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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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Economic paradigms and the role of the State in Latin America

Enrique V. Iglesias

This paper looks at the two successive development paradigms that prevailed in Latin America during the second half of the twentieth century, examining in particular the role assigned to the State in each. It will discuss how, in the ECLAC paradigm, a far-reaching role for the State as guide, sponsor and direct participant in productive development became less viable as the State was captured by private interests that no institution was solid enough to contain. Later, after the advent of the Washington consensus, the State became too severely weakened to carry out proper regulation of privatized activities or to sustain its long-term vision or its concern about income concentration. The paper touches upon the social demand for a new type of State and examines the requirements and objectives that will have to be met if the State is to facilitate the effective operation of markets and act to reduce social inequalities, among other things.

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I

Introduction

At the kind invitation of my great friend and colleague José Luis Machinea, I took part not long ago in a very special meeting at the Economic Commission for Latin America and the Caribbean (ECLAC). The meeting was convened to honour the memory of Raúl Prebisch, an iconic Latin American economist and illustrious contemporary of many of those present. His memory evokes the golden age of development economics in the latter half of the twentieth century, a discipline he led with such wisdom in Latin America and brought to greater prominence in international academic circles and prestigious specialist institutions such as ECLAC, the Latin American and Caribbean Institute for Economic and Social Planning (ILPES) and the United Nations Conference on Trade and Development (UNCTAD). His life was rich in thought and action and in due course was instrumental in moulding new generations of professionals committed to the economic and social progress of Latin Americans, while his ideas are held in deservedly high regard by many prominent economists in the academic world today. For me his memory is genuinely moving, since he was both the

teacher who opened my eyes to the workings of the real economy in Latin America and the world and a generous friend whose example, advice and support were a crucial influence on my career and my own dedication to the economic and social development of Latin America and the Caribbean. At the event, these feelings mingled with nostalgia for the years spent at ECLAC, which was and, I feel, still is my home —the cradle of aspirations and experiences shared over so many years. I feel very grateful for the opportunity I was given to revisit the memories it holds for me and to find myself once again in the company of such good friends and travelling companions.

On that occasion, I shared a number of reflections on the role of the State over more than half a century of efforts to develop economic paradigms in the Latin America region. In this paper I will do the same. I do not intend to write a theoretical treatise, but rather to illustrate the vision of an exceptional practitioner in the work of academic disquisition and in the practicalities of the development policies followed by the great majority of the region's countries.

II

Economic paradigms

The search for economic paradigms has been a constant in the region since the middle of the twentieth century. Few regions have known such fierce debate or such varied experimentation as Latin America. The region has been a veritable laboratory of ideas and policy proposals, each driven by the ideologies of the moment and often following teachings that originated elsewhere in the world.

A number of lessons can be drawn from this search. One thing I have learned in nearly half a century of experience is that economic underdevelopment is a much more complex matter than we believed it to be fifty years ago, for all the thought devoted to the subject at the time. In part, ECLAC was a seedbed of ideas brilliantly propounded by Raúl Prebisch. But it was also a centre for research and learning about the economic reality in each country, often in close cooperation with governments. The experience this provided gave us a better understanding of each country's economic complexity and of its international environment.

Thus, one thing we were taught by the experience of so many years was to avoid the reductionism or oversimplification of reality that often accompanies the

□ This paper is based on the lecture given by the author at the Economic Commission for Latin America and the Caribbean (Santiago, Chile, 28 August 2006) on the occasion of the Sixth Raúl Prebisch Memorial Lecture.

search for paradigms. Simplification of this kind has been a feature of almost all theoretical formulations and the policy proposals following on from them. In my personal experience, oversimplification is found in two areas: in economic matters, and in relation to social and political frameworks.

How can we avoid the simplifications of theory? Advances in macroeconomic analysis have made an enormous contribution to policymaking. Macroeconomic models have made extraordinary progress in their capacity for policy analysis and prescription. Three areas in which particularly substantial and useful progress has been made are monetary and financial affairs, price formation (including inflation) and external trade.

Often, though, I feel that reality has been sacrificed to the formal and mathematical elegance of the models. Not that we should underestimate the contribution of macroeconomic models to knowledge and policy implementation, but there is sometimes a tendency to put formal elegance before the complexity of the economic, social and political reality.

Perhaps we can illustrate this by drawing a parallel with the building of a house. The input of a good engineer is needed to make sure the house has proper foundations and infrastructure. It will simply not be safe without them. But there is also the need for an architect who can supply a design that matches the aspirations and needs of its occupants. I think the search for economic paradigms is rather akin to this. Good economic engineers are needed to ensure the consistency of economic models and work out the optimum conditions for them. But economic architects are needed as well to see that the rationality of the economic engineering matches the requirements of the social and political reality. In my view, economic engineering has moved far ahead of the architecture of economic paradigms. The experience of years past has often revealed flaws in the design of houses whose structure, by contrast, has been a model of formal elegance.

What has the experience been as regards socio-political paradigms? Different ideas and categories of sociological and political analysis have been deployed in the effort to ascertain and grasp the true state of affairs, and this has brought us closer to a comprehensive understanding of reality. Inevitably, though, this appreciation of conditioning social and political factors has often fallen prey to non-empirical ideologies or constructs which, while useful in shedding light on social phenomena, risk putting ideology before reality. And this leads to socio-political simplification that is just as dangerous as the economic kind.

One of the most valuable lessons of recent years, then, is the need to avoid both types of simplification. In one case we risk ending up with economies but no society, and in the other with societies but no economy. All paradigms entail one risk or the other, so we must guard against oversimplification if we hope to develop an all-round appreciation of the reality in which we mean to implement relevant and viable economic and social policies.

None of this is to say that we should dismiss the role of ideas and ideologies. These have proven their value throughout history. What I have found in my personal experience, though, is that the search for economic and social paradigms needs to take account of national and international realities and identify the obstacles and conditionalities these create for the application of different policy proposals.

Institutions play a crucial role in shaping economic, political and social realities, as is increasingly being recognized. And one of the most important institutions is the State. In Latin America, the role of the State has been a key element in all major development paradigms.

This issue is not new, but I propose to address it here because it may be interesting to examine it in the light of my personal experience, drawing in particular on the findings of our work over the last few years at the Inter-American Development Bank (IDB), where we set up a special unit to analyse political problems in Latin American development, particularly the role of the State. In doing this, we were simply adding our efforts to the institutionalist thinking of recent years, with its stress on the fundamental role of institutions when it comes to explaining and combating development problems.

I should like to discuss the role of the State in each of the two main economic policy paradigms of the last 50 years in Latin America: the ECLAC paradigm and the Washington consensus. Consideration of this and the lessons it yields shows the need to rethink the role of the State in the light of the new realities in Latin America and the economic strategies being applied in the region.

1. The ECLAC paradigm

For our generation, the first great encounter between State and paradigm in Latin America resulted from the ECLAC approach. As we know, the framework of that paradigm contained a set of key ideas that included: (i) the setting of the paradigm in the framework of the

centre-periphery relationship; (ii) inward development; (iii) the role of technology; (iv) import-substitution industrialization; and (v) an active role for the State. Implementation of this development strategy required a series of specific tariff, tax, currency and credit instruments and policies, along with fiscal incentives for industrial development and measures to deal with the explosion of social demands generated by migration from rural areas to cities.

In these circumstances, the State had a leading role to play and accordingly created line ministries, planning offices and development banks to mobilize financial resources and technology. Enlarging and strengthening the State apparatus was the central tool of economy policy. The development process driven by this strategy profoundly altered the economic and social profile of Latin America. One of the main aspects of the social transformation was intensive urbanization. As regards the economy, the manufacturing sector came to account for a larger proportion of total production and employment while agricultural output held steady or declined, the growth of public-sector services (and employment) accelerated, and government bureaucracies expanded in tandem with the share of total resources absorbed by the State. Urban incomes grew and outstripped rural incomes quite markedly, although this upward tendency weakened sharply from the 1960s to the 1970s.

What accounts for this progressive exhaustion of Latin American development? Were not the underlying development policy principles the same as those applied so successfully by the "Asian tigers"? So why did Latin America prove unable to operate a progressive industrial economy in a viable way, instead losing significant ground to countries that began their industrialization from a weaker base? The causes were many, but there were some factors that had a particularly harmful impact.

In Asia, the State had greater autonomy than in Latin America and could build on a tradition of bureaucratic efficiency and independence from the influence of private interests. The Latin American experience was very different, not so much in the nature of the policies as in the way these were implemented. The fiscal base was inadequate, mainly because there was no genuinely redistributive social and political covenant. The State was easily dominated by private interests, including those of political groupings or parties, business groups, military leaders, caudillos or dictators, who used the State to build up their own political and economic power. This also accounts for

the clientelism of employment and public expenditure management by authoritarian or semi-democratic regimes.

In short, the kind of State that existed at the time of the ECLAC paradigm was omnipresent, centralist and captive. Moreover, few Latin American countries succeeded in making much progress with the construction of a solid democratic State, an essential condition for securing independence from private interests and confidence in the rule of law. Those flaws led ultimately to political instability and the democratic deficit.

The studies done at the IDB analysed this democratic deficit from the perspective of two different relationships: State-market and State-society. Gaps or flaws in those relationships made sustainable, equitable development a less viable proposition.

Thus usurped by private interests, the State intervened in ways that blocked the efficient operation of the market and encouraged rent-seeking, speculation and corruption. Again, public policies that had been captured by private interests could not respond to the demands of most citizens, and this played a part in excluding large sections of the population from the benefits of development and eroding the legitimacy of the State.

The exhaustion of the heterodox ECLAC model precipitated the crisis of the State. This is not the occasion to examine the reasons for this model's exhaustion. Suffice to say that the crisis experienced by Latin America in the 1980s—which reached its nadir with the debt crisis—accelerated inflationary processes, accentuated the loss of economic competitiveness and widened social gulfs. On the institutional side, central banks, ministries of planning and financial and development institutions were destroyed. Just as serious, however, if not more so, was that the long-term approach to development policymaking was lost. In most Latin American countries, policymakers' attention was monopolized by the problems of economic survival and short-term crises. This situation, and especially the problems arising from the debt crisis, prompted ECLAC to warn at the beginning of the 1980s that a "lost decade" was imminent for the continent. Unfortunately, this proved to be exactly the case, with deeply damaging consequences for the economies and societies of Latin America.

The severity of the crisis led to the abandonment of the heterodox model and to the return of the orthodox model and the adoption of the Washington consensus.

2. The Washington consensus

The return of orthodoxy meant the adoption of market rules, use of the price system as the main mechanism for resource allocation, the implementation of stringent stabilization programmes, the liberalization of international trade, inflows of financial resources and private investment from abroad, and a far-reaching policy of privatization. Economic reforms were promoted largely by financial agencies in Washington, and particularly those that emerged from the Bretton Woods Conference, which were to be among the driving forces behind reform.

The conception of the liberal State enshrined in the Washington consensus was pervaded by an anti-statist attitude whose rationale derived from the crisis of the heterodox State, with its inefficiency, its unwieldy bureaucracy and, especially, its corruption.

Another definite influence was the generally expanding role of the market in a growing number of emerging economies, both in developing countries and in the socialist sphere.

The new conception was of a minimalist, hands-off State. All sorts of reasons were found to disqualify the State from acting as a mechanism of resource allocation, the main ones being its inefficiency, corruption, clientelism and bureaucratic excesses. Hence the advocacy of a minimized State, entailing the closure of institutions, the abolition of policy instruments and the pruning back of excessive interventionism. Industrial and agricultural policies, for example, were dispensed with. Most importantly, long-term vision was lost.

A serious mistake was thus made in implementing the reforms, that of turning away from the State. Because State involvement was rejected, the generality of reforms lacked credibility. According to *Latinobarómetro* surveys, only a third of Latin America's people have faith in the reforms. The result has been that large majorities of the population have increasingly come to view reforms and the market as illegitimate. This crisis of credibility has compounded a widespread feeling of frustration and fatigue at the slow pace of progress and the severity of the sacrifices made to implement reforms.

So, how does the State relate to the market and citizens in this new paradigm?

Where the State-market relationship is concerned, economic policy has undergone major changes, including: (i) privatizations and the opening up of whole sectors of the economy to market forces; (ii) the

weakening or absence of the regulatory frameworks needed to spur competition and protect consumers' interests; (iii) the sustained opposition of corporate interests to reform processes; (iv) the lack of proper mechanisms for negotiation between the winners and losers from reform; (v) the abandonment of measures to promote specific production sectors; (vi) lack of progress on genuine fiscal reform; and (vii) low and decreasing public investment in infrastructure.

Concerning the State's relations with citizens, a number of points need to be raised. The conditions for genuine justice and the rule of law are still absent in many countries. For one thing, judicial systems are unreliable, and this heightens the lack of legal security. Meanwhile, the State lacks the capacity to promote redistributive social covenants.

Moving on to the approach taken by the new development strategies to the role of the State, a general feature of the latter years of the twentieth century and the early years of the twenty-first has been a strongly renewed concern with social development. In one way or another, too, the whole world has felt the effects of the tragic events of 11 September 2001, especially the emphasis on State-led security measures.

The State's relationship with the market and citizens in this new paradigm has left the public administration poorly equipped to develop and implement policies, largely as a result of fiscal crises. Reforms to the public administration have yielded more in the way of fiscal reforms than of specific exercises in reorganization. They have tended to be technocratic in nature, neglecting to pursue real change in the structure of the State.

Hence, in recent years there has been a new interest in redefining the role of the State in the context of the new development strategies including, as noted earlier, a marked concern with social development and, since 2001, with national security measures. This has coincided with a propitious international economic environment, substantial growth in world output and trade, an upturn in commodity prices and an expansion in financial flows and foreign private investment. The benefits this international economic upsurge has brought to Latin America have been further enhanced by the sound macroeconomic management that is now the rule in most of the region's countries, where both external debt management and export performance have benefited from favourable external conditions.

The new economic strategies are being applied in a general framework dominated, on the external side, by better balance-of-payments positions than in the past and

by the presence of new international actors such as China and India, which represent both great opportunities and major challenges for the region; and domestically, by the consolidation of sound macroeconomic management, a new focus on macroeconomic problems and a renewed acceptability both for specific public policies to correct market failures and for State action generally. All of these are issues that ECLAC has been working on since its foundation.

Might this be a new paradigm we are seeing? In all honesty, I think not; I prefer to construe it instead as an

incremental paradigm. Latin America possesses a great deal of pragmatism, learned from its own and others' experience, together with an increased awareness of the constraints imposed by international relations in the modern world. As State and market have drawn together, the general rule has been the one expressed by President Ricardo Lagos here in Santiago: more market and better State. Of course, it is up to each country to decide the best relationship between the two.

III

A new conception of the State: its objectives and the means to achieve them

The matter we need to consider, therefore, is the new conception of the State, drawing on the good and bad lessons learned from its role in the two preceding paradigms. I propose now to use those experiences to identify a number of objectives that I think are important in the effort to define this new State.

1. Objectives

A first objective is to have a State capable of making market efficiency a viable proposition. The State is important, if not indispensable, in achieving an efficient market, which requires a reliable and credible legal and judicial system to enforce property and personal rights. Another necessity is a regulatory framework that strikes the right balance between public and private interests. Competition also has to be fostered and protected in the interests of market efficiency. Experience has shown how bad the results of privatizing State enterprises can be when these conditions are absent, with a public monopoly simply being replaced by a private one. In short, an efficient market capable of providing growth and opportunities for the whole population requires a State that can act effectively where needed, refraining from intervention when this can do no good.

Second, the State needs to be able to stimulate production capacity. This is not to argue for a producer State as a matter of principle, although the option should not be ruled out. What is important in this conception of the State's role is the implementation

of public policies to build up production capacity in the sectors most critical to development, such as those associated with technological and productive innovation. We propose that the State should intervene intelligently, but without going against the market, and that the dogmatic exclusion of the State that was a feature of earlier years should be avoided.

Third, we need a State that can take responsibility for reducing social inequalities. The State plays a essential role in actively defending social cohesion and combating poverty. The efficiency of political and civil rights hinges on the existence of a State apparatus that can guarantee respect for legality and decent material living standards for the population by recognizing and protecting economic and social rights. This entails the State performing two basic functions: an enabling role and a compensatory one. The State enables citizens by providing access to greater equality of opportunity through education, while its compensatory role derives from its obligation to protect the welfare of the most vulnerable in society. This is not to say, however, that the State should have a leading role in economic growth as a way of solving the problems of poverty, since this would mean supplanting the private sector in its economic responsibilities.

Fourth, a prominent part of the modern experience is a new relationship between the State and private enterprise that has yielded substantial economic and social dividends. New forms of cooperation can be identified in this field, such as the joint financing of

infrastructure by the State and private enterprise, which will certainly represent one of the greatest challenges for the regional economy in the coming years.

Fifth, where the State's role vis-à-vis civil society is concerned, it is clearly understood today that strengthening civil society goes hand in hand with State reform. At the IDB we have repeatedly stressed that there can be no effective State without a strong civil society, and vice-versa. That is, there cannot be a strong civil society without the support of a robust and efficient State. Strength must not be confused with size, however, or muscle with fat, as Prebisch often used to say. Development requires more State, more market and more civil society, but in a coherent fashion that allows all three to co-exist and bring out the best in each other. The relationship needs to be fostered creatively by building up mechanisms for civil society engagement in State functions. This is undoubtedly a great challenge, and the first step in addressing it is to do away with the mutual suspicions so often found in this relationship.

Sixth, the State has a key role to play in orienting and setting the policies that will determine the country's international positioning. It is the State's job, in consultation and collaboration with the private sector, to take the major decisions that go into shaping the country's relationship with the outside world. This is crucially important at a time when international relations are becoming more and more complex, both regionally and globally. The role of the State is especially significant in the regional integration process. The kind of *de facto* solidarity on which economic and political integration is built depends on a progressive convergence of interests, values and cultures, whose backbone is the institutional capacity of the countries and, in particular, the role of the State. Integration is a complex, dynamic process that is advanced by resolving the conflicts that arise in adapting the economic, political and social structures of the different countries. It is difficult to see how this could be achieved without the leadership of State institutions. Jean Monet used to say that nothing was possible without people but nothing was lasting without institutions. Regional integration, which is itself a process of State reform, can hardly progress unless there are States capable of dealing effectively with the adaptation problems it entails.

Seventh, the State plays an absolutely crucial role in technological innovation. At the early stages of nation-building, the State played a fundamental role in educating citizens. Today, the new frontier that is

opening up for the primary responsibility of the State is support for the development of technology and technological innovation. What education was yesterday, the expansion and quality of education are now. Today's responsibilities also include the promotion of scientific research and technological innovation. This is not to deny the essential role of private-sector activity in this field, but the gap that separates us from the developed world may widen unless we make a massive effort of technological development, and this will inevitably require effective action on the part of the State.

Eighth, in our increasingly complex world we need to strengthen our capacity to analyse key trends in the economy, society and politics at the international level. We live in a world that is advancing at an unprecedented rate in every field, dominated by the forces of globalization and the astonishing development of information and communication technologies. Accordingly, one of our very highest priorities must be to maintain the maximum possible level of observation and monitoring capabilities. In this, the modern State needs to encourage ongoing discussion and analysis by the public and private sectors so that we can cope with the challenges and benefit from the opportunities created by different aspects of globalization.

Ninth, planning offices are a proven institutional tool for developing the capacity to analyse major national and international economic, social and political trends. It is time to make amends for our past failure to analyse and reflect on the future. Long-term thinking must again become an important objective for the contemporary State. We are not arguing for central planning, but for the ability to project long-term trends as a basis for development strategies.

Tenth, another vital function of the modern State is to build up broad national consensus. We know that consensus-building at different levels between the State, private enterprise, trade unions and civil society has been a valuable experience for many developed countries. Without wishing to dilute the responsibilities of each sector of society, it is worth trying to create mechanisms to contribute to the broad national consensus that appear to be so useful and necessary in the conditions prevailing in the region today. Creating and supporting economic and social councils would seem to be a task that merits particular attention from the State.

To supplement this veritable catalogue of objectives for the new State, we should try to identify or determine the requirements and instruments that are appropriate and necessary to achieve them.

2. Requirements

In my view, the first requirement is a robust democratic system. This is certainly the most important precondition, although this assertion may be rather unexpected given that it is perhaps unusual to treat the capacities of the State as conditional upon the maintenance and advancement of democracy. It is, however, relatively common to associate the poor functioning of democracy with the development of its liberal component, relating this to the weakness of the mechanisms that protect civil and political rights and liberties by effectively limiting and apportioning power. Less attention has been paid, however, to the weakness resulting from deficiencies in what has been called the republican component of democracy, by virtue of which the exercise of public power should be a public-spirited activity involving strict obedience to the law and the public interest, often at the expense of private interests.

A second condition is the creation of a professional civil service with a solid institutional position and sense of duty, set within a suitable legal framework. In advanced democracies, the institutional independence of a civil service in which access and career progression are governed by strict criteria of equality, merit and ability acts as a counterweight to political and governmental freedom of action and as a check on arbitrary behaviour, safeguarding the values of legality without which the rights and liberties of citizens would be difficult to protect effectively. Democracy cannot be consolidated without State reform to institutionalize a professional civil service. The progress of political, economic and social democracy in developed countries cannot be understood without acknowledging the strength of their administrative institutions. It should come as no surprise, either, that the Latin American countries with the best indicators of social cohesion are those whose public institutions have the strongest traditions, including a career civil service. Consequently, there is a need to depoliticize the public administration and prevent its capture by private interests, leading to clientelism and cronyism. This is a vital step along the road to the kind of State that Latin American democracy needs today.

There is also a need to expand and improve public expenditure management capabilities. Sustainable and equitable growth depends on the quality and efficiency of public policies and management. It is therefore

essential to increase the fiscal capacity of governments, together with their responsibility. A particular priority must be to adapt resource allocation systems to the needs of the poorest and to tailor systems of provision to their specific circumstances, providing them with opportunities for direct participation and engagement. To achieve all this, it is essential to depoliticize the public administration and prevent its capture by private interests, as already noted. It is the role of public administration to provide the basic institutional platform for the design and implementation of public policies that reflect the general interests of society.

Lastly, any approach to State reform will need to deal both with the ideological baggage associated with this and with the logic that reduces it to a mere set of technical problems. State reform can only be arrived at through incremental adjustments conceived on the basis of a political economy that is grounded in the achievable. Reality shows that ideas, not ideologies, are what gradually drive progress towards solving problems. This holds true for the design of the State: there are few viable options associated with flags of a particular colour, but there are opportunities for gradual and usually cross-cutting changes requiring broad consensus and support from society as a whole.

By the same token, to treat State reform as an exclusively technical problem distinct from politics is to ignore a reality that reappears over time in unsuspected forms. It has become increasingly clear that the countries which have been able to make sustainable progress are not those which have subordinated political logic to purely technical criteria. Only when there is some kind of entente between technical and political rationality, when reforms have been presented and discussed openly and without fear of the political cost, when there has been cross-cutting investment in local knowledge and collective appropriation of plans and projects, do we see advances which, albeit slower, prove more sustainable and equitable. It is important to emphasize that, apart from some basic common ground in relation to macro balances, the most successful countries display a very diverse range of institutional and political reform models. But another common trait is that they have devised innovative ways of solving their problems, each striking a particular balance between political and technical rationality. This is perhaps the most important lesson from reform in such countries as Chile and Brazil.

(Original: Spanish)

Angel or Demon?

China's Trade Impact

on Latin American countries

Jorge Blázquez-Lidoy, Javier Rodríguez, Javier Santiso

China's economy has expanded in leaps and bounds to become a major world trade player. For Latin America, China's growth is both a threat and an opportunity. With a few exceptions, Latin American trade clearly benefits from this country's global integration. In order to analyse China's trade impact, we study the country's export and import structures. A database of 620 different goods and two indices of trade competition were used to compare the impact of China on 34 economies (including 15 Latin American countries) during the period 1998-2004. In general terms, the results confirm that there is no relevant trade competition between China and Latin America in the United States market. Not surprisingly, those countries that export mainly commodities face less competition. This is to be expected, since China is a net importer of raw materials and Latin America has a strong commodity endowment.

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I

Introduction

Over the past two decades, China has become a major player in the global economy. In less than 20 years, its GDP has grown at an impressive rate of nearly 9.5% according to official figures,¹ and its share of world trade has jumped from a meagre 1% to more than 6%.

China's integration into the world economy has been one of the major events of recent decades. In 2003, it was already the sixth-largest economy in the world, measured at the market exchange rate,² the

fourth-largest global trader and the biggest recipient of foreign direct investment (FDI) in the world. If its trade growth continues, China will soon emerge as the third-largest trading economy in the world, overtaking Japan for the first time and coming in just behind the United States and Germany. In 2005, China overtook the United Kingdom to become the fourth-largest economy in the world.

As underlined by almost all Wall Street analysts, China's emergence has become the issue of the decade. The figures cited in discussing the country's 1.3 billion consumers are inevitably on a colossal scale. Goldman Sachs predicts that, by 2040, China will overtake the United States as the world's biggest economy.³ Much of the analysis might be overly optimistic, inviting some analysts to wonder if China's growth surge is being driven by an investment bubble, while others sound the alarm about a possible hard landing or worry about the Chinese currency peg⁴ and the banking system.⁵ According to other analysts, China's developing capitalism is not solidly based on law, a respect for property rights and free markets. Lastly, it is unclear whether Chinese public banks allocate their capital

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¹ Uncertainties about Chinese statistics abound. In 2003, for example, the official GDP growth rate was 9.1% but almost all economists following China suspected that the figure was over 11%. In 2005, Chinese authorities revised their statistics, upgrading GDP growth among other variables. On the contrary, Alwyn Young of Chicago University, estimated that GDP growth over the period 1978-1998 was 1.7 percentage points below the official one (Young, 2000 and 2003).

² In terms of purchasing power parity (PPP), China is the second largest economy behind the United States.

³ Over the past years, Goldman Sachs has implemented an aggressive strategy to enter China. This United States based global investment bank runs its business in the Asia-Pacific region with an office in Hong Kong as its headquarters. Goldman Sachs also has offices in Beijing and Shanghai for Chinese business contacts. In Asia, it employs over 1,000 people and 150 of them are dealing with Chinese businesses. For the challenges facing Goldman Sachs in China, see Yao, Li, and others (2003).

⁴ Concerns about the Chinese currency intensified during 2003 and 2004, an electoral year in the United States (Eichengreen, 2004 and 2006).

⁵ On the Chinese banking system, see Deutsche Bank (2004) and the Bank of Spain (2004). Over the past two decades, the rush of foreign banks into the Chinese financial system has also intensified, reflecting the deeper trade relations between China and the rest of the world. Hong Kong-Shanghai Bank Corporation (HSBC), Citigroup, Scotia, Crédit Lyonnais and BNP Paribas are among the foreign commercial banks with the strongest representation. Of the investment banks, the most active are Goldman Sachs, Morgan Stanley, Deutsche Bank, JP Morgan, UBS and Crédit Suisse First Boston (CSFB). In 2003, investment banks paid out more than US\$ 200 million in fees for initial public offerings (IPOs) of China-based companies according to estimates by *Dealogic* (a leading British information provider) released by the *Financial Times* (although this amount was not enough to compensate them for their expenditure).

according to capitalist economic criteria and whether they are therefore vulnerable to negative shocks. What is evident is the Chinese “gold rush” being experienced in nearly all markets. This is the case, for example, in bond markets owing to the issuance of Chinese bonds. In mid-October 2004, China issued a 10-year 1-billion euro bond that has been oversubscribed more than fourfold by large European investors, ranging from Finnish pension funds to Italian asset managers. The spreads of 50-60 basis points over United States Treasury bonds are largely comparable to those of Chilean investment grade paper and even to those of developed countries, like the 20 basis points paid by Spain the same week of the issuance.

In any event, the appetite of foreign investors for Chinese “gold mines” has grown steadily. Economic historians would, however, nuance China’s emergence and subsequent boom by suggesting that it is not totally new or unprecedented.⁶ China was already the largest economy for much of recorded history and, until the fifteenth century, China had the highest per capita income in the world. In 1820, although it had already been long overtaken by Europe in terms of per capita GDP, it still accounted for 30% of world GDP. As is also underlined by IMF and HSBC, the recent Chinese experience can easily be compared to that of Japan or the emerging Asian economies and indeed, China’s share of world trade is still far below that of Japan for example (IMF, 2004; HSBC, 2005). These studies emphasize that China’s rising share in world output and economic integration is already having a significant impact all around the world. This is the case in Asia (Ahearne, Fernald and others 2003) but also much further afield in Africa for instance (Goldstein, Pinaud and others, 2006).

The growing impact of China on Latin America has also raised the interest of major institutions involved in the region (ECLAC, 2005; Andean Development Corporation, 2006). Mirroring moves by the Asian Development Bank (Lin, 2004; Lall and Weiss, 2004), the Inter-American Development Bank (IDB) has multiplied the number of studies into the impact of Chinese growth on Latin America⁷ and has developed a dense research network and agenda to encourage

research between Asia and Latin America.⁸ At the IDB Annual Meeting in Lima, China’s application for membership was formally submitted and Japan was chosen as host for the 2005 Annual Meeting. On 1 October 2004, IDB organized a major event on China and Latin America in Washington, in cooperation with the Asian Development Bank, and published an extensive report (IDB, 2004). As underlined by one panellist and then-President of IDB, Enrique Iglesias, it was the first time in the history of the institution that such an event was taking place.

The Banco Bilbao Vizcaya Argentaria (BBVA), a major European bank with a large Latin American franchise, has also published several studies to assess the impact of China on the region. In its monthly review, *Latinwatch*, BBVA published two articles on this issue. The first, published in *Latinwatch* of June 2003 (BBVA, 2003) and entitled “Mexico and China in World Trade” suggested that the emergence of China as a global trade player was a negative event for Mexico. The second (BBVA, 2004), entitled “China’s Economic Potential and Opportunities for Argentina”, concluded that the results for Argentina were the opposite of those for Mexico. The fact that the same review published two case studies with contradictory results is, to say the least, surprising. The perception about the impact of the emergence of China on Latin America seems therefore to be rather contradictory. On the one hand, China’s very low labour costs and strong competitiveness are a risk for other economies. On the other hand, China’s enormous domestic market presents an opportunity. Is China an angel or a demon for Latin America?

This paper assesses the trade impact of China on Latin America, on the basis of the emergence of China as a global player. It follows the same lines as the Rumbaugh and Blancher study (2004) which analysed the risks and opportunities of China’s emergence, but on a global scale. Unfortunately, Rumbaugh and Blancher (2004) exclude Latin America. Most of the studies on the impact of Chinese trade on emerging markets tend to concentrate on Asia, where Chinese exports tend to crowd out the exports of other Asian countries (see Eichengreen and others, 2004). In fact, much of the increase in United States imports from China has been at the expense not of Mexico or Central American countries (protected by proximity) but of

⁶ See the study of Angus Maddison for the OECD Development Centre (Maddison, 1998) for a historical perspective on the Chinese economy and the papers of Carol Shiue and Wolfgang Keller (2004a and 2004b).

⁷ See for example Lora (2004a) and IDB (2006).

⁸ See the website of the Latin American/Caribbean and Asia Pacific Economics and Business Association (LAEBA): <http://www.laeba.org/index.cfm>.

Asian countries like Japan or other emerging economies in the area. For example, in 1988, nearly 60% of United States shoe imports came from South Korea or Taiwan Province of China, compared to a meagre 2% from China. By 2005, China's share was more than 70%, while United States imports from South Korea and Taiwan Province of China had dwindled.

This emergence of China as a global trade player is exceptional in terms of its speed and depth. China is already a much more open economy than most emerging markets. In 2005, the sum of exports and imports of goods and services reached more than 70% of GDP while the figure is 30% or less in the United States, Japan or Brazil (Chinese trade performance is however comparable to some Latin American countries such as Chile or Mexico with ratios of 60-65%, and also to some developed countries like Spain). The growth trend also seems sustainable over the medium

term, driven by both external and domestic demand. According to Soler (2003), trade growth will be accompanied by a 1% yearly productivity growth in China between 2003 and 2012, which suggests that current Chinese growth is sustainable in the medium term. The rate of growth will probably decelerate as China develops, yet it will remain significant.

This paper assesses the impact of growth and trade not only in the short term, but also in the medium term. It is structured as follows: section II concentrates on the emergence of China as a global trade player; section III is about the trade structure of China; Section IV focuses on Chinese trade competition. Section V is centred on trade opportunities from strong Chinese demand and deals with geographical aspects and their impact on trade with China. Section VI examines China's impact in the long term. Lastly, section VII presents the main conclusions.

II

The emergence of China as a global trade player

China's progress since it first opened to foreign investment and reform in 1978 has been dazzling. Average annual GDP growth reached 9.5% during the period 1978-2005.⁹ Over the last 20 years, and after a long period of economic autarky, the country emerged as a major player in world trade. In this context, China's accession to the World Trade Organization (WTO) in December 2001 could be considered a milestone. During those years, China significantly reduced its tariffs and progressively joined global trade. Nowadays, its weighted average tariff is 6.4% compared with 40.6% 10 years ago (see table 1).

In this process of commercial opening, the Chinese share in the global market grew quickly. However, when compared to some Latin American countries, the growth rate of China's exports looks less impressive in relative terms. During the 1990s for example, countries like Mexico, Chile or Costa Rica registered a more impressive export growth rate than China during the

same period (Lora, 2004b). The positive performance of exports allowed China to gain market share in developed markets (see table 2). By definition, this gain in market share was achieved at the expense of other economies.

This is one of the reasons why China is perceived by most emerging economies as a tough trade competitor.¹⁰ Some countries even blame China for the poor performance of their exports in recent years.¹¹ China is indeed taking the place of other emerging countries in world markets. This negative perception

¹⁰ One indicator of the increasing competitive tensions generated by the emergence of China is the rising number of anti-dumping claims against China. In recent years, China has become the top anti-dumping target (see Chu and Prusa, 2004).

¹¹ For example, the poor performance of the industrial sector in the United States, despite its significant economic growth during the period 2002-2004, is indirectly attributed to China. There is an "off-shoring" process and, in this context, United States corporations are transferring their manufacturing activities to China to take advantage of its low labour costs. Similarly, some analysts claim that the poor performance of Mexican exports in recent years is due to China.

⁹ On this performance and its sustainability, see Yifu Lin (2004); Zijian Wang and Wei (2004).

TABLE 1

Chinese tariffs over the last twenty years

	Unweighted average	Weighted average	Dispersion (standard deviation)	Maximum
1982	55.6	-	-	-
1992	42.9	40.6	-	220.0
1997	17.6	16.0	13.0	121.6
2002	12.3	6.4	9.1	71.0

Source: Based on *World Economic Outlook* (IMF, 2004).

TABLE 2

Chinese exports' market shares in major markets
(Percentage of total imports of major markets)

	1960	1970	1980	1990	2000	2002	2004	2005 ^a
Japan	0.5	1.4	3.1	5.1	14.5	18.3	20.8	21.0
United States	...	...	0.5	3.2	8.6	11.1	13.8	14.2
European Union ^b	0.8	0.6	0.7	2.0	6.2	7.5	14.1	10.1

Source: Based on figures taken from IMF, *World Economic Outlook* and *Direction of Trade Statistics*

^a 2005 (January-June).

^b Not including intra-trade among countries of the European Union.

increased after 2001, when China joined WTO. The accession to WTO opened up global markets to Chinese goods and it made the Chinese ability to compete successfully in those markets even more obvious. As a matter of fact, it is clear that there is strong competition between China and other economies that specialize in exporting industrial goods with relatively low value added. It is therefore clear that some costs will appear in the short-term.

As if to confirm this perception, China's share of world exports has increased rapidly over the last 20 years. In 1980, China accounted for 0.9% of world exports and by 2002 its share had risen to 5%. In 2003, it reached nearly 6% and, by the end of 2004, China was becoming the world's third biggest exporter (after the United States and Germany). From 1990 to 2002, world exports grew by around 90% and Chinese exports by about 425%. This performance of Chinese exports implies, by definition, that other countries are losing market share. It is clear that, in the short-term,

some costs will appear. China can produce goods of low value added at a very low cost. The reason is that labour is relatively more abundant in China than in other economies. Wages are on average four times lower in China than in Latin American countries. In 2002, the average Chinese monthly salary in the manufacturing sector was 112 dollars, compared with around 440 dollars in Mexico and 300 dollars in other urban *maquila* countries of Central America such as Costa Rica, El Salvador or Panama. However, all these facts might be interpreted too naively in an exclusively negative way.

On the positive side, we find that there are benefits to be had from trade with China. China has an enormous domestic market. The development of China will be accompanied by a flowering of its market. The emergence of China implies long-term trade benefits. Developing countries like those of East Asia, which have established strong trade and investment relations with China, could benefit from this process.

III

The trade structure of China

In order to analyse the short-term impact of Chinese trade performance, it is first necessary to study the country's export and import structure.

The first relevant point is that there is an enormous gap between merchandise exports and imports. In fact, the difference between exports and imports is US\$ 30.4 billion. As mentioned in the previous section, however, this feature of the Chinese trade balance should be a temporary characteristic. In other words, we expect a more sustainable trade balance in the long term.

The database used in this section is that of the United Nations Conference on Trade and Development (UNCTAD).¹² It covers 620 different goods and uses the three-digit Standard International Trade Classification. The UNCTAD one-digit classification is used here for ease of presentation.

On the export side, there are three key sectors in 2004: manufactured goods, machinery and transport equipment, and miscellaneous manufactured goods. These three sectors add up to 87.4% of total exports (see table 3).

We should highlight the impressive performance of machinery and transport equipment. In 1998, this sort of merchandise amounted to 28.0% of total exports. Six years later, it represented 46.6%, i.e. an 18.6 point increase. Miscellaneous manufactured goods, on the other hand, are rapidly losing their share.

As far as imports are concerned, we find that manufactured goods, machinery and transport equipment and chemicals are the relevant sectors. These added up to 69.2% of total imports in 2004 (see table 4). The relatively similar structure of exports and imports suggests that significant intra-industry trade is taking place. In fact, this evidence reflects the fact that China has turned into a regional production centre and manufacturing point for re-exports.

As in the previous case, machinery and transport equipment is increasing rapidly. Manufactured goods, on the other hand, are losing weight in the import structure. In fact, if we use the Interactive Graphic System for International Trade Data (SIGCI) database (ECLAC) we find the same results. This database divides the trade structure into high-technology manufactured goods, middle-technology manufactured goods, low-technology manufactured goods, manufactured goods

¹² This database can be found on line at www.intracen.org.

TABLE 3

Export Structure of China (% of total exports)

	1998	1999	2000	2001	2002	2003	2004
Machinery and transport equipment	28.0	31.1	34.2	36.8	40.3	44.0	46.6
Miscellaneous manufactured goods	37.3	36.2	33.7	31.9	30.2	28.1	25.6
Manufactured goods	16.0	15.3	15.4	14.8	14.5	14.0	15.2
Chemical products	5.4	5.1	4.6	4.7	4.5	4.2	4.2
Food and animals	5.8	5.4	4.9	4.8	4.5	4.0	3.2
Mineral fuel and lubricants	2.8	2.3	3.1	3.1	2.6	2.5	2.4
Commodities	2.1	2.1	1.9	1.9	1.8	1.6	1.6
Crude material (excl. food and fuel)	1.7	1.8	1.6	1.4	1.2	1.0	0.9
Beverages and tobacco	0.5	0.4	0.3	0.3	0.3	0.2	0.2
Animal and vegetable oil/fat/wax	0.4	0.3	0.3	0.3	0.2	0.2	0.1

Source: Database 2004 of the International Trade Centre (ITC), United Nations Conference on Trade and Development/World Trade Organization (UNCTAD/WTO).

using natural resources, raw materials and other transactions (see table 5).

The relatively similar trade structure suggests that intra-industry trade is taking place. In this case, high-tech manufactured goods are increasing rapidly. Low-tech manufactured goods, on the other hand, mainly

are losing weight in the trade structure, both in terms of exports and imports.

These data however do not reveal any information on Chinese advantages or disadvantages. To study the impact on other countries, a more detailed analysis is needed.

TABLE 4

Import structure of China
(% of total imports)

	1998	1999	2000	2001	2002	2003	2004
Machinery and transport equipment	38.8	40.5	40.3	42.3	45.3	45.9	44.4
Manufactured goods	22.5	21.2	19.0	17.7	17.2	16.2	13.6
Chemical products	13.8	13.8	12.7	12.4	12.3	11.1	11.2
Miscellaneous manufactured goods	7.8	7.3	6.1	7.7	7.6	8.6	9.4
Crude material (excl. food and fuel)	7.5	7.6	8.8	9.0	7.6	8.2	9.8
Mineral fuel and lubricants	4.9	5.5	9.2	7.2	6.6	7.1	8.6
Food and animals	2.7	2.2	2.1	2.0	1.8	1.4	1.6
Commodities	1.1	1.5	1.4	1.3	1.2	1.0	0.9
Animal and vegetable oil/fat/wax	0.6	0.4	0.2	0.1	0.2	0.3	0.4
Beverages and tobacco	0.1	0.1	0.2	0.2	0.1	0.1	0.1

Source: Based on data from Intracen 2004, UNCTAD/WTO.

TABLE 5

Export and Import Structure of China
(% of total exports and imports)

	1990	1995	2000	2003	2004	2005
<i>Export Structure</i>						
High-tech manufactured goods	5.3	13.0	22.4	30.3	32.5	33.2
Low-tech manufactured goods	40.2	46.3	41.2	35.2	32.5	31.5
Mid-tech manufactured goods	20.8	18.8	19.6	20.4	21.7	22.0
Resource-based manufactured goods	11.4	12.0	9.9	9.1	9.3	9.4
Raw materials	20.2	9.0	6.2	4.5	3.5	3.3
Other transactions	2.1	0.7	0.7	0.6	0.5	0.5
<i>Import Structure</i>						
High-tech manufactured goods	13.4	17.4	28.0	34.0	34.2	35.7
Mid-tech manufactured goods	45.9	42.0	30.4	31.1	29.4	27.0
Raw materials	10.8	10.3	13.7	11.5	14.5	16.4
Resource-based manufactured goods	11.9	13.9	15.2	13.0	13.2	12.6
Low-tech manufactured goods	17.0	14.9	11.6	9.9	8.2	7.8
Other transactions	1.0	1.0	1.1	0.6	0.5	0.6

Source: Interactive Graphic System for International Trade Data (SIGCI), ECLAC.

IV

The short-term costs:

Chinese trade competition

Even though we think China will benefit from other emerging economies in the long term, some costs could arise in the short term. In particular, China is competing with other emerging economies in developed markets. In the case of Latin American countries, anecdotal evidence suggests that Mexico is a paradigmatic example of these short-term costs.¹³

Two indices of trade competition have been used to assess the short-term costs stemming from Chinese competition. The aim of these indices is to compare the export structure of China with that of other emerging economies over a particular period of time. If the export structure between two countries is quite similar, then trade competition is more likely in third markets such as the United States, the major destination of Latin American exports.

These indices were constructed using the UNCTAD database. The indices are modified versions of the well-known coefficient of specialization (*CS*) and coefficient of conformity (*CC*).

$$CS = 1 - \frac{1}{2} \sum_n |a_{in}^n - a_{jn}^n|$$

$$CC = \frac{\sum_n a_{in}^n a_{jn}^n}{\sqrt{\sum_n (a_{in}^n)^2 \sum_n (a_{jn}^n)^2}}$$

Where a_{in} and a_{jn} represent the share of good “n” in total exports of country “i” and country “j”, respectively, in period “t”. In this case, one country will always be China and the other a selected economy. If two countries (ij) have exactly the same export structure, then both indices are equal to 1. In this case, the potential trade competition is high. On the other hand, both indices equal 0 if there is no coincidence. Two indices were constructed instead of one, to ensure that results were consistent.¹⁴ We calculate *CS* and

CC, comparing competition between China and 34 economies (including 15 Latin American countries). The period is 1998–2004. Obviously, *CS* and *CC* are calculated for each year.

To sum up, the export structure of China is compared with that of 34 countries. This comparison is carried out for seven different years (1998–2004). Lastly, two different indices are used for each year. That information is aggregated to present the results in the simplest way possible. The final figure, labelled *CI*, is the arithmetic average of both indices (see table 6 and figure 1).

The results are quite interesting. Figures are relatively low for all Latin American economies except Mexico. In general terms, the results suggest that there is no direct trade competition between China and Latin America in the United States market. Unsurprisingly, countries that export mainly commodities face lower competition. This is to be expected, as China is a net importer of raw materials. Paraguay, the Bolivarian Republic of Venezuela, Bolivia and Panama are those that exhibit the lowest figures among the 34 selected economies, i.e. those are the countries that suffer the least from Chinese trade competition. Brazil and Colombia could be considered intermediate cases between Mexico and the Bolivarian Republic of Venezuela.

When we compare Latin America with other emerging countries, and particularly those located in Asia, we observe that Chinese competition is not a problem in general terms. Thus, we might conclude that there are only a few, if any, short-term trade costs for Latin America from the trade point of view. In fact, most Latin American countries are witnessing a tremendous increase in their exports to China. In recent years, China has, for example, become Brazil’s fastest-growing export market, purchasing 80% more from Brazil in 2003 than in 2002. Bilateral trade more than quadrupled in the period 2001–2004. However this trade is very concentrated on five commodities: soybeans, iron ore, steel, soy oil and wood accounted for 75% of Brazil’s exports to China in 2005. Some big Brazilian companies like Aracruz, Latin America’s

¹³ See, for example, *América Economía* (2003) and *The Wall Street Journal* (2004).

¹⁴ The correlation between both indices is 0.94. This figure shows that both indices report the same information.

TABLE 6

**Chinese trade competition with Latin America
in the United States market, 2000-2004^a**

	Coefficient of specialization (CS) ^b	Coefficient of conformity (CC) ^b	Average (CI) ^b	Average (CI 2002) ^c
<i>Paraguay</i>	0.08	0.02	0.05	0.07
<i>Venezuela (Bol. Rep.)</i>	0.10	0.03	0.06	0.10
<i>Bolivia</i>	0.12	0.04	0.08	0.11
<i>Panama</i>	0.11	0.06	0.08	0.11
<i>Chile</i>	0.14	0.04	0.09	0.11
<i>Honduras</i>	0.14	0.05	0.09	0.13
<i>Russia</i>	0.15	0.06	0.10	0.12
<i>Uruguay</i>	0.18	0.07	0.12	0.17
<i>Peru</i>	0.19	0.08	0.13	0.17
<i>Argentina</i>	0.20	0.08	0.14	0.17
<i>Guatemala</i>	0.24	0.11	0.17	0.16
<i>Colombia</i>	0.25	0.12	0.18	0.20
<i>El Salvador</i>	0.31	0.21	0.26	0.25
<i>Brazil</i>	0.30	0.21	0.26	0.28
<i>Pakistan</i>	0.30	0.26	0.28	0.32
<i>Slovakia</i>	0.40	0.23	0.31	0.33
<i>Spain</i>	0.42	0.22	0.32	0.34
<i>Costa Rica</i>	0.34	0.32	0.33	0.29
<i>India</i>	0.42	0.25	0.34	0.38
<i>Japan</i>	0.41	0.35	0.38	0.38
<i>Philippines</i>	0.40	0.37	0.39	0.33
<i>Bulgaria</i>	0.43	0.36	0.39	0.41
<i>Croatia</i>	0.45	0.34	0.40	0.42
<i>Poland</i>	0.44	0.35	0.40	0.46
<i>Turkey</i>	0.43	0.38	0.41	0.49
<i>Indonesia</i>	0.46	0.39	0.43	0.42
<i>United States</i>	0.43	0.44	0.44	0.44
<i>Romania</i>	0.45	0.45	0.45	0.52
<i>Singapore</i>	0.45	0.52	0.48	0.43
<i>Czech R.</i>	0.50	0.52	0.51	0.43
<i>Malaysia</i>	0.48	0.57	0.53	0.46
<i>Mexico</i>	0.52	0.54	0.53	0.50
<i>Republic of Korea</i>	0.50	0.60	0.55	0.48
<i>Hungary</i>	0.54	0.66	0.60	0.55
<i>Thailand</i>	0.57	0.71	0.64	0.57

Source: Authors' own data.

^a Ascending Order of average *CI*

^b Average 2002-2004

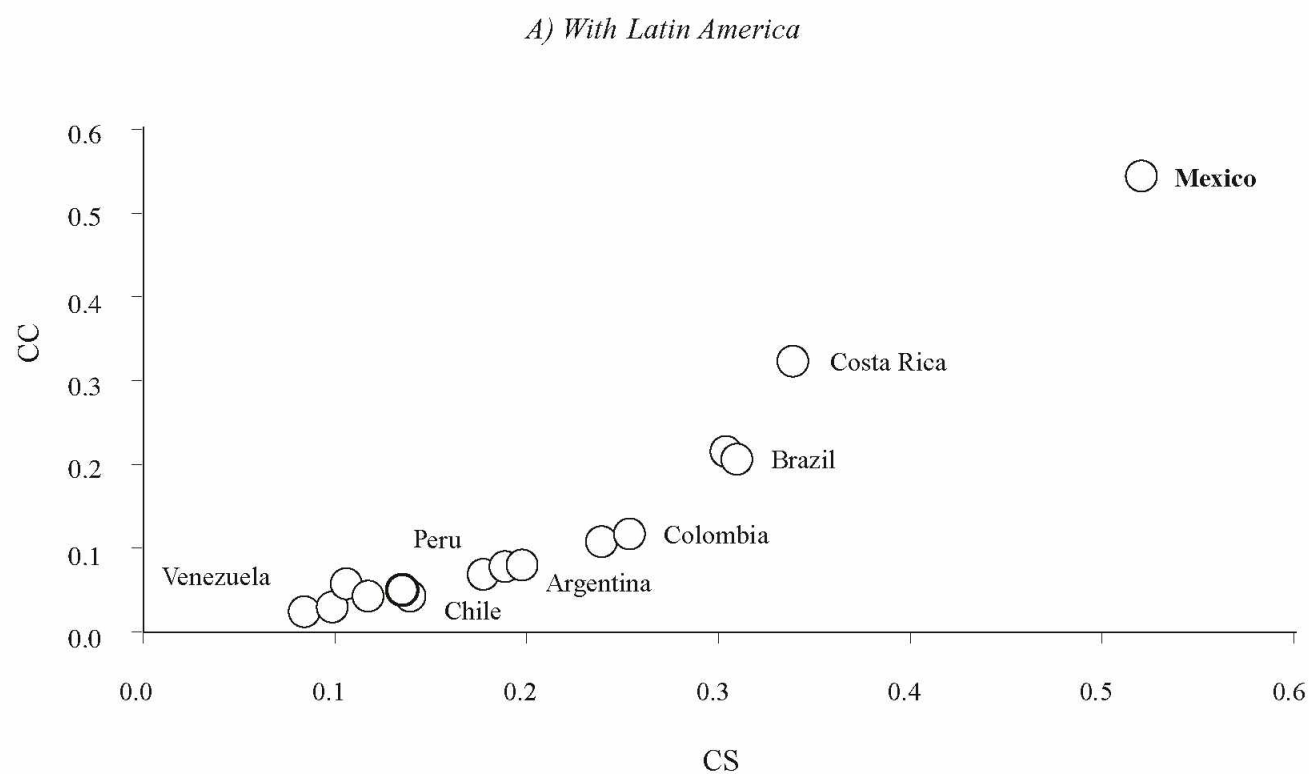
^c Average 2000-2002

largest wood-pulp producer, has more than doubled its sales to China in the past two years (they now account for 12% of the company's exports).¹⁵ China has also become a major trading partner for other

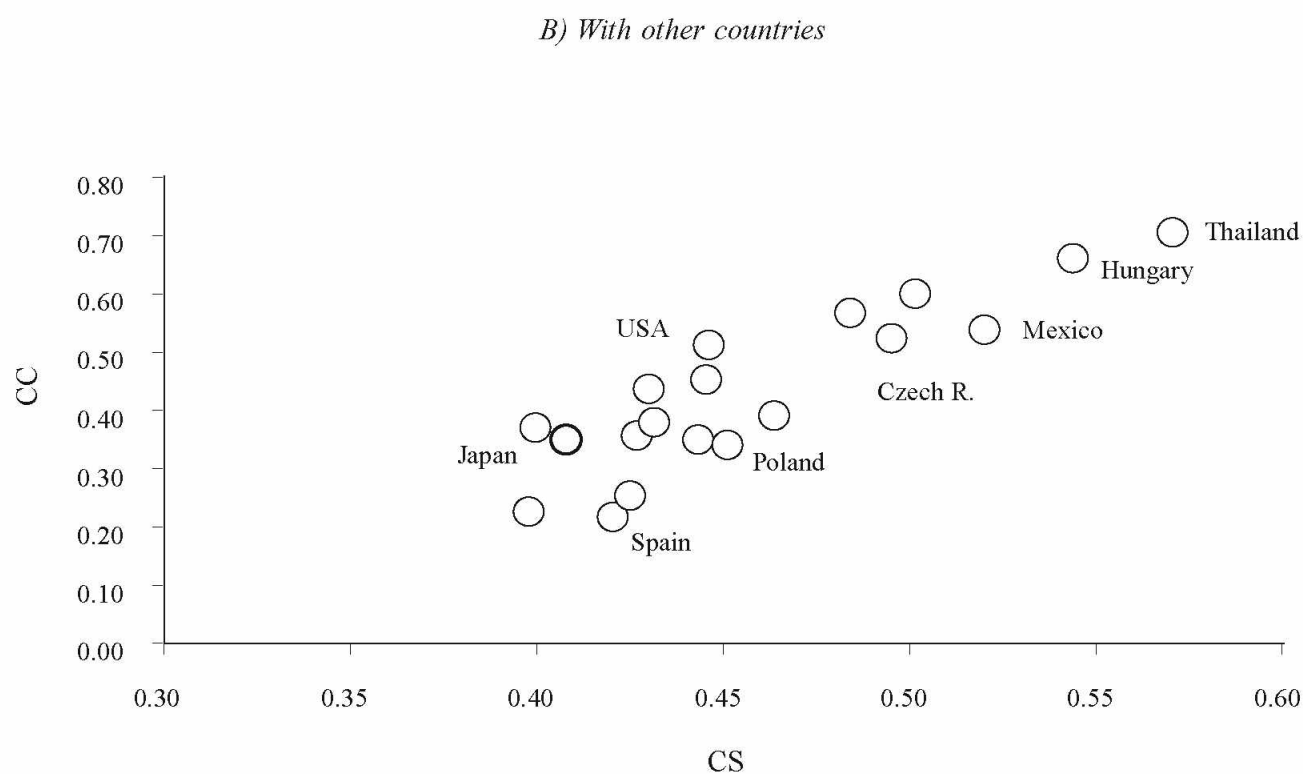
companies such as iron-ore producer Companhia Vale do Rio Doce (CVRD). Another issue for Brazil is the buoyancy of Chinese exports. China will continue to expand its exports over the next decades, with new products gaining market share in third markets. From this perspective, as underlined by Brazilian economists (Paiva de Abreu, 2005), some Brazilian sectors like iron and steel products might be affected by Chinese

¹⁵ In May 2004, Brazilian President Luiz Inacio Lula da Silva took more than 400 executives to China, the largest official Brazilian delegation to make a trade visit.

FIGURE 1

Chinese trade competition with Latin America in the United States, 2000-2004

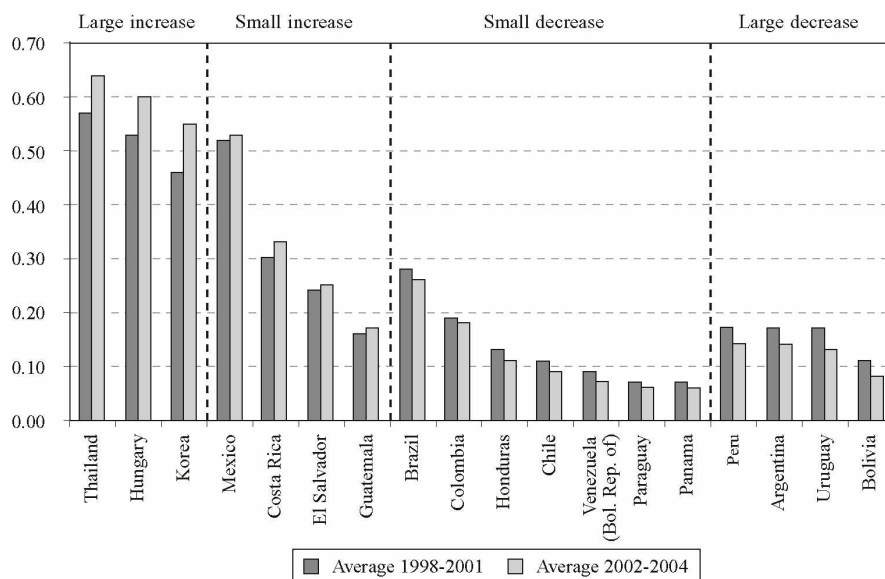
Source: Authors' own data.



Source: Authors' own data.

FIGURE 2

Chinese trade competition, 1998-2001 and 2001-2004



Source: Authors' own data.

competition in the medium term. In a more long-term perspective, the automobile industry could also become an issue.

Mexico is, clearly, another story. The results hint at Mexico facing strong commercial competition.¹⁶ In fact, only the Republic of Korea, Hungary and Thailand suffer from tougher potential competition. In this case, empirical evidence backs formal analysis. What is more, Chinese trade competition is tending to increase over time, as indicated by our *CI* index.¹⁷

In the second period, Chinese competition increased in countries where trade competition was already high, such as Thailand, Hungary, Republic of Korea and Mexico. In contrast, Latin America as a whole suffered less from Chinese trade competition: the index dropped in 11 out of the 15 Latin America countries studied (see figure 2).

Our analysis suggests that China could jeopardize some Mexican exports in foreign markets. Again, some empirical evidence supports this point. The largest market for Mexican exports is, by far, the United States. Thus, the United States market absorbed 85% of Mexican exports in 2005. In 2003, and according to the United States Bureau of Economic Analysis (BEA), the market share of China was 12.1%, beating Mexico for the first time in its history. Berges (2004) studies these trends in detail.

Mexico specializes in information technology (IT) and consumer electronics, electronic components, clothing, transport equipment and miscellaneous manufacturing, according to the Balassa index.¹⁸ This index measures the revealed comparative advantage according to the Balassa formula. The index, which includes 14 different sectors, compares the share of a given sector in national exports with the share of this sector in world exports. If this index is above one, then

¹⁶ Soler (2003) reaches the same conclusion: China jeopardizes Mexican exports. However, the final impact on Mexico depends not only on trade competition, but also on changes in capital flows.

¹⁷ For other countries, see Appendix A.

¹⁸ This information is available on line at www.intracen.org.

TABLE 7

Balassa Specialization Index

	China 2002	China 2004	Mexico 2002	Mexico 2004
Wood products	0.45	0.43	0.26	0.26
Leather products	3.70	3.34	0.34	-
Chemicals	0.46	0.42	0.35	0.34
Processed food	0.57	0.47	0.57	0.56
Textiles	2.43	2.39	0.53	0.49
Minerals	0.29	0.28	0.83	1.06
Basic manufactures	1.01	0.96	0.76	0.69
Non-electronic machinery	0.52	0.52	0.82	0.84
Fresh food	0.77	0.68	0.69	0.80
<i>Miscellaneous manufacturing</i>	<i>1.59</i>	<i>1.48</i>	<i>1.08</i>	<i>1.07</i>
Transport equipment	0.25	0.27	1.43	1.34
<i>Clothing</i>	<i>3.65</i>	<i>3.46</i>	<i>1.39</i>	<i>1.29</i>
<i>Electronic components</i>	<i>1.04</i>	<i>1.04</i>	<i>1.49</i>	<i>1.53</i>
<i>IT and consumer electronics</i>	<i>2.00</i>	<i>2.43</i>	<i>1.81</i>	<i>1.75</i>

Source: Authors' own data based on Intracen, 2004, UNCTAD/WTO.

the country is specialized in that sector. China, in contrast, is specialized in IT and consumer electronics, electronic components, clothing, miscellaneous manufacturing, textiles, basic manufactures and leather goods. China and Mexico therefore specialize in similar sectors. From the Mexican point of view, transport equipment is the only sector in which Chinese competition is not relevant.

Some economists argue that the Mexican export model could be at risk. In 1994, the North American Free-Trade Agreement (NAFTA) came into force. Mexico specialized in manufactures of low value added, i.e. maquila products. China can also produce this kind of goods, but at a lower cost. Labour is relatively more abundant in China than in Latin America. As mentioned before, wages are four times lower in China than in Latin American countries (on average). In addition the Chinese authorities foster these sorts of labour-intensive industries through their "one-stop shop" programme. This programme grants tax exemptions and technical assistance. Joining WTO gave China access to the United States market. The current export structure of Mexico will probably change because of Chinese competition. Singapore, Taiwan Province of China and the Republic of Korea are already changing their export structure by upgrading the value added of their exports.

Nevertheless, it is difficult to foresee the direction of change in the case of Mexico and to assess the future impact of China if we take into account dimensions other than production and labour costs. Mexico clearly has a competitive advantage over China: proximity

to the United States. Economists have been stressing the related issues of transport costs and trade costs in order to capture the penalty of distance (see Hummels, 2001a). Distance also introduces delays that give rise to trade, freight and transaction costs. However, as argued by Harrigan and Venables (2004), and Hummels (2001b), an important element of the cost of distance in trade issues is also time, that is the time taken in delivering final and intermediate goods. Time costs are not only a quantitatively important aspect of proximity but quality also matters in terms of synchronization of activities, delivery, thus creating incentives for clustering activities. One aspect for Mexico to consider would be the identification of sectors and products where this issue of distance and time are key comparative and competitive assets.

In a detailed study, Evans and Harrigan (2003) developed a theoretical model where timely delivery matters a great deal, and products are therefore developed near the source of final demand, making wages higher as a result. In their model, timely delivery is a key asset because it allows retailers to respond quickly and efficiently to fluctuating final demand without holding costly inventories, and timely delivery is only possible where location is near final demand. This theoretical model is consistent with empirical examples and trends during the 1990s, which witnessed some shifts in the location of production away from lower-wage based producers like China toward higher-wage locations like Mexico. This shift occurred for example in the sourcing of United States apparel and

it is concentrated precisely on goods where timeliness is essential. Based on detailed empirical data from a major department store, they found strong evidence that nearby producers are specialized in goods where time and timeliness matters, as predicted by their theoretical model.

One can argue that, for Mexico, working on reducing trade costs could bring back a strategic advantage for this member country of the North American Free Trade Area (NAFTA), as trade costs have become much more significant than production costs (Dearnoff, 2004). Some studies find a modest decrease in the elasticity of trade to distance, though most of them point to little or no change, and more surprisingly to a modest increase (Disdier and Head, 2004), while gravity equation estimates from panel data over long time periods tend to find an increase (Brun, Carrère and others, 2005). According to the estimates of Anderson and van Wincoop (2003) trade costs are on average nearly twice as high as production costs. This implies that trade costs are significant determinants of comparative advantage, perhaps even more so than production costs—where China has a competitive advantage.

In fact, and contrary to conventional wisdom, the effect of distance on trade has not decreased but rather increased over the past decades.¹⁹ Hummels (2001b) provided evidence, using detailed data on shipping costs, that ocean freight rates have in fact increased while United States air cargo rates showed large cost reductions between 1955 and 1997 (a result confirmed also for overland transport costs by Glaeser and Kohlhase, 2003). The reduction of transport costs does not therefore seem to be uniform over time. In fact, as shown by Berthelon and Freund (2003) there has been a significant and increasing impact of distance on trade in more than 25% of the nearly 770 industries studied, i.e. in more than 30% of trade, and there are almost no industries for which distance has become less important. Carrère and Schiff (2003) reached a similar conclusion by examining patterns in how distance affects countries' trade over time. They found that the distance of trade (DOT), an indicator of a country's proximity to the world centre of economic activity, declined over time for a majority of countries (with the exception of the United States) during the period 1962–2000. In other words, countries (still)

benefit from proximity to the centre of world activity while others are penalized for being far from it. In a systematic survey of empirical research on how distance effects have fallen or increased over time (856 distance effects examined in 55 papers), Disdier and Head (2004) found that the negative impact of distance on trade has not decreased but rather has increased over the last century.

Another issue for Mexico, and also other Latin American countries, will be to reduce transport costs and boost infrastructure efficiency. For most Latin American countries, transport costs are even greater barriers to United States markets than import tariffs.²⁰ In a detailed analysis of shipping costs to the United States market, using a database of more than 300,000 observations per year on shipment products, Clark, Dollar and Micco (2004) found that port efficiency is an important determinant of shipping costs.²¹ This is a relevant issue as the lowering of average tariff barriers (both in Asia and in Latin America) has increased the relative importance of transport costs as a determinant of trade. When Mexico is excluded, Latin American average freight costs are similar or even in some cases higher than those of the Asian competitor.

For some countries, like Chile or Ecuador, transport costs are more than 20 times higher than the average tariffs they face in the United States. Lowering transport costs, and therefore increasing infrastructure efficiency, could boost the trade performance of Latin American exporters.²² Focusing on the effects of port efficiency on transport costs, Clark, Dollar and Micco (2004) found that improving port efficiency from the 25th to 75th percentiles will reduce shipping costs by more than 12%. In the case of Mexico, which benefits from proximity to the United States, an improvement in port efficiency to the levels observed in countries like France or Sweden would reduce transport costs by around 10%. In the case of Brazil or Ecuador, it would reduce their maritime transport costs by more

¹⁹ See Anderson and van Wincoop (2004).

²⁰ In this sense, the Panamá-Puebla highway—a new infrastructure project—could generate a significant increase in trade between Central American countries and Mexico and the United States.

²¹ They also show that distance matters and that it has a significantly (1%) positive effect on transport costs: doubling the distance roughly generates an 18% increase in transport costs. See table in Appendix B.

²² Limao and Venables (2000) showed that raising transport costs by 10% reduces trade volumes by more than 20%. They also underlined that poor infrastructure accounts for more than 40% of predicted transport costs.

than 15%, according to the estimates of the authors. Latin America is perceived as being one of the least efficient regions in terms of ports, and also has significant customs problems with a median clearing delay of 7 days (the worst performers being Ecuador (15 days) and the Bolivarian Republic of Venezuela (11 days)); moreover, ports face high container

handling costs and major organized criminal activity in seaport infrastructure. Clearly, there is ample room for improvement. All in all, an improvement in port efficiency from 25th to 75th percentiles would reduce shipping costs by more than 12%, which would be equivalent to 5,000 miles in distance, according to the estimates of the authors.

V

The short-term opportunities: strong Chinese demand

As shown, China's impact on Latin America is generally positive with a few exceptions. Yet even for the countries like Mexico that are facing increasing competition pressure in the United States market, China could be (at least in theory) an opportunity and a potential export market for intra-trade exchanges.

Two indices were constructed in order to assess the potential benefits of increasing Chinese demand. As in the previous case, the UNCTAD database containing 620 different goods has been used. These indices compare the export structure of 15 Latin American countries with the import structure of China. If the exports of a particular country are similar to the imports of China, then there is a potential trade gain for Latin American economies. It is important to point out that the Latin American country and China do not necessarily trade, even if the value of these indices is close to one. We must highlight that there is a potential gain and an obvious commercial opportunity.

The indices are, again, modified versions of the well-known specialization coefficient (*CSm*) and the conformity coefficient (*CCm*).

$$CSm = 1 - \frac{1}{2} \sum_n |a_{it}^n - a_{jt}^n|$$

$$CCm = \frac{\sum_n a_{it}^n a_{jt}^n}{\sqrt{\sum_n (a_{it}^n)^2 \sum_n (a_{jt}^n)^2}}$$

Where a_{it} represents the share of good n in total exports of the Latin American country i in period t .

On the other hand, a_{jt} is the share of good n in total imports of China in period t . Both indices are equal to 1 if there is a perfect correspondence between Chinese imports and exports of the Latin American country under consideration. Again, two indices were built to ensure consistent results. As in the previous section, the period considered is 1998-2004 and *CSm* and *CCm* are calculated for every year. Finally, for presentation purposes the previous information is aggregated into a new index (*CIIm*) (see table 8).

TABLE 8

Potential trade with China

	CSm ^{ab}	CCm ^{ab}	CIIm ^b	CIIm 2002 ^c
Panama	0.09	0.03	0.06	0.08
Honduras	0.13	0.04	0.08	0.08
Paraguay	0.10	0.08	0.09	0.10
Peru	0.16	0.09	0.13	0.15
Bolivia	0.16	0.09	0.13	0.14
Uruguay	0.18	0.07	0.13	0.15
Chile	0.17	0.12	0.15	0.17
El Salvador	0.21	0.11	0.16	0.17
Guatemala	0.24	0.14	0.19	0.16
Venezuela (Bol. Rep. of)	0.17	0.30	0.23	0.25
Costa Rica	0.24	0.25	0.25	0.25
Colombia	0.25	0.28	0.27	0.27
Argentina	0.31	0.23	0.27	0.30
Brazil	0.40	0.33	0.36	0.36
Mexico	0.44	0.50	0.47	0.47

Source: Authors' own data.

^a Ascending Order CIIm

^b Average 2002-2004.

^c Average 2000-2002.

The results are not very encouraging. The main reason is that Latin American countries are exporters of commodities and therefore the potential trade with China is concentrated on a small basket of goods. In other words, intra-industry trade is not very likely with Latin America given its export structure (with the exception of Mexico and Brazil).

The export specialization index is only presented for larger countries in the interests of simplicity. In table A.2 (appendix A), which presents data for 11 Latin American countries, the figures in bold type represent those sectors in which Latin America is specialized and China is not, i.e. wood products, processed food, minerals and perishable goods. Those sectors are clearly raw materials. El Salvador and Guatemala also specialize in chemicals²³ and Mexico in transport equipment.

In general terms, Latin America specializes in exporting commodities. This means that potential trade gains are limited to few items. Furthermore, trade with China could entail a deeper specialization in those goods, because of current strong Chinese demand for commodities, thereby increasing the risk that some countries might be caught in a “raw material corner” without being able to move ahead in the value added chain. In fact, China is also increasing its demand in some raw material markets (see table 9). In 2003, China became the world’s largest importer of cotton, copper, soybean and the fourth largest importer of oil.²⁴ China’s demand for raw materials keeps growing, particularly for copper and soybean (demand rising by 50% yearly). In the case of oil, the rate of growth is nearly 20% every year. In 2003, China became the world’s leading importer of copper, boosting exports from Chile and Peru. The combination of a heavy industrial expansion and a booming economy also created a huge demand for oil that suppliers are straining to keep up with, causing the country to leapfrog Japan to become the second-largest oil consumer just behind the United States. In 2003, China alone was responsible for a third of the rise in daily global oil consumption.

TABLE 9

China and the world: Average annual growth in imports 1997-2004
(Percentages)

	China	World
Oil	24.4	2.9
Copper	18.4	4.0
Soybeans ^a	20.5	6.9

Source: Based on the United States Department of Agriculture (USDA), World Metal Statistics and British Petroleum.

^a Average 2001-2004.

Even though trade is concentrated in a small basket of commodities, China’s strong demand for raw materials is good news for Latin America. In economic terms, this could be considered as a positive demand shock. Furthermore, there is a positive impact on the region, even if direct trade with China does not rise. The reason is that commodities are almost homogenous goods. For example, if China increases its demand for crude, oil-producer countries should raise their production; otherwise prices will increase. Since 2004, China’s growing thirst for oil has been driving oil prices to their highest levels since trading in oil futures began on the New York Mercantile Exchange in 1983. According to the Paris-based OECD International Energy Agency, China accounted for one million barrels of the 1.8 million barrel increase in daily oil use during the first quarter of 2004. From 2000 to 2004, China accounted for nearly 40% of the entire growth in world oil demand.

The four main commodities in Latin America are copper, oil, soybean and coffee. These commodities account for 66% of total exports of raw materials. China absorbs a significant share of these commodities, excluding coffee.

Another relevant fact is that Latin America is a major world producer of commodities. The region produces 47% of the world soybean crop, 40% of copper production and 9.3% of that of crude oil. Strong Chinese demand represents an opportunity for most Latin American countries in the short-term, because of their export specialization in commodities. If this vigorous demand continues over time, there is likely to be positive impact on the region. However, unless the region increases its level of specialization, its dependence on commodities will intensify and countries will remain exposed to trade shocks.

²³ However, China imports chemical products mainly from East Asian countries. This sector is one in which those Asian economies are specialized. See Ianchovichina and Walmsley (2003).

²⁴ Using 2004 data, China accounted for 34.3% of world imports of soybeans, compared with only 7.4% in 1997. In the case of copper, China’s imports were 25.3% in 2004, compared with 5.0% in 1997. Lastly, Chinese imports of oil added up to 7.2% in 2004, compared with 2.3% in 1997.

TABLE 10

Latin America (seven countries): Composition of exports
(Percentages of exports of each country)

	Food	Fuels	Metals	Manufactures
Mexico	6	10	2	81
Brazil	31	1	9	54
Argentina	49	12	2	34
Colombia	32	31	1	31
Peru	35	7	39	17
Chile	25	1	48	16
Venezuela (Bol. Rep. of)	2	83	2	12

Source: Based on *LatinFocus* (2004).

VI

China's impact on trade in the long term

The above-mentioned negative interpretation regarding China's impact is that this demand shock is a transitory one. In the long term, as predicted by economic theory, the positive performance of the Chinese economy and the increase in world trade would be beneficial to other countries. In this sense, the *World Economic Outlook* (IMF, 2004), presents two alternative scenarios analysing Chinese impact on world trade and growth. The results should, however, be treated with caution as both scenarios show a positive impact on the rest of the world in the long term. Most regions will benefit from stronger demand generated by China's rapid growth, although regions where labour faces relatively stronger competition from China benefit less. In addition, this study emphasizes that more structurally flexible countries will reap greater benefits. These results are similar to the findings of Ianchovichina and Martin (2003).

This state of affairs, characterized by the emergence of a global trade player, is however not new.²⁵ To illustrate this point we could compare the current situation with the Japanese experience of the 1950s and 1960s (see Yang, 2003; HSBC, 2005). At the beginning

of the twenty-first century, Japan was a key economy. It represented around 9% of world gross domestic product (GDP). Following the Second World War, however, the country was devastated. At that time, Japan was characterized by its relatively low wages. For more than 20 years, Japan implemented an economic policy that boosted growth and exports. That policy turned Japan into the second-largest economy. Nowadays, it is clear that the positive performance of the Japanese economy was partly due to the state of the world economy as a whole (including Latin America).

In some ways, the performance of the Chinese economy is similar to the Japanese experience. There is a clear correspondence between the two countries. The evidence matches up with the period of higher growth in Japan: 1952-1972; the period considered for China is 1979-1999. In each case, the growth rate was an average of 8.5%. In addition, average annual growth in trade²⁶ was around 13%.²⁷

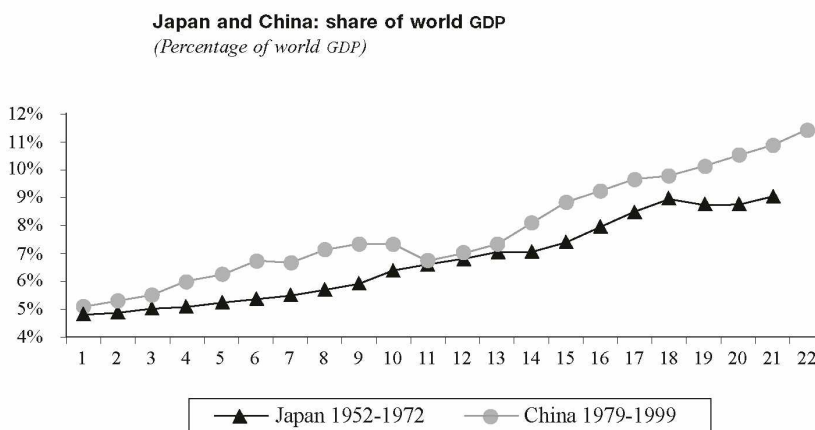
However, similar trade and growth patterns are not the only similarities. The weight of each country in the world economy during the relevant period is also similar. Consequently, both countries have contributed

²⁵ See, for instance, *World Economic Outlook* (IMF, 2004). This edition also analyses the emergence of East Asia.

²⁶ In this paper we define trade as the sum of exports and imports.

²⁷ We have used the Summers and Heston database (PWT 6.1). See Heston and Summers (1997).

FIGURE 3



Source: based on Summers and Heston database.

to world growth, on average, approximately 0.6 percentage points every year. In other words, during the period 1952-1972, world GDP grew by an average of 5.8%, with 0.6 percentage points of that growth attributable to Japanese GDP performance. During the period 1979-1999, average annual world growth was 3.7%, with Chinese growth contributing 0.6 points (see figure 3).

However, this comparison also throws up some striking differences. The composition of Japan's GDP in the early 1950s was quite similar to that of China in the early 1980s (see table 11). Around 60% of GDP was consumption, 15% was investment and over 25% was net exports.²⁸ Throughout the periods mentioned, the composition of GDP changed significantly. In the case of Japan, one can observe a reduction in consumption and net exports as a proportion of GDP, which was offset by investment. But in the case of China, there was a decrease in consumption and it was replaced by an increase in net exports and investment.

These figures reveal why China is perceived as a rival instead of a trading partner. The data show that China exports much more than it imports. So, other countries perceive that Chinese growth is not spreading. But this situation is not sustainable in the

TABLE 11

Japan and China: Components of GDP
(Percentages of total GDP)

Japan	1953	1972
Consumption	60	53
Investment	14	35
Net Exports	26	11
China	1979	1999
Consumption	57	47
Investment	17	21
Net Exports	27	32

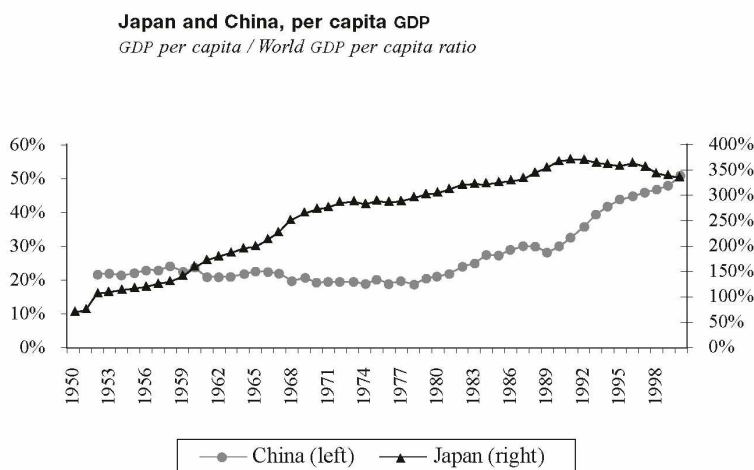
Source: Summer and Heston database.

long-term. Eventually, China will import massively and net exports will fall.²⁹ In fact, according to the WTO database, in 2005 Chinese merchandise imports totalled 6.1% of world imports. On the other hand, Chinese exports amounted to 7.3% of world exports. The difference between merchandise exports and imports represents US\$ 101.9 billion. This amount is three times the nominal GDP of Ecuador. Now in the middle of the first decade of the twenty-first century,

²⁸ Net exports are defined as the difference between exports and imports in real terms.

²⁹ Ianchovichina and Martin (2001) share this opinion about the future of net exports. They expect a significant increase in China's imports.

FIGURE 4



Source: based on Summer and Heston database.

Chinese manufacturers are already lapping up imports and dictating global prices for nearly everything from copper to microchips.

Another important difference between the two countries is that Japan had a more developed economy and China is still a developing country (see figure 4). Chinese per capita GDP in 2000 was around 50% below the world average. According to the Summers and Heston database,³⁰ per capita GDP in China is similar to that of Ecuador. This evidence suggests that, despite its impressive performance over the last 20 years, a deeper convergence process might take some time. In other words, China could still enjoy a high rate of growth for a long period.

In this regard, some simple projections have been made to evaluate the future weight of China within the world economy (see table 12).³¹ In the 1990s, China grew by 10.1% on average, the world by 3.3% and Latin America by 3.4%. If these rates hold for the next 20 years, China will become the largest economy, far outstripping the United States.³²

In 2002, Chinese merchandise imports already represented 4.4% of world imports. During the 1990s,

TABLE 12

**China and Latin America: share
of world GDP, 2002 -2020**
(Percentages)

	2002	2010	2020
China	12.7	21.1	40.1
Latin America	7.9	7.9	8.0

Source: Authors' own data.

Chinese imports grew by around 16% on average and world imports (excluding China) by around 7%. If these trends continue, China will represent 8% of world imports in the year 2010 and 18% in the year 2020.

It is hard to foresee, in detail, the long-term impact of China's emergence on other economies and on international trade. Nevertheless, we know that the aggregate impact has to be positive. It is also true, however, that the impact could be asymmetrical. Some sectors could benefit and others might be harmed by Chinese competition. China has a competitive advantage in labour-intensive sectors in particular, and the potential benefits for those sectors are therefore lower. The opposite is true of capital-intensive sectors.³³

³⁰ Per capita GDP is calculated in terms of PPP.

³¹ Using the IMF database.

³² For more information on China growth forecasts, see Wilson and Purushothaman, 2003; Gaulier, Lemoine and Ünal-Kesenci, 2005; Goldman Sachs, 2005.

³³ See *World Economic Outlook* (IMF, 2004).

VII

Chinese and Latin America

trade relations in a wider context

Generally speaking, the impact of Chinese trade on Latin America is positive in the short and medium term. The results of our study are consistent with the findings of IMF researchers and other economists (Lall and Weiss, 2004). On average, and from the point of view of trade impact, Latin America will benefit from increased Chinese demand and growth. In comparative terms, as stressed by IMF, the only net loser will be South Asia, while for Latin America the effect will be positive. For sectors like agriculture in Latin America, the estimated impact of faster Chinese integration around 2020 is clearly positive (with output up by 4%). The clear losers will, however, be sectors such as textiles and countries specialized in labour-intensive manufacturing exports. More detailed analysis is needed, particularly in terms of the trade impact of China on the domestic markets of Latin American countries such as Mexico.

In terms of trade relations, China and Latin America have been intensively developing their relations over the past decade.³⁴ The trade volume between China and Latin America rose from US\$ 2 billion in the early 1990s to US\$ 15 billion in 2001, according to Chinese statistics. Since 2000, Brazilian and Chinese trade has leapt nearly threefold, a blessing for the indebted Brazilian economy and especially for exporters of soybean, steel and iron ore, which account for two thirds of the goods exported. In general, Latin America, has a surplus commodity endowment that coincides with China's needs and its strategy to secure food and energy imports in order to avoid shortages.

One of the consequences of booming Chinese demand for Latin America might not be as positive, however. First, with China's increasing demand for commodities, Latin American countries are deepening their trade specialization toward commodities - goods usually characterized by strong price volatility. In

fiscal terms, this also could increase volatility of fiscal receipts. Second, with the intensification of links with China, the region is becoming more exposed to that country's economy. In 2003, delivery bottlenecks and demand from China bumped up the prices of raw materials and commodities, but Chinese industrial use is also susceptible to recessions and booms. In recent years, tensions have arisen between Brazil and China because of the latter's increasing price-setting power in key Brazilian markets such as iron ore and soybean. The growing dependence of Latin American exports on China should also force the region to be more aware of growth dynamics in Asia and China. In 2003, China became the second-largest destination of Brazilian exports around the world according to ECLAC, a position that has since been maintained.³⁵ In 2004, China accounted for half the increase in Brazil's exports earnings. China is therefore becoming a key driver of Brazilian growth dynamics and is responsible for a quarter of Brazil's official targeted GDP growth. With China trying to cool down its overheated economy, Brazil's export growth could be dampened.

Another issue not developed in this paper that deserves further analyses is that of capital flows. While foreign direct investment (FDI) to Latin America is tumbling, China is experiencing a boom. Between 2001 and 2003, FDI into Mexico declined from nearly US\$ 27 billion to US\$ 11 billion, with an upturn in 2004 and 2005. Brazil also experienced an abrupt slowdown with a 52% drop in FDI to the country in 2003 in relation to the previous year (compared with 30% for Mexico over the same period). Meanwhile, China has simply become the major recipient of FDI in the world, reaching levels of US\$ 55 billion in 2003 (nearly twice the total that flowed into all Latin American countries in 2003 — a mere US\$ 36.5 billion)³⁶ and again around 60 billion both in 2004 and 2005. In other words, over the past

³⁴ Trade contacts between China and Latin America are nothing new. They date back to the 1570s, when Sino-Latin American trade started to flourish across the Pacific with Chinese exports of silk, porcelain and cotton yarn to Mexico and Peru via Manila (see Shixue, 2004).

³⁵ See ECLAC, 2004a.

³⁶ See ECLAC (2004b). In 2003, FDI flows to China almost reached the record level of FDI inflows to Latin America (US\$ 88 billion in 1999).

three years, every week, more than 1 billion dollars of foreign direct investment is flowing into China.³⁷

It is true that much of the FDI to China is in fact related to “round tripping” (Xiao, 2005). Experts have estimated that the scale of this round tripping could be as high as a quarter of total FDI inflows into China. However, the FDI from other regions is increasing. In 2002, United States firms were already investing 10 more times in China than ten years previously. The prospect of a huge domestic market of 1.3 billion consumers has lured countless companies to rush into China, despite the fact that the country’s capitalism is not solidly rooted in law, protection of property rights and free markets.³⁸

Some studies are pointing to “flow diversion” in favour of China, following the full integration of the country’s huge labour force into the international division of labour.³⁹ In the case of Asian countries like Indonesia, Malaysia, the Philippines and Thailand, this process might cause significant losses if foreign direct investment is redirected away from these countries to China. There is a risk of them experiencing a de-industrialization process and a return to the roles they had in the 1950s and 1960s as primary commodity exporters (McKibbin and Thye Woo, 2003). However both the studies and the data show that the impact is rather small. From studying the period 1984 to 2001,

García-Herrero and others concluded that, in terms of FDI, there is no substitution effect negatively affecting inflows of FDI to Latin America. The study does, however, underline the fact that the Chinese effect has become more significant in recent years (1995-2001), with inflows of FDI to China appearing to have affected FDI received by Mexico and Colombia in particular.

The data for 2004 and 2005 are also mixed. They suggest that, while China is still experiencing a boom of FDI, reaching levels of more than US\$ 60 billion, Latin American countries are recovering from the extremely low levels of this current decade. Foreign direct investment towards Brazil jumped by 80% in 2004, reaching more than US\$ 18 billion. Mexico also experienced a recovery of 23%, reaching US\$ 13.6 billion while Chile saw its FDI increase by 66%, to stand at almost US\$ 5 billion. The 1990s golden years of the FDI rush towards Latin America might be over, at least unless privatization processes are repeated.

However, a “blessing in disguise” of Chinese investment in term of capital flows could be the future development of Chinese foreign investment overseas. China is no longer only an absorber of foreign direct investment (FDI), but has also made a leap forward in its investments overseas. Over the period 1991-2003, Chinese foreign direct investment reached roughly US\$ 35 billion. In 2003, China’s outward investment more than doubled year-on-year to stand at over US\$ 2 billion (still a low level, however). This trend was maintained in the years that followed. In 2004, 50% of Chinese FDI went towards Latin America (more than the 30% that went towards Asia). In 2005, Chinese multinationals invested a record level of just under US\$ 7 billion abroad. The bulk went to Asia (60%) but Latin America remained on the radar screens as the second major recipient region of Chinese FDI (16% of the total).

The need to secure food and commodities is boosting FDI through strategic international partnerships. Chinese firms have been targeting resource-sector investments in Angola, Algeria, Australia and Indonesia. Chinese companies are already prominent investors in Africa, mainly in energy and raw materials. According to a survey of 100 investment promotion agencies released by UNCTAD, China ranked fifth (after the United States, Germany, the United Kingdom and France) in the list of leading overseas investors in the near future.⁴⁰ In 2004, Chinese corporations multiplied

³⁷ On FDI in China, see the research of MIT-based economist Huang (2003). See also the relevant United States Congressional hearings: <http://www.cecc.gov/pages/hearings/092403/huang.php>

³⁸ Investing in China might, however, become a risky business, as underlined by the growing disputes between foreigners and their Chinese partners. In 2004, for example, Syngenta, a Swiss agrochemicals company sued a Chinese competitor for allegedly pirating one of its patented insecticides, joining the growing club of foreign investors resorting to the courts to protect their intellectual property. The profitability of Chinese investments can also be questionable. Foreign brewers have squandered hundreds of millions of dollars in China over the past decade. Meanwhile, according to *The Economist* (2005), the average net profit margin of these investments is meagre: for the top 400 brewers operating in China (including foreign joint ventures) the margin is a mere 0.5%. Compared with Latin America, the data are interesting. According to a study carried out by the *China Economic Quarterly*, direct and indirect profits made by all United States affiliates operating in China amounted to just US\$ 2.8 billion in 2001, nearly half the US\$ 4.4 billion they made in Mexico in the same year (and with a population more than 10 times smaller). According to another empirical study on political control and firm performance in China’s listed companies, the decision-making power of local party committees (relative to the largest shareholders) is positively associated with firm performance (See Chang and Wong (2003); see also Wong, Oppen and Hu (2004)).

³⁹ For an empirical analysis applied to Latin America, see García-Herrero and Santabárbara (2004); Chantasasawat, Fung and others (2004); for other analyses focused on Asia see Eichengreen and Tong (2005a and 2005b); and Mercereau (2005).

⁴⁰ See UNCTAD, 2004.

attempts to boost their investments overseas, not only in other emerging countries but also in developed countries —as underlined by the acquisition of IBM production units by Lenovo (for US\$ 1.75 billion) or the attempts by Chinese firms such as Minmetals to acquire the Canadian Noranda for US\$ 5 billion or efforts by the Chinese oil group China National Offshore Oil Corporation (CNOOC) to acquire Unocal for more than US\$ 13 billion.

Like Japanese companies a few decades ago, Chinese firms seem to be seeking overseas expansion. For Latin America this looks like an opportunity. Not only are major Asian countries (Japan and China) interested in the region, but both have the same aim: to secure the continued flow of raw materials and agricultural products and derivatives. In order to reach that goal, they are both interested in having viable infrastructure in the Americas (more efficient ports, airports, roads, railways). For the region, this is therefore a unique opportunity to play a new competitive game. It also provides the opportunity to implement an industrial strategy in order to avoid an intensification of the commodity trade specialization and stimulate diversification (like in Trinidad and Tobago) towards more value-added industries, while building on the commodity endowment.

Latin America is on the radar of Chinese companies. By 2001, China had set up more than 300 enterprises in Latin America with contractual investments of over US\$ 1 billion. Since then Baosteel, China's biggest steelmaker, undertook the country's largest ever overseas foreign direct investment (worth US\$ 1.5) in Brazil. Plans to invest US\$ 2 billion in the Brazilian aluminium industry were also announced by China, but have yet to be confirmed. China already controls, through the Shougang Group, Peru's major iron-ore mine, owns a major stake in an Ecuadorian oil field and is attempting to produce fuel in the Bolivarian Republic of Venezuela, where it has also reactivated gold mines. Chinese investment is expected in railways and ports in Brazil, and throughout Latin America. Chinese interest in logistical infrastructure is high, with a view to facilitating transport of commodities to ports. In Argentina, China is already committed to invest US\$ 25 million in a grain port and another US\$ 250 million in a road from Argentina to Chile in order to facilitate exports of Argentine raw materials from Chilean ports.

We will also begin to witness agreements such as the one signed in October 2004 by Telefónica (a leading Spanish firm with a regional Latin American franchise)

and the Chinese telecommunication equipment manufacturer Huawei, whereby Telefónica offers Huawei facilities to enter the Latin American market and sell its products to all of Telefónica's Latin American subsidiaries.⁴¹ In 2006, BBVA, the leading Spanish bank, boosted its presence in China by opening offices in Shanghai and Beijing and boosting its Hong Kong base. It also concluded an agreement with the Bank of China in order to capture Chinese remittance flows coming from the United States but also from some Latin American countries like Peru.

Latin American companies are also looking for business opportunities in China, as demonstrated by the official trip that Brazilian President Lula and nearly 400 Brazilian businessmen made to China in 2004. Some large Latin American companies have already rushed into China, such as EMBRAER, the Brazilian Aircraft Corporation, which sells and produces jets in China⁴² or Marcopolo, another Brazilian company that makes bus chassis and is planning to set up a factory in China. They follow in the footsteps of Embraer, a pioneering company that set up a plant in Beijing in 1995. Ten years later, it was followed by the motor producer Weg, which set up the first wholly Brazilian-owned factory in China. Steel producer Gerdas also announced the acquisition of a Chinese mill while Belgian-Brazilian Inbev acquired a local beer producer. Clearly, in terms of trade-flow dynamics, capital flows between China and Latin America deserve more analysis and invite further research.

However, beyond the trade and investment impacts, there may be a third and final impact of Chinese trade: a cognitive effect. China's economic development is very

⁴¹ Huawei is a clear example of the internationalization process of Chinese companies. The company hopes to increase its international sales from US\$ 2.3 billion in 2004 to more than US\$ 10 billion by 2008 as part of an ambitious global expansion strategy. In 2003, Huawei also invested 27% of its US\$ 4 billion total investment outside China, reaching markets such as Sweden or Netherlands. The company is now present in more than 70 countries and over 3,000 of the group's 24,000 employees are based overseas. In 2004, two fifths of its US\$ 5 billion revenues were made outside China (*The Economist*, 2005; *Financial Times*, 2005). However, as underlined by Yasheng Huang from the Massachusetts Institute of Technology (MIT), most of the "Chinese champions" are in fact foreign companies. Lenovo, the purchaser of IBM personal computer business in 2004, is a clear example. Technically speaking it is a foreign company as it organized its operations in China as subsidiaries of its Hong Kong branch. The four Chinese companies listed as the most dynamic in Forbes all have their headquarters in Hong Kong. As stressed by Huang, it seems that "China's success has less to do with creating efficient institutions and more about allowing such an escape from inefficient institutions" (Huang, 2005). See also <http://web.mit.edu/yshuang/www/>.

⁴² For a case study, see Goldstein, 2004.

pragmatic. The unique marriage between capitalism and communism is attracting a growing amount of attention. Leading economists like Ricardo Hausmann and Dani Rodrik have already emphasized the trade dimension of this unusual emerging giant, the Chinese economic miracle being a matter not only of export volumes but also, and above all, of their higher quality: what China exports matters (Rodrik, 2006; Hausmann, Hwang and Rodrik, 2006). The very pragmatic economic approach of the Chinese authorities is attracting the attention of

policy makers around the world. The Chinese miracle is neither the result of some “Chicago Boys” process nor the output of a Kemmerer mission. No foreign advisor or guru of economic development ever landed in China. If Jeffrey Sachs advised Bolivia, he never reached Beijing, or at least his advice never did. The lesson that is arising from China is also that there is no magic formula for development, no special key of a paradigm that will open the doors to the miracle of development.

APPENDIX A

Trade competition between China and Latin America

TABLE A.1

Latin America (fifteen countries): annual average CI,^a 1998-2004^b

	1998	1999	2000	2001	2002	2003	2004
Mexico	0.49	0.51	0.52	0.54	0.54	0.52	0.53
Costa Rica	0.31	0.26	0.28	0.33	0.36	0.31	0.33
Brazil	0.25	0.27	0.3	0.3	0.28	0.25	0.26
El Salvador	0.21	0.23	0.23	0.27	0.26	0.24	0.26
Colombia	0.19	0.16	0.19	0.21	0.19	0.18	0.18
Guatemala	0.16	0.15	0.16	0.17	0.16	0.18	0.17
Argentina	0.17	0.16	0.18	0.17	0.15	0.13	0.14
Peru	0.17	0.16	0.17	0.17	0.15	0.13	0.13
Uruguay	0.19	0.17	0.16	0.16	0.13	0.13	0.12
Chile	0.11	0.11	0.11	0.11	0.1	0.09	0.09
Honduras	0.11	0.15	0.12	0.14	0.12	0.09	...
Bolivia	0.11	0.12	0.11	0.11	0.08	0.08	0.08
Panama	0.12	0.11	0.11	0.11	0.1	0.08	0.08
Venezuela (Bol. Rep. of)	0.11	0.08	0.09	0.08	0.07	0.06	0.06
Paraguay	0.07	0.07	0.08	0.07	0.06	0.05	0.05

Source: Authors' own data.

^a The average CI is the arithmetic mean between the coefficient of specialization and the coefficient of conformity.

^b Descending order of the column relating to 2004.

TABLE A.2

Specialization Index (Balassa)

	China	Mexico	Costa Rica	Brazil	El Salvador	Colombia	Guatemala	Argentina	Peru	Chile	Venezuela (Bol. Rep. of)
Wood products	0.43	0.26	0.51	2.26	2.99	0.78	0.91	0.60	0.58	4.10	...
Leather products	3.34	...	0.60	2.88	1.40	0.93	0.66	1.98	-	-	...
Chemicals	0.42	0.34	0.75	0.62	1.16	0.86	1.44	0.68	0.35	0.62	0.29
Processed food	0.47	0.56	2.11	2.93	5.17	1.49	4.73	6.60	4.13	2.53	0.16
Textiles	2.39	0.49	0.23	0.60	2.23	0.71	0.77	0.20	0.68	0.17	...
Minerals	0.28	1.06	...	1.05	0.54	3.63	0.76	1.75	2.56	1.67	7.54
Basic manufactures	0.96	0.69	0.44	1.60	1.39	1.04	0.77	0.75	2.86	3.66	1.09
Non-electronic machinery	0.52	0.84	0.10	0.82	0.11	0.09	0.12	0.22	0.06	0.07	0.05
Fresh food	0.68	0.80	5.67	4.13	3.00	4.14	7.18	5.50	2.52	4.54	0.11
Miscellaneous manufacturing	1.48	1.07	1.39	0.27	0.92	0.44	0.51	0.20	0.35	0.11	0.05
Transport equipment	0.27	1.34	0.03	0.88	...	0.10	...	0.45	...	0.08	0.15
Clothing	3.46	1.29	1.51	0.12	1.93	1.48	1.14	...	2.81	...	...
Electronic components	1.04	1.53	...	0.20	0.24	0.12	0.20	0.05	...	...	...
IT and consumer electronics	2.43	1.75	2.40	0.26	...	...	...	...	...	...	...

Source: Authors' own data based on Intracen, 2004, UNCTAD/WTO.

APPENDIX B

Container handling charges

Country	Cargo Handling Restriction Index	Mandatory Services Index	Price Fixed Agreements Index	Cooperative Agreements Index	Median clearance time (Days)	Port Efficiency Index (1-7)	Crime Index (1-7)	Container Handling Charges		
								World Bank Index ^a	CMPCH Index ^b	LSU Index ^c
Singapore	1	0.38	0	0.33	2	6.76	6.72	117	...	...
Hong Kong SAR	0	0.25	0	0	...	6.38	5.46	...	...	...
Taiwan	0.5	0	0	0	...	5.18	4.49	140	163	...
Japan	0.75	0.13	0.89	1	...	5.16	5.16	250	202	...
Malaysia	0	0.25	0	0.38	7	4.95	5.76	75	...	...
Spain	0	0.06	1	0	4	4.88	6.08	200	105	...
Republic of Korea	0	0.38	0	0	...	4.12	5.22	...	...	...
Thailand	0.5	0.63	0	0.38	4	3.98	5.12	93	...	...
Argentina	0	0.13	0	1	7	3.81	4.52	...	139	...
Vietnam	0	0	0	0.5	...	3.81	5.02	...	...	...
Chile	0	0.25	0.43	1	3	3.76	6.05	202	100	...
China	0.5	0	0	0	7	3.49	4.44	110	...	...
Indonesia	1	0.06	0	0.38	5	3.41	4.06	...	...	...
Mexico	0.5	0.38	0	1	4	3.34	2.61	...	...	...
Venezuela (Bol. Rep. of)	0	0	1	1	11	3.28	3.63	...	...	...
El Salvador	0	0	0	1	4	2.95	2.3	...	...	61
Brazil	0.5	0.75	0	1	10	2.92	4.45	328	292	...
Peru	0.5	0	0.5	1	7	2.88	3.32	...	142	...
India	0	0	0	1	...	2.79	4.28	...	...	...
Philippines	0.5	0	0	0.38	7	2.79	3.51	118	...	...
Ecuador	0	0	0.43	1	15	2.63	3.65	...	139	...
Costa Rica	0	0	0	1	4	2.46	3.28	...	...	68
Colombia	0.5	0.13	0.5	1	7	2.26	1.88	...	...	...
Bolivia	...	...	...	...	9.5	1.61	4.38	...	...	...
Uruguay	0	0	0	1	5	...	...	...	...	...

Source: Clark, Dollar and Micco (2004).

^a US\$/TEU (feet equivalent unit).

^b CMPCH = Maritime Port Chamber of Chile.

^c LSU index of the United States National Ports and Waterways Institute.

(Original: English)

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Trade and infrastructure

in the Andean Community

Gina E. Acosta Rojas, Germán Calfat and Renato G. Flôres Jr.

This paper examines the key role of infrastructure in Andean Community trade patterns, using three gravity models. The first identifies the importance of preferential trade agreements and of geographical adjacency. The second and third models encompass these aspects while focusing on the inclusion of infrastructure in the gravity equation, testing the assumption that infrastructure endowments reduce “distance” (in terms of transport costs) between partners. Under the new trade arrangements, borders and previous agreements will lose significance, trade will be virtually free and bilateral flows will be defined in terms of costs and competitiveness. Competitiveness, however, can be achieved only by means of an improvement in infrastructure at all points in the production-distribution chain.

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I

Introduction

This paper offers further evidence that infrastructure development is a source of integration and competitiveness and shows the dynamic role played by infrastructure in explaining and determining trade flows within and outside the Andean Community.

The work is organized as follows. The following two sections set out the framework for the analysis. Section II briefly reviews the evolution of what is now the Andean Community since it was formed in 1969 as the Andean Pact, focusing on the consolidation of the internal market and the group's trade pattern. An augmented gravity model of bilateral trade flows is applied to yearly data for 1993-1999 in order to determine whether the Andean Pact helped to increase trade within the region and to capture the effect of adjacency on trade among its members. Section III discusses the first gravity model. Section IV looks at the role of infrastructure in trade, reviewing theoretical and statistical evidence that location and resource endowments play a conclusive role in determining whether countries will decide to enhance their trading

opportunities by developing infrastructure to reduce transport costs. It then briefly reviews the transport modes employed in Andean Community trade.

Section V, where the effects of the degree of infrastructure development are fully assessed, is the core of the paper. We go beyond a traditional gravity model to discuss the notion that transport costs are not only a function of distance but also of the availability of proper means, such as roads, energy and telecommunications networks. These variables are summarized in an index measuring infrastructure development in the countries examined, modifying the distance variable. The analysis sheds light on the role played by infrastructure and its impact on the relevance of other explanatory variables. We then link the results to the new concept of infrastructure development in the region, in which the relationship between infrastructure and geographical space is regarded as a key integration and competitiveness tool. Lastly, section VI offers conclusions drawn from the work.

II

How the Andean Community has evolved

What is known today as the Andean Community dates back to 1969, when a group of countries signed the Cartagena Agreement, also known as the Andean Pact, in which they established a customs union for the next 10 years.

Since then, Andean integration has come through a series of stages and the initial inward-looking development project, based on the import substitution model, gradually gave way to an initiative more akin to open regionalism. In June 1997, the Andean

Community came into being with the Trujillo Protocol modifying the Cartagena Agreement. The Protocol created the Andean Presidential Council and a Council of Foreign Ministers, affording both a critical role in decision-making. It also strengthened the internal cohesion of the integration process by placing all the Community's institutions and mechanisms under the management of the Andean Integration System. The Andean Community is now a regional organization endowed with international legal status. Recently, some friction has arisen among its five members —Bolivia, Colombia, Ecuador, Peru and Bolivarian Republic of Venezuela— and this last country has opted to follow an independent course. At the same time, Mexico applied for full membership of the group. These developments, however, fall outside the scope of this paper.

□ Renato Flôres acknowledges the hospitality extended by the Institute of Development Policy and Management of the University of Antwerp, where he initiated this work as a visiting scholar.

In 1987, the members of the Andean Community began to design a new strategy to keep up with the liberalization process taking place in Latin America. A free trade area was formed in 1992 and evolved into an imperfect customs union. As early as 1992, Bolivarian Republic of Venezuela and Colombia eliminated tariffs and other barriers to reciprocal trade. Bolivia joined them in September 1992 and Ecuador in January 1993, when the free trade area became fully operational among these four countries. Peru temporarily suspended its obligations under the liberalization programme, beginning, in 1992, to negotiate bilateral trade agreements with each of its Andean partners and, in some cases, partially liberalizing reciprocal trade flows. These bilateral agreements remained in place until 1997, when an agreement was reached for Peru's gradual incorporation into the Andean free trade area (Decision 414). Tariffs were eliminated on most goods by 2000, with "sensitive products", including agricultural goods, to be totally liberalized by 2005.

In 1994, the Common External Tariff (CET) was approved by Decision 370. Its implementation, however, has run up against the typical difficulties. When Decision 370 was made, Bolivia was exempt and Peru, as noted above, was not participating in the process. Here again, Bolivarian Republic of Venezuela and Colombia were the first two countries to adopt the CET in 1994, followed by Ecuador in 1995. The Andean CET is determined by level of processing: a rate of 5% is applied to raw materials and industrial inputs; rates of 10% and 15% to intermediate inputs and capital goods, respectively; and 20% to final goods. The CET average is 13.6%, with a 20% ceiling. Bolivia and Peru are becoming gradually incorporated into the customs union, which already encompasses Bolivarian Republic of Venezuela, Colombia and Ecuador. Full adoption was expected in 2005.

The Andean Community has addressed most of the newer trade issues, such as investment, competition

policy, services and intellectual property rights and it has adopted common policies in most of these areas.¹ It has also taken steps to deal with the question of infrastructure, the focus of this paper. Furthermore, the Community is aware that the development of a common foreign policy is a main objective and involves the joint participation of all its members in the World Trade Organization (WTO) and in negotiations concerning regional agreements.

In 2004, the Andean countries formed a market of over 121 million people distributed over an area of 4.7 million square kilometers. Their combined GDP that year stood at US\$ 317 billion. The main markets for their exports are the United States, the European Union (EU) and the Community itself.

Liberalization of the internal market has had an important impact on trade among its member countries. Trade flows have reached unprecedented levels, with intraregional trade growing faster than trade with the rest of the world. After a decade of flat or declining growth in the 1980s, intra-Andean trade picked up in 1989 and grew steadily after 1990. At the end of 2004, intra-Andean exports amounted to US\$ 7.4 billion, nearly three times the 1992 level. Equally importantly, Andean trade with the rest of the world has also risen; imports and exports from and to countries outside the Community have increased steadily since the agreement was reactivated in the early 1990s.

Though there is a commitment to establish a Common Market, as noted earlier, the Community is still an incomplete customs union, since both the CET and the FTA are subject to a number of exceptions.

¹ For example, Decision 291 replaced Decision 24, which restricted foreign direct investment activities, granting national treatment to foreign investors and eliminating all restrictions on capital and profit remittances. Decision 344 granted patent rights to pharmaceutical products and Decision 351 addressed copyright issues.

III

A first gravity model

In order to create a framework in which to analyse the growth of trade among Andean countries, we first constructed the following gravity equation:

$$\ln M_{ij} = \beta_0 + \beta_1 \ln Y_i Y_j + \beta_2 \sqrt{D_{ij}} + \beta_3 ACP + \beta_4 Border + e_{ij} \quad (1)$$

where: M_{ij} is the value of country i imports from country j ; $Y_i Y_j$ is the GDP of both countries multiplied as a proxy for size; D_{ij} is the distance between country i and country j (to capture trade costs); ACP is a dummy to measure the impact of integration on member countries' trade (it takes a value of 1 when both countries are Andean Community members and 0 otherwise); and $Border$ is a dummy to measure the impact of adjacency (it assumes a value of 1 when the countries have a common border).²

The analysis encompassed the period 1993-1999, since integration gained momentum after the formation of the free trade area in 1992, with the aim of testing the significance and value of the agreement's impact on intraregional trade. The countries on the left side of equation (1) are the five Andean Community members and those on the right are their partners, i.e., suppliers or exporters. The partners selected are those that have bilateral trade with members.

Data on trade flows, in millions of current United States dollars, were obtained from the International Monetary Fund (IMF, 2001). GDP data, in current dollars, are from the World Bank Global Development Network Growth Database³ and the distance between capital cities, in kilometres, was obtained from Haveman's web page.⁴

Individual regressions were run for each year based on equation (1), following a descriptive analysis of the data, which led to the transformation of imports and GDP by natural logarithm and distance by square root. Ordinary Least Squares (OLS) were employed, with the transformed data on imports as dependent variables. A number of countries in Asia and Africa that did not trade with the Andean Community were removed in each year.

The results, in standardized coefficients, together with the R^2 for each regression and the significance of the coefficients, are shown in table 1. The gravity equation performs well in explaining bilateral trade between the Andean countries and their respective partners. The global adjustment of the regression is satisfactory, since the R^2 values are higher than 0.70. In all cases, the independent variables had the expected sign and were statistically significant according to F and t -tests.

The effect of the multiplication of the countries' GDP is positive and statistically significant, ranging between 0.862 and 0.901. These values are consistent with those found by Frankel (1997) and Echavarría (1998) for the periods 1965-1980 and 1986-1995, respectively, though slightly higher owing to the fact that size plays a more important role in trade nowadays and, of course, that the partners chosen for each analysis are different. The coefficients bear out the assumption that trade increases with economic size and, in the case of the Andean countries, this has a strong effect on their trade.

The distance coefficients have a negative sign, are statistically significant and show values between -0.443 and -0.345. Distance has less impact than GDP, however. The value and sign of the distance coefficients are also similar to those found by Frankel (1997) and Echavarría (1998). Both authors worked with a period before the liberalization of transport services and the reduction of costs, so their coefficients are, in most cases, higher than those found in this work, when the distance effect had diminished.

The coefficients for the preferential agreement dummy fluctuate between 0.101 and 0.160. Their statistical significance (p -values) improves from 1995 onwards and they evolve positively, albeit at low levels

² Frankel (1997) used gravity models to show that regionalization could be explained by geographical proximity and preferential trade agreements; Krugman (1991) formalized the role played by geographical proximity in the regionalization process and since then dummy variables have been used to simulate and analyse these effects; Anderson and van Wincoop (2003) offer a more recent and stronger theoretical support for all this.

³ www.worldbank.org/research/growth/GDNdata.html.

⁴ www.haveman.org.

TABLE 1

Gravity model estimates
(Standardized coefficients)

	1993	1994	1995	1996	1997	1998	1999
$Y_i Y_j$	0.897 *	0.862 *	0.896 *	0.882 *	0.901 *	0.867 *	0.865 *
D_{ij}	-0.435 *	-0.403 *	-0.443 *	-0.413 *	-0.377 *	-0.347 *	-0.345 *
D_{ACP}	0.102 *	0.101 *	0.128 *	0.155 *	0.159 *	0.143 *	0.160 *
D_{Border}	0.200 *	0.161 *	0.129 *	0.124 *	0.127 *	0.116 *	0.139 *
No. observations	141	243	240	255	247	261	235
R^2	0.82	0.722	0.755	0.752	0.780	0.714	0.769

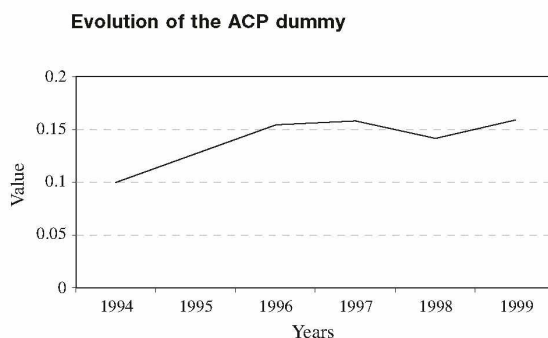
Source: authors' estimates.

* Significant at 5%.

(figure 1). It is important to recall that the free trade area took effect only in 1993 and that Peru remained outside the agreement until 1997. In addition, a large number of exceptions leading to the application of different regulations diluted the influence of the agreement. The impact of the Pact may be expected to become more powerful as regulations are more uniformly applied by all partners. The positive evolution of the coefficients and their significance gains reflect the fact that, with the exception of 1999, member countries have been trading increasingly among themselves. The year 1999 saw numerous economic and political crises, including the macroeconomic and banking collapse in Ecuador, the political problems in Peru that led to the flight of President Fujimori and flooding in Bolivarian Republic of Venezuela. Overall, our empirical results show that the Pact and the free trade area had a positive impact on trade among member countries.

The dummy for adjacency is used to establish whether common borders, which enable trade in those areas, do in fact increase trade flows. The coefficients for this dummy are positive and statistically significant, though their values are low and tending to decline. The positive values confirm that countries with a common border will trade more, but the low values and the non-positive trend suggest that these economies are relatively small and may trade more with larger economies, even those that are geographically more distant. Importantly, the reason adjacent countries do not engage in more border trade often comes down to poor transport infrastructure and difficult geographical conditions. In this regard, the Andes mountain range can drive up costs considerably for the Andean countries.

FIGURE 1



Source: Estimates prepared by the authors on the basis of the data shown in Table 1.

IV

Trade and infrastructure in the Andean Community

1. Trade, infrastructure and regional integration

Since Krugman (1991) recalled the importance of geography to trade, several authors, including Hummels (1998), have attempted to measure the effect of distance and the role of infrastructure in a bilateral trade model. A number of empirical works, such as Porojan (2000), have used investment data as a proxy for infrastructure. But the use of investment data to estimate infrastructure capital can present problems, as Summers and Heston (1991) argued. The effectiveness of the same investment flow may vary from one country to another, owing to differences in public sector efficiency and in the prices of infrastructure capital.

Bougheas, Demetriades and Morgenroth (1999) sought to examine the role of infrastructure in a bilateral trade model and in determining the cost of transport. According to their findings, a pair of countries in which infrastructure investment is optimal will exhibit a directly proportional relationship between infrastructure endowment and volume of trade. Consequently, variations in transport costs among countries may account for differences in their ability to compete in international markets. Furthermore, differences in the volume and quality of infrastructure may account for differences in transport costs and, hence, variations in competitiveness. As a result, reducing the cost and improving the quality of transport systems improves international market access and stimulates an increase in trade.

There is categorical evidence linking improvements in transport services and infrastructure in general to improvements in export performance. Hummels (1999) estimated that for every reduction of 1% in shipping costs, exporters will enjoy a market share gain of 5%–8%. Limão and Venables (2001) calculated that the elasticity of trade flows with respect to the trade cost factor is approximately –3. Their research into the extent to which transport costs depend on geography and infrastructure found that differences in infrastructure account for 40% of the variation in transport costs for coastal countries and up to 60% for landlocked countries. Wilson (2003) showed that trade performance

gaps among the Asia-Pacific Economic Cooperation countries were attributable to substantial differences in the quality of their transport infrastructure and level of logistics and trade services. This study concluded that upgrading the transport and service infrastructure of the lagging countries would substantially boost trade.

Martinez-Zarzoso and Nowak-Lehman (2002) examined the role of economic and geographical distance for a number of MERCOSUR sectoral exports to EU. Their findings reveal that geographical distance, defined as the physical distance in kilometres between capitals modified by an infrastructure index, has a negative impact on trade. Transport costs increase with distance but may be reduced by infrastructure improvements.

The real costs of trade, including transport and the costs of doing business internationally, are important determinants of a country's ability to participate in the world economy. As Limão and Venables (2001) pointed out, remoteness and poor transport and communications infrastructure isolate countries and limit their capacity to participate in international production chains. Any strategy aimed at increasing a region's international competitiveness must include improvement of the channels that facilitate the exchange of goods and services and the movement of people.

In terms of regional integration, as noted by the Inter-American Development Bank (IDB, 2000), geographical interaction creates flows that do not necessarily circulate freely, but do so through infrastructure networks. These networks provide the physical support for flows to circulate: they cannot be a positive influence on integration and development without an appropriate legal and institutional framework combined with efficient infrastructure-related services. Moreover, like the integration process itself, infrastructure networks constitute regional public goods (IDB, 2004) and therefore require joint, coordinated action from all the countries involved in order to fully realize their status as such.

2. Andean Community trade by mode of transport

In order to determine the variables that affect transport costs in members' intra-community trade, it is important to analyse the modes of transport used. Table 2 shows trade information by mode of transport within the Andean Community. Between 1997 and 1999, intra-community exports were delivered mainly by road—nearly 49% of the value traded. Maritime transport occupied second place, with around 38% of the total value traded, and air transport took third place with approximately 8% of the total.

TABLE 2

Andean Community: intra-community exports by mode of transport, 1997-1999
(Percentages of export value)

Mode of transport	1997	1998	1999
Road	49.5	51.0	45.7
Sea	38.5	36.5	39.9
Rail	0.5	0.3	0.7
Air	5.7	8.7	9.2
Multimodal	0.1	0.0	0.0
Waterway	5.6	2.9	4.4
Others	0.0	0.6	0.1

Source: www.comunidadandina.org

In 1997, road transport was the main delivery method for Bolivarian Republic of Venezuela, Bolivia, Colombia and Ecuador. The proportion of maritime transport increased in Ecuador in 1998, likewise in Bolivarian Republic of Venezuela in 1999. Between 1997 and 1999, 48% of Venezuelan exports were delivered to other Andean countries by road and 39% by sea. Of Venezuela's imports from its Andean partners, 62% arrived by road and 29% by sea. In this period, 55% of Colombian exports were delivered by road and 35% by sea, while the proportions of its imports arriving by road and sea were 60% and 33%, respectively.

In common with other Community members, Peru uses mainly maritime transport for all deliveries to non-bordering partners, since inland transport is expensive and slow in such cases. Shipping is the Andean countries' traditional method of delivery for trade with geographically distant partners such as the United States and EU and is therefore the second most important mode of delivery to and from the Andean

region. Nevertheless, in most cases, goods carried by sea must also be transported over an additional inland stretch by either road or rail at both origin and destination. Bolivia's landlocked position makes it the prime illustration of this point. For both exports to and imports from non-bordering countries, Bolivia usually combines shipment to or from a Chilean port with inland road transportation (Andean Community, undated).

Generally speaking, the Andean Community members do not engage in inland waterway transportation because the areas where it would theoretically be feasible lack well-developed corridors. Moreover, the locations of the countries' business clusters often preclude transport modes other than road and sea.

Air cargo is relatively limited: shipping merchandise by road is quicker, especially between bordering countries. Also, road transport is the delivery mode with the most expedite border crossing.⁵ Air cargo involving partners outside the Andean region is limited and confined to highly perishable goods.

Between 1997 and 1999, border trade among the members represented 98% of intra-community trade by road and 49% of total intra-community trade. Trade in road-freighted goods among non-bordering members was thus limited. As table 3 shows, Bolivarian Republic of Venezuela and Colombia have a very significant road-freighted border trade, accounting for around 66% of all trade of this type in the subregion. Trade between Colombia and Ecuador comes in second position, with slightly over 23%, and trade between Bolivia and Peru occupies third place (8%), though nearly half of all trade between these two countries—during the same period—was carried by road. The lowest level occurs between Ecuador and Peru, with only 2% of the total value carried.

In the late 1980s, the lack of infrastructure and the limited relevance of the Andean Pact meant that having a common border was extremely important for all the members' trade. Trade was conducted at borders and there was less interest in more distant trading, because logistics and transport services were few and expensive. At that time distance was certainly crucial and borders marked out natural trading partners. In the 1990s, however, the significance of border trade decreased considerably, as the coefficients for the dummy in model (1) show.

⁵ Personal discussions with the firm ZaiMella del Ecuador S.A., which operates export-import activities in most of the Andean Community member countries.

TABLE 3

Andean Community: intra-community border trade by road, 1997-1999
(Millions of dollars)

Bordering country of destination	1997	1998	1999	1997-1999	%
Bolivia to Peru	143	120	68	331	4.50
Colombia to Ecuador	353	360	198	911	12.38
Colombia to Peru	7	2	0	9	0.12
Colombia to Venezuela (Bol. Rep. of)	802	847	688	2 337	31.77
Ecuador to Colombia	336	269	207	812	11.04
Ecuador to Peru	23	11	13	47	0.64
Peru to Bolivia	92	91	84	267	3.63
Peru to Colombia	3	1	2	6	0.08
Peru to Ecuador	64	34	14	112	1.52
Venezuela (Bol. Rep. of) to Colombia	982	1 073	470	2 525	34.32
<i>Total</i>	<i>2 805</i>	<i>2 807</i>	<i>1 744</i>	<i>7 357</i>	<i>100.00</i>

Source: www.comunidadandina.org.

V

Evaluating the infrastructure effect

1. Model specification and data

The results of model (1) showed that economic size (GDP) is probably the most important variable in the choice of trading partner and established that distance plays a decisive role in cost. Nevertheless, the absolute value of the distance coefficients declined throughout the period, suggesting that other factors, apart from physical distance, may be affecting transport costs (and therefore trade) in the Andean region. Indeed, given that the economic size of bilateral partners did not change dramatically within the period examined, no borders were altered and the basic structure of the Pact was unchanged, transport cost and the associated factors represent the variable that calls for further analysis.

Based on the literature described in point 1 of section IV, we built an augmented gravity model in which physical distance is modified by an infrastructure index, i.e., a geographical distance centred on the interaction of geography and infrastructure, to determine the effect of infrastructure on trade. In this model, transport costs are a function not only of distance but also of the availability of public infrastructure, such as roads, railroads, energy and telecommunication

networks. These public infrastructure dimensions are summarized in an index that measures the degree of infrastructure development in the countries, modifying the distance variable.

Rewriting equation (1), bilateral trade is thus modeled as:

$$\ln M_{ij} = \beta_0 + \beta_1 \ln Y_i Y_j + \beta_2 GeoD_{ij} + \beta_3 ACP + \beta_4 Border + e_{ij} \quad (2)$$

where M_{ij} , $Y_i Y_j$, ACP and $Border$ are the same as in equation (1) and $GeoD_{ij}$ is the distance between country i and country j modified by the infrastructure index.

The analysis takes a cross section for the period 1985-1995.⁶ The reporting countries are again the five Andean Community members, with partners selected by levels of trade with the Andean countries and the

⁶ The time difference in relation to model (1) was conditioned by the availability of infrastructure data.

availability of information on their infrastructure endowment. Since the model retains the dummies for the Andean Pact and border effects, it continues to capture the importance of the preferential trade agreement and the significance of a shared border when the infrastructure variable is introduced.

Data on bilateral trade flows and GDP were taken from the same sources as before. The geographical distance variable is similar to that used by Martínez-Zarzoso and Nowak-Lehmann (2002) and Limão and Venables (2001). It is defined as the physical distance between trading partners' capital cities (obtained as before) divided by the sum of the two countries' infrastructure indexes. The index, which is explained in the appendix, was based on five variables: kilometres of highways, of paved roads and railways, telephone mainlines and kilowatts of electricity generating capacity.

Annual data on physical infrastructure stocks for the reporter and partner countries for 1985-1995 were taken from David Canning's 1998 Database of World Infrastructure Stocks.⁷ Canning reports two data types:

raw data with a minimum of manipulation, basically as they appear in the original sources, and processed data with some kind of interpolation (assuming exponential growth over the intervening period, for instance). As recommended by the author, the index was calculated using the processed data because of their inter-temporal consistency for empirical work. The data on population and country area used to normalize infrastructure stock were obtained from the World Bank Global Development Network Growth Database and the Country Watch web page, respectively.⁸

2. Empirical results

In model (2) separate OLS regressions were run for each year, with the natural logarithm of members imports as dependent variable. Again, a number of Asian and African countries that did not engage in bilateral trade with the Andean Community were removed from the sample.

The results (in standardized coefficients) for each regression are shown in table 4. The R^2 values range

⁷ See www.worldbank.org/html/dec/Publications/workpapers/WPS1900series/wps1929.

⁸ See www.worldbank.org/research/growth/GDNdata.html; www.countrywatch.com.

TABLE 4

Andean Pact, 1985-1995: first gravity model including infrastructure. Empirical results
(Standardized coefficients)

Year	$\ln Y_i Y_j$	$\ln \text{GeoDistance}$	Andean Pact dummy	Border dummy	R^2	n
1985	0.744 *	-0.252 *	0.007	0.410 *	0.677	125
1986	0.729 *	-0.250 *	0.021	0.384 *	0.664	129
1987	0.743 *	-0.243 *	0.032	0.374 *	0.666	131
1988	0.780 *	-0.211 *	0.041	0.390 *	0.717	134
1989	0.727 *	-0.244 *	0.080	0.371 *	0.653	133
1990	0.773 *	-0.206 *	0.170 *	0.386 *	0.692	140
1991	0.798 *	-0.228 *	0.243 *	0.349 *	0.735	132
1992	0.791 *	-0.256 *	0.159 *	0.371 *	0.757	135
1993	0.786 *	-0.245 *	0.197 *	0.339 *	0.777	143
1994	0.750 *	-0.256 *	0.227 *	0.307 *	0.728	146
1995	0.718 *	-0.293 *	0.237 *	0.264 *	0.712	151

Source: authors' estimates.

* Significant at 5%.

from 0.653 to 0.735 for the period 1985-1991; between 1992 and 1995, they are higher than 0.712 in all cases. Hence, the gravity equation adequately explains the bilateral trade of the five Andean Community members, especially in the second part of the period, reflecting the increasing application and importance of the preferential trade agreement.

Here again, economic size is the most important variable. This not only confirms the findings already presented but coincides with those offered in most empirical works. Nevertheless, notably, economic size (the multiplied GDP of each pair of countries) has a somewhat smaller effect when infrastructure is incorporated into the equation. Although the partner's purchasing power is the first requirement to engage in trade, the smaller GDP effect found in this second model confirms that the infrastructure stocks of both member and partner reduce the distance between them. By reducing transport costs, such endowments reduce the prices of the goods traded and make them more accessible, thus shortening the economic distance between markets. Throughout the period analysed, GDP coefficients are statistically significant, positive and show no significant variation from one year to another. They range between 0.718 and 0.791, similarly to those found by Echavarría (1998) and Frankel (1997) in previous empirical work on the Andean Community though, again, higher.

The Andean Pact dummy was not significant before 1990. Until the 1990s, import substitution policies and inward-looking regionalism shaped a non-operational agreement rife with exceptions, since members did not fully comply with its requirements: they all applied high tariffs and multiple non-tariff measures. The results for the Pact dummy confirm that the preferential trade agreement did not influence trade among members before market-oriented reforms set the groundwork for boosting integration efforts. Unfortunately, in 1992, despite the creation of the free trade area, the crisis in Peru led the Bolivarian Republic of Venezuela to freeze diplomatic relations with that country. As a result, Peru temporarily suspended its obligations under the liberalization programme. These developments detracted necessary political support from the Community and brought about a decline in trade among members, as confirmed by the drop in the dummy coefficient, though this trade remained significant. Since then the values have shown a positive trend, indicating the consistent enforcement of the agreement.

The new values for the Pact dummy are also higher than those obtained before the incorporation of

infrastructure endowments into the model.⁹ Inclusion of infrastructure endowments not only lessened the distance effect but also strengthened the role of the preferential trade agreement. The combination of appropriate infrastructure and continuous building of regional integration on different fronts will certainly continue to influence intra-community trade in a positive manner.

The border dummy not only showed statistically significant results throughout the period, but gained importance as a trade determinant. As with the previous dummy, the inclusion of infrastructure heightened the importance of borders. All coefficients were above 0.620, about twice as high as those found in model (1), for the corresponding years (1993-1995). The importance of borders in Andean Community trade is consistent with the fact that nearly 50% of the trade within the subregion is road-freighted and 98% of road transport takes place in border areas, as noted earlier. However, one of the most important traits of the results for this variable in model (1), the decreasing trend of the coefficients, is maintained in model (2). Until 1992, the coefficients present higher values, indicating that a common border had a stronger influence on trade than the existence of a trade agreement which, though signed, was yet to be fully enforced. These higher values also reflect two additional issues: the poorer infrastructure and the greater cost resulting from delivering merchandise other than by road. After 1992, when the free trade area became operational and maritime transport costs decreased to affordable figures in terms of transit and frequency, shared borders became less important and the coefficients approached the levels posted by the geographical distance and Pact dummy coefficients.

The geographical distance coefficients were statistically significant and negative, confirming that transport costs, as represented in the model, reduce trade. The results also support the theoretical framework mentioned earlier, insofar as infrastructure endowments reduce bilateral distances. The geographical distance coefficients are roughly half those obtained from

⁹ In this subsection and the next, assertions on the relative sizes of the same coefficients in different regressions (either in different models for the same year, or the same model in different years) are supported by the appropriate significance tests. To avoid encumbering the text, these results are not included; they are, however, available from the authors.

proxying transport costs by physical distance alone.¹⁰ From 1990 onwards, they show a positive trend. This pattern is the opposite of that encountered when physical distance alone was used, revealing that the distance variable became more important as competition for transport services increased and new and better ways of shipping goods were found, thus making transport more flexible and reducing its impact on trade. Therefore, a key issue in increasing trade flows is to develop infrastructure and build up the countries' capability to mobilize efficient delivery services and thus reduce the prices of traded goods.

3. Further results: the importance of infrastructure in reporting and partner countries

To analyse the role of the infrastructure of reporting and partner countries separately, a third gravity model was built within the same theoretical framework. The difference with respect to the previous models was the inclusion of two geographical distance variables instead

of one: the geographical distance of the reporter (the five Andean members) and that of its partner.

The findings are shown in table 5. The coefficients for economic size and the Andean Pact and border dummies show more or less the same evolution, exactly the same sign and approximately the same level. Economic size continues to have a positive effect on trade. Similarly, the common border dummy posts important and significant values up to 1992, before the preferential agreement gained momentum.

Table 5 shows that, until 1992, the infrastructure of the reporting countries, i.e., the Andean Community members, had a larger negative effect on trade than the partners' infrastructure endowments. This clearly indicates that in the late 1980s and early 1990s the lack of infrastructure and the corresponding disadvantage with respect to other countries in the region had a negative impact on the trade opportunities of the Andean Pact signatories. The infrastructure in these countries, like many others in Latin America, deteriorated significantly in the 1980s and early 1990s, when the region lost considerable ground to the industrialized countries and faster-growing emerging economies (Calderon and Servén, 2003). The coefficients show that lack of infrastructure at home narrowed the reporting countries' trade possibilities

¹⁰ It will be recalled that model (1) used the square root of distance, though this does not refute the arguments made in this paragraph.

TABLE 5

Andean Pact, 1985-1995: second gravity model including infrastructure. Empirical results (of the reporting and partner country). Empirical results
(Standardized coefficients)

Year	$\ln Y_i Y_j$	$\ln \text{GeoDistance}$ Reporter	$\ln \text{GeoDistance}$ Partner	Andean Pact dummy	Border dummy	R ²	n
1985	0.782 *	-0.207 *	-0.179 *	-0.034	0.374 *	0.687	125
1986	0.775 *	-0.278 *	-0.161 *	-0.087	0.337 *	0.695	129
1987	0.798 *	-0.243 *	-0.182 *	-0.017	0.327 *	0.688	131
1988	0.843 *	-0.302 *	-0.127 *	-0.031	0.328 *	0.764	134
1989	0.802 *	-0.338 *	-0.135 *	-0.010	0.302 *	0.704	133
1990	0.840 *	-0.267 *	-0.107 *	0.119 *	0.330 *	0.722	140
1991	0.841 *	-0.262 *	-0.142 *	0.175 *	0.295 *	0.765	132
1992	0.825 *	-0.215 *	-0.196 *	0.118 *	0.330 *	0.777	135
1993	0.806 *	-0.199 *	-0.187 *	0.154 *	0.301 *	0.795	143
1994	0.770 *	-0.191 *	-0.203 *	0.190 *	0.271 *	0.747	146
1995	0.750 *	-0.227 *	-0.211 *	0.190 *	0.220 *	0.729	151

Source: authors' estimates.

* Significant at 5%.

more than the same lack in partner countries. In 1989 and 1990, the reporters' infrastructures had a negative impact about two-and-a-half times that of partner-country infrastructures.

Once infrastructure became an important government objective, transportation costs decreased and a greater number of more distant destinations could be reached for the same price. Hence, partner-country infrastructure gained in importance while the reporters' infrastructure lost influence. The results indicate that the Andean countries' major efforts to increase private-sector involvement in infrastructure development were successful. Moreover, the absolute value of distance elasticity rises after 1990. Progress has been made in reducing public-sector funding shortfalls and improving infrastructure productivity (Estache, Wodon and Foster, 2002), thus making distance more flexible again. By 1995, the infrastructure of both countries was equally relevant in cost reduction and efficiency determination.

4. Regional infrastructure perspectives for the Andean Community

Infrastructure should be considered not only as a key tool for integration but as a link to sustainable development. We will refer briefly to the state of the art as regards infrastructure in the Andean region. By discussing the traits of existing corridors and outlining the position regarding those with the highest apparent potential for development, we attempt to link our findings to the situation on the ground. The members are, in fact, beginning to adopt common measures on several fronts to foster intraregional trade and physical integration, by facilitating and deregulating to facilitate and deregulate transport services, electricity supply and telecommunications.¹¹ Specific provisions for all modes of transport, including multimodal transport, have been made to determine the principles and criteria of efficient service provision.¹²

Growing intraregional trade in the Andean Community, as discussed in the previous sections, was

followed by market concentration. Bolivarian Republic of Venezuela and Colombia form the country pair with the highest share of intraregional trade, following by the Colombia-Ecuador.

According to IDB (2000), trade flows in South America are concentrated in a few major corridors and associated hubs of activity, but only one of the six main hubs is located in the Andean Community. The largest flows do not take place in the Community, but in the Southern Cone, with Brazil, Chile and, until 2001, Argentina occupying the main positions (see table 6). Nevertheless, the Colombia-Bolivarian Republic of Venezuela hub, linking Bogotá to Caracas, moves more than 3 million tons of cargo annually and is second only to the Argentina-Brazil flow. Half of this cargo, which amounted to US\$ 2.5778 billion in 1998, is transported by truck and half by river and maritime transport. There is also a 380 MW electricity transmission line. The Ecuador-Colombia trade flow ranks ninth, with US\$ 856.5 million in 1998. These intraregional exchanges are being gradually upgraded. By 2002, around 50% of the goods traded were high value-added products and, among the remaining 50% —low value-added products— petroleum is prominent.

This paper has discussed the conceptual issues, frameworks for analysis and provisions for regional infrastructure development being made in the Andean Community. As well, however, seeking a common strategic vision on development not only within the Andean region but also for all of Latin America, the Community joined the Regional Infrastructure Integration in South America (IIRSA) initiative.

TABLE 6

South America: ten main bilateral trade relationships, 1998 (Millions of dollars)

Bilateral trade partners	Flows	%
Argentina-Brazil	14 411.3	38.64
Colombia-Venezuela (Bol. Rep. of)	2 577.8	6.91
Argentina-Chile	2 413.5	6.47
Brazil-Chile	1 851.0	4.96
Brazil-Uruguay	1 815.6	4.87
Brazil-Paraguay	1 598.7	4.29
Brazil-Venezuela (Bol. Rep. of)	1 367.3	3.67
Argentina-Uruguay	1 338.1	3.59
Colombia-Ecuador	856.5	2.30
Argentina-Paraguay	751.7	2.02

Source: Interamerican Development Bank (2000).

¹¹ See www.comunidadandina.org/servicios/trans.htm.

¹² As regards overland transport, for instance, Decisions 398 (passengers) and 399 (goods) set out the contractual terms and responsibilities of both carrier and user; international transport by road is regulated by Decision 467; Resolution 300 regulates Decision 399 by determining the forms to be used by country authorities and carriers. Other important measures have been taken for maritime and air transport, in order to harmonize policies and make firms more competitive.

IIRSA is a political and strategic regional vision revolving around the development of a hub encompassing the 12 South American countries. It represents a new planning approach in which countries coordinate both national sectoral policies and projects that are consistent with the policies of their regional partners. In view of this, the analysis of potential corridors should consider those in which the Andean members participate under the Andean Agreement as well as those linking them to other existing and potential trading partners in Latin America.

The exchange hubs channelling the largest flows are complemented by others which mobilize smaller volumes but have significant growth potential. It is precisely in these corridors with somewhat lower volumes where fresh investment may have the highest returns, by reducing bottlenecks and expanding capacity. Approaching regionalism via a framework of hubs and corridors helps to identify flows that could be stimulated by furthering integration in different areas, building on complementarities between economies

and developing plans to tie other regions into the existing network. This approach aims to transform trade hubs into axes of integration and development, with infrastructure construed not in isolation but as part of a set of activities, linking —through different kinds of integration— physical investment with social dimensions of development.

Our results confirm the relevance of the above points and add to the motivation to pursue such initiatives. But there are competing options for infrastructure investment, ranging from local or domestic options (the “country cost”) to those favouring distant partners. From a regional development perspective, the preferred options would be domestic and IIRSA-related, whether within or outside the Community.

The operation of new free trade areas in the region, such as the MERCOSUR and Andean Community area, may change the trading map of South America. The evidence set forth in this paper suggests that the development of the hubs and corridors should form one of the main priorities in such agreements.

VI

Conclusions

Three different, though related, gravity models were examined in this paper. The first confirmed the relevance of the Andean preferential trade agreement and of adjacency to the members’ trade flows. The second and third models also took the trade agreement and adjacency factors into account, but factored in the role of infrastructure. One model evaluated the general importance of reducing distance between bilateral partners and the other separated the effects of importers’ and exporters’ infrastructure endowments, in order to determine which had most impact in terms of reducing physical distance.

All the results confirmed that economic size is crucial to trade. Even within regional agreements, size determines a country’s level of bargaining power. When it comes to trade, States are interested in relative purchasing capabilities and, therefore, in the economic power of the others. Given that economic size cannot readily be modified by short-term policies, countries should focus first on such variables as infrastructure or preferential agreements to foster not only trade but

growth as well. Nevertheless, economic size will be a consideration in any regional negotiation.

The first gravity model confirmed the Andean Community’s positive impact on trade within the region and with third partners. The positive evolution and low values of the coefficients show that the preferential trade agreement gained strength slowly, due to the complexity of the integration process and the high number of exceptions involved. The second model indicated that the preferential trade agreement became relevant only in the 1990s, when the free trade area became operational. It also showed that the impact of the preferential regime is greater when infrastructure endowments are considered. Reducing the cost and improving the quality of transport systems through infrastructure development improves international market access and helps to increase trade.

As the new regionalism becomes established in the world in general (IDB, 2002) and liberalization policies continue to lower trade barriers and tariffs, transport costs derived from poor infrastructure may come to

represent a much higher level of effective protection than tariffs do. Undoubtedly, the Andean Community should reformulate its approach to integration and set in motion appropriate mechanisms to improve its geopolitical stability, attract foreign direct investment, foster functional regional cooperation —especially in infrastructure— and improve its economic and political negotiating position *vis-à-vis* other groups or countries. But it should also foster a new type of integration aimed, not simply at trade measures, but also at cooperation on different fronts and global competitiveness. Otherwise the impact of its preferential agreement will be gradually diluted as new regional agreements lower tariffs among other Latin American countries. From this perspective, bilateral trade will ultimately be defined in terms of costs and competitiveness. But competitiveness can be achieved only through improvements in logistical and transport services at all points in the production-distribution chain, and the respective reduction in costs brought about by a more comprehensive type of regional integration.

The second model also showed that the influence of a shared border, enabling border trade, is declining. As transport costs decreased and the preferential trade agreement became consolidated, promoting infrastructure development in the process, shared borders became less important. However, since land transport is the favoured mode for much of the increasing flow of goods and border trade is an important source of economic activity between neighbours, intra-Andean

borders should be properly equipped to efficiently interlink national economies. This is crucial to open trade corridors and development hubs that connect interior regions of the Andean countries, through border regions, with Pacific and Atlantic ports. Such corridors will allow true crossroads to be established, building on their privileged geographic position as a main asset.

Here again, the evolution, sign, significance and values of the geographical distance variable highlighted infrastructure's positive influence on trade and strongly suggest that, as the Andean Pact evolves into a more sophisticated and complex integration scheme, infrastructure will be the most manageable variable available to governments for reducing transport costs.

The results of the final gravity model, which considered the infrastructure of the Andean countries and their partners separately, show that today a country's infrastructure is decisive not only as regards the import of goods needed locally, but also in order to qualify as a trading partner. Improving infrastructure in poor and middle income countries, like the Andean ones, brings high global returns in terms of trade (Brun, Carrère and others, 2002).

Lastly, better infrastructure should not only be regarded as a tool to increase trade: within the framework of functional cooperation among South American economies, it should be considered as a major driver of development, enabling the region as a whole to gain in competitiveness and become an attractive partner for other, more distant locations.

APPENDIX

The infrastructure index

Several approaches to building an infrastructure index have been employed by different authors. Owen (1987) graded countries in terms of infrastructure by using a linear average of several infrastructure measures, establishing a value of 100 for one country and relating the others to it. Hulten (1996) chose to normalize individual measures of infrastructure in quartiles. He then assigned a value to each of the ordered quartiles and, from these infrastructure rankings, constructed an index by taking simple averages (Calderón and Chong, 2004). Limão and Venables (2001) built an index from four variables: kilometres of road, of paved highways, and of railways per square kilometre of country area, and telephone mainlines per person. Factor components were used to normalize the variables and a Cobb Douglas production function was employed. The authors —like others employing similar methods— stated that the normalization did not affect the results in general terms. Martínez-Zarzoso and Nowak-Lehmann (2002) used the same four infrastructure variables but normalized only the variable of telephone lines

per 1,000 people, obtaining a simple average infrastructure index per country.

The index used in his work was calculated on the basis of five infrastructure variables: the four used by Limão and Venables (2001) plus kilowatts of electricity generating capacity. Usually, quantity variables are normalized to make them independent of country size; hence, telephone mainlines and kilowatts of electricity were divided by population, and roads, paved roads and railways were normalized by square kilometers of country area. This procedure was inspired by Canning, who proposed normalizing rival goods by population, on the basis that the quantity of the good divided by population indicates average consumption.¹³ For

¹³ A good is rival in nature when the use of that good by one agent precludes the simultaneous use of the same goods by other agents. (See "Non-rival productivity inputs", available at: www.hassler-j.ei.su.se/Courses/macro/2000/growth3.pdf).

non-rival goods, however, normalizing by population does not give average per capita consumption, since an increase in population does not reduce average consumption with a fixed stock of non-rival infrastructure. Hence, it makes sense to normalize transportation infrastructure data by area, as Ingram and Liu (1997) and Limão and Venables (2001) did—and as we have done.

The rationale for including kilowatts of electricity was that electricity contributes to economic activities in general and is crucial for telecommunications, computers and machinery. Also, most activities rely on electricity at (at least) one point in the transport and trade process, such as port operation and data processing. Moreover, proper electrification along roads allows safe and efficient movement of cargo, especially at night, when most road transport take place in the Andean countries.

Ports and airport data which, in any case, represent a small share of overall infrastructure endowments, were

excluded owing to a lack of comparable data across countries and over a sufficient period of time. For similar reasons, power refers only to electricity. Moreover, the analysis incorporates only quantitative stocks rather than qualitative measures, since there is almost no data on operational efficiency.

The final index is a linear average of the five normalized infrastructure variables, calculated for each country in the sample for the period 1985-1995. Index values for the countries for which regressions were calculated are available from the authors. As noted, normalization of the infrastructure variables eliminates the size effect; hence, small countries with well-developed infrastructure, such as Belgium, the Netherlands and Japan, rank high, even though in absolute terms their kilometres of roads or numbers of telephones appear to indicate a less developed infrastructure.

(Original: English)

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Fiscal policy and the commodities boom:

the impact of higher prices for non-renewables in Latin America and the Caribbean

Juan Pablo Jiménez and Varinia Tromben

For countries specializing in non-renewables, the usual challenges for fiscal policy are compounded by the intrinsic characteristics of these commodities. The countries in which non-renewables account for over 20% of exports include the Bolivarian Republic of Venezuela, Bolivia, Chile, Colombia, Ecuador, Mexico and Trinidad and Tobago. This article reviews the relationship between the improvement in these countries' terms of trade and the fiscal policy challenges they are having to cope with. To this end, it analyses the importance of the role played by the exploitation of these commodities, reviewing changes in their prices and their impact on the terms of trade. It also considers the performance of these countries in relation to the main characteristics of fiscal policy in the region and analyses developments in the public accounts following recent price rises, with emphasis on their impact and the policy decisions taken.

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I

Introduction

...As was abundantly clear in the eighteenth century to those who pondered the enigma of this gigantic empire dominated by one of the most archaic nations in Europe, what had driven the conquistadores was the search for precious metal...

Halperín Donghi (1990)

Latin America and the Caribbean has traditionally been an important supplier of energy and mineral resources. The region accounts for 13% of the world's oil production and possesses 10% of world reserves, while Chile is the leading copper producer and exporter, accounting for an average of 35% of world output. For this reason, the recurrent fluctuations in the prices of these commodities have a significant impact on the economies of the countries specializing in them.

Among the many dilemmas raised by this situation, there are two main questions that have to be addressed by fiscal policymakers in boom periods. The first is how to transform windfall income into fiscal revenues, and the second is how to use the fiscal surpluses generated while avoiding the macroeconomic problems that such periods of high prices usually create.

Concerning the first question, the decision as to which tools to use will depend mainly on whether the non-renewables are publicly or privately owned. The most direct way of turning the exploitation of these commodities into fiscal revenue has been for governments to participate in their extraction through publicly-owned companies. When they are privately owned, fiscal revenues from these sectors are obtained through a combination of tax instruments covering the exploitation and marketing of the non-renewables concerned: royalties and taxes on income, profits and capital gains applied to the companies exploiting resources of this type. Furthermore, over the past few years, as prices have risen strongly, some countries have introduced new instruments: Chile established its special tax on operating income from mining activities

and Bolivia approved its direct tax on hydrocarbons and their derivatives.

The second question concerns the role played by fiscal policy in stabilizing the economy. In this connection, it is often recommended that during economic boom periods the fiscal authorities should influence the level of activity by restricting public spending, whereas in periods of recession fiscal policy should contribute to the reactivation of the economy.

Accordingly, the usual recommendation is that fiscal policy be designed with this stabilizing function in mind. The goal of policy should be to decouple changes in revenue, which is strongly influenced by the economic cycle, from changes in spending. The countries in the region have sought responses of different kinds, ranging from discretionary fiscal policy decisions to more institutionalized mechanisms such as fiscal rules or stabilization funds.

In recent years, furthermore, coinciding with the upward trend in prices for mineral and energy goods and the consequent impact on fiscal revenues, the countries have been discussing different mechanisms for regulating the use of the resulting surpluses.

With these objectives in mind, this paper has been organized as follows. The next section analyses the importance of non-renewables in the region (section II). This is followed by consideration of changes in the prices of these commodities over the last few years and their impact on the terms of trade for countries specializing in them (section III). The performance of these countries is examined in relation to the main characteristics of fiscal policy in the region, and there is an analysis of developments in the public accounts in response to the price increases of recent years, stressing their impact and the policy decisions adopted (section IV). Lastly, section V contains a number of conclusions relating to the fiscal policy applied by these countries and their recent experience.

□ The authors wish to express their appreciation for the comments of Omar Bello, Guillermo Cruces, Osvaldo Kacef and Ricardo Martner, as well as the observations of an anonymous referee on a preliminary version of the article. All opinions, errors or omissions, however, are the sole responsibility of the authors.

II

The exploitation of non-renewables in the region

Latin America has traditionally been a key supplier of commodities to the world. The earliest ECLAC works already refer to the region's importance in this role.¹ As figure 1 shows, commodities continue to account for a substantial proportion of the region's total exports.

Despite the significant efforts made by the countries of the region to diversify exports over the last few years, one or two commodities continue to account

for a major share of the export total in many of the countries. Table 1 shows commodities accounting for over 10% of each country's exports in 2004.

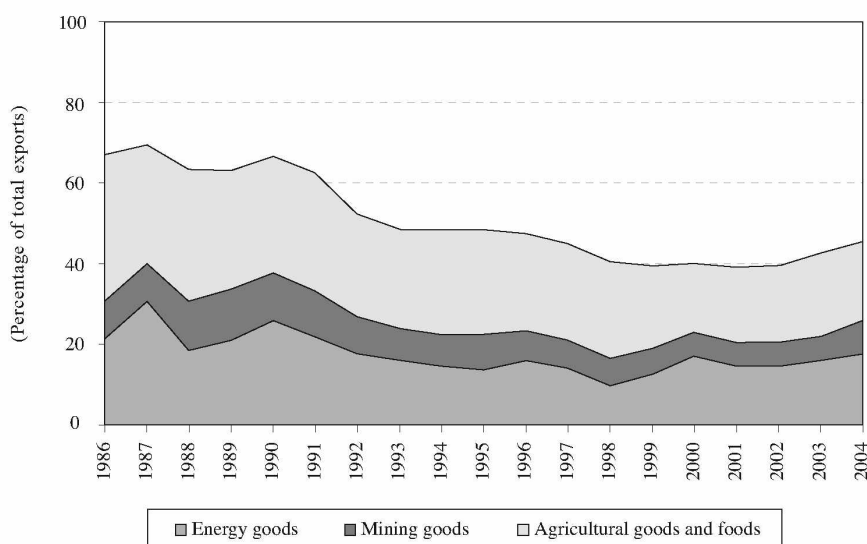
The countries specializing in non-renewable exports (including energy and mineral goods, referred to hereafter as non-renewables) include, principally, the Bolivarian Republic of Venezuela, Bolivia, Chile, Colombia, Ecuador, Mexico and Trinidad and Tobago. These countries can be classified into three groups by the average share of such products in their total exports (copper in Chile, hydrocarbons in Bolivia and Trinidad and Tobago, oil in the other countries) over the 1980-2005 period (figure 2 and table 1):

- The first group includes the Bolivarian Republic of Venezuela and Trinidad and Tobago. For the

¹ In *The Development of Latin America and its Principal Problems*, we find the following assertion: "Under that schema the specific task that fell to Latin America, as part of the periphery of the world economic system, was that of producing food and raw materials for the great industrial centers." (Prebisch, 1950).

FIGURE 1

Latin America and the Caribbean: Commodity exports, 1986-2004
(Percentages of total exports)



Source: ECLAC, using information from the Commodity Trade Database of the United Nations Statistics Division (COMTRADE).

TABLE 1

**Latin America and the Caribbean: Countries dependent
on a commodity export, 2004**

(Percentages of each country's total exports)

Commodity	Over 50% of total exports	Between 20% and 49% of total exports	Between 10% and 19% of total exports
<i>Energy goods</i>			
Crude oil and oil products	Venezuela (Bol. Rep. of) (81.5%) Ecuador (53.2%)	Barbados (35.4%), 2003 Colombia (25.2%) Mexico (38.3%) ^a Trinidad and Tobago (38.5%), 2003	Argentina (14.3%)
Natural gas		Bolivia (27.7%) Trinidad and Tobago (20.6%), 2003	
<i>Mineral goods</i>			
Bauxite and aluminium	Jamaica (65.6%), 2002		
Coal			Colombia (10.6%)
Copper		Chile (46.1%)	Peru (19.6%)
Gold			Peru (18.6%)
<i>Agricultural goods</i>			
Coffee			Guatemala (11.2%) Honduras (18.4%) Nicaragua (17.4%)
Bananas		Dominica (20.5%)	Costa Rica (9.3%) Ecuador (13.2%) Honduras (11.3%) Panama (12.2%) Argentina (11.8%)
Soya		Paraguay (42.4%)	
Fish		Panama (38.5%)	
Crustaceans and molluscs		Belize (25.7%), 2003	Panama (14.6%)
Beef (cattle and meat)		Uruguay (20.6%) Nicaragua (20.1%)	

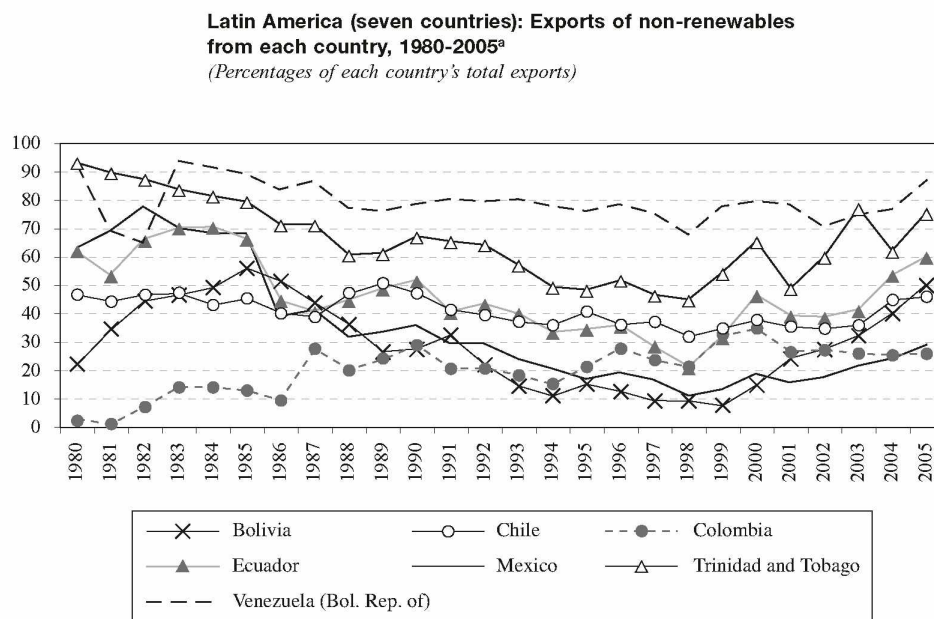
Source: ECLAC, United Nations.

^a Mexico's export total does not include maquila exports.

Bolivarian Republic of Venezuela, oil accounted for an average of 79% of all exports each year over the period in question, and the figure was over 70% in all but three years (1981, 1982 and 1998). For Trinidad and Tobago, hydrocarbon exports (oil and natural gas) averaged 66% of total exports each year.

- The second group includes Chile and Ecuador, whose copper and oil exports, respectively, averaged over 40% of total exports each year (40.9% for Chile and 45.6% for Ecuador).
- The third group includes Bolivia, Colombia and Mexico, where non-renewables accounted for between 20% and 35% of total exports.

FIGURE 2



Source: ECLAC, on the basis of official figures.

^a For the Bolivarian Republic of Venezuela, Colombia, Ecuador and Mexico, the figures are for oil exports. In the case of Bolivia and Trinidad and Tobago they are for hydrocarbon exports (except in the case of Bolivia for the 1980-1989 period, when they are for natural gas only). In the case of Chile they are for copper and molybdenum exports.

III

Commodity price developments

Prices for the commodities exported by Latin America and the Caribbean have increased significantly over the last few years. The largest increases have been for energy products, followed by metals and minerals.

According to ECLAC (2006) and as shown in figure 3, both the overall commodities index and the energy and minerals indices are in an expansionary phase of the cycle and prices are higher than the trends of their respective series. The current cycle differs from previous ones in the magnitude and duration of the upswing.

In the energy products price index series (where crude oil has a 70% weighting) there have been sharp increases in the past two years (2004-2005). The increase in the price of oil has been due mainly to growth in the demand for crude (driven by China and

India); in the case of metals, the price rise has been driven by the expansion of external demand, combined with low inventories.²

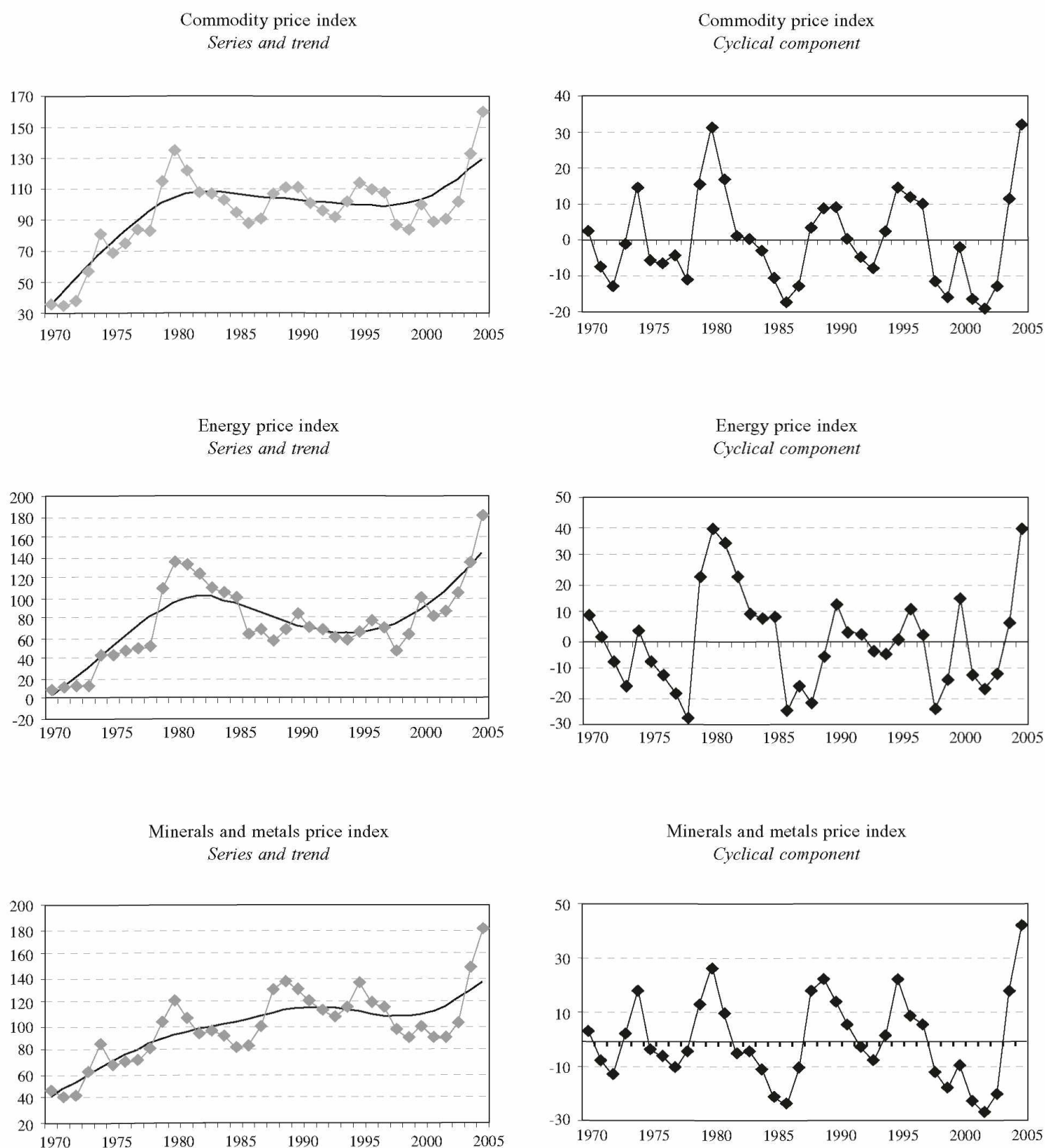
Where oil is concerned, there have been significant price fluctuations in the past few years (figure 4). After a period of sharp rises in the 1970s and the first half of the 1980s, prices remained relatively stable (with a jump in 1990-1991, during the Middle East conflict) until 1997. Volatility rose substantially from that year onward, with large increases in the past few years.

Copper prices have also shown a high degree of variability over the past 25 years, although less so than

² See ECLAC (2006) and Ovalle (2006) for further details.

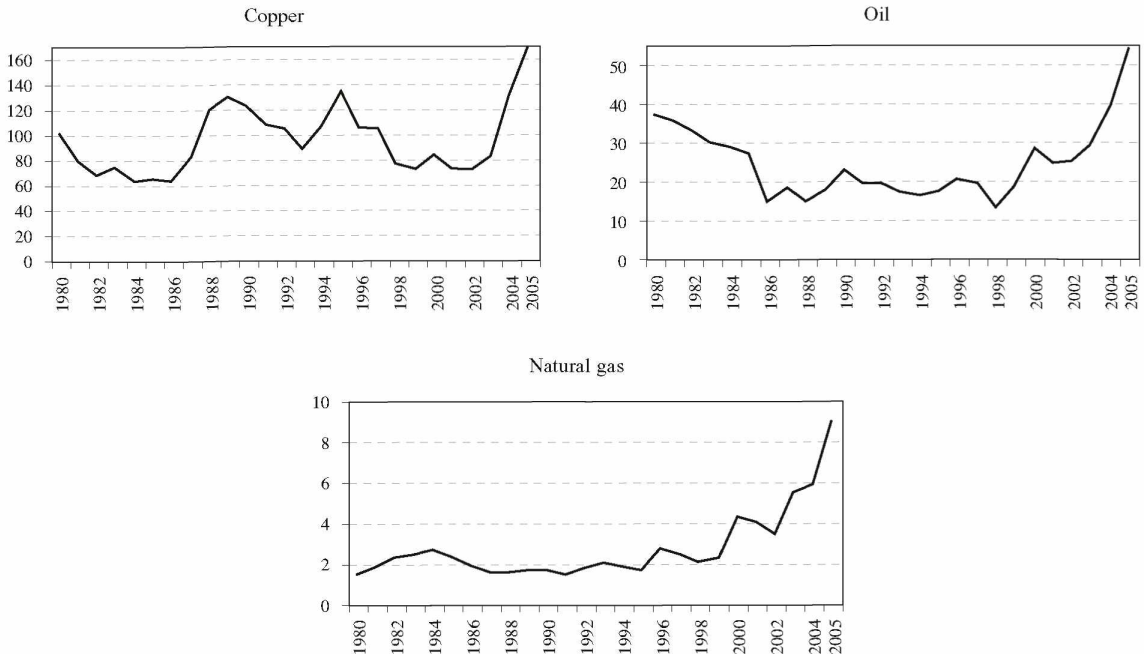
FIGURE 3

Latin America and the Caribbean: Price indices, series, trends and cyclical components, 1970-2005
(2000 = 100)



Source: ECLAC, on the basis of official figures.

FIGURE 4

Copper, natural gas and oil prices, 1980-2005*(Cents per pound for copper; dollars per million British thermal units for natural gas and dollars per barrel for oil)*

Source: World Bank.

oil prices.³ Since Chile is the world's leading copper producer and exporter (generating on average 35% of world output of mined copper), its mining policy has a direct impact on the price of this commodity in the international market. Copper production and investment in Chile increased sharply during the 1990s and the consequent overproduction seems to have been responsible for a large drop in the international market price. Since 2002, the copper price, like the oil price, has resumed an upward trend, mainly because of growing demand from the large Asian economies.⁴

The significant price increases for the products in which the region specializes have brought a strong

improvement in the terms of trade. The high share of non-renewables in total exports means that the region's terms of trade are closely linked to the export commodities price index. According to ECLAC (2006), there is a statistically significant correlation between these two variables, averaging 0.65 since the early 1990s. Nevertheless, as figure 5 shows, the process differs greatly between countries.

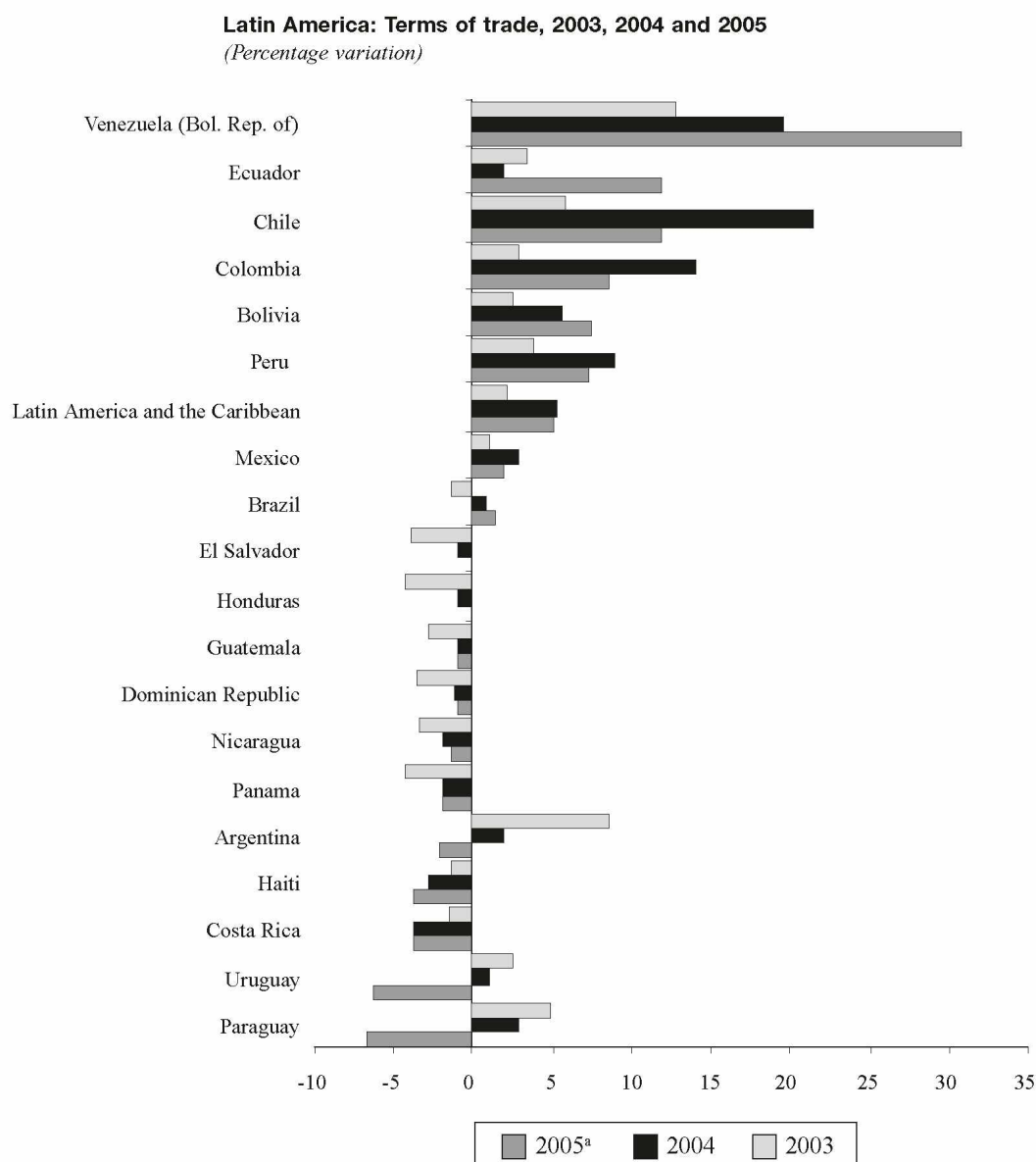
The countries that showed the most pronounced improvement in their terms of trade over the 2003-2005 period are the Bolivarian Republic of Venezuela, Ecuador, Chile and Colombia. In the cases of the Bolivarian Republic of Venezuela, Ecuador and

³ Jiménez and Tromben (2006) show that the coefficient of variation was lower for copper than for oil and gas in 1957-2005.

⁴ See Kaplinsky (2005) for further details on the entry of the People's Republic of China into the global market and its impact on the demand for non-renewables. According to Kaplinsky, it is possible to identify three trends that are having a significant impact

on developments in the region's terms of trade: (i) it is not inevitable that prices of "soft commodities" will fall; (ii) there are now doubts as to whether the prices of manufactures will actually continue to increase, especially those in which China is involved; (iii) the prices of many "hard commodities", which were in a quite profound long-term decline, have been rising since the early 2000s.

FIGURE 5



Source: ECLAC, on the basis of official figures.

^a Preliminary figures.

Colombia, this improvement reflects high oil prices. In the case of Chile, an oil-importing country, higher copper prices more than compensated for the increase in oil prices.

Over the last few years, the large Asian economies' growing share of world trade has tended to alter the structure of global demand, skewing it more towards raw materials and certain manufactures, while at the same time considerably expanding the supply of a wide range of manufactured products. As a result, the

region's terms of trade have recovered from the decline of the 1980s and have exhibited a generally positive, albeit volatile, trend since the 1960s.⁵ The new structure of world goods supply and demand could give rise to long-term changes in price trends for commodities and basic manufactures, and this ought to be taken into account when fiscal instruments are designed.

⁵ See ECLAC (2005a and 2005b).

IV

Fiscal policy in countries that export non-renewables

To consider the fiscal policy implemented by the countries analysed here, this section will be divided into two parts. The first will analyse the behaviour of these countries in relation to the most salient features of fiscal policy in Latin America. The second will examine how these countries in particular have coped with the price surge of the past few years, emphasizing two of the main issues for fiscal policy: how governments manage to capture resources from non-renewables and, most importantly, how higher commodity prices have impacted fiscal revenues. It will then go on to analyse how governments have managed this plenty so as to attenuate its impact on spending.

In countries whose production structure is dominated by non-renewables, the usual challenges facing fiscal policy are compounded by the intrinsic characteristics of these commodities. The volatility and unpredictability of their prices can complicate fiscal policy, making it difficult to determine an appropriate and sustainable level of public spending.⁶ In addition, the fact that natural resource reserves are finite means that fiscal policy design has to provide for considerations of intergenerational equity.⁷

1. Solvency, volatility and the cycle

Any attempt to describe fiscal policy in Latin American and Caribbean countries needs to highlight three characteristics: solvency problems, volatility and procyclical behaviour. Solvency problems are related to the difficulty experienced by the region's governments in financing goods and services provided by their public sectors in a sustainable way. As an illustration of this point, only 48 of the 304 overall fiscal balances

observed from 1990 to 2005 for the 19 countries in the ECLAC database were positive. If these indicators are disaggregated by decade, the 1990-1994 period included 29 positive overall fiscal balances, as against just nine between 1995 and 1999 and 10 between 2002 and 2005 (there was not a single positive fiscal result in either 2000 or 2001). Extending the time coverage to 1950-2005⁸ (figure 6), only 181 of 976 observations show overall fiscal surpluses, which is less than 20% of the total.

Dividing the results between countries specializing in non-renewables and the rest of the region's countries shows that the former have tended to run lower deficits than the latter. Over the 1950-2005 period, countries specializing in non-renewables recorded an average overall fiscal deficit of 1.74% of gross domestic product (GDP), while the average for the remainder was 2.75% of GDP. As figure 7 shows, the years of high oil prices account for most of the difference in fiscal results between the two groups.

Another striking feature of fiscal policy in the countries of the region has been its high level of volatility. The fiscal results of Latin America and the Caribbean have been much more variable than those of the countries in the Organisation for Economic Co-operation and Development (OECD), whether measured as a percentage of GDP, as a share of total fiscal resources or in relation to the size of the domestic financial system (Gavin, Hausmann and others, 1996; Alesina and Tabellini, 2005). This high volatility is a feature both of overall fiscal balances and of revenues and expenditure separately (Jiménez and Tromben, 2006).

The fiscal revenues of the countries specializing in non-renewables can be broken down into revenue from the exploitation of non-renewables and revenue

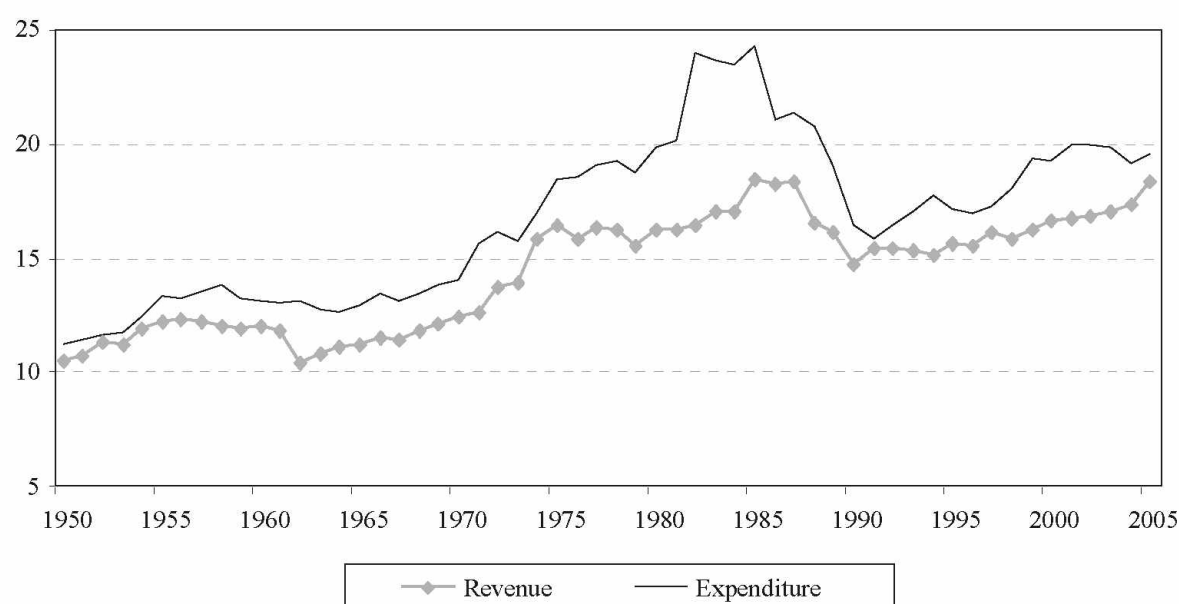
⁶ Rigobón (2006) lists the typical responses of fiscal policy to volatility and uncertainty in fiscal revenues: (i) privatization of the source of volatility; (ii) the use of financial markets to transfer risk; and (iii) self-insurance, basically through the use of contingency funds.

⁷ See Jiménez and Tromben (2006) for further details on the special features of fiscal policy in countries of this type.

⁸ This series was compiled using the Oxford Latin American Economic History Database (OXLAD) of the University of Oxford for the 1950-1989 period, and the ECLAC database, developed by the Latin American Institute for Economic and Social Planning (ILPES), for the 1990-2005 period.

FIGURE 6

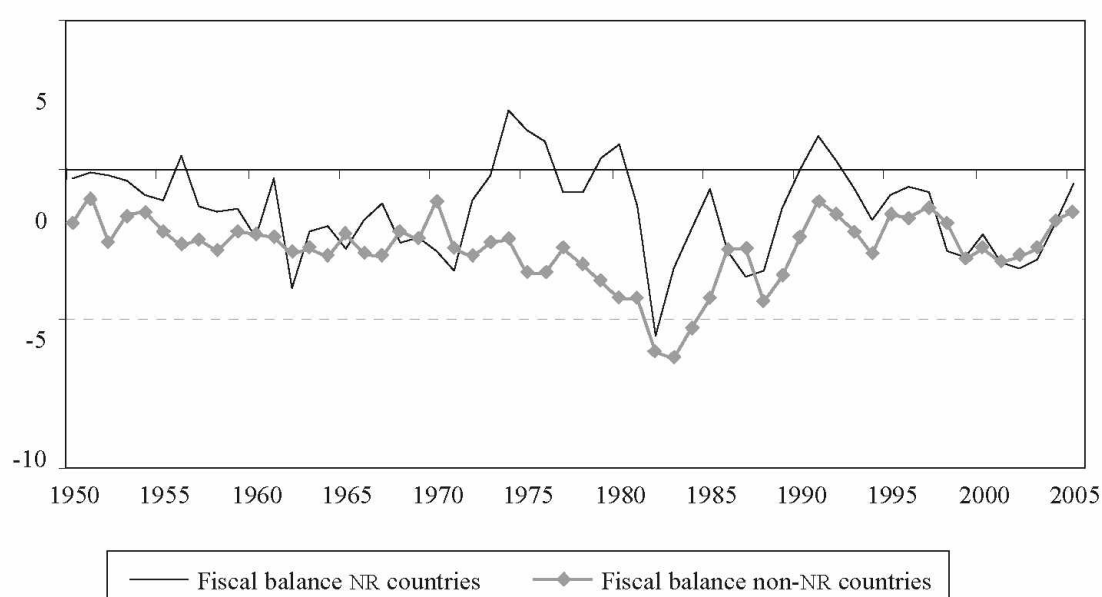
Latin America and the Caribbean: Fiscal revenue and expenditure, 1950-2005
(Percentages of gross domestic product)



Source: Prepared by the authors on the basis of the OXLAD and ILPES databases. The values are simple averages for central government.

FIGURE 7

Latin America and the Caribbean: Fiscal balances for countries specializing in non-renewables and for all other countries in the region, 1950-2005
(Percentages of gross domestic product)



Source: Prepared by the authors on the basis of the OXLAD and ilpes databases. The values are simple averages for central government.

TABLE 2

Latin American countries specializing in non-renewables:
Coefficient of variation in fiscal revenue, 1990-2005
(Percentages)

	Variation coefficient (%)			Revenue from non-renewables as share of total fiscal revenue (%)
	Total revenue	Revenue from non-renewables	Other revenue	
Bolivia	10.6	24.7	16.9	25.3
Chile	5.9	77.2	4.4	7.4
Colombia	16.9	38.3	15.7	11.3
Ecuador	10.7	26.4	11.3	30.0
Mexico	7.5	12.5	11.5	30.9
Venezuela	16.6	33.2	35.0	55.2
Average NR countries	11.4	35.4	15.8	26.7
Average non-NR countries	9.2			

Source: Prepared by the authors on the basis of ECLAC data.

from other sources. As table 2 shows, revenue generated by non-renewables fluctuates much more than total revenue. In the case of the Bolivarian Republic of Venezuela, the high volatility of total fiscal revenue can be attributed to both oil revenues and other revenues. In the case of Chile, although income from copper is highly volatile, the greater stability of other revenues (together with the lower share of non-renewables in the total) means that total revenue has fluctuated by less than the average for the region.

The more diversified the fiscal revenue structure, the more the volatility of a country's tax base is neutralized. The variability of revenue is largely determined by the share of resources from non-renewables in the total.

It is not only fiscal revenue that has been volatile in the region. Over the 1990-2004 period, primary expenditure (which excludes debt interest payments) was more volatile on average than revenue (Jiménez and Tromben, 2006). This is surprising, since income might be expected to be more volatile than spending, as in the OECD countries (Gavin, Hausmann and others, 1996).⁹

⁹ This volatility might be justified if it were the result of countercyclical movements that offset and stabilized macroeconomic shocks affecting fiscal income. The empirical evidence suggests the contrary, however: primary spending in the region has been procyclical, amplifying rather than absorbing exogenous shocks (Alesina and Tabellini, 2005).

This surprisingly high degree of volatility is associated with the third feature of fiscal policy in the region: its relation to the economic cycle. Several papers have demonstrated that the fiscal policy of Latin America and the Caribbean has behaved in a way which can be described as procyclical,¹⁰ especially as public spending has expanded in upturns and declined during recessions, while public accounts in the OECD countries have shown the opposite tendency.

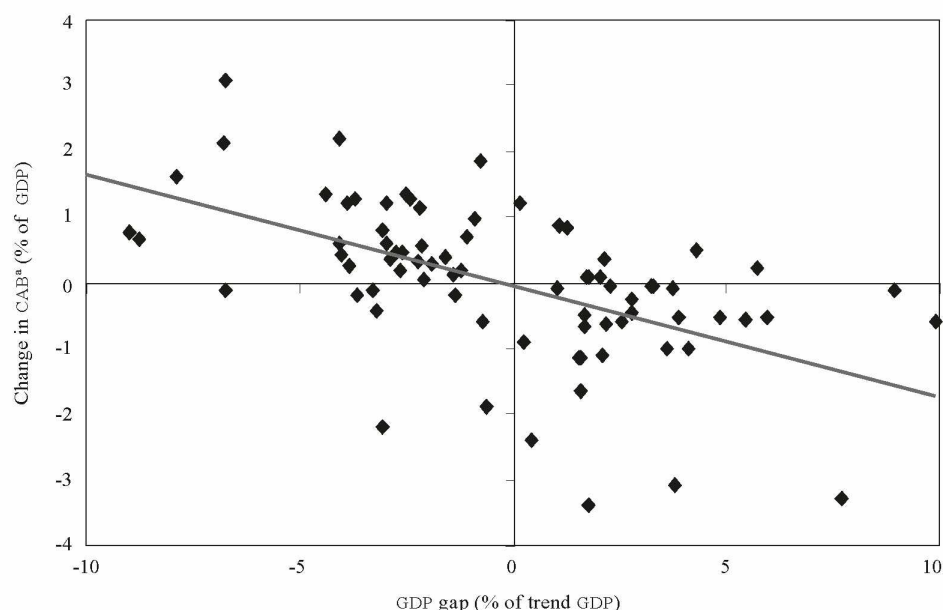
There are different ways of evaluating the relationship between fiscal policy and the cycle. To test the behaviour of the countries under consideration compared to the rest of the region, two procedures will be followed.

Firstly, following the methodology set out in Martner and Tromben (2003), a graphic analysis will be carried out to identify episodes in the GDP cycle of each country and to observe the resulting fiscal position of 18 countries in the region over the

¹⁰ Gavin and Perotti (1997) have argued that fiscal policy in Latin America is procyclical, while Talvi and Vegh (2000), Catão and Sutton (2002), Kaminsky, Reinhart and Vegh (2004) and Alesina and Tabellini (2005) have pointed out that this phenomenon is not exclusive to Latin America: procyclical fiscal policy is common to many developing countries. In Martner and Tromben (2003), analysis of 45 fiscal episodes (showing changes in the cyclically adjusted overall balance) between 1990 and 2001 shows that fiscal policy was procyclical in 25 of them and countercyclical in just eight.

FIGURE 8

Latin America and the Caribbean: Economic cycle and fiscal position, 1980-2005
(Percentages of gross domestic product)



Source: Prepared by the authors.

^a Cyclically adjusted balance.

1980-2005 period. Two variables are needed for this purpose: the GDP gap¹¹ and the change in the cyclically adjusted balance.¹² In figure 8, each point represents an economic cycle with its corresponding fiscal position. More specifically, what is observed is the average GDP gap over an economic cycle in a particular country on the horizontal axis, and the average change in the cyclically adjusted balance over the same period on

the vertical axis. The chart can be read as follows: the upper left-hand quadrant and the lower right-hand quadrant indicate procyclical fiscal positions, the other two quadrants indicate countercyclical fiscal positions, and points close to the horizontal axis indicate fiscal episodes that are neutral in relation to the economic cycle. The great majority of cycles and fiscal episodes are in the two quadrants corresponding to procyclical positions (66% of the total). The countries which have had more than one countercyclical or neutral episode (12% and 22% of the total, respectively) are Chile, Guatemala, Mexico and Panama.

The same methodology will be used in figure 9, differentiating the countries by their specialization or non-specialization in non-renewables for a more recent period (1990-2005). The upper boxes show the change in the cyclically adjusted balance, while the lower ones show changes in the cyclically adjusted primary balance. What this first analysis reveals is that countries dependent on non-renewables also display mainly procyclical behaviour (47% of the total), but with a greater number of neutral cases (35% of the total) than the other countries of the region.

¹¹ The GDP gap is calculated using the Hodrick-Prescott filter. What is analysed here are cycles rather than individual years. A negative cycle is defined as a period in which actual GDP is less than trend GDP (that is, the GDP gap is negative), while a positive cycle is defined as a period in which actual GDP is higher than trend GDP (that is, the GDP gap is positive).

¹² The change in the cyclically adjusted balance (B^{CA}) is calculated as follows:

$$B^{CA} = B^{CA}_t - B^{CA}_{t-1}$$

where $B^{CA} = B^{Actual} - B^{Cyclical}$

$B^{Cyclical} = (\text{Tax Revenues} * \text{GDP Gap})$,

which assumes that the elasticity of tax revenues is 1 and that non-tax revenues and public spending are not included in the cyclical balance.

The second way of evaluating the relationship between fiscal policy and the economic cycle is to use econometric estimates. Because consistent historical series are not available, this will be done by arriving at an estimate for three separate panels of data: first, Latin America and the Caribbean as a whole; second, countries specializing in non-renewables (NR); third, all other countries (non-NR).

The regression is specified as follows:

$$\Delta(balance_{it}) = \alpha + \beta GDPgap_{it} + \delta(balance_{it-1}) + \gamma TDI_{it} + \varepsilon_{it}$$

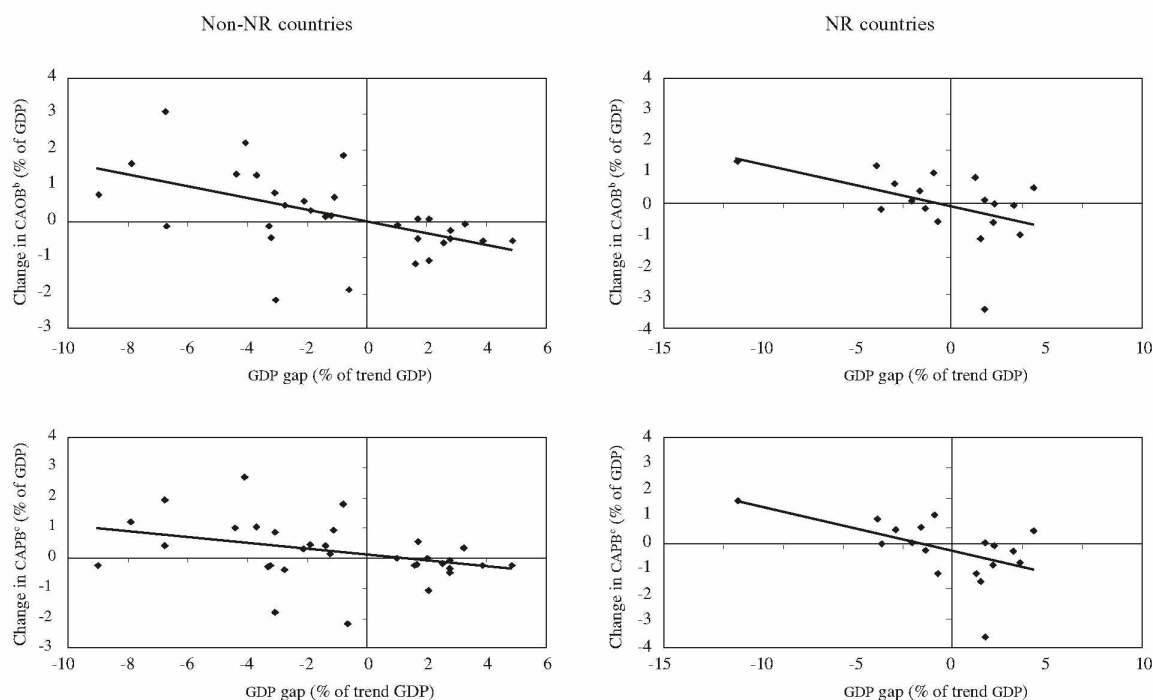
The specification of β matches the measurement of the relationship between the cycle and fiscal policy calculated by Alesina and Tabellini (2005). The three

explanatory variables are: the GDP gap (the difference in logarithmic terms between GDP and its trend value as measured by the Hodrick-Prescott filter), a fiscal balance lag, and the terms of trade (measured as the gap from the trend value, using the Hodrick-Prescott filter). A negative β coefficient indicates that a positive shock in the economy (that is, a positive GDP gap) is associated with a deterioration in the fiscal balance, so that fiscal policy is procyclical. The opposite is the case when the β coefficient is positive. The results of the estimates are shown in table 3.

Using this specification, negative signs are found for the three data panels, which again indicates procyclical fiscal behaviour in the countries of the region, whether or not they are dependent on non-renewables.

FIGURE 9

Latin America and the Caribbean: Economic cycle and fiscal position by groups of countries,^a 1990-2005
(Percentages of gross domestic product)



Source: Prepared by the authors.

^a Countries not specializing in non-renewables (non-NR) and countries specializing in non-renewables (NR).

^b CAOB = cyclically adjusted overall balance.

^c CAPB = cyclically adjusted primary balance.

TABLE 3

Latin America: Fiscal policy and economic cycle, by groups of countries
(Estimates)^a

	Latin America	Countries specializing in non-renewables	Countries not specializing in non-renewables
GDP gap	-0.07 [-2.17] ^b	-0.14 [-2.94] ^b	-0.08 [-1.89] ^c
S (-1)	-0.36 (-9.14) ^d	-0.29 (-4.81) ^d	-0.46 (-7.14) ^d
Terms of trade	0.04 (-2.81) ^b	0.08 (4.03) ^d	0.01 (-0.72)
No. of observations	397	133	224
R ²	0.21	0.29	0.25

Source: Prepared by the authors.

^a Data panel estimates with fixed effects by country. The values in parentheses are *t* statistics. The sample is from the 1980-2005 period.

^b Denotes significance at 5% level.

^c Denotes significance at 10% level.

^d Denotes significance at 1% level.

2. Fiscal policy and commodity prices

In recent years, the particular situation faced by the fiscal authorities of these countries because of their specialization in volatile and finite commodities has been further complicated by the debate on the correct stance for fiscal policy at times when rising prices cause a surge in revenues. Of the many questions raised by this state of affairs for fiscal policymakers in such countries, two stand out in particular. First, what is the best way of transforming revenues from higher prices into fiscal resources? And second, what is the right mechanism or approach for using these fiscal surpluses without triggering the macroeconomic problems usually associated with such boom periods?

The first question concerns the way governments capture resources from the exploitation of non-renewable resources. As stated earlier (figure 9), the evolution and relative scale of these resources differ from country to country. In Chile, the average fiscal resources generated by copper exploitation each year during 1990-2005 represented less than 10% of total revenue, while resources deriving from oil represented about 11% of the total in Colombia, 25% in Bolivia, 30% in Trinidad and Tobago, about 40% in Ecuador and Mexico, and over 50% in the Bolivarian Republic of Venezuela.

The differing composition of the revenue structure in these countries is due to the various instruments used

to tax the sectors concerned and the relative weight of non-renewables. The strategic importance of these sectors to the economies concerned, combined with the rise in prices over recent years, has made them a central target for the tax policies of the countries' governments, which have devised a variety of revenue-raising mechanisms.

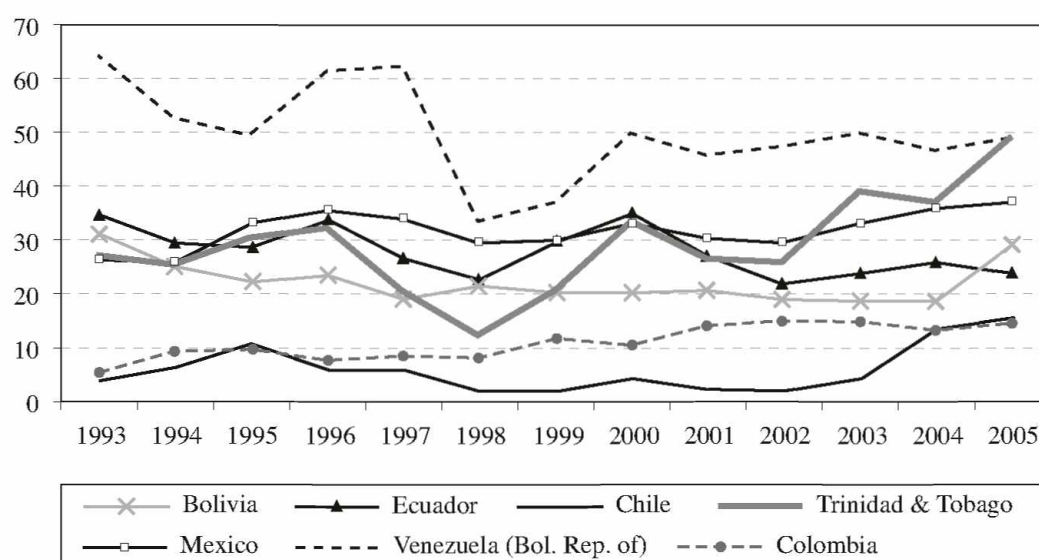
Obviously the choice of instrument will vary depending on whether the resources are publicly or privately owned. The most direct way of turning revenue from these products into fiscal resources has been for governments to become directly involved in production through State-owned enterprises.

Given that these resources are largely exploited by the private sector, countries have designed different mechanisms and specific taxes to appropriate some of the income generated.¹³ These usually take the form of:

¹³ Although the subject will not be dealt with in this article, it is also very important to determine the institutional arrangements for distributing these resources between the different levels of government. Ahmad and Mottu (2002) classify the allocation of oil revenues as totally centralized; totally decentralized; with separation by tax source; and with revenue-sharing. In the four countries of the region considered in their paper (the Bolivarian Republic of Venezuela, Colombia, Ecuador and Mexico), subnational governments share in oil revenues. According to ESMAP (2005), there has been a marked tendency towards decentralization of these resources. In Bolivia, Colombia and Ecuador, the central government's share of these revenues fell from 77%, 43% and 100%, respectively, in 1997/1998 to 68%, 30% and 97% in 2000/2002.

FIGURE 10

**Latin America (seven countries): Share of non-renewables
in each country's total fiscal revenue**
(Percentages of total fiscal revenue)



Source: ECLAC, on the basis of official figures. The figures for Bolivia cover general government; those for Chile, Colombia and the Bolivarian Republic of Venezuela cover central government; for the other countries, they cover the non-financial public sector.

TABLE 4

Latin America (seven countries): Characteristics of tax regimes for non-renewables

Country and commodity	Royalties (rates)	Revenue tax (rates)	Profits tax (rates)	Other taxes	Public participation
Bolivia (hydrocarbons)	National royalties: 6% Departmental royalties: 12% Share of National Treasury: 6%	Direct hydrocarbons tax (IDH): 32% on hydrocarbon production	Company profits tax (IUE) of 25% and 12.5% for remittances abroad Excess profits surtax of 25%	Special tax on hydrocarbons and derivatives Marketing tax Special tax (fixed margin)	Yes ^a
Chile (copper)		Revenue tax, first category: 17%	Additional tax on interest remittances: 35% For public enterprises: special 40% profits tax	Special tax on operating income from mining activity	Yes
Colombia (oil)	8-25%	35%	7%	Transport Pipelines	Yes
Ecuador (oil)	12.5-18.5%	25%	25%		Yes
Mexico (oil)		35%	7.7%	Special tax on production and services (IEPS)	Yes
Trinidad and Tobago (oil)	10% on onshore sales and 12.5% on offshore sales Additional tax on sales of crude oil (rate varies with the oil price)		Oil profits tax: 35-42% on profits from oil production Unemployment tax: 5% of profits from oil production		
Venezuela (B.R.) (oil)	30%	Oil revenue tax (ISLR): 50%	No		Yes

Source: Prepared by the authors on the basis of legislation in the countries.

^a Supreme Decree of 1 May 2006: nationalization of hydrocarbons.

royalties (generally based on output to ensure at least a minimum payment for mineral resources), an income tax (often with differentiated tax rates) and profits taxes applicable to companies exploiting non-renewable resources. Table 4 summarizes some of the revenue-raising instruments used by countries in the region.

This group of taxes has allowed fiscal revenues from these sectors to reflect changes in the prices of the commodities concerned (figure 11).

The large rise in prices between 2002 and 2005, combined with the introduction of new tax-raising measures in 2005, has generated a significant increase in these countries' fiscal resources. As will be discussed below, the authorities have taken advantage of the price surge to apply new taxes to sectors that

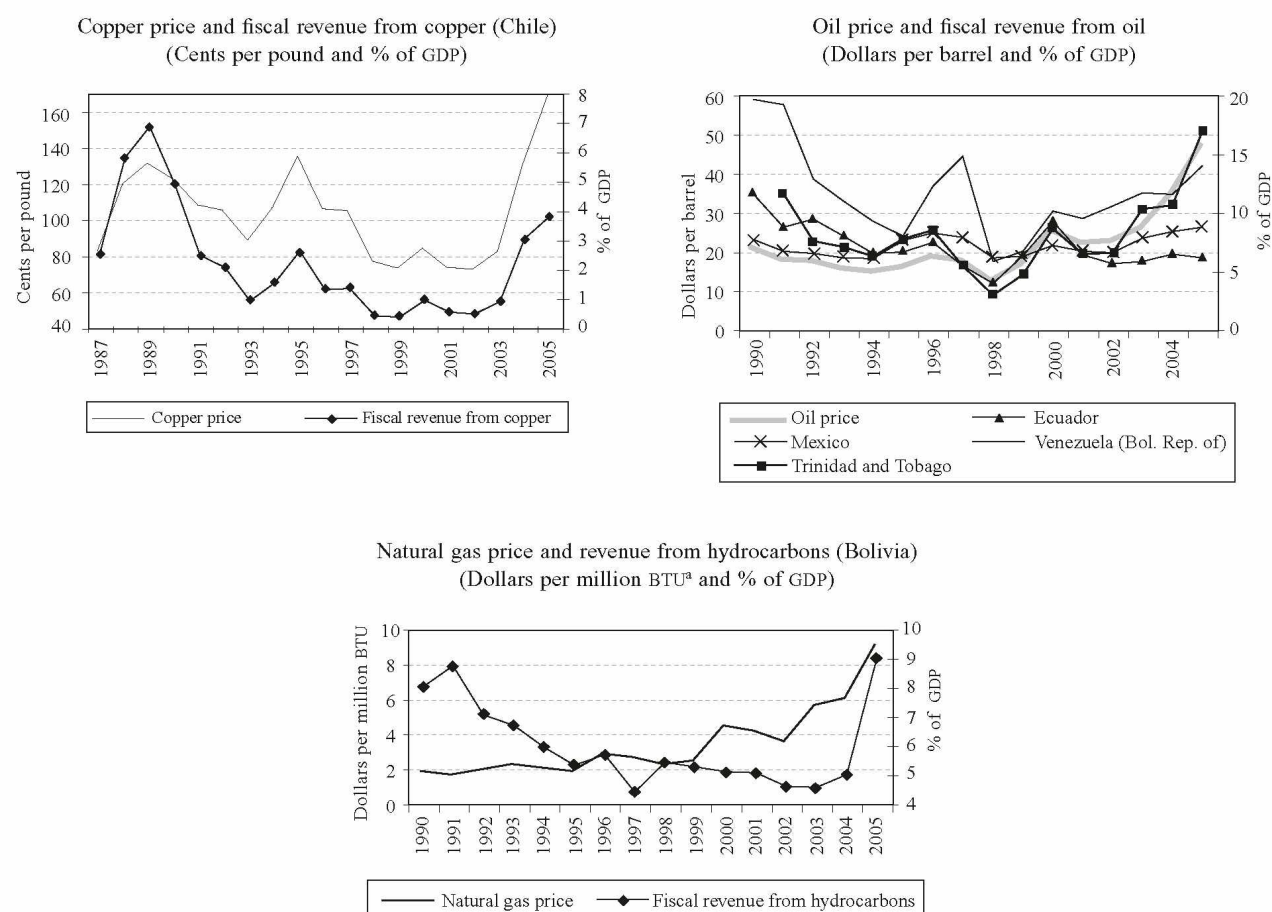
produce minerals and energy products, making their tax structures even more specialized. Of the seven countries included in figure 12, four have increased their fiscal revenues by more than 3% of GDP: Bolivia (6.7%), Chile (3.3%), Trinidad and Tobago (8.9%) and the Bolivarian Republic of Venezuela (6.4%).

The large rise in fiscal revenues from non-renewables has brought the tax burden on the sectors concerned to levels comparable with the highest in the series. This burden has not, however, been matched by a similar rise in spending (figure 13).

In Bolivia, the improvement in fiscal revenues took place mainly in 2005, being chiefly due to the approval of the direct tax on hydrocarbons and derivatives (IDH), which yielded receipts equivalent to 3.1% of GDP that

FIGURE 11

Latin America and the Caribbean (six countries): Prices of non-renewables and fiscal revenues raised from them

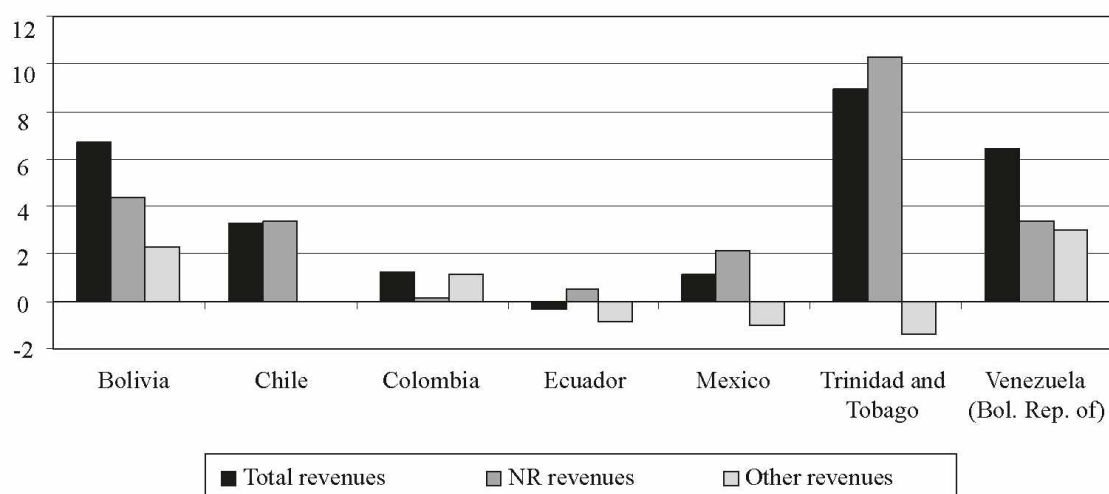


Source: Prepared by the authors on the basis of official country data.

^a BTU: British thermal unit.

FIGURE 12

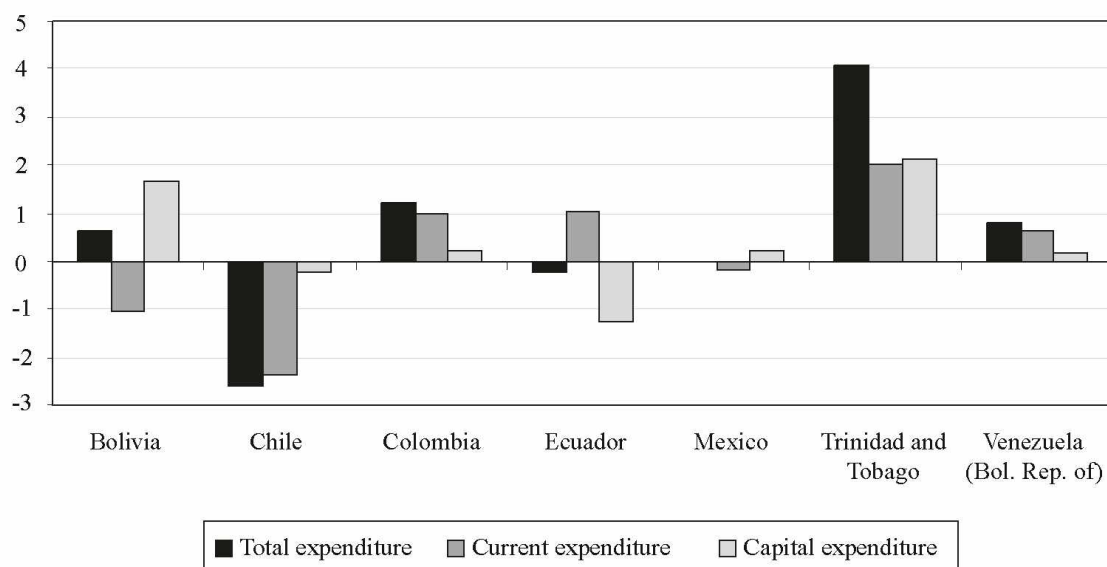
Latin America and the Caribbean (seven countries): Variation in fiscal revenues between 2002 and 2005
(Percentages of gross domestic product)



Source: Prepared by the authors from ECLAC-ILPES data.

FIGURE 13

Latin America and the Caribbean (seven countries): Variation in public spending between 2002 and 2005
(Percentages of gross domestic product)



Source: Prepared by the authors from ECLAC-ILPES data.

year, and the surtax on the excess profits of extraction companies (which was decreed in 1994 but collected for the first time in 2005). This has not necessarily led to central government accounts improving in the same proportion, since the hydrocarbons tax is shared out between the national treasury (42.34% of receipts)

and the departments (57.7%). Where expenditure is concerned, the drop in current outlays is the result of austerity programmes implemented in recent years.

In Chile, increased activity and higher prices for copper and molybdenum, together with legal changes in the taxation of the mining sector (the special tax

on operating revenues from mining activity was introduced in 2005), have resulted in a large increase in fiscal revenues. The countercyclical orientation of fiscal policy (discussed in more detail below) indicates a structural surplus of 1% of GDP, which means that expenditure has grown by less than GDP, significantly improving the fiscal result.

In Ecuador, the strong improvement in the country's terms of trade has not been fully reflected in fiscal revenues. The rise in oil prices has affected Ecuador's public budget in different ways. On the one hand, higher prices have swelled resources thanks to specific taxes and income from the State oil company (PETROECUADOR). On the other hand, higher oil costs have affected the public accounts because domestic prices for petroleum derivatives have been frozen since 2003 and much of the demand for derivatives is met from imports (paid for at international prices). As a result, public revenues from domestic sales of derivatives fell by 1.8% of GDP between 2003 and 2005.

In Trinidad and Tobago, fiscal policy in recent years has been aimed at maximizing tax receipts from the energy sector (thereby relieving fiscal pressure on the non-energy sector) by means of a complex tax regime in which the oil sector¹⁴ is treated differently from the gas sector.¹⁵ Growth in the country's gas sector was behind the government's decision to carry out a tax reform in the energy sector as a whole, announced for the 2005/2006 financial year. The substantial rise in revenues has enabled the authorities to raise current and capital expenditure and increase contributions to the Interim Revenue Stabilization Fund (IRSF), which will be analysed below.

In recent years, the Bolivarian Republic of Venezuela has made numerous reforms to its tax structure: reduction of the value added tax (VAT) rate and abolition of the corporate assets tax in 2004; increase in the royalties and tax on oil sector revenues

in 2005; the creation of a new tax on crude extraction (extraction tax), which has been announced but not yet implemented; and suspension of the bank withdrawals tax in early 2006. Increased fiscal resources have enabled the authorities to implement an expansionary spending policy, mainly through the country's Fund for Economic and Social Development (FONDESPA), whose revenue comes from the oil sales of *Petróleos de Venezuela* (PDVSA), which do not appear in central government data.

The positive fiscal results are one of the factors that have enabled these countries to reduce public debt as a proportion of GDP. Between 2003 and 2005, Bolivia reduced its debt by 10.4% of GDP, Chile by 5.6%, Colombia by 3.8%, Ecuador by 2.7%, Mexico by 1.9% and the Bolivarian Republic of Venezuela by 12.2% (ECLAC, 2006). Except in the case of Bolivia, much of this reduction was due to primary surpluses in the 2002-2005 period. This ties in with another issue that becomes important during periods of high prices: how best to use fiscal surpluses and how to avoid the macroeconomic problems associated with such periods of plenty.

Thus, the situation gives rise to two problems that cannot always be resolved simultaneously. One is that of stabilizing expenditure by decoupling it from the increase in resources and thus turning this increase into a fiscal surplus, and the other is that of dealing appropriately with this fiscal surplus and the resulting assets.

The first problem is related to the role fiscal policy ought to play in stabilizing the economy. The region's countries have looked for different ways of complying with the basic recommendation usually made in economic boom periods, which is to moderate activity by restricting public spending. In recent years, discretionary fiscal policy has accordingly been less expansionary, as described in previous paragraphs, and new fiscal rules have been introduced.

Countries in the region have been making extensive use of fiscal rules since the second half of the 1990s. While the initial aim of these rules was to improve the solvency of the public accounts,¹⁶ in some cases they have also successfully separated the growth of resources from patterns of expenditure (table 5).

¹⁴ As in other countries, oil sector taxation in Trinidad and Tobago distinguishes between exploration, production, refining and marketing. For the extraction and production stages, the government collects revenues using the following instruments: royalties (rates of 10% and 12.5%), a levy on oil production and a small petroleum tax (used to finance the regulatory activities of the Ministry of Energy). Income taxes are as follows: the oil profits tax, with a top rate of 35% for oil extracted onshore and 42% for oil extracted offshore; an unemployment tax of 5% of profits; and a surtax on sales of crude whose rate varies with the oil price.

¹⁵ Companies in the gas sector pay royalties at a rate negotiated with the government. Where revenue taxes are concerned, companies pay the normal profits tax (35%) and a small petroleum tax.

¹⁶ In the region's more decentralized countries, such as Argentina, Brazil and Colombia, one of the main objectives of the rules was to coordinate fiscal policy (expenditure, deficit and borrowing) among the various levels of government.

TABLE 5

Latin America and the Caribbean: Fiscal rules currently in force

	Country	Implementation date	Coverage	Type	Additional rules	Legal status
<i>Balance rule</i>	Argentina	2004	Federal and subnational	Nominal growth of primary expenditure must not exceed nominal GDP growth		Law
	Brazil	2001	Federal and subnational	Current equilibrium (subnational); primary surplus (federal)	Limits on wage expenditure (percentage of total)	Law
	Chile	2006	Central	Overall structural surplus (1% of GDP)	Pension Reserve Fund (FRP) Economic and Social Stabilization Fund (FEES)	Law
	Colombia	2001	Subnational governments	Current equilibrium	National Coffee Fund (FNC) Petroleum Saving and Stabilization Fund (FAEP)	Law
	Ecuador	2005	Federal and subnational	Real growth of current expenditure must not exceed 3.5%	Oil Stabilization Fund (FEP) Saving and Contingency Fund (FAC)	Law
	Mexico	2006	Federal and subnational	Current equilibrium	Oil Revenues Stabilization Fund (FEIP)	Law
	Peru	2003	National	Deficit below 1% of GDP; real growth of primary expenditure no more than 3% per year	Fiscal Stabilization Fund	Law
	Venezuela (Bol. Rep. of)	2000	National	Current equilibrium	Macroeconomic Stabilization Fund (FEM)	Law
<i>Debt rule</i>	Argentina	2004	Subnational governments	Annual borrowing limits to ensure that debt servicing does not exceed 15% of current resources		Law
	Brazil	2001	Subnational governments	Annual borrowing limits		Law
	Colombia	1997	Subnational governments	Borrowing limits determined by solvency and liquidity indicators		Law
	Ecuador	2005	Federal and subnational	Timetable for reducing debt to 40% of GDP	Borrowing limits for subnational governments (outstanding debt, flow and guarantees)	Law

Source: Prepared by the authors using data from ILPES (2004), Kopits (2004) and official sources.

These fiscal rules have taken a variety of forms, ranging from quantitative limits on outstanding debt, expenditure and borrowing to the creation of contingency or stabilization funds.

To improve fiscal sustainability, Ecuador adopted the Organic Law on Fiscal Responsibility, Stability and Transparency (passed in 2002 and amended in 2005), which limits current expenditure increases to 3.5% in real terms.¹⁷

In Chile, since 2001 the authorities have applied a fiscal policy rule requiring a structural surplus equivalent to 1% of GDP.¹⁸ The central government structural balance reflects the budgetary result that would be obtained each year if output followed its trend and the prices of copper and molybdenum were as projected. The aim is to adjust the overall fiscal balance by isolating it from the revenue effects of fluctuations in GDP and in copper and molybdenum prices. Two variables have to be estimated for this purpose: the long-term copper price and the trend growth rate of GDP. Both variables are estimated by a committee of experts while the budget is in preparation.

Other mechanisms that have become particularly important in the region include contingency funds associated with the exploitation of non-renewable resources.¹⁹ They are usually classified as either stabilization funds or saving funds, depending on what their basic objective is. Stabilization funds seek to cushion the impact of revenue fluctuations on public spending, while saving funds seek to create reserves of wealth for future generations so that they may benefit to some degree from the resources generated by exploiting deposits of finite commodities; in other words, they aim to put aside a sum of assets so that those generations have the enjoyment of part of what is extracted in the present. As Jiménez and Tromben (2006) have pointed out, however, funds set up in recent years have been governed more by stabilization than by saving criteria.

Although there are some very old stabilization funds in the region (the Coffee Fund in Colombia dates from 1940), there has been a new drive to create such mechanisms in the last few years: in Chile, the

Copper Compensation Fund (FCC) was set up in 1985, activated in 1987 and replaced by the Economic and Social Stabilization Fund in 2006; in Colombia, the Petroleum Saving and Stabilization Fund (FAEP) was set up in 1995; in Ecuador, the Fund for Stabilization, Social Investment and Public Debt Reduction (FEIREP) was set up in 2002 and replaced by the Saving and Contingency Fund in 2005; in Mexico, the Oil Revenues Stabilization Fund (FEIP) was established in 2000; and in the Bolivarian Republic of Venezuela, the Macroeconomic Stabilization Fund (FEM) was created in 2004 to replace the former Investment Fund for Macroeconomic Stabilization (FIEM) set up in 1998.

As table 6 shows, these funds have various aims and have undergone numerous changes since they were first created. Among the main differences in their design are: (i) the reference variable: in Chile, a committee of experts decides what the base price will be each year; in Ecuador, the Fund for Stabilization, Social Investment and Public Debt Reduction (FEIREP) uses two reference prices; in Mexico, the reference price is the one included in the federal revenues law; and in Colombia and the Bolivarian Republic of Venezuela, fluctuations in fiscal revenues are taken as the reference rather than any price; and (ii) the existence or absence of budget precommitments, which will be explained in more detail below. Common characteristics shared by the funds include the fact that all have saving rules for revenues above the reference value of the target variable, rather than a spending limit.

The various funds have differed in their performance. In Chile, the behaviour of the Copper Compensation Fund (FCC) has varied in different periods. Between 1987 and 1991, very high copper prices resulted in growing contributions to the fund, while withdrawals almost matched contributions, meaning that the authorities used the resources available. The Oil Price Stabilization Fund (FEPP) was set up in those years.²⁰ In 1992-1997 the authorities did not use the resources accumulated in the FCC, even though copper prices were extremely volatile. From 1998 to 2003, the copper price plummeted and contributions to the fund diminished. In 2000 and 2003 they were zero, although they picked up again in 2004 and 2005.

¹⁷ For more detail, see Almeida, Gallardo and Tomaselli (2006).

¹⁸ Concerning the potential and implementation difficulties of such rules in Chile, see Marcel, Tokman and others (2001), Tapia (2003) and LeFort (2006).

¹⁹ See Jiménez and Tromben (2006) for an exhaustive analysis of these funds in Latin America.

²⁰ The Oil Price Stabilization Fund (FEPP) is a mechanism that determines the percentage of price increases for imported crude that is to be passed on to the public. Its aim is to maintain a degree of price stability for petroleum derivatives in the Chilean domestic market. It was created in January 1991 (Law 19.030) with an initial US\$ 200 million lent by the Copper Compensation Fund.

TABLE 6

Latin America: Main characteristics of stabilization funds

Name and creation date	Stated objective(s)	Reference price	Fund operating rules			Fund accounting	Overseeing institution
			Deposits	Withdrawals	Budget precommitments		
<i>Chile</i> Copper Compensation Fund (FCC), set up in 1985 following a sustained period of high copper prices	Stabilization	Long-term copper price. Set by external committee of experts since 2002 and published on the website of the Budget Office to increase the transparency of the process	If the actual price is <i>higher</i> than the reference price: the first 0.04 dollars/pound of excess can be used at the discretion of the fiscal authorities; of the next 0.06 dollars, 50% can be used at the discretion of the fiscal authorities and the remaining 0.03 dollars/pound are deposited in the Fund. Most of the revenue from any additional cents/pound is deposited in the Fund	If the actual price is <i>lower</i> than the reference price, the rule is symmetrical. The fiscal authorities must withdraw the resources from the Fund	No	Budgetary central government asset. There are two accounts at the central bank: a positive one for deposits and a negative one for withdrawals. Fund deposits are not recorded as central government revenue but as a financing operation	Ministry of Finance
<i>Colombia</i> Petroleum Saving and Stabilization Fund (FAEP) set up in 1995	Stabilization and saving		If additional revenue is higher than average additional revenue	If additional revenue is lower than average additional revenue			Administered by the Bank of the Republic
<i>Ecuador</i> Fund for Stabilization, Social Investment and Public Debt Reduction (FEIREP), set up in 2002 [Oil Stabilization Fund set up in 1998 and modified in 2000]	Public debt reduction, stabilization and saving	Two oil reference prices: one for estimating government oil revenues and another (higher) one for calculating the revenues of the funds (FEP and FEIREP)	All revenues from oil produced with State participation and transported through the heavy crude pipeline, plus any surplus from the previous fiscal year		Fund resources are allocated as follows: 70% for debt buybacks, 20% to stabilize oil income and 10% for education and health	FEIREP incomings and outgoings are recorded in the general State budget but are not treated as central government budgetary income and expenditure	Ministry of Economy and Finance, administered by the central bank

Continuation table 6

Name and creation date	Stated objective(s)	Reference price	Fund operating rules			Fund accounting	Overseeing institution
			Deposits	Withdrawals	Budget precommitments		
<i>Mexico</i> Oil Revenues Stabilization Fund (FEIP), set up in 2000	Stabilization	Price used to estimate oil revenues in the federal revenues law	Revenues in excess of those budgeted for	If the federal government's receipts decrease because income from oil exports is lower than provided for in the federal revenues law. Difference of more than 1.5 dollars from the reference price	Preference given to priority programmes approved in the federal expenditure budget		
<i>Trinidad and Tobago</i> Interim Revenue Stabilization Fund (IRSF)	Saving	Price used to estimate oil revenues in the budget	Discretionary	Discretionary	No		Central bank
<i>Venezuela</i> (<i>Bol. Rep. of</i>) Macroeconomic Stabilization Fund (FEM) set up in 2004 to replace the Investment Fund for Macroeconomic Stabilization (FIEM) created in 1998	Stabilization of expenditure by the three levels of government in the event of fluctuations in ordinary revenues	No	National executive: additional oil revenues (in relation to the average for the previous three years); income from privatization or from concessions or strategic partnerships that is not used for managing public liabilities; and extraordinary contributions from the national executive. Petróleos de Venezuela (PDVSA): 50% of the difference between income from exports of oil and derivatives and the average of such income over the previous three years	Three cases apply: - Drop in total fiscal revenues from oil compared with the average for the previous three years - Drop in income from exports of oil and derivatives compared with the average for the previous three years - State of economic emergency	No However, Fund surpluses (there is a limit on how much it can accumulate) will be allocated to: Intergenerational Accumulation Fund (national executive), investment expenditure (subnational entities) and Intergenerational Accumulation Fund and/or investments (PDVSA)	The FEM is recorded as an extraordinary financing source (in the central bank public finance statistics) and as external financing (in the public finance statistics of the Finance Ministry), with a positive sign if the resources have been used to finance public spending and a negative sign if they are accumulating in the Fund	Financial fund without legal personality, assigned to the Ministry of Finance and administered by the central bank

Source: Various official documents.

In Colombia, the Petroleum Saving and Stabilization Fund (FAEP) began operating in 1995. Some authors argue that although the fund did not achieve the objective of increasing fiscal and macroeconomic stability, it did serve to curb the expenditure of territorial entities (departments and municipalities) that receive oil revenues.

In Mexico, although the Oil Revenues Stabilization Fund (FEIP) was set up too recently for conclusions to be drawn, the amounts accumulated have been small in relation to total resources, suggesting that it has a limited capacity for stabilization.

In the Bolivarian Republic of Venezuela, the Investment Fund for Macroeconomic Stabilization (FIEM) set up in 1998 (and replaced by the Macroeconomic Stabilization Fund in 2004) is one of the funds to have accumulated the most resources (5.3% of GDP in 2001). It should, however, be pointed out that its operating rules have been amended several times and its resources have been used for purposes other than those originally stipulated.

In Trinidad and Tobago, the Interim Revenue Stabilization Fund (IRSF) was set up in 2000 to save the surplus fiscal revenues generated by the difference between the reference oil price used to calculate revenue and the actual oil price. Unlike other funds in the region, the IRSF was created by the budget act for fiscal year 2000/2001. However, there is no law establishing its operating rules (withdrawal and deposit laws, fund management). Despite this, it is the fund that has accumulated the most resources as a proportion of GDP (see below). The budget act for the 2005/2006 fiscal year provides for the fund to be transformed (by law) into a Heritage Stabilization Fund with three components: stabilization, heritage for future generations, and investment and infrastructure.

The second issue is how best to handle fiscal surpluses during periods of high prices. In recent years, there has been growing concern about how to use the fiscal surpluses generated by higher prices for non-renewables. As fiscal revenues rise and countries successfully stabilize fiscal expenditure in the face of short-term fluctuations in revenues from non-renewables, countries must ask themselves how those surpluses should be used.

As table 6 shows, most of the resources going into the funds are preassigned. These precommitments or specific allocations may make the budgetary process more rigid. Although precommitments are not used in Chile, the funds that exist in Ecuador, Mexico and the Bolivarian Republic of Venezuela all have

precommitments of some kind. In Ecuador, the entirety of the resources in the Special Account for Productive and Social Reactivation, Scientific and Technological Development and Fiscal Stabilization (CEREP), which replaced the Fund for Stabilization, Social Investment and Public Debt Reduction (FEIREP), are allocated as follows: 35% for credit lines, payment of debts owed to the Ecuadorian Social Security Institute, buyback of external debt and implementation of infrastructure projects; 30% for social investment projects; 5% for development-oriented scientific and technological research; 5% for improvements to the road network; 5% for environmental clean-up and social improvement; and the remaining 20% to stabilize oil revenues.

High levels of precommitment and successive rule changes have left the region's funds with little capacity for accumulating resources. As table 7 shows, with the exception of Trinidad and Tobago, the impact on fiscal revenues of higher prices for non-renewables since 2002 has not led to a corresponding increase in the balances of the region's stabilization funds.²¹

To ensure the fiscal surpluses generated were used appropriately, both Chile and Mexico established mechanisms to regulate their use in 2006. In Chile, the Fiscal Responsibility Act was adopted to regulate the structural fiscal balance rule and the management of fiscal assets in excess of the expenditure level set by that rule. Two funds were created for this purpose: the Pensions Reserve Fund (FRP) and the Economic and Social Stabilization Fund (FEES). The former is designed to supplement the financing of fiscal obligations arising from the State minimum pensions guarantee and will be financed essentially by contributions from the fiscal surplus, capped at 0.5% of GDP. The latter will be financed by the Copper Compensation Fund (which it replaces) and with resources from fiscal surpluses exceeding 1% of GDP, minus contributions to the Pensions Reserve Fund (FRP). FEES resources will be used to finance social spending and public investment.

As for Mexico, in May 2006 the federal budget and financial responsibility law was adopted to regulate the use of fiscal surpluses and prevent these from being allocated to current expenditure. Compensation

²¹ Rigobón (2006) summarizes the problems of this type of fund as follows: appropriability problems (i.e., the question of whether saved resources can be used or spent for purposes that lie outside the operating rules) and governance problems (i.e., the tendency for numerous funds to be created to achieve the same objective).

TABLE 7

Latin America and the Caribbean (six countries): Year-end balances of stabilization funds, 1996-2005
(Percentages of gross domestic product)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Chile	2.3	2.3	2.0	1.5	1.0	0.9	0.4	0.1	0.2	0.8
Colombia	0.0	0.1	0.2	0.6	1.7	1.7	1.7	1.4	1.2	1.6
Ecuador								0.3	0.4	1.1
Mexico					0.2	0.1	0.0	0.1	0.2	0.2
Trinidad and Tobago					1.7	1.7	2.3	3.9	4.5	5.4
Venezuela (Bol. Rep. of)				0.2	4.0	5.3	3.7	0.8	0.7	0.5

Source: ECLAC, on the basis of official information. The 2005 figure for the Ecuadorian Fund is the balance at the time the fund was wound up (7 October 2005).

funds have accordingly been set up to accumulate savings for use when oil prices fall. Initially, until these funds reach adequate reserve levels, surplus oil revenues will be allocated as follows: 25% to the Federal Agencies Revenue Stabilization Fund to be used for compensation purposes when actual receipts for revenue-sharing use are less than estimated in the budget; 25% to the Petróleos Mexicanos (PEMEX)

Stabilization Fund for Infrastructure Investment to offset declines in PEMEX's own revenues; 40% to the Oil Revenues Stabilization Fund to offset lower federal government oil revenues; and 10% to the infrastructure investment projects of federal agencies. In a second phase, resources will be allocated as follows: 50% for infrastructure investment, 25% for investment in PEMEX and 25% for the pensions system.

V

Some closing remarks

Throughout this article, it has been stressed that countries specializing in non-renewables are far from being a uniform group. There are major differences between them in terms of the non-renewable product they have specialized in, the importance of that product for the economy, variations in its price, the size of reserves, the fiscal impact of its exploitation, the level of diversification in the tax structure, the composition of expenditure and the level of public debt, all of which are key criteria for designing an appropriate fiscal policy. When analysing these countries as a group, it is therefore vital not to lose sight of the specific characteristics of each case. Nonetheless, comparing the fiscal performance of this set of countries with that of the other countries in the region shows that they do have some distinctive features, especially in respect of the solvency and volatility of their public accounts.

It should also be emphasized that, despite the region's major efforts to diversify exports in recent years, a single product continues to account for a significant share of total exports in many Latin American countries. Combined with higher prices for energy and mineral products, this has resulted in a great improvement to the terms of trade of countries specializing in those commodities.

Thanks to their tax structures, which have been strengthened by the introduction of new revenue-raising instruments, and to the price patterns of recent years, these countries have been able to achieve a strong increase in fiscal receipts, which has meant their tax systems becoming even more focused on the sectors concerned. By contrast with previous periods, this increase in revenues has not led to a matching rise in expenditure. This has been due to non-expansionary

fiscal decisions and the establishment of new fiscal institutions, enabling these countries to generate positive fiscal balances.

The region's wealth of recent experience in designing and implementing different fiscal institutions, be they expenditure and public debt rules or stabilization funds, does not allow linear conclusions to be drawn. In the case of funds, it is not easy to carry out a conclusive evaluation, given that those of Mexico and the Bolivarian Republic of Venezuela are only four years old, and that the fund set up by Ecuador in 2002 lasted only three years. However, certain design characteristics, multiple precommitments and successive rule changes have meant that the balances accumulated in these funds are small, which raises doubts about their capacity to achieve their stated objectives.

In the countries concerned, this situation has intensified the debate about the most appropriate use

for fiscal surpluses, and both Chile and Mexico have introduced new instruments to regulate the management of public assets resulting from fiscal surpluses.

In summary, fiscal performance in the last few years suggests that there is scope for improving the fiscal initiatives adopted in recent times for stabilization purposes. As has been emphasized throughout this article, problems of solvency, volatility and the relationship with the economic cycle are not limited to countries whose exports are dominated by non-renewables, so the discussion about stabilizing fiscal policies cannot be confined to the group of countries analysed here. Nonetheless, the debate on the appropriate use of fiscal surpluses in countries specializing in finite resources should give greater prominence to considerations of intergenerational equity, so that a store of resources can be created for future generations.

(Original: Spanish)

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Fiscal policy and social protection

Eduardo Aldunate and Ricardo Martner

The inadequacies of social protection in Latin America and the Caribbean reveal a clear need for more active fiscal policies in this area. Although economic growth and decent employment are indispensable preconditions for social progress, the need for financing from public expenditure is ineluctable in the medium term. The present article examines three ways of achieving this objective. The first is to close the tax gap, since the fiscal burden is low in most Latin American and Caribbean countries. The second is to construct budgeting systems capable of removing rigidities and reallocating public spending, thereby helping to improve its quality. The third is to bring social expenditure evaluation mechanisms into general use, with a view to improving the efficiency and effectiveness of public projects and programmes.

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I

Introduction

Although there is still some time to go, it seems safe to say that most of the region's countries will find it very difficult to meet the Millennium Development Goals for 2015 unless special policies are deployed for the purpose. To take just the first goal, halving extreme poverty and hunger, the countries (particularly the lower-income ones) will have to achieve high rates of growth, a task that would be facilitated by better income distribution (ECLAC, 2005). Another pressing issue is that, when it comes to social security and protection, population coverage is severely inadequate everywhere in the region (ECLAC, 2006).

Even in a context of tight borrowing constraints, there seems to be no getting away from the need for a significant rise in public funding to deal with these demands in the medium term. Three concurrent methods may be proposed for attaining this objective: (i) increasing the tax take, (ii) shifting the composition of spending towards social programmes, and (iii) freeing up resources by improving the efficiency and effectiveness of public projects and programmes. There can be no one right answer in such diverse circumstances. In one country or situation it may be necessary to increase the tax burden, either through new taxes or through more efficient collection. In others, it may be more appropriate to aim for a higher quality of expenditure, in terms both of allocation and of efficiency and effectiveness.

These are the issues this essay will address, in the belief that income distribution will not improve significantly in the medium term without active fiscal policies (and these cannot be confined to an effort to improve education, as proponents of a minimalist approach to public policies have suggested) and that higher social spending and the widespread use of "protected" public expenditure categories are no panacea when it comes to reducing poverty and inequality.

In a more constructive spirit, this article will emphasize the unquestionable potential of reforms to tax systems and administrations, of policies that use structural and multi-year planning rules to improve budgetary allocation, and of initiatives to raise the quality of public spending through the systematic use of evaluation programmes.

1. Is there scope for increasing public revenues?

Figure 1 presents government revenues as a percentage of gross domestic product (GDP) and the composition of these revenues in 2005. In a number of countries (Argentina, Brazil, Colombia, Costa Rica, Guatemala, Haiti, Honduras and Uruguay), tax revenues are virtually the only source of current income for central governments. In others (the Bolivarian Republic of Venezuela, Bolivia, Chile, Ecuador, Mexico and Peru), tax revenues are supplemented by other current revenues deriving from natural resources (hydrocarbons and mining). In Nicaragua and, to a much lesser extent, El Salvador and the Dominican Republic, donations provide significant current revenues on top of tax revenues. In Panama and Paraguay, other current revenues from service activities also supplement central government tax revenues.

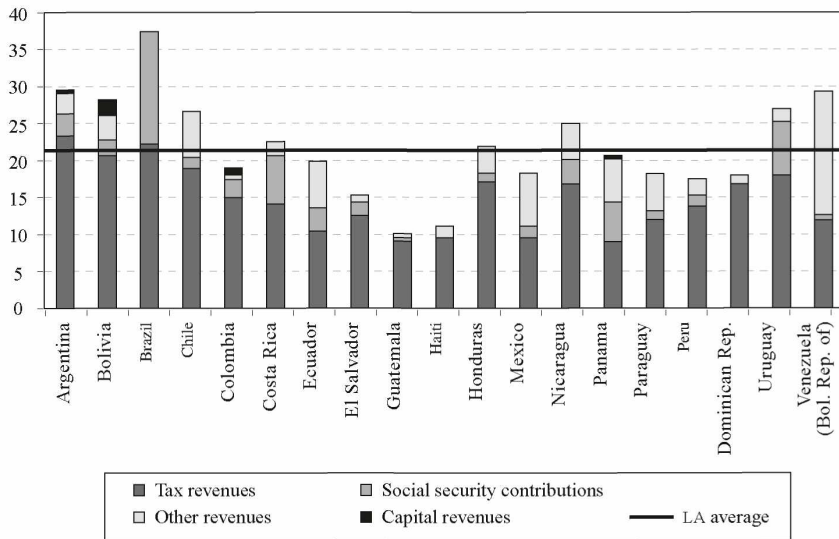
One of the main functions of taxes is to finance government spending on goods and services so that, in the medium term, the level of revenues chosen will set a limit on the level of public-sector expenditure. Apart from the traditional recommendation to avoid types of taxes that distort the allocation of resources, economic theory offers only very limited guidance to the optimum size of the tax burden and the taxation structure employed.

Some studies have found a negative relationship between tax pressure, or public spending, and economic performance. But no firm conclusions can be reached about the subject: there are countries that have grown satisfactorily with a high level of taxes, while many others have combined lacklustre macroeconomic performance with low tax pressure. The causality actually seems to work the other way around: as countries grow, the tax base expands and the system

□ Two research assistants from the Budgeting and Public Management Area, María Victoria Espada and Varinia Tromben, assisted the authors with the compilation of information for this article.

FIGURE 1

Latin America and the Caribbean: Tax burden, 2005
(Percentages of GDP)



Source: ILPES, ECLAC, on the basis of official figures.

can become more progressive, so that a virtuous circle is set up between growth, public spending, taxation levels and the progressiveness of the system.

One way of telling whether tax levels and structures are “right” is to compare the relationship between taxes and gross domestic product (GDP) for a large number of countries. Simply comparing the situation in Latin America and the Caribbean with that in other regions of the world is very revealing (figure 2). In 2005, the tax burden in the Organisation for Economic Co-operation and Development (OECD) was roughly double that of Latin America and the Caribbean. As for composition, what is striking is the greater weight of direct taxes in the OECD countries, along with the size of social security contributions. In Latin America and the Caribbean, indirect taxation is the backbone of tax systems and it has been argued that, with this being so, the direct tax take is systematically lower there than in other regions with similar rates. Latin America and the Caribbean has a similar level of tax pressure to South-East Asia, although the composition is very different. The Asian countries have a higher burden of direct taxation, while social security contributions are not substantial.

In making the comparison, however, some explanatory variables (per capita income and others)

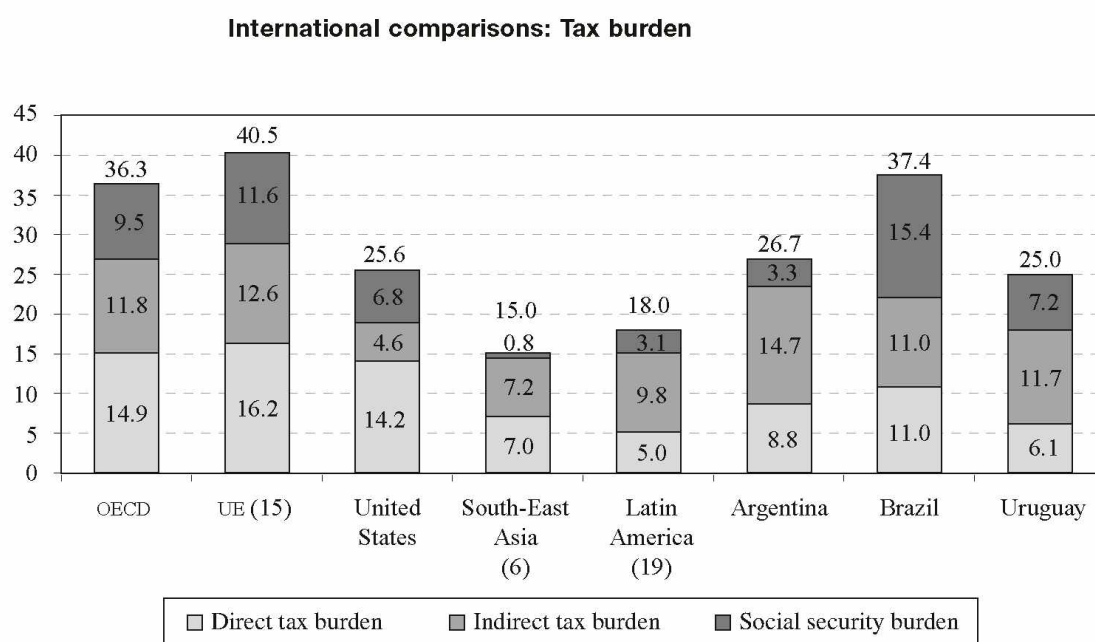
need to be considered. Some authors have used panel regressions to estimate the “tax capacity” of each country¹ before comparing this to the actual rate. Although the present paper does not set out to estimate this capacity, the relationship between the tax take of Latin America and the Caribbean and the per capita income level of the region is shown for the purposes of illustration (figure 3).

In 2005, the tax pressure in the region was 18% of GDP. It should be stressed, however, that the averages mask large differences between the countries of Latin America and the Caribbean, some of which can be explained by the high dispersion of per capita income in the region. The central government tax burden in Brazil is more than 37% of GDP, a higher level than in the United States. The figures for Argentina and Uruguay are also higher than the average.

Although substantial increases in tax revenues were achieved during the early stage of the reforms in the mid-1980s, two decades later there has been only a slight increase on the levels prior to the debt

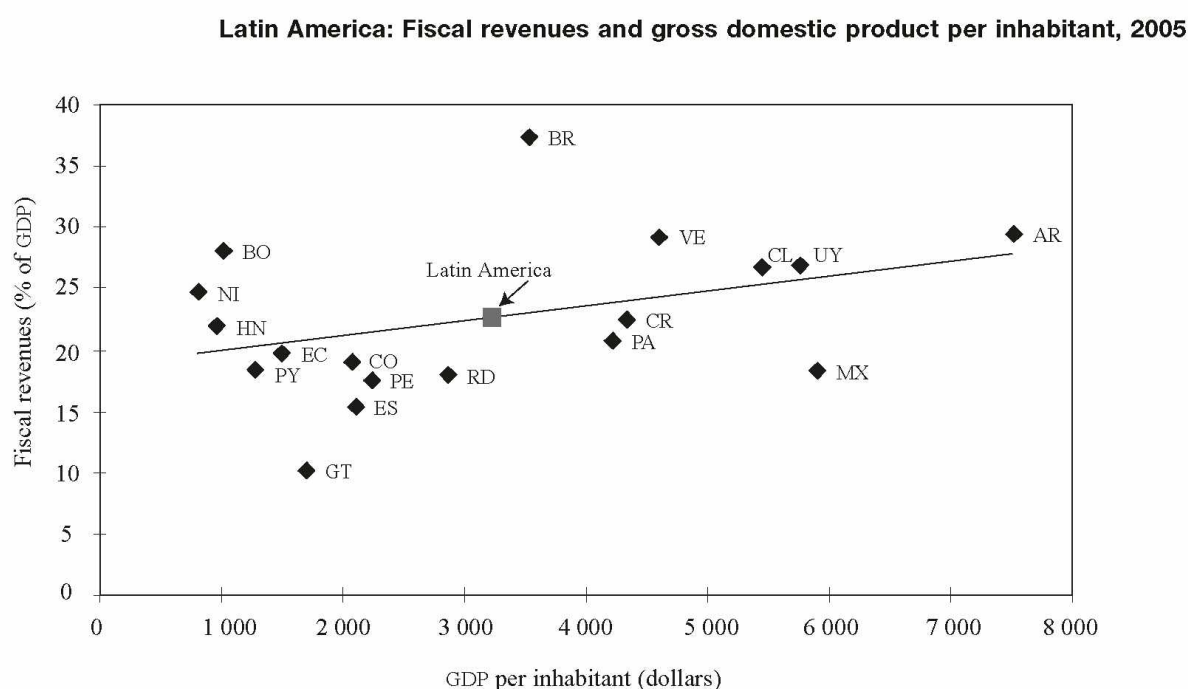
¹ See, for example, Agosin, Barreix and Machado (2005) on the countries of Central America.

FIGURE 2



Source: Prepared by the authors on the basis of official figures from each country.

FIGURE 3



Source: ECLAC.

crisis, with collection being very much centred on consumption taxes while income taxes yield little. Despite the effort to expand the tax base, raise rates and bring in surtaxes, the region is far from collecting as much as it needs.

Efforts have been made to attain the goal of neutrality by making value added tax (VAT) rates more

homogeneous and reducing the number of exemptions.² In addition, marginal rates have been cut in the highest income tax bands. Protection for some sectors of the economy has likewise lessened as a result of trade

² See, for example, ILPES (2004).

liberalization and the resulting consolidation of tariffs at generally lower levels. Internationally, the goal of neutrality has begun to take on greater importance with the proliferation of bilateral free trade treaties and double taxation agreements.

The goals of simplicity, meanwhile, have been furthered by more transparent legislation, improved rules and procedures and stronger administrative systems. In addition, some low-yielding taxes have been abolished. Nonetheless, duplication of functions is still a problem in some federal countries, with differentiated tax structures and collection authorities at various levels of government.

Where the equity of tax systems is concerned, there has been more emphasis on horizontal equity (agents with the same payment capacity should have the same tax burden) than on vertical equity (agents should have a tax burden that matches their ability to pay). There has been little progress with the latter.

The work of designing modern tax systems is still incomplete, in some countries because rates are still too low, in others owing to the survival of exemptions that distort the tax system, and in most because too little attention has been paid to vertical equity in the recent reforms. In cases where VAT is the main tax and is levied at a single rate, the whole system tends to be regressive, since lower-income sectors pay a proportionately larger share of taxes levied on the necessities of life. Today's tax systems are indeed regressive, making income distribution worse than it would otherwise have been once the effect of taxes is considered.³

It has been repeatedly claimed that the most important concept is the "net impact" of fiscal policy, with public spending being assigned the task of achieving progressiveness by targeting the poorest sectors.⁴ Studies show, however, that successful redistribution policies do more than just increase public social spending. Furthermore, spending with immediate redistributive characteristics, such as direct transfers, has not increased significantly either, something that stands in contrast to the European experience.

Although VAT has been adopted throughout the region, this tax presents major differences from one country to another in respect of both the size of the tax base and the rates applied in each case (i.e., the number of rates and their level). Concerning the former, some countries tax both goods and services generally, others tax goods and only some services, and a few apply VAT exclusively to goods. As for rates, a first distinction can be established between countries that have applied multiple rates (to differentiate between different types of consumption) and those that have adopted a single rate across the board. Thus, for example, Argentina, Colombia, Costa Rica, Honduras, Mexico, Nicaragua and Panama use a system of multiple rates, while the other countries considered use single uniform rates.

In addition, the rates in force in the region's countries present two basic characteristics (table 1). First, there has been a general upward trend, with the average regional VAT take rising by three percentage points of GDP between 1994 and 2005. Second, the countries differ markedly in the rates they apply. Argentina, Brazil, Chile, Peru and Uruguay apply rates of about 20% or more, while Bolivia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Panama and Paraguay have adopted rates of 13% or less, which places them below the 14.7% average.

In comparative terms, the simple average of VAT rates applied in the region in 2005 was almost five percentage points below the simple average for the countries of the European Union (14.7% and 19.6%, respectively). Again, the dispersion of rates between countries was smaller in the European Union than in Latin America and the Caribbean (with a standard deviation of 3.0 in the first case and 4.4 in the second).

Furthermore, the productivity of VAT (calculated by taking VAT revenue as a percentage of GDP and dividing this by the general rate) is comparatively low in the region, standing at 40% in 2005 (by way of illustration, average productivity in the developed countries is over 60%). There are also large differences between countries in this respect, as figure 4 shows. In five countries (the Dominican Republic, Haiti, Mexico, Panama and Peru), collection is less efficient than the regional average. This indicator does not necessarily reflect administrative efficiency, but rather the dispersion of rates around the general rate. In Mexico, for example, dispersion is greater because there are exemptions for food. What the chart illustrates, therefore, is only the shortfall in relation to what could potentially be collected if there were no

³ Gómez Sabaini, Santieri and Rossignolo (2002) reached this conclusion after analysing the tax structure of Argentina. The taxes mainly responsible for this are, in order of regressiveness, social security contributions, domestic goods and services taxes, and VAT. The most progressive taxes are those levied on personal and corporate earnings, together with provincial and municipal property taxes. These findings seem readily applicable to the rest of Latin America too.

⁴ See, for example, Martín (1997).

TABLE 1

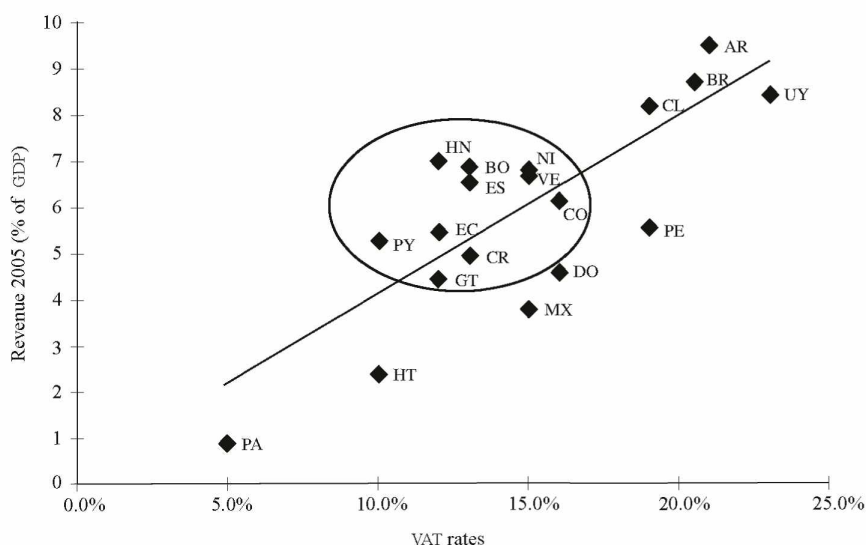
**Latin America and the Caribbean:
Value added tax (VAT) rates**

	1994	2000	2005
Argentina	18	21	21
Bolivia	14.92	14.92	13
Brazil	20.48	20.48	20.48
Chile	18	18	19
Colombia	14	15	16
Costa Rica	8	13	13
Ecuador	10	12	12
El Salvador	10	13	13
Guatemala	7	10	12
Haiti	10	10	10
Honduras	7	12	12
Mexico	10	15	15
Nicaragua	10	15	15
Panama	5	5	5
Paraguay	10	10	10
Peru	18	18	19
Dominican Republic	6	8	16
Uruguay	22	23	23
Venezuela (Bol. Rep. of)	10	15.5	15
Average for Latin America and the Caribbean	11.7	14.2	14.7
Standard deviation for Latin America and the Caribbean	5.1	4.6	4.4

Source: ECLAC, on the basis of official information from each country.

FIGURE 4

Latin America and the Caribbean: Productivity of value added tax (VAT), 2005



Source: ECLAC, on the basis of official figures from each country.

exemptions. In a context where it is becoming ever more difficult to introduce new taxes or higher tax rates, the removal of exemptions and the limitation of tax deductions are emerging as significant sources of future fiscal revenue.

The term "tax expenditure" is widely used to refer to tax exemptions, remissions, credits, deductions, deferments and certain reimbursements. Broadly, tax expenditure can be understood as that portion of tax revenue which is forgone owing to the application of exemptions or special tax regimes whose purpose is to favour or stimulate particular sectors, activities, regions or agents in the economy.

More and more countries in Latin America and the Caribbean are supplying information on tax expenditure. The amounts are very significant in all cases, with the 2003 figures showing a low of 1.6% of GDP in Brazil and a high of 9.2% in Colombia. Of the taxes giving rise to tax expenditure, VAT predominated in Argentina, Ecuador and Peru and income tax in Chile. Concerning the destination of this spending, in Argentina 80% of tax expenditure (2.8% of GDP) went on forms of special treatment provided for in the relevant tax laws and the remainder on benefits provided under the different economic, regional and sectoral promotion regimes. In Chile, tax expenditure (4.4% of GDP) took place mainly in the financial sector (61.3%), the property sector (12.6%) and education (7.4%).

In the 1990s, better economic growth rates led to a recovery in the tax burden. In most cases, the elasticity of tax revenue is higher than one. In the upswings of the cycle, this is because growth expands the formal economy and generates a disproportionate increase in imports and the taxes associated with them. Conversely, in recessive phases the tax take also falls disproportionately because the above mechanisms are reversed and also because evasion increases substantially. The relationship between inflation and tax revenues is also a powerful one. First, because inflation reduces the real value of tax revenues owing to the time lag between the time taxes are generated and the time they are collected. Second, because inflation reduces real incomes, which means families and businesses will try to maintain their real disposable income by paying less tax. Thus, macroeconomic stability, meaning a combination of high growth and low inflation, is the principal requirement for higher tax revenues. When the environment is recessive and inflation on the rise, any tax system will be hard pressed to prevent revenues from declining.

Meanwhile, tax policy implementation requires an institutional framework and specific arrangements appropriate to the functions and objectives being pursued. In particular, the collection of revenue from internal taxes, customs duties and social security contributions requires an administrative mechanism that meets certain minimum conditions of institutional status and internal organization if it is to be able to work properly. The tax administration, therefore, needs to guard against the institutional weaknesses that commonly affect public agencies of various types. In recent years, indeed, recognition of this fact has resulted in the adoption of administrative reforms to raise the institutional status of tax administrations and place them under the leadership of high-ranking officials. Great progress has also been made in strengthening the institutional basis of tax administrations by creating legal structures that provide them with varying degrees of functional, administrative, technical and financial independence.

In any event, the countries of Latin America and the Caribbean still have a long way to go in terms of the efficiency and effectiveness of their tax administrations, especially when compared to more developed countries. The fact is that, although tax administrations in the region operate with fewer budgetary and human resources, their collection costs are higher than those of their counterparts in more developed countries.

This rapid review of the public revenue situation does provide some answers to the first question. Yes, it

is possible to detect scope for increasing tax revenues, especially in the current environment of strong economic growth. Rates are comparatively low in some countries, especially for VAT and specific taxes. There are also exemptions that can be reviewed.

In this analysis, two peculiarities of the region's tax systems are of particular importance. The first is the VAT treatment of food. Exemptions for this reduce the tax take by up to two points in some countries, as they do not discriminate between a basket of staples and other foods. It has been argued that replacing these measures with targeted spending policies would be beneficial in net terms. However, it remains to be shown whether, in terms of redistribution, such policies are better than direct exemptions for a basket of staple foodstuffs, in countries where this basket represents a significant proportion of family consumption for many people. The second peculiarity is the growing importance of tax incentives in free trade zones, especially those granted to maquila companies in the countries of Central America.⁵ Although their positive impact on employment is undeniable, consolidation of this production regime goes against the principle of horizontal tax equity and, when these activities have few backward linkages, reduces the income-elasticity of tax systems.

In addition to these restrictions, there is the impact of free trade agreements and regional integration on tax revenues. The consequent reduction of taxes on external trade can exceed one point of GDP in some cases. Just replacing these taxes may involve complex political battles, leaving little room for net increases in tax revenue.

Lastly, it is possible to affirm that the institutional strength of tax administrations has now increased to a point where, in the short term, any further gains yield decreasing returns in terms of tax collection. The fact is that high levels of evasion and avoidance are closely related to the degree of informality in the region's economies, which in turn is strongly correlated with growth and income levels. Reducing evasion is therefore a structural task inherent in the development process, and not just a matter of administration or short-term management improvements. Relying on a rapid decrease in evasion as a mechanism for financing social policies, or on economic growth alone, would have very risky implications for the stability of the public finances.

⁵ See Agosin, Barreix and Machado (2005) for an extensive analysis of tax systems in these countries.

II

Public spending and social protection

Expanded coverage for social protection programmes will not be achieved solely through better tax collection. If the aim is to redirect resources to the social area, then a hard but urgent task is to improve the productivity and quality of public spending.

1. The public spending dynamic

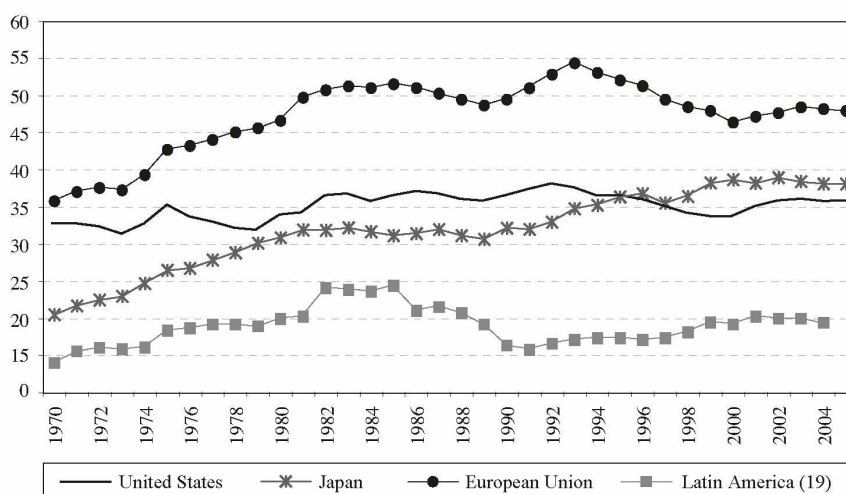
Public spending as a percentage of GDP is commonly used as an indicator to measure the State's share of the economy, although it does not take account of the regulatory activity conducted by governments. As figure 5 shows, the "incrementalism" that characterized the budgetary process in the OECD countries and laid the basis for the welfare State has been progressively replaced by a "decrementalism" characterized by the setting of macrofiscal rules and multi-year targets for deficit reduction and public spending restraint. Public spending also has a clearly countercyclical character, so that spending constraints in periods of expansion alternate with a larger role for the State when the level of activity slows.

In Europe, the large rise in public spending in the 1970s was basically due to the establishment of the welfare State, which more recently has taken the form of monetary transfers including pensions, unemployment benefits, education and health care. Transfers increased by 5.7 points of GDP on average in the 1970-2004 period, and have stabilized at around 18 points of GDP. In the aggregate, the composition of public spending has shifted from the categories of general services (including interest payments) and economic affairs towards health and social protection. The data do not show any major reduction in the size of the welfare State in recent years.

Although the level of spending is much lower in the United States, it has followed a path very much like the one described, with a stage of growth during the 1980s and one of reduction during the 1990s. Over the coming decades, however, public spending on health and pensions is expected to grow strongly (by some 10 points of GDP) as a result of population aging. Again, the size of the State in Japan has grown strongly to reach over 35 points of GDP.

FIGURE 5

International comparisons: Public spending, 1970-2004
(Percentages of GDP)



Source: OECD (2004) for OECD countries (general government); International Monetary Fund (IMF) and ECLAC for Latin America (central government).

To obtain a fuller picture of the changing size of the State in Latin America and the Caribbean, measured by public spending as a proportion of GDP, it is worth examining other definitions of government (table 2), particularly general government and the non-financial public sector. The first concept (general government) is particularly important in certain federally organized countries, such as Argentina and Brazil, where a substantial part of public spending takes place at the provincial and state level, respectively. The concept of the non-financial public sector, meanwhile, is a more useful one when it comes to grasping the variety of organizational and financial structures that emerged from the structural reforms of the 1990s.

To take a simple average, public spending as a proportion of GDP was 19.5% in 2005, having increased by almost four percentage points of GDP between 1990 and 2003 for the central government category (19 countries); between 2003 and 2005, public spending fell by 0.8 percentage points of GDP. For the general government category (nine countries), public spending

was 24.2% of GDP in 2005 and grew by almost two percentage points of GDP in the 1990-2003 period. As regards the non-financial public sector category (14 countries), public spending was 28.5% of GDP in 2005 and rose by 2.4 percentage points of GDP in the 1990-2005 period. The largest drops were in Chile, Mexico and Peru, for the definitions of government available.

In one group of countries (Bolivia, Colombia, Ecuador, Paraguay), there was a significant increase in public spending at the central government level between 1990 and 2005. This dynamic could be characterized as upward convergence, since in 1990 public spending as a proportion of GDP was well below the regional average. In general, the causes of this expansion in public spending as a proportion of GDP are to be sought in a movement towards decentralization and increases in social security benefits and coverage. In some cases, decentralization has increased the weight of central government (Colombia) because the financing of subnational bodies has depended heavily on transfers, or has led to significant growth in general

TABLE 2

**Latin America and the Caribbean: Change in the size of the State,
by definition of government, 1990-2005**
(Percentages of GDP)

	Public spending, 2005			Change from 1990 (points of GDP)		
	Central government	General government	Non-financial public sector	Central government	General government	Non-financial public sector
Argentina	16.6	24.7	25.2	4.8	-1.6	2.7
Bolivia	29.0	28.9	30.0	11.5	6.5	-5.1
Brazil	24.6			5.9		
Chile	19.8	21.8	33.9	-1.8	-1.3	-3.1
Colombia	21.0		35.2	11.7		14.6
Costa Rica	15.9	23.4	25.5	1.0	1.8	2.7
Ecuador	17.2		24.5	2.8		-1.9
El Salvador	14.6		17.5	1.0	1.6	1.5
Guatemala	11.7			1.4	3.8	
Haiti	11.5			-0.1		
Honduras	23.0		34.1	0.2		8.3
Mexico	19.7		23.3	-0.9		-4.2
Nicaragua	23.0	27.3	30.3	1.5	4.9	6.8
Panama	19.0		24.8	1.0		1.0
Paraguay	17.5		33.3	7.4		12.0
Peru	16.7	19.2		-2.4	-1.7	
Dominican Republic	19.3			6.8		
Uruguay	23.2		29.6	7.2		1.3
Venezuela (Bol. Rep. of)	26.9		32.2	1.1		-3.6
Latin America and the Caribbean	19.5	24.2	28.5	3.2	1.8	2.4

Source: ECLAC, on the basis of official data.

government, as in Costa Rica and Nicaragua. Where the non-financial public sector is concerned, Colombia recorded an increase of 18 percentage points of GDP in the 1990-2003 period and Paraguay one of 12 percentage points up to 2005. The non-financial public sector shrank in five of the 14 countries for which information is available.

2. The quality of public spending

Of course, the productive effects of public spending do not so much depend on the amount of resources used as on the impact achieved. In recent years, emphasis has been placed on poverty reduction as a priority goal. International agencies have made tremendous efforts to promote “pro-poor” budgets. The Heavily Indebted Poor Countries (HIPC) Debt Initiative was a unique opportunity in this respect, as it meant that the interest savings resulting from the reduction of external debt could be channelled into social spending instead. There is growing concern, however, about this excessive reliance on social spending to reduce poverty.

Most programmes focus on the composition of public spending, especially in social areas, placing less emphasis on other aspects of a broader strategy to stimulate growth with poverty reduction. Although these experiences mainly involve lower-income countries, the conclusions from them hold good for the great majority of the countries in the region: it is not such a small matter to associate the composition of public spending with poverty reduction, income distribution and economic growth.

The analysis becomes more complex when this last goal is included. The member States of the European Union, for example, agreed as part of the Lisbon strategy to *strengthen the contribution of the public finances to growth by redirecting public expenditures towards physical, human and knowledge capital*; in the case of the European Union, spending on research and development, education and infrastructure investment is more productive than other types of spending (European Commission, 2004). In any event, these brief notes show how hard it is to set priorities, even when explicit poverty reduction targets are set. It is enough to glance at the functional classification of public spending (table 3) to realize how enormously difficult it is to rank spending priorities without considering the specific characteristics of each country and situation. Although it is clearly important to allocate resources to the different social protection categories, it seems very hard to do this at the expense of other

TABLE 3

Functional classification of public spending

General classifiers	Social protection
1. General public services	1. Sickness and incapacity
2. Defence	2. Third age
3. Public order and security	3. Survivors
4. Economic affairs	4. Families and children
5. Environmental protection	5. Unemployment
6. Housing and community services	6. Social housing
7. Health	7. Social exclusion
8. Recreation, culture and religion	8. Others
9. Education	
10. Social protection	

Source: United Nations.

categories that are no less crucial to economic and social development.

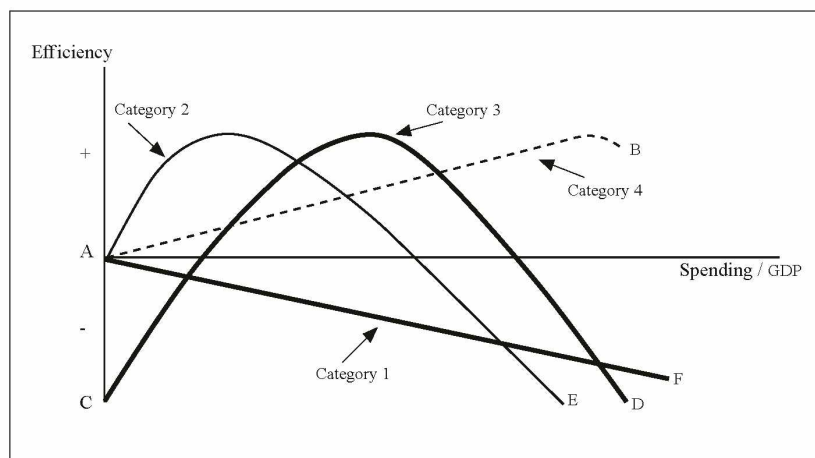
When considering the quality of public spending in macroeconomic terms, it is possible to distinguish four categories, which combine the functional and economic classifications. Expenditures are defined as “efficient” when they have positive effects on economic growth and employment. The empirical evidence delivers a mixed message: the effects of public spending vary depending on its composition, are positive within moderate ranges, and can rapidly turn negative if certain limits are exceeded.⁶

This non-linear relationship between public spending and growth varies by the type of expenditure, giving rise to the four categories referred to (figure 6). Category 1 is interest payments, represented in the chart by line AF; this spending has a negative effect on growth and employment, since any increase in it forces other public spending down. Category 2 includes spending such as public consumption and pensions, including survivors’ pensions, represented by line AE. Studies generally argue that while such spending is efficient up to a point, increasing it can have negative effects on saving, investment and growth. Category 3, represented by line CD, illustrates the effects of expenditure such as unemployment insurance, or spending on social exclusion. Keeping spending below a certain level reduces macroeconomic efficiency, making it harder for the excluded to enter the labour market and holding down their participation rates.

⁶ See European Commission (2002) for a detailed analysis of this typology.

FIGURE 6

Quality and efficiency of public spending



Source: European Commission (2002).

Furthermore, a certain level of unemployment transfers helps make the labour market more flexible and tends to reduce excessive labour protection. The relationship is not linear, however; a point comes where spending of this type starts to have a negative impact on growth. Category 4 includes education, health care, research and development, and gross fixed capital formation, represented by line AB. This spending is positive for growth and has a much higher expenditure limit than the other categories, although a turning point is eventually reached here as well.

Like any typology, this breakdown is rather arbitrary and has numerous limitations. It is useful for three purposes, however. The first is to emphasize the non-linear character of the macroeconomic effects of public spending. Thus, it would be as wrong to reject growth in such spending for reasons of efficiency as it would be to rely on it as the sole engine of development. It is clear that, for the vast majority of countries in the region, the slope of categories 2 and 3 is positive; public spending is below its optimum level. This does not mean, of course, that its productivity might not be improved.

The second purpose served by the typology is to provide a more illustrative differentiation than the economic and functional classifications. Just distinguishing between current and capital expenditure, important though this is, is not enough when it comes to attaining social and economic policy goals. Regarding

the functional classification, the tendency to prioritize social spending can also be a limitation when, as analysed earlier, it is recognized that growth and job creation play an important role in poverty reduction.

The third purpose of this classification is to provide the basis of a medium-term sequence for improving the quality of public spending, primarily by reducing the burden of interest payments, which in some cases are as much as 50% of the approved budget. When these levels are reached, the priority is to return public debt to a sustainable path, both by generating primary surpluses and by working to improve internal and external financing conditions (ECLAC, 2004a). In the last five years, fortunately, the share of resources going to the social sectors has increased in relation to both total public spending and GDP. Indeed, ECLAC (2004a) notes that public social spending has been reoriented towards human capital investment (education and health), which has more pronounced redistribution and growth effects than other categories. Lastly, as ECLAC (2004c) pointed out recently, there is an urgent need to stimulate spending on infrastructure and on research and development, given the alarming decline in such expenditure during the recent cutbacks.

To summarize, it can be said that the task of improving the quality of public spending in Latin America and the Caribbean must involve sustained investment in physical, human and knowledge capital. Although progress has been made recently, major

challenges still remain: continuing the effort to reduce the interest burden and thus free up resources, maintaining human capital investment, and accelerating spending on fixed and knowledge investment.

In a context of severe institutional rigidities, reorienting public spending is no easy matter. Use of a medium-term public spending framework can facilitate the necessary reallocations between categories (Shick, 2002). In the OECD countries, indeed, this instrument has been used to prioritize targets for investing in education and raising overall productivity (Blondal, 2005). A multi-year framework is a financial planning instrument whereby annual budgetary decisions are taken in a context of global or sectoral spending constraints over periods of from three to five years.

The key to success in implementing a multi-year framework is that the institutional mechanisms used should allow decision-makers to balance the aggregate resources available with the country's priorities. This balance is struck using a top-down sectoral/ministerial resource allocation approach. Properly used, this instrument should overcome budgetary inertia and change the prevailing mindset from a sectoral "needs" approach to an "available budget" approach.

The instrument described can be useful for reducing budgetary rigidity insofar as it allows sectoral shifts to take place over time, with fewer particular pressures and upheavals. Although it is early days to rate these experiences, they are clearly a necessary but not sufficient condition for proper supervision and reallocation of public spending, as they have to be accompanied by macrofiscal rules that confer a reasonable degree of certainty upon medium-term projections and avoid procyclical bias in public spending.

3. The procyclical nature of public spending

Ideally, public spending ought to be "acyclical" (i.e., more or less neutral in respect of macroeconomic cycles) or countercyclical, with specific policies to pay down public debt at times of plenty, the better to cope with periods of scarcity. Spending decisions should follow an intertemporal approach, with programmes and projects financed over a multi-year goal horizon.

Unfortunately, this rather technocratic approach is by no means the one applied, owing to the extreme vulnerability of the region's public finances to changes in the macroeconomic environment. If interest rates rise or public revenues fall, the authorities are obliged to restrain primary expenditure growth, with capital

spending usually suffering more than current spending. During the six years from 1998 to 2003, in fact, cumulative GDP growth in Latin America and the Caribbean was 6%, while public investment by central government experienced a cumulative 14% decline (Martner and Tromben, 2005).

There is ample empirical evidence to show that fiscal policies in the region have been procyclical in the recent past.⁷ Thus, it is vitally important to bring in countercyclical fiscal rules to set public spending on a stable path. There is a crucial need to take advantage of the current phase of growth to establish or strengthen mechanisms that can give public spending consistency over time. The fiscal responsibility laws of the early 2000s have served to moderate the dynamic of rising public debt in some countries.

In only a few instances, however, has the explicit objective of macroeconomic rules been countercyclical. Funds designed to stabilize revenues from tax (Argentina, Peru) or raw materials (Chile, the Bolivarian Republic of Venezuela, Ecuador, Mexico) are indeed explicit countercyclical policies, but their mere existence is not a sufficient guarantee. Meanwhile, legally mandated limits on public spending growth (3.5% a year in real terms in Ecuador and Peru, for instance) actually tend to drive spending down over time as a proportion of GDP if trend growth in the economies concerned is higher, and thus cannot be described as neutral over time.

Chile is an exception. The 1% structural surplus rule means that, in practice, public spending growth is pegged to trend GDP and also to the long-term copper price, which is a key variable in determining structural revenues (Dirección de Presupuestos de Chile, 2005), irrespective of short-term fluctuations in actual GDP and thus revenues. In theory, this ensures a stable and neutral spending path, reducing the likelihood of sharp adjustments and conferring a degree of certainty in practice on the multi-year implementation of public projects and programmes. This experience shows that policies not involving preallocation of spending are not necessarily detrimental to social expenditure in the long term.

4. Priority for social spending?

The vulnerability of social spending is also disturbing. While the procyclical bias of primary spending as a whole has already been mentioned, there is

⁷ See Martner and Tromben (2003) for a recent analysis.

even stronger cause for concern when it comes to social spending. Since this is priority expenditure, it is important for its hard core to be given explicit protection if cutbacks are unavoidable.

Column A of table 4 gives estimates for the GDP-elasticity of social spending. The results are striking: as a simple average, the elasticity of social spending is 1.87, indicating that it is procyclical to a high degree. This characteristic is not common to all the countries, however. The value seems to depend on the starting point; elasticity is greater in countries where social spending was lower in the early 1990s (Bolivia, Colombia, Guatemala, Mexico, Paraguay, Peru), in a context of rising expenditure across the board. This could also explain the lower elasticities of Argentina, Brazil and Chile, countries that had higher social spending to begin with.

One thing that is crucial is to differentiate these elasticities from those of spending generally. Column B of table 4 shows the GDP-elasticity of total public spending, and column A/B calculates the ratio between the two elasticities. The countries whose total public spending has been most sensitive to GDP fluctuations

are Bolivia, Colombia, the Dominican Republic, El Salvador, Mexico, Paraguay and Uruguay. Conversely, this elasticity is close to or less than one in Argentina, Brazil, Chile, Guatemala, Honduras and Peru. In these countries, public spending has fluctuated much in line with economic growth.

The third column compares the elasticities estimated. A value higher than one for this indicator shows that social spending has been more procyclical than other spending.⁸ This is what is obtained for all the countries except El Salvador, although the indicator is significant in only a few cases (Bolivia, Brazil, Guatemala, Honduras, Peru). In these countries, social spending has increased by substantially more than aggregate spending at times of expansion and has fallen by substantially more than aggregate spending during phases of recession.

⁸ Strictly speaking, this form of calculation does not actually indicate procyclicality, since the comparison should be made with the GDP gap and not with actual GDP. The results would probably not differ much.

TABLE 4

Latin America and the Caribbean (14 countries): Elasticity of social spending in relation to gross domestic product^a

	Elasticity of social spending (A)	Elasticity of total spending (B)	Ratio (A/B)	Number of observations
Argentina	0.91	0.82	1.11	15
Bolivia	2.95	1.90	1.55 ^b	15
Brazil	1.56	1.16	1.34 ^b	15
Chile	0.93	0.73	1.27	25
Colombia	2.12	2.02	1.05	22
El Salvador	1.57	1.99	0.79	9
Guatemala	1.84	0.99	1.86 ^b	25
Honduras	1.56	0.97	1.61 ^b	21
Mexico	1.78	1.58	1.13	15
Paraguay	3.31	3.17	1.05	25
Peru	2.41	1.02	2.36 ^b	15
Dominican Republic	1.60	1.46	1.10	25
Uruguay	1.82	1.64	1.11	15
Venezuela (Bol. Rep. of)	-	-	-	25
Latin America and the Caribbean	1.87	1.50	1.38	

Source: Aldunate and Martner (2006), on the basis of social spending data from the ECLAC Social Development Division.

^a The estimates were produced using the following equation: $\log S_i = \alpha \log S_{i-1} + \beta \log GDP_i + \gamma$, where S is total spending or social spending and GDP is the gross domestic product of each country i , both variables measured in constant terms. Long-term elasticities $\beta/(1-\alpha)$ are shown.

^b Cases in which both elasticities are significantly different from 5%.

The question, then, is whether social spending should be given priority in the public budget. In many countries, the answer has been yes. A first option is to raise this priority to the very highest level. In Colombia, for example, article 350 of the 1990 Constitution provides that “public social spending will take priority over any other allocation”. Furthermore, another article provides that social spending must increase from year to year. The final clause of the first section of the definition laid down by Law 179 of 1994 includes not only specific activities but also “(...) those tending to the general welfare and a higher quality of life for the population”. The problem is that by laying down such an unrestricted principle, the article accommodates all categories that can be characterized as tending to the general welfare and a higher quality of life for the population.

A second option is to “ earmark” some social spending, which involves preallocating a certain amount of resources from the public budget. In many countries of Latin America there are, for example, constitutionally mandated lower limits on health or education spending, generally expressed as a percentage of GDP. For all the good intentions of legislators, mechanisms of this type do not remove the procyclical bias of public spending,

since they allow social spending to fall if the same thing happens to GDP. In too many cases, furthermore, these limits are not respected because the resources are simply not available and the budgets passed are not implemented. Earmarking public spending does not solve the problem, because it does not go to its root: the chronic inadequacy of public resources at times of crisis.

A third option is to “shield” some public social spending, which is salutary because it assumes that the authorities are capable of setting and applying resource allocation priorities despite the many pressures that arise in this process. A number of recent experiences show that it is possible to identify a hard core of social spending which, incidentally, contributes to governance throughout the system. There are still classification problems to complicate the task, however.

Naturally, each situation merits a different response. It does seem clear, though, that medium-term strategies need to aim at the development of explicit mechanisms for the protection of public spending generally so that it becomes possible to meet the tremendous needs arising in periods of recession, which unfortunately are more frequent than might be wished.

III

Evaluating social policies and programmes

1. The need for evaluation

In the previous section, it was pointed out that the effects of public spending did not depend so much on the amount of resources employed as on the impact achieved. This is a key factor to be borne in mind when designing social security and protection policies, programmes and projects. There is no point in increasing investment and spending in social sectors if the benefits generated for the country with these resources are lower than the costs.

If a country channels more resources into social security and protection, these must necessarily be diverted from other uses, whether in the public or the private sector. When resources come from reallocations within the public budget, it will have been necessary to cut allocations to some agencies to increase the budget of others, implying a quantitative or qualitative drop in the provision of certain public services. For

example, if an increase in the budget allocated to the Ministry of Health is funded by reducing the budget of the Ministry of Mines, the latter might have to reduce support for small-scale mining or for exploration, with all the resultant costs for the country in terms of lower production in the present or future, less employment and greater poverty.

If resources come from higher tax rates or lower tax avoidance, on the other hand, then they will have been diverted from alternative uses in the private sector. If these resources would otherwise have gone into productive activities, forgoing these will entail an opportunity cost to the country equal to the value set by society on the goods or services that could have been produced. If the additional resources collected were going to be used for private consumption, there will also be a cost in the form of lower consumer satisfaction and lower aggregate demand for goods and services. There is room for debate about the costs

and benefits of such cutbacks in consumption, but it is important to recognize that lower consumption will almost always have a cost for society.

The cost is even starker if the additional resources come from borrowing, as there will be interest and commissions to pay. Furthermore, higher borrowing by the country will increase lending rates in general, affecting the productive sector. Fewer projects will be started, and the contribution made by new productive jobs to poverty reduction will consequently be less.

It is clear, then, that irrespective of the origin of the resources used to increase investment and spending on social security and protection, there will be a cost for society. Accordingly, the benefits generated by programmes and projects will have to be at least equivalent to the costs incurred if the country and its inhabitants are not to end up poorer than before.

This explains the concern discussed earlier about the possible constraints arising from the tendency to prioritize social spending, once the important poverty reduction role played by growth and job creation is recognized. Draining resources from activities that generate productive jobs will only be justified if the benefits created by allocating them to social security and protection programmes or projects are greater than those that would have accrued from the productive activities forgone.

Another concern is how resources should be allocated to maximize their impact. As was pointed out in the previous section, the effects of public spending vary according to its composition, are positive within moderate ranges, and can turn negative if certain limits are exceeded. There is a need, then, to work out how far spending can usefully be raised in each of the sectors associated with social security and protection, so that resources are allocated only up to the point where higher spending leads to lower efficiency. In situations of limited resources, furthermore, intersectoral allocation should aim to stop short of the zone in which efficiency is still positive but declining.

To avoid overallocating resources to a particular sector, it is necessary to know what effect marginal programmes and projects will have on key development indicators such as life expectancy, the educational level of the population, sickness rates and per capita income (and its distribution). Estimating these effects is not easy, and it is harder still to know when diminishing or negative efficiency levels have been reached.

Lastly, a third concern is to be able to identify, in any given sector, the programmes or projects that are most efficient in terms of achieving the maximum

impact with limited resources. Needs usually far exceed the potential for satisfying them, and large sections of the population are left with unmet basic needs (in health care, education, housing and so on). In these circumstances, it is important to be able to prioritize the programmes and projects proposed, so that those with the best cost-benefit ratios can be implemented first. This will ensure the greatest impact for the limited resources available.

Evaluation is the tool available for attempting a response to concerns about the amount of resources to be spent on social security and protection, their allocation between sectors, and the projects and programmes to be undertaken. Policies, programmes or projects are evaluated in an effort to assess their value, meaning the difference between the total benefits and total costs of the initiative. And here, a question immediately arises: their value for whom?

Depending on the answer, there are two types of evaluation: private and social. Private evaluation seeks to ascertain the value of the project or programme for a person, a company or an institution. Social evaluation, on the other hand, seeks to determine the value of the initiative for the country, i.e., for society as a whole.

To determine the value of an initiative it is necessary to identify, quantify and value all the "relevant" costs and benefits associated with it over its life cycle. By relevant costs we mean those that are incurred if the programme or project is executed, but that would not have to be incurred if it were not. Similarly, relevant benefits will be those that can only be obtained by executing the programme or project.

It is also necessary to distinguish between *ex ante*, mid-term, final and *ex post* evaluations. The purpose of *ex ante* evaluation is to determine whether or not it is advisable to undertake the initiative. Mid-term evaluation is to find out whether the initiative is worth continuing with and, if so, in what respects it can be improved. Final evaluation is to provide information about the fulfilment of objectives and to benefit from lessons learned during execution. Lastly, learning is the main purpose of *ex post* evaluation, which covers everything that happened with the initiative from its conception to the evaluation date.

The multiplicity of evaluation approaches and techniques, the existence of different types of evaluation, the differences that arise when initiatives in different sectors are evaluated and the difficulties inherent in any evaluation all make the task of ascertaining and comparing the value of different government initiatives a complex one. It is therefore indispensable to have

qualified staff and methodologies to facilitate and standardize the work of the assessors. Furthermore, given the number and diversity of initiatives proposed or being implemented in any budgetary period, the work of evaluating all programmes and projects takes resources and a good level of organization. National systems of public investment, which now exist or are being developed in almost all the region's countries, are a reflection of this. These are described and analysed in the following section.

2. Evaluation in the social sectors

The theory and practice of private and social project evaluation were originally developed to ascertain the value of industrial or agricultural-type projects. Consequently, there is a large body of experience and literature dealing with the evaluation of projects such as power stations, industries and irrigation systems. Transport is another field in which evaluation has long been widely applied.

Evaluation has a long track record in the health sector, but with the focus on the effectiveness of different types of treatments or drugs. Only recently has the economic variable been incorporated into the analysis. In the education sector, too, there is a century and more of experience with the evaluation of learning outcomes, but the evaluation of programmes or projects from a socio-economic perspective is also a recent development. In both health and education, this is due to the great difficulty of setting a monetary value on the benefits that programmes and projects generate.

In other sectors, such as justice and citizen security, there is very little evaluation experience and socio-economic evaluation criteria are hardly ever applied. On the whole, the sectors concerned with social assistance and protection are very badly served when it comes to evaluation methodologies and capabilities. This puts them at a disadvantage when they have to defend budgetary allocations, since it is hard for them to demonstrate what benefits will be generated from the resources allocated to them.

Among the factors accounting for this slowness to adopt evaluation as a decision-making instrument in the social sectors are a lack of trained personnel, the absence of specific methodologies and, to some degree, the lower priority traditionally given to these sectors.

Evaluating social assistance and protection initiatives in socio-economic terms is not straightforward. The costs of programmes or projects can almost always

be determined fairly accurately. Most of the benefits are very difficult to value in monetary terms, however. A variety of methodological approaches have been adopted to get around this difficulty.

The most common and straightforward is to accept how difficult it is to set a monetary value on the benefits generated by social programmes or projects and seek lowest-cost solutions. The problem with this approach is that it is only useful for choosing between alternatives that generate identical benefits and does not provide any indication as to whether the value of the initiative is positive, since only the costs are known. The benefits can be identified and perhaps quantified, but they are not valued, so to assume that their value exceeds the costs requires an act of faith.

Another methodological alternative, known as cost-effectiveness, seeks to determine the cost of producing a certain impact on some relevant variable. In other words, the aim is to calculate a cost per unit of benefit, such as cost per health-care service provided, or cost for each percentage point reduction in the incidence of a certain disease.

The above two approaches are the ones most widely used in the region's countries. Bolivia, Chile and Peru, for example, all regularly apply methodologies based upon them.

Yet another methodological alternative is contingent valuation. This method aims to ascertain people's willingness to pay for the benefits generated by the programme or project concerned by conducting surveys among a sample of potential beneficiaries. This methodology has been used mainly in research work, owing to the cost of executing surveys and the difficulty of designing them in a way that avoids bias in the opinions expressed.

One problem with applying this methodological approach in the social assistance and protection field is that the willingness of poor people to pay for certain services may be very low. For example, a family that barely manages to subsist on the combined income of all its members is unlikely to be willing to pay for education. Consequently, if the value set on a good or service by a group of poor beneficiaries is determined, it is very likely to be low. Then, if the benefits of the project are assessed by the value set upon them by the poor beneficiary group, the conclusion is very likely to be that it is unprofitable for the country.

This goes against the general perception that projects providing social assistance and protection to very disadvantaged sections of the population are highly beneficial to a country. The apparent contradiction was

addressed by professor Arnold Harberger, who proposed the basic needs approach as a way of understanding it. The reasoning behind this approach is that there is a positive externality for society when poor groups are able to consume goods or services deemed essential for a decent life. In other words, certain groups in society are willing to pay for a programme or project, without themselves being beneficiaries of it, so that this can provide essential goods or services to the most vulnerable groups. This approach, then, recognizes and seeks to set a monetary value on the altruism which many people share.

Unfortunately, this methodological approach is also difficult to apply in practice owing to lack of information. The willingness of the poor to pay for basic goods or services is not known, much less the value that non-poor population groups set on the consumption of the poor. The theoretical soundness of this method, however, and its great potential for application, mean that it is one whose use should be promoted in social assistance and protection sectors, with investment to create the necessary databases.

To increase the efficiency and effectiveness of social security and protection spending, it is vital for evaluation to be institutionalized as a key management instrument in these sectors. Most of the region's countries have recognized the importance of evaluation and created national systems of public investment. Almost invariably, however, evaluation activities are seen as just another formality that has to be complied with to obtain resource allocations. Valuation has not yet been positioned as an integral part of the public management process.

Within the public sectors of most of the countries, there is a need to re-engineer evaluation systems and procedures so that evaluation is positioned as part of a process of learning and continuously improving efficiency and effectiveness. Evaluation needs to be one of the standard administrative and management procedures of public institutions. These should be evaluating their programmes and projects and their management because they really believe that they will achieve better results and impacts in this way, and not just because funding bodies demand it.

(Original: Spanish)

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Social capital and participatory management in the Pátzcuaro basin

John Durston and Eduardo López

Setting out from a survey of the theoretical postulates of social capital, the present paper analyses the utility and scope of this approach for generating solutions that can reverse environmentally harmful processes by activating and empowering existing social capital in different communities and social groups. For this purpose, it takes the socio-environmental situation in the Lake Pátzcuaro basin as its empirical referent and explores the social and political developments now holding out the promise of a revival of social capital in the area, the processes whereby significant changes might be triggered as a result of social capital, and the potential and limitations of what an outside agency can achieve.

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I

Introduction

In Latin America, the relationship between the State and local communities is seriously impaired by the current weakness of civil society and by problems such as corruption (Peña and Solanes, 2003). According to Hooper (2001), notwithstanding these difficulties and people's lack of confidence in their governments, it is possible to create communities that are committed to their region's future through a combination of motivated leadership and face-to-face networking.

In this context, the theoretical debate about social capital (which encompasses a large number of issues relating to the interaction of the State and civil society) has become a new touchstone for the analysis of problems such as poverty, social participation and rural development, the idea being that practical solutions can be arrived at by empowering social capital in different groups or communities. In addition, we believe this can

be a useful approach to the analysis of integrated river basin management.

In view of the above, this paper uses the socio-environmental situation in the Lake Pátzcuaro basin as an empirical case study to consider two questions. What new basis can be found for a real environmental recovery in the area that enhances quality of life and economic growth without affecting the survival and reproduction of natural resources? And what can an outside agency do to strengthen participation by sectors that are currently in a subordinate position?

To answer these questions, we first review some relevant aspects of social capital theory. Second, we analyse the situation in the basin, the work of social actors and the prospects for constructing, reconstructing or enhancing social capital in the area. Third, we discuss some signs of improvement in the situation.

II

The social capital debate

Social capital is not a recipe, or even an agreed theoretical framework, but an ongoing cross-disciplinary, holistic debate¹ in which economists, sociologists, anthropologists and political scientists participate using the same language. As this debate has progressed, it has become necessary to re-evaluate some established ideas about social behaviour.

1. What is social capital, and how does it work?

There is a fairly broad consensus that people and groups are actors, agents or subjects who try to implement life plans and projects with different objectives and who mobilize assets to realize their strategies, including

intangible assets such as social capital (Bebbington, 2005). Adler-Lomnitz (2003 and 1998, respectively) has shown the importance of asset mobilization by deprived groups for the purposes of survival, and by the Chilean middle class for the purposes of favour-seeking; in both cases, the formation or existence of exchange networks is vital. The mechanisms she identifies unquestionably have a close connection with the different forms of social capital, and with the mobility strategies of social actors.

Of the many different views of social capital, the one we adopt here is the selective approach of ECLAC: social capital is the content of social relationships and social institutions, based on diffuse reciprocity and characterized by repeated cooperation practices that develop trust (Atria, Siles and others, 2003). In this definition, social capital is analytically separated from cultural capital, but it is understood that both are constantly modified in a permanent feedback process.

¹ Many recent documents are available on the World Bank website (www.worldbank.org) and, with a slightly different approach, the ECLAC site (www.eclac.org).

Social capital has been discussed in sociology for decades: Bourdieu and Coleman were already using the term in the 1980s, while Granovetter (1985) spoke of “strong ties and weak ties” and North (1990) developed a theory of institutions very similar in substance to what is now called social capital. The concept became fashionable in the development debate, particularly as regards the role of civil society in development, following the publication of a book (Putnam, 1993) which celebrated the role of social capital in the regionalization of public policy in certain areas of Italy.

In an article in *World Development*, Jonathan Fox asks how regional civil society thickens (Fox, 1996). In his analysis, he makes use of the social capital concept and devises another one, semi-clientelism. What interests him is to find out how small local organizations in Mexico scale up to form an active network of civic partnerships and social movements at the regional level. Our concern in the present work, however, has had to set out from a more elementary level: what can be done in regions such as Pátzcuaro where, despite a strong communitarian² and organizational tradition, efforts at “development” have come to little or been dissipated into programmes that represent “perks” for a system of authoritarian clientelism, turning many organizations into passive recipients of clientelist practices. The logical thing in cases like this, so common in Latin America, seems to be to reduce the scale of analysis and action rather than increasing it, in order to look at the smallest units of social capital: the links between individuals. This is a necessary first step even in a region as large and politicized as the Pátzcuaro basin, because it is interpersonal links, strengthened by principles of reciprocity, that are the driving force behind informal institutions and thence civic endeavour on a larger scale.

2. Elements, dynamics and types of social capital

Adler-Lomnitz (2003) and Mauss (1979), among other anthropologists, have shown that reciprocity, mutuality and trust are the basis of any sustained human interaction whose purpose is to initiate or strengthen social relationships. These attitudes imply an obligation to repay and be available for the other party (the partner) in future, without this requiring the keeping of accounts.

The basis for this is the “dyadic contract”, a concept developed by the anthropologist George Foster after several years spent studying the Pátzcuaro area (Foster, 1963). The proliferation of dyadic contracts generates ego-centred networks in which the intensity of exchange depends on four factors: (i) social distance, (ii) physical distance, (iii) economic distance and (iv) psychological distance (Adler-Lomnitz, 2003). In turn, participation in these networks produces “socio-emotional goods” (Robison, Siles and Schmidt, 2003) and strengthens the ties of social capital, which accumulates with use. Repeated activation of these links leads to collective learning about the potential for cooperation and to an increase in trust, which expands the capacity for collective endeavour.

Setting out from dyadic contracts, social actors recruit allies from a pool of relatives and neighbours. In this way, groups multiply to form working partnerships, communities and regional societies with social capital. With this transformation, the possessors of social capital are no longer just two individuals but are now collective actors, or society as a whole.

In recent years, the concept of social capital has gradually been reconstructed (box 1). It not only provides access to scarce goods but, as is now recognized, is itself a scarce good. Social capital is a weapon in a socio-economic environment where competition, rivalry, conflict, betrayal and deceit are also present.

Different types of social capital are now recognized. The best-known are termed bonding, bridging and linking social capital. This threefold categorization, developed for the World Bank by Woolcock (1998), has been criticized for identifying “levels” of social capital without recognizing the existence of inequalities of power. As Fine (2001) has noted, the World Bank overlooked Bourdieu (2001), who sees the use of social capital by national elites as primarily an instrument of subordination, extortion and exclusion. It is important to avoid the romantic fallacy that social capital is always good for society as a whole. Yet it is worth having.

Different typologies have been developed for social capital (Durstun, 2002; Arriagada, Miranda and Pávez, 2004), and these can be helpful for studying it empirically in specific situations. These typologies cannot be used to pigeonhole reality, however, and should be treated only as instruments of analysis to identify the different forms of social capital and analyse the potential for promoting it.

One advance in the typology of social capital has been the distinction between its horizontal and vertical

² We use this term to refer to residents’ strong attachment to their community and their sense of belonging to it.

Box 1
DEFINITIONS OF SOCIAL CAPITAL

Robert Putnam	Social capital refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions (Putnam, 1993).
James Coleman	It is not a single entity, but a variety of entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure (Coleman, 1990).
Pierre Bourdieu	Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group—which provides each of its members with the backing of the collectivity-owned capital, a “credential” which entitles them to credit, in the various senses of the word (Bourdieu, 1986).
Francis Fukuyama	“Social capital can be defined simply as a set of informal values or norms shared among members of a group that permits cooperation among them” (Fukuyama, 2000).
World Bank	Social capital refers to the norms and networks that enable collective action. Increasing evidence shows that social cohesion—social capital—is critical for poverty alleviation and sustainable human and economic development. (Available at http://www1.worldbank.org/prem/poverty/scapital/).
John Durston	“By social capital will be meant the content of certain social structures and relationships... attitudes of trust found in combination with reciprocal and cooperative behaviour” (Durston, 2002).

Source: prepared by the authors on the basis of the bibliography cited.

forms. Strictly speaking there is no such thing as purely horizontal relationships, since even in poor families and communities there are large differences in the degree of control exercised over the social relationships of their members. All social relationships are to some extent vertical and asymmetrical. The expression “horizontal social capital” is an abbreviated way of referring to links within a single social stratum, and the expression “vertical social capital” refers to links between strata, classes or castes, or between “patricians” and “plebeians”.

It was Foster (1963) once again who pointed out that an important form of the dyadic contract is the patron-client relationship, exemplified in the patron saint of the community, who grants favours and receives tribute. Indeed, the socio-religious offices of the brotherhoods that sponsor the festivals of the patron saints of neighbourhoods and communities in the Pátzcuaro region illustrate how the social capital approach demands a reappraisal of established theories (in this case, Foster’s and others’). The prevailing view among analysts is still that expenditure on festivals acts

as a mechanism for levelling wealth and social position by requiring a greater input of money and time from men who have initiated an accumulation process.

From the social capital point of view, it would seem instead that the time and money that go into these apparently unproductive activities act as investments in prestige and in diffuse reciprocity, which subsequently yield not only a social fabric of reciprocities that are strengthened by their activation, along with prestige for the brotherhood, but also individual economic benefits. The expenditure associated with these offices does not reduce those making them to the general level of poverty, as these critics argue. While the (economic) capital of these people is depleted during the year following their sponsorship of a civic religious event, in the long run their prestige and material circumstances are improved as a result of greater trust, the ability to mobilize labour and the opportunity to call on partners for assistance.

The networks of kinship activated to organize a festival are the main basis for the accumulation of material and social capital. These networks are now

also being activated to facilitate migration, and the saving carried out through them is reinvested by some communities in great religious festivals.³ We should not forget that in incurring these large expenses, returning emigrants are also actuated by the desire to honour profoundly religious promises which the brotherhoods sincerely regard as the saint's due.

Despite the pressures of capitalism, clientelism and emigration, these practices are elements of collective social capital that are still present in a "subsumed" form (Salazar, 2001) and that can be recovered from the social memory and activated in new group, community or inter-community projects. There is, then, a permanent interplay between individual and collective social capital. As well as pairs of partners, people tend to form groups with leaders, and these are the basis for enterprise and community. The structures and forms of cooperation of these social institutions are themselves resources for undertaking larger-scale ventures, i.e., they are forms of collective social capital.

Although the social capital debate has moved forward, Bebbington (2005) stresses the "silences" and the new areas of thinking about social capital: women, income and power. The following observations may be made about these:

- (i) *Social capital and women.* In Latin America, women are no longer deprived of a voice. On the contrary, they represent one of the few social movements active today. In the Pátzcuaro area, they have shown themselves able to operate in the gaps left by the emigration of men. As Mercedes González de la Rocha (2005) warns, however, women playing a helpful leadership role act as free labour for many State programmes that take advantage of their social capital even when they themselves are living in conditions of extreme poverty.
- (ii) *Social capital and income.* Putnam (1993) made it fashionable to concentrate on the "civility" of social capital. Recent studies like Berdegú's (2001), however, analyse the ways in which peasant social capital makes it easier to "cooperate to compete" in partnerships, yielding higher incomes.
- (iii) *Social capital and power.* Power is missing from the conservative view of social capital and from

that of the World Bank, where Bebbington worked. It also tends to be missing from the theory and practice of anti-poverty programmes, where the idea of class conflict is absent for political reasons.

3. Social capital mobility strategies

Those who have drawn upon the postulates of social capital theory and used this concept as an instrument for conducting community development or anti-poverty programmes argue that social capital presents two dimensions whereby groups or communities can attain their common objectives: (i) a group's specific capacity to mobilize particular resources, and (ii) the availability of networks of social relationships.

In both dimensions, mobilization capacity is expressed through two different concepts, leadership and empowerment, and accordingly two strategies (which are not mutually exclusive) have been identified for developing a group's social capital:

- (i) *Associativity strategy*, in which group actions are aimed at strengthening the system of networks in which group members participate so that their ties are enhanced by new relationships. Here, links with other groups are viewed as a cooperation and alliance strategy which, in the words of Atria (2003), "is based on the development of social capital such that a situation in which internal networks predominate gives way to one in which networks external to the group predominate".
- (ii) *Mobilization strategy*, which is based on the development of social capital such that a situation in which leadership in the group predominates gives way to one in which leadership for the group predominates. Atria (2003) treats this as an empowerment strategy, since the influence exerted within the group by some of its members is transformed into a type of organization that enables the group to act on its environment in respect of other groups.

These strategies are not detached from the bureaucratic machinery used to implement programmes; on the contrary, there are bureaucratic networks that make it easier or harder to obtain results, since "programmes are embedded in social relationships. In the language of social capital, this means that development agencies and public agents project bureaucratic networks on to the community level. These social relationships in turn influence their capabilities and way of acting" (Arriagada, Miranda and Pávez, 2004).

³ For example, documented information exists on migrant networks in Oaxaca and Michoacán. Important examples of these are the Frente Indígena Oaxaqueño Binacional (FIOB) and the Federación de Clubes Michoacanos in Illinois.

The orientation of each programme will also be influenced by the way it approaches the problems it is meant to resolve and the outlook of those designing and implementing it, since: "It is the day-to-day attitudes and practices of these agents that will determine whether a public programme succeeds in creating ties of trust between government and citizen; and these agents' social networks are crucial in determining how the benefits of these programmes are spread locally. Accordingly, there needs to be quite a nuanced understanding of the way linking social capital (that which links citizens to external agents) is created and maintained, and thus of who actually does or does not have this kind of social capital" (Arriagada, Miranda and Pávez, 2004).

In view of all the above, it is safe to say that the social capital approach contains a number of ideas that have useful and important implications for the way integrated water management has traditionally been approached:

- It provides an understanding of social organization that goes beyond formal canons, i.e., simply as aggregations of individuals whose function is to support government programmes.
- There is no need to establish a special agency to participate in measures for reclaiming a geographical zone (such as a drainage basin or region), since participation and organization will be guided by the convergence of interests and mutual benefits.
- "Investment" in social capital, therefore, can generate much greater results than traditional social participation, which is why "changes in the structure of social relationships can have significant effects on the distribution of power and on a range of other resources" (Bebbington, 2005).
- The "structure of these social relationships affects the functioning of both public institutions and economic institutions (markets, etc.), which means that changes in social relationships can lead to changes in the working of these institutions" (Bebbington, 2005).

4. What can outside agencies do to increase grass-roots social capital for participatory planning purposes?

Given all that has been said, the time has come to ask whether social capital is a sufficient condition for local or community development. The answer is no, for it must be remembered that while relationships are

important for local development, so is physical and financial capital (Trigilia, 2003). The question, then, is what outside agencies can do to increase social capital and orient it towards a form of participation that can help to reverse environmental damage, as in the present case.

The ideal thing for stimulating the accumulation of social capital would be a basin authority with regulations, power, resources and the ability to provide benefits. There is no such formal authority in Pátzcuaro, however, and efforts to repair damaged social capital cannot be put off until one is established. Indeed, such efforts may be a first step towards creating social demand for the legal establishment of a basin management agency.

It is illusory to think that politicization can be avoided. The strategy proposed by ECLAC⁴ is to stimulate rapid transitions in the socio-political system of the territory, viewed as a complex adaptive system emerging from the combined evolution of the strategies of all actors, rather like an ecosystem. To achieve this, an outside agency needs to carry out a number of strategic actions:

- Scale down to scale up: it is essential for promoters to remain in place when they are in a position to provide immediate benefits in return for repeated cooperative efforts to regenerate trust that has been damaged at the microlocal level; this is the starting point for efforts to encourage the reappearance of autonomous grass-roots social actors in the municipal and State system.
- Support emerging grass-roots actors who might be co-opted or eliminated by authoritarian clientelist actors.
- Intervene in the municipal territorial system. Community organization and the agency promoting collective social capital are two new actors in the system whose sudden appearance results in co-evolving strategies and a systemic shock. They secure allies, among which, ideally, are the municipal president and reformist factions within established parties.

Contrary to Putnam's (1993) view of a dual equilibrium model, societies do not tend to stabilize at extreme (high or low) levels of social capital, but can rapidly change course as a result of these complex dynamics.

⁴ See the ECLAC website (www.eclac.org) for numerous documents on the subject.

III

The Pátzcuaro basin and social capital: environmental problems

The Lake Pátzcuaro basin has been the subject of extensive studies, analyses, projects, public works and programmes of various kinds, so it would be pointless to attempt a new diagnosis to add to what has already been written. In this section, therefore, we shall confine ourselves to touching on the main resources of the basin and the environmental problems affecting it. Further on, setting out from the theoretical parameters mentioned, we shall try to clarify what an outside agency such as the Mexican Institute of Water Technology (IMTA) can do to foster social capital in the area.

The basin studied includes part of the municipalities around the lake of the same name, namely Pátzcuaro, Quiroga, Erongarícuaro and Tzintzuntzan. It is estimated to contain 86 communities (77 of them rural and nine urban), with a total population of 118,733 (INEGI, 2000).

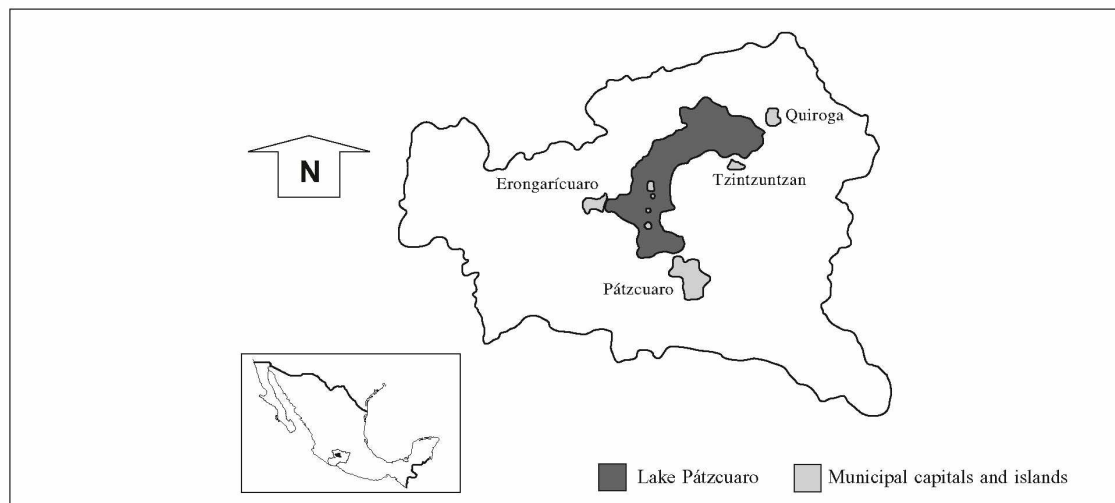
Because of its physical characteristics, the basin combines different environments in which various production activities are carried out, particularly fishing, forestry and agriculture. Over the last 25 years, deforestation, urbanization, expansion of the agricultural frontier, the declining fertility of cultivated land, erosion, sedimentation of the lake, water weeds, diminishing fish stocks and pollution of the lake by discharges of waste products have caused disturbances and instability in the basin, resulting in a lower quality of life for its inhabitants and an increase in environmental damage.

The following are some of the main environmental problems of the basin:⁵

- (i) *Soil erosion.* This is caused by different factors such as slash-and-burn agriculture, extensive cattle rearing in wooded areas and land use changes

MAP 1

Mexico: Lake Pátzcuaro basin



Source: prepared by the authors.

⁵ Unless otherwise stated, the information on the problems of the Lake Pátzcuaro basin summarized in the five points that follow is

taken from the Atlas Cibernético de Pátzcuaro, which can be found at <http://www.centrogeo.org.mx/CiberAtlas/patzcuaro/>.

which, occurring on steep slopes with very light-textured soils affected by heavy rainfall and constant forest fires, have been causing rapid soil loss.

- (ii) *Deforestation.* Some 32% of the basin's land area is wooded, and while not all of this is timber-yielding, it can be used for numerous purposes such as resin extraction, craftwork, firewood for household use, pottery firing, and the production of standing timber and conversion of this into wood for commercial purposes in the area's sawmills. The wooded area is estimated to have declined by almost half between 1963 and 1991 because of clandestine logging, and three out of every four cubic metres of wood going into the region's sawmills are believed to be clandestine.
- (iii) *Overuse of fertilizers in agricultural areas.* About 25% of the basin's land area is used for agriculture. Fertilizer use is now prevalent, although it has not led to any significant increase in land productivity. It is estimated that between 5,000 and 10,000 tons of chemical fertilizers are applied in the basin annually. Leaching of these fertilizers into the lake not only damages the soil, but also contributes to eutrophication through overfertilization.

- (iv) *Overfishing.* Non-industrial fishing is carried out on the lake, characterized by a limited scale of operations, rudimentary fishing techniques, a large number of fishermen, and low capitalization. Fishing is carried out by 24 lakeside and island communities in the municipalities around the lake, leading to overfishing of freshwater species. The Secretariat of the Environment and Natural Resources (SEMARNAT) estimates that there are 2,000 fishermen, and that 2,300 tons of fish were caught in 1989; in 1996, production was down to 634 tons (Herrera, 1999).
- (v) *Sewage and sediment.* The rapid growth of towns has increased the production of sewage. In the Pátzcuaro basin there are 23 sewage outlets at various places, discharging about 222 litres a second. It is calculated, though, that 145 litres a second enter the lake because the sewage is diluted in the soil before reaching the shore owing to the lack of sewers, the agricultural use made of it before it is discharged, or the serious shortcomings of the four treatment plants in the area.⁶

IV

Indications of reviving social capital and synergy with the state government in the Pátzcuaro basin

Despite the current situation in the Pátzcuaro basin, a number of recent developments may indicate that the social capital of subordinated groups is re-emerging, in synergy with sections of the state of Michoacán, creating the conditions for environmental recovery in the basin. These indications will now be listed.

1. A state government with solid legitimacy

For the first time, the government of Michoacán is in the hands of the left-wing Partido de la Revolución Democrática or Democratic Revolution Party (PRD). Its candidate, Lázaro Cárdenas Batel, became governor of Michoacán after a sweeping electoral victory and has a legitimacy that no other party would have been likely to attain.

The situation has created an opportunity for peasant communities, "organized civil society" and many social sectors to implement inclusive projects that benefit the most vulnerable. This is suggested, at any rate, by the policy of the present government, since its main initiatives so far have concentrated on issues essential to local development such as health-care, education, the environment and agricultural development.

The state government sets out from the view that rebuilding the social fabric is an essential precondition for social and economic development. "Rebuilding

⁶ Information supplied by the biologist Armando Rivas in an interview on the clean-up of Lake Pátzcuaro.

and strengthening the social fabric as a first formula of action to deal with need: properly designed and implemented, it is this approach that will enable individual members of society to take full control of their own social, political, cultural and productive lives in the medium and long term. There is no room here for clientelism or corporate control, because people who develop their own capabilities as part of the community cannot easily (or ever) be turned into a mere 'mass' to be manipulated by those with power" (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

In this policy, the strategy of the state government is to add another variable (as a resource allocation criterion) to the variable termed "greater poverty": "people's greater proclivity or potential for self-organization and organizational development, since the aim has to be to enhance the regenerative potential of the social fabric as a formula or lever for subsequent development processes. From this perspective, poor areas or regions that have greater cultural, associative and organizational density (using the concept of organization in its broadest sense) should receive critical amounts of social investment, meaning amounts: (a) that are quantitatively significant in relation to the basic purpose of the investment; (b) that have the characteristics of multi-purpose social investments with ripple effects so that their benefits spread as widely as intended; (c) that have a major organizational and management capacity-building and development component for the social actors concerned (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

2. The creation of the Intermunicipal Committee

The Intermunicipal Committee for the Pátzcuaro basin was set up in 2000 by the municipal presidents of Pátzcuaro, Erongaricuaró, Quiroga and Tzintzuntzan to improve the coordination of their work and thus avoid the dispersion of resources (*Plan estatal de desarrollo Michoacán, 2003-2008*, n/d).

The current state government decided to revive the Intermunicipal Committee in order to support community initiatives and be able to plan all government measures. To this end, the Interinstitutional Relations Coordinating Committee and the Secretariat of Development Planning, with support from Servicios Alternativos para la Educación y el Desarrollo A.C. (SAED), a non-profit organization supporting education and sustainable development, reviewed the situation of the municipalities and drew up a Regional Development

Programme to improve environmental conservation and the development of communities in the region.⁷

The working methodology used by SAED was important for ascertaining the situation in the area and encouraging community involvement. About 100 community meetings and 92 assemblies were held, and committees of representatives were formed in places that in many cases had previously been overlooked in government planning. The work done by all these bodies was validated by themselves and translated into lines of action in the Regional Programme.

A group of community promoters was formed as a result of this work, the thinking being that involving people from the communities themselves to represent them was the best way of ensuring that programmes were understood and implemented. The promoters worked to keep the network of grass-roots participants alive. The idea was that the programme should be funded and launched once it was known who the new mayors would be (in November 2004), so that federal and state institutions would ensure the continuity of the plan.

3. Financial support from the Gonzalo Río Arronte Foundation and participation by the Mexican Institute of Water Technology

One feature of the situation which has the potential to reverse the deterioration of the basin and foster self-management processes for environmentally sound development is the presence of IMTA and the Gonzalo Río Arronte Foundation.

In February 2003, the state government of Michoacán, the municipal governments represented on the Intermunicipal Committee, the Gonzalo Río Arronte Foundation and IMTA signed a general cooperation agreement for the implementation of different environmental recovery measures in the Pátzcuaro basin.

What is new about this agreement is that it is designed to channel institutional measures to improve the environment in the basin by solving water-related issues. Given current conditions in the area, particularly the poor quality of the water in Lake Pátzcuaro, this resource has become critically important and is a focus of attention for the different social actors.

⁷ See <http://www.laneta.apc.org/saed.htm>.

In this context, the work done earlier by the state government with support from SAED, the revival of the Intermunicipal Committee, the financial support from the Gonzalo Río Arronte Foundation and the presence of IMTA all came together to create an environment favourable to the development of social capital in different fields, thus helping to reverse the tendency towards deterioration in the basin.

4. Non-governmental organizations

Non-governmental organizations (NGOs) have become important actors. They have been working for a number of years to save natural resources in the area. The ties they have forged with one another and with basin communities have enabled them to create a network of social relationships around which bridging and linking alliances have formed, and these are unquestionably a force for the restoration and enhancement of social capital in the basin.

(a) *Centro de Estudios Sociales y Ecológicos A.C. (CESE)*

The roots of CESE (Centre for Social and Ecological Studies) are intertwined with the regional movement that arose in 1980-1981 to oppose the establishment of a centre for research into nuclear reactors in the indigenous community of Santa Fe de la Laguna. The institutional mission of CESE is to work for a sustainable regional development process by (i) strengthening strategic social agents, (ii) designing and implementing a strategy to give civil society in the region, and particularly the poorer sectors, a greater say in public policymaking, (iii) designing an environmental education programme, and (iv) carrying out technical and social studies and research to help find specific answers to regional problems. In recent years, particular attention has been paid to environmental education measures as part of an environmental education strategy for the Pátzcuaro basin being promoted by CESE (COEEO, 2002).

(b) *Organización Ribereña contra la Contaminación del Lago de Pátzcuaro (ORCA)*

ORCA (Coastal Organization against the Pollution of Lake Pátzcuaro) arose out of the movement started by CESE in 1980-1981 in Santa Fe de la Laguna; its initial objective was to advise and inform local peasants about the disadvantages of building nuclear reactors. ORCA has now turned to supporting rural self-management projects, training, participatory

workshops, the building of Lorena stoves (mud stoves for cooking and heating which economize on wood), and advice for fishermen. Its members are well-known in the basin and their views have great influence.

(c) *Grupo Interdisciplinario de Tecnología Rural Apropriada (GIRA)*

GIRA (Interdisciplinary Group for Appropriate Rural Technology) was created in 1985. Its main objectives are to research, develop and disseminate appropriate technology so that the natural resources of the countryside can be used in an efficient and socially and ecologically harmonious way; to develop green production systems based on the economical and environmentally sustainable use of local natural resources; to act as an information, demonstration, training and advisory centre; and to share, coordinate and disseminate experiences with like-minded institutions, groups and individuals. Its main sphere of action is the Purhépecha region, although it is also interested in national and international cooperation. It has researchers and professionals in the fields of agronomy, biology, ecology, physics and graphic design.

(d) *Servicios Alternativos para la Educación y el Desarrollo (SAED)*

SAED (Alternative Education and Development Services) is a civic partnership whose main functions include conducting environment-related technical and social research. It carries out education and social advancement work in the Meseta Purhépecha. Rather than acting like a traditional NGO, this partnership has provided consultancy services to a variety of government bodies, both in Michoacán and in other states such as Guanajuato.

5. Small rural groupings led by women

The emergence and growing strength of female social capital in rural communities is an interesting phenomenon. Local organizations led by women have recently appeared in the area and initiated measures to enhance the capabilities of their members. Drawing strength from the network of local relationships, they are acquiring a significant presence.

(a) *Centro de Apoyo al Desarrollo de la Mujer Purhépecha (UARHI)*

UARHI (Support Centre for the Development of Purhépecha Women) is a non-governmental

organization that works for the all-round development of women in Purhépecha. Its headquarters are in the community of Santa Fe de la Laguna and it is run by a woman, Guadalupe Hernández Dimas. Its aim is to participate in the social and productive development of women in Purhépecha and raise their awareness of the need to claim and make use of opportunities for self-development by promoting community participation and cooperation.⁸

UARHI activities include training in craft skills to improve product quality; the creation and development of production units to raise productivity and generate earnings for families; and the publicization of human rights so that women in Purhépecha are aware of their opportunities for participation and self-expression.

The head of the Centre has succeeded in forging links beyond the community level, so that she now holds a position in the state Social Development Secretariat. Her government position and her experience have enabled her to greatly expand training, women's leadership and institution-building activities and production projects.

(b) *Juchari Uinapikua*

Another important example is the group of 11 rural women making up the *Juchari Uinapikua* (Our Strength) organization. This organization was created in September 2001 as a result of different workshops on local problems and the role of women in the basin area. Its members carry out community work in five settlements in the basin: Cucuchuchu, Nocutzepo, Santa Ana Chapitiro, Tzentzenguaro and San Jerónimo Purenchechuaro.

The goal of this organization is to improve the quality of life of the region's women. To this end, it has been working to improve the group's handicraft production processes, find a better market and obtain higher prices for its products, so as to secure a fairer return on its members' labour.

An illustrative example is that of Herminia Domingo from the community of Cucuchuchu, who has spent several months organizing women in her community to make handicrafts and obtain better prices in the market. She has also helped women to become aware of their rights within the family and their scope for personal development.

Another interesting case is that of Odilia Molina, a woman from the community of Nocutzepo who started a public library there on her own initiative some years ago. Her efforts have been rewarded by the support of the community and she has managed to make progress both within it and further afield. As a result of her work she has forged links with young professionals from her community, including two lawyers who provide free advice and two teachers who are promoting cultural exchanges between communities. This group has emerged from the community itself and, in response to its needs, has been working on an environmental platform that includes drinking water, landfill waste disposal and reforestation. Implementation of this platform is going very slowly, however, since it has not been adopted by political parties or governmental institutions.⁹

(c) *Centro de Atención y Desarrollo Cultural Colibrí*

An example of the potential of social capital is provided by Tania Calderón, a young professional from the municipality of Tzintzuntzan. Several years ago, she began working voluntarily to teach reading and writing to young people who for one reason or another had not been able to carry out or complete their education in the area.

Tania began working as a volunteer within the municipality. Over time, people became interested and involved themselves with her educational project, which expanded to include a school for parents, educational videos, sex education and vocational information, among other aspects.

The results of her work impressed the municipal president of Tzintzuntzan, leading to an agreement with the state government. In addition to the adult literacy programme, the settlement now has the Centro de Atención y Desarrollo Cultural Colibrí (Colibrí Cultural Assistance and Development Centre).

Tania's efforts have had a great impact, largely because of her charisma and her ability to connect both with young people in her community and with state officials.

⁸ Information available at http://www.geocities.com/pagina_purepecha2002/julio02.htm.

⁹ Although Odilia Molina stood in the prd primary elections as a candidate for councillor in the municipality of Erongaricuaro and won, she chose to withdraw because of party pressures.

V

From promise to results.

Some conclusions

The communities of the Pátzcuaro basin and the social actors working there have a significant presence. They have managed to establish not just a large network of relationships but also various forms of social capital, some of which are difficult to define owing to the complexity of the area's social fabric.

It would not be wrong to say that the social capital of the area often reacts lethargically to the onslaught of government (both elections and programmes), only surfacing in response to some event that might affect its communities, for good or ill. Otherwise it only operates at a microsocial level, i.e., when there are festivities, harvests, misfortunes and actions that have an immediate impact on social actors.

This being so, the promise of social capital described above is no guarantee of results. For these to be reliably achieved, the first requirement is to modify the institutional system so that substantial changes benefiting the region can be brought about through the network of social actors in the basin. These modifications would have to affect at least three areas immediately:

- (i) *The state government*: even though a basic premise of its programmes is the restoration of the social fabric and the participation of society to achieve their goals, they are still implemented under the old paternalistic system; consequently, they are disconnected from state politics and are unable to draw in the local capabilities of communities, non-governmental organizations or other governmental sectors. As a result, government efforts to restore the social fabric (which could be the element that reconstitutes social capital) are not progressing, and this limits the social impact of programmes. To re-establish the social fabric, it is indispensable to identify and foster networks of bureaucratic social capital and restructure the way programmes are implemented.
- (ii) *The Mexican Institute of Water Technology*: for all its proven technical capacity, IMTA has not established an appropriate relationship with social actors in the area, particularly non-governmental organizations. It has been openly spurned by

the latter for having ignored the accumulated environmental knowledge of communities and their considered views on the successes and failures that have occurred there over the last 20 years. Indeed, there is a perception that some of the work proposed by IMTA has already been tried out in the area.¹⁰ The rigidity and verticality of IMTA projects have also been called into question, the view being that they should be flexible enough to adapt to the real needs of communities (López Ramírez and Martínez Ruiz, 2003). An urgent change of strategy is therefore needed if IMTA is to truly engage with local actors and build on their experience of working in the area.

- (iii) *Non-governmental organizations*: these have played an important role in the basin, but at the same time they have become a school for activists from different communities, and this has made community leaders strongly dependent on NGOs. In our opinion, this reduces the potential for truly local initiatives to emerge since, just as communities have been the political clients of parties or the authorities on other occasions, they have now become an important justification for NGOs vis-à-vis their financial backers: the same ties of dependency that were discussed earlier have meant that, after a time, many NGOs cease to be agents of human capital formation and become *gestores* or intermediaries for communities or their projects. Thus, "...the role taken on by groups or leaders of organizations as they involve themselves not just in this relationship, but in the whole disputed terrain of the multiform and complex relationships between local government and citizens, is that of *gestores*. In this way, the intermediary becomes a key social and

¹⁰ A very illustrative example is the IMTA proposal to construct Lorena stoves, when GIRA (the Interdisciplinary Group for Appropriate Rural Technology) has been promoting, constructing and evaluating stoves produced in the area for the last 15 years. Another instance is the proposal for courses in water culture in a basin where people have been overwhelmed with courses, workshops and meetings.

political actor interceding in the relationships between citizens and local government in order to convey demands from the former to the latter and, at the same time, to control the response to these demands" (Treviño, 1999). There is a need to break this dependency and foster local initiatives through organizational networks so that development projects can be implemented.

In this context, local efforts seem to be acquiring a greater and greater presence as opportunities for community self-management. Under these circumstances, which have arisen against a background of increasingly vulnerable and struggling local economies and of migratory processes in which women have come to play a major role formerly reserved for men, it appears that group, neighbourhood and community cooperation and solidarity mechanisms have opened up a gap through which a less uncertain future for communities can be glimpsed.

It is very interesting to note that those heading these organizational efforts in the communities considered have followed very similar paths, both in the way they relate within their communities and in their ties beyond them and the links their organizations have forged with governmental and non-governmental agencies to secure support or financing for their projects.¹¹

It makes sense, then, to try to achieve a detailed analysis and a better understanding of how the different types of social capital in the basin communities interact, ascertain their internal and external links, identify their social networks and encourage their growth, so that social capital can be fostered and incorporated into the general processes of government and social participation. This will make it possible to pursue integrated basin management via the prompt formation of community and group structures, resulting in high levels of trust that facilitate engagement and action by all those involved, guided by a rigorous theory of collaborative decision-making (Hooper, 2000).

To achieve this, though, it is essential for there to be a working strategy that channels efforts in ways that really benefit the basin. Our view is that, for a

variety of reasons, IMTA is well-placed to activate the potential of social capital:

- IMTA has scientific and technical prestige and is detached from the local dynamics of authoritarian clientelism, political cronyism and government connivance, which means it can act with a degree of impartiality and objectivity to address the environmental problems that need solving.
- The financial support provided to IMTA by the Gonzalo Río Arronte Foundation means it has the chance to set the pace of future work and thus to establish participation mechanisms. We repeat, however, that the organization needs to restructure the mechanisms through which it works with communities.
- Likewise, there is a need to establish rules for a new institutional structure so that all government actions are transversal and the projects implemented have a greater impact on the basin.

Thus, no environmental recovery programme can be undertaken in the Pátzcuaro basin without reference to the social actors living there, and local communities in particular. Accordingly, there can be no guarantee that such a programme will be successful and the environment of the area gradually restored unless the social relationships existing in the communities to be acted upon are treated as valid, since even when organizational efforts exist there it will not be possible to make substantial progress with the measures undertaken if the programme does not recognize the specific dynamics of communities and their self-management processes, or if the whole focus is on dealing with or resolving particular issues while existing networks and positive leadership situations in the region are ignored.

"The key in all this is the extent to which social capital can be scaled up from the microsocial to the macrosocial level. In other words, social capital is a resource possessed not just by individuals in their personal networks, but also by groups and communities, in a different form: that of institutions and complex systems. Economic development depends on the ability to make the transition from a community life based on ties of kinship to societies organized by formal institutions. This means that social capital is present in differing degrees and forms in the institutions of the State, the market and civil society" (Arriagada, Miranda and Páez, 2004).

A key element in gauging the existing social capital of target groups is the ability of programmes to recognize and respect the track record of communities

¹¹ Of the leaders mentioned, Guadalupe, Herminia and Tania hold government positions that greatly facilitate their understanding of bureaucratic processes and the work of engaging their communities with government programmes. Odilia, meanwhile, works in GIRA, one of the highest-profile NGOs in the area, and this has enabled her, as she herself puts it, to get a training for the benefit of her community.

in their development initiatives, and then to work from there. To this end, analysis of social capital networks at the local level needs to be capable of discerning between groups or individuals who for whatever reason are forced to cooperate, and those who participate voluntarily on their own initiative and in their own interests.

Consequently, programmes carried out for the benefit of society (such as environmental recovery, community development or anti-poverty programmes)

can create, revive or foster social capital only if they specifically set out to do so. If agents of development (non-governmental organizations, governments and outside agencies) really want to work for the benefit of communities and their resources, they will have to turn their attention to new ways of working with society. Otherwise, we will continue to make development a virtual world.

(Original: Spanish)

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Associational life and local development in two Nicaraguan villages

Nadia Molenaers

Civil society organizations are often seen as repositories of social capital, and their existence is taken as evidence that the dilemma of collective action has been resolved and that there is a willingness to trust, share and cooperate. Thus, attitudes and structures are seen as two complementary elements in the social capital debate. This article suggests that attitudes and structures are not always matched. Research carried out in two Nicaraguan villages shows that there is a major contradiction between the structure of associational living and the structure of social capital at the local level. Rather than being agents of social transformation, organizations tend to institutionalize local divides in the form of social, political or economic segregation.

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I

The role of civil society, social capital and development policies

Your corn is ripe today; mine will be so tomorrow. 'Tis profitable for us both, that I should labour with you today, and that you should aid me tomorrow. I have no kindness for you, and know you have as little for me. I will not, therefore, take any pains upon your account; and should I labour with you upon my own account, in expectation of a return, I know I should be disappointed, and that I should in vain depend upon your gratitude. Here then I leave you to labour alone; you treat me in the same manner. The seasons change; and both of us lose our harvests for want of mutual confidence and security.

David Hume (2000)

Hume's parable illustrates a fundamental dilemma of collective action: to cooperate or not to cooperate. Rationally speaking, everyone might be better off by cooperating, but a lack of trust means that we fail to take advantage of the benefits and opportunities of coordination and cooperation.

One solution to this dilemma is found in the concept of social capital, understood as dense, horizontal networks of civic engagement and widely shared norms of trust and reciprocity. Social capital seems to be the driving force behind democratic practices and economic prosperity (Putnam, 1993; Harrison and Huntington, 2000; Fukuyama, 1995). In stable democracies with high levels of socio-economic development, associational life arises chiefly as the historical and almost natural result of the bottom-up accumulation of horizontal cooperation experiences among citizens. Willingness to trust, share and cooperate is closely linked to certain structures (such as organizations and associational membership) whose very existence demonstrates that the collective action dilemma has indeed been resolved. Attitudes and structures are therefore the two main elements in the social capital debate. Accordingly, the existence of a large number of organizations and high levels of associational membership tends to go hand in hand with high levels of trust (Putnam, 1993 and 2000).

Development actors have recognized the role that social capital and a strong, vibrant civil society can

potentially play in development processes¹ (Ostrom, 2001). Since the 1990s, international development actors like the World Bank and the United Nations Development Programme (UNDP), along with the European Union (EU) and national governments in the West, have clearly set out to strengthen civil society in developing countries (UNDP, 1993, p. 8; World Bank, 1994, p. i; Edwards and Foley, 1998, p. 38; Fowler, 2000, p. vii). The hope is that the civil society-based approach will prevail over development models based exclusively on the State or the market (Pieterse, 1996; Hulme and Edwards, 1997, pp. 4 and 5; Brett, 1996, pp. 5 and 6). And certainly, civil society organizations have become an important tool for increasing the effectiveness of anti-poverty policies and promoting social change, since their participatory approach to collective action has the potential to empower poor and vulnerable groups.

Recognition of the significant role of civil society has had some major repercussions. A significant proportion of development financing applications now come from civil society organizations. Donors' enthusiastic willingness to give priority to civil society has created opportunities for organizations to establish

¹ See, for instance, the World Bank website: <http://www.worldbank.org/poverty/scapital>.

themselves, grow, professionalize and extend their area of influence. Nonetheless, the large volume of organizations and associational membership that now exists might say more about strategic choices, financing opportunities and “associational entrepreneurship” than about any upsurge in cooperativeness in any given population. This view is supported by researchers analysing the extremely low levels of trust and the predominance of clientelism in developing countries. There is some scientific research to show that, on average, just 16% of Latin Americans trust their fellow citizens, while in Europe the proportion is 60% (Latinobarómetro, 2005, p. 32). Transparency International states that countries like Nicaragua have entered a situation of hypercorruption, equalled only in degree by the culture of tolerance towards those who fail to live up to their obligations.² Throughout the region, the shared inheritance of mistrust is reflected in social interaction patterns. Latin America seems to be characterized and dominated by verticalism and clientelism, and what this basically reveals are fragmentation and an inability to achieve horizontal cooperation (Gambetta, 1988; Latinobarómetro, 2006). All this appears to indicate that, where social capital is concerned, in situations of low socio-economic development there may be a separation or even contradiction between attitudes (trust and horizontal cooperation) and structures (associational vitality). At the political level, this could mean that the civil society-based approach may not necessarily be tied to the construction, generation and implementation of trust, horizontal cooperation and participation.

The main aim of this article is therefore to investigate whether, in a Third World setting, any relationship can be found between associational membership and the “attitudinal” components of social capital, as partly suggested by the literature.

To address the subject, the present article will attempt to answer a number of questions. Is associational life tied to attitudes of horizontal cooperation and trust, and does such horizontal cooperation exist? Or is it

tied mainly to vertical, clientelist access? In other words, what are associations promoting? Do they play an effective role as bringers of change, or do they merely posture against vertical, clientelist networks? As bringers of social change, they are expected to work against the logic of such networks, which keep the poor and vulnerable in positions of dependency. In an ideal development situation, aid channelled through organizations should foster and stimulate cooperative, dependable, inclusive and horizontal patterns of social interaction. Added to this, special attention should be paid to the poor and vulnerable, given the need to do something about their position of exclusion. It is therefore imperative to analyse whether organizations are reaching poor groups effectively.

The data presented here were collected in 1999 as part of the author’s own research in two Nicaraguan peasant villages: El Toro, with 103 families, and La Danta, with 74. In each village, 65 families were interviewed. First, organizations, membership structures and recruitment mechanisms were examined. Then, information was collected on informal horizontal cooperation mechanisms. The information gathered shows that organizations are heavily dependent upon local leaders and their informal networks, which suggests that they are probably reaffirming the social interaction patterns of the two villages rather than changing them. Their effectiveness in reaching the poor is also very largely determined by local networks. The data show that if these local networks already include poor groups, then the organizations reach them; if not, vulnerable groups remain beyond their field of action and development interventions.

It should be pointed out that the data collected do not serve to analyse the direction of causality, so the ambitions of this article are modest. A debate about causality would be useful if a significant link were found between organizations, trust and reciprocity. In the absence of any significant relationship, there is little to be said about causality.

² See <http://www.ibw.com.ni/~ien/c5-7.htm>.

II

Overview of associational life in the two villages

El Toro and La Danta are isolated peasant villages in the poorest area of the Chinandega region of Nicaragua, very near the border with Honduras. The two villages are very different. El Toro is one of the agrarian reform villages, as they are known in Nicaragua. These villages were originally organized as production cooperatives and received many benefits during the Sandinista regime in the 1980s. Following the electoral defeat of the regime in 1990, the cooperatives' assets (land and livestock) were privatized and divided up equitably among the inhabitants of the village concerned. In addition, inhabitants were often helped by national and international development agencies and non-governmental organizations (NGOs). The *comarca* (administrative district) of El Toro therefore already had high levels of socio-economic equality in the early 1990s, and its infrastructure is much more advanced than that of La Danta. El Toro has public wells, electricity, and more and better education and health infrastructure, while houses are made of concrete. La Danta, on the other hand, was not an agrarian reform *comarca*. Furthermore, assistance from the Sandinista government and NGOs was limited, if not completely lacking.³ As a result, the village lacks many basic amenities, it has no electricity or public wells, houses are made of mud and the school and health centre are in poor condition.

Having said that, the two villages have much in common. In both El Toro and La Danta, over 75% of the population depend on agriculture, while at the time the research was conducted about 40% of the farmers in both *comarcas* were landless, which means that both

villages have similar numbers of poor people. It is important to touch upon socio-economic developments in El Toro, which has moved from a fairly egalitarian situation (thanks to agrarian reform) to a more unequal one.⁴ Where socio-economic classification is concerned, the landless were categorized as the poorest group, farmers owning less than 50 hectares as the intermediate group and farmers owning 50 hectares or more as the elite group.⁵ In terms of political preference, participants were classified as Sandinistas (left-wing opposition), liberals (right-wing party currently in power) or no preference. As regards associational structure, both villages have a comparable number of organizations with similar characteristics. Each village has three special interest groups (unions, peasants' organizations), nine NGOs, four governmental institutions and a village committee (table 1).

All the organizations and institutions present in the two villages share the same participatory development perspective. They also have strong links with the outside world, as all of them have ties to the municipal authorities or the central government, national unions, regional development offices and national and international NGOs. The existence of these links is vital to all actors involved, as they can use them to channel tangible and intangible resources. The similarities between these organizations (participatory approach, developmental discourse and horizontal cooperation)

³ Interviews with project managers, government officials and NGO coordinators suggest that agrarian reform villages generally seem to find it more difficult to adopt cooperative, trusting behaviour than traditional villages. Those interviewed stated that the strong presence of the Sandinista party and national and international solidarity organizations in these villages had consolidated a "culture of non-reciprocity". They argued that the incessant inflow of benefits with nothing expected in return was partly responsible for the crisis in local relationships of reciprocity and cooperation. These issues are obviously only part of the picture and need to be researched rather than just assumed.

⁴ El Toro has gone in the space of a decade from a more or less egalitarian landowning structure to a quite unequal socio-economic situation. For reasons of space, this article will not examine the mechanisms involved in this development in any detail; suffice to say that lack of trust has helped to bring it about. This lack of trust means that "favours" and services are paid for in cash. Inhabitants therefore have to pay for access to certain services (land, oxen, information), and the poor in particular get further and further into debt and eventually have to sell livestock, land and other goods to clear their arrears. Some peasants have thus gradually descended into greater poverty. Again, agrarian reform, the Sandinista party and international solidarity all contributed to a culture of non-reciprocity during the 1980s.

⁵ Classification of the Nicaraguan Ministry of Agriculture.

TABLE 1

Nicaragua (two villages): Structure and membership of organizations

<i>Organizations</i>	<i>El Toro</i>	<i>La Danta</i>
Interest groups	2	3
Non-governmental organizations (NGOs)	7	6
Governmental institutions promoting project development	3	2
Village committee	1	1
Total number of organizations	13	12
<i>Membership</i>		
Families in the village with at least one membership (%)	44	60
Families in the village with more than one membership (%)	25	32
Average memberships per family	0.8	1.2
Local leaders participating (four leaders per village)	All	All
<i>Membership by political preference and socio-economic status of village families</i>		
Proportion of village families that are members, by political preference (%)		
Among Sandinista families	79	93
Among liberal families	31	36
Among those with no political preference	27	58
Proportion of families that are members, by socio-economic status (%)		
Elite (50 hectares or more of land)	57	80
Landowning peasants (less than 50 hectares)	84	68
Landless peasants	20	64
<i>Average number of memberships by political preference</i>		
All families	0.8	1.2
Sandinista families	1.7	2.2
Liberal families	0.3	0.5

Source: Prepared by the author.

contrast strongly with the theoretical divide between the State and civil society. Both governmental and non-governmental actors operate on the same terrain, organize the same kind of interventions and adopt similar approaches in the two villages. The similarities between the organizations are no doubt strengthened by the fact that they are all dependent upon donors and governed by donor guidelines.

To obtain a clearer picture of the characteristics of these organizations' members in the two villages, the families were divided up according to their political preferences and socio-economic level (see table 1).⁶

The large number of organizations and extremely high (and in some cases multiple) membership costs confirm that the inhabitants of both villages are quite well organized. Furthermore, all local leaders are involved in associational activities. The four local leaders in each village are Sandinistas and act as coordinators for the associations in their respective villages. Each leader coordinates at least three organizations.

Most of the participants in organizations in both villages seem to be in a relatively good economic position, being either members of the elite or landowning

⁶ When a farmer has to prepare a hectare of land for sowing, weeding alone could take up to 16 days if carried out single-handedly. Hiring a worker could halve the time taken to eight days, but would cost

about 1.25 dollars a day in worker wages (i.e., 10 dollars for eight days' work).

peasants. This fits the pattern seen in earlier research: associational activity tends to be found among those who are not extremely poor.

Other studies also indicate that membership, cooperation and trust seem to be particularly difficult for the poorest (Inglehart, 1988; Newton, 1999). From the development perspective, however, it is poor and vulnerable groups that associations ought to be reaching. In La Danta, indeed, the poorest group is actually well represented in associations, but in El Toro only 20% of this group participates.

In both villages, participants seem to share a political preference for the Sandinistas, a characteristic

that holds good when multiple membership is analysed. In both villages there were inhabitants with up to five memberships, most of them Sandinistas. Table 1 clearly shows that the average number of memberships is substantially higher among Sandinista inhabitants in both villages and lower among supporters of the Liberal party. The underrepresentation of liberals is marked in both villages, but in El Toro socio-economic status is an even more striking source of bias. Participation in both villages thus displays a structural bias. To understand the structure of non-participation, we will have to look at associations' recruitment mechanisms.

III

Explanation of preferences

The Sandinista bias in membership is closely related to the history of a large number of organizations in Nicaragua. In the 1980s, the Sandinista government encouraged and welcomed all left-wing associational initiatives. In the 1990s, however, there was an even bigger surge in the number of associations, most of them progressive.⁷ Although most of the country's left-wing organizations distanced themselves from the Sandinista party after its electoral defeat in 1989, this probably made no appreciable difference to local membership structures. In any event, given the history of the country, Sandinista overrepresentation in membership structures was only to be expected.

Another extremely important but often overlooked point is that organizations in developing countries always bring projects, and hence resources, into communities. Members seem to be the first beneficiaries of these tangible and intangible resources. In villages, some organizations use the "food for work" system.

Farmers, for example, are offered food in return for effectively introducing (new) farming methods and technologies, and are also given materials like wire netting, corrugated iron, insecticide spray pumps and machetes. Some organizations have supplied their members with production materials and financial help, others with valuable market information on sesame prices, which strengthens farmers' hand in negotiations with intermediate buyers. All organizations offer education through workshops and seminars. The volume of scarce resources managed by these organizations is quite impressive and the benefits of joining are tangible. If we consider that some residents of both villages accumulate up to five memberships then, surprisingly enough, the ideas of multiple membership and exclusion take on considerable economic significance. From the point of view of access to resources, joining becomes a privilege.

Informal networks strongly influence access to organizations, and thus access to resources is regulated through the direct and indirect ties that compose these networks. This turns resources into "social resources", as they are embedded in social networks (Lin, 1982, p. 132).

"Why haven't you joined an organization?"

"Because they won't let me."

"Who are they?"

"The leaders."

"What do you mean by that?"

⁷ Obviously the ideas of excessive trust and social control coincide with the debate about creating emotional ties and reaching out to social capital. Too much trust, especially when based on group belonging, can have quite a number of negative effects (see, among others, Woolcock, 1998; Portes, 1998; Granovetter, 1982). However, authors seem to agree that, whenever collective development is concerned, the existence of integration networks is always better than fragmentation and isolation (Woolcock, 1998). This article is therefore mainly centred on aspects of social capital relating to integration, horizontal cooperation and trust, which are seen as necessary but not sufficient conditions for democratic development.

"When an organization wants to do something here, like a project, they always arrange things with the local leaders, and they say: 'If you know any good people, hardworking people who want to get involved, get them together and we'll start the project.' So the leaders decide who is going to be in the group and they always pick the same ones."

"Would you like to join?"

"Of course... they're getting benefits and we never get anything..."

(Farmer in La Danta)

The above conversation and the remarks quoted below are excerpts from interviews conducted by the author. The above reflects the most widely held view in these villages. Non-participants feel excluded from associational life, and thus from access to resources. Membership is the strategy that secures access to these. For this reason, organizations can create conflict among local inhabitants as these seek to enter networks to get access to resources. The interviews revealed tensions within the villages, because some inhabitants were systematically included while others were left outside the associational structures. Organizations and local leaders themselves confirmed the importance of the latter's role when it comes to recruiting members:

"Yes, I take charge of selecting the people who are going to be working on the project. Sometimes the organization puts forward requirements like age or sex or the amount of land they have to own. Of course I follow their instructions and then I pick the people I know best, people I can trust. I can't make myself responsible for people I don't know, because if they 'screw up' then the organization will blame me and I will lose the contact."

(Local leader in La Danta)

Coleman (1990, p. 182) argues that leaders can be seen as occupying the position of brokers. A number of trustors (organizations) rely on these brokers to deploy resources properly among the trustees (members), who then work collectively to secure the benefits of the activity (project). The fact that local leaders are responsible for selecting members simultaneously decentralizes project execution and administration to those leaders. It seems, however, that this approach has advantages for the organizations themselves, as they are able to hold down their transaction costs by falling back on existing social networks of trust. This

tendency to use social capital to carry projects through is a cause for concern, especially when organizations make use of existing networks without questioning their composition, structure and content, since they may in fact be vertical, i.e., they may be clientelist dependency networks. Essentially, this instrumental use of trust in the analysis and practice of development tends in the same direction as the thinking of the pragmatic school of social capital, which treats such capital as an instrument for mobilizing resources.

Networks are thus used to enhance effective control over project execution through a manageable group (a few local leaders); these leaders can be held responsible and penalized by the withdrawal of projects (and thus resources) from the community. In order to avoid this, leaders will deploy all their power resources to ensure completion of the project. This means that their power as brokers will probably be supplemented by power as providers of access to their personally owned resources (land, oxen, small amounts of money and food).

The more resources individuals control, the more hierarchical the position and the more hierarchical access to the organization will become. Those wishing to access these personal and social resources will have to offer compensations and reciprocity (Lin, 1995, pp. 687 and 688). Furthermore, those obtaining such access will be indebted to those providing it. This limits horizontal control, accountability, empowerment and genuine participation —the very goals that the civil society-based approach is meant to pursue. The power differences between organizations and local leaders, and between local leaders and the inhabitants, are just too large. At best, then, participation suits those above but penalizes those below. The available evidence suggests that the tendency in these cases is rather towards clientelism than towards genuine participation. This indicates that involvement in associational life has more to do with the mechanisms of clientelism than with a horizontally acting cooperative spirit. This being so, associations cannot credibly be regarded as a manifestation or source of the "attitudinal" components of social capital.

We have seen that the strong Sandinista bias observed can be explained by the historical evolution of the political opportunities that have moulded the character of associational life, having been created and nurtured mainly in Sandinista leadership structures at the local level. The consequence is that liberals cannot derive benefit from associational opportunities. These mechanisms do not, however, explain why

local leaders in La Danta select the poorest peasants to join associations, while those in El Toro do not. Not selecting the poorest peasants could be seen as wholly rational, since unreliability, mistrust and the abandonment of responsibilities could be expected to be more common in the lowest socio-economic classes (Inglehart, 1988, p. 1213; Newton, 1997, p. 181). The poor also tend to have low expectations of those around them and the world in general (Newton, 1997): they have more to lose and tend to scrutinize possible risks very closely because the rewards are uncertain and the

risk of being let down is real. Thus, the recruitment behaviour of leaders in El Toro seems to follow this logic, even if it is to the detriment of the development goals of the civil society-based approach promoted by donors, since resources do not reach the poorest groups. In La Danta, on the other hand, resources do reach many of the poorest strata, but the question is why local leaders risk involving themselves with this seemingly unreliable group. The structure and content of local informal networks may provide the answer.

IV

Informal cooperation networks

According to Coleman (1990), the emergence and enforcement of norms is facilitated by the “closure” of networks. Such closure enhances the trustworthiness of social structures, thereby allowing obligations and expectations to proliferate. Otherwise it might be difficult to impose sanctions. Conversely, open networks lack these enforcement mechanisms.

To return to the subject of informal networks in the two villages under consideration, this article will seek to ascertain whether it is possible to find horizontal forms of cooperation in these generally vertical societies, and will analyse the way these relate to the more clientelist dimension of associational life. The idea is to investigate forms of cooperation that approximate to the horizontal, voluntary aspect of social capital. In both villages, such horizontal cooperation has taken the form of farmers exchanging labour with their neighbours. This cooperative arrangement is known as *cambio de mano* (“work swap”). In its simplest form, this informal rural sharing mechanism means that farmer A helps farmer B for a few days on the latter’s land and then farmer B returns the favour by working for a few days on farmer A’s land.

This mechanism offers considerable savings in an environment where money is extremely scarce and labour extremely costly. Cooperative networks of this kind are thus of great importance for the poorest peasants, as they save them a great deal of money. The rational thing to do is therefore to engage in these forms of cooperation, unless there is a lack of trust. Trust is fundamental here, since there is always a time lapse before the favour that has been done is

returned, so the risk of being let down is real. The farmers interviewed explicitly stated that trust played a vital role in this mechanism, especially in the case of more complex forms of *cambio de mano* involving more than two actors.

The mechanism of trust in this type of *cambio de mano* basically works as follows: person A, who provides the service, trusts beneficiary B

- (i) to acknowledge that he owes something to A, and
- (ii) to execute one or more services in return (comparable in amount and/or quality with the service or services provided by A).

It is important that A not have to apply pressure to receive a service in return. If A has to invest time and energy in cajoling B to return the favour, the relationship might become strained. This mechanism is inherently delicate. Participants spontaneously offer one another favours and services “in return”, but without overloading the other party with demands or obligations. If after some time the parties involved feel that no-one is trying to “have their cake and eat it”, these cooperative arrangements may eventually evolve into complex, many-faceted support mechanisms in which all those concerned can benefit from the capabilities, knowledge and relationships of the other members of the cooperative community.

Participants in *cambio de mano* arrangements argue that, in principle, their “job for job” relationship involves an “equal swap”. Symmetry between the actions of those involved is vital in this relationship. If one of the parties started to neglect the obligations

deriving from it, trust and reciprocity might start to break down. Failure to live up to expectations can have direct consequences. Again, the accountability mechanism in relationships of this type is informal and horizontal. To keep the relationship alive, it is necessary to attend to the mechanism that ensures its horizontality: the equality of rights and obligations.

Table 2 shows that only 35% of families in El Toro are involved in *cambio de mano* relationships, while in La Danta the proportion is 78%. This indicates that the great majority of people in La Danta are cooperating horizontally with one another. An important characteristic of networks is whether or not they are connected. Actors in a disconnected network may be grouped into two or more sub-networks that are not linked with each other. Thus, the more sub-networks a network has, the more disconnected it will be (Wasserman and Faust, 1994, p. 109). We can see that, in La Danta, a very large group is organized into just five sub-networks. In El Toro, on the other hand, a small group of farmers is organized into 10 disconnected sub-networks. Sub-networks do not, however, provide specific information about the density of networks. In a dense network, there is a path between every pair of actors, which means that all actors are mutually

accessible. The accessibility coefficient thus equals 1, the maximum value. The coefficient is 0.59 in La Danta and 0.12 in El Toro. Network analysis has also shown the average number of *cambio de mano* relationships to be significantly higher in La Danta than in El Toro. This means that not only are more families in La Danta involved in *cambio de mano*, but each family also averages more relationships of this type with other families. Furthermore, all associational leaders in La Danta are involved in *cambio de mano* arrangements, whereas in El Toro not one local leader has cooperative relationships of this type with villagers.

Generally speaking, there is a considerable amount of horizontal cooperation and trust in La Danta. This high density indicates near-closure of networks, and this makes them more effective in terms of compliance with norms of reciprocity. Considering the number of families involved and the fact that local leaders are subject to the same norms of accountability, the village of La Danta seems to be less hierarchical and more inclusive and integrated, and to have more horizontal trust and reciprocity, than El Toro. Furthermore, the presence of local leaders in the cooperative networks of La Danta suggests that they are subject to internal social control mechanisms. In El Toro, the absence of

TABLE 2

Nicaragua (two villages): Structure of informal cooperation networks and member characteristics

<i>Network structure</i>	<i>El Toro</i>	<i>La Danta</i>
Village families involved in network (%)	35	78
Number of sub-networks in the village	10	5
Accessibility coefficient	0.12	0.59
Average number of <i>cambio de mano</i> arrangements per family	0.6	1.8
Local leaders participating	None	All
<i>Characteristics of member families</i>		
Participation of village families by political preference (%)		
Sandinistas	55	89
Liberals	31	80
No preference	40	63
Participation of village families by socio-economic status (%)		
Elite (50 hectares or more of land)	29	80
Landowning peasants (less than 50 hectares)	55	88
Landless peasants	40	71

Source: Prepared by the author.

associational leaders from the informal cooperation network might indicate that they are not subject to horizontal accountability mechanisms, to the fair swap rule, or to mutual expectations and obligations. Social oversight of deviant behaviour would therefore appear to be much easier in La Danta than in El Toro.

The actors involved in both villages seem to be mainly Sandinistas and landowners. These data coincide with the profile of participants presented earlier. There is, however, a rather odd discrepancy. Whereas liberals in La Danta were very much underrepresented in the membership structure, no less than 80% of the liberal group is involved in this cooperative network (table 2). Similarly, whereas landless peasants in El Toro are almost totally absent from associational life, in La Danta we find that about 40% of such peasants are informally cooperating in *cambio de mano*. Cross-checking of the data on associational life against the data on cooperative relationships revealed the following pattern: in El Toro, half of all families not involved in formal participation structures do practise *cambio de mano*, as do half of all families that are involved in these formal structures. In La Danta, 20 of the 29 families not involved in formal structures practise *cambio de mano*, and so do 34 of the 41 families that are thus involved.

V

Conclusion

The existence of a large number of associations with high levels of membership is not necessarily indicative of trust, reciprocity and horizontal cooperation. Associations do not always constitute a structural representation of the “attitudinal” components of social capital. Both the villages studied score similarly on associational life, yet in El Toro there are just a few small groups cooperating horizontally, whereas many people participate in horizontal networks in La Danta.

In both villages, associational life has proved to be subject mainly to clientelist patterns of interaction: actors attempt to gain access to resources via local leaders, who act as brokers between organizations and inhabitants. But a very different picture emerged when informal cooperation networks were studied: this approach brought us much closer to the “attitudinal”

It can be said, then, that associational life is not necessarily linked to the “attitudinal” components of social capital. It transpires that the groups which were found to be underrepresented in the formal structures of participation in associational life are very much present in horizontal cooperation networks. In neither case does formal participation in associational activities and development processes seem to have much connection with the cooperative spirit. Both the recruitment mechanisms used and the data on cooperation structures requiring membership are indicative of divergence between the two phenomena.

More importantly still, it transpires that the strong presence of the poor in the networks of La Danta reduces the risk of non-compliance with associational obligations. Because the networks provide an environment in which reciprocity is generally expected, the leaders can include the poorest without there being a great risk of major non-compliance problems. The fact that large numbers of the poor are active in horizontal networks (especially in La Danta and to a lesser extent in El Toro) seems to call into question the traditional view of Latin America as a place where the poorest remain marginalized, isolated, unorganized, rather fatalistic and dependent on wealthy patrons (Huntington and Nelson, 1976).

components of social capital, and we saw that the two villages differed considerably in terms of horizontal cooperation. If we had relied on the apparent relationship between associations and social capital, we would have concluded that both scored more or less the same on social capital.

This discovery of the mechanisms associated with *cambio de mano* networks reveals that these might be an alternative indicator for the horizontal, voluntary cooperation dimension of the social capital concept. It is necessary to find indicators of this kind in order to deconstruct the complex concept of social capital and its normative assumptions (Edwards and Foley, 1998), especially in developing countries, since the policy implications can be significant.

As was stated earlier, high hopes surround the civil society-based approach to development cooperation.

Donors hope that organizations can forge social change by working against the vertical, clientelist grain and encouraging the inclusion of poor and vulnerable groups. The most recent forms of development cooperation have clearly opted to give a very important place to civil society organizations in the poverty reduction process (Fowler, 2000; Tikare, Youssef and others, 2002; Booth, 2003). However, the facts presented here show that these objectives are somewhat simplistic, especially when held up against the complex realities faced by developing countries. We have seen that, in the case of Nicaragua, the associational landscape is not as pluralistic or as inclusive as is usually supposed. The idea of strengthening civil society so that it can forge social change may therefore be contradictory, as the very elements that stand in the way of social change may be entrenched in the workings of civil society.

The history and evolution of political opportunities colour the current composition of civil society and the local membership structure. We have seen that, in both the villages considered, certain groups (local Sandinistas in this case) are more organized than others, obtain access to organizations more easily and have leadership structures that are supported by some originating from outside the area (in the city, the capital or abroad). Organizations decentralize their operations by transferring power to local leaders, who can then choose the participants and distribute resources. Thus, the effectiveness of the development efforts made by organizations seems to be largely determined by the local structure of the informal networks which sustain and reinforce them. If these informal networks are reasonably inclusive, horizontal, dense and governed by accountability mechanisms, and if they include leaders and their followers, both rich and poor (as in La Danta), then they will make a contribution to what the associations are supporting, developing and encouraging. However, if networks are exclusive and clientelist, then the associations and their projects will also be contributing to that type of social organization. Seen in this light, "participation" may reproduce and reinforce the domination of leaders and elites (Kapoor, 2004, p. 2, and 2005, p. 1210).

The participation of local leaders in informal cooperation networks prevents them from abusing their position of power, as they are subjected to internal mechanisms of social control through dense networks. Thus, networks in La Danta promote integrity (Coleman 1988 and 1990), but in El Toro this is not the case. Local leaders in the latter do not participate in horizontal cooperation networks, the

networks themselves are quite fragmented, and only a small number of people participate in them; in Coleman's view, this indicates the difficulty of creating an environment of trust where norm compliance and reciprocity can be maintained. Thus, when associations have to relate to environments like El Toro, they are effectively institutionalizing verticalism and clientelism and reinforcing the unchecked power of leaders. It is therefore obvious that, in both villages, horizontal and trust-based relationships are much more likely to be found in informal than formal networks. It thus seems very unlikely that the latter can be regarded as sources of trust. In both villages there are groups that cooperate horizontally and have relationships of trust even though they do not have access to associations, either because they have the wrong political preference (as in La Danta) or because they are not connected with local leaders (as in El Toro), since the latter are absent from horizontal networks. The trouble is that organizations also consolidate and institutionalize this exclusion. The biased structure of participation is probably due mainly to biases in informal networks, something that is indicative of divisions. Divisions are not an issue in themselves as long as all groups can obtain access to scarce resources within their respective structures. This is not the case in the villages studied, however, because the associational landscape is not diversified enough, or because organizations lack the capabilities, time or resources to carefully study the places where they may become active.

These considerations bring us to some policy recommendations. First of all, the civil society-based approach within development practice is in urgent need of a critical review. The romantic, positive connotations surrounding the role, function and effects of a large and vibrant civil society in relation to democracy and economic development may prove simplistic or downright wrong in developing countries. The one-size-fits-all approaches often imposed by donors ignore the idea that context matters. Thus, it seems utopian to wish to create social capital as though it were just another resource, an outcome to be expected from investment in a particular instrument.

When the context is taken into account, some questions and observations arise. Stimulating civil society organizations does not necessarily promote those attitudes that we tend to associate with social capital. If the consolidation of civil society is so vital, is it not also vital to support the diversification of civil society, or do we have to take it as it comes? Is participation a good tool in any context? To reach

the poor in fragmented, clientelist and mistrustful populations, it might be necessary to confront certain leaders or force them to compete. The solution to this problem will probably have to be top-down, involving the imposition of transparent selection or inclusion criteria. Only in this way will it really be possible to work for the benefit of the weakest groups (Van der Linden, 1997; Vandana, 1996). In other words, if the inclusion of certain groups is not a spontaneous bottom-up process, it must be established and overseen from above. This implies effective, top-down imposition and implementation of transparent mechanisms in organizations and development interventions, including sanctions when commitments are not kept to.

Such, ironically enough, is the contradictory conclusion of this research: institutionalizing distrust is the only way to counteract clientelism and arbitrary exclusion. Thus, creating trust and thence social capital depends on the transparent working of institutions, projects and interventions, and on the possibility of

preventing and punishing clientelist abuse of resources. Accordingly, donor organizations (both governmental and non-governmental) should not hand over all the power to their local intermediaries (leaders), but should keep a much tighter rein on the use of resources and the mechanisms of inclusion and exclusion.

All these observations point to the need for more development-inspired research. In the first place, it is important for there to be preliminary studies of the locality concerned to ascertain the composition of a given community and the relationship between its different groups. It seems imperative to avoid consolidating the positions monopolized by leaders, to diversify sources of information and to increase the chances of reaching truly poor and vulnerable groups. Determining how far the networks of leaders penetrate and what their inclusion and access criteria are might also tell us where the real development work ought to begin.

(Original: English)

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Wage rigidity in Chile

Andrés Marinakis

One issue in the debate about the workings of the labour market is its degree of flexibility. In the case of Chile, the Asian crisis of late 1997 led to a large increase in the unemployment rate, while the hourly wage index produced by the National Institute of Statistics rose steadily in real terms. This gave rise to the idea that wage rigidity might exist. The present article seeks to qualify this conclusion by detailing the limitations of the index when it comes to recording more volatile items of remuneration, and shows that the average monthly wage rose only by small amounts, while the minimum wage appears to have followed a different path from market wages. Lastly, this article discusses the advisability of setting a special minimum wage for the young and introducing a variable component into pay, two proposals that are often made in the interests of greater wage flexibility.

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I

Introduction

After more than a decade of high and sustained growth, Chile was caught unaware by the Asian crisis in late 1997. One of its first effects was to increase the unemployment rate from 6% or so in 1997 to 9.8% in 1999. Once growth resumed, net job creation was rather small and unemployment was slow to fall.

A number of analysts put this situation down to wage rigidity in Chile, arguing that this caused the burden of adjustment to fall on employment rather than being spread among all wage earners in the form of lower pay.¹ This outcome is quite surprising in an economy that has less heavily regulated labour relations than the other countries in the region. The wage rigidity theory, which is based on very aggregate data, has been widely accepted in some academic circles and by the press generally.

According to data produced by the National Institute of Statistics (INE), real hourly wage growth fell but still averaged around 2.5% in 1998 and 1999,

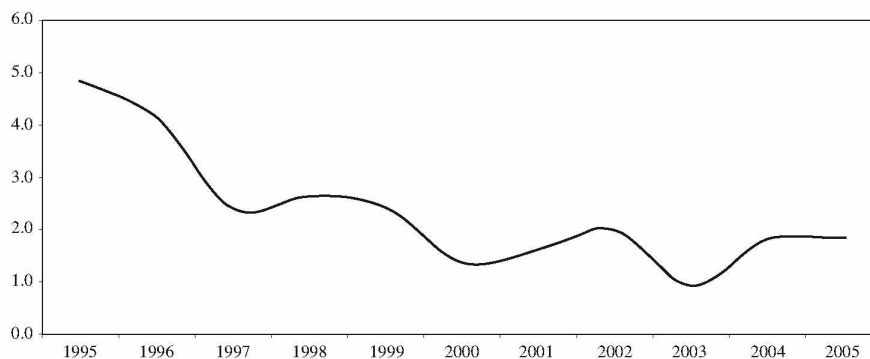
which is quite a high figure for the economic conditions of the time. Between 2000 and 2004, real hourly wages rose by between 1% and 2%, with an average of 1.5% (figure 1). Although these figures reveal a decline in growth rates in general, it could be argued that these rates were still high given the situation of economic recession and recovery in those years.

Another indicator used to buttress the wage rigidity argument is the evolution of the minimum wage. At the time of the Asian crisis, a system of three-yearly adjustment was in place, having been established when the economy was growing at 7% and there was no expectation of any crisis. The minimum wage increases in those years were very substantial in real terms, especially considering that the economy was stagnant.

Thus, the idea that wages in Chile are downwardly rigid comes mainly from these two items of information, i.e., developments in real hourly wage rates and the

FIGURE 1

Chile: Real hourly wage, 1995-2005
(Annual variations)



Source: Prepared by the International Labour Office (ILO) with data from the National Institute of Statistics (INE) remuneration survey.

□ The opinions expressed here are the author's and do not necessarily represent those of the organization to which he belongs. The author is grateful for the assistance of Jacobo Velasco in preparing the data

presented in this article, and for the comments of an anonymous referee.

¹ See Cowan and Micco (2005) and Céspedes and Tokman (2005).

real minimum wage. On the basis of this conclusion, three different policy proposals have arisen. Some economists suggest lowering the minimum wage. Others argue for the introduction of a special minimum wage for young people aged between 18 and 24, which would be lower than the general minimum wage. Lastly, others again suggest the introduction of a variable pay component based on performance or profit-sharing (Bravo, Larrañaga and Ramos, 2003).

The debate is by no means confined to these options, however. In fact, there seems to be a need to

look more closely at the existing indicators in order to obtain a fuller picture of the situation.

Although the information on which the studies are based is accurate and these proposals may seem reasonable to some degree, a more detailed reading of the wage statistics methodology used and of the workings of the labour market reveals that wages in Chile are not as rigid as they are claimed to be and that some of the measures proposed are not in fact very suitable. The purpose of the present article is to justify this alternative view.

II

What does the National Institute of Statistics remuneration index measure?

The INE survey² encompasses all economic activities except agriculture, hunting, fishing and forestry, and is based on a sample of formal-sector establishments employing 10 or more workers.³ In other words, it covers about 40% of all those in work. From this segment it is also necessary to deduct a number of workers whose pay is not recorded. The survey does not include employees of external contractors, even if they are working for a company included in the survey.

The first thing to be said here is that the survey only records those who have a strict relationship of employment with the businesses surveyed. Furthermore, it only includes those who have a contract with the company and have worked for at least 20 hours during the week, and excludes those working for companies for a fixed period (to carry out specific projects, for example). Of all workers, then, the remuneration

survey only covers the segment with the most stable employment, and thus with the least volatile pay.

The remuneration index covers compensation in money and kind received by workers under their employment contracts. It excludes components which behave variably over time or fluctuate greatly over the course of the year. These are:

- Overtime payments.
- Non-monthly bonuses and profit-sharing payments. Monthly bonuses and supplementary payments might include a qualifications allowance, payments for years of service, and isolated working or responsibility bonuses, all of them paid monthly.
- Additional payments for holidays and gratuities (INE, 1994).

In other words, the survey does not include bonus or incentive payments for production, productivity, attendance and/or punctuality unless they are paid regularly every month. The second point to be made, then, is that large variations are hardly to be expected in an index that only incorporates the most stable components of pay. In analysing the remuneration index data, therefore, it has to be remembered that this only records developments in the most regular components and not in total worker remuneration.

According to the 2002 labour survey (ENCLA), an average of 25% of total remuneration is variable. The percentage ranges from 14.5% in small enterprises

² INE (1993). This series has been available monthly since 1993, has national coverage, and presents information by occupational category and branch of activity. Its frequency makes it useful for analysing wage variability, by contrast with the National Socio-Economic Survey (CASEN), which was conducted every two years in the 1990s and has been triennial since 2000. Statistics generated from records like those of the Chilean Safety Association (Asociación Chilena de Seguridad) require some work to produce a sample of companies that is stable over time and to remove seasonal factors, as they were designed for specific purposes.

³ In the case of construction, it only covers firms employing 50 or more.

to 25.6% in medium-sized ones and 27.2% in large companies (Dirección del Trabajo, 2003). Furthermore, 60% of medium-sized and large enterprises apply productivity incentive and bonus systems, so that a sizeable (and variable) percentage of total remuneration is not being included in the INE wage data.

A third point is that the remuneration data are averages for occupational groups in each establishment and not measurements for individual workers (INE, 1994). Consequently, not only does the remuneration of the individuals covered vary substantially, but so do the number and composition of workers. For example, a company that kept its wages constant would show a rise in its remuneration index if it cut back the number of lower-paid employees working there.

III

How are wage increases determined?

There are major differences in the way employee remuneration is determined. One group of workers negotiate pay conditions through their unions or other representative bodies, leading to the signing of collective agreements or contracts. The terms agreed upon in collective instruments of this kind are binding as long as they remain in force.

Most collective instruments make two references to the calculation of wage increases. First, they establish an initial increase to be applied when the instrument comes into force. In the case of collective instruments signed during 2005 which included a clause of this type, the weighted average of this initial increase was 0.68%. Only 63% of workers covered by collective instruments benefited from this initial real adjustment clause.⁴

Second, there has been a decline in the initial real-term increases established. As figure 2 shows, whereas the initial real-term increase averaged 1.43% in 1996 and 1997, before the crisis, the figure had dropped to 0.55% by 1999 and has since remained in the 0.6% to 0.7% range.

Again, most collective instruments include clauses providing for future increases tied to changes in the

If companies had dismissed mainly low-paid workers during the crisis years, this could have caused the remuneration index to rise in real terms, reflecting the composition of employment rather than wage developments.

In summary, the remuneration index deals with the most stable segment of formal-sector workers in companies with more than 10 employees and does not include the more variable components of pay. For methodological reasons, too, the changes in remuneration recorded can be affected when there is a disproportionate reduction in the number of lower-paid employees (the remuneration index rises) or in the number of higher-paid employees (the remuneration index falls). All these factors need to be taken into account when wage developments in Chile are assessed.

consumer price index (CPI). It is usually stipulated that adjustment will take place every 6 to 8 months (in 2005, the average was 6.7 months) and inflation is compensated for in full (in 2005, the average adjustment was 100% of the CPI). The future real-term adjustment clause was found in 70% of collective instruments.⁵

It is clauses like this which give rise to the belief that wages in Chile are downwardly rigid and that a kind of index-linking operates. Although the results of collective bargaining are to some extent taken as a reference price in setting wage levels, their value is purely indicative for the universe of workers not covered by collective instruments. It is well known that the coverage of collective instruments in Chile is very limited, so this mechanism would not be expected to be the predominant one. In recent years, furthermore, there has been a downward trend in the number of workers included in collective instruments of any kind.

To give an idea, 4,046 instruments were recorded as being in force in 2005, covering 343,420 workers.⁶

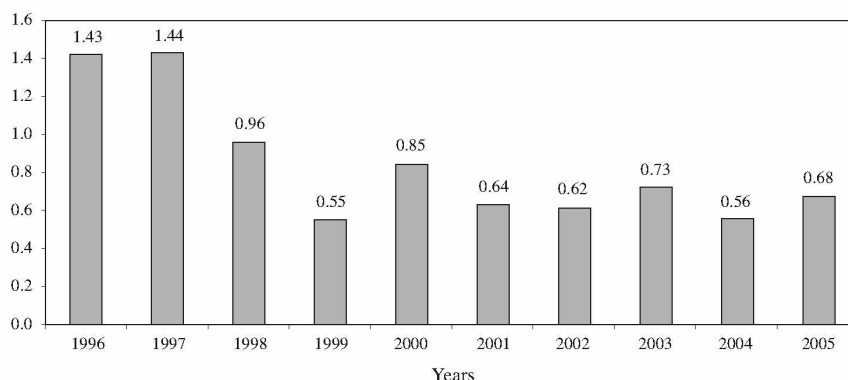
⁴ Labour Office, Labour Relations Department, Ministry of Labour and Social Security.

⁵ Labour Office, Labour Relations Department, Ministry of Labour and Social Security.

⁶ These figures were obtained by adding together the numbers for collective instruments concluded in 2004 and 2005, since they last at least two years (Dirección Nacional del Trabajo, 2005).

FIGURE 2

Chile: Initial real-term increases. Basic pay in collective bargaining, 1996-2005
(Percentages)



Source: Labour Office, Labour Relations Department, Ministry of Labour and Social Security.

In other words, just 10.6% of private-sector workers are covered by clauses of this type. Furthermore, this rate is significantly lower than it was in 1997, when collective bargaining covered 14.4% of private-sector workers. Thus, even if all collective instruments included index-linking clauses of this type, it does not seem reasonable to think that this would lead to rigidity in the wage structure of the private sector as a whole.

The remaining workers, meanwhile, do not have any such explicit coverage. For them, the pay increases established in collective instruments are only a reference price that may be taken into account when their wages are set, but is not binding on the parties. For this segment, the only legally binding limit is the minimum wage.

An important question is whether it is real wages or nominal wages that are set by employers in the segment without collective coverage. In most cases, each company sets the nominal wages of its workers. To determine them, employers go by market wages (taking into account the information in collective agreements), recent inflation and forecasts for the conditions in which each company will have to operate. In addition to considerations of inflation and company projections, however, things like improved qualifications, individual performance and years of service are also taken into account when wages are set. In these cases, the real wage is known only at the end of the period analysed, and this information is important for measuring the change in purchasing power.

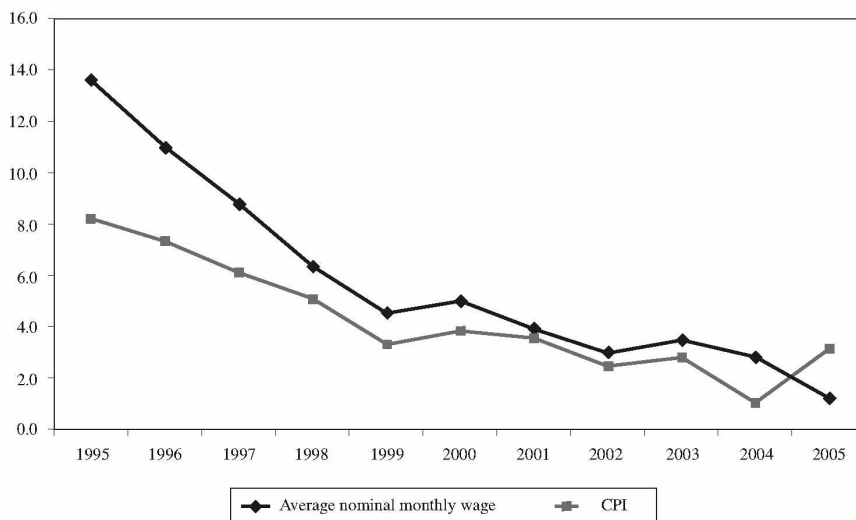
Average growth in nominal wages, whether hourly or monthly, began to fall steadily from 1995 onward, from 13.6% that year to 1.2% in 2005. This downward trend in the average wage increases granted by companies was not noticed until 2004 because the CPI rose by even less, resulting in positive real wage growth (figure 3). In 2004, the CPI varied by a mere 1%, while in 2005 the figure was 3.2%

When setting wages, companies consider the level of inflation in the period immediately beforehand. Although there was an expectation of lower inflation in the second half of the 1990s, since this was a fundamental objective of Central Bank monetary policy, the reduction might not have been expected to be as fast and effective as it ultimately proved to be. Furthermore, the recession resulting from the Asian crisis undoubtedly caused inflation to fall by more than anticipated.

The clearest example of this can be found in 2004. The average wage increase recorded that year was 2.9%. Since inflation in the period was an unusually low (1.1%), the average hourly wage rose by 1.8% in real terms. Conversely, if inflation had been close to the levels of recent years and the Central Bank target (2.1%), as might have been expected, wages would hardly have changed at all in real terms. If we also consider that wage increases ought to reflect increases in qualifications, productivity and years of service, it becomes even clearer that wage rises were very moderate in the period.

FIGURE 3

Chile: Average nominal monthly wage and the consumer price index, 1995-2005
(Annual variations)



Source: Prepared by the International Labour Office (ILO) with data from the National Institute of Statistics (INE) remuneration survey.

For the coming years, it is important to bear in mind that, by contrast with the situation in the 1990s, the inflation rate in Chile can be deemed to have stabilized at a rate of 2.5% or 3%, and it is not reasonable to expect real wages to be boosted by falling inflation. Thus, nominal wage rises at these same levels will be doing no more than compensate for inflation.

Again, the lower the level of inflation in a country, the less reliance can be placed on “inflation flexibility” as a source of wage adjustment. This being so, the success of the price stability policy operated by the Central Bank of Chile has reduced companies’ room for manoeuvre and made it necessary to seek other sources of flexibility.

IV

The silent wage adjustment

Besides the trend towards lower wage rises discussed above, there has been a low-key wage adjustment process which has gone largely unremarked upon by analysts, and which concerns the differing trends of the monthly and hourly remuneration indexes. While hourly wages are an important indicator for analysing labour productivity, monthly wages are a better indicator of workers’ consumption capacity. For example, given constant wages, if the amount of time worked were

to fall then the hourly wage would increase, while the purchasing power of that wage (best reflected by the monthly wage) would remain unchanged. Figure 4 shows the trend followed by the two series, revealing that the average real monthly wage has consistently grown more slowly than the real hourly wage.

The first significant difference is seen in 1998 and 1999, when the effects of the Asian crisis were being felt most strongly. In addition to the job cuts made by

companies, which were reflected in the unemployment rate, the wage series show a difference that derives from a reduction in hours worked (another form of adjustment). Undoubtedly, this reduction in hours was largely confined to overtime. Although the remuneration index does not include overtime pay, it does record the number of hours worked. Thus, while real hourly wages apparently continued to grow by 2.5%, workers' real monthly take-home pay was actually rising far more slowly, by 1.3%, without considering the loss of additional pay because of overtime cutbacks.

There was also a large difference between hourly and monthly wage developments in 2001 and 2002. Whereas the hourly wage grew by 1.8%, the monthly wage rose by a mere 0.4%. In this second period, the divergence between the two series might have been partly due to the progressive reduction of the working week from 48 to 45 hours, as provided by the Labour Reform. The most significant difference, however, arose in 2005, when the new 45-hour working week came fully into force. According to the remuneration survey, the number of hours worked fell by 3.7% in 2005, indicating that most firms left it to the last moment to make the working time adjustment. This is borne out by the INE household survey data (table 1).

In 2005, the lowest increase in nominal monthly wages since the series began in 1993 (just 1.2%) was combined with a large reduction in hours worked, while inflation picked up (from 1% in 2004 to 3.2% in 2005). Thus, while the real hourly wage rose by 1.9%, the real monthly wage fell by the same amount. Going by this indicator, then, in 2005 workers saw the first drop in their real purchasing power since the return to

TABLE 1

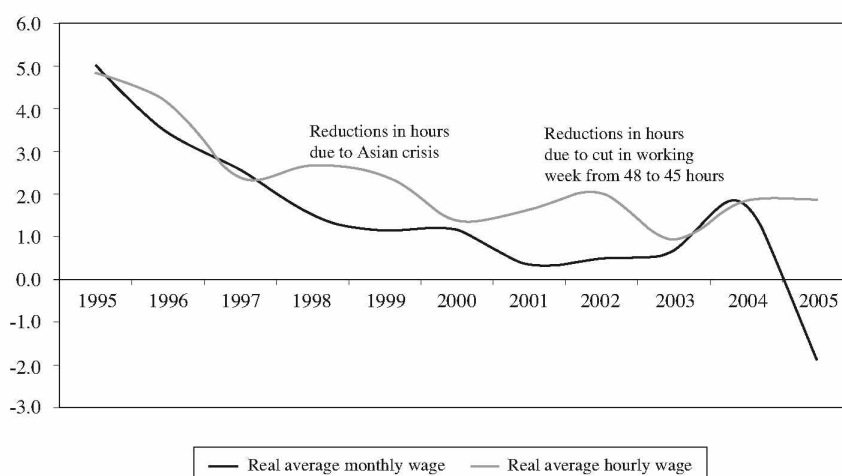
Chile: Variation in hours worked, 2000-2005

	Remuneration survey (workplaces)	Employment survey (households)
2000	-0.2	-0.6
2001	-1.2	-0.9
2002	-1.5	0.4
2003	-0.3	-0.7
2004	0.0	-0.1
2005	-3.7	-3.7

Source: Prepared by the International Labour Office (ILO) with data from the National Institute of Statistics (INE) remuneration survey and employment survey.

FIGURE 4

Chile: Average hourly and monthly wages, 1995-2005
(Annual variations)



Source: Prepared by the International Labour Office (ILO) with data from the National Institute of Statistics (INE) remuneration survey.

democracy. In a way, the cost of shortening the working day was transferred to workers.

Besides what happened in 2005, it is clear that the real wages received by workers (and paid by employers) have not risen by as much as it appears when the average hourly wage series is considered in isolation. Since the growth of workers' purchasing power is

linked to the growth of their real take-home wages, it is clear that low monthly wage increases account for the slowness of the recovery in domestic demand, with all the constraints this implies for economic growth. It can also be held partly responsible for the weakness of economic growth in 2006, when international conditions were ideal.

V

A jarring note: the real minimum wage

Until 1997, the minimum wage tracked average wages in the economy very closely. From 1998 onward, however, these two wage categories followed sharply divergent paths. This gap was the result of the three-yearly adjustment system established in March 1998. While the expected inflation rate on which it was based followed the forecast trend, productivity gains proved far more modest than anticipated (figure 5).

Without a doubt, the emphasis on raising the minimum wage led to a greater concentration of wage earners at levels close to the minimum. Whereas in 1998 some 28% of non-agricultural private-sector workers earned up to 1.5 times the minimum wage, by 2000 this proportion had risen to 35%.⁷ In some sectors, such as construction, average wages for unskilled workers were barely more than the minimum wage (in 2003, the minimum wage represented 94% of the average wage for unskilled workers in this industry).

A remarkable amount of emphasis has been placed on minimum wage policy. Although it is very positive that increases in the minimum wage have been sustained over time, starting from a very low base, it has to be asked whether this is the best policy for the goal being pursued, or for optimum labour market performance.

Regarding the first question, the main objective of the minimum wage is to protect the lowest-paid workers, especially those who are not represented in

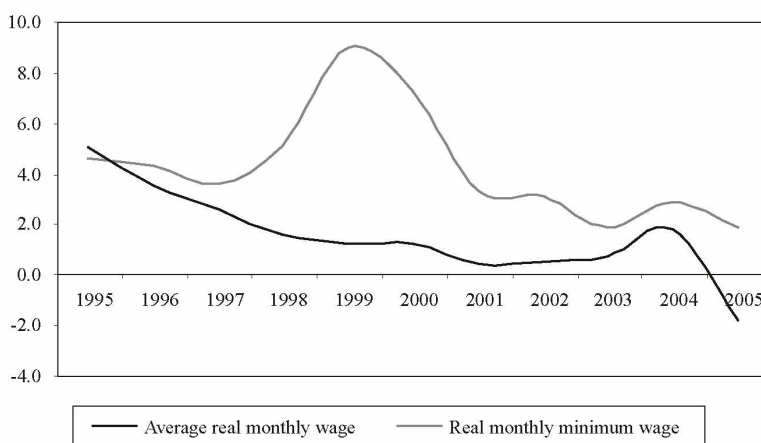
any way or covered by a collective instrument. Since the early 1990s, when it was increased substantially in relation to market wages, the minimum wage has fulfilled this purpose. While it remains low compared to workers' needs, there can be no doubt that their purchasing power has increased substantially. Again, successive increases were on the whole very well absorbed by companies until 1997. In the 1998-2000 period, on the other hand, companies were unable to pass on the percentage increase in the minimum wage up the whole of their wage scale, as had happened in earlier years, and the result was a greater concentration of workers at levels close to the minimum wage. In that period, many companies, especially smaller ones and those operating in particular sectors, had difficulty paying the minimum wage. To this extent, it seems to have adversely affected the working of the labour market.

There have also been questions about the effect of the minimum wage in reducing poverty and improving income distribution. Although it has been important in both cases, especially the former, it is not reasonable to think that it is the only wage policy instrument that might serve to improve both aspects. Again, while both poverty and income inequality are addressed through social policies, wage policy ought to be an important element, particularly when it comes to reducing inequality. Clearly, though, a wage policy whose only instrument is the minimum wage is going to be too weak to attain this goal. It is therefore essential to strengthen collective bargaining arrangements in which the minimum wage is only the base of a system capable of reconciling the different situations found in the various sectors of activity and in different companies.

⁷ According to the author's own calculations from the 1998 and 2000 CASEN surveys.

FIGURE 5

Chile: Average real monthly wage and real minimum wage, 1995-2005
(Annual variations)



Source: Prepared by the International Labour Office (ILO) with data from the National Institute of Statistics (INE) remuneration survey.

VI

Should there be a special minimum wage for the young?

Since the youth unemployment rate is double the average, one of the most frequently voiced proposals for improving wage flexibility has been to establish a special minimum wage for young workers.⁸ The reasoning here is that the minimum wage acts as an entry-level wage for young people starting work and that its current level is an obstacle for them since, for a given wage level, companies prefer people with work experience, believing it to be indicative of higher productivity. Thus, if young people had an entry wage lower than the general minimum wage, there would be an incentive to hire them that would correct the imbalance currently existing in the labour market. At present, there is a differentiated minimum wage for

young people under 18, equivalent to 75% of the adult minimum wage.

To determine whether this theory holds good, what is needed is a more detailed analysis of how the youth labour force is distributed in comparison with the adult labour force. If we find that young people are underrepresented in formal private-sector companies, this will confirm that there is some obstacle to their recruitment. We shall not take under-18s into account here, since they already have a minimum wage lower than the general one and they are few in number; besides, it seems better to encourage them to remain in the education system until they have completed their formal studies than to ease them into the labour market early with few qualifications.

Accordingly, what we shall do here is compare the employment situation of the young economically active population (EAP), i.e., those aged between 19 and 24, with the employment situation of the

⁸ See, for example, Instituto Libertad y Desarrollo (2005).

EAP aged 25 and over. Right away, we see that in 2003 the percentage of young people working in the private sector was larger than the percentage of adults (53% and 48%, respectively). We also observe large differences in the percentages of workers employed in the informal sector (11% of young people and 22% of adults) and in the public sector (4% of young people and 10% of adults), while percentage participation in the agricultural sector is very similar for young people and adults (figure 6).

It might be expected, however, that young people in formal jobs would more frequently be employed under insecure conditions, to avoid paying the minimum wage. This is the case to some extent in private-sector companies, domestic service and the public sector, where a smaller percentage of young people than of adults are employed under contract (figure 7).

To summarize, the problem seems to lie not so much in the private sector as in the inability of young people to establish themselves as self-employed (7% of the youth EAP and 18% of the adult EAP) and the difficulty they have in entering the public sector, where employment contracts seem to be given for preference to people who have more training and experience, and are thus older. Lowering the minimum wage would clearly not solve these problems, nor does

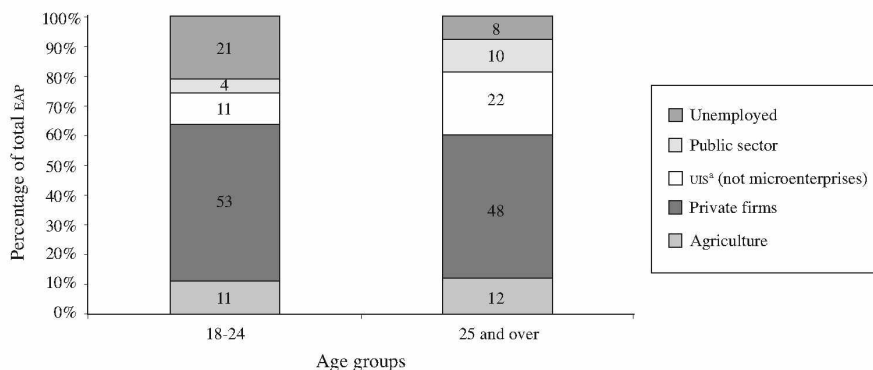
it seem reasonable to think that all young people should be wage earners in the private sector. Accordingly, creating a minimum wage for young people does not seem the most appropriate policy.

In addition, we need to ask whether it is advisable to encourage young people to take up poorly paid jobs at an early age by establishing a low minimum wage, or whether it is better to encourage them to stay in the education system. The demands of globalization would seem to indicate that this second strategy is the more appropriate one, as it would yield a workforce that is more highly educated, and with greater development potential. The recent extension of compulsory education certainly comes down on the side of this second option.

The data categorically bear out the difficulty young people have in entering the labour market. What our analysis of the distribution of the youth EAP suggests to us, however, is that it is not “price” but other factors that play the preponderant role in this. These factors include the lack of relevance of formal education curricula to the world of work, the low value set by society on technical skills, a lack of experience and resources for starting up small-scale enterprises, and the slow growth of public-sector employment, for which ever greater qualifications are being required.

FIGURE 6

Chile: Distribution of the youth and adult economically active population (EAP), 2003
(Percentages)

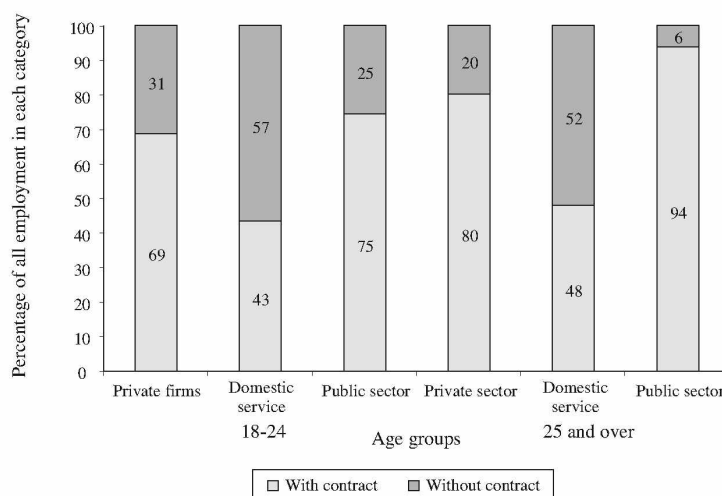


Source: Prepared by the International Labour Office (ILO) with data from the 2003 CASEN survey.

* Urban informal sector.

FIGURE 7

Chile: Distribution of employment by contractual status, youths and adults, 2003
(Percentages)



Source: Prepared by the International Labour Office (ILO) with data from the 2003 CASEN survey.

VII

Worker profit-sharing: a variable component of remunerations?

We said earlier that the INE remuneration index did not take account of bonuses and profit-sharing payments that were not disbursed monthly or of overtime payments (variable components of remuneration), so that we did not know the size of these components in the universe covered by the survey. We do know, however, that under the provisions of the Labour Code,⁹ companies required to keep accounts are obliged to give their workers a share of their profits.¹⁰

According to the specialist literature, such components of total worker remuneration are a basic element of flexibility. While significant amounts are distributed on this basis at times when profits are high, in periods of crisis these components are automatically adjusted in companies as profits decline (or disappear) and so, accordingly, are the workers' share of them (Weitzman, 1984). If Chile has an instrument of this type, why do we not see a cushioning effect on employment in periods of recession like the one that recently ended?

Part of the answer is to be found in the specifications of the Chilean profit-sharing model. Although the percentage to be distributed is set at 30% (article 47), the Labour Code establishes an alternative that releases companies from this obligation: that of paying workers a proportion of their annual wage (25%), with a ceiling

⁹ Chile, Código del Trabajo, Capítulo V: de las remuneraciones, articles 47 to 52.

¹⁰ Net profit is calculated by deducting 10% from the amount declared for corporation tax (without deducting losses from previous years) as return on the employer's equity.

TABLE 2

**Employment: Company with 100 workers earning more than
1.6 times the minimum wage a month^{a b}**

Company profits (millions of pesos) Articles of the Labour Code		Profits to be distributed to workers (millions of pesos)	Worker share of profits (percentages)
5.8	Art. 47	1.7	30.0
58	Art. 47	17.3	30.0
580	Art. 50	60.5	10.4
5 800	Art. 50	60.5	1.0

^a Equivalent to 204,000 pesos a month given the minimum wage in force since 1 July 2005 (127,500 pesos).

^b Maximum share per worker: 605,625 pesos (4.75 x 127,500 pesos).

per worker of 4.75 times the minimum wage (article 50). The combination of these two limiting factors means that any worker earning more than 1.6 times the minimum wage¹¹ (204,000 pesos as of July 2005) receives less than 25% of his or her annual wage.

This alternative allows companies making large profits to limit what they distribute by way of profit-sharing, with a ceiling that is also quite low. Thus, the higher a company's profits, the lower the percentage that will be distributed on a profit-sharing basis.

According to the minimum wage values in force since 1 July 2005, the maximum profit share per worker is 605,625 pesos (4.75 x 127,500 pesos). This amount applies to all workers earning more than 1.6 times the minimum wage (or 204,000 pesos a month given the same minimum wage). Workers who earn exactly the minimum wage each month will receive a maximum share of three times the minimum wage, since a ceiling of 25% of the annual wage is applied (i.e., 382,500 pesos).

To better illustrate how the profit-sharing system works, we shall take as an example a company with 100 workers whose wages exceed 1.6 times the minimum wage each month (i.e., 204,000 pesos). Table 2 presents hypothetical profits ranging from 5.8 million pesos (equivalent to US\$ 10,000) to 5.8 billion pesos (equivalent to US\$ 10 million).¹² The third column

of the table shows that when the company's profits are 5.8 million pesos or 58 million pesos, it has to distribute 30% of these profits among its workforce, since the amounts to be distributed are less than 25% of annual remuneration and than 4.75 times the minimum wage. If the company has profits of 580 million pesos, however, it will suit it to apply article 50, under which it can pay its workers 25% of their annual wages with a ceiling of 4.75 times the minimum wage. Thus, instead of having to distribute 174 million pesos among its workers (30% of profits), it will have to distribute 60.5 million (100 x 4.75 x 127,500), i.e., 10.4% of its profits. If its profits were 5.8 billion pesos, it would have to distribute a mere 1% of this amount.

According to the 2004 ENCLA, 12% of the companies surveyed distributed 30% of profits, 75% paid bonuses in accordance with article 50, 8% paid some other type of bonus exceeding the legal requirement under the terms of a collective agreement, and the rest paid no bonus. Payment of bonuses under the 30% of profits rule or some negotiated formula becomes more common as company size increases. Whereas only 10% of microenterprises and small businesses pay out 30% of profits, the proportion of large companies doing so is 18%.

Companies have to choose between the two alternatives each year. In the opinion of a consultant who advises companies, "the article 50 formula has its advantages from the financial point of view, as it allows the annual budget to be planned and there are no surprises" (Peñaloza, 2005).

Another very useful way of reaching a better understanding of how this instrument is actually applied in practice is to analyse the periodicity with

¹¹ This threshold of 1.6 times the minimum wage (*MW*) is arrived at by resolving the equation $(12 \times X) \times 25\% = 4.75 \text{ MW}$, where *X* is the monthly wage.

¹² In the interests of simplification, the 10% for the return on the employer's equity has not been deducted from the profit figures.

which payments are made on this basis. According to the 2004 ENCLA, in cases where 30% of profits are paid out the most common frequency is once a year (78% of cases). Among companies that opt to pay 25% of annual remuneration, on the other hand, the usual periodicity is monthly (84% of cases). In the latter case, this portion of earnings merges into basic pay because of the regularity with which it is paid each month and the uniformity of the amounts, so that it is captured by the INE remuneration survey.

From everything analysed here, three conclusions can be drawn. First, the limits established by the law favour companies with higher profits. Second, it is clear that the larger a company's profits, the less important the variable component is as a cushion in times of recession. Lastly, most companies opt in practice to apply article 50, giving rise to payment of a fixed sum that in most cases is distributed monthly, supplementing basic pay.

VIII

Variable wages in some sectors

While it is true that making a portion of worker remuneration variable really does offer an alternative to adjusting employment in a situation of crisis, it is important for this variable component to possess certain characteristics. For example, the variable part must not be a very large proportion of total pay. Otherwise, the effect would be to safeguard the interests of the company at the cost of passing on all the risk to workers, who might see their total income reduced to levels insufficient to meet their basic needs.

This very situation has been complained of on some occasions, as there are companies in the commerce sector that calculate all remuneration on the basis of sales made. While it is common in commerce for a portion of remuneration to be based on sales, it is also usual for workers to have a basic salary paid each month by way of compensation for the time worked, their experience and their training for the job, among other factors.

Another basic condition for variable components is that they must be designed with a view to optimizing the way work is performed in every respect. An incentive system is badly designed if it results in higher productivity but at the cost of product quality, something that is also applicable to services. For example, in the system of

All this indicates that while company profit-sharing is typically categorized as a variable instrument, it has actually become just another component of fixed remuneration. What is being lost by this is the possibility of having a cushioning element in place in the event of a recession that affects company profits. It would be worth conducting an in-depth examination to determine whether the profit-sharing system as currently applied is the most suitable instrument at the present time. Although it is during periods of recession that calls for wage flexibility are heard, it is only if substantial sums are distributed during growth periods that a margin of adjustment will be available. It is not reasonable to expect that already low wages can be cut significantly in the event of a crisis. This margin should be generated during periods of growth like the one Chile is currently experiencing.

remuneration used by bus operators in the Chilean capital pending implementation of the new public transport plan, Transantiago, the more tickets drivers sell the more they are paid, with the result that they are more interested in picking up passengers than in obeying traffic rules or operating the service as the timetable requires. In this case, a monetary incentive has resulted in lower service quality and greater risk on the roads.

Lastly, there are a number of occupations where the link between the company and the worker is limited to the performance of a specific piece of work for a certain period of time, as happens in construction. The volatility of remuneration in this sector arises not while contracts are in force but every time a job is completed and the worker is hired again for a new one. This means that the worker is forced to carry out pay negotiations very frequently, sometimes more than once a year. Given that the construction sector is characterized by low pay, those working there are poorly placed when they come to look for a new job because in most cases they lack the savings to cope with periods of unemployment and have not paid social security contributions in sufficient quantities or for long enough to benefit from unemployment insurance.

According to the INE remuneration index for the construction sector, in 2004 the real hourly wage in this sector was three percentage points lower than in 1997 and had remained unchanged for over three years, despite the strong upturn in activity. Real monthly wages in construction, meanwhile, have fallen steadily since 1997, so that by 2004 they were 20% lower than in that year.

IX

Conclusions

Contrary to the perception of those who believe wages in Chile are rigid, a more detailed analysis indicates that they did adjust in various ways during the crisis period. First, in the case of wages determined by collective instruments, initial increases were reduced in real terms. Second, the number of hours worked was adjusted, resulting in monthly wages that were broadly stable. Lastly, real wage increases were possible, but mainly because inflation fell to levels even lower than expected. The minimum wage moved against this trend, continuing to rise strongly despite the crisis.

One striking thing in the particular case of the minimum wage is that throughout the period when adjustments were being implemented every three years, employers' organizations did not speak out about the discrepancy between the resulting increases and developments in the economy. Two factors must certainly be at work here. First, we know that the minimum wage is the actual wage for many people employed by smaller companies. It is possible that employers in the upper reaches of business were not sufficiently aware of how seriously their smaller counterparts were being affected by this decision, and were not pressed by them to represent their interests more actively.

The second and probably more important factor is that the periodic consultations conducted by the government whenever the minimum wage is due to be set have not followed a formal institutionalized procedure whereby all parties are provided with a basic report prepared by a special expert committee and can present their own technical reports to back up their own positions. Under these circumstances, employers' representatives appear to have held back from a debate whose primary focus was political.

The characteristics described (high job turnover and low wages) suggest that in this particular case there is a need to re-establish sectoral bargaining arrangements so that an effective wage floor can be set by agreement between the parties. The levels thus agreed upon would provide a basis for companies to compete within a framework of relatively stable employment conditions.

There seems to be a need to consider whether it is advisable for consultations among the actors concerned to follow the same format as hitherto or whether it would be more helpful to institutionalize a procedure that encourages not just the active participation of actors in the debate but also the provision of useful technical information.

Still on the subject of this negotiating deficit, there needs to be an in-depth analysis of collective bargaining arrangements. The persistent decline in the proportion of wage earners involved in such bargaining is worrying, as it means that an important instrument for establishing more modern labour relations is being neglected. Again, there is a need for dialogue between the parties to resolve situations of unstable employment and hence working conditions that characterize specific sectors, as indicated when the subject of wage-setting in the construction sector was looked at.

Something that will have to be kept very much in mind over the coming years is that the success of macroeconomic policy, and monetary policy in particular, has led to low inflation, reducing the "inflation flexibility" of wages. Logically enough, this situation has led to a concern to introduce a variable component into pay. A review of current legislation shows that the Labour Code provides for workers to receive a share of company profits, which is an appropriate instrument for cushioning the effect of recessions by reducing labour costs, and for distributing revenues in periods of profitability in accordance with the contribution made by workers.

The great majority of companies, however, prefer to apply the alternative formula provided for, which sets an upper limit on the amounts to be distributed per worker and thus makes the total distribution easier to

predict. In this way, a “variable” instrument becomes another “fixed” component of pay. Given that it is companies that decide how to apply the profit-sharing instrument, we must assume that in making this choice they see the desirability for the company of limiting profit distribution and, should a period of crisis occur, adjusting working hours and possibly employment.

For many years now, therefore, profit-sharing has not provided what the labour market currently needs to work better. There are not many examples in Latin America of practices that might provide material for reflection in Chile, although the case of Brazil may well be of interest. In the mid-1990s, the country introduced a provision for workers to share in the profits of companies or specific production results; with an obligation for the parties to negotiate, albeit with a wide margin of discretion as to the formula ultimately adopted. The objective in Brazil was to encourage more harmonious labour relations so as to improve company performance while at the same time rewarding the workers who made this possible.¹³ It offers companies

the opportunity of setting agreed targets to improve their performance and competitiveness. This strategy clearly fits well with Chile's ongoing integration into world trade, which will force the country to make a great effort to modernize labour relations, starting with recognition of the need for solid worker representation and a system of bipartite dialogue. Lastly, although calls for flexibility are usually heard when periods of recession begin, it must be understood that flexibility can only materialize if substantial sums are distributed to workers during periods of growth to reward them for their contribution to higher profits. As was said earlier, it is not reasonable to expect that already low wages¹⁴ can be cut significantly during a crisis. The variable component of pay could serve this purpose, however, and accordingly it ought to be introduced at a time of strong economic growth, like the one Chile is currently experiencing.

(Original: Spanish)

¹³ See Marinakis (1999) for further information.

¹⁴ According to the 2003 CASEN survey, 60% of wage earners received less than twice the minimum wage (Marinakis and Velasco, 2006).

APPENDIX

Chile: Wage indicators, 1995-2005 (Annual variations)

Year	Real average monthly wage ^a	Real average hourly wage ^a	Real monthly minimum wage ^a	Nominal average monthly wage ^a	Nominal average hourly wage ^a	Nominal monthly minimum wage ^a	Consumer price index ^a
1995	5.0	4.8	4.5	13.6	13.5	13.1	8.2
1996	3.4	4.1	4.2	11.0	11.8	11.9	7.4
1997	2.6	2.4	3.6	8.8	8.7	9.9	6.1
1998	1.5	2.7	5.1	6.4	7.9	1.3	5.1
1999	1.2	2.4	8.9	4.5	5.8	12.5	3.3
2000	1.2	1.4	7.2	5.0	5.3	11.2	3.8
2001	0.4	1.6	3.3	3.9	5.2	6.9	3.6
2002	0.5	2.0	3.1	3.0	4.6	5.6	2.5
2003	0.6	0.9	1.8	3.5	3.8	4.6	2.8
2004	1.8	1.8	2.8	2.8	2.9	3.9	1.1
2005	-1.9	1.9	1.8	1.2	5.0	5.0	3.2

Source: Prepared by the International Labour Office (ILO) with data from the Chilean National Institute of Statistics (INE).

^a Average annual variation.

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The expansion model of the major Chilean retail chains

Álvaro Calderón Hoffmann

Chilean retail firms have succeeded in developing solid competitive advantages based on a business model that captures synergies from the joint operation of a number of related activities. This integrated retailing formula developed as a direct result of the intense competition in the Chilean market, whose limited size made it very difficult to achieve profitability in just one segment of the retail industry. The key to success has been to combine the best practices of international leaders with local knowledge, diversified provision that includes banking services, and the capacity for survival in a highly competitive market. Given all this, retailers have seen international expansion as the option most likely to set them upon a path of sustainable growth.

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I

Introduction

Chile was a pioneer of economic reform (trade liberalization, deregulation and privatization) in Latin America. Following an initial period of turbulence, the country embarked on a course of vigorous growth that made it one of the best-performing economies in the region. In this renewed environment, local companies were forced to undergo profound restructuring. As a result, by the early 1990s, some of these companies were highly competitive in the local market. A number of sectors, including telecommunications, electricity generation and distribution, some segments of manufacturing, pension fund management companies (AFPs) and retailers, achieved significant competitive advantages.

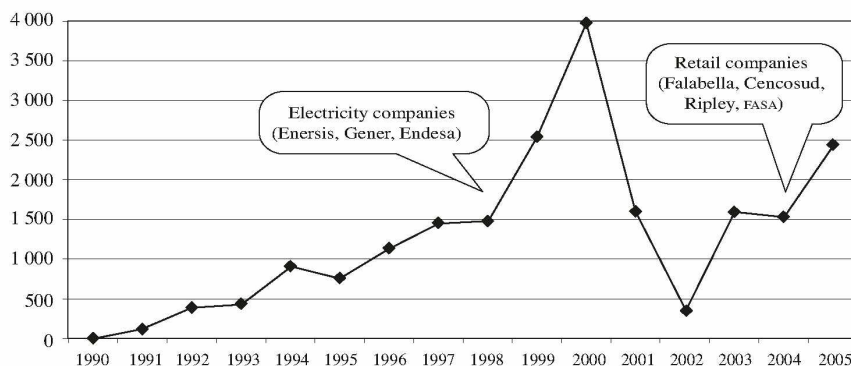
Some Chilean markets were starting to show signs of saturation by this stage, but new investment opportunities were emerging in other Latin American countries as a result of reforms initiated there. Thus, although Chilean companies were not as large as some of their Latin American competitors, their experience enabled them to embark upon ambitious internationalization plans, thereby overcoming the size limitations of their domestic market. Moreover,

this process was boosted by the renewed financing opportunities —both local and foreign— available to the country's largest firms. In fact, Chile became a sort of “recycling centre” for international funds (Calderón and Griffith-Jones, 1995).

In the second half of the 1990s, a good many Chilean companies sought to reproduce abroad the successes they had achieved in the domestic market. More than US\$ 10 billion was invested during this period, most of it in South America and especially Argentina, Peru and, to a lesser extent, Brazil (figure 1). Most of the early investments were made in the electricity sector through the acquisition of assets in the privatization processes taking place in neighbouring countries. These were followed by other investments in service activities, especially pension fund management, and in manufacturing. In the case of the latter, most of the activities concerned were natural resource-based, examples being food and beverages, wood pulp and paper, and metal manufacturing (table 1). By the end of the decade, a number of these firms had achieved a major regional presence. Nevertheless, some of the most successful —such as the electricity companies

FIGURE 1

Chile: Direct investments abroad, 1990-2005
(Millions of dollars)



Source: Central Bank of Chile.

TABLE 1

Main Chilean companies with investments abroad, by country, 2005^a
(Millions of dollars and percentages)

A	B	Company	Sector	Countries where company operates ^b						Sales	
				AR	PE	BR	MX	OT	US	Total	% abroad
1	2	Empresa Nacional del Petróleo (ENAP)	Oil	X	X			X		6 674	...
2	3	Enersis ^c	Electricity	X	X	X		X		6 277	...
3	4	Cencosud	Retail	X						4 915	32
4	7	Falabella	Retail	X	X			X		3 854	22
5	9	Lan Airlines	Transport	X	X	X	X	X	X	2 507	...
6	12	Celulosa Arauco y Constitución (ARAUCO)	Wood, pulp and paper	X		X		X		2 377	...
7	13	Compañía Manufacturera de Papeles y Cartones (CMPC)	Wood, pulp and paper	X	X		X	X		2 130	11
8	14	Molymet	Metal manufacturing				X	X		2 090	...
9	16	Compañía General de Electricidad (CGE)	Electricity	X						1 663	10
10	18	ENTEL	Telecommunications		X			X	X	1 496	16
11	19	Ripley Corp.	Retail		X					1 475	25
12	20	Farmacias Ahumada (FASA)	Retail		X	X	X			1 230	60
13	23	Compañía Cervecerías Unidas (CCU)	Beverages	X						961	10
14	24	Embotelladora Andina	Beverages	X		X				934	52
15	25	AES Gener ^c	Electricity	X	X			X		899	...
16	30	Masisa ^c	Wood, pulp and paper	X		X	X			744	73
17	32	Manufacturas de Cobre (Madelco)	Metal manufacturing	X	X	X				713	39

Source: Prepared by the author using data from the companies and from *Capital* (2006) and *América economía* (2006a).

^a Column A ranks the companies by their foreign investments and column B by their sales.

^b AR: Argentina; PE: Peru; BR: Brazil; MX: Mexico; OT: Other Latin America; US: United States.

^c Company taken over by a transnational enterprise.

and the AFPs— were taken over by transnational corporations seeking to quickly establish a substantial presence in Latin America. For many, too, lack of international experience, overconfidence and difficult conditions in the recipient economies resulted in losses that matched the original investments in size.

Thus, firms that decided to invest abroad had a difficult and unrewarding experience: they were taken over by competitors from outside the region or else ran up large losses. Despite the dynamism of the Chilean economy and the availability of low-cost

financing, the country's firms thus became warier of new attempts to expand abroad. At the same time, the corporate perception of the Latin American business climate rapidly deteriorated in the face of growing economic and political volatility in the neighbouring countries and reduced legal security for investments abroad (Calderón, 2005).

In an atmosphere of greater uncertainty, Chilean firms sought to strengthen their position in their home market and postponed many of their foreign investment ventures. In Argentina, in particular, but also in Peru,

companies set contingency plans in train and in some cases implemented radical financial and operational restructuring projects. They also worked to improve their efficiency locally, incorporating new technologies and innovative forms of management and seeking to generate renewed synergies. To this end, there was an intensive round of consolidation through mergers and acquisitions and alliances between operators in related businesses, which resulted in economies of scale and far-reaching integration. Currently, Chilean companies seem to be more selective and cautious when it comes to embarking upon an internationalization strategy.

Chilean investments abroad began to pick up again in 2003, coinciding with an upturn in the domestic economy (which grew by over 6% in 2004 and 2005) and a strong flow of financial resources as a result of robust growth in the world economy and buoyant prices for the country's main exports (figure 1). Certain sectors started to look for new business opportunities in order to continue growing, and the limited size of the domestic economy meant that the prospect of investing abroad once again seemed appealing. This has not led to any significant change in internationalization patterns, as the same businesses and geographical destinations predominate. This trend has been greatly strengthened by economic recovery and the return to institutional normality in Argentina.

Just as the electricity sector led the way in the first wave, retail companies have clearly taken the lead in this new phase of Chilean investment abroad. These firms have learned from recent experience, refining a business model with clear competitive advantages and exporting it successfully to other countries in

Latin America. Chilean firms have learned from the global giants of industry and adapted their experience to Latin American conditions, basing their competitive advantages on their management capabilities. While keeping a majority stake in their foreign affiliates, they have sought to operate as local firms in collaboration with strategic domestic partners, thereby limiting the exposure of capital exported from Chile. This is in contrast to the first phase of Chilean investment abroad, when this logic did not exist because markets were not yet sufficiently developed.

To summarize, the internationalization of Chilean firms has taken place within Latin America. Early reforms, the privatization of State enterprises and the experience accumulated in an open, competitive economy, together with geographical proximity and cultural affinity, gave these firms a major competitive advantage in initiating the international expansion of their activities and harnessing the opportunities that emerged in neighbouring countries. Initially, given the highly uncertain environment, this experience was crucial for competing with transnational corporations that were less familiar with Latin America. Nevertheless, these advantages dwindled rapidly, competitors became more familiar with the local environment and some of the Chilean firms that had been most active in this process were swallowed up by international operators. Now, after a lull, Chilean investments abroad have been making a comeback. Chilean firms have learned from their experience and developed business models that they can apply successfully abroad, retailing being the prime example.

II

The internationalization of retailing

In the mid-nineteenth century, there was a sharpening of the divide between the wholesale and retail trades in the United States and Europe. France saw the establishment of the great emporia that were the forerunners of today's department stores, creating the retail trade as we know it today. Right from the start, large stores in Paris such as Galeries Lafayette had special sections for displaying their products, sales personnel whose task was to meet the needs of customers, and credit facilities. This model spread rapidly to other European

countries. The first half of the twentieth century saw the advent in the United States of the supermarket and one of its emblematic features, the shopping trolley, which led to a veritable revolution in consumption patterns. In the early 1960s, new formats gave a fresh impetus to the retail industry; the French chain Carrefour opened the first hypermarket and shopping centres began to proliferate in the United States. These brought together department stores, boutiques, supermarkets and entertainment facilities (restaurants, cinemas,

etc.) under one roof. Powerful local operators began to consolidate in the different retail formats, and these developments were copied all over the world.

In Latin America, the progression was similar. Large stores started to make their appearance in the main cities of the region at the beginning of the twentieth century. Subsequently, following the United States model, the first supermarkets appeared, followed shortly afterwards by hypermarkets and shopping centres. Generally speaking, the retail business was operated by local family-owned groups and its growth was quite fragmentary.

Retailers internationalized more slowly than firms in other industries. The first efforts in this direction were made by some of the major United States stores, such as Woolworth, which set up operations in Canada (1907) and later in Europe, and Sears Roebuck, which expanded into Cuba in 1942. In the 1960s, these initiatives were emulated by some of their peers on the other side of the Atlantic, including C&A of France and Marks & Spencer of the United Kingdom. Prior to that, most companies had largely confined their growth and diversification strategy to their local markets. Signs of saturation in these, however, together with regulatory changes and greater openness to foreign direct investment, prompted some large firms in the sector to seek out new growth opportunities abroad. The pioneers in the supermarket segment were European companies, led by Carrefour of France and Royal Ahold of the Netherlands.

The process started to gain greater momentum in the 1990s, especially with the emergence of the United States firm Wal-Mart. By 1990, less than thirty years after its foundation, Wal-Mart had already become the leading retail chain in the United States, thanks to an active strategy of acquisitions and consolidation of its format (discount or convenience stores). Thereafter, it set in motion an ambitious process of international expansion, combining greenfield investments with acquisitions and partnerships. Initially, its expansion was concentrated in North America (Mexico in 1991, through a partnership with the local group Cifra, and Canada in 1994); then it set its sights on South America (Argentina and Brazil in 1995) before finally venturing into more distant markets in Europe (Germany in 1998 and the United Kingdom in 1999) and Asia (China in 1996, Republic of Korea in 1998 and Japan in 2002). Wal-Mart has thus become the world's leading retailer, with three times the turnover of its closest competitor (Carrefour), and is climbing towards the highest rankings in the classification of the

world's largest companies (the Global 500) prepared by Fortune magazine.

As the experience of Wal-Mart demonstrates, the international expansion of retail firms accelerated considerably in the second half of the 1990s, albeit only a few major players were involved. Moreover, this process did not only take place in industrialized countries (the United States, Western Europe and Japan), where it was boosted by the existence of the European Union and the North American Free Trade Agreement, but also spread to a considerable number of developing economies, principally in Asia, Latin America, Eastern Europe and the Mediterranean area (figure 2 and table 2). With home markets close to saturation, several companies saw emerging economies, where the business model was largely underdeveloped, as a major opportunity for continued growth.¹

Nevertheless, United States retailers dominate, accounting for 36% of the sales of the 250 largest companies in the industry, followed by European companies (35%) and those from Japan (16%) (Deloitte, 2006). As they expanded internationally, these companies' operations abroad began to have a significant impact on total sales. Between 1996 and 2003, the number of retailers ranking among the top 100 transnationals worldwide increased from none to four: Carrefour, Wal-Mart, Royal Ahold and Metro of Germany (UNCTAD, 1998, pp. 36-38 and 2005, pp. 267-269). As outside companies began to enter their own markets, however, domestic performance was held back and none of these companies has emerged as a clear winner across all regions or markets (McKinsey Global Institute, 2003).

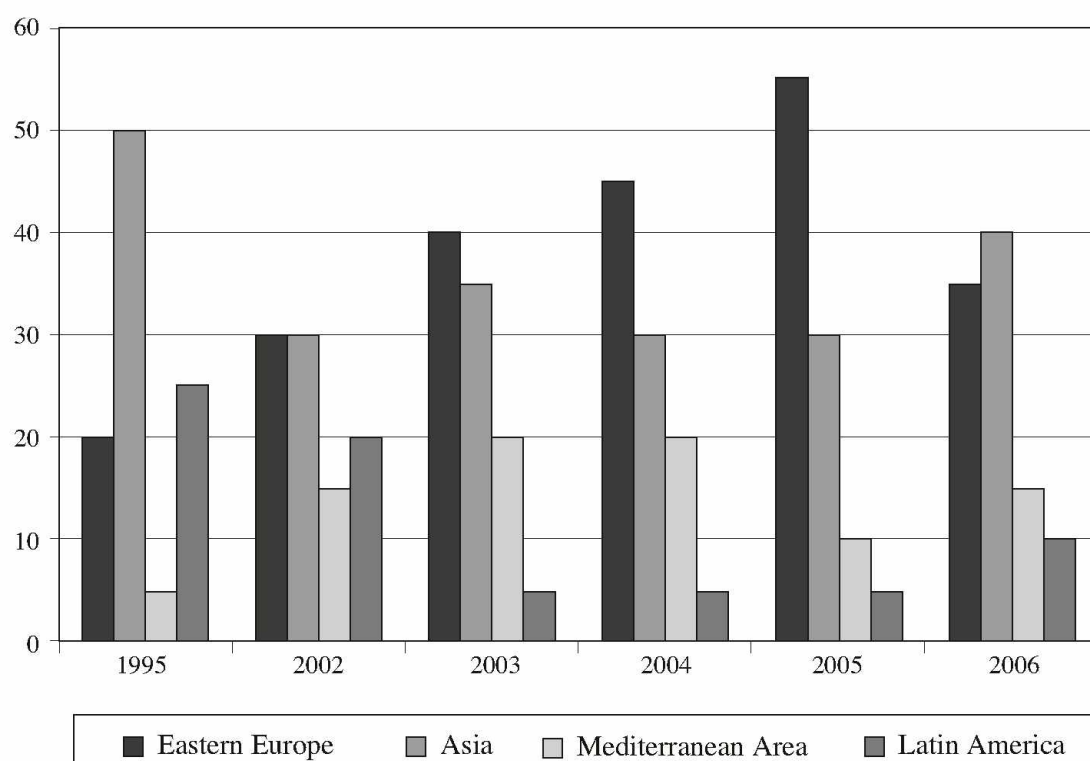
Thanks to the reforms and the promising economic outlook in its principal countries, Latin America became one of the regions where industry leaders with global ambitions had the greatest potential for international expansion (figure 2).² The region thus

¹ At the beginning of the current decade, Royal Ahold owned a chain of stores with operations in Western and Eastern Europe, North America, Central and South America and South-East Asia; Carrefour had a strong presence in Europe, the Americas, Asia, the Middle East and Africa; and Wal-Mart had operations in the Americas, Western Europe and East Asia.

² In 1995, five Latin American countries ranked among the 20 most attractive destinations for retail development. At that time, Asia had 10 countries on the list, Eastern Europe four and the Mediterranean area just one (A.T. Kearney, 2005).

FIGURE 2

Developing country markets with the greatest retail potential, by region, 1995-2006
(Percentages)^a



Source: Prepared by the author on the basis of A.T. Kearney (various years).

^a Percentage of markets that are among the 20 most attractive destinations for retail development.

TABLE 2

World's leading retailers, by sales, 2004
(Millions of dollars)

	Firm	Country of origin	Total sales ^a	Regions outside home country where it operates ^b				
				NA	LA	EU	AS	OT
1	Wal-Mart Stores Inc.	United States	285 222	X	X	X	X	
2	Carrefour S.A.	France	89 568		X	X	X	X
3	The Home Depot Inc.	United States	73 094	X	X ^c			
4	Metro AG	Germany	69 781			X	X	X
5	Tesco PLC	United Kingdom	62 505			X	X	X
6	Kroger Co.	United States	56 434					
7	Costco Wholesale Corp.	United States	47 146	X	X ^c	X	X	
8	Target Corp.	United States	45 682					
9	Royal Ahold N.V.	Netherlands	44 793	X		X		
10	Aldi GMBH & Co.	Germany	42 906	X		X		X
228	Falabella	Chile	2 608		X			
239	D&S S.A.	Chile	2 420					

Source: Prepared by the author on the basis of *Stores* (2006).

^a Group turnover in the retail segment.

^b NA: North America (United States and Canada); LA: Latin America and the Caribbean; EU: Western and Eastern Europe; AS: Asia; OT: Others.

^c Operations in Mexico only.

rapidly became a priority target for the major retail operators (figure 3). Through an aggressive strategy that consisted essentially in buying up local chains, Wal-Mart, Carrefour and Royal Ahold rapidly built up solid positions in the region's major markets (Argentina, Brazil and Mexico), taking their place among the principal transnationals with operations in the region and becoming leaders in the Latin American retail industry.

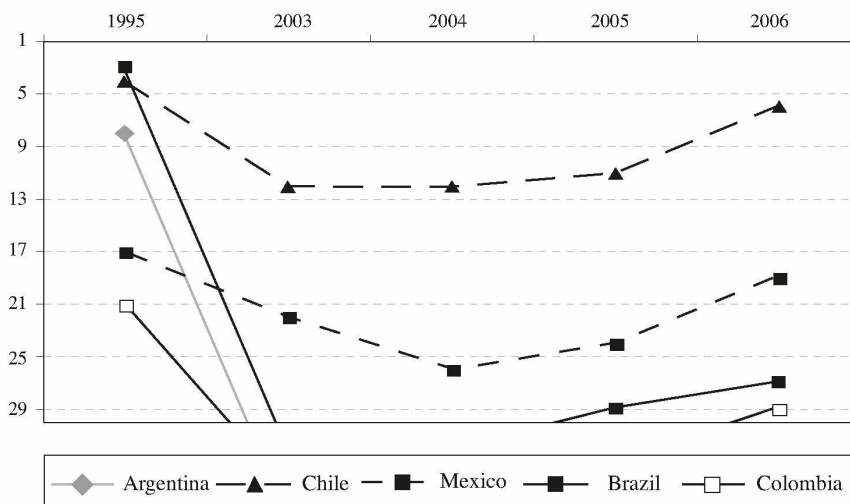
Despite barriers to entry, these major markets offered the companies sufficient economies of scale for them to gradually introduce the formats developed in their countries of origin. In Brazil, the retail trade was very fragmentary, had low operating margins and

needed a great deal of investment; it also faced intense competition from the informal sector, which made foreign capital inflows into the industry very valuable. This led to a high level of penetration by international operators, especially Carrefour and Casino of France, Sonae of Portugal, Royal Ahold of the Netherlands and, more recently, Wal-Mart. In Mexico, on the other hand, where local operators were in a better position, Wal-Mart entered the market through a partnership which gave it a better understanding of the preferences and needs of the country's consumers. Subsequently, the United States firm took control of the operation³ and applied an aggressive strategy centred on pricing and the transfer of best practices, which resulted in a significant

³ In 1997, Wal-Mart paid US\$ 1.2 billion to acquire the Cifra group's share of their joint operation in Mexico.

FIGURE 3

Latin America: Most attractive markets for the retail industry
(Country ranking among the 30 most attractive emerging markets)^a



Source: Prepared by the author using information from A.T. Kearney (various years).

^a A.T. Kearney publishes an index on global prospects for the retail trade in developing countries. This analysis is meant to help international operators to prioritize their global strategies. The index is constructed on the basis of variables associated with country risk, attractiveness, market saturation and the time required to take advantage of the opportunity. The end result is an annual classification that ranks the 30 main emerging economies by their investment potential.

increase in competition in the Mexican market. This experience enabled Wal-Mart to intensify and speed up its expansion in Latin America, particularly Brazil, where it took over the assets of Royal Ahold and Sonae.⁴ In 2004, Wal-Mart was in third place among the 50 largest transnational corporations with operations in Latin America, surpassed only by General Motors and Telefónica of Spain, while Carrefour ranked thirteenth (ECLAC, 2006, p. 42).

Expansion into the smaller Latin American economies was more limited during this period, with Royal Ahold being practically the only significant participant. In 1998, after entering the Brazilian market, the Dutch firm went into partnership with the Argentine group Velox (owners of the Disco and Santa Isabel supermarket chains), gaining simultaneous access to the markets of Argentina, Chile, Paraguay and Peru. The following year, even as it was embarking upon ambitious growth in the United States, Royal Ahold set its sights on Central America. Using the same strategy

as it had applied in the Southern Cone, it formed a company with the Guatemalan firm La Fragua, which already had operations in El Salvador and Honduras. It subsequently expanded the partnership to include the Corporación de Supermercados Unidos (CSU) of Costa Rica, thus creating the largest supermarket network in the subregion, Central America Retail Holding Company (CARHC).⁵ In 2002, Royal Ahold took control of operations in South America. In early 2003, however, the Dutch group ran into serious financial difficulties and publicly admitted to accounting irregularities. Under these circumstances, and faced with the deteriorating economic situation in the Southern Cone, Royal Ahold announced its withdrawal from Latin America, thereby opening up new opportunities for other companies that wished to expand their presence in the region. Its most valuable Latin American assets were acquired by just two companies: Wal-Mart and the emerging Chilean group Cencosud (table 3).⁶

TABLE 3

Latin America: Leading international retail chains, their turnover and their market position, 2005
(Millions of dollars)

	Regional leaders				Emerging operators			
	Wal-Mart Stores		Carrefour		Cencosud		Falabella	
	Sales	Position	Sales	Position	Sales	Position	Sales	Position
Argentina	...	...	538	4	1 743	1	144	...
Brazil	5 032	3	5 394	2	-	-	-	-
Chile	-	-	-	-	4 915	1	3 854	2
Colombia	-	-	751	3	-	-	-	-
Mexico	15 518	1	^a	-	-	-	-	-
Peru	-	-	-	-	-	-	404	3
Central America	2 200	1	-	-	-	-	-	-

Source: Prepared by the author on the basis of data from the companies and *América economía* (2006).

^a In March 2005, Carrefour sold its assets in Mexico to the local chain Chedraui for an estimated US\$ 500 million.

⁴ In 1995, Wal-Mart moved into the Brazilian market through a partnership with the local chain Lojas Americanas, opening a couple of discount stores. Two years later, the partnership was dissolved and Wal-Mart started a slow process of organic growth, opening 25 new outlets. Recently, the process has accelerated considerably thanks to new acquisitions from some of its leading global competitors. In March 2004, Wal-Mart bought the Bompreço chain for some US\$ 300 million from the Netherlands company Royal Ahold; this brought it 118 stores in north-eastern Brazil. In December 2005, Wal-Mart paid US\$ 748 million for the Brazilian operations of the Portuguese firm Sonae, thus positioning itself, with 295 stores in 17 of Brazil's 26 states, as the third-largest retail chain in the country

behind Carrefour and Companhia Brasileira de Distribuição (CBD), which has the backing of the French group Casino (*The Wall Street Journal Americas*, 2005).

⁵ Royal Ahold controlled 33.3% of CARHC, which in turn owned 85% of La Fragua and 100% of CSU. By 2005, CARHC was operating 363 stores in Costa Rica (124), Guatemala (120), El Salvador (57), Honduras (32) and Nicaragua (30).

⁶ Wal-Mart acquired the Brazilian chain Bompreço and Royal Ahold's share of the Central American supermarket chain CARHC. Cencosud bought the Santa Isabel chain in Chile and the Disco supermarkets in Argentina.

As can be seen from the experience of Royal Ahold, it has not been easy for large retailers to expand into foreign markets, since good results at home are no guarantee of success abroad (Bianchi and Ostalé, 2004, p. 3). Moreover, the “windows of opportunity” opening up in developing countries were associated with a high degree of uncertainty, owing to the rapid saturation and instability of local markets (figure 2). Latin America has been no exception, and Royal Ahold is not the only transnational corporation to have pulled out of the region. Other emblematic cases include The Home Depot (Argentina and Chile) and Carrefour (Chile and Mexico). In most such situations, the international operators in question proved unable to adapt their formats and practices to the characteristics of local markets and faced unexpected problems with suppliers, consumer tastes and aggressive competition from established local chains.

III

The integrated retail model in Latin America

Retail is one of the most dynamic and competitive sectors of the Chilean economy, and is in a state of unceasing development. This has made the Chilean market the most attractive in Latin America (figure 3). In recent years, there has been a trend towards consolidation of the different formats that compete for custom in the sector: supermarkets, specialized chains (pharmacies, home improvement and building materials) and department stores. A greater diversification of income sources has now become explicit, essentially involving the provision of customer credit and the sale of a broader range of products at the same location in order to attract more consumers (banking services, insurance and travel). Many of these changes have occurred against the backdrop of profound transformations in the sector’s largest companies, especially the transition from family businesses to professionally managed firms and then to public companies whose shares are traded on stock markets in Chile and abroad.

With a more open economy and growing competition following the arrival of the first international operators, retail companies adopted a defence strategy which yielded good results. First, they were quick to study the top international retailers. Then they took

In summary, the dominant international operators, Wal-Mart and Carrefour, have concentrated on consolidating their position in the main regional markets. They have recently sought to expand their presence into smaller markets, with mixed results. On the whole, consolidation in the smaller economies has taken place among local firms, which have been incorporating some of the best practices and formats developed by the global operators. Chile’s experience is particularly striking, since the local chains put up fierce resistance to the global leaders, consolidated their position in the domestic market and then ventured out to explore new business opportunities in neighbouring countries. This last development is especially noteworthy, since not even the large Mexican chains (Organización Soriana, Controladora Comercial Mexicana, Grupo Gigante and Grupo Elektra), which have competed strongly with Wal-Mart, have been able to expand their activities abroad to any significant degree.

some of those retailers’ business models and practices, pinpointed and eliminated their shortcomings and proceeded to adapt them to the local market. They also hired executives with ties to those companies and added new products and services. For their part, the foreign corporations underestimated the local firms’ ability to react and ultimately had to withdraw from the Chilean market⁷ (Bianchi and Ostalé, 2004). The sector thus saw the emergence of a group of companies that had developed competitive advantages, enabling them to establish a strong position in the domestic market, block international competitors’ attempts to enter the Chilean market and begin to expand into neighbouring countries (table 4).

⁷ In 1999, after operating for five years without making a profit, the largest United States department store chain, J.C. Penney, sold its assets to its local competitor, Almacenes París. In 2001, three years after it began trading, the world’s biggest home improvement store, The Home Depot, decided to sell its out to its local partner, Falabella. In 2003, after five years in the country, the world’s largest supermarket chain, Carrefour, sold its stores to the local operator D&S. Lastly, in the same year, Cencosud acquired the operations of Royal Ahold in Chile.

TABLE 4

Chile: Leading retail groups and their market share, 2005
(Percentages)

Group	Department stores	Home improvement	Supermarkets	Pharmacies
Falabella	40	21	3	-
Cencosud	29	5	25	-
Ripley	31	-	-	-
D&S	-	-	35	4
Farmacias Ahumada (FASA)	-	-	-	30
Salcobrand	-	-	-	27
Cruz Verde	-	-	-	34
Others	0	74	37	5
Total	100	100	100	100

Source: Prepared by the author with information from the companies.

One of the main peculiarities of Chilean retailers is their involvement with financial services.⁸ Chilean firms were pioneers in consumer lending. The development of the sector has been closely linked to the provision of customer credit, boosted by the creation of the retailers' own financial arms: Banco Falabella (1998), Banco Ripley (2003) and Banco París (2004). Indeed, meeting customer demand for credit has become an additional source of revenue and a key factor in these companies' profitability. Consumer credit activities have strengthened the retail side of the business and the success of this has boosted lending in turn, generating a powerful synergy between the two activities (Falabella, 2004b, p. 27). Lending activities could become even more important at times of economic slowdown, since people would then prefer longer repayment terms. The financial business currently represents between 7% and 10% of total income for Cencosud and Falabella, and about 25% for Ripley, which is not yet in the supermarket business. Moreover, it provides companies with information on their customers (consumption

habits and borrowing capacity) that helps them to define their marketing strategies and optimize the composition of the goods they sell and their promotional activities. It would appear that the present focus of strategy is on increasing the loyalty of existing customers rather than attracting new ones. Thus, lending could be increased further by providing more credit to the best customers without necessarily increasing risk.⁹

The provision of credit cards by retailers was not formerly subject to many restrictions, and in some cases this led to complaints by users. In April 2006, a new law was brought in to govern the operation and use of non-bank credit cards, bringing them under the supervision of the Superintendency of Banks and Financial Institutions (SBIF).¹⁰ Although these changes in the regulatory framework could affect their capacity to generate operational flows, the companies in the sector seem to be adapting rapidly to this more restrictive environment. As part of this, they have improved their credit profile forecasting models and tightened up their bad debt provision policies.

⁸ This strategy had already been applied by United States companies. In Chile, however, it proved particularly successful, since the major stores' credit cards were targeted at lower-income consumers, a segment clearly not covered by traditional banks.

⁹ In December 2005, the main retailers had loan portfolios totalling more than US\$ 3.15 billion: Falabella, US\$ 1.072 billion; Ripley, US\$ 907 million; Cencosud, US\$ 428 million; D&S, US\$ 374 million; and La Polar, US\$ 374 million (*La Segunda*, 2006).

¹⁰ Under the new regulations, customers who have problems with their card, be they irregularities in the commissions charged or security anomalies, can complain to SBIF or the National Consumer Service (SERNAC). The companies are obliged to provide customers with information on the item for which interest is being charged, the rate applied, the basis of calculation and the period covered.

In the absence of international operators in Chile, local companies competed vigorously with one another in areas ranging from hypermarkets to the more innovative types of convenience store. Economic growth and stability, together with strong consumption growth, enabled the leading firms to continue expanding without significant losses of market share. Nevertheless, the first signs of saturation prompted the Chilean chains to seek new growth opportunities abroad.

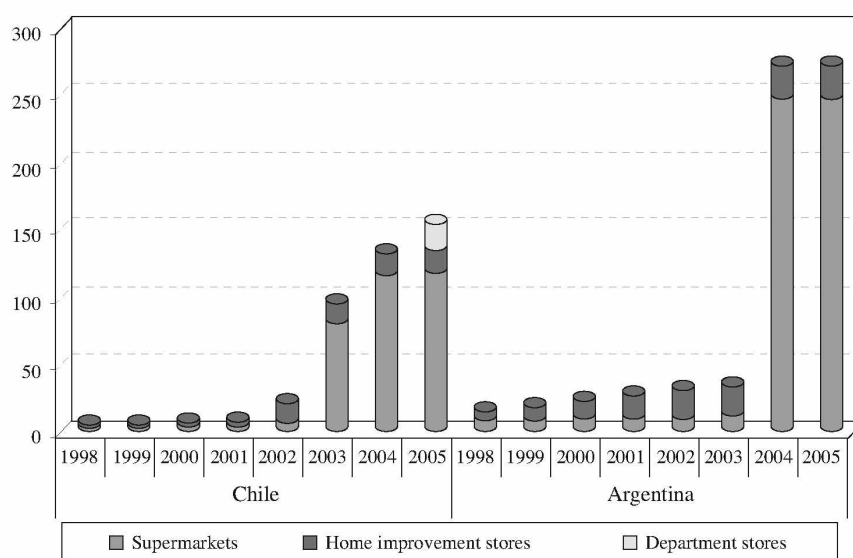
The pioneer in international expansion was Cencosud. During the 1980s, it opened two shopping centres with Jumbo hypermarkets in Buenos Aires; one of them, Unicenter, was the largest of its kind in Argentina. These initial incursions set what was to become the pattern for Cencosud's internationalization drive: a combination of vigorous real-estate development (construction and operation of shopping centres) and active participation in retail activities, particularly supermarkets, to which it would later add home improvement stores. In 1993, the company introduced a new line of business simultaneously in Chile and Argentina when it created building materials and home improvement stores under the Easy brand name. From then until 1998, Cencosud's growth in Buenos Aires was particularly rapid, as it built and ran seven new

shopping centres, all of which included Jumbo and Easy stores. The penetration strategy for Easy was even broader, as about half these stores were located away from the shopping centres run by Cencosud. This was part of a strategy of generating powerful synergies between the company's different lines of business, especially in Argentina (figure 4).

During the same period, the department store chain Falabella also moved into Argentina, but with a considerably more conservative strategy than the one used by Cencosud. In 1993, Falabella opened its first store in the border town of Mendoza, where people were already familiar with the company because of the amount of tourist traffic between the two countries. Falabella saw Mendoza as offering an opportunity for growth with less risk than would have been involved in moving directly into Buenos Aires (Bianchi, 2002, p. 6). With this initial operation, Falabella became the only department store chain to operate in the Argentine market (Falabella, 2004b, p. 37).

Despite this privileged position, the results did not live up to expectations. Falabella had to deal with a complex environment in which legal standards, consumer preferences and habits and product import facilities were very different from those in Chile.

FIGURE 4

Cencosud: Number of stores, by business segment and country

Source: Prepared by the author on the basis of information from Cencosud.

Nevertheless, the company continued its expansion into Argentina by opening two new stores, in San Juan (1994) and in Córdoba (1997), seeking to generate economies of scale that would make its business profitable (Bianchi, 2002, p. 6). Its great opportunity to consolidate its position in Argentina came a little later, however, when Cencosud remodelled the Unicenter shopping centre. Falabella then came in as the second anchor store alongside Jumbo, thus establishing itself in Buenos Aires. As a means of promoting department store sales, it also introduced its CMR credit card, along with other services such as its travel agency. When it began to provide credit, the company's performance started to pick up, and expectations for Falabella's future growth in Argentina are now high (Falabella, 2000, p. 17).

In light of its experience in Argentina and the difficulties encountered there, Falabella reformulated its strategy for entering other markets and began to pay greater attention to local idiosyncrasies. In 1995, encouraged by the Peruvian economy's growth prospects, it entered that market by acquiring the SAGA (Sociedad Andina de Grandes Almacenes) department store chain, which was well known locally and had two stores in Lima, from its Colombian owners. The company began operating under the name SAGA Falabella, retaining local management and incorporating processes and best practices applied in Chile (Bianchi, 2002, p. 7). The strong position of the SAGA brand, the established managers' knowledge of the market, the existence of a department store shopping culture and the perception among Peruvian consumers that Falabella was a local company meant that it quickly achieved positive results (Falabella, 2004b, p. 38). As in Argentina, those results were boosted by the introduction of the CMR credit card and the company's travel agency, and by the selling of insurance.

In view of Falabella's success, one of its main rivals in Chile, Ripley, began its own internationalization process in Peru in 1997. The new competitor reproduced the characteristics of the Chilean market by opening its first premises in Lima at the Jockey Plaza Shopping Center, where Falabella also had a store. In Peru, Ripley sought to build up its corporate image among higher-income consumers before turning its attention to segments with less purchasing power.

In a bid to cope with this new situation, between 1996 and 1998 Falabella expanded and remodelled its existing facilities, opened two new shops in Lima, and set up a distribution centre. The company also worked to maintain good relations with its Peruvian suppliers

(almost 50% of its purchases were local), while at the same time coordinating closely with the buying department in Chile, as a way of creating synergies in bulk purchases from foreign suppliers (Bianchi, 2002, p. 8).

The economic situation in Peru began to deteriorate, however, affecting the results of the two Chilean firms' Peruvian subsidiaries. In response, both Ripley and Falabella launched new expansion drives involving major changes in their strategies. In 2000, Ripley introduced a new low-price, self-service store format (Max). This strategy enabled it to reach segments of the Lima population which its competitor had yet to approach. Meanwhile, Falabella was also opening smaller stores (SAGA Falabella Express), but with a view to exploring market potential elsewhere in Peru. Thus, the company used a small shop format and careful product selection to try to identify the needs and preferences of consumers in the northern part of the country, while also introducing the CMR credit card. Over a short period, Falabella opened premises in Trujillo (the largest city in northern Peru) and in Chiclayo, Piura and Arequipa.

Coming on top of the difficulties in Peru, the sharp downturn in the Argentine economy destabilized Falabella's and Cencosud's plans. Falabella put a freeze on new investment and announced that it would not open any more new stores in Argentina, but would instead concentrate on improving the commercial management and efficiency of its operations (Falabella, 2001, p. 19 and *El Mercurio*, 2002). One of the most important measures taken by the Chilean firm in Argentina was a rapid reduction in the percentage of imported merchandise, which it replaced with local products more suited to Argentine tastes. This gave it a considerable competitive advantage (Falabella, 2004b, p. 37). Falabella also sought to improve its communication strategy and capitalize more on the economies of scale generated by its joint operations in Chile and Peru (Falabella, 2001, p. 19). Lastly, the department store format proved highly convenient and flexible for Argentine consumers during the economic recession because they could use the CMR credit card for their purchases (Falabella, 2004a, p. 14).

Meanwhile, Cencosud continued to grow but, unlike Falabella, focused its efforts on expanding its real-estate business into other parts of Argentina by opening somewhat smaller shopping centres (Neuquén and Mendoza) and extending its Easy chain (table 5). Cencosud saw an opportunity in the deep economic crisis, and while other major operators in the industry

TABLE 5

Cencosud: Shopping centres in Argentina, 2005

Opened	Shopping centre	Leasable floor space (m ²) ^a	Location	Description
1982	Parque Brown Factory	26 224	Federal capital	Jumbo, Easy, 44 stores
1988	Unicenter	91 771	Martínez, Buenos Aires	Jumbo, Falabella, 287 stores, Aventura, Food Court, 14 cinemas
1993	Lomas Center Factory	33 675	Lomas de Zamora, Buenos Aires	Jumbo, Easy, 50 stores, Aventura
1994	San Martín Factory	32 729	San Martín, Buenos Aires	Jumbo, Easy, 31 stores, Aventura
1996	Centro Comercial Palermo	29 699	Federal capital	Jumbo, Easy, 43 stores
1997	Quilmes Factory	44 132	Quilmes, Buenos Aires	Jumbo, Easy, 47 stores, Aventura, Food Court, 12 cinemas
1997	Plaza Oeste Shopping	41 634	Morón, Buenos Aires	Jumbo, Easy, 138 stores, Aventura, Food Court, 8 cinemas
1998	Las Palmas del Pilar	49 581	Pilar, Buenos Aires	Jumbo, Easy, 102 stores
2000	Portal del Escobar	32 740	Escobar, Buenos Aires	Jumbo, Easy, 24 stores
2000	Portal de La Patagonia	33 813	Neuquén	Jumbo, Easy, Food Court, 40 stores
2001	Portal de Los Andes	32 563	Godoy Cruz, Mendoza	Jumbo, Easy, 30 stores
2004	Portal Rosario	55 000	Rosario	Jumbo, Easy, 160 stores, Food Court, cinemas

Source: Prepared by the author on the basis of information from Cencosud.

^a Includes Jumbo and Easy stores.

were trying to withdraw from the country, the Chilean company sought options for continuing growth. Although it did experience a significant slump in sales, it was clearly confident that the Argentine economy would bounce back (figure 5). In 2002, Cencosud paid US\$ 105 million for the four stores owned by the United States chain The Home Depot in Argentina (Cencosud, 2003, p. 15).

Cencosud thus became one of Argentina's largest shopping centre management companies¹¹ and the leader in the country's home improvement and building stores sector (tables 5 and 6). The devaluation of the peso forced Easy to substitute local products for imports and use a greater number of local suppliers.¹²

¹¹ The Argentine shopping centre market basically comprises two large operators, Cencosud and IRSA-Alto Palermo Centros Comerciales, which account for 60% of gross leasable space in commercial establishments of this type.

¹² Prior to this, some 30% of the products sold in the company's stores were of foreign origin.

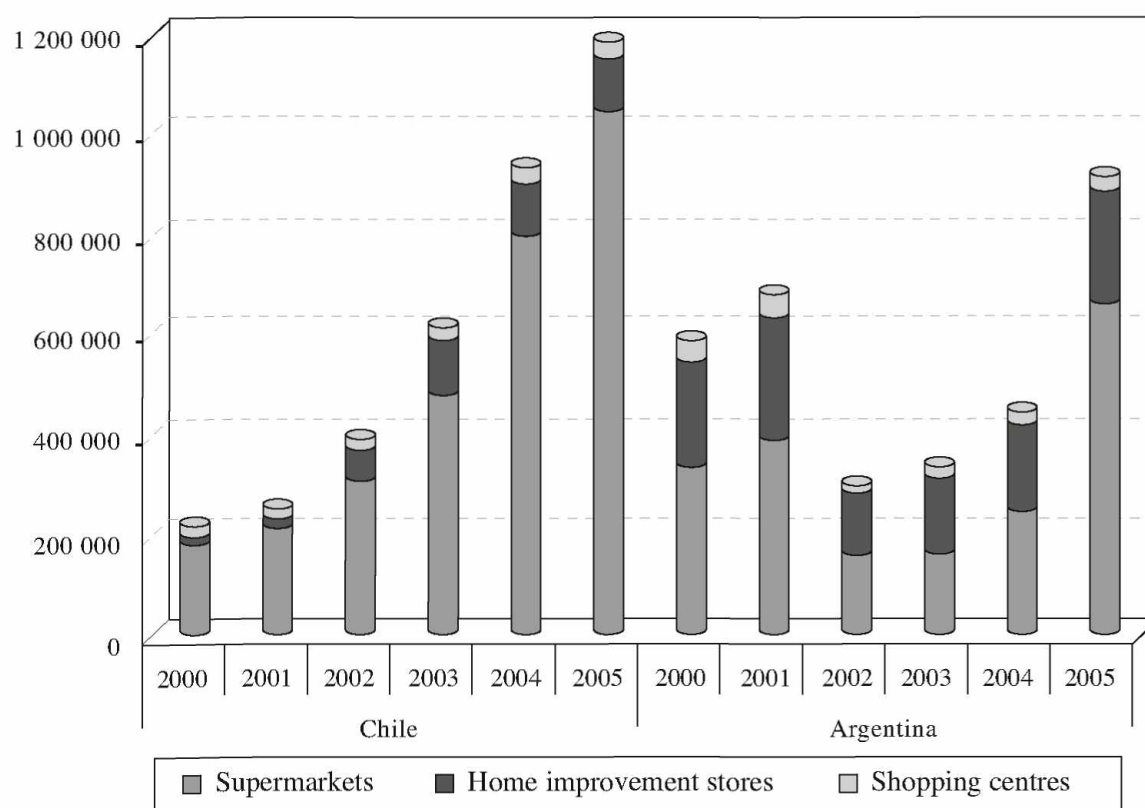
This situation created an opportunity to introduce new products to its subsidiary in Chile, enabling the company to reap volume synergies in its purchasing (Cencosud, 2004, p. 36).

The troubled economic situation of Argentina and Peru in the early 2000s held back the international expansion of Chile's largest retailers, but they did succeed in growing and strengthening their position in the Chilean market while introducing major changes in their business development strategies. Given the small size of their domestic market, they realized that they could not achieve sufficient scale if they acted in just one segment of the industry, so they began to broaden and diversify their provision in order to create synergies among different but related lines of business. Thus, while global operators were specializing and standardizing their formats, a new variant began to emerge in Chile's retail industry: integrated retailing.

It was Falabella that took the first steps in this direction. In the late 1990s, it moved into the home improvement stores segment in partnership with the

FIGURE 5

Cencosud: Operating revenue, by business segment and country, 2001-2005
(Millions of Chilean pesos)



Source: Prepared by the author on the basis of information from Cencosud.

TABLE 6

Retailers: Number of stores, by business segment and country, 2000-2005

	Falabella			Cencosud			Ripley		
	1998	2000	2005	1998	2000	2005	1998	2000	2005
Department stores									
Chile	26	29	33	-	-	21	14	23	31
Argentina	4	5	6	-	-	-	-	-	-
Peru	4	4	10	-	-	-	1	4	8
Home improvement									
Chile	2	5	54	2	3	16	-	-	-
Argentina	-	-	-	8	14	26	-	-	-
Peru	-	-	2	-	-	-	-	-	-
Colombia	-	-	9	-	-	-	-	-	-
Supermarkets									
Chile	-	-	11	3	4	119	-	-	-
Argentina	-	-	-	8	10	248	-	-	-
Peru	-	-	3	-	-	-	-	-	-

Source: Prepared by the author on the basis of information from Falabella, Cencosud and Ripley.

United States firm The Home Depot and acquired 20% of Farmacias Ahumada (FASA), a specialist company with an interesting growth strategy. In 2001, Falabella bought out its partner, The Home Depot, and created HomeStore. Two years later, it merged HomeStore with Sodimac, Chile's largest operator in the segment. This operation indirectly boosted Falabella's internationalization, thanks to Sodimac's presence in Colombia.¹³ Falabella subsequently expanded into the supermarket segment, first establishing itself in Peru with the creation of the Tottus hypermarket chain and then quickly applying this experience in Chile.¹⁴

Not to be outdone, Cencosud began to implement a similar strategy. First, it sought to extend the geographical coverage of its supermarket chain in Chile and diversify its format. To that end, it bought up a number of local operators: Santa Isabel, Las Brisas and Montecarlo (Cencosud, 2005, p. 13). Then, in March 2005, Cencosud made its boldest play, taking over Almacenes París, Chile's third-largest department store chain after Falabella and Ripley.¹⁵ As a result, like Falabella, Cencosud has established a broadly based retail business that will enable it to generate synergies and complementarities between its different assets, especially with the non-banking credit business—Cencosud (Jumbo) and Almacenes París have about 4 million credit card holders between them—and with Banco París.

Cencosud and Falabella thus appear to have cut several years off the process of developing an integrated model for supermarkets and department stores (a strategy which has also been successfully implemented by the Spanish chain El Corte Inglés). Again, while the integrated retail concept has been applied most intensively in the domestic market, this new strategy began to be implemented outside Chile as well when the economic situation in a number of Latin American countries improved, and Falabella and Cencosud have

shown great interest in continued expansion into relatively undeveloped market segments or niches in other countries of the region.

In less than two years, Falabella has very successfully replicated its business model in Peru, opening three Tottus hypermarkets, two Sodimac Homecenter home improvement stores (with six more planned for the next two years) (Sodimac, 2005, p. 24), and four new SAGA Falabella department stores (table 6). In Argentina, it hopes to gain a new impetus with the opening of two new department stores in a major street (calle Florida) in central Buenos Aires (*La Nación*, 2005 and Falabella, 2005, p. 20). In Colombia, it plans to open three new Sodimac stores and four Falabella department stores, a format that is almost non-existent in that country.¹⁶ Indeed, Falabella has announced that it will invest some US\$ 1.13 billion over the next four years (Falabella, 2006, p. 11) to double the number of retail outlets of all formats in Chile, Argentina, Colombia and Peru (table 7). The company is also looking for new opportunities in Ecuador and the Bolivarian Republic of Venezuela (*Business Latin America*, 2005), thereby making explicit its aim of becoming a major regional player. All this has turned it into one of the 10 fastest-growing retailers in the world (Deloitte, 2006, p. 15).

With the first signs of recovery in Argentina, Cencosud saw a chance to increase its market share and expand the geographical coverage of its operations in that country by buying the Disco supermarket chain,

TABLE 7

Retail sector: Planned investments, 2006-2010
(Millions of dollars)

Company	Period	Amount
Cencosud	2006-2010	1 200
Falabella	2006-2009	1 130
Ripley	2006-2007	551
D&S	2006-2009	800

Source: Prepared by the author on the basis of information from company reports.

¹³ In 1994, the original owners of Sodimac formed a joint venture with the local group Corona to introduce the Homecenter franchise in Colombia. Falabella currently owns 35% of the joint operation and runs eight stores, and has thus achieved nationwide coverage and consolidated its position as the leader of the sector in Colombia (Sodimac, 2005, p. 25).

¹⁴ In 2004, Falabella entered the supermarket business in Chile by acquiring 88% of Supermercados San Francisco, the country's third largest chain, for US\$ 62.5 million.

¹⁵ On 31 August 2005, shareholders' meetings of both companies approved the merger of Cencosud and Almacenes París, the latter being taken over by the former.

¹⁶ Falabella intends to invest some US\$ 100 million for this purpose together with the Corona group, its partner in Sodimac (*El Mercurio*, 2005a).

the second largest in Argentina, from Royal Ahold, which was in serious difficulties.¹⁷ It very soon began to show what it was capable of in Argentina, where it was competing with the two global leaders, Wal-Mart and Carrefour, achieving a 22% market share by early 2005. Furthermore, following the acquisition of Almacenes París, the company decided to step up the internationalization of its department store format by building on its platform of shopping centres in Argentina.¹⁸ Cencosud expects to double its annual sales to over US\$ 10 billion by 2010, positioning itself as the industry's fourth-largest operator in Latin America behind Wal-Mart, Carrefour and Casino. To that end, it plans to invest some US\$ 1.2 billion, financed basically through internal cash generation. In addition to growth in Chile, Cencosud aims to increase the number of its Easy stores in Argentina from 26 to 50 and to open between seven and nine new Almacenes París stores (table 7). It also wishes to expand into a third country at the same time, and is looking at opportunities in the Bolivarian Republic of Venezuela, Brazil, Colombia, Mexico and Peru (*La Tercera*, 2006a).

Ripley has not been left behind either, but has continued to seek opportunities for diversification and may follow Falabella's lead by entering the supermarket segment in Peru before turning to the Chilean market. The company has announced a new push in its international expansion and is targeting other Latin American countries that have potential and are of "manageable" size, the main contenders being the Bolivarian Republic of Venezuela, Colombia and Ecuador (*El Mercurio*, 2005b). Notwithstanding, Ripley has also expressed interest in entering larger markets such as Brazil and Mexico (*La Tercera*, 2006b). The

company plans to invest over US\$ 550 million for this purpose (table 7).

The Chilean model has also been followed by other operators in Latin America. In Colombia, for example, Falabella and Carrefour have joined forces to manage their own consumer credit system, while the local chain Carulla Vivero has attempted to do the same with Ripley (*América economía*, 2006a, p. 92). This latter partnership has suffered a delay because the Colombian chain Almacenes Éxito may be acquiring part of Carulla Vivero (*La Tercera*, 2006b).

With this track record, it seems logical that the leading Chilean retail companies should continue to expand their presence, both in the different segments of the industry and geographically. Accordingly, they have already announced ambitious investment plans for the coming years. These companies' past and future expansion plans have required complex financial engineering to meet the financial requirements of this process by combining equity, bank credits, bonds and new share issues. Nevertheless, their borrowing has remained within acceptable limits. Cencosud is the company that has faced the greatest difficulties, as its recent aggressive expansion plan left it heavily indebted; it has managed to turn the situation around rapidly, however.¹⁹

In sum, boosted by the growth of the local economy and, especially, by private consumption trends, the revenues of the large Chilean retail chains have expanded steadily. This is reflected in the substantial investments announced for the next few years, in the pace at which new stores are being opened and in the expansion of agreements for the use of credit instruments. Thus, these companies have consolidated and expanded their participation in the markets where they operate. The big chains have increased their presence by taking over smaller operators, thereby significantly increasing the degree of concentration in the domestic market. Notwithstanding this trend, there is no clear evidence that competition has suffered. Indeed, consumers have mostly enjoyed lower prices.

¹⁷ In early 2004, Cencosud successfully completed its first issue of shares and American Depositary Receipts (ADRs), equivalent to 21% of its holding, thereby raising US\$ 332 million. Using these funds, it struck an agreement with Royal Ahold some months later to acquire an 85% share in Argentina's second-largest supermarket chain, Disco S.A., for about US\$ 315 million. After numerous legal battles, the operation was finally concluded, although the merger with Jumbo could not take place (*El Clarín*, 2005). Thus, during an especially difficult period, following the purchase of Disco and the remodelling of the Jumbo stores (in which it invested over US\$ 500 million), Cencosud became the second-largest supermarket operator in Argentina (Cencosud, 2005 and *Estrategia*, 2004).

¹⁸ As with Jumbo and Easy, Cencosud plans to open an Almacenes París store in each of its shopping centres in Argentina. This process was to begin in early 2006 with the opening of a store at Unicenter in Buenos Aires, to compete with Falabella (*La Nación*, 2005).

¹⁹ A capital increase was approved in January 2005, and this was used to fund part of the takeover of Almacenes París. Including the liabilities of Almacenes París, Cencosud's financial debt stands at US\$ 1.156 billion, of which 40% is repayable in the short term. In June 2005, Cencosud sold 38.6% of Disco and Jumbo in Argentina to various institutional funds for US\$ 130 million and subsequently implemented a US\$ 550 million liability refinancing plan. This operation allowed the company to extend the maturity profile of over half its financial liabilities (Cencosud, 2006, p. 8).

The market leaders still have room for further growth, which would seem to indicate that the industry is far from having reached maturity. In this respect, two central trends have emerged: (i) the search for synergies between different retail segments and formats to make up for the small size of the Chilean market; and (ii) the use of selective and gradual internationalization strategies to expand the market. The first of these trends has enabled the leading companies to consolidate their position in the domestic market, check the expansion of international chains and acquire highly valuable know-how in the management of related businesses, especially in the increasingly important financial segment. On the

strength of this experience, the leading companies in the sector have moved with particular success into certain external markets, thus opening up new potential to scale up their business. Their international experience has also enabled the leading operators to assimilate new elements, such as local characteristics and supplier relationships, into their overall strategies. Nevertheless, it is also true that greater international exposure will mean increased competition with global operators, which could introduce greater uncertainty into the potential for Chilean companies to sustain these strategies.

IV

Specialist retailing: A record of success in fragmented markets

In contrast to the leading retail companies, which have grown rapidly by expanding the range of their business and their geographical coverage, Chile also offers interesting examples of a completely opposing logic: specialization in a particular segment of the industry. This is the case with certain chains of pharmacies and home improvement stores, such as Farmacias Ahumada (FASA) and Casa&Ideas.²⁰

In 35 years or so, FASA has grown from a traditional pharmacy to the largest chain of pharmacies in Latin America and one of the 10 largest in the world, with operations in Chile, Peru, Mexico and, until recently, Brazil (FASA, 2005, p. 7; *Chain Drug Review*, 2002). It is also one of the few companies in the world to have successfully implemented an internationalization strategy in this particular segment of the retail market, whose leader is the British company Boots Group PLC.

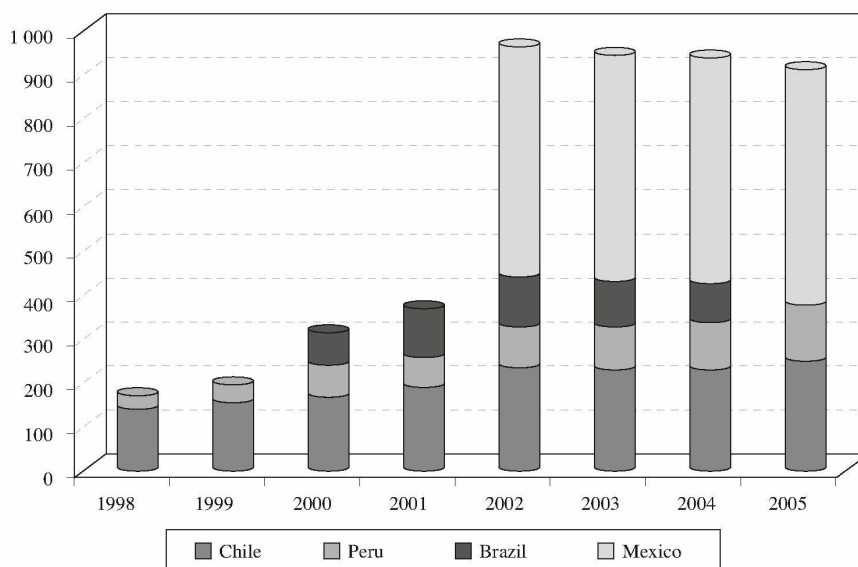
In recent years, Chile's pharmacies have been undergoing intensive consolidation in a highly competitive environment, with the three largest

operators having a combined market share of 90% (see table 4). Unlike its competitors, FASA realized that the shrinking market share of independent pharmacies and the consequent consolidation of the chains would translate into fewer opportunities for growth within Chile. The company therefore embarked upon an active internationalization process, seeking out new markets that would offer profitable growth and enable it to benefit from the synergies generated by its size and experience (FASA, 2005, p. 7). Entering highly fragmented and dispersed markets, FASA was able to expand its market share rapidly, thanks to cost advantages resulting from its greater volume of business, the implementation of technological and logistical improvements, and marketing campaigns (FASA, 2002, p. 29 and 2003, p. 49).

FASA began its internationalization drive in 1996 when it entered the Peruvian market, setting up the Boticas FASA S.A. pharmacy chain in a joint venture with local investors. In 2000, together with AIG Capital Partners Inc., it acquired 77% of Drogamed, the largest pharmacy chain in the Brazilian state of Paraná, for US\$ 25 million. A year later, in order to take full control of its affiliates in Peru and Brazil, FASA acquired 15% of Boticas FASA and, jointly with AIG, 23% of Drogamed. In early 2005, FASA bought the remaining 35% of Drogamed from AIG, turning it into a wholly-owned subsidiary (figure 6).

²⁰ The experience of Casa&Ideas is more recent and more limited in scope. In 1993, Casa started trading with two stores in Santiago; five years later, it was replaced by Casa&Ideas, with a new corporate image and a new business concept: affordable design for all. In 2005, following huge success in Chile, the company ventured abroad with the opening of two stores in Lima, Peru. Casa&Ideas currently has 26 stores in Chile and three in Peru.

FIGURE 6

Farmacias Ahumada: Number of outlets, by country, 1998-2005

Source: Prepared by the author using information from FASA.

In December 2002, FASA acquired a majority interest in the Mexican company Far-Ben S.A. de C.V. through the subscription and payment of a US\$45 million capital increase. The Mexican chain was going through a profound crisis and needed a strategic partner to turn around its financial situation (*América economía*, 2006b, p. 46). In 2003, FASA consolidated its operations by successfully taking over Farmacias Benavides in Monterrey, Mexico. This doubled the size of the business in terms of sales, customers and the number of outlets (see figure 4).

Thus, by using different internationalization strategies tailored to each market, from entirely new operations in Peru (Boticas FASA) to the takeover of chains in Brazil and Mexico (Drogamed and Farmacias Benavides), FASA has been able to expand its operations substantially in record time. After more than eight years of international expansion, over 60% of the company's consolidated operational earnings now come from abroad and over 71% of its customers are outside Chile.

This international expansion effort has not been trouble-free, however, particularly in Brazil. In fact, the operation in that country was largely responsible for the deterioration in the company's profits from

US\$ 10.5 million in 2001 to US\$ 2.5 million in 2002. The fragmentation of the Brazilian market made it difficult to operate a chain like FASA and, despite large capital injections, debts were increasing and the operations showed no sign of recovery. Moreover, competition in Chile was becoming stiffer, resulting in a six point loss of market share between 2003 and 2005 (*América economía*, 2006b, p. 47). FASA therefore decided to withdraw from Brazil. In January 2006, following five years of losses, it sold its Brazilian subsidiary to the then executive president of Drogamed. Complicated regulations, high taxes and commissions, competition from the informal economy and the difficulty of adapting to local consumption patterns had turned its operations in Brazil, the world's sixth-largest consumer of pharmaceutical products, into a nightmare (*Qué Pasa*, 2006).

In summary, faced with intense, unrelenting competition in the Chilean market, FASA decided to expand its operations abroad on the strength of the experience it had built up in Chile and the relative underdevelopment of external markets. Other than in Brazil, the outcome has been successful, making this one of the few companies in the world to have internationalized its pharmaceutical retailing operations.

V

Conclusions

Chilean retailers have achieved significant competitive advantages using a business model based on synergies between a number of related activities, a strong customer orientation and a powerful financial dimension. This strategy has given companies a solid base in the local market, enabling them to head off efforts by some of the major international operators to enter what is one of the most attractive destinations for the retail industry in the developing world. The development of this integrated retail formula was the direct result of intense competition in the Chilean market, whose small size made it very difficult to run a profitable operation in just one segment of the retail industry. Accordingly, Chilean companies progressively developed a full range of integrated retail operations, based on six main pillars: department stores, home improvement stores, supermarkets, credit card administration, financial services provided through their own banks, and real estate. The key to success was a combination of best international practice with knowledge of local conditions, a diversified product range including banking services, and the ability to survive in a highly competitive market.

Following their success in the local market, and alert to the first signs of saturation, retailers saw international expansion as the best option for sustainable growth. Their internationalization has been gradual and limited to neighbouring countries, which has enabled them to gain experience of operating in other markets without major traumas. Indeed, some of the approaches developed in the Chilean market have been emulated by other operators in the region.

Chilean companies have applied the central elements of their domestic market strategies to their international expansion, adapted somewhat to enable them to tune in to local consumer habits and needs and win acceptance. To this end, they have sought out local partners, established long-term relationships with suppliers and recruited local staff whenever possible in the countries where they have invested. Many of these changes were implemented during economic crises in

the countries concerned, and this enabled the companies to take advantage of new opportunities and acquire assets from transnational corporations that were unable to weather the situation and grasp the peculiarities of local consumers.

The leading Chilean operators have recently been facing new challenges in the domestic market, particularly where supermarkets are concerned. In the first place, the restrictions imposed by Chile's competition authority, the Tribunal de Defensa de la Libre Competencia (TDLC), on continued growth in the Chilean market via acquisition of smaller chains, together with the regulation of these operators' relationships with their suppliers, will help to keep a check on market concentration and prevent abusive conduct. Secondly, the new standards laid down by the Superintendency of Banks and Financial Institutions (SBIF) for credit cards issued by retail operators will regulate the provision and use of these non-bank payment facilities, preventing companies from levying excessive interest and charges. Although it means tighter restrictions than in the past, the new situation does not appear too problematic for local companies. While some of them may see their profit margins fall, their efficiency will increase and their relationships with their customers and suppliers will improve significantly. There is surely no impediment to their continuing to improve the quality of their internal management and looking with fresh enthusiasm at the opportunities for more ambitious international expansion.

The model developed by Chilean companies would also be applicable to medium-sized economies where major international operators such as Wal-Mart and Carrefour have not been very successful or have not shown any interest. This could be risky, however, as the subregional chains being set up by Chilean companies in rapidly consolidating markets could become prime targets for global operators wishing to position themselves quickly and on a sound footing in Latin America. A case in point is Wal-Mart's recent acquisition of the CARHC chain in Central America.

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Earning inequalities in Brazil: quantile regressions and the decomposition approach

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Income distribution in Brazil is highly unequal. There are many factors that influence this distribution and the relative importance of each one has changed significantly in recent years. In this article, the recent evolution of this distribution for employed men and women in urban areas of Brazil was analysed with the use of quantile regressions. We also investigated earning differentials between white people and black people based on the methodology presented in Juhn, Murphy and Pierce (1993). The gap between the richest 10% and the poorest 25% shrank, while there was also a homogenization of the earnings between white and black people, particularly for the first quartile of the distribution. This occurred because changes in the distribution of productive attributes reduced the heterogeneity between groups and, in general, the convergence of factor returns for white and black people benefited the latter (especially black women). However, this convergence was limited by factors related to labour-market discrimination.

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I

Introduction

Income inequality in Brazil, generally considered one of the worst in the world, has been the subject of many studies in recent decades. The availability of microdata from the census and the National Household Survey enables researchers to analyse the distributive problem in Brazil more effectively and to identify factors that differentiate income among different strata of the population and different types of workers. Several studies, such as the one carried out by Langoni (1973), have contributed to the debate among economists and other professionals about the determining factors of inequality. Langoni established that educational heterogeneity was the most important aspect in explaining earnings dispersion. He found that other factors, such as those linked to labour-market characteristics and gender and racial discrimination, were also relevant.

The persistence of high income inequality over decades has generated a context in which negative conditions are transferred between generations for some of the Brazilian population. The income of the individual determines that person's access to different types of resources: the education system, on-the-job training, career advancement and access to capital markets. This access to resources influences workers' capacity to transform personal attributes into income and change the magnitude of marginal returns.

To emphasize this point, some authors include the relative position of workers in the income distribution (using the quantile regression technique) in their analysis of inequality. This type of regression analyses

the changes in factor return and in inequality, and identifies reductions in the income gap between individuals in the lowest income stratum of the distribution, even if the inequality indicators remain relatively stable.

A preliminary analysis of the data from the National Household Survey, which includes the different income strata, showed that the poorest groups in the population have increased their share of total income in the last two decades, especially when only employed women are considered.

With this in mind, the main motivation of this study is to analyse a possible improvement in the income distribution in favour of low-income workers, focusing on the reduction in income gaps between racial groups within the poorest 25%. The analysis was carried out with data from the National Household Survey for 1987, 1995 and 2001.

In order to achieve the proposed objectives, the article has been divided into five sections, including the introduction and conclusion. The second section presents a review of the literature on inequality issues in Brazil that considers the relative position of workers in the income distribution. Section III introduces the applied methodologies, which includes the quantile regression technique and a decomposition along the lines of the Juhn, Murphy and Pierce (1993), which analyses temporal changes in income gaps between racial groups. The econometric model, data treatment and empirical results are included in section IV. Section V offers a summary of the main results.

II

Inequality in conditional income distribution in Brazil: a review of the literature

In recent decades, Brazil has figured among worst countries in the world in terms of income distribution. As pointed out by several studies, there are many factors that influence this distribution such as: educational

heterogeneity, sociooccupational characteristics and discrimination. However, the relative importance of each factor has changed significantly in recent decades, impacting differently on groups of workers that vary in

terms of distribution of productive attributes and also their income strata.

A significant proportion of studies implicitly assume that the market pays the same premium for additional years of schooling, for instance, irrespective of whether the workers are in the upper-income strata. However, in the same way that the endowment of productive characteristics differs between rich and poor, returns on these attributes may also be expected to differ according to the income strata analysed.

In this sense, recent studies have included the idea that a person's relative position in the income distribution might influence the rate of return and, consequently, the level of inequality. Maciel, Campêlo and Raposo (2001), for example, argued that the strong asymmetry observed in the income scale in favour of the rich population in Brazil might be caused by methodological limitations. In order to overcome these difficulties, they applied quantile regressions with the use of microdata from the National Household Survey to analyse the changes in the returns on education for the income of employed women between 1992 and 1999. Using five quantiles (10, 25, 50, 75 and 90) for quantile regressions, it was established that the returns on education (after controlling for job experience) have different magnitudes, depending on the quantile analysed, as the returns increased towards the top end of the distribution.

Menezes Filho, Fernandes and Picchetti (2000) analysed income inequality among employed men with data from the National Household Survey from 1977 to 1996. They argued that the Brazilian economy is characterized by a large variability in wages and income. They estimated a wage equation also based on the same five quantiles for four groups of workers according to schooling. The results showed significant differences in the coefficients not only for the quantiles, but also for the schooling groups. Besides this, they demonstrated that, in recent years, there had been a fall in the returns associated with education, except for tertiary-level schooling, and that the returns on education depend on business cycles.

The returns on education and their relation to income distribution in Brazil was also the subject of Blom, Holm-Nielsen and Verner (2001). They argued that individuals at various points of the income distribution tend to receive different premiums for the endowment of productive characteristics. In order to analyse differences in the returns on education, the study applied quantile regressions to the Monthly Employment Survey data in 1982 and 1998, using

quantiles 0.10, 0.25, 0.50, 0.75 and 0.90. The results showed that workers in the upper quantiles received larger premiums for one more year of schooling than other workers.

In research that specifically studied wage differentials, Silveira Neto and Campêlo (2003) examined regional income dispersion in Brazil. In this analysis, they applied quantile regressions based on the quantiles 0.10, 0.25, 0.50, 0.75 and 0.90 with data from the 1999 National Household Survey. The regional income differentials were estimated with the use of Mincer equations. Many independent variables related to individual attributes were used, such as age, education, sex, race and family position, and also some associated with employment conditions in nine metropolitan regions in Brazil. The Metropolitan Region of São Paulo was used as reference. The analysis of the results showed that regional inequality differed according to the income strata considered. The coefficients calculated also depended on the quantile analysed. It was seen that the north and northeast regions presented the worst results for inequality and the larger variability between quantiles, these differentials being more significant among individuals in the lower quantiles.

Oliveira (2002) studied differentials in women's earnings and income inequality trends on the basis of National Household Surveys from 1987 to 1999. The earnings of black women were compared with the relative distribution of white women's earnings. If both distributions were similar, each salary decile for white women would include the same 10% of black women. However, the results for Brazil showed that black women's earnings were concentrated in the lower part of the white women's distribution and that there was a very small proportion of black women at the top of this scale. It was also established that women in the lower-income strata from both racial groups, up to quantile 25, obtained increases in their real earnings that were higher than the ones gained by women in the upper quantiles. It was seen that the real earnings of black women rose by more than the earnings of white women, especially in the lower-income strata. Based on these results, it could be hypothesized that, in the period analysed, there was a reduction in the wage gap between racial groups in the lower quantiles, a non-directional volatility in the intermediate income strata, and an increase in the gap in the upper quantiles. This hypothesis was tested with the decomposition of the wage gap between black and white women in observable and non-observable factors, with the

application of quantile regressions (quantiles 0.10, 0.25, 0.50, 0.75 and 0.90). The estimates showed that the earnings differentials increased in the upper part of the income distribution and confirmed the reduction in the earnings differentials for black and white women in the lower quantiles.

The above-mentioned studies emphasize the importance of analysing the impact of individual and sociooccupational characteristics on the marginal returns on income in different income strata, and also of seeking out factors that might be associated with

an improvement in the relative situation of certain population groups.

Taking this into consideration, this paper aims to make a contribution in the area of income inequality by using National Household Survey data to analyse earning distribution trends for employed men and women in 1987, 1995 and 2001. More specifically, this study intends to investigate the evolution of earnings differentials based on the methodology presented in Juhn, Murphy and Pierce (1993) (hereinafter referred to as JMP decomposition).

III

Analysis methodology for income differentials

The objective of this section is to present the methodology that was used to analyse earning differentials in Brazil. It has been divided into two subsections: the first presents the quantile regression model, while the second shows the JMP decomposition method.

1. Quantile regression

Quantile regression was introduced in the econometric analysis carried out by Koenker and Basset (1978 and 1982). It is a method used to measure the effect of explanatory variables on a response variable at different points of a conditional distribution. This method is very effective when the data are known to present heteroscedasticity, as is the case of income distribution.

In comparison with the ordinary least square method (OLS), the estimates obtained with quantile regressions are more effective and give more robust results when the errors do not show a normal distribution behaviour. According to Deaton (1995) and Koenker (2000), the advantages of this method can be summarized as follows: (1) it captures changes in the parameters along many quantiles; (2) it can be evaluated by linear programming; (3) monotonic transformations in the dependent variable can be used and; (4) it presents more robust results in the presence of outliers.

Koenker and Basset (1978) applied the least absolute deviations (LAD) estimator to quantile regressions. As with the OLS model (in which the

coefficients vector minimizes the sum of the square of the residues), in the LAD model, given a random variable y and the covariates set x in each quantile q , the sum of the square of the absolute values of the residues is minimized, and the median of the distribution is obtained as the solution of the problem:

$$\min_{\beta} \frac{1}{n} \left\{ \sum_{i \in \{i: y_i \geq x_i' \beta\}} q |y_i - x_i' \beta| + \sum_{i \in \{i: y_i < x_i' \beta\}} (1-q) |y_i - x_i' \beta| \right\} \quad (1)$$

$$= \min_{\beta} \frac{1}{n} \sum p_q(y_i - x_i' \beta)$$

where $p(q)$ is denominated check function.

The median regression is obtained by stipulating q equals $1/2$. By doing this, given the independent variable matrix, it is possible to obtain a family of conditional quantile functions of the dependent variable. In the matrix form, these functions are:

$$Q_y(q | X) = X\beta(q) + Q_\epsilon(q) \quad q \in [0.1] \quad (2)$$

where Q_ϵ stands for conditional errors.

According to Buchinsky (1998), the coefficients are interpreted by estimating the marginal effect of each one of the variables in a specific conditional quantile, which is given by the partial derivative of the regression in relation to one of its regressors:

$$\partial Q_y(q | X) / \partial x_j \quad (3)$$

This derivative must be interpreted as the marginal variation in the conditional quantile q due to a marginal change in the j element of X or a marginal change in the value of a specific covariate.

2. Juhn, Murphy and Pierce decomposition

The temporal variations of the differences between demographic groups exposed to discrimination can be evaluated with the use of the method developed by Juhn, Murphy and Pierce (1993), which takes into account the position of the individual in the residual distribution and also the dispersion of the distribution.

Following Arabsheibani, Carneiro and Henley (2003), for each year t , the earning regressions for different groups (white and black people) can be written as:

$$\bar{y}_{jt} = \bar{X}_{jt}\beta_{jt} + \sigma_{jt}\theta_{jt} \quad j = w, b \quad (4)$$

where \bar{X} is a matrix with the mean values of the productive attributes; σ_{jt} represents the estimate of the standard deviation of the residuals for each group in the year t ; and θ_{jt} represents the standardized residuals of the regression, being equal to $\theta_{jt} = \mu_{jt}/\sigma_{jt}$. Consequently, the gap between white and black people becomes:

$$D_t = \bar{y}_{wt} - \bar{y}_{bt} = (\bar{X}_{wt} - \bar{X}_{bt})\beta_{wt} - \overline{\Delta\theta}_t\sigma_{wt} \quad (5)$$

where $\overline{\Delta\theta}_t$ is the mean difference between the standardized residuals for white and black people. The variation in the earning differential between two years is given by:

$$\begin{aligned} D_t - D_{t-1} = & [(\bar{X}_{wt} - \bar{X}_{wt-1}) - (\bar{X}_{bt} - \bar{X}_{bt-1})]\beta_{wt} \\ & + (\bar{X}_{wt-1} - \bar{X}_{bt-1})(\beta_{wt} - \beta_{wt-1}) \\ & + (\overline{\Delta\theta}_t - \overline{\Delta\theta}_{t-1})\sigma_{wt} \\ & + (\overline{\Delta\theta}_{t-1})(\sigma_{wt} - \sigma_{wt-1}) \end{aligned} \quad (6)$$

The first term in the right side of the equation — $[(\bar{X}_{wt} - \bar{X}_{wt-1}) - (\bar{X}_{bt} - \bar{X}_{bt-1})]\beta_{wt}$ — measures the effects that variation in individuals' observable characteristics has on variation in the gap between the groups at two points of time, using the return for white people as a reference. A change in the gap, due to changes in the relative market appreciation of the observable attributes (i.e. the price-effect) is captured by the expression $(\bar{X}_{wt-1} - \bar{X}_{bt-1})(\beta_{wt} - \beta_{wt-1})$, which has the value of white people's characteristics as a reference. The third term, $(\overline{\Delta\theta}_t - \overline{\Delta\theta}_{t-1})\sigma_{wt}$, represents the gap-effect that analyses a relative change in black people's position in the white distribution, associated with labour-market discrimination, because it reflects what would happen if the residual inequality of white people holds constant while the percentile ranking of black people changes. Black people should move within the top of the distribution, if they were less exposed to discrimination between two selected periods. The last term — $(\overline{\Delta\theta}_{t-1})(\sigma_{wt} - \sigma_{wt-1})$ — represents variations in the non-observable or residual characteristics.

IV

Empirical analyses

The empirical analyses are discussed in three subsections. The first one presents the database and the results for the earning distributions by worker characteristics. The econometric model and data are described in the second subsection. This same subsection also briefly discusses the results of interquantile regressions, that is, the factor returns for individuals of the same racial group that are at different points of the income distribution. The

third subsection analyses some of the features of the JMP income decomposition.

1. Database and income distributions by personal and employment characteristics

The database used was the National Household Survey, which is annually researched by the Brazilian Institute

of Statistics and Geography (IBGE), except in National Census years, as in 1991 and in 2000. In 1994, the National Household Survey was not carried out due to technical problems.

In this study, a specific population group was selected from the National Household Survey database of 1987, 1995 and 2001. The data used refers to the economically active population (EAP), i.e. those employed in the reference week of the survey, aged between 18 and 65 years, with a positive income from the main form of employment, a positive number of working hours, and living in an urban area. Using the National Consumer Price Index as the deflator index, all monetary values are expressed as their real values as of September 2001. The data were further divided in two samples, one for men and another for women. These samples were used separately in order to estimate the earning differentials between white and black individuals of each gender (table 1). The white individuals are those who described themselves as such in the National Household Survey, and the individuals who declared themselves as black or mulatto compose the group denominated as black people.

The empirical data presented in this subsection are presented in three tables. Table 2 shows the participation, employment and unemployment rates for both sexes and racial groups. It can be seen that the differences between racial groups are small, but between genders the rates are remarkably dissimilar. For instance, the increase of the unemployment rate for women in the period 1995-2001 was much larger than for men.

We can infer from the data presented above that the differences between racial groups are small and, consequently, the observed earning gaps are not caused primarily by differences in the rates, but are a result of other aspects of the labour force.

The relative distribution of workers in different income strata is presented in table 3. There are two

samples that are analysed separately, one for men and another for women. The values in the table indicate the percentage of individuals in each stratum for gender and racial group in three different years. In 2001, for example, 18.01% of white men were in the first quartile of the income distribution, namely, they are among the 25% poorest men, and 21.39% of the white women were in this same category in the female distribution.

In this same year, it can be seen that the black population was over-represented in the poorest stratum, for example, 39.73% of black male workers and 43.69% of black women were in the first quartile of the income distribution. In 2001, at the other extreme of the income distribution, (the richest 10%) there were around 24% of white people (men and women) and only 5% of black people. A similar fact was also noted by Henriques (2001), who established that, in 1999, 85% of the richest 10% of the population was white.

Table 4 presents the amount of income for each income stratum analysed in table 2, with the exception of the richest 10%. First, it shows the distributions of men and women separately with data for whites and blacks grouped together. Then, it also analyses white and the black people's distributions separately.

For the poorest strata of employed men (white and black together), the data show a reasonably stable situation when only the data for the years 1987 and 2001 are analysed. Their share of total income was 6.41% at the beginning of this period and 6.44% at the end, with a small increase of 0.47%. When this same group of workers is analysed separately by racial group, white workers increased their share by 15.9% (from 5.38% to 6.18%), which was a smaller increase than the 23.0% rise (from 7.86% to 9.59%) for black workers.

However, when the analysis is extended to include data for 1995 and is conducted over two different periods, 1987-1995 and 1995-2001, the results are not so stable. In the first case, the relative income share

TABLE 1

Numbers of observations for the samples analysed

	White			Black		
	1987	1995	2001	1987	1995	2001
Men	28 268	32 229	36 155	21 779	26 913	33 987
Women	16 991	22 385	27 232	13 018	17 152	22 076

Source: National Household Survey microdata, 1987, 1995 and 2001.

TABLE 2

Brazil: Labour market statistics by racial group and gender^a

Group	Rates	Men			Women		
		1987	1995	2001	1987	1995	2001
White	Participation	76.2	74.03	71.76	38.65	45.53	48.09
	Employment ^b	73.72	70.2	66.81	37.18	42.12	42.79
	Unemployment	3.26	5.18	6.9	3.79	7.49	11.01
Black	Participation	75.57	73.41	71.14	38.62	44.62	46.04
	Employment	72.56	68.76	64.57	36.72	40.31	38.79
	Unemployment	3.98	6.33	9.23	4.9	9.65	15.74

Source: National Household Survey microdata, 1987, 1995 and 2001.

^a Men and women are analysed separately.

^b Employment rate = employed/population between 15 and 65 years old.

TABLE 3

**Brazil: Proportion of workers in different income strata
separated by racial group and gender^a**
(Percentages)

		Men			Women		
		1987	1995	2001	1987	1995	2001
White	poorest 25%	21.13	16.33	18.01	19.16	21.14	21.39
	2nd quartile	22.54	23.72	23.00	21.85	26.20	18.42
	3rd quartile	24.78	28.55	28.97	28.39	20.26	29.67
	richest 25%	31.55	31.41	30.02	30.60	32.40	30.52
	(richest 10%)	(23.21)	(25.62)	(24.83)	(24.84)	(22.57)	(24.12)
Black	poorest 25%	40.17	37.78	39.73	35.55	42.48	43.69
	2nd quartile	25.00	27.75	26.51	29.39	29.16	21.98
	3rd quartile	21.46	21.81	22.19	22.18	15.20	22.42
	richest 25%	13.37	12.66	11.58	12.88	13.16	11.91
	(richest 10%)	(5.66)	(5.36)	(5.25)	(6.12)	(5.42)	(5.07)

Source: National Household Survey microdata, 1987, 1995 and 2001.

^a Men and women are analysed separately.

of the poorest stratum fell by 21.6%, from 6.41% to 5.09%. In this period, Brazil suffered the effects of hyperinflation, a recession at the beginning of the 1990s and a stabilization plan in 1994-1995. When men from each racial group are compared separately, it can be seen that black workers lost 15.3% of their relative participation in the income distribution, while white workers lost only 1.30%.

Income redistribution can be observed from the mid-1990s onwards, in the second period analysed,

when all the poorest workers increased their share of total income by 26.5%, from 5.09% to 6.44%, while the richest lost 4.21% in the same period. This same tendency was also observed when racial groups were analysed separately.

As can also be seen in table 3, among women (white and black), the poorest workers increased their share by 55.9% between the years of 1987 and 2001, while the richest lost some of their relative income absorption (-1.69%). The poorer group increased its

TABLE 4

**Real income share in different quartiles of the total income distribution
by racial group and gender**
(Percentages)

		Men			Women		
		1987	1995	2001	1987	1995	2001
Total	poorest 25%	6.41	5.09	6.44	5.15	6.96	8.03
	2nd quartile	10.84	10.75	11.26	11.03	13.26	9.43
	3rd quartile	18.84	19.99	20.89	21.17	15.09	20.95
	richest 25%	63.91	64.17	61.41	62.65	64.69	61.59
White	poorest 25%	5.38	5.31	6.18	5.52	5.34	6.73
	2nd quartile	11.01	11.85	11.09	10.88	10.75	11.77
	3rd quartile	20.30	19.75	20.97	20.41	19.63	17.74
	richest 25%	63.31	63.09	61.76	63.19	64.28	63.76
Black	poorest 25%	7.86	6.66	9.59	5.75	15.02	6.98
	2nd quartile	12.07	11.93	10.85	13.26	4.24	15.22
	3rd quartile	21.14	22.48	21.13	20.56	20.58	21.46
	richest 25%	58.93	58.93	58.43	60.43	60.16	56.34

Source: National Household Survey microdata, 1987, 1995 and 2001.

share by 35.2% during the first period analysed (1987-1995), and also increased it by 15.4% in the second period (1995-2001). The richest workers, on the other hand, increased their share in the first period but reduced it during the second.

However, when racial groups are compared separately, the variations are not similar. For the poorest whites, both men and women, their share decreased between 1987 and 1995 and then showed an increase in the second period, which signified an overall rise from 1987 to 2001. For the richest white workers, the evolution was very different. For men, a decline in income share was observed in both periods, and, for women, an increase was recorded in the first period, with a decrease in the second (resulting in a slight increase overall).

For the poorest 25% of black women, there was an increase of over 100% in income share during the first period. This increase can probably be related to the readjustment of the Brazilian national minimum wage. This is the reference wage for paid domestic activities, which employed a great proportion of the poorest women workers in 1994. Even considering the reduction in their share between 1995 and 2001, the poorest black women obtained relative gains that were higher than for the richest women during 1987-2001.

Generally speaking, the poorest individuals (namely those in the first quartile of the income distribution) had the highest rates of increase in the share of total income, particularly those groups that are traditionally discriminated against in the labour market (such as black people and women).

Tables 3 and 4 also showed significant differences in temporal changes when the income distributions were analysed by gender and by racial group. Due to these differences, the statistical analysis shown below was carried out separately for the two gender samples.

2. The econometric model and selected variables

All the results presented in this subsection are based on quantile regressions. These regressions estimate the effects of personal productive attributes, regional dummies and labour-market factors on individual income. As was shown in the methodological subsection that discussed the quantile regressions, the returns were determined by the first partial derivatives of the hourly-income conditional distribution equation, and were analysed with the following conditional regression, which were applied to the quantiles 0.25, 0.50 and 0.90.

$$y(q) = \beta_1 + \beta_2 Head + \beta_3 Age + \beta_4 Age^2 + \beta_5 \sum Education + \beta_6 \sum Region + \beta_8 \sum Position \quad (7)$$

where $y(q)$ is the logarithm of hourly income; *Head* is a dummy indicating if the person was the head of household; *Age* is the age of the individual; *Education* is a group of dummies for educational achievement; *Region* is a group of dummies for the regions in Brazil; and *Position* is a group of dummies for the person's position in the labour market.

For each group of individuals (white men, white women, black men and black women), in each year analysed (1987, 1995 and 2001), three quantile regressions were estimated on the basis of the quantiles cited above. The results obtained for the 36 models are shown in annex 1.

The 25th percentile is used as an approximation for the returns of the poorest 25% of workers, while the 90th percentile is an approximation for the richest 10%. The 50th percentile apprehends the effects on the median of the distribution in the hourly income.

The *Head* variable was included in the model to determine the income differentials between the head and other members of the household. The returns obtained for heads of household indicate whether these individuals earn more than others in the labour market. These returns are also related to each household member's ratio of participation in the labour force. Age was used as a proxy for experience. The same term was also included in the model in a squared form in order to analyse the concavity of the income-experience profile.

Schooling data was also included in the model as various dummy variables, depending on the level attained by the person and related to workers' productivity. It must be emphasized that Brazil has large returns on age and for education, but these have been falling over the past twenty years, partly due to the increase in primary school attendance.¹

Three categories represent the regions in Brazil: south, southeast and other regions. The regional returns are analysed in order to capture some of the spatial differences in the conditional income distribution. Owing to the lower capacity of the poorest workers to transform personal attributes into income generation,

regional economic characteristics might be expected to affect this capacity. In regions that are economically more developed, such as the south and southeast regions in Brazil, the factor returns may be substantially larger than in the north, northeast and central-western regions, which were used as reference in the analysis.

Finally, the labour-market positions of occupied workers were aggregated into the following three categories:²

Position 1: Workers with employment contracts (*com carteira*), including domestic employees;

Position 2: Workers without employment contracts (*sem carteira*), including domestic employees, public workers, military personnel and employers; and

Position 3: Self-employed workers.

The reference for these dummies was position 1. For instance, a positive sign for the position 2 dummy indicates that workers that do not have an employment contract have a larger income than the reference group.

Following the recommendations of Buchinsky (1998), the variance and covariance matrices were estimated using a Design Matrix Bootstrap Estimator with 20 replications using the Stata 7 statistical package. All the models were significant in the F test at 5% (see annex 2).

3. The decomposition of inequality trends

This section discusses JMP decomposition (Juhn, Murphy and Pierce, 1993). This technique, as already mentioned, was applied in order to isolate the effects of changes in personal attribute endowment and of variations in the returns on these attributes from the effect of discrimination in the period analysed on the earning gaps between white and black people.

The decomposition of the temporal change in the income gap of employed men is presented in table 5. The total earnings differential between white and black men was decomposed into four categories: quantity, price, gap and non-observable characteristics, for two periods 1987-1995 and 1995-2001.

The negative signs in the total column for the 25th quantile in all periods analysed show that there was

¹ See, for example, Menezes Filho, Fernandes and Picchetti (2000).

² Due to the fact that the National Household Survey in the 1980s did not analyse public workers and military personnel separately from workers without a formal employment contract from the government, the best option was to aggregate all these workers (although the category is surely a heterogeneous one).

TABLE 5

JMP decomposition of the earning gaps for different racial groups – Men^a

Quantile	Period	Total	Quantity	Price	Gap	Non Obs.
25	1995-1987	-0.52217	-0.43641	0.01805	-0.10314	-0.00067
	2001-1995	-0.07962	-0.10842	-0.01502	0.05027	-0.00645
	2001-1987	-0.60179	-0.54483	0.00303	-0.05287	-0.00712
50	1995-1987	-0.37679	-0.34319	0.02983	-0.05532	-0.00811
	2001-1995	0.35097	0.33710	-0.01355	0.02357	0.00385
	2001-1987	-0.02582	-0.00609	0.01628	-0.03175	-0.00425
90	1995-1987	-1.07997	-1.05180	0.06331	-0.09134	-0.00013
	2001-1995	0.12137	0.15762	-0.00185	-0.02703	-0.00737
	2001-1987	-0.95860	-0.89418	0.06146	-0.11837	-0.00750

Source: National Household Survey microdata, 1987, 1995 and 2001.

^a Juhn, Murphy and Pierce decomposition (1993).

a decrease in the earning gap between racial groups for men in this quantile. There was also a decrease in productive attribute distribution, as shown by the negative signs of the quantity column. Besides this, the coefficients in the next column established that variations in the returns on price effects promoted larger income gaps between racial groups between 1987 and 1995, and smaller ones in the second period analysed. This means that these contributions had different impacts in the first period analysed; while they showed a tendency to promote smaller earning gaps between racial groups in the second period. However, labour-market discrimination, reflected in the gap-effect, which showed a positive sign between 1995 and 2001, prevented the contributions originating in these two effects from being even greater during that period. Among men, the gap-effect is negative during all the period analysed only for the 90th quantile of the distribution, although this does not promote similar performance for the total earning gaps, which showed a negative sign only between 1987 and 1995.

The results for women are presented in table 6. It can be seen that the differences in the evolution of the total earning gaps are more outstanding, especially when the results for the 25th and 90th quantiles are compared. For the poorest group, there is a tendency towards reduction in the total earning gaps in all the periods analysed, while the opposite is true for women in the last quantile between the years of 1995-2001, with an increase in the income differentials between white and black women. The data also show that the earning gaps for the first quantile analysed were not

only reduced by the quantity effect (which reflects reduced heterogeneity of personal attributes endowment and regional and labour-market characteristics) but also by the price effect, which shows a relative devaluation of the returns of white women when compared to black women in the period analysed. Besides this, the gap-effect also enhanced this homogenization tendency for the first period analysed. As was noticed for men, the employed women in the economically active population in the 25th and 50th quantiles suffered from an increase in discrimination in the final period analysed.

Generally, the results show that the earning gaps between racial groups narrowed for the poorest people, both in terms of men and women. A less unequal distribution of attributes in the period, especially due to education and regional localization, decreased the income differentials between white and black people, allowing for a reduction of the earning gaps related to these endowments. Besides this, a reduction in the factor returns (shown by the quantile regressions, see annex 1), had a greater impact on the white than the black population. This is reflected in the negative signs obtained for the price-effect, especially between 1995 and 2001. However, it was established that the gap-effect has limited these distributive gains in the latter period. As is shown by the non-observable price-effect in the final columns of tables 5 and 6, when the residual earning inequality of whites holds constant, the percentile position of blacks shows greater inequality. This suggests that discrimination exists or that some changes in the attribute endowment were not considered in the analysis.

TABLE 6

JMP decomposition of the earning gaps for different racial groups – Women^a

Quantile	Period	Total	Quantity	Price	Gap	Non Obs.
25	1995-1987	-0.27716	-0.24239	-0.01685	-0.02970	0.01178
	2001-1995	-0.18002	-0.18261	-0.02146	0.03662	-0.01258
	2001-1987	-0.45718	-0.42500	-0.03831	0.00692	-0.00080
50	1995-1987	-0.32956	-0.31784	0.00757	-0.01386	-0.00543
	2001-1995	0.48240	0.49034	-0.02658	0.01703	0.00161
	2001-1987	0.15284	0.17251	-0.01901	0.00317	-0.00382
90	1995-1987	-0.48321	-0.41128	0.04278	-0.11797	0.00327
	2001-1995	0.88971	0.86194	-0.00044	0.03194	-0.00373
	2001-1987	0.40650	0.45065	0.04234	-0.08604	-0.00046

Source: National Household Survey microdata, 1987, 1995 and 2001.

^a Juhn, Murphy and Pierce decomposition (1993).

V

Summary of results: reduction of differentials for the poorest 25%

Among other topics, this paper analyses the evolution of the income distribution of the poorest 25% of employed workers in metropolitan areas in Brazil, stressing that the persistence of high income inequality generates a context in which negative conditions are transferred through generations for part of the population. First, it was observed that the relative income share of this group increased over the period analysed. Second, further analyses attempted to determine the extent to which personal attributes, regional inequalities and/or labour-market characteristics impacted on this result. This paper applied quantile regressions in order to capture the effects of the relative position of the individual in a conditional income distribution. Then, the earning gaps between white and black people were analysed using a JMP decomposition. The diverse impact of the heterogeneity of productive attribute endowments, labour-market characteristics and other non-observable factors (including discrimination) were analysed for the periods 1987-1995 and 1995-2001.

When the different quantiles were separately compared, the poorest individuals presented a

larger reduction in earnings differentials, with a homogenization of income between white and black people. However, the existence of factors related to labour-market discrimination limited the income convergence in the second period analysed. In spite of this, the reasons that impacted on the reduction of the gap for different racial groups among the poorest workers in the period 1987-2001 (or 1995-2001 for men) can be summarized as follows:

- Changes in the distribution of productive attributes reduced the heterogeneity between white and black people;
- In general, the convergence of the factor returns of white and black people benefited the latter group.

In conclusion then, an improvement in the situation of the poorest workers in the analysed period was observed not only due to the relative increase in share of earnings, but also in terms of a reduction in the differentials by racial group. The results for women were even more positive in terms of these two phenomena.

ANNEX 1

Quantile regressions

White women (1987)							Black women (1987)						
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
q25 R ² : 0.23							q25 R ² : 0.22						
Head	0.011	0.02	0.62	0.53	-0.02	0.04	Head	0.024	0.02	1.54	0.12	-0.01	0.05
Age	0.081	0.00	20.13	0.00	0.07	0.09	Age	0.074	0.00	14.83	0.00	0.06	0.08
Age2	-0.001	0.00	-15.80	0.00	0.00	0.00	Age2	-0.001	0.00	-12.47	0.00	0.00	0.00
Educ2	0.231	0.04	5.26	0.00	0.14	0.32	Educ2	0.243	0.04	6.89	0.00	0.17	0.31
Educ3	0.492	0.03	14.06	0.00	0.42	0.56	Educ3	0.430	0.03	12.82	0.00	0.36	0.50
Educ4	0.825	0.03	23.99	0.00	0.76	0.89	Educ4	0.713	0.05	14.74	0.00	0.62	0.81
Educ5	1.375	0.04	31.77	0.00	1.29	1.46	Educ5	1.215	0.04	32.06	0.00	1.14	1.29
Educ6	2.119	0.04	49.26	0.00	2.03	2.20	Educ6	2.182	0.07	29.45	0.00	2.04	2.33
Position2	-0.258	0.02	-13.93	0.00	-0.29	-0.22	Position2	-0.448	0.02	-20.94	0.00	-0.49	-0.41
Position3	-0.127	0.02	-5.82	0.00	-0.17	-0.08	Position3	-0.276	0.02	-13.50	0.00	-0.32	-0.24
South	0.200	0.02	9.12	0.00	0.16	0.24	South	0.189	0.03	6.68	0.00	0.13	0.24
South East	0.219	0.02	13.09	0.00	0.19	0.25	South East	0.129	0.01	10.59	0.00	0.10	0.15
Constant	-2.364	0.07	-33.69	0.00	-2.50	-2.23	Constant	-2.185	0.10	-21.56	0.00	-2.38	-1.99
q50 R ² : 0.2974							q50 R ² : 0.23						
Head	0.010	0.02	0.48	0.63	-0.03	0.05	Head	0.003	0.01	0.32	0.75	-0.02	0.02
Age	0.078	0.00	18.04	0.00	0.07	0.09	Age	0.068	0.00	21.01	0.00	0.06	0.07
Age2	-0.001	0.00	-13.84	0.00	0.00	0.00	Age2	-0.001	0.00	-17.82	0.00	0.00	0.00
Educ2	0.215	0.03	6.54	0.00	0.15	0.28	Educ2	0.205	0.02	10.96	0.00	0.17	0.24
Educ3	0.476	0.03	14.82	0.00	0.41	0.54	Educ3	0.409	0.02	22.71	0.00	0.37	0.44
Educ4	0.881	0.04	24.41	0.00	0.81	0.95	Educ4	0.747	0.03	26.72	0.00	0.69	0.80
Educ5	1.493	0.03	48.16	0.00	1.43	1.55	Educ5	1.372	0.03	48.92	0.00	1.32	1.43
Educ6	2.208	0.03	65.36	0.00	2.14	2.27	Educ6	2.308	0.05	49.80	0.00	2.22	2.40
Position2	-0.179	0.02	-10.34	0.00	-0.21	-0.14	Position2	-0.301	0.02	-18.77	0.00	-0.33	-0.27
Position3	0.051	0.02	2.39	0.02	0.01	0.09	Position3	0.029	0.03	1.05	0.29	-0.03	0.08
South	0.129	0.02	6.20	0.00	0.09	0.17	Age	0.125	0.03	4.95	0.00	0.08	0.17
South East	0.176	0.02	10.14	0.00	0.14	0.21	South East	0.101	0.01	7.65	0.00	0.08	0.13
Constant	-1.952	0.07	-26.19	0.00	-2.10	-1.81	Constant	-1.766	0.07	-26.69	0.00	-1.90	-1.64
q90 R ² : 0.2893							q90 R ² : 0.28						
Head	0.014	0.03	0.49	0.62	-0.04	0.07	Head	0.002	0.02	0.08	0.94	-0.05	0.05
Age	0.076	0.01	12.35	0.00	0.06	0.09	Age	0.067	0.01	9.77	0.00	0.05	0.08
Age2	-0.001	0.00	-7.84	0.00	0.00	0.00	Age2	-0.001	0.00	-6.99	0.00	0.00	0.00
Educ2	0.216	0.05	4.02	0.00	0.11	0.32	Educ2	0.250	0.03	7.53	0.00	0.19	0.32
Educ3	0.544	0.05	11.20	0.00	0.45	0.64	Educ3	0.485	0.05	10.11	0.00	0.39	0.58
Educ4	1.067	0.05	22.51	0.00	0.97	1.16	Educ4	0.928	0.05	19.85	0.00	0.84	1.02
Educ5	1.623	0.05	32.45	0.00	1.53	1.72	Educ5	1.568	0.05	28.95	0.00	1.46	1.67
Educ6	2.240	0.05	47.30	0.00	2.15	2.33	Educ6	2.380	0.07	32.61	0.00	2.24	2.52
Position2	-0.030	0.03	-0.88	0.38	-0.10	0.04	Position2	-0.157	0.03	-6.06	0.00	-0.21	-0.11
Position3	0.294	0.03	9.49	0.00	0.23	0.35	Position3	0.348	0.04	8.96	0.00	0.27	0.42
South	-0.012	0.03	-0.44	0.66	-0.07	0.04	South	-0.083	0.04	-1.86	0.06	-0.17	0.00
South East	0.071	0.03	2.54	0.01	0.02	0.13	South East	0.010	0.02	0.43	0.67	-0.04	0.06
Constant	-1.275	0.09	-13.95	0.00	-1.45	-1.10	Constant	-1.077	0.11	-9.60	0.00	-1.30	-0.86

^a SD = Standard deviation.^b Confidence interval.

Continuation annex I

White women (1995)							Black women (1995)						
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
q25 R ² : 0.23							q25 R ² : 0.17						
Head	0.031	0.01	2.55	0.01	0.01	0.05	Head	0.036	0.02	2.17	0.03	0.00	0.07
Age	0.049	0.00	17.34	0.00	0.04	0.05	Age	0.050	0.00	13.19	0.00	0.04	0.06
Age2	0.000	0.00	-13.12	0.00	0.00	0.00	Age2	-0.001	0.00	-9.84	0.00	0.00	0.00
Educ2	0.159	0.03	4.60	0.00	0.09	0.23	Educ2	0.121	0.03	3.99	0.00	0.06	0.18
Educ3	0.340	0.03	11.33	0.00	0.28	0.40	Educ3	0.303	0.02	14.22	0.00	0.26	0.34
Educ4	0.589	0.03	17.12	0.00	0.52	0.66	Educ4	0.528	0.03	18.59	0.00	0.47	0.58
Educ5	1.066	0.03	34.93	0.00	1.01	1.13	Educ5	0.908	0.03	33.68	0.00	0.86	0.96
Educ6	1.883	0.03	54.05	0.00	1.81	1.95	Educ6	1.862	0.05	38.71	0.00	1.77	1.96
Position2	-0.113	0.01	-13.56	0.00	-0.13	-0.10	Position2	-0.139	0.01	-15.77	0.00	-0.16	-0.12
Position3	-0.025	0.01	-1.80	0.07	-0.05	0.00	Position3	-0.013	0.02	-0.73	0.47	-0.05	0.02
South	0.261	0.01	19.68	0.00	0.24	0.29	South	0.306	0.02	13.15	0.00	0.26	0.35
South East	0.244	0.02	15.57	0.00	0.21	0.27	South East	0.215	0.01	15.47	0.00	0.19	0.24
Constant	-1.572	0.05	-31.49	0.00	-1.67	-1.47	Constant	-1.640	0.07	-23.39	0.00	-1.78	-1.50
q50 R ² : 0.26							q50 R ² : 0.20						
Head	0.031	0.01	2.27	0.02	0.00	0.06	Head	0.032	0.02	1.88	0.06	0.00	0.07
Age	0.062	0.00	17.80	0.00	0.05	0.07	Age	0.058	0.00	12.71	0.00	0.05	0.07
Age2	-0.001	0.00	-13.62	0.00	0.00	0.00	Age2	-0.001	0.00	-9.65	0.00	0.00	0.00
Educ2	0.173	0.03	6.10	0.00	0.12	0.23	Educ2	0.164	0.03	6.36	0.00	0.11	0.21
Educ3	0.389	0.02	16.50	0.00	0.34	0.44	Educ3	0.363	0.02	14.93	0.00	0.32	0.41
Educ4	0.666	0.03	24.78	0.00	0.61	0.72	Educ4	0.656	0.04	17.83	0.00	0.58	0.73
Educ5	1.243	0.02	60.96	0.00	1.20	1.28	Educ5	1.127	0.03	44.37	0.00	1.08	1.18
Educ6	2.009	0.02	85.97	0.00	1.96	2.05	Educ6	2.036	0.03	60.90	0.00	1.97	2.10
Position2	-0.046	0.01	-6.11	0.00	-0.06	-0.03	Position2	-0.064	0.01	-5.28	0.00	-0.09	-0.04
Position3	0.163	0.01	12.25	0.00	0.14	0.19	Position3	0.167	0.02	10.87	0.00	0.14	0.20
South	0.248	0.01	19.02	0.00	0.22	0.27	South	0.331	0.03	11.44	0.00	0.27	0.39
South East	0.249	0.01	17.35	0.00	0.22	0.28	South East	0.239	0.02	13.69	0.00	0.20	0.27
Constant	-1.537	0.07	-22.78	0.00	-1.67	-1.40	Constant	-1.584	0.08	-19.34	0.00	-1.74	-1.42
q90 R ² : 0.27							q90 R ² : 0.24						
Head	0.073	0.02	3.39	0.00	0.03	0.12	Head	0.001	0.02	0.03	0.98	-0.04	0.04
Age	0.077	0.01	13.57	0.00	0.07	0.09	Age	0.073	0.00	14.61	0.00	0.06	0.08
Age2	-0.001	0.00	-10.67	0.00	0.00	0.00	Age2	-0.001	0.00	-11.44	0.00	0.00	0.00
Educ2	0.151	0.04	3.60	0.00	0.07	0.23	Educ2	0.169	0.05	3.35	0.00	0.07	0.27
Educ3	0.455	0.04	12.23	0.00	0.38	0.53	Educ3	0.408	0.04	9.48	0.00	0.32	0.49
Educ4	0.802	0.05	16.08	0.00	0.70	0.90	Educ4	0.816	0.05	16.21	0.00	0.72	0.91
Educ5	1.462	0.04	37.18	0.00	1.38	1.54	Educ5	1.358	0.04	30.60	0.00	1.27	1.44
Educ6	2.155	0.05	47.57	0.00	2.07	2.24	Educ6	2.262	0.05	42.84	0.00	2.16	2.37
Position2	0.170	0.02	7.91	0.00	0.13	0.21	Position2	0.128	0.02	6.61	0.00	0.09	0.17
Position3	0.436	0.03	13.13	0.00	0.37	0.50	Position3	0.545	0.03	19.07	0.00	0.49	0.60
South	0.121	0.03	3.97	0.00	0.06	0.18	South	0.307	0.04	8.27	0.00	0.23	0.38
South East	0.163	0.03	6.45	0.00	0.11	0.21	South East	0.294	0.02	12.75	0.00	0.25	0.34
Constant	-1.103	0.12	-9.51	0.00	-1.33	-0.88	Constant	-1.278	0.10	-12.28	0.00	-1.48	-1.07

^a SD = Standard deviation.^b Confidence interval.

Continuation annex I

	White women (2001)							Black women (2001)					
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
	q25 R ² : 0.22							q25 R ² : 0.17					
Head	-0.003	0.01	-0.20	0.84	-0.03	0.03	Head	0.006	0.01	0.52	0.60	-0.02	0.03
Age	0.054	0.00	16.07	0.00	0.05	0.06	Age	0.054	0.00	21.07	0.00	0.05	0.06
Age2	-0.001	0.00	-12.69	0.00	0.00	0.00	Age2	-0.001	0.00	-14.19	0.00	0.00	0.00
Educ2	0.150	0.03	5.78	0.00	0.10	0.20	Educ2	0.171	0.02	8.25	0.00	0.13	0.21
Educ3	0.304	0.02	13.01	0.00	0.26	0.35	Educ3	0.310	0.02	15.26	0.00	0.27	0.35
Educ4	0.538	0.03	20.92	0.00	0.49	0.59	Educ4	0.505	0.02	20.88	0.00	0.46	0.55
Educ5	0.874	0.02	35.93	0.00	0.83	0.92	Educ5	0.804	0.03	31.93	0.00	0.75	0.85
Educ6	1.794	0.02	80.50	0.00	1.75	1.84	Educ6	1.789	0.03	61.10	0.00	1.73	1.85
Position2	-0.109	0.01	-12.61	0.00	-0.13	-0.09	Position2	-0.177	0.01	-21.80	0.00	-0.19	-0.16
Position3	-0.224	0.02	-9.58	0.00	-0.27	-0.18	Position3	-0.419	0.02	-25.09	0.00	-0.45	-0.39
South	0.223	0.01	18.78	0.00	0.20	0.25	South	0.228	0.02	9.27	0.00	0.18	0.28
South East	0.226	0.01	23.65	0.00	0.21	0.25	South East	0.188	0.01	22.96	0.00	0.17	0.20
Constant	-1.590	0.07	-23.06	0.00	-1.73	-1.46	Constant	-1.658	0.05	-32.08	0.00	-1.76	-1.56
q50 R ² : 0.26							q50 R ² : 0.18						
Head	0.013	0.01	1.93	0.05	0.00	0.03	Head	0.016	0.01	1.73	0.08	0.00	0.03
Age	0.059	0.00	22.69	0.00	0.05	0.06	Age	0.049	0.00	16.30	0.00	0.04	0.05
Age2	-0.001	0.00	-16.64	0.00	0.00	0.00	Age2	0.000	0.00	-11.68	0.00	0.00	0.00
Educ2	0.133	0.02	5.91	0.00	0.09	0.18	Educ2	0.131	0.02	5.65	0.00	0.09	0.18
Educ3	0.314	0.02	14.78	0.00	0.27	0.36	Educ3	0.278	0.02	13.12	0.00	0.24	0.32
Educ4	0.570	0.02	23.17	0.00	0.52	0.62	Educ4	0.499	0.02	22.83	0.00	0.46	0.54
Educ5	1.019	0.02	46.07	0.00	0.98	1.06	Educ5	0.876	0.02	41.72	0.00	0.83	0.92
Educ6	1.913	0.02	79.60	0.00	1.87	1.96	Educ6	1.878	0.03	69.17	0.00	1.83	1.93
Position2	-0.004	0.01	-0.62	0.53	-0.02	0.01	Position2	-0.059	0.01	-7.85	0.00	-0.07	-0.04
Position3	-0.011	0.02	-0.63	0.53	-0.04	0.02	Position3	-0.104	0.01	-7.21	0.00	-0.13	-0.08
South	0.179	0.01	17.31	0.00	0.16	0.20	South	0.205	0.02	9.99	0.00	0.17	0.25
South East	0.206	0.01	16.47	0.00	0.18	0.23	South East	0.190	0.01	24.05	0.00	0.17	0.20
Constant	-1.463	0.05	-28.58	0.00	-1.56	-1.36	Constant	-1.307	0.06	-22.45	0.00	-1.42	-1.19
q90 R ² : 0.29							q90 R ² : 0.23						
Head	0.048	0.02	2.51	0.01	0.01	0.08	Head	0.036	0.02	2.04	0.04	0.00	0.07
Age	0.064	0.00	15.63	0.00	0.06	0.07	Age	0.061	0.01	9.94	0.00	0.05	0.07
Age2	-0.001	0.00	-9.36	0.00	0.00	0.00	Age2	-0.001	0.00	-7.39	0.00	0.00	0.00
Educ2	0.217	0.06	3.92	0.00	0.11	0.33	Educ2	0.122	0.03	3.87	0.00	0.06	0.18
Educ3	0.329	0.04	7.85	0.00	0.25	0.41	Educ3	0.252	0.02	10.67	0.00	0.21	0.30
Educ4	0.692	0.05	13.85	0.00	0.59	0.79	Educ4	0.536	0.03	20.84	0.00	0.49	0.59
Educ5	1.284	0.04	31.74	0.00	1.20	1.36	Educ5	1.053	0.02	44.31	0.00	1.01	1.10
Educ6	2.185	0.04	49.33	0.00	2.10	2.27	Educ6	2.134	0.03	62.51	0.00	2.07	2.20
Position2	0.187	0.02	10.51	0.00	0.15	0.22	Position2	0.179	0.02	9.00	0.00	0.14	0.22
Position3	0.343	0.02	15.72	0.00	0.30	0.39	Position3	0.403	0.03	12.65	0.00	0.34	0.47
South	0.042	0.02	1.95	0.05	0.00	0.09	South	0.194	0.03	6.11	0.00	0.13	0.26
South East	0.122	0.02	6.12	0.00	0.08	0.16	South East	0.192	0.01	15.60	0.00	0.17	0.22
Constant	-0.997	0.08	-12.80	0.00	-1.15	-0.84	Constant	-0.988	0.11	-9.14	0.00	-1.20	-0.78

^a SD = Standard deviation.^b Confidence interval.

Continuation annex I

White men (1987)							Black men (1987)						
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
q25 R ² : 0.24							q25 R ² : 0.16						
Head	0.351	0.01	27.86	0.00	0.33	0.38	Head	0.242	0.02	15.74	0.00	0.21	0.27
Age	0.071	0.00	21.58	0.00	0.06	0.08	Age	0.059	0.00	25.11	0.00	0.05	0.06
Age2	-0.001	0.00	-19.91	0.00	0.00	0.00	Age2	-0.001	0.00	-22.31	0.00	0.00	0.00
Educ2	0.318	0.03	10.84	0.00	0.26	0.37	Educ2	0.256	0.02	12.38	0.00	0.22	0.30
Educ3	0.574	0.02	25.45	0.00	0.53	0.62	Educ3	0.461	0.02	19.75	0.00	0.42	0.51
Educ4	0.887	0.03	27.77	0.00	0.82	0.95	Educ4	0.670	0.02	28.77	0.00	0.62	0.72
Educ5	1.377	0.03	50.60	0.00	1.32	1.43	Educ5	1.140	0.02	54.27	0.00	1.10	1.18
Educ6	2.138	0.03	69.61	0.00	2.08	2.20	Educ6	2.072	0.05	41.51	0.00	1.97	2.17
Position2	-0.135	0.01	-11.35	0.00	-0.16	-0.11	Position2	-0.208	0.01	-15.36	0.00	-0.23	-0.18
Position3	-0.026	0.02	-1.20	0.23	-0.07	0.02	Position3	0.030	0.02	1.58	0.11	-0.01	0.07
South	0.142	0.01	11.50	0.00	0.12	0.17	South	0.035	0.03	1.32	0.19	-0.02	0.09
South East	0.193	0.01	13.66	0.00	0.17	0.22	South East	0.074	0.02	4.79	0.00	0.04	0.10
Constant	-2.006	0.05	-36.54	0.00	-2.11	-1.90	Constant	-1.630	0.05	-32.67	0.00	-1.73	-1.53
q50 R ² : 0.28							q50 R ² : 0.20						
Head	0.327	0.01	26.68	0.00	0.30	0.35	Head	0.264	0.02	15.07	0.00	0.23	0.30
Age	0.083	0.00	29.90	0.00	0.08	0.09	Age	0.073	0.00	21.39	0.00	0.07	0.08
Age2	-0.001	0.00	-26.53	0.00	0.00	0.00	Age2	-0.001	0.00	-20.75	0.00	0.00	0.00
Educ2	0.323	0.02	17.40	0.00	0.29	0.36	Educ2	0.298	0.02	14.76	0.00	0.26	0.34
Educ3	0.636	0.02	37.82	0.00	0.60	0.67	Educ3	0.533	0.03	19.73	0.00	0.48	0.59
Educ4	0.994	0.03	37.81	0.00	0.94	1.05	Educ4	0.817	0.03	28.87	0.00	0.76	0.87
Educ5	1.522	0.02	67.75	0.00	1.48	1.57	Educ5	1.349	0.03	46.81	0.00	1.29	1.41
Educ6	2.239	0.02	99.91	0.00	2.19	2.28	Educ6	2.246	0.04	51.26	0.00	2.16	2.33
Position2	-0.036	0.01	-2.52	0.01	-0.06	-0.01	Position2	-0.145	0.01	-11.87	0.00	-0.17	-0.12
Position3	0.064	0.01	4.38	0.00	0.04	0.09	Position3	0.122	0.02	7.84	0.00	0.09	0.15
South	0.086	0.01	6.16	0.00	0.06	0.11	South	0.026	0.03	0.88	0.38	-0.03	0.08
South East	0.164	0.01	14.62	0.00	0.14	0.19	South East	0.074	0.02	4.90	0.00	0.04	0.10
Constant	-1.906	0.05	-42.00	0.00	-1.99	-1.82	Constant	-1.618	0.06	-26.19	0.00	-1.74	-1.50
q90 R ² : 0.31							q90 R ² : 0.24						
Head	0.309	0.03	12.18	0.00	0.26	0.36	Head	0.291	0.02	12.33	0.00	0.24	0.34
Age	0.085	0.01	16.23	0.00	0.07	0.10	Age	0.080	0.01	14.91	0.00	0.07	0.09
Ead2	-0.001	0.00	-11.83	0.00	0.00	0.00	Age2	-0.001	0.00	-11.58	0.00	0.00	0.00
Educ2	0.374	0.04	8.94	0.00	0.29	0.46	Educ2	0.282	0.02	12.66	0.00	0.24	0.33
Educ3	0.708	0.04	16.02	0.00	0.62	0.79	Educ3	0.565	0.03	18.58	0.00	0.51	0.63
Educ4	1.134	0.04	25.23	0.00	1.05	1.22	Educ4	0.912	0.03	26.87	0.00	0.85	0.98
Educ5	1.675	0.03	50.09	0.00	1.61	1.74	Educ5	1.548	0.04	44.17	0.00	1.48	1.62
Educ6	2.279	0.03	67.02	0.00	2.21	2.35	Educ6	2.220	0.04	53.48	0.00	2.14	2.30
Position2	0.229	0.03	8.55	0.00	0.18	0.28	Position2	0.075	0.01	5.45	0.00	0.05	0.10
Position3	0.225	0.02	10.68	0.00	0.18	0.27	Position3	0.245	0.02	11.63	0.00	0.20	0.29
South	-0.059	0.02	-2.89	0.00	-0.10	-0.02	South	-0.073	0.04	-1.78	0.08	-0.15	0.01
South East	0.030	0.02	1.40	0.16	-0.01	0.07	South East	-0.001	0.02	-0.09	0.93	-0.03	0.03
Constant	-1.263	0.08	-15.70	0.00	-1.42	-1.11	Constant	-1.070	0.09	-12.32	0.00	-1.24	-0.90

^a SD = Standard deviation.^b Confidence interval.

Continuation annex I

White men (1995)							Black men (1995)						
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
q25 R ² : 0.23							q25 R ² : 0.17						
Head	0.289	0.02	17.08	0.00	0.26	0.32	Head	0.204	0.01	15.14	0.00	0.18	0.23
Age	0.058	0.00	17.39	0.00	0.05	0.06	Age	0.056	0.00	19.77	0.00	0.05	0.06
Age2	-0.001	0.00	-15.55	0.00	0.00	0.00	Age2	-0.001	0.00	-18.55	0.00	0.00	0.00
Educ2	0.294	0.03	11.29	0.00	0.24	0.35	Educ2	0.247	0.02	13.02	0.00	0.21	0.28
Educ3	0.554	0.02	26.64	0.00	0.51	0.59	Educ3	0.443	0.02	23.39	0.00	0.41	0.48
Educ4	0.823	0.02	38.04	0.00	0.78	0.87	Educ4	0.652	0.02	31.63	0.00	0.61	0.69
Educ5	1.249	0.02	51.33	0.00	1.20	1.30	Educ5	1.049	0.02	45.58	0.00	1.00	1.09
Educ6	2.139	0.03	83.19	0.00	2.09	2.19	Educ6	2.036	0.07	30.24	0.00	1.90	2.17
Position2	-0.096	0.01	-7.57	0.00	-0.12	-0.07	Position2	-0.136	0.01	-16.27	0.00	-0.15	-0.12
Position3	-0.092	0.01	-6.76	0.00	-0.12	-0.07	Position3	-0.071	0.01	-7.90	0.00	-0.09	-0.05
South	0.229	0.02	13.69	0.00	0.20	0.26	South	0.233	0.02	11.11	0.00	0.19	0.27
South East	0.269	0.01	21.10	0.00	0.24	0.29	South East	0.218	0.01	27.10	0.00	0.20	0.23
Constant	-1.715	0.06	-28.32	0.00	-1.83	-1.60	Constant	-1.574	0.05	-29.14	0.00	-1.68	-1.47
q50 R ² : 0.26							q50 R ² : 0.20						
Head	0.265	0.02	15.75	0.00	0.23	0.30	Head	0.229	0.01	20.95	0.00	0.21	0.25
Age	0.065	0.00	19.90	0.00	0.06	0.07	Age	0.066	0.00	38.19	0.00	0.06	0.07
Age2	-0.001	0.00	-16.98	0.00	0.00	0.00	Age2	-0.001	0.00	-35.79	0.00	0.00	0.00
Educ2	0.301	0.02	12.83	0.00	0.26	0.35	Educ2	0.255	0.02	14.79	0.00	0.22	0.29
Educ3	0.586	0.02	27.56	0.00	0.54	0.63	Educ3	0.477	0.02	27.08	0.00	0.44	0.51
Educ4	0.904	0.02	39.91	0.00	0.86	0.95	Educ4	0.745	0.02	45.54	0.00	0.71	0.78
Educ5	1.388	0.02	73.05	0.00	1.35	1.42	Educ5	1.221	0.02	63.82	0.00	1.18	1.26
Educ6	2.249	0.02	97.39	0.00	2.20	2.29	Educ6	2.198	0.04	54.75	0.00	2.12	2.28
Position2	0.011	0.01	1.01	0.31	-0.01	0.03	Position2	-0.072	0.01	-11.53	0.00	-0.08	-0.06
Position3	0.011	0.01	0.77	0.44	-0.02	0.04	Position3	0.065	0.01	6.37	0.00	0.04	0.08
South	0.182	0.01	12.95	0.00	0.15	0.21	South	0.207	0.02	11.48	0.00	0.17	0.24
South East	0.243	0.01	17.83	0.00	0.22	0.27	South East	0.242	0.01	27.08	0.00	0.22	0.26
Constant	-1.521	0.05	-29.87	0.00	-1.62	-1.42	Constant	-1.491	0.04	-36.70	0.00	-1.57	-1.41
q90 R ² : 0.30							q90 R ² : 0.24						
Head	0.233	0.02	9.95	0.00	0.19	0.28	Head	0.254	0.02	15.09	0.00	0.22	0.29
Age	0.070	0.01	12.86	0.00	0.06	0.08	Age	0.080	0.01	13.26	0.00	0.07	0.09
Age2	-0.001	0.00	-9.20	0.00	0.00	0.00	Age2	-0.001	0.00	-9.69	0.00	0.00	0.00
Educ2	0.306	0.05	6.48	0.00	0.21	0.40	Educ2	0.253	0.02	12.20	0.00	0.21	0.29
Educ3	0.598	0.04	13.64	0.00	0.51	0.68	Educ3	0.559	0.02	28.36	0.00	0.52	0.60
Educ4	0.989	0.05	20.89	0.00	0.90	1.08	Educ4	0.901	0.03	26.76	0.00	0.83	0.97
Educ5	1.506	0.04	40.38	0.00	1.43	1.58	Educ5	1.439	0.03	45.48	0.00	1.38	1.50
Educ6	2.239	0.05	45.47	0.00	2.14	2.34	Educ6	2.294	0.05	46.09	0.00	2.20	2.39
Position2	0.259	0.02	14.85	0.00	0.23	0.29	Position2	0.164	0.02	8.56	0.00	0.13	0.20
Position3	0.238	0.02	10.43	0.00	0.19	0.28	Position3	0.228	0.02	13.43	0.00	0.19	0.26
South	0.074	0.02	3.70	0.00	0.03	0.11	South	0.158	0.02	6.68	0.00	0.11	0.20
South East	0.144	0.02	8.46	0.00	0.11	0.18	South East	0.176	0.02	8.67	0.00	0.14	0.22
Constant	-0.874	0.09	-9.47	0.00	-1.05	-0.69	Constant	-1.175	0.10	-12.17	0.00	-1.36	-0.99

^a SD = Standard deviation.^b Confidence interval.

Continuation annex I

White men (2001)							Black men (2001)						
	Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b			Coeff.	SD ^a	t	P>|t|	95% conf. int. ^b	
q25 R ² : 0.22							q25 R ² : 0.15						
Head	0.217	0.01	18.07	0.00	0.19	0.24	Head	0.137	0.01	16.05	0.00	0.12	0.15
Age	0.056	0.00	20.98	0.00	0.05	0.06	Age	0.055	0.00	23.66	0.00	0.05	0.06
Age2	-0.001	0.00	-18.19	0.00	0.00	0.00	Age2	-0.001	0.00	-20.43	0.00	0.00	0.00
Educ2	0.196	0.03	7.76	0.00	0.15	0.25	Educ2	0.177	0.02	10.51	0.00	0.14	0.21
Educ3	0.436	0.02	18.78	0.00	0.39	0.48	Educ3	0.376	0.01	26.32	0.00	0.35	0.40
Educ4	0.662	0.02	33.23	0.00	0.62	0.70	Educ4	0.567	0.02	32.69	0.00	0.53	0.60
Educ5	1.001	0.02	42.43	0.00	0.95	1.05	Educ5	0.829	0.02	49.49	0.00	0.80	0.86
Educ6	1.956	0.03	66.71	0.00	1.90	2.01	Educ6	1.851	0.03	55.08	0.00	1.79	1.92
Position2	-0.100	0.01	-10.45	0.00	-0.12	-0.08	Position2	-0.174	0.01	-14.54	0.00	-0.20	-0.15
Position3	-0.191	0.01	-15.92	0.00	-0.21	-0.17	Position3	-0.284	0.01	-29.71	0.00	-0.30	-0.27
South	0.231	0.01	19.92	0.00	0.21	0.25	South	0.192	0.02	12.69	0.00	0.16	0.22
South East	0.251	0.01	18.25	0.00	0.22	0.28	South East	0.173	0.01	20.35	0.00	0.16	0.19
Constant	-1.627	0.05	-30.17	0.00	-1.73	-1.52	Constant	-1.486	0.04	-34.41	0.00	-1.57	-1.40
q50 R ² : 0.26							q50 R ² : 0.18						
Head	0.221	0.01	22.44	0.00	0.20	0.24	Head	0.156	0.01	16.33	0.00	0.14	0.17
Age	0.067	0.00	31.21	0.00	0.06	0.07	Age	0.062	0.00	34.13	0.00	0.06	0.07
Age2	-0.001	0.00	-25.71	0.00	0.00	0.00	Age2	-0.001	0.00	-28.22	0.00	0.00	0.00
Educ2	0.218	0.02	8.78	0.00	0.17	0.27	Educ2	0.196	0.02	10.72	0.00	0.16	0.23
Educ3	0.482	0.02	25.05	0.00	0.44	0.52	Educ3	0.409	0.01	31.16	0.00	0.38	0.43
Educ4	0.748	0.02	35.17	0.00	0.71	0.79	Educ4	0.605	0.01	48.90	0.00	0.58	0.63
Educ5	1.177	0.02	53.25	0.00	1.13	1.22	Educ5	1.005	0.01	85.07	0.00	0.98	1.03
Educ6	2.135	0.02	117.64	0.00	2.10	2.17	Educ6	2.015	0.04	47.85	0.00	1.93	2.10
Position2	0.017	0.01	2.46	0.01	0.00	0.03	Position2	-0.081	0.01	-6.92	0.00	-0.10	-0.06
Position3	-0.049	0.01	-3.89	0.00	-0.07	-0.02	Position3	-0.112	0.01	-9.49	0.00	-0.13	-0.09
South	0.167	0.01	14.27	0.00	0.14	0.19	South	0.192	0.01	14.49	0.00	0.17	0.22
South East	0.224	0.01	19.64	0.00	0.20	0.25	South East	0.179	0.01	19.08	0.00	0.16	0.20
Constant	-1.592	0.05	-33.83	0.00	-1.68	-1.50	Constant	-1.432	0.03	-46.78	0.00	-1.49	-1.37
q90 R ² : 0.31							q90 R ² : 0.24						
Head	0.225	0.02	10.76	0.00	0.18	0.27	Head	0.174	0.01	11.83	0.00	0.15	0.20
Age	0.079	0.00	21.19	0.00	0.07	0.09	Age	0.074	0.00	19.36	0.00	0.07	0.08
Age2	-0.001	0.00	-17.25	0.00	0.00	0.00	Age2	-0.001	0.00	-13.00	0.00	0.00	0.00
Educ2	0.178	0.05	3.51	0.00	0.08	0.28	Educ2	0.212	0.03	7.15	0.00	0.15	0.27
Educ3	0.426	0.04	11.30	0.00	0.35	0.50	Educ3	0.455	0.03	15.49	0.00	0.40	0.51
Educ4	0.789	0.04	21.72	0.00	0.72	0.86	Educ4	0.760	0.02	37.53	0.00	0.72	0.80
Educ5	1.324	0.04	32.93	0.00	1.25	1.40	Educ5	1.304	0.03	52.14	0.00	1.25	1.35
Educ6	2.227	0.04	51.59	0.00	2.14	2.31	Educ6	2.280	0.03	69.16	0.00	2.22	2.35
Position2	0.237	0.02	13.13	0.00	0.20	0.27	Position2	0.145	0.02	8.41	0.00	0.11	0.18
Position3	0.177	0.02	7.81	0.00	0.13	0.22	Position3	0.123	0.02	5.76	0.00	0.08	0.16
South	0.010	0.02	0.57	0.57	-0.02	0.04	South	0.035	0.04	0.83	0.41	-0.05	0.12
South East	0.079	0.02	3.76	0.00	0.04	0.12	South East	0.103	0.01	9.17	0.00	0.08	0.13
Constant	-1.086	0.07	-15.02	0.00	-1.23	-0.94	Constant	-1.128	0.06	-17.80	0.00	-1.25	-1.00

^a SD = Standard deviation.^b Confidence interval.

ANNEX 2

F tests of significance

		1987		1995		2001
<i>White men</i>						
	F (gl 1, gl2)		F (gl 1, gl2)		F (gl 1, gl2)	
25°	F (18.28249)	10 342.17	F (18.32326)	13 627.4	F (18.36467)	5 728.31
	Prob > F	0	Prob > F	0	Prob > F	0
50°	F (18.28249)	65 549.1	F (18.32326)	4 708.92	F (18.36467)	13 175.57
	Prob > F	0	Prob > F	0	Prob > F	0
90°	F (18.28249)	34 868.99	F (18.32326)	5 676.31	F (18.36467)	4 464.48
	Prob > F	0	Prob > F	0	Prob > F	0
<i>Black men</i>						
25°	F (18.22050)	4 185.65	F (18.27241)	3 010.82	F (18.34695)	446 825.4
	Prob > F	0	Prob > F	0	Prob > F	0
50°	F (18.22050)	2 808.88	F (18.27241)	14 715.16	F (18.34695)	28 610.58
	Prob > F	0	Prob > F	0	Prob > F	0
90°	F (18.22050)	6 863.78	F (18.27241)	46 695.01	F (18.34695)	26 216.4
	Prob > F	0	Prob > F	0	Prob > F	0
<i>White women</i>						
25°	F (18.16972)	7 714.6	F (18.22450)	5 103.57	F (18.27460)	2 255.21
	Prob > F	0	Prob > F	0	Prob > F	0
50°	F (18.16972)	9 222.14	F (18.22450)	9 021.84	F (18.27460)	6 080.06
	Prob > F	0	Prob > F	0	Prob > F	0
90°	F (18.16972)	6 319.44	F (18.22450)	1 436.77	F (18.27460)	5 573.95
	Prob > F	0	Prob > F	0	Prob > F	0
<i>Black women</i>						
25°	F (18.13162)	1 666.2	F (18.17406)	17 226.23	F (18.22619)	32 471.33
	Prob > F	0	Prob > F	0	Prob > F	0
50°	F (18.13162)	2 200.58	F (18.17406)	12 836.92	F (18.22619)	21 361.02
	Prob > F	0	Prob > F	0	Prob > F	0
90°	F (18.13162)	32 321.38	F (18.17406)	2 000.94	F (18.22619)	666 713.3
	Prob > F	0	Prob > F	0	Prob > F	0

(Original: English)

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Latin America and the Caribbean in the World Economy, 2005/2006, LC/G.2313-P. United Nations publication, Sales No.: E.06.II.G.67, ECLAC, Santiago, Chile, October 2006.

The 2005-2006 edition of *Latin America and the Caribbean in the World Economy* is divided into six chapters.

Chapter I analyses recent trends in the international economy and trade, capital flows and the region's trade performance. It examines the factors driving external imbalances and looks at developments in the United States, Japanese and European Union economies, as well as oil prices, interest rates and exchange rates. This chapter also sets out Latin American trade projections for 2006 and 2007 and examines the main risk factors that could undermine the favourable conditions now prevailing in the region.

Chapter II provides an overview of recent economic developments in China and India and examines these countries' trade relations with Latin America and the Caribbean. Although these trade flows have gained momentum in the last few years, driven mainly by the two Asian countries' interest in gaining more secure access to South America's natural resources, the region remains a little-exploited trading partner for China and India as either a supplier or a purchaser.

The main issues raised by the Doha Round of trade negotiations following the sixth Ministerial Conference held in Hong Kong Special Administrative Region (SAR) of China are explored in chapter III. The Hong Kong Ministerial Conference succeeded in getting the trade talks back on track and secured an agreement to move ahead on "aid for trade", but failed to influence the decision-making political climate sufficiently for the main stakeholders to adopt an acceptable "package" in the first half of 2006. For this to have happened, three of the major parties to the negotiations would have had to comply with specific demands: the European Union would have had to agree to lower agricultural tariffs; the United States, to make greater commitments to cut agricultural subsidies; and the Group of 20, to reduce industrial tariffs and undertake certain commitments regarding trade in services. The chapter concludes that the future of this recently suspended round of trade talks is now uncertain.

The fourth chapter assesses the current status of regional integration efforts and discusses the need to give a fresh thrust to the different initiatives being pursued, not only to help strengthen trade relations within the region, but also to capitalize on the new trade agreements that Latin American and Caribbean countries and blocs have formed

with trading partners in other parts of the world. With this in mind, chapter IV compares different approaches to achieving convergence among the trade rules governing the many free trade agreements (including subregional integration accords) operating in the region.

Chapter V looks at Latin America's competitiveness indicators and compares them with those of certain Organisation for Economic Co-operation and Development (OECD) countries that are also prominent natural-resource exporters. The competitiveness and innovation strategy pursued by Australia and New Zealand (which have similar export structures to some South American countries) is examined as an example of a successful effort to achieve an advantageous international position through competitiveness-building and technological innovation.

Chapter VI discusses the main economic losses associated with bird flu and foot-and-mouth disease, two transboundary animal diseases that pose a formidable challenge for world trade in beef and poultry. The chapter reviews a number of specialized studies on the economic and social costs of recent outbreaks of the two diseases, examines their effects on the trade flows of the leading beef and poultry exporters and offers regional policy proposals for dealing with their implications.

Other publications

Financiamiento para el desarrollo: América Latina desde una perspectiva comparada, *Libro de la CEPAL*, No. 90, LC/G.2316-P, United Nations publication, Sales No.: S.06.II.G.82, ECLAC, Santiago, Chile, July 2006, 389 pages.

Access to financing is a fundamental aspect of the development process in emerging economies. In this groundbreaking analysis of Latin America's financial sector, Bárbara Stallings and Rogério Studart consider recent changes in the region, comparing them with transformations observed in other regions and assessing their possible implications. The authors diverge from new literature on financing and development that advocates the dismantling of public banks, the substitution of government regulation and supervision for private oversight and more comprehensive integration of international capital markets. Instead, they argue in favour of a more balanced approach with an emphasis on the particular situation of each country and institutional capacity-building within financial systems.

Stallings and Studart begin by analysing financial liberalization in Latin America since 1990 and discuss the circumstances in which a post-liberalization financial crisis would be likely to occur. They also examine other changes relating to this process, such as the system of ownership of the financial sector, State regulation of banking activity and the emergence of capital markets as alternative sources of financing. Throughout the book, the authors compare the Latin American financial sector with that of East Asia, as

the emerging market region which, in their view, provides the most valuable lessons.

Three case studies are used to illustrate the changes that have occurred in Chile, Mexico and Brazil, which are home to Latin America's most sophisticated financial systems. Particular attention is afforded to two types of market failures that need to be overcome: lack of long-term financing for investment and access to credit for small businesses. Lastly, the authors offer policy recommendations for achieving stronger Latin American banks and capital markets that can play a more prominent role in promoting economic development.

Fernando Fajnzylber. *Una visión renovadora del desarrollo de América Latina*, Libro de la CEPAL, No 92, LC/G.2322-P, United Nations publication, Sales No: S.06.II.G.124, ECLAC, Santiago, Chile, November 2006, 412 pages.

Widely recognized as a school of thought approaching the region's economic and social development problems in a highly focused and original manner, Latin American structuralism has also demonstrated a vocation and aptitude for developing policy proposals to overcome them. Less commented upon has been this school's lucid grasp, from its emergence in the late 1940s right up to the present, of successive changes occurring both within the sphere of Latin American countries and in the wider international context and, by extension, its ability to review and update its assessments and reformulate its policy recommendations.

Fernando Fajnzylber's work most eloquently illustrates this potential for constant renewal and improvement. Notwithstanding his early experience in academic circles and government economic policy, it was in the short period—of less than 20 years—he spent in different international organizations that Fajnzylber studied the development impasse the region's countries had reached and identified crucial aspects of the economic and social challenge emerging at that time. His arguments about the role of technological innovation in development, efficient mechanisms for initiating and implementing such innovations and the economic and institutional conditions under which those mechanisms could operate are well remembered. Equally memorable are his reflections on the respective roles of the public and private sector in these areas and on the way in which these processes tie in with the competitiveness required by global markets.

Fajnzylber is remembered, too, for his analyses and reflections on distributional equity, the necessary nexus between this principle and economic development and the central role of education as “a pillar supporting changing productive patterns with social equity”, as he described it. He set forth all these ideas, in quintessentially ECLAC tradition, with insightful references to the social processes in which the important stakeholders were involved.

Certainly, such concepts had already figured to a large extent in early ECLAC writings, but therein lies the great merit of this author's work: his thinking gives credit to the roots that nourished his work, but it was he who cultivated new fruits by adapting ECLAC contributions to the changing reality and building on them with enhanced proposals for action. These efforts culminated in the ECLAC proposal entitled, precisely, “Changing production patterns with social equity”. Fajnzylber spearheaded the preparation of this book in the early 1990s and it has steered the course for the Commission for many years. The value of Fajnzylber's intellectual and practical work is clearly evident in the fact that even after the death of its lead architect in 1991, it continued to be developed in subsequent years by his colleagues who explored its implications in areas as vast and as diverse as economic integration, foreign investment, the environment, population and the fiscal sector.

After reviewing important human aspects such as the author's family background, childhood and adolescence, the compiler of the present book, Miguel Torres, goes on to conduct a masterful analysis of all aspects of Fajnzylber's intellectual life and contribution to economics.

This book's publication is the fruit of a joint effort by ECLAC and the Inter-American Development Bank/Institute for Latin American Integration (IDB/INTAL), in which the two institutions have pursued common aims. First, the book is intended to broadcast the life and work of Fernando Fajnzylber to a wider audience. Second, by compiling various studies in a single volume, it affords a clearer appreciation of a dual dimension of the work: on the one hand, the development of the author's own thinking, working methods and findings and, on the other, the issues that motivated his research at the time, including the export of manufactures, the generation and dissemination of technical progress, the role of the transnational corporations in the region and the part played by foreign investment, to name but a few.

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CEPAL Review first appeared in 1976 as part of the Publications Programme of the Economic Commission for Latin America and the Caribbean, its aim being to make a contribution to the study of the economic and social development problems of the region. The views expressed in signed articles, including those by Secretariat staff members, are those of the authors and therefore do not necessarily reflect the point of view of the Organization.

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