of undistributed profits accumulate in companies of this type. This "deferral cost" (more crudely put, personal income disguised as business income) is over 2% of GDP, while the tax take from personal income tax is somewhat below that figure (SII, 2006). That so much tax should be foregone is surprising considering that tax expenditure is only 0.6% of GDP for corporation tax and 0.9% for VAT, which collects 8.5% of GDP.

4. The Uruguayan dual income tax

Contrary to what is usually claimed, Uruguay already had a personal income tax before the tax reform that

FIGURE 1

Nordic dual income tax



Source: Prepared by the authors.

came into force in July 2007; more precisely, it had an incomplete schedular type income tax system whereby different taxes were applied to particular types of income at different rates, leaving other incomes unaffected. For example, the personal receipts tax (impuesto a las retribuciones personales—IRP) affected wages, pensions and unemployment insurance; the commissions tax (impuesto a las comisiones) affected a large number of non-professional service providers (customs agents, currency dealers, salespeople, etc.); the income of sole traders was subject to corporation tax. However, other income, such as that from professional services, interest, rent and capital gains, was not taxed.

These taxes on income were supplemented by a number of lesser taxes that were inefficient (causing distortions) and/or expensive to administer and comply with. Many of them came out of the continual "fiscal reforms" of the 1990s —actually minor adjustments that worsened the quality of the tax system. In the 13 years from 1990 to 2002, 13 taxes were introduced, or exactly one a year.[13] The introduction of the dual tax meant that most of them could be repealed.

The need to resolve the design problems of the incomplete schedular income tax system was one of the reasons for overhauling it. These problems included the following:

(i) the system was not comprehensive, i.e., did not cover all income. This was a clear violation of the principle of horizontal equity (same treatment for taxpayers with the same ability to pay);

(ii) it did not attain vertical equity, since most earned incomes, including income from businesses, were taxed at high rates, while most types of capital income, going predominantly to the higher-income strata, were exempt.

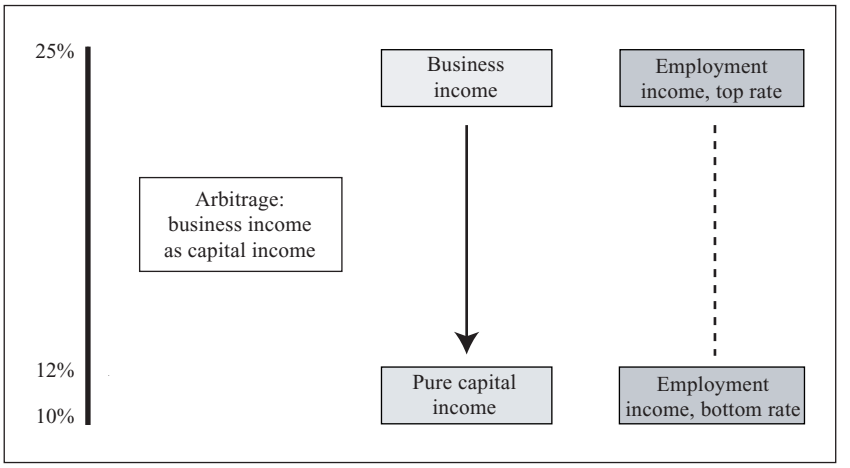
(iii) because the system consisted of an assortment of taxes with different bases and different rates, it created numerous opportunities for arbitrage, one example being back-to-back loans whereby business owners lent money (interest exempt) through a third person to their own company (interest deductible). This is reflected in the ratio between corporate income and assets in 1993-1997: while this ratio averaged about 3.5% for industry and services, the average for banks was 0.08%, i.e., less than 1‰ (Barreix, 2003).

The new Uruguayan dual income tax takes from the Nordic dual system the core idea of taxing earned income separately (at progressive rates) from capital income (proportional rate). In other words, it establishes a lower tax rate for capital yields (interest, dividends and profits, rents, capital gains) which is the same as

[13] To name a few: social security financing contribution tax (COFIS, a kind of wholesalers' VAT), bank asset tax (IMABA), financial system oversight tax (ICOSIFI), credit card tax, sportsmen's transfer tax, forced sales tax, lottery tax, tax on the sale of movable property by public auction.

FIGURE 2

Uruguayan dual income tax



Source: Prepared by the authors.

the bottom marginal rate for earned income. This rate is the "anchor" of the system, the lowest rate at which income begins to be taxed.[14] In turn, the top marginal rate on earned income is the same as the rate for (net) business income.

The political debate in Uruguay led to the decision that the single all-in tax rate[15] on capital incomes would be 12%, and would thus not be the same as the 10% bottom marginal rate on earned income (figure 2). Taxes on earned incomes range up to 25%, which is also the rate for business income.

The Uruguayan dual rate, therefore, limits the scope for arbitrage offered by the Nordic dual system, to the point where physical persons providing professional services or obtaining business type incomes are free to choose whether to pay corporation tax or personal income tax. The system is designed so that, for example, self-employed taxpayers can choose between paying as businesses at a nominal rate of 25% on net income (after deduction of all admissible business expenses) or paying as physical persons under the system of earned income brackets, whose top marginal rate is also 25%; in this latter case, they cannot discount business expenses but only personal expenses (social security contributions, payments for their children's health care and a set percentage of 30% for expenses). Self-employed taxpayers who are "large" (employing professionals and having a substantial infrastructure, for example) will undoubtedly choose to pay tax as corporations to be able to deduct their expenses. Those who are "small" may be better off paying as physical persons, something that makes economic sense given that labour is bound to be the main factor of production in their work (and the system does not set out to punish them by taxing them as though they were acting predominantly as employers). This is not arbitrage; for arbitrage to exist, there has to be a dominant strategy whereby the taxpayer always gains by dissimulation.

Meanwhile, the possibility of arbitrage between business income and gross capital income is resolved by the customary rules of corporation tax.[16] The solution the reform opted for to prevent arbitrage when interest (taxed at 12%) is deducted to calculate

[14] It is recognized that capital gains and royalties are not gross income. Accordingly, Barreix and Roca (2005) proposed that they should be taxed at a higher rate (15%), but administrative considerations, particularly as regards international income, led to a flat rate being adopted. It was also proposed that technical assistance from non-residents and dividends paid abroad should likewise be taxed at this rate.

[15] The deduction at source is final and releases the taxpayer from any obligation of declaration or identification.

[16] By applying the payment credit method to retained capital income, together with thin capitalization rules for interest and/or deduction limits for capital income when business income is calculated.

business income (taxed at 25%) was to require that the deduction matched the proportion between the all-in withholding tax rate applied to capital and the business income rate (i.e., 12/25).

Lastly, the Uruguayan dual system follows the flat tax in setting a tax allowance that leaves a large proportion of the population (60%) outside the tax net and in allowing only a small number of deductions, thereby facilitating administration and preventing the erosion of the tax base (and the lobbying) that are a feature of the synthetic model, especially in Latin America.[17]

The reform of personal income tax in Spain, which was formulated in 2006 and came into force on 1 January 2007, implemented a dual model closer to the "Uruguayan style" dual tax than to the Nordic dual tax. The lowest rate at which income begins to be taxed is for capital income (18%), and is close to the bottom marginal rate for earned income (24%). The top marginal rate on earned income, meanwhile, is 43%; given the deductions allowed and the tax on dividends, this rate discourages physical persons from setting up as companies (taxed at 30%) to conduct their economic activities. Regarding the possible abuse of interest in obtaining business income, reliance is placed on thin capitalization rules.

At this point in the analysis of taxation models, it is worth asking why a dual system was chosen for Uruguay. The answer is that the decision was influenced by reasons of an administrative nature and by considerations of efficiency.

Among the administrative reasons are the following: first, at a time when MERCOSUR is still incomplete, Uruguay is obliged to follow a "small country" strategy that aims to capture external savings, by contrast with the "big country" strategy followed by Argentina and Brazil, whose aim is rather to secure foreign direct investment. This strategy does not permit high marginal rates like those of the traditional synthetic model. Similarly, the flat rate necessary to generate the same amount of income tax revenue (from companies, individuals and non-residents) as the Uruguayan dual tax is expected to yield would be around 19%; for capital income this rate would be too high, encouraging the flight of savings.

Second, the low quality of tax administration in Uruguay means that the new income tax system has to be straightforward. The model approved is easy to comply with and oversee because:

(i) capital income, whether received by residents or non-residents, is taxed at a flat all-in withholding rate;
(ii) 60% of the total population are left outside the income tax net, so that a fifth of the population that was affected by the personal receipts tax (IRP), now abolished, will be unaffected by the dual tax; in addition, 80% of this tax will be paid by the wealthiest 20% of the population;
(iii) it allows few deductions (just three: social security contributions, health insurance contributions and deductions per child or dependent), which are easy to calculate;
(iv) it prevents tax arbitrage between taxpayers' different income types and/or legal status, thereby reducing incentives for evasion or tax-driven changes in saving portfolios; and
(v) it raises more revenue than the incomplete schedular tax, making it possible to do away with inefficient taxes (IMABA, COFIS and others) and thus simplifying the system.

Third, the proposed design allows Uruguay to retain bank (tax) secrecy without being regarded as a tax haven.

It should be stated here that we are not supporters of bank secrecy. It creates information asymmetry, leading in turn to market failure (Stiglitz and Grossman, 1980), by depriving partner countries of the ability to apply taxes or combat fiscal fraud and thereby finance part of their public spending. In essence, this means exporting a tax base (Tanzi, 2001). However, we believe that the current situation in MERCOSUR forces Uruguay to use tax (bank) secrecy as a negotiating tool. The fact is that as long as MERCOSUR is not perceived as a consolidated customs union (it does not have a common trade policy, it lacks a serious dispute resolution system and customs controls are abused), investment will tend to go to the largest market, chiefly Brazil and then Argentina, and this will be reinforced by the incentives offered by these countries. For this reason, Uruguay's share of foreign direct investment (about 3%) is significantly lower than its share of the bloc's GDP (about 5%).

[17] In the tax base constituted by earned income, the personal tax allowance is approximately 70% of per capita GDP, i.e., more than twice the value of the basket used to calculate the absolute poverty line. There is no provision for a tax-exempt allowance in the capital income tax base and nor, for reasons of bank secrecy, is offsetting of capital income allowed (other than rents). The deductions authorized in the earned income tax base are contributions to pension plans (both compulsory and voluntary) and health expenditure by the taxpayer and the taxpayer's children while minors, up to a certain limit.

The main criterion used by the Organisation for Economic Co-operation and Development to define tax havens is that they impose low or no taxes on saving income (OECD, 2005). By taxing capital income at substantial all-in rates, the Uruguayan dual tax makes it impossible for Uruguay to be regarded as a tax haven, since it does not meet this criterion. This provides a reaffirmation of legal security, while the all-in tax allows the depositor's identity to remain confidential. The result is to make the country even more attractive for domestic or external savers, who take decisions by assessing the trade-off between returns and security.

Regarding considerations of efficiency, Feldstein (2006) argues that taxing capital income at high rates gives rise to two types of problems:

(i) the loss of efficiency associated with a tax on saving should be measured not by the reduction in its current level but by the drop in the future consumption that today's saving will be able to buy, meaning that it is substantially greater than the loss usually estimated; and

(ii) high taxes on capital income lead to inefficiencies in the allocation of capital. For example, a high rate of tax on dividends discourages their distribution (lock-in effect), with the following consequences: first, it results in a loss of efficiency in investment choices; second, it is a disincentive to discipline for managers, who have privileged access to internal financing; third, it can even lead to a lower tax take than would be obtained by taxing investment (or consumption).[18]

As pointed out earlier, Chile is a case study in this respect. The strong incentive represented by the difference between the rates on undistributed profits (17%) and distributed profits (up to 40%) has led to a situation, according to estimates by the tax administration (SII), in which retained profits total 2% of GDP (SII, 2006). Furthermore, Cantallopts, Jorrat and Scherman (2007) state that retained profits are more heavily concentrated than other income, revealing the loss of vertical equity associated with this design.

IV

The progressivity and redistribution capacity of the Uruguayan dual tax

The need to maintain a tax burden of about 30% of GDP means that indirect taxes (15% of GDP in 2005) and pension contributions (7%) account for a large share of the tax structure, making it regressive. The need to temper these adverse effects on equity is a second reason for introducing a comprehensive, progressive personal income tax, especially given that the limited fiscal revenues available[19] leave very few resources free for financing redistributive public social spending, which is the most suitable instrument. Available fiscal revenue in the country, defined as tax revenues (30.4% of GDP in 2005) minus "inflexible obligations", i.e., social security expenditure (11.4%) and interest payments on the public debt (4.5%), is currently 14.6% of GDP, having been as low as 10% of GDP in 2003.

Some observations should now be made, therefore, on the progressivity and redistributive effect of the new dual personal income tax (impuesto a la renta de las personas físicas—IRPF). The figures given in table 2 are the results of a static microsimulation exercise without behaviour functions, carried out using 2004 microdata from the Continuous Household Survey (INE, 2004). The methodological details of this exercise can be found in Barreix and Roca (2006).

The average rates for both the personal receipts tax (IRP) and the dual personal income tax (IRPF) rise as we move up the income scale from the poorest to the wealthiest deciles. This rise is far more pronounced

[18] Broadway (2005) summarizes the following arguments in favour of reducing the tax on capital income: (i) there is a positive externality when investment is linked to innovation, according to the studies available on endogenous growth; (ii) there is a systematic tendency for saving to be suboptimal, which seems irrational (in practice, it is possible that individuals are acting strategically, anticipating that the government or a philanthropist will come to their aid); (iii) taxing capital income discriminates against households with fluctuating incomes that use saving as a way of flattening out their consumption. In theory, taxing capital income at a lower rate is equivalent to applying different rates to present and future consumption.

[19] See Villela, Roca and Barreix (2005).

TABLE 2

Uruguay: Personal receipts tax (IRP) and dual personal income tax (IRPF), by decile

	Effective average rate (%)		Proportion of tax's revenue paid by each decile (%)	
	IRP	Dual IRPF	IRP	Dual IRPF
Decile 1	0.23	0.10	0.3	0.1
Decile 2	0.70	0.22	1.3	0.2
Decile 3	1.05	0.48	2.4	0.5
Decile 4	1.36	0.91	3.5	1.0
Decile 5	1.60	1.31	4.7	1.7
Decile 6	1.84	1.89	6.4	2.8
Decile 7	2.13	2.73	8.6	4.8
Decile 8	2.51	3.94	12.5	8.5
Decile 9	2.89	6.22	19.1	17.8
Decile 10	3.21	11.23	41.3	62.7
Kakwani index	*0.1973*	*0.3887*		
Reynolds-Smolensky index	*0.0047*	*0.0222*		
Transfer from wealthiest 10%	0.27%	1.86%		
Transfer from wealthiest 20%	0.35%	1.99%		
Transfer from wealthiest 50%	0.24%	1.11%		

Source: Barreix and Roca (2006).

in the case of the dual tax, however, something that is well borne out by the Kakwani index which, unlike the progression of the average rate, is a comprehensive indicator of progressivity.[20] As table 2 shows, the fact that the Kakwani index is higher for the IRPF (0.3887) than for the IRP (0.1973) shows that the former is more progressive.

As regards redistribution capacity, this can be measured using the Reynolds-Smolensky index, a comprehensive indicator of redistribution capacity (table 2).[21] The index value associated with the dual tax (0.0222) is higher than that associated with the IRP (0.0047), meaning that the former causes an improvement in income distribution of more than 2 points of the Gini coefficient, which is greater than the half point improvement in the Gini caused by the IRP, allowing the IRP to be identified as (quasi) neutral. The introduction of the dual tax results in a transfer of 2% of total income (after the IRPF) from the richest 20% of households to the other 80%.

The substantially greater redistributive capacity of the IRPF as against the IRP is also seen when the respective percentages of the tax take from each decile are compared. While the poorest 40% of households pay 7.4% of the IRP, they will pay 1.7% of the new IRPF. Meanwhile, the richest 20% of the population pay 60.4% of the IRP but will pay 80.5% of the IRPF. While the IRP collects 0.87% of GDP, the IRPF will collect about 2.4%.

Following this analysis, we shall conclude with two observations. First, estimation of the effect of the tax system in the European Union (15 countries) on income distribution for 2001 gives an improvement of 2.5 points in the Gini coefficient. When comparing this with the dual tax in Uruguay, which, as we have seen, entails a drop of 2.2 points in this coefficient, it is important to emphasize two aspects that are striking in their own right: the higher tax burden entailed by personal income tax (progressive and redistributive as

[20] Kakwani index = quasi-Gini (personal income tax) - Gini (income prior to fiscal policy). Income prior to fiscal policy, also known as autonomous income, is income that has not yet been affected by taxes or public transfers. The quasi-Gini for tax is calculated much like the Gini for income, but from the tax concentration curve, whence the semantic distinction. If $K > 0$, i.e., if the personal income tax is distributed more inequitably than income prior to fiscal policy, the effect of tax is to reduce inequality in income distribution and it is therefore progressive. If $K < 0$, on the other hand, the tax is regressive.

[21] Reynolds-Smolensky (RS) index = Gini (income prior to fiscal policy) - Gini (income after personal income tax). If $RS > 0$, inequality in income distribution has diminished since the introduction of the personal income tax and this tax will therefore be progressive. The opposite holds if $RS < 0$.

it is) in the European Union, and the large contribution made by it to the total tax revenues of that bloc. The redistributive effect of the new dual tax in Uruguay should therefore not be underestimated.

Second, given that the reduction in indirect taxation resulting from the tax reform[22] will be financed from the proceeds of the Uruguayan style dual tax, what matters is the overall effect of the reform on equity. While the pre-reform tax system was regressive (Kakwani index = -0.0088), the post-reform system is progressive (Kakwani index = 0.0993). Again, while the pre-reform tax system worsened income distribution (Reynolds-Smolensky index = -0.0012), the new tax system clearly improves it (Reynolds-Smolensky index = 0.0167). In other words, the introduction of the Uruguayan dual tax makes the tax system as a whole progressive and redistributive (Barreix and Roca, 2006).

V

The pillars of taxation in Latin America: the need to collect income tax

1. A simple typology of current tax systems

Tax structures are determined essentially by three factors: (i) the country's paradigm of insertion in the international economy; (ii) the level, quality and sustainability of public spending; (iii) the performance of the tax administration in a broad sense.[23] To establish a typology of the different tax systems in operation today, we propose to identify their main pillars (plus complements), by "main pillars" being meant taxes that are capable of generating substantial, stable revenues and are broadly based, as this enhances their neutrality and elasticity.

This typology is dynamic. Thus, for example, import taxes were a pillar of taxation after the crisis of the late 1920s (the Great Depression) in both developed and underdeveloped countries. At that time they collected some 25% of tax revenues, but in today's open economies their revenue-raising capacity has diminished.

In our view, there are now three pillars of taxation and three complements. The three pillars are: (i) income tax (strictly speaking, the system of taxation on income); (ii) general consumption taxes (VAT and other retail taxes); (iii) pension contributions (with the variant of private-sector and mixed systems). The complements, meanwhile, are: (i) taxes on renewable and non-renewable natural resources; (ii) taxes on property (particularly real estate), personal assets and the transmission of wealth (mainly inheritance taxes); and (iii) specific consumption taxes.

2. Strengthening the pillars of taxation

To guide our analysis, we may compare the main taxes underpinning fiscal sustainability in Latin America on the one hand and the Organisation for Economic Co-operation and Development (OECD) on the other. Table 3 shows that the greatest differences between these two groups of countries are in the areas of personal income tax and social security contributions; VAT and corporation tax, conversely, look fairly alike, despite the large disparities in development and income levels between the two groups.

We shall not go into the considerations that, in our view, rule out any prospect of the taxes we have called "complements" becoming pillars of the tax system in Latin America. We shall merely note that natural resource taxes are highly variable (Jiménez and Tromben, 2006), there is a worldwide trend towards the abolition of corporate asset taxes and inheritance taxes, and selective taxes are severely constrained by the scope for smuggling and/or are regressive (the exception being vehicle fuel taxes). And while Latin America still has work to do in developing taxes on property,

[22] Abolition of the COFIS (wholesale VAT of 3%), reduction of the basic rate of VAT from 23% to 22% and of the lower rate from 14% to 10%.

[23] The term "tax administration" is used here in a broader sense than the traditional one, referring to what we may call a "system of tax institutions". This system encompasses not only the internal revenue agency and customs but also other institutions ranging from land and property registries to the judiciary.

TABLE 3

Organisation for Economic Co-operation and Development (OECD) and Latin America: Pillars of taxation, 2004

(Percentages of gross domestic product)

	OECD	Latin America[a]
Tax revenue[b]	35.9	20.2
Value added tax (VAT)[c]	6.7	5.8
Income tax	12.5	3.8
Corporation tax	3.4	2.6
Personal income tax	9.1	1.2
Social security contributions[d]	9.3	2.8

Source: Organization for Economic Co-operation and Development (OECD), Economic Commission for Latin America and the Caribbean (ECLAC), Inter-American Development Bank (IDB) and International Monetary Fund (IMF).

[a] Includes oil revenues in Colombia, Ecuador, Mexico and the Bolivarian Republic of Venezuela, minerals in Bolivia and Chile and hydroelectricity in Paraguay.
[b] Includes social security (pensions).
[c] Includes the tax on goods movements and service provision (ICSM) in Brazil.
[d] Includes contributions to public systems.

particularly real estate and vehicles, the amount these can raise is limited (1% or 2% of GDP).

3. Payroll taxes to finance pensions have no future

We believe that the revenue-raising potential of payroll taxes to finance pensions is almost nil in Latin America. In open, competitive economies with high and rising rates of chronic unemployment (around 10% on average), the non-capitalizable element of pension contributions is just another charge on labour that bears down on wages and/or employment.

In the first place, if the results of the Heckscher-Ohlin theorem are borne out by trade liberalization, the prices of tradable inputs will tend to equalize and countries will export goods that use their abundant factor intensively and import goods that use their scarce factor intensively. At the same time, the Stolper-Samuelson theorem states that a rise in the relative price of a good will lead to a rise in the return to that factor which is used most intensively in the production of the good and to a fall in the return to the other factor. For the Latin American countries, the result in practice is growth in the commodity sector (agricultural commodities and non-renewable natural resources) and a partial decline in the industrial sector, dominated by the Asian countries where labour is abundant.[24] The economic sectors that have traditionally generated jobs in the region, namely industry and formal commerce, have seen their share in the composition of GDP decline in the last 35 years (4.2% and 6.6%, respectively). The factor that has gained is capital (capital-intensive primary sectors) and returns on labour have experienced a relative decline.

At the same time, there is a tendency to replace labour by technology (IMF, 2007). In particular, advances in agriculture, information technology and robotics are reducing the number of unskilled workers. It is clear that workers in Latin America, a region where public education spending is low (less than 3% of GDP) and investment in research and development is paltry (0.3% on average), will find it harder and harder to compete for work and wages with more highly skilled workers not only in the OECD countries but also in the new market economies of the former Soviet bloc and India.

In view of this, and of the past and potential crises in the unfunded pension systems of certain countries, the (public) principle of (intergenerational) solidarity has been supplemented by a (private) system of strict equivalence between contributions and pension levels (individual funded system), with a number of countries opting for mixed or parallel systems. Although pension system pressure is not yet a problem in some Latin American countries whose population pyramid still has a wide base, there must be concerns about the future.

The fact is that, over the course of two generations (1950-1955 period compared to 2000-2005), the gross birth rate has fallen by almost 50% (from 42 to 21 per 1,000 inhabitants) while life expectancy at birth has risen by 38% (from 51.8 to 71.9). The result is that the labour component in the composition of taxpayers will diminish while at the same time the proportion of potential recipients (pensioners) will increase exponentially, and this will be compounded by the burden of pension system debt and the (gross) financial debt of the non-financial public sector, estimated to average 86% and 48% of gdp, respectively.

[24] And which apply policies such as managed exchange rates and investment incentives, among others, and have lower levels of unionization.

To sum up, the tendencies referred to make it very unlikely that payroll taxes to finance pensions can attain the level of revenue required to make them a pillar of the fiscal structure.

4. VAT: good at raising revenue, bad at distributing it

In Latin America, quite a number of attempts have been made to use exemptions and differential rates to give VAT an income redistribution role. In our view, the outcome of these efforts has not only been marginal but has resulted in high tax expenditure that favours the wealthiest deciles, wasting resources that could indeed have had redistributive effects if targeted on public social spending.

The case of Mexico is very revealing in this respect (table 4). Mexico's VAT is progressive even when income is taken as an indicator of well-being. In the richest deciles, for example, 60% of spending is subject to the general rate and just 10% to the zero rate, while for the poorest deciles these proportions are 41% and 38%, respectively. Although the tax expenditure implicit in this design is 2% of GDP, however, its redistributive capacity is slight: after tax there is a transfer of just 0.15% of total income from the richest 50% to the

TABLE 4

Latin America (nine countries): Equity of value added tax
(By per capita income decile)

	Colombia	Ecuador	Argentina	Uruguay	Mexico	Honduras	Costa Rica	Guatemala	Panama
A. Progressivity									
Effective tax/income rate (%)									
Poorest decile	10.8	4.6	11.7	9.5	1.1	12.7	5.4	20.2	4.6
Second poorest decile	8.6	4.2	9.2	8.9	1.6	3.7	4.2	9.1	2.2
Second wealthiest decile	5.4	4.9	7.8	6.8	3.6	2.7	3.5	5.4	1.7
Wealthiest decile	4.7	5.2	6.8	6.1	3.7	2.3	3.0	4.9	1.7
Gini income inequality coefficient, prior to VAT	0.537	0.408	0.549	0.317	0.433	0.570	0.577	0.596	0.636
Quasi-Gini after VAT	0.469	0.445	0.507	0.254	0.547	0.480	0.489	0.460	0.533
Kakwani index (if < 0 => regressive; if > 0 => progressive)	-0.068	0.038	-0.042	-0.063	0.113	-0.090	-0.089	-0.136	-0.104
B. Redistribution									
Gini income inequality coefficient, after VAT	0.541	0.406	0.555	0.322	0.430	0.575	0.580	0.604	0.638
Transfer from poorest 50% to wealthiest 50% (or from wealthiest 50% to poorest 50%)	-0.20%	0.09%	-0.30%	-0.25%	0.15%	-0.25%	-0.16%	-0.40%	-0.09%
Losers	1 to 6 and 9	9 and 10	1 to 9	1 to 6 and 8	8 to 10	1 to 8	1 to 9	1 to 9	1 to 7
C. Who pays the tax									
Poorest 40%	14%	14%	11%	24%	8%	13%	12%	15%	10%
Wealthiest 20%	55%	52%	62%	35%	59%	54%	56%	53%	58%
Wealthiest 20%/poorest 40%	4.0	3.7	5.4	1.5	7.4	4.2	4.8	3.5	5.6
D. Tax expenditure									
As % of GDP	6.0	2.6	1.6	3.2	2.0	2.3	…	2.4	…

Source: For equity: in Colombia, Zapata and Ariza (2006); in Ecuador, Arteta (2006); in Argentina, Gómez Sabaini, Santieri and Rossignolo (2002); in Uruguay, Barreix and Roca (2006); in Mexico, Ministry of Finance and Public Credit (2004); in Honduras, Garriga (2007); in Costa Rica, Trejos (2007); in Guatemala, ICEFI (2007); in Panama, Rodríguez (2007), Barreix and Roca (2007). *For tax expenditure:* in Colombia, 1999 data, Simonit (2002); in Ecuador, 1999 data, Roca and Vallarino (2003); in Argentina, 2001 data, Simonit (2002); in Uruguay, 1999 data, Rossa and Roca (2001); in Mexico, Tax Administration Service (2005); in Honduras, Gómez Sabaini (2006); and in Guatemala, DevTech (2002).

poorest 50%. By contrast, personal income tax, which collects about 2.4% of GDP, has a redistributive effect more than 10 times as great and the "Progresa-Oportunidades" programme of public spending targeted on poverty alleviation achieves a similar redistributive effect to VAT but at one eighth of the fiscal cost. Furthermore, the "progressivity without redistribution" of VAT has a cost: 54% of the benefits of the zero rate go to the highest-income decile and just 3.5% to the poorest. It seems clear, for one thing, that abolishing this benefit would substantially increase revenues, so that the losers could if necessary be compensated out of public spending, preventing any major deterioration in equity.

Section A of table 4 shows that the regressive effect of VAT is moderate, section B that its redistributive effect is almost nil despite strong revenues, and section C that because consumption is concentrated in the highest deciles, exemptions have a very high fiscal cost.

In summary, VAT is a revenue-raising tax and not a redistributive one, which means that it should tend to the greatest neutrality and simplicity possible to ensure compliance and thus establish itself firmly as a pillar of the system, while it needs to be recognized that personal income tax excels all others in its redistributive potential.

5. Income tax: the great shortfall

As was shown in table 3 earlier, the amount raised by corporation tax in Latin America is close to the OECD average: 2.6% and 3.4% of GDP, respectively. As already pointed out, however, revenue from income tax on sole traders is included in this category in Latin America, while in the developed countries it is categorized as personal income tax.

Where corporation tax is concerned, it is a fact that capital mobility has not only brought down nominal rates around the world, but forms of special treatment designed to attract capital have proliferated and these, in combination with tax planning, have eroded the tax base. Economic liberalization and the integration of markets have produced some structural changes in the tax that are not going to be reversed. For example, in 1918 corporation tax in the United States yielded four times as much as personal income tax, which only affected the wealthiest; around 1950 both taxes yielded the same; but by 1980 physical persons were paying about four times as much as businesses, and this remains the case to this day. What we seem to be looking at is a global phenomenon, with relatively weak and non-cooperating national States in a very poor position to tax corporate income.

By contrast, personal income tax in Latin America raises barely 1.2% of GDP on average (see table 3 above). This tax, which is predominantly synthetic, riddled with exemptions and "dualized" in an inconsistent way to the benefit of capital income, is highly progressive but has a very limited capacity for redistribution, as the low revenues yielded by it would indicate. For example, only in Mexico does it bring down the Gini income inequality coefficient by more than 1 point of that coefficient (table 5).

When we are dealing with countries where the income share of the richest 20% is more than five times that of the poorest 40%, it seems clear that a reformulation of the tax, taking into consideration the new forms discussed here, would raise more revenue and thus allow greater redistribution. Indeed, in Uruguay, where income distribution is relatively equitable by regional standards (the share of the richest 20% is 3.6 times that of the poorest 40%), it is estimated that the new dual tax will reduce the Gini coefficient by 2.2%, in line with the developed countries (the transfer from the richest 10% is almost 2% of total income).

It is clear, then, that the great taxation shortfall in the region derives from the situation with personal income tax. It is only fair to acknowledge that it will be impossible to attain the levels of revenue raised by the mass taxes in the developed countries, where average per capita income at purchasing power parity is four times that of Latin America, while financial income is almost eight times as high. It must be realized, however, that our proposal for Uruguay concentrates the tax burden on the two wealthiest deciles, making it appropriate for a region where, as we have pointed out, the richest 20% across Latin America receive some 60% of total income while the poorest 40% receive an average of barely more than 10%. Since open regionalism was implemented in the early 1990s, furthermore, this average ratio of 5.5 to 1 has remained unchanged, even as income has increased by almost 60%.

As a corollary to the considerations set out in this section, there is a vital need for efficient collection of the revenue from the income tax system, especially the personal income component. This component is essential not just as a revenue-raising pillar with the potential for growth to finance ever-increasing physical and social infrastructure needs, but also as the tax with the greatest redistributive capacity. That is a crucial consideration in a region where the world's longest-standing and acutest

TABLE 5

Latin America (10 countries): The equity of personal income tax[a]

	Uruguay (2004)	Colombia (2003)	Ecuador (2003)	Peru (2000)	B.R. of Venezuela (2003)	Honduras (2004)	Costa Rica (2004)	Guatemala (2000)	Panama (2003)	Mexico (2003)
Gini income inequality coefficient prior to the tax	37.6	53.7	40.8	53.5	42.3	56.9	60.2	59.6	63.6	43.3
Gini coefficient after the tax	35.4	53.4	40.3	53.5	42.1	56.4	59.4	59.5	63.1	39.6
Change in Gini coefficient	2.22	0.30	0.45	0.03	0.19	0.50	0.74	0.11	0.53	3.71
Wealthiest decile: % of income prior to the tax	30.00	44.5	29.9	41.2	41.9	45.1	49.4	49.3	51.3	33.1
Wealthiest decile: % of income after the tax	28.20	43.7	29.4	41.1	41.7	44.4	48.7	49.2	50.1	29.7
Change	-1.80	-0.80	-0.50	-0.10	-0.20	-0.76	-0.68	-0.13	-1.18	-3.40
Revenue from the tax, 2004 (% of GDP)	2.4	1.2	…	1.2	0.4	1.3	1.3	0.4	2.0	2.4

Source: Uruguay, Barreix and Roca (2006); Colombia, Zapata and Ariza (2006); Ecuador, Arteta (2006); Peru, Haughton (2006); Bolivarian Republic of Venezuela, García and Salvato (2006); Honduras, Garriga (2007); Costa Rica, Trejos (2007); Guatemala, ICEFI (2007); Panama, Rodríguez (2007); Mexico, Ministry of Finance and Public Credit (2004) and Barreix and Roca (2007).

[a] The years in brackets below the names of the countries are those of the surveys used to prepare the estimates.

income inequality coexists with a high level of poverty.[25] Personal income tax, then, can be an important element of social cohesion in Latin America, since inequality prior to fiscal policy is worsening both in developing countries and in those of the OECD. Tax revenue raised from the highest deciles can be used to finance targeted spending on the lowest, thereby providing opportunities for the least privileged. At the same time, payment of such an individual tax not only strengthens taxpayers' relationship with the State but legitimizes their demands for better public services.

To sum up, in the medium term the taxation basis for fiscal sustainability in Latin America will have just two pillars: VAT and the system for taxing income. To show responsibility, therefore, the region ought to renew the mainstays of its tax system, particularly income tax, during the very favourable upturn stage of the cycle.

(Original: Spanish)

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[25] It is important to realize that while average poverty and indigence levels in Latin America have fallen from 48.3% and 15.3% in 1990 to 41.7% and 12.4% in 2004, the size of the populations living in disadvantaged and critical situations remains very large and places severe constraints on growth and social cohesion (ECLAC, 2005).

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KEYWORDS

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International migration and development: the socioeconomic impact of remittances in Colombia

David Khoudour-Castéras

Remittances to Colombia have grown rapidly over the last few years, and their economic significance is increasing apace. This article provides a detailed analysis of the economic and social effects of these currency flows and draws attention to the potential long-term risks involved. Accordingly, it analyses trends in remittances in Colombia over the last few years, paying special attention to their importance to the country's economy and the socioeconomic characteristics of their senders and recipients. This analysis is followed by an assessment of remittances in Colombia which indicates that, while they may help to improve the situation of the country, they also entail a number of costs that may, in the long term, be detrimental to its economy.

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I
Introduction

Over the past few years, remittances have become the Holy Grail of development studies. The massive amounts of capital sent by migrant workers to their countries of origin appear to bridge many gaps in developing countries, particularly with regard to financing problems that neither foreign direct investment nor development aid can address. There is no consensus, however, as to the actual impact of remittances on development. While optimists view them as the best way to spur economic growth and improve well-being in the world's poorest countries, pessimists regard them as yet another form of dependence which may make matters worse for receiving countries. As is always the case with such questions, the truth lies somewhere between these two extremes and largely depends on the social and economic situation of the receiving country, as well as the manner in which remittances are handled.

The Colombian experience offers particularly useful insights into the impact of remittances on development. The latter have increased rapidly over the last few years, and their economic importance is also growing. Studies on the subject have multiplied as well, perhaps faster than remittances themselves. The issue remains surrounded by controversy, however. The purpose of this article is to provide a detailed analysis of the economic and social effects of remittances and to underscore the potential long-term risks these currency flows entail.

Accordingly, section II analyses trends in remittances in Colombia over the last few years, paying special attention to their importance to the country's economy. An effort is also made to understand the socioeconomic characteristics of those who send and receive remittances. Section III provides an assessment of remittances in Colombia which shows that, while they may help to improve the situation of the country, they also entail a number of costs that may, in the long term, be detrimental to its economy. Consequently, public policy should not focus solely on reducing the cost of sending remittances or channelling them towards investment in production. Rather, it must provide viable development alternatives to reduce the country's economic dependence on these flows.

II
An overview of remittances in Colombia

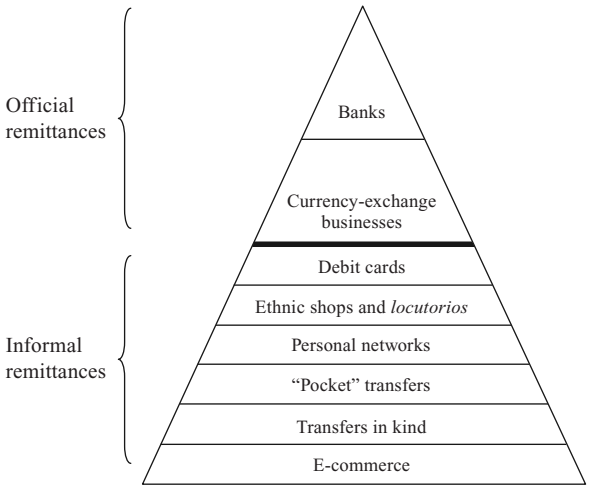
1. A classification of remittances

Remittances may be broadly defined as the portion of migrants' available income which they send back to their countries of origin. These funds can be transferred in a number of ways (see figure 1). In addition to official remittances, which are transferred through banks and currency-exchange businesses, migrants employ a variety of informal channels which enable them to lower the cost of international financial transfers. An informal remittance market dominated by ethnic shops and *locutorios* (migrant service businesses offering cheap international phone calls and other communication services) has thus arisen in the main urban centres that receive large inflows of migrants. In addition to their main business, the owners of these shops also transfer funds for a lower fee than financial institutions charge.

Another informal channel is the creation of a bank account in the receiving country. An emigrant regularly transfers money to this account, and his or her relatives withdraw the desired amounts from an ATM, using a debit card supplied by the migrant. While these remittances do travel through the formal financial system, they are difficult to include in official statistics, since they are not recorded as interpersonal money transfers. Oftentimes, however, the best way to lower or even eliminate transaction costs is to use personal networks —friends or family members travelling to the country of origin who agree to carry cash back with them. Migrants themselves also carry a portion of their remittances with them when they go

FIGURE 1

Classification of remittances



Source: Independent research by the author.

on vacation or when they permanently resettle in their countries of origin.

While remittances are essentially monetary in nature, transfers in kind represent an additional means of transmitting part of a migrant's income. Trips to the country of origin are thus employed as an opportunity to bring gifts to family members. E-commerce has also become an increasingly common transfer mechanism. Migrants purchase goods for their families back home directly from the Internet.

The large number of channels through which remittances are conveyed makes the phenomenon difficult to measure. According to the World Bank, half of all remittances worldwide go unreported (Ratha, 2005), making it even more difficult to measure their impact on development in receiving countries. Notwithstanding these difficulties, this article will attempt to assess the possible economic and societal repercussions of the massive inflow of remittances into Colombia. In order to do so, trends in remittances in Colombia over the past few years must first be analysed.

2. The massive growth of remittances

Colombia has a long tradition of migration. After the country's participation in the Korean War, the United States opened its borders to Colombian workers through the Bracero Programme, and those workers then contributed to the economic expansion of the United States during the 1950s and 1960s. During the 1970s and 1980s, about 500,000 Colombians settled in Venezuela, where labour demand had risen sharply following the oil boom of the 1970s. Migration also increased significantly during the 1990s as a result of both armed conflict and an economic crisis.

Armed conflict in the country has helped increase migration for three main reasons. Firstly, clashes between the participants in this conflict (guerrilla, paramilitary and regular forces) have compelled the civilian population —particularly *campesinos*— to flee combat zones and seek refuge in peaceful areas, either in the country's main cities or abroad. Secondly, the threats which many Colombian families have received from belligerents in the conflict have driven them into exile as a means of escaping their pursuers. Thirdly, this war against civil society has taken a high economic toll. Colombians are indirectly affected by political violence through the economic crisis and unemployment it has generated. The economic crisis worsened considerably during the second half of the 1990s, leading to a strong surge in migration.

As a result of this massive migration process, approximately 3.3 million Colombians —8% of the country's overall population— live abroad, according to 2005 census data (DANE, 2006).[1] Women make up 51.4% of the migrant population, and the median age of Colombians living abroad is 25.4 years. Migrants come mainly from the Valle del Cauca (24.1% of all Colombian migrants), Bogotá (18.7%), Antioquía (11.9%), Risaralda (7.8%) and Atlántico (6.6%). Their main destination countries are the United States (35.4% of all migrants), Spain (23.3%), Venezuela (18.5%), Ecuador (2.4%) and Canada (2.2%).

This strong upsurge in migration[2] has led to a sharp increase in remittances to Colombia over the last few years. Between 1995 and 2006, official remittances increased almost five-fold, from US$ 809 million in 1995 to US$ 3.89 billion in 2006. This makes Colombia the third-largest recipient of remittances in Latin America, after Mexico and Brazil (see table 1). In Colombia, however, remittances do not account for as high a share of GDP (3.3% in 2005) as they do in other countries

[1] The results of the 2005 census are available at the following website: http://www.dane.gov.co/censo/.

[2] According to estimates prepared by the National Administrative Department of Statistics (DANE), the number of Colombians living abroad was 1.7 million in 1990, 1.9 million in 1995 and 2.3 million in 2000.

in the region such as Jamaica (19.0%), Haiti (20.7%) and Honduras (21.2%). Measured as a share of GDP, the level of remittances is higher in Colombia than it is in Brazil, however (1.1%), or in Mexico (2.8%). It has also increased over time (see table 2). Remittances represented only 1% of the country's GDP and 6.9% of its exports in 1990; as of 2005, these figures had risen to 3.3% and 15.9%, respectively.

As of 2006, remittances were the second most important item in the country's current account, behind petroleum but before coal, coffee, ferronickel and emeralds (see figure 2). For three years, from 2002 to 2004, they also exceeded foreign direct investment (see figure 3). The gap between the two was at its widest in 2003, when Colombia took in US$ 3.06 billion in remittances, compared to only US$ 1.758 billion in foreign direct investment. In 2005, on the other hand, foreign direct investment (US$ 10.255 billion) far exceeded remittances (US$ 3.314 billion). This was mainly a result of the sale of Bavaria group to the British-South-African company SABMiller for US$ 8 billion. In 2006, foreign direct investment exceeded remittances, although the gap between the two shrank considerably. This reflects the highly cyclical nature of foreign direct investment. Remittances, in contrast, are much more stable.

TABLE 1

Latin America: remittances, 2005

Country	Millions of dollars	Percentage of GDP
1. Mexico	20 034	2.8
2. Brazil	6 411	1.1
3. Colombia	**3 314**	**3.3**
4. Guatemala	2 993	9.3
5. El Salvador	2 830	17.1
6. Dominican Republic	2 682	9.1
7. Peru	2 495	3.2
8. Ecuador	2 005	6.4
9. Honduras	1 763	21.2
10. Jamaica	1 651	19.0
11. Haiti	1 077	20.7
12. Bolivia	860	8.5
13. Nicaragua	850	16.9
14. Argentina	780	0.4
15. Paraguay	550	7.2
Total, Latin America	*52 608*	

Source: Inter-American Development Bank (IDB, 2006).

TABLE 2

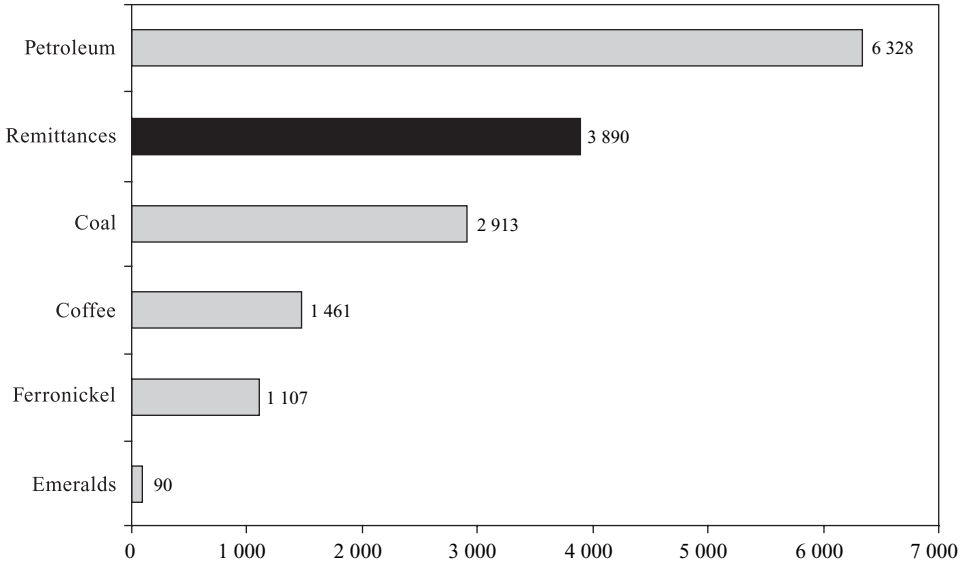
Colombia: Economic importance of remittances

	1990	1995	2000	2005
Remittances (millions of dollars)	488	809	1 578	3 314
Percentage of GDP	1.0	0.9	1.9	3.3
Percentage of exports	6.9	8.0	12.0	15.9

Source: Author's calculations, based on data from Banco de la República.

FIGURE 2

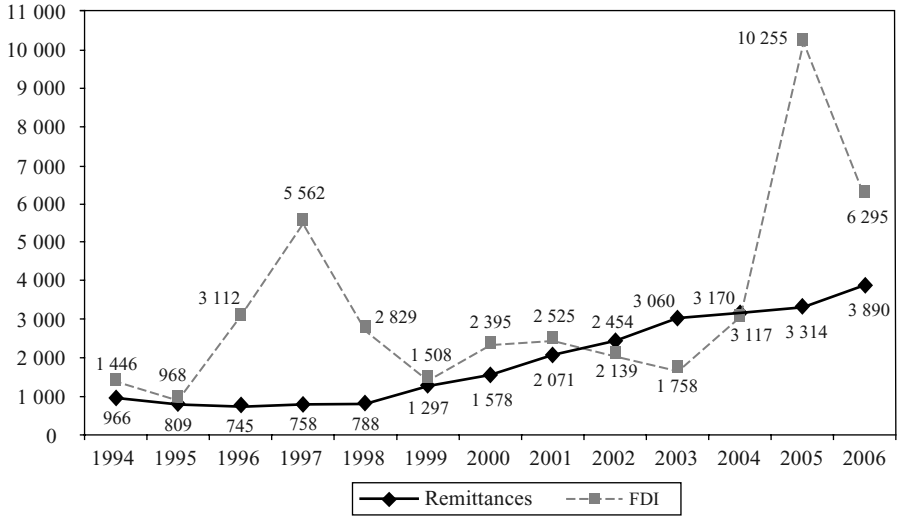
Colombia: main items in current account, 2006
(Millions of dollars)



Source: Banco de la República.

FIGURE 3

Colombia: remittances and foreign direct investment, 1994-2006
(Millions of dollars)



Source: Banco de la República.

3. Senders and receivers of remittances: Who are they?

Over the past few years, several studies have been carried out to develop profiles of those who send and receive remittances, as well as to determine the uses to which remittances are put. The most notable of these studies have been carried out by Garay and Rodriguez (2005) and Gaviria and Mejía (2005). The former received technical support from the National Administrative Department of Statistics (DANE), the Colombian Ministry of Foreign Affairs and the International Organization for Migration (IOM). The study focuses on households in the *Área Metropolitana Centro Occidente* ("Midwestern Metropolitan Area"), which comprises the municipalities of Pereira, Dosquebradas and La Virginia, in the province of Risaralda. The latter consists of an Internet survey which seeks to contribute to a better understanding of the behaviour of Colombians abroad.[3] Despite the limitations inherent in such exercises, these two studies are a useful source of data for the analysis of remittances in Colombia.

According to these surveys, half of total remittances come from the United States and one fourth from Spain. This roughly matches the geographic distribution of Colombian emigrants. About 75% of Colombians living abroad send remittances. Most of those who do so are recent emigrants. The average monthly remittance is somewhere between US$ 240 and US$ 300. Remittances tend to be higher during the first few years after migration, as migrants' finances improve; they begin to decline after about 10 years as families regroup, among other factors. Migrants send money to Colombia primarily because members of their family (spouse, children, parents) remain there.[4] It should be noted that a migrant's schooling affects the pattern of remittances in two opposite ways. On the one hand, better-educated migrants (those who have attended university) are less inclined to send remittances than those who have only attended high school (probably because the families of the former have higher incomes). On the other hand, there is a positive correlation between the number of years a migrant has attended school and the average monthly remittance he or she sends home, since better-educated migrants tend to earn higher incomes.

The average age of remittance recipients is 40. The vast majority of them (76%) are women. Over half of them have no steady job and therefore depend on remittances as their main source of income. Most remittance recipients are, in fact, below the poverty line (64% in the Midwestern Metropolitan Area), which explains why most of the remittances they receive (between 61% and 68%) are spent on recurrent expenses, such as food, clothing, rent or utility bills. Remittances are also used to cover education and health-care costs (10% to 15% each), start businesses (4% to 7%), build up savings (4% to 6%) or buy a home (3% to 5%).

Generally speaking, the massive increase in remittances to Colombia over the past few years has helped to significantly improve living conditions for the families that receive them, increasing their purchasing power and affording them access to a wider range of consumer products and health and education services. In this respect, the impact of remittances has been undeniably positive for households which steadily receive this supplemental income. At the national level, however, their impact is not as clear. Can remittances help finance the development of Colombia? Can these capital flows help reduce inequality and improve living conditions for the overall population? Or do these flows bring with them a risk of dependency that might jeopardize the economy in the long run?

[3] Gaviria and Mejía (2005), in particular, have developed an index of "Colombianness" (or transnationality) which measures a migrant's ties to Colombia. The index consists of six binary variables: membership in a Colombian expatriates' association; sending of remittances; receipt of goods from Colombia; continued affiliation with a Colombian pension fund; telephone calls to Colombia at least twice a week; keeping apprised of events in Colombia via television.

[4] The literature on remittances usually draws a distinction between two types of motives. One is altruism, or a sense of obligation to one's family. In this case, migration is viewed as a family decision. The other motive is risk-sharing. In this case, remittances serve a more individualistic purpose, with migrants expecting help from their families if circumstances change (particularly if they lose their job). In fact, migrants probably send remittances for a mixture of altruistic and individualistic reasons.

III

The role of remittances in the Colombian economy

Remittances affect many different stakeholders (senders, recipients, intermediaries, public authorities and others) and therefore have many different implications for the economy and for society. In addition to influencing the traditional components of aggregate demand, a massive inflow of capital can have repercussions on prices, exchange rates, the formation of human and social capital and income redistribution. Remittances also represent a challenge for financial institutions seeking to attract those resources, as well as for public authorities striving to maximize the benefits and minimize the direct and indirect costs of such flows.

1. Domestic demand

One of the main arguments against remittances is that they are spent mainly on goods to meet basic needs rather than on production. Advocates of this view assert that, since the recipients of remittances save very little and do not invest in business projects, they do not contribute to long-term economic development. It should be noted, however, that the spending patterns of families that receive remittances are similar to those of most other Colombian households; they have nothing to do with remittances *per se*, but are rather a result of the living conditions of the overall population. Furthermore, it is unreasonable to criticize the use that families make of remittances when the main reason why migrants send money is to cover their families' basic needs.

In addition, by contributing to an increase in consumption —that is, to aggregate demand— remittances have a multiplier effect on GDP. In fact, spending by recipient households spurs demand in several sectors of the economy, which then spend more. The initial momentum thus has more than a proportional impact on economic activity. Considering that Colombian households that receive remittances have a savings rate of approximately 5% (Garay and Rodríguez, 2005), this flow of money has a significant multiplier effect. To the extent that trade liberalization is already well under way, however, some demand is directed towards the consumption of imported products, thereby reducing the multiplier effect of remittances.[5]

The construction industry has particularly benefited from remittances thanks, on the one hand, to home purchases by the families of migrants and, on the other, to direct investments in their country by Colombians living abroad. Between 1995 and 2005, homebuilding costs rose by 181%, while inflation fell by 75% (from 19.5% in 1995 to 4.9% in 2005), which suggests that demand was strong in that sector. Housing fairs in the main foreign cities where Colombians have settled, such as those held in September 2005 and October 2006 in New York, in April 2006 in Miami, and in March 2006 and April 2007 in Madrid,[6] have proven to be an effective way to connect migrants with the Colombian real estate market.

Remittances have also contributed to the creation of microenterprises in Colombia, as they have helped to mitigate the problems faced by low-income households in trying to gain access to loans. Remittances have been particularly useful for the purchase of investment goods, such as tools for the establishment of small businesses. Experience has shown, however, that most of these microenterprises are subsistence operations in the informal sector and are relatively short-lived. One of the main obstacles preventing recipients of

[5] The multiplier effect of remittances may be calculated as follows:

$$\Delta Y = \frac{1}{1 - c + m} \Delta R$$

where ΔY is the variation of the product generated by remittances, ΔR is the change in the flow of remittances entering the economy, c is the marginal propensity to consume and m is the marginal propensity to import.

[6] Housing fairs, organized by the *Cámara Colombiana de la Construcción* (Colombian Chamber of Construction, or CAMACOL), are designed to steer remittances towards investment in construction and real estate. They bring together the Colombian communities residing in the area where the fair is held, on the one hand, and building and real estate promoters, as well as financial entities, on the other. These fairs are supported by IOM, the Ministry of Foreign Affairs and the Ministry for the Environment, Housing and Territorial Development. For further details, see: http://www.camacol.org.co/htm/index.asp

remittances from starting their own business is their lack of experience. The State should offer technical assistance, financial information and training. Training programmes could also be offered to migrants in order to encourage them to return.[7]

The massive inflow of remittances has also contributed to the growth of a number of activities that are related, directly or indirectly, to this phenomenon. The rapid growth of the money-transfer and exchange business, in particular, is clearly associated with migration. The number of branches established by Western Union as a commercial money-transfer agent rose from 8 in 1996 to 112 in 2006. Similarly, the air transport industry, including airlines and travel agencies, has experienced strong growth in recent years as a result of the increase in the number of Colombians living abroad. Many of the new migrants are able to travel thanks to the financial support of family members living abroad, who pay part or all of their travel costs and thus help set up a chain migration process.[8]

While it is true that remittances have a positive effect on economic activity, they also make the Colombian economy highly sensitive to migratory cycles. There is a strong correlation between emigration rates and the volume of remittances. Remittances therefore tend to have an anticyclical effect on economic activity: when the economy is in recession, emigration increases, as does the volume of remittances, helping to stimulate the national product. Conversely, a period of strong economic growth leads to a decrease in emigration flows and thus to a smaller inflow of remittances, thereby slowing economic activity. In the case of Colombia, there is a strong negative correlation (-0.76) between the cyclical deviations of GDP and those of remittances for the 1994-2005 period. This confirms the anticyclical nature of remittances. The current resurgence of economic activity in Colombia[9] has been accompanied by a decline in emigration, which may, over the medium term, lead to a drop in the volume of remittances, with the ensuing slowdown of growth.

2. Current account and exchange rate

Remittances can affect the current account in three ways. Firstly, they have a direct impact on the balance of payments, as they improve the balance of invisibles, which is comprised mainly of money transfers. Thus, remittances have helped reduce the external imbalance of the Colombian economy over the last few years. As shown in figure 4, without the money sent by migrants, the current account deficit between 1999 and 2006 would have been worse. In fact, the improvement in the current account that occurred between 2002 and 2004 was basically due to an increase in remittances, without which it would have continued along its downward path. Similarly, remittances have helped curb the deterioration of the current account which has been occurring since 2004.

The second impact of remittances on the current account involves changes in consumer behaviour. Recipients of foreign currency usually adopt ostentatious consumption habits, as evidenced in their purchases of foreign products such as brand-name clothing or household appliances (Terry, 2005). This behaviour tends to spread to their neighbours, who do not receive remittances but who copy these consumption patterns. The effects of "ostentation" and "imitation" lead to an increase in imports, a trend that is encouraged by the openness of the Colombian economy to trade. Thus, between January 2000 and December 2005, imports of goods and services rose by 137.8%, while exports rose by only 91.2%.

Finally, remittances are likely to have repercussions on the current account through their effect on exchange rates (figure 5). A large inflow of money can be expected to lead to an appreciation of the national currency, which may be followed by a loss of competitiveness and a deterioration of the current account (Amuedo-Dorantes and Pozo, 2004). This, in turn, creates the risk of "Dutch disease"[10] (i.e., a shift of economic activity

[7] In Brazil, for example, the *Corporación Official de Apoyo a la Pequeña Empresa* (State Microenterprise Corporation) and Banco do Sul implemented a programme to support enterprises established by Brazilian emigrants of Japanese descent who returned to Brazil after working for several years in Japan.

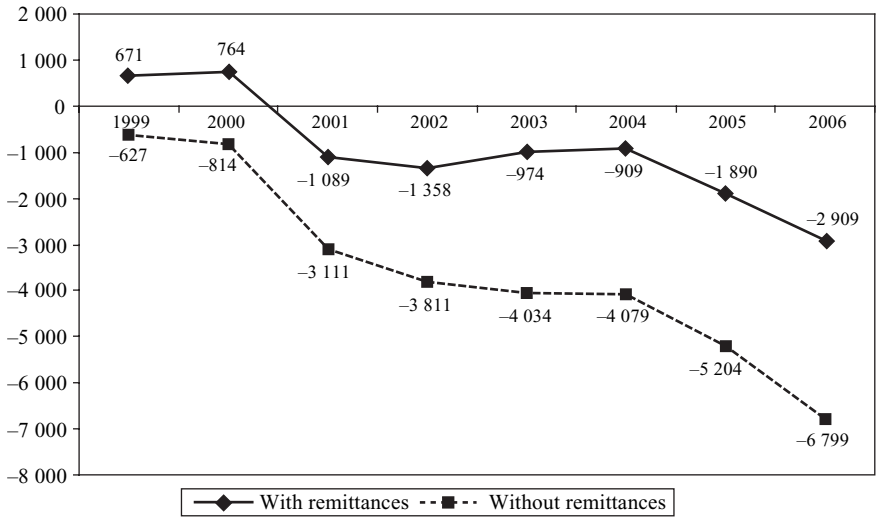
[8] Chain migration is a cumulative migration process based on family ties or ties to a common place of origin. Those who first attempt migration help feed migration flows by providing information on opportunities in the receiving country, sending money to cover the travel costs of future migrants, offering lodging and logistical support to new migrants and facilitating job contacts or access to social services.

[9] With a GDP growth rate of over 4% since 2003 (as of 2006 it was 6.0%), Colombia has achieved better results than its Latin American neighbours (5.3% on average in 2006). The country's unemployment rate fell from an average of 17.7% in 2002 to 12.6% in 2006.

[10] "Dutch disease" takes its name from the negative consequences of the discovery and exploitation of natural gas in the Netherlands during the 1960s. A large inflow of capital leads to a strong trade surplus, which causes the real exchange rate to appreciate and thus hurts the competitiveness of the tradable goods sector. The economy becomes revenue-based, and the structure of production is distorted in favour of non-tradable goods.

FIGURE 4

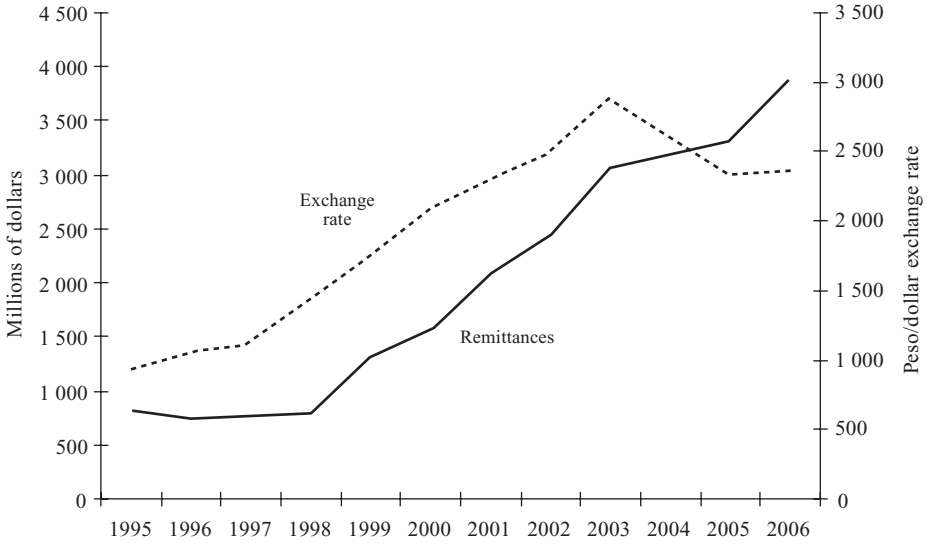
Colombia: current account, 1999-2006
(Millions of dollars)



Source: Author's calculations, based on data from the Banco de la República.

FIGURE 5

Colombia: exchange rate and remittances, 1995-2006



Source: Banco de la República.

towards non-tradable goods as exporters become discouraged). The massive flow of remittances into Colombia in recent years has probably contributed to the strong appreciation of its currency. Thus, between March 2003 and April 2007, the peso fell by 28% with respect to the dollar.

It is difficult, however, to establish a direct link between remittances and the exchange rate. In the first place, although the share of the current account represented by remittances has increased, oil is still the country's chief export, and the rise in prices of this raw material has had a greater impact on the exchange rate than remittances have. Similarly, the high level of foreign investment in Colombia in recent years, which is partly attributable to the acquisition of Colombian firms by large foreign groups, has contributed significantly to the appreciation of the peso. Furthermore, if remittances were the factor that was responsible for the appreciation of the Colombian currency, the peso would have appreciated many years ago. As shown in figure 5, remittances and the exchange rate both rose, side by side, until March 2003. This disproves the argument that remittances affect the exchange rate. On the contrary, it could be argued that the depreciation of the peso has encouraged migrants to send remittances, since every dollar or euro they send means more cash for recipient families. It would appear, therefore, that the idea of remittances causing Dutch disease in Colombia can be discarded, at least for the time being.

3. The labour market

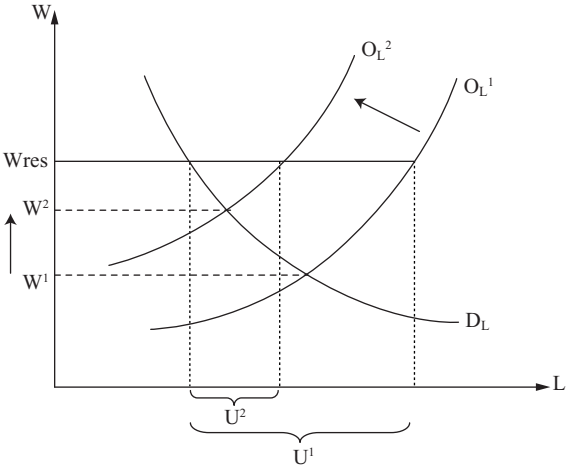
The net impact of remittances on the labour market is ambiguous, as they may reduce the unemployment rate without necessarily improving the employment situation. Remittances can, in fact, have an income substitution effect since, by driving the reservation wage[11] up, they may discourage recipients from seeking work and thus reduce unemployment. In many cases, monthly remittances (which average between 585,000 and 680,000 pesos, at an exchange rate of 2,260 pesos to the dollar as of late 2006) actually exceed the minimum wage in Colombia (408,000 pesos as of 2006). In a way, this has created a "culture of idleness", particularly in regions —such as the coffee belt— that export the most labour. The fact that a growing number of remittance recipients are withdrawing from the labour market may lead to a drop in the unemployment rate.

Figure 6 illustrates the impact of remittances on the labour market. L represents labour, while W represents the real wage. O_L and D_L represent labour supply and demand, respectively. W^1 represents the equilibrium wage without remittances. The reservation wage is assumed to equal W^1. What happens when remittances enter the equation? The reservation wage (*Wres*) climbs above W^1, which means that a fraction of workers are failing to find work. This leads to increased unemployment (the difference between $O_L{}^1$ and D_L, or U^1). But remittances also help reduce the labour supply (as $O_L{}^1$ shifts to $O_L{}^2$), as they encourage idleness. The result is lower unemployment (U^1 to U^2) and higher wages (W^1 to W^2). While increased wages do improve living conditions for workers, they also raise production costs for businesses. This may have a negative impact on competitiveness.

The decline in the unemployment rate in Colombia since 2000 (from an average of 20.2% in the country's seven main metropolitan areas in 2000 to 12.6% in 2006) partially confirms the foregoing analysis. The massive exodus of migrants which began in the mid-1990s had, in fact, already helped to significantly reduce unemployment, either because a portion of the unemployed population left the country, or because those who were employed and left (due to safety concerns, or in search of better working conditions) created vacancies

FIGURE 6

Impact of remittances on the labour market



Source: Author's calculations.

[11] The reservation wage is the minimum wage an individual requires in order to participate in the labour market.

upon their departure. The withdrawal from work of some members of recipient families —particularly in the coffee belt (Garay and Rodriguez, 2005)— has also helped lower the country's unemployment rate. Notwithstanding the above, it is difficult to determine the precise extent to which lower unemployment is directly (migration of part of the active population) or indirectly (impact of remittances) attributable to migration. The recovery of the Colombian economy over the past few years has, of course, played a role in improving the labour market. Without migration, however, unemployment rates today would probably be higher.

4. Prices

In terms of prices, remittances bring with them a high risk of inflation. A massive influx of capital has a direct impact on the money supply, driving prices upward. Since Colombian businesses are, as shown in figure 7, suffering the consequences of an increase in real wages, there is a temptation to raise the end prices of their products. This would entail a risk of supply-side inflation. Remittances also lead to an increased demand for non-tradable goods, which are free from international competition and are therefore more likely to rise in price in response to stronger demand. This, in turn, would fuel demand-side inflation.

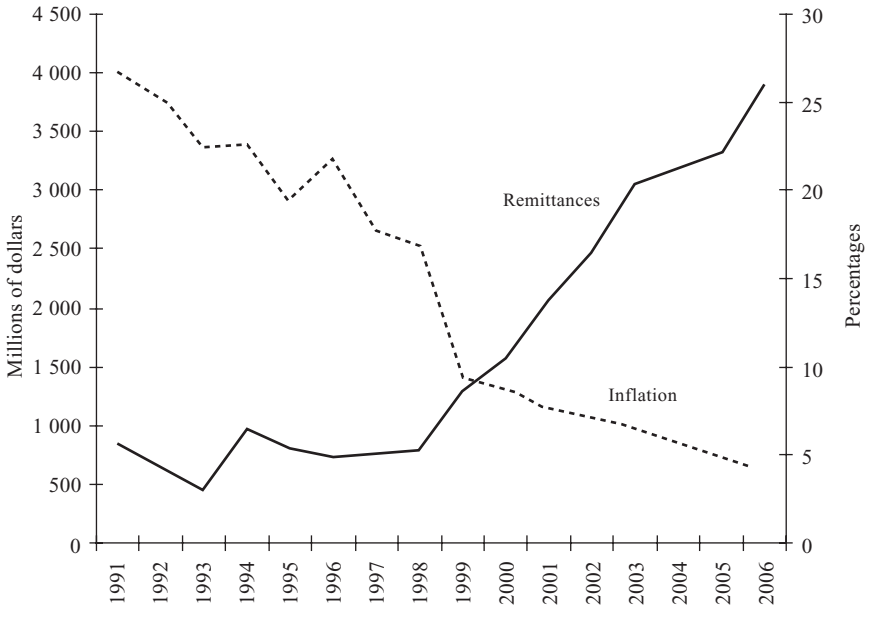
It should be noted, however, that the appreciation of the Colombian peso, for which remittances are partly responsible, has made foreign imports cheaper, leading to a process of imported disinflation which partially offsets the inflationary effects of remittances. Most importantly, the Banco de la República has implemented a strict inflation-control policy based on an inflation targeting strategy. This may explain why the Colombian economy has been free of inflationary tensions over the last few years, despite renewed economic activity and a massive inflow of remittances (see figure 7).

5. The financial system

The rapid increase in remittances in Colombia has drawn the interest of a growing number of financial institutions which are attracted by potential profits in

FIGURE 7

Colombia: remittances and inflation, 1991-2006



Source: Banco de la República.

TABLE 3

Colombia: cost of sending remittances from Spain[a]

Company name	March 2005	March 2006
Latinoenvíos	6.87	4.16
Giroexpress	7.95	4.73
Unigiros Express	6.99	4.73
Maccorp Exact Change	8.54	4.83
Uno Money Transfers	5.19	4.91
Changepoint	7.63	5.27
United Europhil	6.93	5.37
Master Envíos Unidos	6.27	5.79
Safe Money Transfer Spain	5.12	6.30
Envía Telecomunicaciones	6.69	6.78
Geomil Transfer	8.37	6.93
Foreign Exchange Company	8.30	7.32
Interenvíos Money Transfers	5.81	7.38
Telegiros	7.47	7.82
Cambios Sol	8.39	8.13
R.D. Money Transfer	6.88	1.60
Average	*7.09*	*6.32*

Source: www.remesas.org

[a] Remesas.org publishes an assessment of remittance costs twice a year. This assessment is based on a survey of remittance firms approved by the Banco de España. The survey consists of a telephone inquiry regarding the cost of sending 150 euros to northern Bogotá. Remittance costs correspond to the percentage of money withheld by the remittance firm.

this market. This has led to keener competition among money-exchange firms and banks seeking to capture emigrant capital. This, in turn, has helped to boost the competitiveness and functional efficiency[12] of financial intermediaries. Heightened competitiveness benefits the Colombian economy in two ways. Firstly, lower intermediation costs represent a net gain for households that receive remittances. Table 3 traces changes in remittance costs from Spain to Colombia through several different companies. In most cases (11 out of 16), costs fell considerably, and the average ratio between remittance costs and the sums remitted dropped from 7.09%, in March 2005, to 6.32% one year later. This is equivalent to a reduction of -10.9% over the course of one year. Secondly, the enhanced productivity of money-exchange firms and banks has increased the productivity of the Colombian financial system, which should help raise the rate of capital formation in Colombia.

Another way in which remittances have a significant effect on the financial system is by expanding Colombians' access to banking services. Table 4 lists several indicators of "bankarization" (expanded access to banking services for the population) in Colombia. While it is true that the number of bank accounts has not increased sharply over the last few years, more and more Colombians have acquired bank cards, which accounts for the rapid development of the country's ATM network (the number of ATMs in the country increased five-fold between 1993 and 2004). Since banks tend to be safer than other formal channels, recipient households' degree of bankarization appears to be on the rise.

Notwithstanding the above, "financial democracy", or increased popular access to financial services, remains quite limited (Terry, 2005). This is particularly true of banking services in Colombia,[13] especially among poorer families that receive remittances mainly through money-exchange businesses or other informal

[12] Functional efficiency may be defined as the ability of financial intermediaries to perform their functions at the lowest possible cost.

[13] As of 2003, Colombia possessed 9.6 ATMs for every 100,000 inhabitants. By way of comparison, the ratio for Latin American countries was 5.9 in Peru, 6.3 in Ecuador, 12.8 in Costa Rica, 14.9 in Argentina, 16.6 in Mexico and Venezuela, 17.8 in Brazil, 20.2 in Guatemala and 24.0 in Chile. In industrialized countries, the ratio was 42.5 in the United Kingdom, 67.2 in Italy, 70.3 in France, 113.8 in Japan, 120.9 in the United States and 126.6 in Spain (Beck, Demirgüç-Kunt and Martinez Peria, 2005).

TABLE 4

Colombia: bankarization indicators, 1993-2004

	1993	2000	2004
Active current accounts	2 067 629	1 970 623	2 203 390
Active savings accounts	…	12 893 804	12 893 263
Active debit cards	3 500 000	7 925 022	10 277 353
Active credit cards	1 200 000	1 9442 17	2 812 228
Number of ATMs	1 207	3 874	5 520

Source: Caballero, Lizarazo and Urrutia (2005).

channels. The involvement of the Bank of the Republic in the remittance process, using an approach similar to that of the Banco de México, may help increase access to banking services and reduce remittance costs.[14] Financial education campaigns may also be required to make recipient families aware of the importance of employing formal banking services. Information regarding the remittance market should also be improved, in order to ensure that the agents involved are better acquainted with the relevant legislation, entities and services. Information must be developed to ensure greater transparency in the financial system, as well as greater trust in that system, which should increase access to banking services. Such access is essential if the savings derived from remittances are to be invested in production.

Finally, the massive influx of remittances into Colombia raises the delicate issue of money laundering. Drug traffickers have developed a laundering technique known as "smurfing", whereby large sums of money are funnelled through transactions below the maximum authorized by the monetary authorities, in order to elude detection. International transfers are made to beneficiaries, who then receive a commission. It is difficult, of course, to distinguish family remittances from smurfing operations. These transactions are probably limited, however, since they require coordinated action on the part of many accomplices, and beneficiaries must be changed regularly to avoid suspicion (Cadena and Cárdenas, 2004). The country's monetary authorities (Bank of the Republic) and financial authorities (Office of the Bank Examiner), acting through the System for the Prevention and Control of Asset Laundering (SIPLA) and the Financial Information and Analysis Unit (UIAF), have implemented regulatory and supervisory measures that significantly reduce the risk of money laundering through international transfers.

6. Public finance

Despite the abolishment, in 2005, of the tax-at-source which had previously been levied on international transfers, remittances probably have a positive impact on public finance. They are, in fact, still subject to a number of taxes. The value added tax (VAT) is applied to currency exchange operations, increasing their cost. Financial movements in Colombia are also subject to a 0.4% tax, which must be paid by anyone receiving transfers from abroad. The same tax applies whenever an agent withdraws money from an account. Consequently, migrants sending money to their families through a bank must pay a transaction tax, in addition to the transaction costs and the 0.4% tax when the recipients make use of the funds. This has increased the volume of taxes collected by the State, thereby improving its revenue.

It should be noted that these taxes constitute a loss for households which receive remittances, and are partly responsible for keeping a fraction of those flows outside of the official financial system. In addition, the tax regime applied to remittances is regressive, since most of their recipients belong to lower social strata. Burdensome taxes come at a cost, both in terms of economic efficiency and social justice. A strong

[14] The FedACH system (Federal Reserve Automated Clearing House) is based on cooperation between the United States Federal Reserve and the Central Bank of Mexico. Emigrants send money to their families through a correspondent bank, which employs the services of the Federal Reserve, which in turn wires the funds to the Bank of Mexico. Recipients then retrieve their funds through local correspondent banks. This system offers several advantages (Collazos, Montes and Muñoz, 2005). The exchange rate employed is more advantageous than that offered by private intermediaries, and the remittance fee is lower. Transactions are more secure, since they are backed by both the Federal Reserve and the Bank of Mexico. The system also ensures a higher degree of transparency than would be possible if several private operators were involved. The concentration of transactions in the hands of the monetary authorities creates economies of scale which make recipients the ultimate winners of the process.

TABLE 5

Colombia: public finances, 1996-2004

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Fiscal deficit (as % of GDP)									
- Central national government	-3.4	-3.7	-4.8	-6.1	-5.4	-5.3	-4.9	-4.7	-4.3
- Non-financial public sector	-1.7	-2.8	-3.7	-4.1	-4.0	-4.1	-3.5	-2.6	-0.9
Total gross external debt									
- In millions of dollars	31 114	34 409	36 681	36 733	36 130	39 109	37 336	38 065	39 460
- As % of exports	236	242	273	263	229	260	263	242	202

Source: ECLAC (2005).

argument can therefore be made for their abolishment, or at least for their reduction.

As mentioned above, the massive influx of remittances has increased both domestic demand and imports. Remittances have thus become a supplementary source of tax revenue, through the VAT, on the one hand, and customs duties, on the other. Insofar as migration reduces unemployment and remittances are a form of social protection, they benefit the State by easing the burden of social problems. Public spending is lower than it would be in the absence of migration, and the fiscal deficit is reduced as a result. Thus, between 1999 and 2004, the deficit of the national central government fell from -6.1% to -4.3% of GDP, and the deficit of the non-financial public sector fell from -4.1% to -0.9% of GDP (see table 5).

Recent IMF studies on the impact of remittances on development in receiving countries emphasize their possible risks for the financial system (Chami, Cosimano and Gapen, 2006). By raising the liquidity of the financial system, remittances expand access to foreign capital, reducing the cost of foreign indebtedness. At the same time, this increased liquidity raises moral hazard issues, since the terms of credit created by remittance flows may generate growing public debt. The Colombian economy may find itself affected by such forces in the future.

7. Human and social capital

One of the positive effects of remittances on development in Colombia has to do with human capital (Kugler, 2006). A significant portion of these funds are used to cover education and health-care costs. Many children are able to remain in school, and many poor families are able to afford health care, thanks to the financial support of a family member abroad. In addition, collective remittances (funds raised by emigrant associations or channelled through Internet community networks) are used to finance large-scale initiatives, particularly infrastructure and educational projects. The experience of Conexión Colombia,[15] a non-governmental organization (NGO) which uses the Internet to channel money from Colombian emigrants into education, health or cultural programmes, is one example of the kind of impact that remittances can have in terms of social investment. Organizations of this type also contribute to the development of social capital[16] by encouraging the implementation of transnational networks (Guarnizo, 2003). It should be noted that there is no history of cooperation between the Colombian government and emigrant associations. In this regard, Colombia differs from Mexico, with its *Programa Iniciativa Ciudadana 3x1* (3x1 Citizen Initiative Programme),[17] and El

[15] *Conexión Colombia* operates through the following website: http://conexioncolombia.terra.com.co/index.jsp. The organization has two objectives: first, to strengthen the ties of expatriate Colombians to their country by publishing articles on current events in Colombia, allowing migrants to write about their experiences and hosting a discussion forum; second, to create a safe channel through non-profit foundations for migrants' contributions to the financing of development efforts in Colombia. Between December 2003 and December 2005, *Conexión Colombia* channelled US$ 2 million to 22 foundations and other special projects.

[16] According to Coleman (1990), social capital is a public good that includes ties of trust between the members of society. It becomes manifest particularly through respect for collective commitments, which strengthens social cohesion. Social capital has a positive impact on other forms of capital, such as human or financial capital.

[17] *Programa Iniciativa Ciudadana 3x1* was created in Mexico in 2002. For every dollar invested in a local development project by associations of Mexicans living abroad, the Mexican government invests an additional three dollars. One dollar comes from the federal government, another from the State government and a third from the municipality where the project takes place. The 3x1Programme has helped fund a wide range of initiatives (Vásquez Mota, 2005), including social projects (e.g., rest homes or homes for persons

Salvador, with its *Unidos por la Solidaridad* (United for Solidarity) programme.[18]

Remittances are the flip side of the costs associated with migration. The departure of millions of Colombians represents a net loss of human capital. It is not only a brain drain, but a "body drain" as well. Economic growth requires both skilled and unskilled labour, and Colombia is currently at a disadvantage on both counts. The brain drain is a more serious concern at present, since it reflects the removal of part of the country's investment in education.[19] The loss is often permanent, since most of the students and professionals who leave Colombia settle in their destination country.[20] Incentives today are insufficient to persuade talented Colombians to return home.

Another problem associated with migration and remittances is that, in many cases, migrants are parents who have had to leave their children in the care of grandparents, aunts or uncles as they travel abroad in search of a better life. While the money they send their families is often used to finance their children's schooling, those children cannot help but feel abandoned. Studies on this issue, particularly in the Colombian coffee belt (Garay and Rodríguez, 2005), have shown that children whose parents live abroad do not perform as well in school and tend to exhibit violent behaviour. They join gangs more frequently and may even become criminal offenders. It could thus be argued that one of the collateral costs of remittances is an erosion of social capital. The family is responsible for initiating individuals into society and is therefore an essential component of social capital (Wilson, 1993). The break-up of families has a disruptive effect on children and may lead to increased criminal behaviour.

8. Poverty and inequality

Aside from their impact on aggregate demand, remittances play a social role. Many recipients are, in fact, below the poverty line, and the funds they receive allow them to improve their living conditions. Garay and Rodríguez (2005) have shown that, when remittances are factored out of the income of Colombians living in the Midwestern Metropolitan Area, poverty and indigence levels rise from 59.4% to 64.3% and from 30% to 34.9%, respectively. Remittances finance social protection for the poor and are often the only source of income for many retirees who are not covered by the national pension system. They also serve as an insurance policy of sorts against economic shocks (namely, unexpected drops in family income) since they tend to remain stable over time.

In this regard, remittances are much more effective at reducing poverty than development aid is, since they go directly to the families in greatest need, bypassing the intermediate channels usually employed by international assistance (Terry, 2005). Indeed, both the senders of remittances and their recipients have a greater stake in making optimal use of these funds than do public bodies. Moreover, unlike development aid, remittances from family members are untouched by corruption.

A regular inflow of transfers from abroad poses several problems, however. In the first place, remittances tend to create financial dependency, which may lead to difficulties for recipient households if family members abroad stop sending money, either temporarily or permanently. In addition, remittances can magnify social and geographic inequalities. Migration is essentially a lower-middle-class phenomenon; it does not extend to the poorest households, which lack the financial resources to travel abroad. The social gap between households that receive remittances and the rest of the population becomes wider as a result. Furthermore, migrants do not come from the poorest regions of the country, such as Chocó, Cauca or Nariño, but rather from industrialized areas such as Bogotá, Antioquía (Medellín) or the Valle del Cauca (Cali) (Khoudour-Castéras, 2007a). Remittances are concentrated in these areas, making geographic inequalities deeper.

with disabilities, health-care centres), educational projects (schools, libraries), cultural projects (museums, cultural centres) and public works (road paving, electrification, sewerage).

[18] The Salvadoran programme *Unidos por la Solidaridad* was created to coordinate the atni-poverty efforts of the government, municipalities, the private sector and associations of Salvadorans living abroad. The funds provided by such contributors are administered by the *Fondo de Inversión Social para el Desarrollo Local en El Salvador* (Social Investment Fund for Local Development in El Salvador, or FISDL), which distributes available resources through open calls for grant proposals from local communities. The programme has channelled incoming remittances into local investment projects and has helped to increase the coverage of basic social services and infrastructure.

[19] Beine, Docquier and Rapoport (2001) argue that the brain drain may help to increase the level of human capital in countries of origin, as it creates an incentive to stay in school and take advantage of better employment opportunities abroad. Since only a fraction of the country's skilled labour force ultimately migrates, the end result is a higher level of human capital than that which existed before the brain drain began. Notwithstanding the above, empirical studies show that a positive correlation between the departure of skilled workers and increased investment in education exists only in a limited number of cases (Schiff, 2006).

[20] The odds of encountering Latin Americans schooled at the secondary level or beyond are 2.5 times higher in the United States than they are in their countries of origin.

In the final analysis, the impact of remittances is mixed (see figure 6). While they can, under certain circumstances, strengthen economic activity and improve the social landscape, they also involve a number of risks that could have harmful long-term consequences for the development of Colombia. Despite their magnitude, the overall impact of remittances tends to be very limited. If one divides the overall sum of official remittances in 2005 (US$ 3.314 billion) by the country's population (41.2 million), the result is US$ 0.22 per day, or one fifth of the amount which the World Bank has set as an indicator for extreme poverty (one dollar a day). Consequently, under no circumstances should a development model be based solely on the financial contributions of emigrants.

Of course, this does not mean that remittances cannot be used to spur development. On the contrary, the accrued experience of international good practices

TABLE 6

Colombia: potential effects of remittances

Affected sector	Positive effects	Negative effects
Domestic demand	• Multiplier effect on GDP through consumption • Reactivation of construction sector • Development of remittance-related activities • Support for investment (particularly microenterprises)	• Demand is heavily focused on non-productive spending • Economic activity is sensitive to changes in migratory cycles
Current account	• Improvement in current account through balance of invisibles	• Increased imports as a result of ostentation and imitation • Loss of competitiveness as a result of currency appreciation (risk of Dutch disease)
Labour market	• Higher reservation wage • Higher real wages (due to reduced labour supply) • Lower unemployment (fewer people looking for work)	• No incentive to work (culture of idleness)
Prices	• Imported disinflation (due to appreciation of currency)	• Increase in money supply • Increased demand for non-tradable goods • Higher production costs (due to increase in real wages)
Financial system	• Increased functional efficiency (more competition between financial intermediaries) • Increased bankarization among remittance recipients	• Risk of money laundering
Public finance	• Increased tax revenue • Lower social expenditure • Lighter debt burden (greater access to international financing)	• Moral hazard (growing public debt)
Human and social capital	• Increased investment in education and health care • Organization of emigrant networks for the sending of collective remittances	• Collateral problems: brain drain and break-up of families
Poverty and inequality	• Reduced poverty • Steady income for retirees • Funding of social projects by emigrant associations	• Increased social and geographic inequality • Strong financial dependence on the part of recipient households • Risk of reduced social spending (remittances take its place)

Source: Independent research by the author.

should be put to use in Colombia in order to adopt public policies that take advantage of this "financial manna". The abolishment of the tax-at-source on international transfers, the creation of a consular identity card in the United States,[21] the organization of several housing fairs in the United States and Spain, and the development by the Colombian National Education System (SNE) of virtual training courses for Colombians living abroad are all steps in the right direction. In any event, remittances should clearly not be an objective but rather an instrument of public policy. It should not be forgotten that remittances belong to migrants and their families; they are the result of much effort and sacrifice, and it would be a mistake to think that the State could take ownership of them.

IV
Conclusions

In Colombia today, there is a tendency to view migration as a public-policy tool. The departure of part of the country's workforce is, in effect, a safety valve that allows the State to ignore its economic and social responsibilities. Migration does reduce unemployment, and remittances help to stimulate economic activity and improve the balance on current account. The government should not view it as a solution to the country's problems, however. While there is reason to encourage migration (to export problems, so to speak), internal solutions must also be found. The reduction of unemployment should be the result of an active job-creation policy, not of the mass departure of the unemployed.

While the government should strive to reduce remittance costs, promote financial democracy and steer remittances towards investment in production, it should not be forgotten that the key to development lies in domestic structural reforms. The experience of other countries has shown that, generally speaking, migration is not a development solution. Some countries, such as Morocco, Algeria and even Mexico, have received remittances for decades and yet have failed to offer their people viable development options. Migration has thus become a perverse process, creating "poverty traps" whereby flawed economic and social policies lead to increased migration to industrialized countries, which in turn makes it so governments do not feel the need to undertake the types of reforms required to overcome underdevelopment. In contrast, countries that have successfully jump-started their economies have all carried out profound reforms. The achievements of Ireland, Spain or the Republic of Korea cannot be attributed to the massive outflow of migrants they experienced at a given time in their history, but rather to sound development policies. As a result, these countries, which used to be exporters of manpower, are now net receivers of migrants.

Such a transformation calls for a reorientation of economic and social policy. Economic growth must be a priority for the Colombian government; this is a *sine qua non* if the country is to retain its workforce. Increased efforts are needed in terms of agricultural, industrial and employment policy, as well as investment in research and development and in human capital. Social expenditure must also be a priority, since there is an inverse relationship between social spending and the migration rate (Khoudour-Castéras, 2007b). This will require a redistributive policy, which will in turn entail tax reforms aimed at improving social justice. It is also time for Colombia to consider affirmative action policies for the benefit of the most vulnerable sectors of society.

(Original: Spanish)

[21] The consular identity card is issued by Colombian consular offices in the United States (Atlanta, Boston, Chicago, Houston, Los Angeles, Miami, New York, San Francisco and Washington, D.C.) and is recognized by numerous public and private entities in that country. The card, which includes several features designed to prevent forgery, is a bilingual document that includes a photograph of the bearer and lists his or her city of origin, age and address, as well as the consular office that issued the card, its date of issuance and expiry and its registration number. The main advantage of the card is that it contains no information on the bearer's immigration status and allows migrants whose status is irregular to open a bank account at their place of residence.

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Non-sectoral agents and recent changes in Argentina's agricultural sector

Clara Craviotti

This article explores some of the changes that Argentina's agricultural sector has undergone in the past decade, before going on to analyse the structure of the production sector for a non-traditional crop, the blueberry, in the province of Entre Ríos. This crop is unusual in that it has been adopted chiefly by entrepreneurs from outside the local area and shows alternatives in terms of diversification of production and vertical integration. Capital investment is more important in blueberry production than investments of land, and information and management technologies play an important role. These are also features of the recent development of traditional crops in non-Pampas areas. The role of capital from outside the sector is worthy of consideration, given the flexibility and versatility made possible by some of today's production methods.

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I
Introduction

This article analyses the role played by non-sectoral capital and agents in Argentina's agricultural development after the peso-dollar link was abandoned and economic policy was altered in response to the profound political and institutional crisis in late 2001. Central to the new economic policy was a sharp currency devaluation, which involved a repositioning of export activities: those in which Argentina had traditionally been competitive (grains and meat) were strengthened and opportunities were created for innovative products introduced prior to 2001 that were showing strong growth at the time.

The article initially looks at the main changes in the agricultural sector and goes on to analyse the distinctive characteristics of those involved in blueberry production, one of the main hubs of which is the province of Entre Ríos. Based on this analysis, a number of factors are identified which could be applied to the development of Argentina's agricultural sector as a whole. The article concludes by considering some of the policy implications.

II
Production growth and non-sectoral capital in field crop production

After a decade-long policy of deregulation and liberalization, together with convertibility (the peso-dollar link), the change in macroeconomic conditions and attempts to redefine the role of the State have not altered the fundamental role played by Argentina's agricultural sector in the country's economy. Instead they have highlighted the sector's importance in generating foreign exchange and shoring up government expenditure.

Annual field crops continue to dominate the crop basket. The development of the soybean segment, where 16 million hectares are currently planted, is reflected in its share of exports. The soybean's development was made possible by an expansion in the agricultural frontier and a new "technology tier" (Flood, 2005) resulting from the widespread use of no-till and genetically modified varieties resistant to the herbicide glyphosate. As soybean output has expanded, livestock has been relegated to marginal areas and in some cases is now bred intensively. Meanwhile, less conspicuously, there has been an expansion in non-traditional crops, many previously unknown in Argentina, which are targeted at segmented markets.[1]

However, this general picture masks a profound transformation in the types of agents involved in agricultural production, the relations between them and their linkages with other phases of production. Significantly, the number of producers declined between 1988 and 2002, with the loss of more than 80,000 farms (representing a quarter of the number in existence in 1988), most of them small or medium-sized farms. Also noteworthy is that the number of people working in farming fell by 460,000, with the result that, in 2001, they represented only 34% of the total number employed in agriculture in 1991. The two processes are no doubt connected: even though the decrease in direct agricultural employment has partially been offset by an increase in industrial employment and in jobs in farming-related services, clearly this decline in the

[1] Obschatko's analysis (2004) points to strong growth in the production of high-value non-traditional food products in recent years. Defined as foodstuffs which Argentina was not exporting in significant quantities 15 years earlier but which were fetching a minimum export price of US$ 500 per ton, in the period from 1992-1993 to 2002-2003 the export value of such non-traditional foodstuffs grew in both absolute and relative terms from US$ 533 million to US$ 1.107 billion, while their share of the total agroindustrial sector rose from 7.4% to 8.6%.

number of farms is associated with the crowding-out or departure of production agents from the sector.[2]

A number of studies conducted while the deregulation and liberalization policy was under way (Lattuada, 1996; Murmis, 1998) showed that this policy had increased the amount of capital needed to remain in the production process, leading to significant increases in the scale of operation. This change in macroeconomic conditions is still too recent to allow us to assess the extent to which such a process can be reversed or, more realistically, how far it can be curbed. In any case, the technology package employed for a number of agrifood products requires high-powered machinery and inputs from outside the farm, which calls for greater financial resources and so increases the scale.[3] There has been a shift from relatively extensive to intensive production, increasing the capital required by each production unit.[4] The increasing dependence on non-farm agents, compounded by the process of capital concentration and centralization currently at work in the processing and distribution links in the chain and in the supply of seed, can also be seen as a gradual loss of autonomy by agricultural producers (Lattuada, 2000; Teubal, 2006).

Bisang and Gutman (2005) attribute the expansion of several of Argentina's agrifood products to their clear integration into international markets, the use of foreign technology packages, the organization of interlinked and coordinated groups of enterprises (clusters) and the consolidation of large enterprises in the main production phases. This has led to the formation of two types of production chain: large-scale externally-oriented chains and small to medium local or regional chains responsible for much job creation which, at best, operate at the minimum threshold for staying in business.

In terms of the agricultural structure, the above factors show that what has occurred is not merely a decline in the number of production agents, but also qualitative changes in the structure itself caused by a combination of three processes: a change in the relative importance of the different strata, a change in the profile of some existing producers and the emergence of new actors. These processes have arisen not only in Pampas areas but also in north-western and north-eastern Argentina as the soybean and other traditional Pampas crops have spread into these non-Pampas regions.

Clearly, we should avoid the temptation to define these changes as an irreversible "before and after". However, the growing importance of leasing within the land-tenure system, as well as the expansion of Pampas-region producers into non-Pampas regions, in large measure associated with putting leased land into production, have led to major changes in some types of agent, whose links with their farms and areas of origin are increasingly tenuous. These are changes in agents' behaviour and in the relations which they establish with their environment.[5]

Much the same applies to the share of investment funds in the agricultural sector. Investment funds raise capital from a variety of investors, are able to optimize the use of resources and can reduce risk by investing in crops at different latitudes. As Posada and Martínez de Ibarreta pointed out (1998), the concept of investing a specific sum of capital to put a specific acreage into production is nothing new to farming in the Pampas region: the first "sowing pools" date back

[2] Some analysts (Reboratti, 2005; Barsky and Fernández, 2005) point out that in the Pampas region, the concentration of production has not resulted in an equal concentration of land ownership, since some small and medium producers have been able to lease land. It is also true that, while the working capital has not been completely liquidated, in theory they can still return to direct production. Even so, the concentration of production is still an important issue, since it affects the intensiveness of resource use and the type of agricultural structure, as discussed later in this article.

[3] Obschatko (2003, p.124) argues that "this new production model impacts on the social organization of production. It is appropriate and necessary to scale up, given the size of the machinery and the widespread technique involved [no-till], which requires no major adaptations. While technical advice becomes more necessary because of the size of the operations involved, the larger scale means that its cost can be absorbed. The volume of harvests and the capital invested make it necessary to cover risks in futures markets. In the new model, the input of professional services is therefore greater. *The working capital involved requires the participation of many investors, who are not necessarily the landowners… These changes call for a larger number of actors, many from outside the farming sector*. This increases the multiplier effects on other activities, particularly service activities." (our italics).

[4] Some authors believe that this trend is not confined to the soybean subsector alone but, to a greater or lesser extent is present in all the branches of agricultural production, both in the Pampas region and in the regional economies. "According to this technological paradigm, soybean expansion is therefore only one example of this trend" (Slutzky, 2005, p. 61).

[5] Even though these changes had not yet been fully reflected during the 2001/2002 crop year (the reference period for Argentina's 2002 National Agricultural Census and prior to the recovery of the Argentine economy), it should be noted that, as Slutzky states (2006), compared with 1988 there was a hefty increase of 2.6 million hectares in the wholly-leased acreage, coupled with a steep rise in the number of farms using a combination of owned and leased land, with a total of 8.6 million hectares under this combined regime. This led to a large increase in acreage per management unit.

to the mid-1970s, and in the mid-1990s their activities were extended and their organization improved. However, by the late 1990s they had practically disappeared. Following devaluation in early 2002, their ability to raise non-agricultural capital, make optimum use of production resources and reduce risk by investing at different latitudes allowed them to resurface in a more formalized manner as part of an economic policy to foster export activities, in a context where financial investment options are limited or have a disappointing record.

Some of these agents use trust funds to raise the capital required for projects calling for higher per-hectare investments.[6] The designated administrator leads the effort. Most of the investors are institutions, but the relative share of private individuals appears to be on the increase. They invest sums of between US$ 10,000 and US$ 50,000, and many are urban professionals who have decided to invest part of their savings in agriculture.

The advantages of a trust are that: (i) bankruptcy of the operators does not affect the beneficiary's rights, as the assets are separate; (ii) economic agents can obtain funds in the capital market at a lower cost than with more traditional alternatives; (iii) in the case of a public offering of shares (financial trusts), the investor's risk is lowered by the rating agency's verdict, and (iv) the investor receives tax benefits (Santamaría Suárez Lago, n/d). In financial trusts, the trustee is either a financial institution or a company specially authorized by Argentina's National Securities Commission, and the beneficiaries are the holders of certificates of beneficial ownership or debt securities, which can be put out to public tender and so are listed on the stock exchange (Act No. 24,441).

These systems have also been adopted by the producer-contractors of days gone by which have not redefined themselves. As the record of some of its more high-profile members has shown, their activities date back more than two decades.[7] However, the trend in recent years seems to be an increase in the acreages worked and leased by these producer-contractors, their expansion into non-Pampas areas and even neighbouring countries, and the use of new strategies in which management and marketing play a key role, with the aim of capturing investors from outside the sector.

This might indicate that, to varying degrees, some of these agents took advantage of a set of favourable circumstances: the opportunities afforded by the legal and financial framework, with instruments such as those described above; the benefits of technology applied to the soybean, such as no-till, which has cut operating times; the crisis faced by huge numbers of small and medium-sized producers, especially in the latter half of the 1990s, which led to heavy indebtedness and falling land prices, and the subsequent recovery of export crops thanks to external demand and the devaluation.[8]

Based on the changes described, Piñeiro and Villareal (2005) identified five ways in which production is organized in the Pampas region and in non-Pampas areas into which soybean production has expanded:

(i) Contractors who own no land and therefore have to lease it;

(ii) Landowner-entrepreneurs who own land, unlike contractors, and can expand beyond their local areas;

(iii) New tenant farmer-entrepreneurs who neither own land nor have much capital, and therefore take advantage both of the available mechanisms for raising financial capital and of their own technical knowledge and management capacity, which are their strengths;

[6] "What has happened is that the law has matured a lot and some refinements were made to turn the trust into a valid instrument without too many dark corners. It has triggered a lot of economic activity…. As a general rule, the financial market is not at all attractive to anyone with spare cash to invest at present; instead they prefer to invest it in the real economy, which is very good …" (comments by a trust manager interviewed in 2006).

[7] Los Grobo is currently one of the largest local grain producers, with 150,000 hectares under cultivation (compared with 3,000 hectares in 1984). It owns 15% of that land and the rest is leased on a percentage basis. The company owns mills and a number of silo plants, has expanded into Uruguay and Paraguay, employs 400 people and invoices an annual US$ 150 million from its activities in production, agricultural marketing and services to third parties. MSU is another large company whose production comes from a combination of owned and leased land. It farms more than 90,000 hectares in Argentina and Uruguay, 80,000 hectares of which are leased, and hires services; it is also involved in livestock production and has 10,000 head in Buenos Aires and Corrientes, where it has 120 employees. Even though MSU started up in 1999, the family owning the company seems to have had links with the agricultural sector for several generations. Another company is El Tejar, which began in 1987, farms 180,000 hectares of leased land in Argentina, Bolivia, Brazil and Uruguay, and employs 134 people directly and 1,078 people via the associated network. Although strictly speaking El Tejar has no owned land, it leases some of the land which it manages from the company's owner families, and the services needed to put the land into production are hired from third parties (data from *Revista Apertura*, 2006; *El Federal*, 2006).

[8] This phenomenon shows some continuity with the intensification of production in the first half of the 1990s, fostered by a combination of growing international demand, technological advances and the entry into the agricultural sector of capital from outside the sector in the form of sowing pools and investment funds seeking positive returns (Posada and Martínez de Ibarreta, 1998).

(iv) Promoters of short-term investment of external capital in the farming sector (pools);
(v) Vertically-integrated farming enterprises that also operate in the agricultural input and/or product market, a field in which they began their business and which is their core activity.[9]

Strictly speaking there are not five ways of organizing production since, operationally speaking, investment promoters are clearly linked with the new tenant farmer-entrepreneurs (type iii) and also with the other types. The system used by the new tenant farmer-entrepreneurs is of special interest: it is a sort of "managed" sowing system for which financial resources are raised, the land is leased and many of the services needed to start production are hired. All this makes the new tenant farmer-entrepreneur a sort of "contract manager".

Some of the production systems currently in operation appear to be reflecting a divide between farming and the local area, with major social and environmental effects.[10] This phenomenon had already been identified in other production contexts. For instance, Hervieu (1991) spoke of discontinuities in the French farming world, saying that in many cases farming had lost its local or native character.[11] Nevertheless, it is striking to see this phenomenon emerge in post-devaluation Argentina, based on the injection of financing from outside the agricultural sector.

These systems also reveal the importance of liquid capital, which can be channelled rapidly for different purposes, as well as the growing application of management techniques to the various production phases. Authors like Obschatko (2003) consider that "soft" technologies are now essential for farming enterprises: this applies to the evaluation of alternatives and the definition of strategies in the areas of business, finance and production chains.

The concept of undertakings using capital from outside the sector merits further examination, whether or not they take the form of "new actors", given the flexibility and versatility of some of the production systems currently used. This article will analyse some of the characteristics of production growth, not only for traditional field crops, but for a crop targeted at a market niche that was virtually unknown in Argentina barely a decade ago –the blueberry– which is grown mainly in the provinces of Buenos Aires, Entre Ríos and Tucumán.

III

Production growth in a non-traditional crop: the blueberry in Entre Ríos

The development of the blueberry in north-eastern Entre Ríos is fairly typical of the processes in operation in Argentina: blueberry production gathered speed following Argentina's currency devaluation; it requires large-scale investment; the agents embarking on blueberry production come from outside the farming sector and, in some cases, use capital-raising mechanisms like those mentioned earlier. At the same time, there have been few studies of the social and productive aspects of blueberry growing, as it is an innovative product targeted at a market niche for off-season fruit in developed countries (primarily the United States).

There were two pioneering blueberry producers in Entre Ríos, especially in the department of Concordia. They started up in 1997, only a few years after the crop had first been introduced into Argentina (the first exports date back to 1993, with a negligible volume of three tons). The two producers started with small

[9] Flood (2005) also mentions the emergence of a new profile for productive agents, radiating outwards from the Pampas region towards the rest of the country, stating that it is unclear whether this predated the process of agricultural expansion or caused it.

[10] This article does not make an in-depth analysis of this issue, which is of particular importance to non-Pampas areas. See Reboratti (2005), Slutzky (2005) and Teubal (2006).

[11] "Today, the phenomenon of displacement already noted in industry and commerce is beginning to make itself felt in farming (…). A further aspect of the displacement process is that large-scale farming is not tied down to specific areas" (Hervieu, 1991, p. 294).

acreages (five hectares and half a hectare, respectively) and experienced all the problems typical of an activity with few precedents either in Argentina or in Entre Ríos. However, over time the two producers managed to expand the acreage under cultivation. Neither of the two pioneers came from the farming sector: one worked in a forestry company and the other was an insurance broker, a business in which he continues to this day.

Blueberry cultivation in Entre Ríos and the country as a whole expanded rapidly from 2002 onwards, when the macroeconomic conditions changed and there was an upturn in the agricultural export sector. In Argentina over the past five years the blueberry has fetched the fairly high average price of US$ 10.7 per kilogram (f.o.b.). In the latest crop year (2006), production is estimated at 6,000 tons. Merchants and nursery farmers (producers of nursery plants) promoted the development of the crop by highlighting the agro-ecological suitability of north-eastern Entre Ríos.

According to data from a 2006 survey,[12] 70% of the producers in Concordia started planting the blueberry in 2002 and now some 1,200 hectares have been planted with the crop. However, the most striking feature of this expansion is how much it has been associated with the growth of medium and large enterprises. That is to say, even though agents with small acreages continued to plant the blueberry, even on land areas measuring less than the economically viable unit (initially estimated at five hectares), 55% of blueberry producers are enterprises with more than 15 hectares under cultivation. Large enterprises with more than 40 hectares under blueberry cultivation include two from Chile and one from the United States.

The capital investment involved can easily be quantified on the basis of planting costs per hectare that ranged from US$ 15,000 to US$ 35,000, excluding land. Official estimates for the region show that nursery plants represent a substantial 34.5% of the total cost (Jaime and Fassi, 2002). One reason is the high planting density required (3,333 plants per hectare) and the characteristics of the input, which in some cases is produced by means of micropropagation techniques. Some are patented varieties, which makes them more expensive. In addition, the fact that the crop developed over a fairly short period of time created high demand for the input and at the same time gave high visibility to the process of production growth.[13]

A significant feature is the non-local origin of the owners of such enterprises: if foreign-owned enterprises are added to enterprises whose owners reside in other provinces, we find that a total of 60% of owners reside outside the production area. Craviotti and Cattaneo (2006a) analysed what this implies in terms of relations with the local environment and found that, whereas local producers bought their irrigation equipment and agrochemicals locally, non-local producers were more likely to buy them from outside the area and to issue tenders to a variety of bidders. In the case of nursery plants, producers in general, but especially those of non-local origin, tend to choose suppliers from outside the region.

In addition to the scant presence of local agents in blueberry cultivation, only a fairly small proportion of the producers already operating in the area are diversifying to include the blueberry or converting their crops wholesale (Craviotti and Cattaneo, 2006b). Also, the fact that not even one third of blueberry producers have a farming background (either inside or outside the region), added to the fact that they embarked on blueberry cultivation after 2002, indicates that many were investors who had spotted the opportunities afforded by the new situation in the agricultural sector, particularly for a non-traditional crop like the blueberry.[14]

Among these production agents, who include no examples of family-run production (although the family does participate in crop-related activities to varying degrees), investments in nursery plants and irrigation technology, and in some cases packaging plants, are

[12] The information was drawn from semistructured interviews with producers conducted in April and May 2006. The purposive sample included 57% of the farms identified and accounted for 67% of the total acreage planted with blueberry.

[13] The interviews show that farms tend to apply a fairly consistent technology model, using early varieties, drip irrigation and frost-protection systems. Where it differs is in the combination of varieties chosen, the frost control technology used (flippers, full sprinkler irrigation or inverted sinks) and the use of anti-hail nets, as well as in the proportion of planted acreage where these technologies are present.

[14] It was common to find analyses in the media, as well as in technical journals and conferences, mentioning the high prices obtained for blueberries in the international market, as well as the expected return on investment. This is reflected in the following sentence in a trust brochure written about blueberry cultivation: "*In terms of current income, a cumulative return of around 1,000% on the sums invested can be expected between the fourth and the twentieth year*. For example, a person investing $10,000 would receive an estimated total return of $100,000 over the first 20 years of the investment, equivalent to an annual income of 23% on a fixed-rate savings deposit of an equal amount. (…) The values illustrated have been projected on the basis of figures lower than actual returns in the past. *However, they do not constitute a guarantee of future returns*" (our italics).

combined with the soft technologies mentioned earlier. These soft technologies include conducting a pilot project prior to start-up (partially linked with the setting up of trusts), scheduling investments, seeking some degree of integration among stages in the value chain (packaging and/or marketing), analysing business options and consulting technical experts on a continuing basis, which sometimes includes visits to farms by foreign specialists. While the important role played by technical experts and managers, some of whom are very closely associated, makes soft technologies highly representative of a more professionalized style of farming, at the same time it raises questions about how far farm owners have assimilated these technologies personally.

Even though return on investment is the factor common to all the various production strategies, an analysis of the interviews suggests a conflict between a very short-term rationale based on the rapid capture of speculative profits and an approach that sees it as a long-term business. A number of informants and producers feel that the foreseeable drop in the blueberry price will lead some producers to abandon production, whilst it will induce others to formulate strategies for capturing new markets and/or differentiating the product, or else to develop coordination mechanisms to gain more organized access to markets, something that is just starting to be seen in blueberry production in Entre Ríos.

As the legal form of organization for these enterprises is predominantly that of a company, it allows people to belong to more than one company or be associated with more than one farm. Basualdo (1996) analysed the morphology of companies in the Pampas-region farming sector and its implications for the concentration of farmland ownership. These companies can also be viewed from the standpoint of the horizontal and vertical production linkages that their incorporation allows. The resulting "production groups" pool resources and jointly negotiate the purchase of inputs and the sale of products, thereby obtaining greater business advantages (Craviotti and Cattaneo, 2006a). To some extent, the existing concentration of production is further boosted by this type of multiple ownership situation, although the production chain can still not be described as highly interlinked or coordinated.

There are also innovative mechanisms for capturing small investors, which indirectly increases the number of people associated with blueberry production. To make such heavy investments as the ones described, in some cases joint ventures have been formed with nursery farmers, who provide the nursery plants, and similar arrangements have been reached with input suppliers and machinery contractors. However, in some instances trusts are set up, in which case the fund contributors (trustors) are not linked to the production activity and delegate its administration to the trustee, who has wide-ranging powers for managing business activities.

In the case under study, they are common (non-financial) trusts, in other words, private contracts.[15] An analysis of the interviews reveals that such trusts were set up by financial or insurance companies; in other cases, they were created by people who had entered into blueberry production either directly or by creating companies, and who later decided to set up trusts to expand their business. The minimum funds invested range from US$ 5,000 dollars to 50,000, with no upper limit. As the blueberry is a perennial crop, the term of these trusts is relatively long, compared with those for field crops: as a general rule they are set up for twenty years.

As regards the business sector, the predominance of medium-sized to large enterprises in blueberry cultivation in Entre Ríos does not preclude diversity within the production sector. In order to examine this diversity, a typology was drawn up so that hypotheses could be made about the local impact of the development of the various types of blueberry producer. Three variables were used: size (greater or less than 15 hectares, considered as an approximation of the current economically viable unit for blueberry cultivation); diversification of production (single-crop producers or diversified producers), and source of funds (local or non-local). Table 1 shows the resulting types.

A comparison of theoretically possible types with those actually in existence reveals that types B, D and G are nonexistent. That is to say, there are no large-scale local funds for blueberry cultivation, either among those with no farming background or those who farm other crops. In particular, the lack of involvement of major producers of citrus fruits (which have been grown in the region since 1930) is attributed to the relatively low profit margins for the blueberry. Citrus producers weigh the decision to invest in blueberry production against the alternative of continuing to invest in citrus fruits to make their production chain more efficient (Craviotti and Cattaneo, 2006b). Nor do non-local funds exist for blueberry production on less

[15] Representatives of three of the estimated seven trusts operating in the area were interviewed.

TABLE 1

Entre Ríos (Argentina): types of blueberry producer

		Diversification of production			
		Single-crop producers		Diversified producers	
	Acreage	Less than the economically viable unit	Greater than the economically viable unit	Less than the economically viable unit	Greater than the economically viable unit
Source of funds	Local	A	B	C	D
	Non-local	E	F	G	H

Source: Author, based on interviews conducted in 2006.

than the economically viable unit where producers are diversified: as they are small investors, they do not wish to divert some of their limited capital towards activities that they deem less profitable.

Types A, C, E, F and H do actually exist. The results of the analysis are as follows.

There are two subgroups within Type A (locally-owned enterprises growing a single crop on less than the economically viable unit): Subgroup A1, whose members are engaged in non-farming activities but choose to embark on small blueberry undertakings, and Subgroup A2, where the members grow only blueberries but are involved in another sort of diversification by producing nursery plants, another source of income. As these agents are linked with the activity in various ways, they have a greater level of involvement. Owing to their diversification, to some extent they resemble Type C, which comprises local enterprises whose output is diversified.

Type C consists of local producers who have planted small plots of land with blueberries. In their other crops (usually citrus fruits) they farm less than the economically viable unit. It is possible that diversification enables them to make the farm profitable as a whole, by recouping certain fixed costs and using part of the labour force engaged in other activities.

Though not of local origin, Type E resembles Subgroup A1, which also is not diversified and farms less than the economically viable unit. Type E members tend to be non-farming professionals investing in agriculture.

Types F and H are the most significant in terms of both numbers and the acreage they plant, which, potentially at least, gives them the ability to control the conditions under which production develops in the region. They include large non-local enterprises with a more complex management structure than the other types. They tend to have an office outside the area (usually in Buenos Aires) that takes care of commercial aspects and paying suppliers, whilst staff administration is outsourced to an accounting firm in Concordia. In the field they have a general manager, to whom a field supervisor reports, with different managers for irrigation, agrochemicals and machinery. In some cases the farm is divided into plots, each with its own manager. Half of these enterprises subcontract part or all of their harvesting to farm labour contractors.

Types F and H differ from one another in terms of their productive diversification and vertical integration. Type H includes large enterprises with a more conventional structure, including internationally-owned companies. They farm citrus fruits and, while some have replanted a portion of the land with a view to export, so far this has failed to achieve the expected results. A greater proportion are also involved in packaging, refrigerating and marketing blueberries and have direct access to distributors located in export destination countries.

By contrast, Type F is entirely composed of domestically-owned companies that tend not to employ this vertical integration strategy. Type F also includes trusts.

Based on the above analysis, the hypothetical types previously identified can be redefined and simplified as follows:

1. Small single-crop investors.
2. Large single-crop investors.
3. Small diversified investors.
4. Large diversified and integrated investors.

There is a distinction between Types 1 and 2 on the one hand, and Types 3 and 4 on the other, apart from diversification, refers to the extent to which they apply a

short-term production strategy. The focus on capturing opportunistic profits from blueberry cultivation is aptly illustrated by the following comments made during interviews.

> *"I am very much tied to the farming sector. I grew up in the countryside and went to school on horseback. I'm a country person but have had to do other jobs to earn a living. I don't know if I shall leave the blueberry business because, if the bubble bursts, it's curtains" (comments by a producer and trust manager interviewed in 2006, case no. 18).*
>
> *"This is an income-led business, because the price isn't going to stay at current levels, so you need to claw back your money as fast as possible" (comments by the partner responsible for the commercial and administrative management of a corporation, interviewed in 2006, case no. 4).*
>
> *"Is the outlay for a [frost protection] system that we are hardly going to use financially justifiable? We can wait, a lot of things can happen along the way, like a shift in the Earth's axis or even a guy turning up to offer us a million dollars for the field as it stands; anyway it's a done deal" (comments by the manager of a corporation and a trust, interviewed in 2006, case no. 15).*

Types 3 and 4 have the best prospects for long-term survival because, as they are more diversified and/or integrated, they will be better placed to reduce costs and to break into various markets. However, as Type 3 agents are smaller, they will need to create linkages and horizontal forms of coordination in order to be able to negotiate better conditions with other agents in the production chain. Their size is not necessarily a drawback, as evidenced by the problems larger farms experience in securing and managing harvest workers.

The capital-raising strategies used in the cases under consideration are interesting. Situations range from small investors using their own or their family's capital, to creating companies to incorporate a wider circle of acquaintances, and lastly to setting up trusts whose participants are usually unconnected. This range of situations indicates that non-sectoral capital and agents are gaining access to the farming sector in increasingly complex ways.

IV

Blueberry crop expansion in Entre Ríos and the recent development of the farming sector

The aim of this section is to link the foregoing analysis with the more general processes mentioned at the beginning of this article, that is to say, to detect any clues that the profiles of blueberry producers can give us regarding the changes currently taking place in Argentina's agricultural structure.

On the one hand, this analysis reaffirms the growing significance of capital in relation to investments in land. In the case of annual field crops such as the soybean, the use of no-till technology (using owned or hired machinery), together with genetically modified varieties and the herbicide glyphosate, has contributed to crop expansion (particularly in non-Pampas areas) to an equal or greater extent than investment in land, which is largely leased. In the case of the blueberry, nursery plants, irrigation and packaging infrastructure, and inputs throughout the production cycle outweigh the amount of capital tied up in land.

As the blueberry is a perennial crop and, given the importance of fixed improvements such as irrigation technology, there is no separation between the people in charge of the production process and the owners of the land. However, such a separation does exist in some of the areas planted with annual field crops. In Entre Ríos blueberry production (unlike other blueberry-growing regions), farms are diverse but medium to large establishments predominate. Although these farms seem small in comparison with the acreages typically given over to field crops, a large amount of capital is invested per hectare, as it includes capital tied up in land.

Another issue highlighted by the analysis is the importance of information and management technologies; among other things, this has resulted in rising numbers of technicians on farms. The role of these technicians, which goes well beyond strictly technical

production functions, includes such tasks as formulating investment projects, seeking business partners and exploring opportunities and strategic partnerships. This reflects the growing importance of large-scale investment in both types of crop production.

As has already been discussed, in blueberry cultivation the leading players are not normally producers. Instead the sector is dominated by companies or intangible entities such as trusts. The use of trusts, which first began with annual crops, is notable and stems from strategies to attract non-agricultural investors. As such trusts are private contracts, unlike in the case of field crops, contracts are not awarded on the basis of a public tender and nor are they quoted on the stock exchange. This shows how difficult it would be to gauge the impact of capital from outside the agricultural sector if this type of capital-raising entity were to proliferate; which is very likely to occur, given that the growing scale of production increases capital requirements. Current economic policy also promotes trusts.

Some of the production systems described, coupled with the fact that farm owners are not local, promote the use of managers, who have come to play a key role in enabling new agents to exploit certain local synergies.

Some of the characteristics identified for field crops (greater use of capital per production unit, the presence of non-sectoral agents and the importance of management technologies) might be considered as over-represented in the case of a crop such as the blueberry. This is because innovative crops entail heavy requirements. In particular, access to information and the assessment of its relevance can be almost as great a barrier to entry into and continuance in the blueberry sector as access to capital.[16] In any case, the presence of small entrepreneurs in blueberry cultivation belies the view that entry into the sector is a homogeneous process dominated entirely by large-scale capital.

The development of the blueberry in Entre Ríos can be likened to the more recent development of field crops, at least in non-Pampas areas, in terms of the limited integration of local agents into these processes, although there are not enough empirical studies to warrant conclusive affirmations. Only a few producers in north-eastern Entre Ríos (chiefly citrus growers) have decided to include the blueberry in their production strategies. More intensive use is made of local labour in blueberry production than for totally mechanized annual field crops, especially during the harvest. However, this short-term work (lasting no more than three months) does not substantially alter the conditions of recruitment of salaried workers. Blueberry cultivation also calls for skilled local labour, in the form of farm managers, many of whom come from the citrus production sector or are children of producers, as well as local input suppliers and service providers for the "new" activity. It remains to be seen whether this will produce more of a spillover effect. In the medium term, the short-termist strategy of some of the agents identified in the analysis could conspire against a wider local impact.

V
Conclusions

The earlier sections of this article linked aspects of blueberry expansion in Entre Ríos with the development of Argentina's leading crops. One issue to be addressed in these final considerations is the earnings of non-sectoral agents in relation to their policy implications.

In the Pampas region, the difficulties experienced by small and medium-sized producers led some to abandon direct production; this was exploited by other agents in a better position. Similarly, the crisis in the late 1990s in the leading Entre Ríos crop (citrus fruits) led to a drop in land prices. This was capitalized on by agents from outside the sector, who were attracted into farming by what they saw as an opportunity, blueberry production.

The current environment, which is generally favourable for export goods, could well continue to

[16] The two factors are undoubtedly linked. For example, while large enterprises make no critical investments in cultivation (for instance in blueberry varieties) without taking technical advice, small investors tend to be constrained when weighing up the information provided by input and machinery suppliers, which affects their investment decisions.

bring about such situations, where return on investment plays an important, but perhaps not exclusive role.

The problem with this scenario is basically the preponderance of large-scale establishments, as opposed to an agricultural structure where land is more fairly distributed and so inspires greater commitment to farming and to the local area. However, this does not appear to be happening with most crops in Argentina where the trend is towards larger operational scales.

In the case of the blueberry, as described above, some small investors are joining forces in a variety of formal and informal ways to scale up to the estimated viable economic unit. However, the rationale under which such small investors operate in the region may well not differ from that of large establishments, especially if they delegate management to others.

Progress is therefore required in formulating policies not just to promote the sustainability of existing small and medium agricultural producers by means such as helping them to diversify their crops and encouraging the entry into farming of people who, whilst not ignoring financial considerations, are more strongly motivated by issues relating to the lifestyle and the development of the local area. In other words, if we assume that in the future there will continue to be situations prompting people to enter farming, then it will be necessary to foster public/private systems of regulation to counter adverse effects on the community and environment where those agents operate (Craviotti, 2006). Initiatives for linking them up with local actors are particularly promising in this respect.

Other countries already have experience of policies to attract residents to rural areas and to encourage the setting up of new producers. Such policies stem from a vision of farming as a sustainable activity whose social and occupational base can, and must, be broadened.

More specific policies must also be envisaged to promote the sustainability of innovative crops like the blueberry, where a transition towards a less favourable market situation is expected. In this case, measures to further horizontal coordination among agents are especially important so as to avoid undermining the incipient effects on local employment and production chains.

(Original: Spanish)

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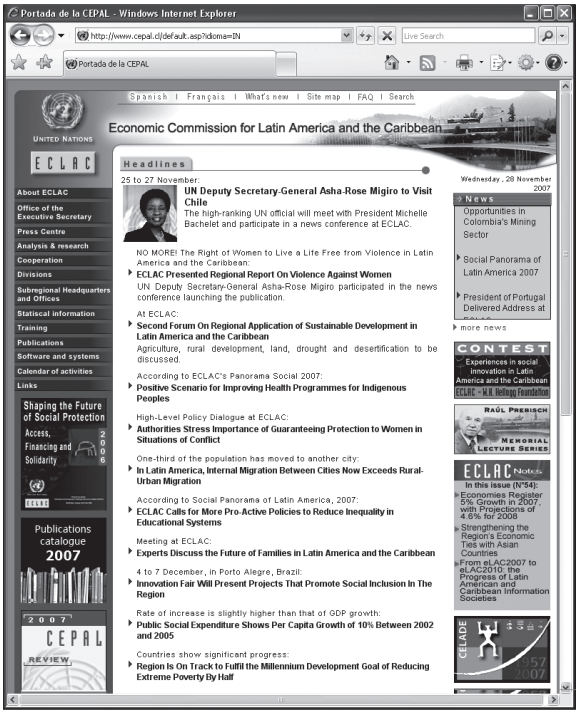

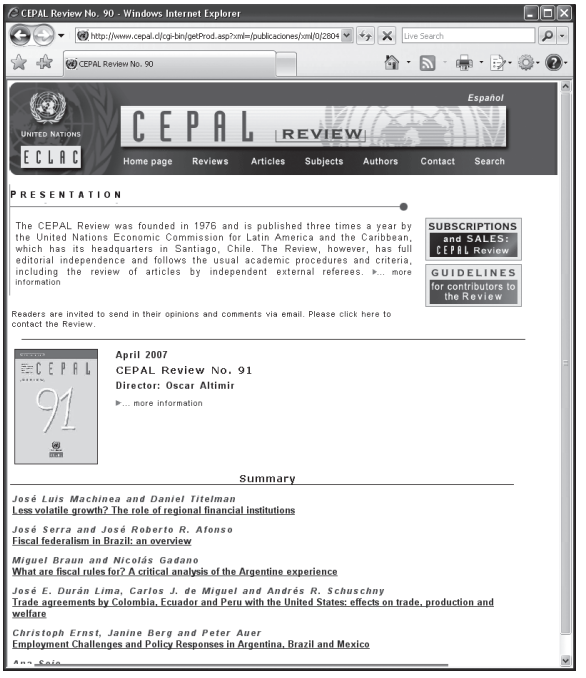

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Social Panorama of Latin America, 2006, LC/G.2326-P/I. United Nations publication, Sales No.E.06.II.G.133, CEPAL, Santiago, Chile, February 2007, 422 pages.

In the last four years (2003-2006), Latin America has turned in its best performance in 25 years in economic and social terms. Progress with poverty reduction, falling unemployment, improving income distribution in several countries and a strong upswing in numbers of jobs are the main factors underlying the positive trend in a number of the region's countries.

The first two chapters of Social Panorama of Latin America 2006 look at the way the main social indicators have behaved in the last few years. These indicators track the evolution of poverty and extreme poverty, inequality in income distribution and changes in the main labour market indicators. The analysis focuses in particular on the performance of urban waged employment during these years of economic upswing and expansion.

The following two chapters address matters that, for different reasons, have come to figure prominently on government agendas. The chapter on indigenous peoples adopts a rights-based perspective to examine the new realities of indigenous peoples' lives, their heterogeneity and, in particular, the new obligations of twenty-first century democracies in this respect. The chapter on changes in family structure in Latin America looks at new public policy issues raised by the increasing variety in family types and outlines ways in which governments are responding to these new situations.

Social Panorama of Latin America 2006 uses the most recent estimates of the magnitude of poverty conducted by the Economic Commission for Latin America and the Caribbean (ECLAC). According to these estimates, in 2005, 39.8% of the region's population, or 209 million people, were poor and 15.4%, or 81 million, were extremely poor or indigent. The first chapter also gives poverty projections for 2006, according to which the numbers of poor and indigent will decline again, to 205 million and 79 million, respectively. These figures are then used as a basis for a fresh examination of the countries' progress towards the first target set in relation to the Millennium Development Goals. An analysis is also conducted of recent income distribution trends in the Latin American countries and these are compared with measurements of absolute and relative poverty, which are based, in turn, on the criteria adopted by the countries of the Organization for Economic Co-operation and Development (OECD).

The second chapter deals with changes in the main labour market indicators and compares trends recorded in the period 1990-2002 with those for the last three years. The analysis focuses on the level and composition of unemployment, trends in labour force participation, especially by women, and the generation of waged employment in urban areas. The quality of waged employment is discussed with reference to trends in real wages, type of contract and the attached social security coverage. It is concluded that the upturn in employment and, partly, in wages seen in the last two years has not significantly improved the quality of new jobs. This would indicate that the current levels of coverage of employment-based contributory social security schemes are insufficient to sustain progress towards the institution of a universal pension and retirement scheme in which minimum benefits can be properly financed in the long term.

The chapter on indigenous peoples gives a socio-demographic overview from the perspective of the new international standard on indigenous peoples' individual and collective rights, the implementation of which is compulsory for all States. In this regard, two main points are discussed: the emergence of indigenous peoples as active social and political actors, and the consolidation of the international standard of rights and the associated public policy implications. The chapter also looks at demographic and territorial heterogeneity among countries and among indigenous peoples in terms of settlement patterns, age structure and higher rates of fertility and infant and child mortality. Emphasis is afforded to the complexity and heterogeneity of indigenous population dynamics and the persistent inequity and inequality indigenous people face, interpreted in the framework of the structural discrimination and specific cultural traits evident in Latin American countries. This poses an enormous challenge to twenty-first century democracies in terms of State reform and policies aimed at narrowing gaps in the implementation of indigenous peoples' individual and collective rights.

Chapter IV, which is devoted to the social agenda, analyses changes in family structure and reviews family policies and programmes in the region, based on the responses provided by official national agencies to a questionnaire circulated by ECLAC. The first part of the chapter, on shifts in family structure, discusses the increasing variety of family type, particularly the greater proportion of single-person and female-headed single-parent households. This has been accompanied by a decline in the proportion of two-parent nuclear families with children and of extended families, and a relative decline in the number of households whose head provides the sole financial support for all the family members. A new approach to family programmes and policies is called for in view of these changes. The second part of the chapter discusses some aspects of the public institutions responsible for different family-related issues and associated programmes and policies and flags a number of flaws and limitations observed in the region in this regard.

As regards the international social agenda, the chapter refers to international meetings held on social issues during

the period covered by this report and summarizes the agreements and recommendations arising from the thirty-first session of ECLAC, whose core theme was social protection.

Foreign Investment in Latin America and the Caribbean 2006, LC/G.2336-P. United Nations publication, Sales No. E.07.II.G.32, ECLAC, Santiago, Chile, in final stages of publication, 286 pages.

In 2006, foreign direct investment (FDI) inflows to Latin America and the Caribbean (excluding the main financial centres) continued their upward trend, reaching over US$ 72 billion, for an increase of 1.5% over 2005. At the same, however, the region's share of global FDI inflows declined, as flows increased more rapidly in other parts of the world.

The situation with respect to FDI outflows in 2006 was quite different, as outward FDI (OFDI) from Latin American and Caribbean countries jumped by 115% to about US$ 41 billion, expanding faster than in the rest of the world.

The main message of this year's report is that active and integrated FDI attraction policies linked to national development strategies are necessary to secure quality FDI. These are lessons drawn from policy practices in the more successful European and Asian countries, which contrast with the more passive and disconnected FDI attraction policies evident in Latin America and the Caribbean.

The 2006 report also contains chapters that analyse the experiences of two relatively small investor countries in Latin America and the Caribbean: the Republic of Korea and Portugal. In the first case, it was found that one of the reasons why the region plays a fairly minor role as a destination for OFDI from the Republic of Korea is that its FDI attraction policies have not been effective in attracting and upgrading dynamic FDI in the electronics, automotive and apparel sectors. In the second case, passive policies proved sufficient to attract significant FDI in services from Portugal to Brazil, but only for a limited period of time.

Other publications

Cooperación financiera regional, *Libro de la CEPAL*, No. 91, LC/G.2319-P, United Nations publication, Sales No. S.06.II.G.103, ECLAC, Santiago, Chile, September 2006, 268 pages.

Regional financial cooperation can be a highly effective tool for overcoming the problem of insufficient financial services that currently characterizes the international financial architecture. In a context defined by open regionalism, global and regional institutions can play complementary roles. On the other hand, in a heterogeneous international community, some competition in the provision of services to small and medium-sized countries might be the best way to meet their needs. According to the essays in this publication, although there is much experience in the area of financing for development, there are relatively few cases of macroeconomic cooperation in the developing world. In recent years, several initiatives have been launched in this area, often replicating models developed in the European Union. There are two main reasons for macroeconomic cooperation among developing countries: the building of stronger defences against global financial shocks and the prevention of distortions in competition between export-oriented economies.

Regional financial cooperation faces some major challenges, as it must attempt to match the demand for financial support with funding capacity, which may limit the ability of the poorest developing countries to create viable regional financial institutions. There must also be a strong commitment to institutional development, which was a basic lesson learned in the history of European integration. Last but not least, there is also a need to adopt measures aimed at guaranteeing the equitable distribution of the benefits of such cooperation.

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