

ECONOMIC REFORMS, FINANCIAL DEVELOPMENT AND GROWTH: LESSONS FROM THE CHILEAN EXPERIENCE*

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Despite reform efforts, the economic performance of Latin American countries during the 1990s was disappointing with the exception of Chile, which grew at almost 7% per year. This paper tries to explain this difference. Following recent literature that highlights the role played by institutions and policies on economic growth, we estimate a cross-section econometric model over the 1960-2005 period and find that Chile's better performance can largely be explained by a combination of better institutions and reforms that have been deeper and broader in scope than those in the rest of Latin America. In addition, we estimate that improving institutions in other Latin American countries to the Chilean standard would have increased per-capita GDP growth rates by about one and a half percentage points.

JEL: O11, O16, O54

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1. INTRODUCTION

Latin American countries grew steadily at about 5% per year in the three decades after World War II. But this process did not last long as it was interrupted by the debt crisis of the early 1980s, during which most countries in the region

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went into recession (Table 1). The crisis brought to the surface the structural problems, both macro and micro, existing at the time in most Latin American economies. Consequently, almost every country in the region spent the rest of the decade revising and amending their policies and implementing reforms aimed at changing the development model followed until then.

TABLE 1
CURRENT ACCOUNT BALANCE AND ECONOMIC PERFORMANCE
OF LATIN AMERICAN COUNTRIES DURING THE DEBT CRISIS

	Average Current Account Balance (% GDP) 1978-1981	Average GDP Growth (%) 1982-1983
Argentina	-2.4	0.3
Bolivia	-11.5	-4.0
Brazil	-4.5	-1.4
Chile	-8.6	-8.5
Colombia	-0.8	1.3
Costa Rica	-13.4	-2.2
Dominican Republic	-7.2	3.2
Ecuador	-7.1	-0.8
El Salvador	-3.6	-2.4
Guatemala	-4.0	-3.0
Honduras	-9.9	-1.1
Mexico	-4.7	-2.2
Paraguay	-8.8	-2.0
Peru	-1.1	-5.9
Uruguay	-4.7	-7.7
Venezuela	0.2	-2.4
Average	-5.8	-2.4

Sources: IMF, World Bank.

Following the debt crisis, the old import-substitution *cum* government intervention model began to be replaced by market-oriented economies, where resource allocation was to be driven mainly by private initiative and market forces. Thus, during the second part of the 1980s –the so-called *lost decade*–, Latin American countries, one after another, began dismantling tariffs and other trade barriers, reducing fiscal deficits, fighting inflation, liberalizing prices and interest rates, lifting credit restrictions, privatizing state owned enterprises, and reducing government intervention in the economy. The aim was to achieve greater integration with the rest of the world, both in goods & services and in financial flows. In the new development model the government was supposed to play a complementary role and focus its attention only on the provision of public goods and the institutional build up –e.g. public safety, legal system, regulatory and

supervisory framework— while providing basic services to the poor —health care and education. Expectations were that by adopting the new model and implementing the policies recommended by the International Financial Institutions —the so wrongly called Washington Consensus (Williamson, 2003)— countries would start growing again on a sustained basis. Social indicators would improve across the board and income inequality would be reduced.

After a decade of reforms, economic growth resumed, but the overall outcome fell short of expectations: average growth during the 1990s, for the region as a whole, attained 3.3% and has since remained below the average of the three decades after WW II. Further, the region was not immune to crises (Mexico 1994-95, Ecuador 1999, Argentina 2001) and was also adversely affected by the 1997-98 financial turmoil. In addition, although there was an improvement in social indicators like literacy or infant mortality, the drop in poverty was very marginal, and the per capita income gap with industrial countries broadened in most countries. These results have been the cause of disillusionment with, and the so-called fatigue of, the reform process.

The exception to all of the above was Chile. The country not only grew steadily during thirteen years after the debt crisis at a much higher rate than in previous decades —annual growth during 1985-97 averaged 7.3%—, but it was less affected by the turmoil of the late 1990s. And although growth averaged only 2.6% during 1998-2003, it returned to 5.2% in 2004-2006. In addition, during the 1990s the inflation rate fell to single digits, social indicators —except for income distribution— improved significantly (poverty fell by as much as 16 percentage points) and the per capita income gap with industrial countries was reduced by about 30%.

The contrasting experience of Chile *vis-à-vis* the rest of the region has not gone unnoticed. In fact, many researchers and policymakers have searched for explanations and, in the process, pointed out to specific factors that distinguish Chile from the rest of the region. Potential candidates among these factors include the depth and extent of the reform process —Chile started its reform in the mid-1970s, about a decade earlier than Mexico, the second country to begin reforms. The pension system reform of the early 1980s has also been singled out as an explanation as it provides a large savings base and reduces the country's dependency on foreign savings to finance investment. And some have argued that capital controls played a role —especially the so-called *encaje* (unremunerated reserve requirement)— during the 1990s, when private capital returned to the region, because they reduced the country's dependency on short-term and volatile flows, thus making it less prone to capital flight and contagion effects.

Although all the factors above have most likely played a role, there is at least one complementary explanation for the different economic performance of Chile and other Latin American countries. This is based on the most recent literature on economic growth that suggests that the ultimate cause of a country's growth lies on the quality of its institutions. Better institutions —property rights

protection, governance, lack of corruption and bureaucracy, rule of law, and the like—lead to the design of better policies and, therefore, allow countries to attain faster economic growth. Alternatively, for the same set of policies, better institutions allow countries to reap off greater benefits in terms of growth. Thus, the argument follows; Chile has been able to grow faster than other Latin American countries since the late 1980s, although facing the same external environment and shocks, mainly thanks to its better institutions.

This paper attempts to evaluate the statement above. That is, we try to find an explanation for Chile's different performance since the mid-1980s, with a focus on quantifying—to the extent possible by data availability—the contribution of different factors. We find that, as expected, both policies and the quality of the country's institutions influenced the outcome in terms of growth. In particular, we find that the better performance of Chile *vis-à-vis* Latin America during the 1990s, is explained by both better policies and better institutions in almost equal shares—during the 1990s, per-capita GDP in Chile grew annually by about 3.2% more than in the rest of Latin America, about half of which is explained by better policies and half by better institutions. With regards to specific economic policies, we find that keeping an overvalued real exchange rate, as some Latin American countries did, is consistently detrimental to growth. In addition, the reforms to the pension system in 1981 and to the banking sector in 1986 were critical to foster the development of the financial sector and thus contributed to accelerate growth in Chile.

This paper is an attempt to put together the conclusions of two branches of the literature, one that studies and draw policy lessons from the reform process in Latin America (IDB 1997, Lora 2001; Fernandez-Arias and Montiel, 1997), and another that tries to explain economic growth using large data sets, which lately has emphasized the role of institutions (Acemoglu *et al.*, 2001; Rodrik *et al.*, 2002; Easterly and Levine, 2003). Using Chile as a counterfactual, we are able to quantify the benefits—in terms of increased economic growth—to be reaped—off by other Latin American countries of adopting better policies and improving the quality of their institutions.

At least two policy conclusions emerge from our analysis. First, countries that are behind in the reform process compared to, say, Chile or Mexico that started earlier, can benefit and attain higher economic growth if they continue making progress in the so-called first generation reforms. Second, beyond economic reforms, countries would benefit by improving their institutions, which by nature are much more persistent but, nevertheless, can be changed, as countries are not condemned to live with the institutions inherited from previous generations. This means that countries should not cease in their efforts to reform their institutional setup, even though the benefits materialize much later than in the case of economic policies, because the payoff is quite large. Institutional buildup should be a continuous effort, like it has been in Chile that for over three decades has been reforming its institutions and continues doing so.

The rest of the paper is organized as follows. Section 2 briefly describes the reform process in Latin America in the past 25 years, highlighting the areas where most and least progress has been made. Section 3 summarizes the economic and social performance of Latin American economies since World War II. Based on previous work by others, section 4 evaluates the reforms implemented in the region, that is, it provides an overall assessment of what did and did not work. Section 5 looks into Chile's reforms in greater detail. It advances an explanation of Chile's better performance by analyzing in detail the existing differences in both policies and quality of institutions between Chile and the rest of the region. Next, section 6 quantifies the relative contribution to economic growth of each set of factors –policies and quality of institutions. In this section we examine the role played by specific reforms and policies in fostering growth, in particular the pension reform, the banking sector reform and the reduction of inflation. By explaining economic growth on a quantitative basis, this section provides an assessment of the potential benefits that a typical Latin American country would obtain after improving the institutional set-up and advancing in the economic reform process. Finally, section 7 concludes and discusses the challenges ahead for most countries in the region.

2. ECONOMIC REFORM IN LATIN AMERICA: WHERE DO WE STAND?

The Latin American region, which grew steadily at about 5% per year during the 1950s, 1960s and 1970s, was severely hit by the debt crisis of the early 1980s. Prior to the crisis, almost every country, and especially the largest –Argentina, Brazil and Mexico–, had borrowed heavily in the international capital markets. Thus, after running large current account deficits for a few years, these countries were severely affected when monetary policy shifted in the US and international interest rates were raised causing a global slowdown (Table 1).

The crisis uncovered the major imbalances and structural problems that existed in most countries in the region at the time, and set the stage for the reform process that occurred in the following years. The reforms were aimed first at attaining macroeconomic stability and reducing government deficits. Beyond that, the main goal was to replace the old import substitution cum government intervention development model that had been in place for several decades. Instead, countries opted for developing outward oriented economies where market forces, as opposed to government actions, would play a major role in allocating resources among competing sectors.

Starting with Mexico in the mid 1980s, one after another Latin American countries began implementing the same reforms that Chile had introduced in 1974-75 and thereafter. These included a program to reestablish macro stability, comprising a devaluation of the currency, a tightening of monetary policy and

a fiscal adjustment with cuts in subsidies and non-essential programs. The aim was threefold: to reduce the fiscal deficit, to balance the external accounts and to fight inflation.

In addition, countries began reducing both the level and the dispersion of trade tariffs while lifting other non-tariff barriers to trade and unifying multiple exchange rate systems. Trade integration took two forms; some countries opted for unilateral tariff reductions –like Chile had done in the 1970s– while others preferred trade agreements and the establishment of trade areas within the region like Mercosur, which in its first stage included only four countries, namely, Argentina, Brazil, Uruguay and Paraguay. Also, countries implemented tax reforms whereby the VAT was introduced –Chile introduced the VAT in 1975– and some taxes were raised to compensate for the reductions in trade tariffs.

The reform process comprised three other areas, namely, financial liberalization, privatization of state owned enterprises (SOEs), and the labor market. Financial sector reforms included lifting restrictions on credit allocation, abolishing ceilings on interest rates, and reducing reserve requirements on banks. The aim was to end the era of financial repression so that credit could be allocated to its most productive and profitable uses among competing economic sectors. In addition, state owned banks were privatized to improve their efficiency. Similarly, the privatization of SOEs sought to attract more investment and attain higher levels of efficiency in the use of resources. Along the way, the privatization of banks and enterprises would provide extraordinary funds for the government that would help to resolve debt problems. Finally, labor market reforms were aimed at increasing labor mobility and wage flexibility. Main objectives were to reduce the cost of firing by cutting severance payments and to abolish automatic salary adjustments to past inflation.

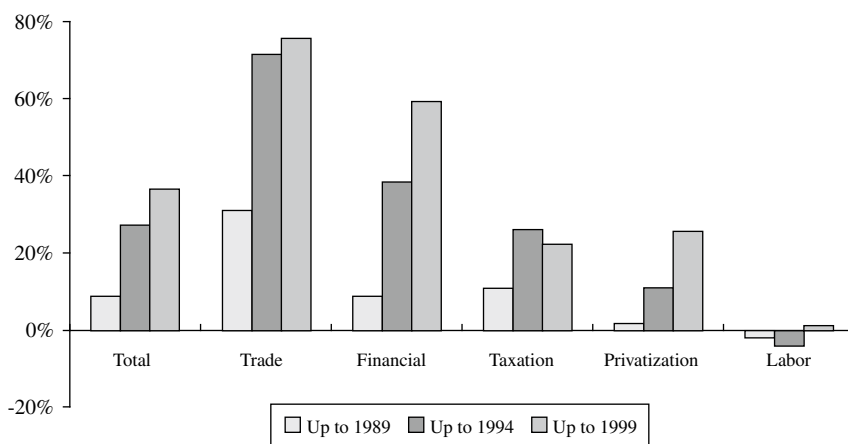
As mentioned, the goals of the reforms were to reestablish macro stability and to replace the old development model that was based on import substitution and widespread government intervention in the economy. The latter occurred through price controls, mandatory credit allocation, financial repression, subsidies to specific industries and exchange controls, among other measures, and was the cause of governments running large fiscal deficits, high inflation rates and endemic balance of payments deficits. In addition, labor legislation was overprotective and tended to reduce mobility and flexibility.

In the new market oriented development model the government relinquishes from the production and distribution of private goods that can be produced more efficiently by the private sector. Instead, it focuses on the provision of public goods –*e.g.* safety, judiciary system– and, most importantly, implementing social programs to alleviate poverty and improve the access of the poor to basic services such as health care and education. But in the new model, education and health care services do not have to be provided necessarily by the government; the poor, with financial support from the government, can buy these services from a private provider. In addition, in the new model the government does play a crucial role in market regulation and supervision. This comprises not only the financial sector and public utilities –which in many cases were privatized–, but markets in general.

The aim is to develop and maintain a competitive environment in all industries and sectors, and entails setting rates for natural monopolies such as utilities, strengthening the role of consumer protection agencies, promoting market discipline and assuring free entry to all economic sectors.

Although the breadth and timing of the reform processes differ across countries, it is worth trying to assess the degree of progress achieved throughout the region. As said, Chile made significant progress in several areas in the 1970s (few other countries did so in some areas), but the bulk of the reforms in the region were implemented after the debt crisis. Figure 1 shows indicators of progress made in several areas as well as an indicator of general progress. All indicators are constructed to measure progress made since 1985. Although these indicators are subject to many caveats¹, they are indicative of the reform effort in the region as a whole. The figure shows that much progress occurred in trade liberalization, especially up to the Tequila Crisis, and significant progress occurred in the financial sector, although it was more evenly spanned through time². Conversely, little progress has been made in tax reform and in the privatization of state owned enterprises, and no progress at all in the labor market. Thus, a lot remains to be done in Latin America in the last three areas.

FIGURE 1
PROGRESS IN THE REFORM PROCESS OF LATIN AMERICAN COUNTRIES



Note: Progress in reform is measured as the usage (in percent) in each date, of the total potential room for reform available in 1985. The potential available in 1985 is measured by the difference with the most liberalized country in the whole sample in each of the sub components. Source: Lora (2001).

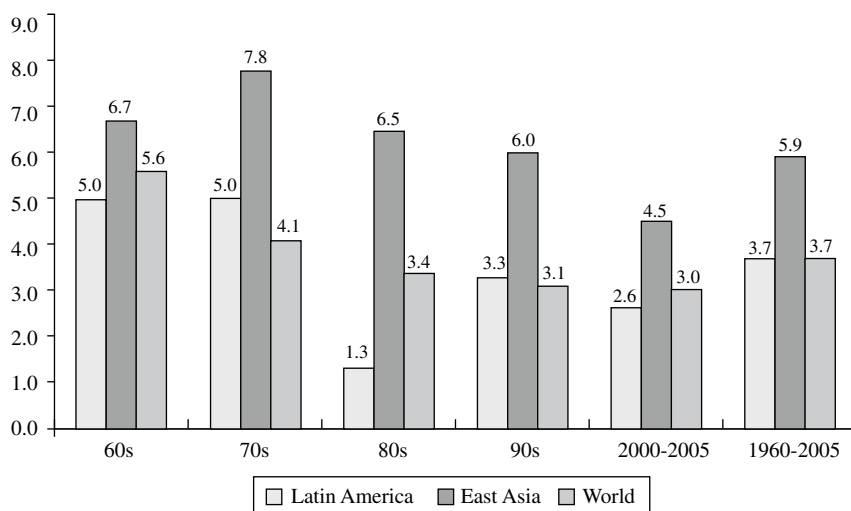
¹ The indices measure, for each area, how liberalized is each country compared to the least liberalized country in the whole sample. The sample period is 1985-99 in Lora (2001) and 1970-95 in Morley *et al.* (1999). For more details see Lora, 2001; Lora and Barrera 1997; and Morley *et al.*, 1999.

² According to Morley *et al.*, significant progress also occurred up to 1995 in the opening of the capital account.

3. LATIN AMERICA'S ECONOMIC AND SOCIAL PERFORMANCE

In the past 43 years, Latin America's economic performance has varied significantly from one period to another, in contrast to the experience of East Asia. Further, on average Latin America grew at about 60% the rate of East Asia for the whole 1960-2005 period, and has not yet recovered the rates of growth attained in the 1960s and 1970s, despite the recovery witnessed shortly into the reform process (Figure 2).

FIGURE 2
ECONOMIC GROWTH RATES (%)
(1960-2005)



Note: East Asia includes China, Hong-Kong, Indonesia, Korea, Malaysia, the Philippines and Thailand.
Source: World Bank, WDI (2007).

Among all Latin American countries, Chile is the only one that in the past eighteen years has grown at average rates comparable to those attained by the East Asian economies. Chile's growth rate in 1990-2000 was very similar to that of South Korea, and between South Korea's and Indonesia's in 1985-97. Costa Rica, the Latin American country that comes second after Chile in terms of growth, grew at a much lower rate –about 2.5% less per year (Table 2). Consequently, among all Latin American countries, Chile is the only one that, along with the emerging market economies from East Asia, in the past quarter century has closed its per-capita GDP gap with the industrial countries –Chile closed this gap in about 30% since 1980 (Figure 3).

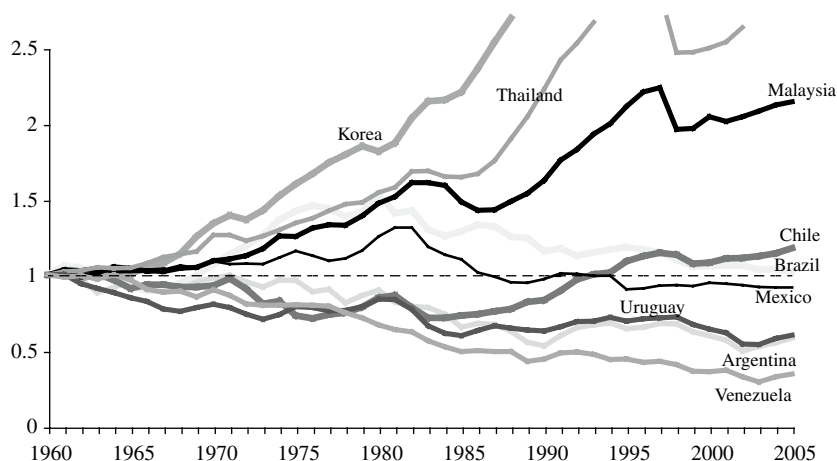
TABLE 2
 AVERAGE ECONOMIC GROWTH RATES
 (Selected countries)

Country	1985-1997	1990-2000
China	10.1	9.6
Thailand	8.0	5.2
Korea	7.9	6.3
Malaysia	7.6	7.4
Chile	7.3	6.2
Vietnam	6.8	7.0
Indonesia	6.4	4.4
India	5.7	5.6
Uganda	5.7	6.8
Ireland	5.1	7.4
Israel	5.1	5.5
Costa Rica	4.7	5.1
Bangladesh	4.2	4.9
Colombia	4.2	2.9
Uruguay	4.0	2.9
Dominican Republic	3.8	4.9
Honduras	3.6	3.0
Panama	3.4	5.8
Paraguay	3.4	2.1
Guatemala	3.3	4.0
Japan	3.2	1.8
United States	3.2	3.2
Brazil	3.1	2.1
Bolivia	3.0	3.8
Ecuador	3.0	2.3
Philippines	2.9	2.9
Venezuela	2.9	2.5
Argentina	2.8	3.8
El Salvador	2.7	3.3
Peru	2.7	3.4
United Kingdom	2.7	2.3
Canada	2.6	2.7
Poland	2.6	2.7
Mexico	2.4	3.7
Germany	2.4	2.3
Italy	2.1	1.6
France	2.0	2.0
Jamaica	1.7	0.8
Trinidad and Tobago	-0.1	3.1
Nicaragua	-0.2	3.0
Haiti	-0.4	0.3

Source: IMF.

FIGURE 3
RELATIVE PER-CAPITA GDP

Per capita GDP in each country as a fraction of US per capita GDP, normalized 1960 = 1



Source: Own elaboration.

Chile's good performance also shows up in its social indicators. The most outstanding achievement in the case of Chile has been poverty reduction; in the past 10 years the country has halved its poverty rate –it went from 33% in the early 1990s, down to 17% in 2000 (Table 3). In contrast, poverty reduction in the region at large has been modest –from 41% to 36%– while in some countries it has increased. It is worth noting that according to Attanassio and Székely (2001), about 85 percent of the poverty reduction in Chile can be attributed to high economic growth, while only 7 percent resulted from redistribution policies³.

In sum, in the 1990s, economic growth resumed in the region but remained below the pre-debt-crisis rates, widening the per-capita income gap with industrial countries. At the same time, poverty reduction was modest, other social indicators improved and income distribution worsened. In sharp contrast, Chile's growth rate during the decade was one of the highest around the world, becoming the only Latin America country that converged in per-capita-income terms to the industrial countries⁴.

³ The results from Attanassio and Székely (2001) refer to the drop in poverty between 1987 and 1996. According to these authors, about 8% of the drop in poverty is a residual and cannot be explained by their model.

⁴ Although it is not the topic of this paper, it is important to comment that one area in which Chile has not been successful is in altering its income distribution. Thus, not only income distribution deteriorated in Latin America in the past 30 years, becoming one of the worst in the world, but with a Gini coefficient above 0.55 Chile's income distribution is one of the worst in the region. The link between growth and income distribution is not as clear as the link between growth and poverty. For improving income distribution it is necessary to implement social policies focalized in the poorest group, and economic growth contributes to finance such policies.

TABLE 3
POVERTY INDICATORS OF LATIN AMERICAN COUNTRIES

	Poverty ¹				Indigence ²			
	Household		Population		Household		Population	
	Early 90s	Current ³	Early 90s	Current ³	Early 90s	Current ³	Early 90s	Current ³
Argentina	16	32	21	42	4	12	5	19
Bolivia	49	56	53	62	22	32	23	37
Brazil	41	30	48	38	18	10	23	13
Chile	33	17	39	21	11	5	13	6
Colombia	47	45	53	51	25	21	29	24
Costa Rica	24	19	26	20	10	8	10	8
Ecuador	56	43	62	49	23	16	26	19
Honduras	75	71	81	77	54	47	61	54
Mexico	39	32	48	39	14	9	19	13
Nicaragua	68	63	74	59	43	36	48	42
Paraguay	37	52	43	61	10	27	13	33
Uruguay	12	9	18	15	2	1	3	3
Venezuela	34	43	40	49	12	20	14	22
Latin America	41	36	48	44	18	15	23	19

Source: ECLAC (2004).

Notes:

¹ Poor is a household with per-capita income below the poverty line or minimum income to satisfy its essential necessities. The poverty line is calculated with the basic necessities cost method.

² Indigent is a household with per-capita income below the indigence line or minimum income to satisfy its essential nutritional necessities.

³ Stands either for 2000, 2001 or 2002, depending on the country. In Chile it corresponds to 2000.

This brief revision of the economic and social performance of Latin American economies raises several questions, in particular: Did the structural reforms implemented during the 1980s and 1990s have any effect on countries' performance? What did Chile do differently that explains its better results? The next two sections try to answer these questions by first summarizing previous findings and then exploring in greater detail the reform process in Chile. Section IV provides an overall assessment of why Latin American countries did not attain higher growth on a sustained basis, while Section V advances an explanation of Chile's better performance by analyzing in detail the differences with the rest of the region in both policies and quality of institutions.

4. THE REFORM PROCESS AND ITS RESULTS: AN ASSESSMENT

Early attempts at evaluating the reform processes in Latin America concluded that reforming countries reaped large benefits from them. The initial estimates concluded that the reforms implemented in the region up to the mid-nineties accelerated growth by about 2% per year (Easterly *et al.*, 1997; Fernandez-Arias and Montiel, 1997). But these results were subsequently contested by new analyses that looked into longer time series. Nevertheless, more recent literature that revisits the issue concludes that the reforms indeed contributed to acceler-

ate growth, although the effects were rather transitory, implying that to achieve a higher growth rate on a sustained basis countries should continue the reform process. Thus, for instance, according to Lora *et al.* (2002) Latin America grew about 1.3% faster during 1991-93 because of the reform effort, but only about 0.6% faster in 1997-99 both because the effects of previous reforms faded away and because the reform effort declined.

At least four other important conclusions emerge from the literature. First, results were unsatisfactory in some countries because of an insufficient reform effort; in other words, growth did not accelerate in those countries not because reforms failed, but because they were incomplete, either in scope or in depth (Fernandez-Arias and Montiel, 1997). Second, the pay-off from the reforms depends on institutions. Thus, for instance, according to Lora *et al.* (2002), reforms were more effective in countries with good rule of law. Third, reforms are complementary; *i.e.*, the pay-off from, say, the trade reform –in terms of faster economic growth– was higher in countries with a more developed financial sector (Gallego and Loayza, 2002). And finally, reforms tended to affect growth mainly through increases in total factor productivity, TFP, rather than through factor accumulation (Lora *et al.*, 2002).

The four results above are consistent with each other if one notes that the main source of growth in recent decades has shifted from factor accumulation to TFP, that is, doing things better (not just doing more of the same by hiring more labor and capital). Beyer and Vergara (2002) decompose the growth of a large (107) sample of countries during 1980-2000, and conclude that about 82 percent of the growth difference between the 10 percent –best and the 10%– worst performers can be explained by changes in TFP, while only 18 percent is explained by faster factor accumulation⁵.

In an era of rapid technological change, rapidly growing firms are constantly trying to improve procedures and attain greater efficiency by incorporating and adapting new technologies. For this to occur, a necessary condition is that prices reflect the actual cost of providing different goods and services, which can be achieved by liberalizing prices and implementing several other market-oriented policies. In other words, what is needed is to reduce state intervention in the economy (except for externalities and other market failures that require the state to intervene). But this is not enough. Also, the business environment must be such that the private sector has the incentives to invest in the development and implementation of new and better technologies; that is, the business environment must be conducive to agents to get involved in constantly improving their efficiency levels. For this, stable rules of the game and good institutions are needed. Among the latter are rule of law, property rights protection, absence of corruption, and low bureaucracy⁶.

⁵ It is possible to provide a different interpretation of this result. In particular, given the way they computed the contribution to growth of ΔL , ΔK and ΔTFP , the latter element captures not only efficiency gains but also other unidentified shocks (“bad or good luck”). Therefore, it could be argued that the best performers, those countries showing a higher contribution of ΔTFP , are those more resilient to shocks (where negative shocks were less harmful). This resilience may, in turn, be a direct result of better institutions and policies.

⁶ Note that this explanation does not preclude the possibility that a better business environment may, besides being more conducive to research and investment in innovation, lead to faster factor accumulation.

In sum, countries that do not put in place an adequate institutional setup, one that supports investment in innovation and the adaptation of new technologies, will not reap the benefits of attaining rapid economic growth even if other economic reforms take place, such as trade liberalization or macro stability. Indeed, Fernandez-Arias and Montiel (1997) suggest that this is one front where most Latin American countries failed during the reform process; not enough emphasis was put on building up and strengthening institutions. These authors acknowledge that some countries did not even complete the so called first generation reforms; *i.e.*, fiscal and macro stability was not attained, as high inflation resumed after a short period, and trade liberalization was never completed. In their view, completing the macroeconomic reforms that were partially implemented would have bridged a significant part of the growth gap observed during 1991-95 between East Asia and Latin America. But, in their words, "... we suspect that it [the growth gap] is also associated with other deep-seated institutional and structural differences in these economies as well. In any event, the gap suggests the need for a broadening of the scope of reform in Latin America beyond the macroeconomic sphere if the region's economies are to achieve the standard of performance they seek".

The next two sections of the paper address the issue raised by Fernandez-Arias and Montiel (1997). In particular, we try to explain Chile's better performance (described in section 3) on the country's institutions and continuous reform process. Section 5 below discusses in greater detail Chile's reform process, while section 6 provides some empirical evidence supporting the view that institutions made a difference. We also quantify the contribution of policies and institutions in Chile's growth, paying special attention to the factors underpinning the development of the financial sector.

5. WHY IS CHILE DIFFERENT?

A common feature in the region is that countries are prone to suffer macroeconomic crises, which usually have fiscal roots and in some cases are even exacerbated by financial problems. These macro crises have delayed the reform process and in many instances resulted in major setbacks. In contrast, Chile muddled through the Tequila, Asian and Russian crises relatively unscathed, partly because its fiscal problems were faced early on, culminating with a stringent fiscal responsibility rule, and partly because it counts with a very robust banking sector.

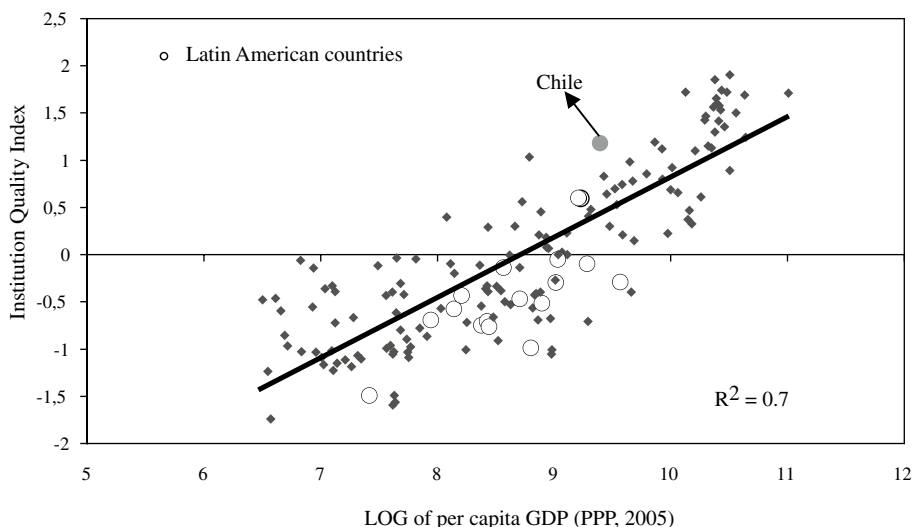
With regards to structural reforms, toward the end of the 1990s most Latin American countries had advanced in trade openness, financial liberalization and, to a lesser extent, in tax reforms and privatization of SOEs (the so-called "first generation reforms"). The main difference in the implementation of these reforms was that Chile, followed by Colombia, Argentina and Mexico, began the reform process earlier (Morley *et al.*, 1999). But even more important, Chile, unlike the rest of the region, continued and deepened the reform process putting more emphasis in the institutional buildup. A reform process without an adequate institutional setup that supports it, most likely won't have significant and sustained effects on economic growth, and can even result in adverse outcomes. For instance, if financial

liberalization is not accompanied by an appropriate regulatory and supervisory framework –one that protects creditors–, most likely the outcome will be a lending boom followed by a financial crisis, like it occurred in Chile and other Latin American countries in the early 1980s⁷. Similarly, a privatization program in a corrupt environment will most likely have negative effects on growth.

The most recent literature on economic growth has emphasized the role of policies and, most importantly, institutions, as the ultimate causes of factor accumulation and productivity gains. There is growing consensus in the literature that countries attain higher economic growth when there is rule of law, property rights protection, low bureaucracy, low corruption, adequate supervisory and regulatory frameworks that guarantee a fair market competition, stable rules of the game, and adequate checks and balances (Rodrik *et al.*, 2002; Easterly and Levine, 2003). All of these lead to either better economic policies or better outcomes for the same policies, and provide a business environment that is more conducive to investment, innovation and the hiring of labor.

The role of institutions is clearly illustrated in Figure 4, which shows a scatter between per capita GDP (as of 2005) and the quality of the countries' institutions for 168 countries. Two conclusions are worth highlighting: (i) Latin American countries tend to be in the bottom part of the figure (they tend to have poor institutions and low GDP per capita); and (ii) Chile is the only Latin American country

FIGURE 4
QUALITY OF INSTITUTIONS AND ECONOMIC DEVELOPMENT
(168 countries)



Sources: World Bank, and Kaufmann *et al.* (2003)

⁷ On this topic see De Gregorio and Guidotti (1995).

that appears significantly above the fitted line. In fact, according to Kaufmann *et al.* (2006), as of 2005 Chile appears as the best-ranked emerging market economy in terms of the quality of its institutions (average of six categories), followed by Uruguay and then Costa Rica among Latin American countries. Chile is even ranked higher than some developed countries, namely Spain, Japan and Italy (Table 4).

TABLE 4
INSTITUTIONAL QUALITY INDICATORS
(2005, Selected countries)

Ranking (out of 156 countries)	Country	Institutions Index	Voice and Accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption
1	Finland	1.86	1.49	1.48	2.07	1.74	1.96	2.39
2	Denmark	1.74	1.51	0.91	2.12	1.69	1.99	2.23
3	New Zealand	1.72	1.39	1.20	1.90	1.66	1.95	2.24
4	Switzerland	1.72	1.43	1.26	2.03	1.47	2.02	2.12
6	Sweden	1.66	1.41	1.18	1.93	1.47	1.84	2.10
7	Netherlands	1.60	1.45	0.80	1.95	1.64	1.78	1.99
8	Canada	1.58	1.32	0.91	1.92	1.57	1.81	1.92
9	Australia	1.56	1.32	0.82	1.88	1.58	1.80	1.95
12	Singapore	1.47	-0.29	1.08	2.14	1.79	1.83	2.24
13	Germany	1.42	1.31	0.67	1.51	1.38	1.76	1.92
14	U.K.	1.42	1.30	0.34	1.70	1.53	1.69	1.94
17	United States	1.24	1.19	0.06	1.59	1.47	1.59	1.56
18	Chile	1.18	1.04	0.85	1.26	1.40	1.20	1.34
19	France	1.15	1.28	0.33	1.46	1.09	1.35	1.40
21	Japan	1.13	0.94	0.94	1.16	1.17	1.33	1.24
22	Portugal	1.12	1.32	0.94	1.03	1.20	1.10	1.13
23	Spain	1.10	1.12	0.38	1.40	1.25	1.13	1.34
28	Botswana	0.83	0.68	0.94	0.79	0.76	0.70	1.10
32	Korea. South	0.69	0.74	0.43	1.00	0.77	0.73	0.47
34	Italy	0.61	1.00	0.21	0.60	0.94	0.51	0.41
35	Uruguay	0.60	0.99	0.64	0.53	0.26	0.43	0.78
36	Costa Rica	0.60	0.99	0.76	0.30	0.61	0.54	0.38
41	Malaysia	0.41	-0.41	0.49	1.01	0.50	0.58	0.27
55	Thailand	0.03	0.07	-0.55	0.40	0.38	0.10	-0.24
63	Brazil	-0.08	0.36	-0.13	-0.09	0.08	-0.41	-0.28
64	Mexico	-0.10	0.29	-0.29	-0.01	0.33	-0.48	-0.41
66	Jamaica	-0.11	0.57	-0.33	-0.12	0.24	-0.55	-0.50
71	India	-0.2	0.35	-0.85	-0.11	-0.34	0.09	-0.31
72	Argentina	-0.29	0.43	-0.26	-0.27	-0.64	-0.56	-0.44
73	Dominican Republic	-0.29	0.20	0.05	-0.41	-0.27	-0.66	-0.66
78	Philippines	-0.38	0.01	-1.11	-0.07	-0.02	-0.52	-0.58
89	Peru	-0.47	0.04	-1.08	-0.60	0.10	-0.77	-0.49
93	Colombia	-0.51	-0.32	-1.79	-0.09	0.05	-0.71	-0.22
94	Lebanon	-0.53	-0.72	-1.14	-0.30	-0.28	-0.36	-0.39
95	Egypt	-0.55	-1.15	-0.90	-0.35	-0.47	0.02	-0.42
97	China	-0.57	-1.66	-0.18	-0.11	-0.28	-0.47	-0.69
98	Vietnam	-0.57	-1.60	0.34	-0.31	-0.64	-0.45	-0.76
106	Bolivia	-0.69	-0.09	-1.15	-0.80	-0.53	-0.78	-0.81
107	Guatemala	-0.71	-0.37	-0.89	-0.70	-0.26	-1.04	-0.98
108	Russia	-0.71	-0.85	-1.07	-0.45	-0.29	-0.84	-0.74
109	Indonesia	-0.71	-0.21	-1.42	-0.47	-0.45	-0.87	-0.86
111	Ecuador	-0.75	-0.16	-0.83	-1.01	-0.83	-0.84	-0.81
112	Paraguay	-0.76	-0.19	-0.62	-0.83	-0.77	-1.00	-1.19
116	Cameroon	-0.89	-1.19	-0.34	-0.90	-0.76	-1.02	-1.15
121	Venezuela	-0.99	-0.50	-1.22	-0.83	-1.15	-1.22	-1.00
122	Cuba	-0.99	-1.87	0.03	-0.94	-1.75	-1.14	-0.26
147	Haiti	-1.49	-1.41	-1.91	-1.39	-1.17	-1.62	-1.45
150	Sudan	-1.56	-1.84	-2.05	-1.30	-1.29	-1.48	-1.40
151	Zimbabwe	-1.59	-1.65	-1.58	-1.42	-2.20	-1.47	-1.24
153	Iraq	-1.77	-1.47	-2.82	-1.64	-1.61	-1.81	-1.27
154	Somalia	-2.18	-1.89	-2.51	-2.21	-2.35	-2.36	-1.74

Sources: Kaufmann, *et al.* (2006).

And the situation is very similar when looking at each of the index components: government effectiveness; regulatory quality; rule of law; control of corruption; voice and accountability; and political stability. This difference between Chile and the other Latin American countries provides a plausible explanation for Chile's better economic performance in the past decades.

Next we discuss the reform process in Chile since the early 1970s. The aim is to show that the reforms were deep and wide in scope in Chile. Also, that the reform process has not stopped; Chile continues implementing policies in many areas. And third, that the institutional setup is not given; it can be modified (albeit slowly), so that countries with poor institutions are not condemned by their legacy.

5.1 First Stage: The First Generation Reforms

When the economic reform process began, the Chilean economy was in complete disarray as the state intervened in virtually every area of production and interfered in many economic decisions. Furthermore, fiscal deficits were rampant and the economy was isolated from the rest of the world through a complex battery of trade restrictions. In a nutshell, by 1973 inflation was running at above 500% per year, the fiscal deficit was about 30% of GDP, and the peso was artificially overvalued as there were many capital and current-account restrictions aimed at containing the external imbalance, including a multiple exchange rate system. In addition, the average tariff was about 105%, though effective protection varied across economic sectors due to a wide range of restrictions including non-tariff barriers, and many prices were set (artificially low) by the government, creating a shortage of goods and services in many markets. Further, the state owned about 600 enterprises, accounting for about 40% of GDP, and financial repression in the form of controlled (negative) real interest rates and restrictions on credit allocation was widespread.

The military government that took power in late 1973 inherited an economy in complete chaos. In the early years of the military government exchange rates were unified, prices were liberalized for most goods and services, and several enterprises, farms and banks that had been intervened and controlled by the state were returned to their previous owners. In addition, a major fiscal package comprising drastic cuts in public investment and subsidies, and a freeze in public wages, brought the fiscal deficit down to only 5% of GDP in 1974. The fiscal adjustment continued, bringing a 4% surplus only two years later (in attaining this surplus it helped the economic recovery that followed the initial reforms).

But reforms went far beyond achieving stabilization and correcting macroeconomic imbalances. In 1975, for example, the sales tax was replaced by the value-added tax (VAT) at a flat rate of 20%, thus improving the efficiency of resource allocation⁸. Also, non-tariff trade barriers were lifted, while both

⁸ Over time, the VAT became the most important source of government revenue, amounting to about 50% of total taxes.

the dispersion and the level of tariffs were unilaterally reduced for most goods. This process continued into 1979, when a flat tariff of 10% was set for most goods⁹.

Major reforms were also introduced in the financial sector, where interest rates were liberalized, banks privatized, mandatory credit allocation abolished, entry restrictions lifted, and the scope of permitted activities broadened. But the end of financial repression was not preceded or accompanied by an upgrade—or even better, an overhaul—of the supervisory and regulatory framework, thus exacerbating moral hazard and adverse-selection problems¹⁰. As a consequence, connected lending between banks and enterprises grew unchecked, currency mismatches in bank borrower's balance sheets mounted up and non-performing loans were rolled over, while the system operated under a *de facto* deposit insurance. This made the overall financial system prone to crisis and proved to be very costly when the economy suffered severe shocks in the early 1980s.

The outcome of all the reforms above combined was a quick economic recovery and a sharp reduction in both the fiscal deficit and the inflation rate. Indeed, after a sharp recession in 1975¹¹, GDP grew on average by about 6.8% per year during 1976-81 (7.5% in 1977-81). Similarly, inflation fell sharply reaching the two-digit level just a few years into the stabilization program, although it remained around 30% until 1980 (it was slightly below 10% only in 1981). The fiscal balance was in surplus through the entire 1976-81 period and the economy received large amounts of private capital inflows, mainly in the form of syndicated bank debt.

But major macro imbalances arose during this period. In particular, the real exchange rate appreciated significantly, the current account deficit climbed to 14.5% of GDP in 1981, and the financial sector weakened as major risks and vulnerabilities grew unchecked¹².

In this scenario of increasing macro-financial fragility, it is easy to understand why the economy plummeted when the external environment deteriorated in the early 1980s. The balance of payments crisis and the abandonment of the nominal peg that followed were unavoidable after private capital inflows came to a halt in 1982. The ensuing real depreciation further aggravated the financial crisis because of the large currency mismatches incurred by the private sector¹³. As a result, real GDP fell by about 16.4% (cumulative) during 1982-83.

⁹ Only a few exceptions remained, like cars and luxury items such as fur and jewelry.

¹⁰ See Barandiarán and Hernández (1999).

¹¹ The recession resulted from the fiscal stabilization program, the first oil shock, and the fall in the price of copper in the world market.

¹² The risks included unmatched currency liabilities incurred by banks' debtors, weak asset rating systems, under-provisioning, connected lending, and rolling over of bad loans (evergreening of banks' balance sheets).

¹³ The fiscal cost of the financial crisis is estimated to be close to 40% of GDP. For more details on the Chilean banking crisis of the 1980s, see Barandiarán and Hernández (1999).

The economic and financial crises caused a setback on some of the policies and achievements of previous years. Indeed, the government had to take over several financial and non financial institutions, ending up controlling about half of the total bank credit¹⁴. Additionally it incurred in a fiscal deficit and allowed higher inflation rates (in addition to higher tariffs¹⁵) to finance it.

It is important to single out two other reforms that were implemented just before the debt crisis hit, and which played a major role in the subsequent period: the new Constitution of 1980, and the pension system reform of 1981.

The new Constitution of 1980 is important not only because it set the timetable for the return to a democratic regime in Chile, but also because it granted the power to allocate government spending exclusively to the executive branch, thus closely linking expenditures with revenues¹⁶. Thus, today the Chilean Congress can either pass or reject the coming year's budget law submitted to it by the government, but cannot amend such law. This has proven to be an important factor for maintaining fiscal discipline. In addition, the new Constitution prohibited the Central Bank from buying securities issued by the government, thus precluding the monetization of the deficit. The Central Bank was also given the explicit mandate to pursue the stability of prices (or of the currency), the stability of external payments, and the stability of the domestic payment system. Finally, it was granted full independence from the executive branch by the way its authorities would be designated¹⁷. (It should be mentioned that although legislated earlier, these changes came into effect *de facto* in 1989, with the country's return to democracy).

The pension system reform of 1981 consisted of the phasing out of the bankrupt pay-as-you-go system and the creation of a fully funded capitalization system run by private, competing entities. In the new system workers make mandatory monthly contributions into personal savings accounts, which are managed by specialized private entities, and whose balances cannot be withdrawn before retirement. This reform led to an increase in total savings and, at the same time, contributed to the development and deepening of the domestic capital markets, thus indirectly helping to raise total factor productivity –we explore this effect in greater detail below¹⁸.

¹⁴ The intervened institutions were later on privatized, merged or shut down.

¹⁵ Import tariffs were temporarily raised to help the fiscal adjustment.

¹⁶ Prior to this legal change, the legislative branch shared the power to allocate public money, but was not required to provide the necessary funding, thus exacerbating the bias toward having a large fiscal deficit purely for political reasons.

¹⁷ Pursuant to the law, the Central Bank is run by a Board composed of five members, each one appointed for a ten year term; every two years a new member is appointed. Board members are nominated by the government, but need senate approval. The Governor is then chosen among the five board members by the country's President for a period of five years, or the time remaining in the member's term, whatever is shorter. The Deputy Governor is chosen by vote among the other members of the Central Bank Board.

¹⁸ See Corbo and Schmidt-Hebbel (2003).

5.2 Second Stage: The Deepening and Institutionalization of Reforms

In the aftermath of the debt crisis, the government focused its policies on two areas: redoing some of the work of previous years –privatizing banks and enterprises taken over during the crisis, continue reducing the budget deficit and inflation– and overhauling the institutional framework to correct the problems and regulatory shortcomings that had been diagnosed during (and were partly responsible for) the crisis¹⁹. Thus, a new tax law was enacted in 1984, which provided special incentives for saving and investment. For instance, profits became non-taxable if reinvested (taxes accrued only when profits were distributed in the form of dividends) and the corporate tax rate was reduced.²⁰ Also, new banking and bankruptcy laws were enacted in 1986. The new banking law granted more powers to the supervisory and regulatory agencies, while updating specific regulations to keep up with international standards and best practices. The new bankruptcy law set for very clear steps for the liquidation and closure of banks and seniorities for the payment of debts to creditors.

Other important institutional changes included the setting of a framework for controlling and monitoring monopolistic practices, and the privatization of SOEs, comprising not only banks and other firms taken over during the debt crisis, but also utilities formerly owned and operated by the state, such as electricity generation and distribution, long-distance and local telephone companies²¹. The new wave of privatization brought the share of SOEs in GDP down from 24% in 1983, to 13% in 1989.

In 1989, a new Central Bank law was enacted, whereby the Central Bank's sole objectives are the stability of prices, the stability of the domestic payment system, and the stability of Chile's external payments. This new charter led the Central Bank, now autonomous, to adopt in 1991 a monetary policy scheme based on inflation targeting and a widening exchange rate band. The exchange rate band was abolished later on (in 1999), leading to a free-float in which the Central Bank

¹⁹ It should be stressed that the decision to maintain the outward oriented market-economy model in the aftermath of the debt crisis was crucial to determine the country's economic performance in subsequent years. Indeed, after that almost a decade of economic reforms had ended in a recession and deep financial crisis, the development model was discredited. In this setting it could have been easily replaced by the inward looking model with greater government intervention, thus reversing the progress achieved during the past decade. Fortunately, the authorities at the time decided to maintain the same overall development strategy, focussing instead on correcting its institutional and regulatory shortcomings.

²⁰ At the same time, double taxation on dividends was abolished by giving shareholders a tax credit, to be used in their personal income tax, equal to the proportional corporate tax paid by the company. This way the tax-induced bias in favor of corporate borrowing to finance investment was eliminated (Modigliani-Miller's modified proposition, 1963). In addition, special tax incentives were provided for the issuance of equity. Buyers of new shares, IPOs, received a tax credit, equal to a fraction of their investment, which would last for as long as they held on to the new shares. For details see Hernández and Walker (1993).

²¹ For details see Larrain and Vergara (2001).

intervenes only when the exchange rate market becomes dysfunctional and the exchange rate is clearly misaligned from its fundamentals. As a result of all these changes, the inflation rate in Chile today has converged to the Central Bank's steady-state target, a range of 2 to 4 percent per year, a level that nobody thought feasible just a decade earlier²².

Also, new legislation allowing the participation of the private sector in infrastructure development was passed in 1991. According to it, roads, highways, airports, seaports and other infrastructure projects may be developed by the private sector under build, operate and transfer (BOT) arrangements. And in 1994, a new law was passed permitting free entry to the –until then monopolistic– long-distance telecommunications market, the so-called “multi-carrier” system.

It is important to mention that during this period the country successfully transitioned from an authoritarian to a democratic regime. Despite all the uncertainties surrounding this transition, the change was smooth, in part because the new Administration confirmed most of the market economy elements already in place, while concentrating on a social agenda. This way the economic institutions created in previous years were validated and in many cases strengthened, so that uncertainty vanished. For instance, early on in 1990 the new democratic government deepened the opening up process by reducing the maximum import tariff from 15% to 11%. In fact, all four governments that have been in power since 1990 have strengthened the market economy model, accelerated the opening up process, consolidated the fiscal position and improved regulations, while, at the same time, they have emphasized social policies and implemented new programs to alleviate poverty.

But the reform process has continued up to now with the introduction of policies and institutional changes aimed at further consolidating the market-oriented economic model and improving the Chilean economy's resilience to shocks. Thus, amendments to the banking law in 1997 allowed banks to undertake new businesses, including lending internationally, while upgrading some regulations, *i.e.*, the Basel capital accord was adopted. In 1998 a law was passed unilaterally reducing the import tariff by one percentage point every year, stopping at 6% in January 2003. Furthermore, in 2002 Chile signed a free trade agreement with the European Union, in 2003 with the United States, in 2004 with South Korea, and in 2005 with China, thus consolidating the process of integration with the world economy. Also, in 2001 the government committed to achieving and maintaining a 1% *structural* fiscal surplus. Under this commitment, government expenditures are set every year to be 1% of GDP less than the Government's *structural revenues*, which are defined as the revenues that would occur in steady state²³. This rule

²² Thus, an inflation that started to develop in 1860 was finally controlled by the late 1990s.

²³ In other words, expenditures are one percentage point of GDP less than the revenues that would occur if the economy were on its long-term path (after eliminating cyclical variations in taxes and other key variables such as the price of copper and the level of international interest rates).

is intended to guarantee that the government will remain solvent in the long run. Also in 2001, all remaining capital controls were abolished, ending more than half a century of a partly closed capital account. And during this period regulatory and tax changes were introduced, aimed at increasing the efficiency and fostering the development of capital markets by providing incentives to save. Also, during this period the exchange rate band was abandoned, consolidating both the inflation targeting and the free float regimes, while a voluntary unemployment insurance scheme was introduced. Finally, in 2003 three new laws were passed that (i) established a clearer career path for public servants, based on merits, thereby significantly reducing the scope for the government to appoint political allies in senior positions; (ii) provided public funding for political parties; and (iii) regulated private donations to political parties and candidates. These three laws should increase transparency, reduce the scope for corruption, and allow the public sector to attract more qualified people.

In sum, Chile not only began its economic reform process a decade earlier than the rest of Latin America; it also completed and deepened many of the reforms in subsequent years. Further, it changed the institutional setup to enhance the credibility –and effectiveness– of its policies and the country’s resilience to shocks. Without the continuous progress in all these areas, most likely the pay-off in terms of growth would have been less than it was and the economy would have remained highly vulnerable to crises.

6. DEEPENING THE REFORMS: WHAT IS AT STAKE?

The previous section has shown how Chile introduced and deepened the reforms, putting special emphasis on the institutional buildup. In the process, the country has established high credibility and its institutions have won reputation, being today of better quality than in all other countries in the region.

Based on Chile’s experience an interesting question arises: What benefits would accrue to countries that intensify their reform process to attain Chile’s –or higher– standards in terms of macroeconomic indicators, policies and, most important, institutions?

6.1 Explaining Economic Growth and Volatility

Model Specification and Definition of Variables

To answer the question above we estimate a cross section of about 80 countries, whose empirical form is based on a theoretical model of conditional convergence as developed by Barro and Sala-i-Martin (1992). Besides following the standard procedure of the empirical growth literature, in which the long term growth rate of an economy depends on initial conditions and policy variables (the

well known Barro-regressions), we also want to test the importance of institutions. Therefore we run two sets of regressions. In the first set the dependent variable is the average growth of per-capita GDP during 1960-2005. In the second, the dependent variable is the volatility (measured by the standard deviation) of the per-capita GDP growth rate over the same time period. The second set of regressions is motivated by recent research by Acemoglu *et al.* (2003) that suggests that volatility is not caused only by bad policies –exchange rate overvaluation, inflation, government consumption, or other– but also by poor quality institutions. Poor quality institutions may cause volatility directly and indirectly by leading to bad economic policies. The two regressions are of the following form:

$$(1) \quad \dot{Y}_i = \alpha_0 + \alpha_1 QI_i + \alpha_2 X_i + \varepsilon_i$$

$$(2) \quad \sigma_{\dot{Y}_i} = \beta_0 + \beta_1 QI_i + \beta_2 X_i + \mu_i$$

where Y is per capita GDP, QI is an index measuring the quality of institutions in each country, X is a set of other explanatory variables, a dot over a variable means its change over time and ε and μ are random terms.

Following the standard literature, the set of explanatory variables X includes initial conditions, policy variables, and one endowment/geography variable. Among the initial conditions we include the log of per-capita GDP in 1960, and the average years of schooling in 1960. Policy variables include openness (measured as exports plus imports over GDP²⁴), government consumption (in percentage of GDP), the real exchange rate overvaluation, and financial development measured as the ratio of private credit to GDP. In the robustness exercises (Appendix, Table A.2) we also include the exchange rate black-market premium, and the growth of the terms of trade. In equation (2) we also include inflation and its volatility, the volatility of government consumption and the volatility of term of trade (see robustness check in Table A.3). All the policy variables are measured as the average for the 1960-2005 period. For completeness, in the robustness exercises in Table A.2 we also include two endowment/geography variables; either a dummy indicating whether the country has access to the seacoast, or the proportion of land area within 100 km of the seacoast²⁵.

²⁴ For robustness checking, in a few regressions we use the alternative suggested by Calderón, Loayza and Servén (2003), but the results do not change. This alternative variable is labeled openness 2 in the Appendix, Table A.2 and A.3.

²⁵ The precise definition and source for each variable is provided in table A.1 in the appendix.

Our institution quality variable, *QI*, is obtained from the Governance Indicators dataset developed by Kaufmann *et al.* (2006), which is available biannually for the period 1996-2005 (annually for 2004-05), the most complete dataset of this kind available²⁶. For the estimation of equations (1) and (2) we take the average over 1996-2005 of the following six indices for each country²⁷:

TABLE 5
INSTITUTIONAL QUALITY INDEX COMPOSITION

Index	Definition
Voice and accountability	Extent to which citizens can choose their government, political rights, civil liberties, and an independent press.
Political instability and violence	Likelihood that the government will be overthrown by unconstitutional or violent means.
Government effectiveness	Quality of public service delivery, competence of civil servants, and the degree of politicization of civil service.
Regulatory burden	Government control on goods markets, government interference in the banking system, excessive bureaucracy to start a new business, and excessive regulation of private businesses and international trade.
Rule of law	Protection of individuals and property against violence or theft, independent and effective judges, and contract enforcement.
Graft or control of corruption	Use of public power for private gain and degree of corruption.

Source: Kaufmann *et al.* (2006).

Econometric Problems

The estimation of equations (1) and (2) poses a problem, namely the potential endogeneity of some of the right-hand-side variables; in particular, openness, financial development and the quality of institutions. To address this problem we use two-stage least squares and the standard instruments suggested in the literature. The instrument for openness is the fitted value that results from a gravity equation as suggested by Frankel and Romer (1999). For the quality of institutions we

²⁶ For a complete description of the methodology used for constructing these institutional indicators see Kaufmann *et al.* (2006).

²⁷ Other papers use Rule of Law as an indicator of the quality of institutions. Although we use a broader index, the results reported below are robust to the use of Rule of Law. Besides, the correlation between our broader index and the latter is 0.97.

use a set of alternative instruments, namely the distance of the capital city from the Equator line, the ethno-linguistic fraction of the population, the fraction of the population speaking English, the fraction of the population speaking one of the major languages of Western Europe, and the origin of the legal system²⁸. In the case of financial development, we take stock of the mounting evidence provided in recent years proving that “financial development causes growth” and treat it as an exogenous variable. (Just for completeness we instrument this variable using the origin of the legal system, as suggested by La Porta *et al.* (1999), but the results change only marginally.)

Before proceeding a methodological note is in order. The dependent variables in equations 1 and 2 are the average and the volatility of the per-capita GDP growth rate for 1960-2005, respectively, while in both regressions the variable indicating the quality of each country’s institutions, *QI*, is measured over 1996-2005. The difference in the *QI* variable between what we would like to measure (the entire period 1960-2005) and what we can measure (it’s only available for the period 1996-2005), poses a measurement problem that could invalidate our results. Our results would still be valid, however, if we assume that Chile had, on average, better institutions than the rest of Latin America over the entire 1960-2005 period, similar to the relationship that we observe in the period 1996-2005. This assumption is consistent with an institutional path in which (i) the starting point in the reform process across the LAC countries was similar until the mid seventies, when macro and micro problems were common among Latin American economies, and (ii) a faster institutional change occurred in the Chilean economy thereafter, which is plausible considering that Chile started the reform process a decade earlier and advanced faster. Additionally, although it is debatable, there is not a priori a reason to believe that Chile’s institutions in the early 60s were worse than those in other LAC countries²⁹.

Due to the problem above, to check for the robustness of our findings we re-estimate both cross-sectional regressions for the shorter sample period, 1996-2005, although doing so leads to poorer results due to the greater importance of cyclical factors. The results show, as expected, that some of the explanatory variables lose statistical significance, in particular financial development and the overvaluation of the real exchange rate, while initial conditions appear less robust. However, the quality of institutions variable turns out to be statistically significant, with the correct sign and with an even larger coefficient than in the regression with the long data set, which shows that our results are robust to changing (reducing) the sample period³⁰. This finding makes us believe that the results reported below are robust and that the coefficient α_1 can be interpreted as the minimum effect of institutions on long run economic growth.

²⁸ Another instrument proposed by Acemoglu *et al.* (2002) is the mortality rate of settlers. We do not use it because doing so would reduce our sample size significantly.

²⁹ Although there is not empirical evidence in this regard, compared with other LAC countries Chile has always been perceived as a country with low corruption and good rule of law.

³⁰ Results are available upon request.

Results

The main results of estimating equations (1) and (2) are reported in Tables 6 and 7, respectively (all the regressions where we test for robustness are reported in Tables A.2 and A.3 in the Appendix)^{31, 32}.

The first two regressions (columns) in Table 6 are simple OLS, before and after controlling for the quality of institutions. The main conclusion that emerges from comparing the first two columns is that institutions matter, that is, not only the α_1 coefficient turns out to be significant, but excluding the institutions variable biases upwards (in absolute value) all the other coefficients, except for initial GDP. Note also that the results from columns 1 and 2 are consistent with previous findings: there is convergence in per-capita GDP (poorer countries tend to grow faster), education and financial development affect growth positively, while keeping an overvalued exchange rate is detrimental to growth. Openness and government consumption, although having the right sign, do not attain statistical significance at the standard levels³³.

As argued, some of the right-hand side variables may be endogenous and that may be causing a bias in the results. Columns 3 through 7 address this problem by using instruments. In the regression in column 3 we use instruments only for the institutions variable, in the one in column 4 we use instruments for institutions and openness but not for financial development, and in column 5 we use instruments for financial development and institutions, but not for openness. The regression in column 6 excludes the institutions variable and uses instruments for financial

³¹ Table A.2 shows robustness exercises for the economic growth equation. In this table, columns 8 through 13 include other controls such as terms of trade growth, black market premium, and two endowment/geographic variables (a dummy indicating whether the country has access to the seacoast, and the proportion of land area within 100 km of the seacoast). In columns 14 through to 16 we use instruments for openness and financial development (and try different control variables). In columns 17 and 18 we use a different definition for openness. Finally, in columns 19 through 20 we try different combinations of instruments. Table A.3 shows robustness exercises for the growth volatility equation. In this table, in columns 8 through 11 we prove different controls such as inflation and its volatility, and government consumption volatility, while equation 12 includes only significant variables. In columns 13 through to 16 we use also instruments for openness and financial development (and try different control variables). In columns 17 and 18 we use a different definition for openness. Finally, in columns 19 through 20 we try different combinations of instruments. In a previous version of this paper we present more robust test equations and results do not change (see Hernández y Parro, 2005).

³² It should be mentioned that, as we follow the standard literature, our results are subject to the same caveats and shortcomings of all recent papers on institutions and growth, in particular with respect to the choice and validity of the instruments and the estimation procedure (Acemoglu *et al.*, 2001, 2003; Beck *et al.*, 2003a, 2003b; La Porta *et al.*, 1997, 1998, 1999). For a test on the validity of the instruments see Easterly and Levine (2003) and Rodrik *et al.* (2002).

³³ Empirical results indicate that the effect of openness on GDP growth is ambiguous. In particular, cross-section studies tend to find no such effect or the effect, when shown, is not robust, while a positive and robust effect emerges in panel data studies that capture the temporal effect of openness. See Calderón *et al.* (2004) for a complete review of the empirical literature about the effect of openness on economic growth.

development and openness, and the regression in column 7 includes institutions and uses instruments for all the potentially endogenous variables.

TABLE 6
ECONOMIC GROWTH DETERMINANTES
Dependent variable: growth of per capita GDP at PPP prices

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS
Institutions quality		0.0106* (4.48)	0.0095** (2.53)	0.0094** (2.50)	0.0089** (2.20)		0.0090** (2.18)
Others Controls:							
GDP per capita 1960	-0.0138* (-5.34)	-0.0177* (-7.23)	-0.0173* (-6.45)	-0.0175* (-6.48)	-0.0175* (-6.39)	-0.0143* (-4.87)	-0.0176* (-6.45)
Average schooling years 1960	0.0084* (4.02)	0.0067* (3.54)	0.0069* (3.53)	0.0069* (3.51)	0.0064* (2.73)	0.0071** (2.28)	0.0065* (2.66)
Openness	0.0056** (2.34)	0.0024 (1.04)	0.0027 (1.11)	0.0013 (0.47)	0.0025 (0.97)	0.0059** (1.97)	0.0015 (0.51)
Financial development	0.0101* (4.07)	0.0057** (2.33)	0.0062** (2.25)	0.0066** (2.38)	0.0081 (1.42)	0.0131*** (1.91)	0.0080 (1.33)
Government consumption	-0.0018 (-0.49)	-0.018 (-0.56)	-0.0018 (-0.57)	-0.0020 (-0.62)	-0.0019 (-0.58)	-0.0017 (-0.48)	-0.0020 (-0.62)
Exchange rate overvaluation	-0.0081*** (-1.74)	-0.0081** (-1.96)	-0.0080*** (-1.94)	-0.0078*** (-1.87)	-0.0075*** (-1.70)	-0.0067 (-1.32)	-0.0075*** (-1.69)
Instruments:							
Constructed trade share	No	No	No	Yes	No	Yes	Yes
Legal origin	No	No	Yes	Yes	Yes	Yes	Yes
Etnolinguistic fraction	No	No	Yes	Yes	Yes	No	Yes
F. P. S. E. ⁽¹⁾	No	No	Yes	Yes	Yes	No	Yes
F. P. S. W. E. ⁽²⁾	No	No	Yes	Yes	Yes	No	Yes
Distance ⁽³⁾	No	No	Yes	Yes	Yes	No	Yes
R-squared	0.59	0.68	0.68	0.68	0.68	0.58	0.68
Number of observations	77	75	75	75	75	76	75

Notes: *t* tests are in brackets. *, **, *** Significant at 1% , 5% and 10% respectively.

(1) Fraction of the population speaking English. (2) Fraction of the population speaking one of the major languages of Western Europe. (3) Distance from Equator of capital city.

The conclusions that emerge from columns 3 through 7 are very similar to those from columns 1 and 2, that is, institutions matter (excluding this variable biases all other coefficients), there is per-capita GDP convergence, the level of education matters, and among the policy variables the most important are exchange rate overvaluation and financial development. In addition, when using an instrument for financial development, the corresponding coefficient turns out larger but is estimated less precisely (its marginal significance level is about 13% in columns 5 and 7).

Three other conclusions are worth noting from Table 6 (and confirmed by the robustness tests in Table A.2). First, the coefficient that accompanies the institution variable, α_1 , is robust to many alternative specifications and very stable (at around 0.0095). Second, the coefficients for the education and exchange rate overvaluation variables are not biased (or are only marginally so) when the institutions variable is excluded. And third, financial development matters for growth on its own, even after controlling for the quality of institutions.

Using the results from Tables 6 and A.2 (using the average coefficient \pm one std. deviation), it is possible to estimate the potential effect for the average Latin American country of adopting Chile's institutions, or even better, the institutions of developed countries or Finland's, the top one among all the countries in the sample. The results, reported in Table 8, indicate that by having institutions of quality similar to Chile's, the average Latin American country could raise its per-capita GDP growth rate between 0.9% and 2.0% per year (or by about 1.5% per year, on average). Or better still, by having Finland's institutions the increase would be between 1.3% and 2.9% per year (or by about 2.1% per year, on average). Note that in this case Chile's per-capita GDP growth would raise only by about 0.6% per year on average, because the difference between Chile's and advanced economies' institutions is marginal. Compared with historical growth rates of per capita GDP in Latin America (1.2% p.a. during 1960-2005, using a simple average, and 1.7% p.a. taking a GDP-weighted average), the potential raise is quite significant. It means that, on average, per capita GDP would double in about 20-25³⁴ years instead of 60 (these numbers change to 22-18³⁵ and 38, respectively, if using the GDP-weighted average).

The results above also provide an explanation for Latin America's poorer performance during the 1990s *vis-à-vis* Chile or East Asia (this is reported in Table 8). In the former case, about half of the predicted growth difference can be explained by better institutions and about half by better policies (differences in initial conditions matter but less than differences in policies and institutions). Among policy variables, financial development is by far the most important, suggesting that countries should pay special attention to promote the development of the financial sector. In the latter case, policies played a much greater role, specially financial development, mainly because there is not much difference in the quality of institutions between the average Latin American country and the average East Asian country. Although smaller in magnitude, the sustained overvaluation of the real exchange rate also added to the poor performance of the average Latin American country.

With regards to GDP growth volatility, the results reported in Table 7 suggest that the quality of institutions matter –better institutions reduce volatility– and, therefore, excluding this variable biases all the coefficients, especially the one

³⁴ 20 if compared to Finland's institutions and 25 if compared to Chile's

³⁵ 18 if compared to Finland's institutions and 22 if compared to Chile's.

on financial development (note that Tables 6 and 7 are similar in structure)³⁶. In addition, using instruments (2SLS) changes the parameters of some variables (β_1 appears to be less stable than α_1 as reported in Table 6). Most important, the only variable besides institutions that matter is the overvaluation of the exchange rate (keeping an overvalued exchange rate raises GDP growth volatility).

TABLE 7
GROWTH VOLATILITY ESTIMATES
Dependent variable: Standard deviation of per capita GDP growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS
Institutions		-0.0066* (-2.54)	-0.0080** (-2.32)	-0.0078** (-2.25)	-0.0148** (-2.25)		-0.0171** (-2.17)
Others Controls:							
Policy variables							
Financial development	-0.0112* (-5.55)	-0.0052*** (-1.71)	-0.004 (-1.08)	-0.0045 (-1.22)	0.0065 (0.72)	-0.0124* (-2.89)	0.0097 (0.88)
Government consumption	0.0056 (1.19)	0.0056 (1.21)	0.0055 (1.18)	0.0052 (1.12)	0.0059 (1.14)	0.0052 (1.08)	0.0053 (0.96)
Exchange rate overvaluation	0.0191* (3.61)	0.0190* (3.67)	0.0190* (3.67)	0.0187* (3.59)	0.0229* (3.52)	0.0178* (2.85)	0.0234* (3.31)
Openness	0.0022 (0.69)	0.0028 (0.86)	0.0031 (0.93)	0.0055 (1.37)	0.0028 (0.78)	0.0038 (0.93)	0.0104*** (1.76)
Instruments:							
Constructed trade share	No	No	No	Yes	No	Yes	Yes
Legal origin	No	No	Yes	Yes	Yes	Yes	Yes
Ethnolinguistic fraction	No	No	Yes	Yes	Yes	No	Yes
F. P. S. E. ⁽¹⁾	No	No	Yes	Yes	Yes	No	Yes
F. P. S. W. E. ⁽²⁾	No	No	Yes	Yes	Yes	No	Yes
Distance ⁽³⁾	No	No	Yes	Yes	Yes	No	Yes
R-squared	0.48	0.53	0.53	0.53	0.43	0.47	0.35
Number of observations	76	74	74	74	74	75	74

Notes: *t* tests are in brackets. *, **, *** Significant at 1%, 5% and 10% respectively.

(1) Fraction of the population speaking English. (2) Fraction of the population speaking one of the major languages of Western Europe. (3) Distance from Equator of capital city.

³⁶ That is, regressions in columns 1 and 2 are OLS estimations with and without the institutions variable; regressions in columns 3 through 5 use instruments for some of the potentially endogenous variables (in the same order explained in the text); and columns 6 and 7 use instruments for all the endogenous variables, openness, financial development and quality of institutions (column 7).

TABLE 8
EFFECTS ON PER-CAPITA GDP GROWTH RATES OF HAVING
INSTITUTIONS SIMILAR TO CHILE, THE MAJOR ADVANCED
ECONOMIES, AND FINLAND

	Institutions like Chile			Institutions like major advanced economies			Institutions like Finland (Top one)		
	Min. (%)	Mean (%)	Max. (%)	Min. (%)	Mean (%)	Max. (%)	Min. (%)	Mean (%)	Max. (%)
Chile	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.9
Argentina	0.9	1.4	1.9	0.9	1.4	2.0	1.3	2.0	2.8
Bolivia	1.1	1.8	2.5	1.1	1.8	2.5	1.5	2.4	3.3
Brazil	0.7	1.2	1.7	0.8	1.2	1.7	1.1	1.8	2.5
Colombia	1.0	1.6	2.2	1.0	1.6	2.3	1.4	2.3	3.1
Costa Rica	0.3	0.6	0.8	0.4	0.6	0.8	0.7	1.2	1.7
Dominican Republic	0.9	1.4	1.9	0.9	1.4	2.0	1.3	2.0	2.8
Ecuador	1.1	1.8	2.5	1.2	1.9	2.6	1.5	2.5	3.4
El Salvador	0.8	1.3	1.7	0.8	1.3	1.8	1.2	1.9	2.6
Guatemala	1.1	1.8	2.5	1.1	1.8	2.5	1.5	2.4	3.4
Haiti	1.6	2.5	3.5	1.6	2.6	3.6	2.0	3.2	4.4
Honduras	1.0	1.7	2.3	1.1	1.7	2.4	1.4	2.3	3.2
Jamaica	0.8	1.2	1.7	0.8	1.3	1.8	1.2	1.9	2.6
Mexico	0.8	1.2	1.7	0.8	1.3	1.7	1.2	1.9	2.6
Nicaragua	0.9	1.5	2.1	1.0	1.6	2.2	1.3	2.2	3.0
Paraguay	1.1	1.8	2.6	1.2	1.9	2.6	1.5	2.5	3.4
Peru	1.0	1.6	2.2	1.0	1.6	2.2	1.4	2.2	3.0
Trinidad y Tobago	0.6	0.9	1.3	0.6	1.0	1.3	1.0	1.6	2.2
Uruguay	0.3	0.5	0.8	0.4	0.6	0.8	0.7	1.2	1.6
Venezuela	1.3	2.1	2.8	1.3	2.1	2.9	1.7	2.7	3.7
Simple average excluding Chile	0.9	1.5	2.0	0.9	1.5	2.1	1.3	2.1	2.9
Simple average including Chile	0.9	1.4	1.9	0.9	1.4	2.0	1.3	2.0	2.8
Weighted average excluding Chile	0.8	1.3	1.8	0.8	1.4	1.9	1.2	2.0	2.7
Weighted average including Chile	0.8	1.3	1.7	0.8	1.3	1.8	1.2	1.9	2.6

Notes: (1) Weighted averages are constructed using each country's GDP as weights. (2) Min and Max are calculated using the average coefficient plus/minus one standard deviation.

Source: Own elaboration.

Finally, Table 10 reports the (again, simulated) effect on the volatility of per-capita GDP growth for the average Latin American country, of it adopting institutions of similar quality to Chile's, or even better, Finland's. The reduction is significant: volatility would fall on average by about 40% per year (from 4.2% to 2.5%) in the former case, and by about 57% (from 4.2% to 1.8%) in the latter (numbers are very similar if using simple or weighted average historical data).

TABLE 9
DIFFERENCE IN GROWTH PERFORMANCE:
CHILE VS. LATIN AMERICA AND EAST ASIA VS. LATIN AMERICA
(1990-2000)

	Chile vs. Latin America (1990-2000)		East Asia* vs. Latin America (1990-2000)	
	Simple Average Countries	Weighted Average Countries	Simple Average Countries	Weighted Average Countries
Inicial GDP	-0.4%	0.3%	-0.3%	0.1%
Human Capital	0.3%	0.2%	0.2%	0.2%
Quality of Institutions	1.1%	1.1%	0.4%	0.3%
Financial Development	0.7%	0.7%	0.9%	1.0%
Exchange Rate Overvaluation	0.3%	0.2%	0.3%	0.1%
Predicted Difference	2.0%	2.5%	1.5%	1.7%
Actual Difference	3.3%	3.2%	2.1%	2.5%

* East Asia countries include Singapore, Indonesia, Korea, Malaysia, Philippines and Thailand.

Note: Weighted averages are constructed using each country's GDP as weights.

Source: Own elaboration.

TABLE 10
EFFECTS ON THE VOLATILITY OF PER-CAPITA GDP OF HAVING INSTITUTIONS
SIMILAR TO CHILE, THE MAJOR ADVANCED ECONOMIES AND FINLAND

	Institutions like Chile			Institutions like major advanced economies			Institutions like Finland (Top one)		
	Min. (%)	Mean (%)	Max. (%)	Min. (%)	Mean (%)	Max. (%)	Min. (%)	Mean (%)	Max. (%)
Chile	0.0	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.7	-1.1
Argentina	-0.9	-1.6	-2.3	-0.9	-1.7	-2.4	-1.3	-2.4	-3.4
Bolivia	-1.2	-2.1	-3.0	-1.2	-2.1	-3.0	-1.6	-2.8	-4.0
Brazil	-0.8	-1.4	-2.0	-0.8	-1.4	-2.1	-1.2	-2.1	-3.1
Colombia	-1.1	-1.9	-2.7	-1.1	-1.9	-2.7	-1.5	-2.6	-3.7
Costa Rica	-0.4	-0.6	-0.9	-0.4	-0.7	-1.0	-0.8	-1.4	-2.0
Dominican Republic	-0.9	-1.6	-2.3	-0.9	-1.7	-2.4	-1.3	-2.4	-3.4
Ecuador	-1.2	-2.1	-3.0	-1.2	-2.2	-3.1	-1.6	-2.9	-4.1
El Salvador	-0.8	-1.5	-2.1	-0.8	-1.5	-2.1	-1.2	-2.2	-3.2
Guatemala	-1.2	-2.1	-3.0	-1.2	-2.1	-3.0	-1.6	-2.8	-4.0
Haití	-1.7	-2.9	-4.2	-1.7	-3.0	-4.3	-2.1	-3.7	-5.3
Honduras	-1.1	-1.9	-2.8	-1.1	-2.0	-2.8	-1.5	-2.7	-3.8
Jamaica	-0.8	-1.4	-2.0	-0.8	-1.5	-2.1	-1.2	-2.2	-3.1
Mexico	-0.8	-1.4	-2.0	-0.8	-1.5	-2.1	-1.2	-2.1	-3.1
Nicaragua	-1.0	-1.8	-2.5	-1.0	-1.8	-2.6	-1.4	-2.5	-3.6
Paraguay	-1.2	-2.1	-3.1	-1.2	-2.2	-3.1	-1.6	-2.9	-4.1
Peru	-1.0	-1.8	-2.6	-1.0	-1.9	-2.7	-1.4	-2.6	-3.7
Trinidad y Tobago	-0.6	-1.1	-1.5	-0.6	-1.1	-1.6	-1.0	-1.8	-2.6
Uruguay	-0.4	-0.6	-0.9	-0.4	-0.7	-1.0	-0.8	-1.4	-2.0
Venezuela	-1.3	-2.4	-3.4	-1.4	-2.4	-3.5	-1.8	-3.1	-4.5
Simple average excluding Chile	-1.0	-1.7	-2.4	-1.0	-1.7	-2.5	-1.4	-2.4	-3.5
Simple average including Chile	-0.9	-1.6	-2.3	-0.9	-1.7	-2.4	-1.3	-2.4	-3.4
Weighted average excluding Chile	-0.9	-1.5	-2.2	-0.9	-1.6	-2.3	-1.3	-2.3	-3.3
Weighted average including Chile	-0.8	-1.5	-2.1	-0.8	-1.5	-2.2	-1.2	-2.2	-3.2

Notes: (1) Weighted averages are constructed using each country's GDP as weights. (2) Min and Max are calculated using the average coefficient plus/minus one standard deviation.

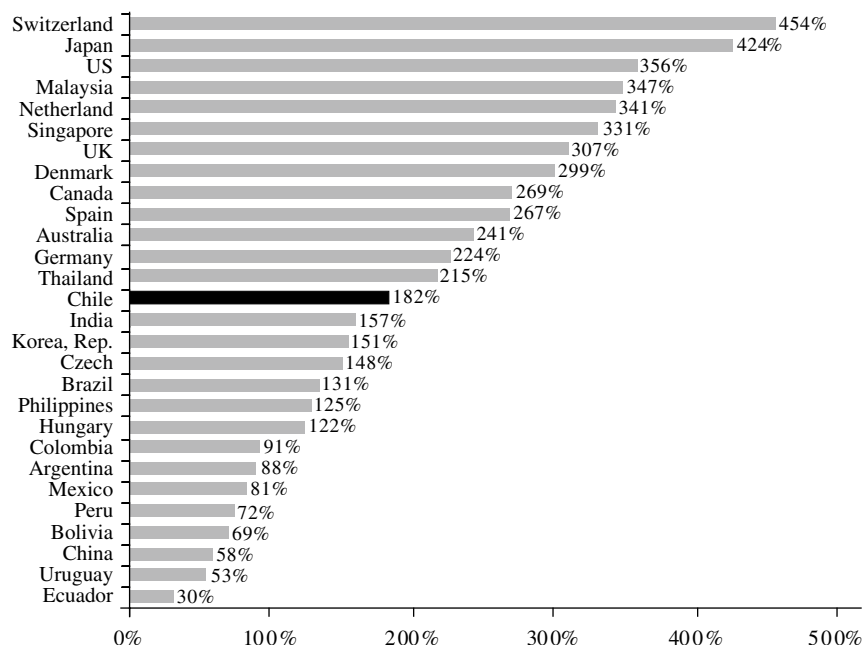
Source: Own elaboration.

6.2 Explaining Financial Development

The cross-sectional evidence from the previous subsection supports the view that both the quality of institutions and the degree of financial development matter for growth. Further, when compared with the other explanatory variables –initial conditions and the real exchange rate overvaluation– it turns out that these two variables explain most of the difference in economic growth performance between Chile and the rest of Latin America and between East Asia and Latin America during the 1990s (Table 9).

At this point it is therefore important to understand why the Chilean financial system is the largest in Latin America and one of the larger ones among emerging market economies (Figure 5). This subsection sheds some light on this issue and tries to identify the ultimate sources of the financial development in Chile during the past forty years.

FIGURE 5
FINANCIAL ASSETS
(2005, % GDP, selected countries)



Note: The assets of the financial system include liquid liabilities of banks and non-bank financial institutions, stock market capitalization, and domestic private and public bonds.

Source: Beck, Demirgüç-Kunt and Levine (2006).

The literature that looks into the factors that explain financial development, which is mainly based on cross-sectional studies, has identified two sets of explanatory variables, namely ‘policy-related’ determinants (*i.e.*, legal, regulatory and macroeconomic policies) and ‘deeper’ determinants (*i.e.*, political, cultural, and even geographical factors). Regarding the first set of variables, La Porta *et al.* (1997, 1998) show the importance of property rights protection in fostering financial development. Similarly, Beck *et al.* (2003a) conclude that the adaptability of the legal system is crucial, while Barth *et al.* (2003) show that adequate bank regulation and supervision –*i.e.*, providing incentives for greater information disclosure without granting regulators excessive powers– is important for the development of the banking sector. With respect to macro policies, Boyd *et al.* (2000) and Khan *et al.* (2002) find significant non-linear negative effects of inflation on the development of banks and the stock market. Similarly, Bencivenga and Smith (1992), Huybens and Smith (1999), and Roubini and Sala-i-Martin (1995) show how monetary and fiscal policies affect the taxation of financial intermediaries and, therefore, the provision of financial services.

With regards to deeper determinants, La Porta *et al.* (1998) emphasize the importance of the origin of the legal system, while Stulz and Williamson (2003) highlight the role of religion. Finally, Beck *et al.* (2003b), Easterly and Levine (2003), and Acemoglu *et al.* (2001) show the importance of geography in the shaping of institutions that, in turn, affect the development of the financial system.

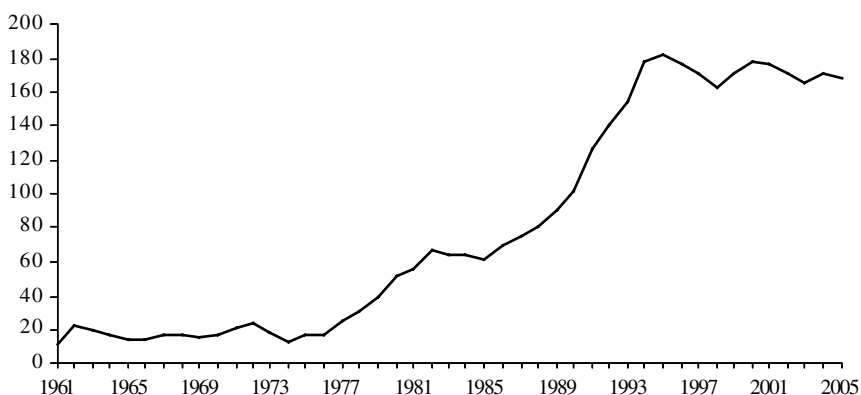
In this subsection of the paper we follow the first approach and use time-series analysis to explain financial development in Chile. This approach has the advantage of allowing us to capture the contribution of key economic reforms undertaken in recent decades. For this purpose we use a modified version of the empirical model developed by Corbo and Schmidt-Hebbel (2003), where the dependent variable measures the size of the Chilean financial market as a share of GDP. This measure, which adds up the most important financial instruments of the Chilean capital markets, is consistent with financial development measures frequently used in the literature. The constructed variable consists of liquid liabilities of the financial system (banks and other non-bank financial intermediaries), stock market capitalization, domestic private and public bonds, and mortgage related bonds³⁷. The evolution of this variable is showed in Figure 6.

The estimation seeks a co-integration relationship between the financial development variable and a set of explanatory variables comprising the size of the (mandatory) pension industry, an index measuring the progress in structural reform processes, and a few variables to capture other important macro-financial policies and reforms. Among the latter are two dummy variables to capture the reduction in inflation and a variable that measures real exchange rate misalignment (the rationale for including this variable is to control for cyclical fluctuations and for potential financial sector distress due to balance sheet effects). In addition,

³⁷ Following Beck *et al.* (2000), beginning- and end-of the year financial variables were CPI-deflated and then averaged. This average was then divided by GDP (deflated by the year-average CPI).

we incorporate a variable that was not included in Corbo and Schmidt-Hebbel's model and that captures the 1986 reform to the banking sector.

FIGURE 6
FINANCIAL DEVELOPMENT IN CHILE
(1961-2005, percentage)



Note: Financial Development is defined as the sum of liquid liabilities of the financial system, stock market capitalization, domestic private and public bonds, and mortgage-related bonds, as a share of GDP.

Source: Own elaboration based on the procedure proposed in Bennett, Schmidt-Hebbel and Soto (1999).

The pension industry variable (PR) is equal to the annual mandatory savings flow of the new private system created by the pension reform of 1981. The structural reform index (SR) is an average of the progress achieved in trade openness, financial liberalization, tax reforms and privatization of state-owned enterprises. The inflation-related dummies identify thresholds; $D^{\pi < 10}$ equals one whenever inflation is below 10%, while the second ($D^{\pi < 20}$) equals one whenever inflation in the current and adjacent years is below 20%^{38, 39}. Finally, the banking sector reform variable is a trend starting in 1986 with diminishing returns over time (it takes the form t^α , where α takes the values of 1, 0.75 or 0.5). The estimation is done for the period 1961-2005. Our final specification adopts the following form:

³⁸ Corbo and Schmidt-Hebbel try different functional forms and thresholds for inflation. The dummies defined as explained in the text are their preferred specification.

³⁹ This functional form explicitly acknowledges the presence of non-linear effects of inflation on financial development and hence growth.

$$(3) \quad FD_t = \gamma_0 + \gamma_1 PR_t + \gamma_2 SR_t + \gamma_3 D_t^{\pi < 10} + \gamma_4 D_t^{\pi < 20} + \gamma_5 RERG_t + \gamma_6 D_t^{BR86} + \varpi_t$$

where FD is the financial development, defined as the sum of liquid liabilities of the financial system (banks and non-bank financial intermediaries), stock market capitalization, domestic private and public bonds, and mortgage-related bonds, each as a share of GDP, $D^{\pi < 10}$ and $D^{\pi < 20}$ are the inflation-related dummies, $RERG$ is the real exchange rate misalignment –defined as the difference between the real exchange rate and its long-term value computed using a Hodrick-Prescott filter– and D^{BR86} is the trend variable that captures the effect of the 1986 banking sector reform. Finally, ϖ_t is a random term.

The results from estimating equation (3) are shown in Table 11. As expected, all variables came out significant at traditional confidence levels (except $D^{\pi < 10}$ in two equations⁴⁰) and with the expected signs. Further, all equations co-integrate at the 1% significance level. Thus, we can conclude that all the explanatory variables (*i.e.*, the 1981 pension reform, the structural reforms, the 1986 banking reform and the reduction in inflation) had a significant effect on fostering the development of capital markets.

TABLE 11
FINANCIAL DEVELOPMENT ESTIMATES I
Dependent Variable: Financial development

	(1)	(2)	(3)
<i>RERG</i>	-0.383* (-3.13)	-0.380* (-3.13)	-0.366* (-2.98)
<i>PR</i>	8.485* (7.91)	9.316* (10.15)	10.152* (11.72)
<i>SR</i>	0.549* (5.52)	0.541* (5.45)	0.536* (5.29)
$D^{\pi < 10}$	7.580*** (1.74)	6.290 (1.41)	6.235 (1.36)
$D^{\pi < 20}$	41.662* (6.31)	40.485* (5.98)	42.331* (6.32)
D^{BR86} (trend ^{0.5})	9.616* (3.74)		
D^{BR86} (trend ^{0.75})		4.728* (3.79)	
D^{BR86} (trend)			2.044* (3.54)
Adjusted R-squared	0.99	0.99	0.99
Co-integration test	Yes	Yes	Yes

Note: t tests are in brackets. *, ***, Significant at 1% and 10% level respectively. Yes: Co-integrates at 1% significance level according to Mackinnon's critical values.

⁴⁰ This result and the statistical significance of the $D^{\pi < 20}$ dummy are consistent with the existence of non-linear effects of inflation on financial development (see footnote 39).

Using the estimated equations next we calculate the contribution of the different factors in explaining the development of the Chilean financial markets. For this we divide the sample into two subperiods: 1961-74 and 1986-2005. The first subperiod corresponds to the financial repression-cum-government-intervention development model, while the second corresponds to the market-oriented development model after the pension and banking reforms of 1981 and 1986, respectively. Financial development during the first subperiod averaged 17.4% of GDP, while during the second it averaged 145.8% of GDP. Of this increase –128.4 percentage points of GDP– about 37% is explained by the pension reform of 1981; 25% by the reduction in inflation; 20% by the banking reform of 1986, and 19% by other structural reforms (Table 12). Thus, it can be concluded that the pension reform contributed proportionately more than other reforms and policies to the development of the financial sector in Chile.

TABLE 12
FINANCIAL DEVELOPMENT IN CHILE
1986-2005 vs 1961-1974

Explained by:	Absolute change in financial development index between 1986-2005 and 1961-74 (% GDP): 128.4		
	(1)	(2)	(3)
Pension Reform	33.3%	36.6%	39.9%
Other Structural Reforms	19.2%	18.9%	18.7%
Low Inflation Periods	25.8%	24.7%	25.7%
1986 Banking Sector Reform ($\alpha = 0.5$)	23.1%		
1986 Banking Sector Reform ($\alpha = 0.75$)		20.7%	
1986 Banking Sector Reform ($\alpha = 1$)			16.7%
Others	-0.4%	-0.9%	-1.0%

Source: Own elaboration.

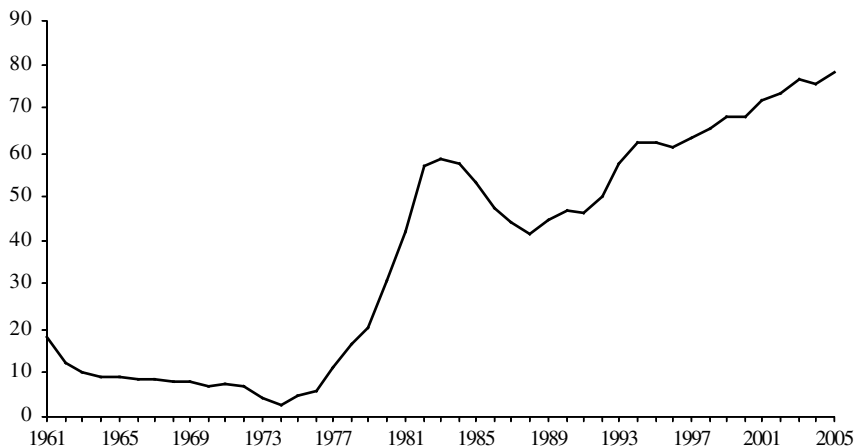
Next, using the same approach we run similar regressions to identify those factors that explain the development of the Chilean banking sector. For this we replace the dependent variable for total bank credit (BC) to the private sector, also measured as a share of GDP (note that this definition matches the one used in the cross-sectional analysis of subsection 6.1). Figure 7 shows the evolution of this variable.

As can be seen in the figure, bank credit experienced a boom-bust episode in the late 1970s and early 1980s, which led to the 1981-83 debt-crisis⁴¹. One consequence of the crisis was that the government had to intervene and take over several financial institutions, leading to its controlling of about 60% of the domestic banking system. Furthermore, in the aftermath of the debt crisis the government implemented several measures to clean up and re-capitalize the financial system. For this reason, a significant share of total credit in the years following the debt crisis consisted of emergency and soft loans granted under different criteria than the ones applied in normal times by a privately run bank. To control for this effect we introduce a dummy variable ($D^{CR\ 81-85}$) that equals 1.0 during 1981-85 and zero otherwise.^{42, 43} This variable also replaces the previous one that controlled for cyclical effects, *REG*. In addition, we change the functional form slightly by including inflation directly instead of the dummy variables used before. Thus, our final specification takes the following form:

$$(4) \quad BC_t = \delta_0 + \delta_1 PR_t + \delta_2 SR_t + \delta_3 \left(\frac{\pi}{1 + \pi}\right)_t + \delta_4 D_t^{BR86} + \delta_5 D^{CR81-85} + \xi_t$$

where π is the annual inflation rate, ξ_t is a random term and the other variables are as mentioned above.

FIGURE 7
BANK CREDIT TO THE PRIVATE SECTOR
Chile 1961-2005 (% GDP)



Source: Beck, Demircug-Kunt and Levine (2006).

⁴¹ See De Gregorio and Guidotti (1995).

⁴² Changing the crisis years changes the estimated coefficients but not the qualitative results, although it makes the co-integration relationships less stable.

⁴³ Ideally we would like to run the regression excluding the debt-crisis years, that is, for the post-crisis years. But this would imply that we couldn't properly control for the pension system and banking sector reforms of 1981 and 1986, respectively—in particular, the effects of the latter would most likely appear in the constant of the estimated model.

The results from estimating equation (4), reported in Table 13, are similar to those from equation (3). More interestingly, the contributions of the different explanatory variables to the development of the banking sector differ from those presented earlier that referred to the financial markets. In particular, bank lending to the private sector increased from an average of 8.6% of GDP during 1961–74, to an average of 60.4% during 1986–2005. Of this increase of 52 percentage points of GDP, about 43% is explained by the 1986 reform to the banking sector; 24% by other structural reforms; 22% by the 1981 pension reform, and about 7% by the reduction in inflation⁴⁴ (Table 13). Thus, although all the reforms and stabilization policies matter, the banking reform of 1986 becomes more important than the pension reform, as expected.

TABLE 13
FINANCIAL DEVELOPMENT ESTIMATES II
Dependent Variable: Bank credit to the private sector as a share of GDP

	(1)	(2)	(3)
<i>PR</i>	1.191*** (1.82)	2.444* (4.30)	3.128* (5.92)
<i>SR</i>	0.263* (3.83)	0.285* (4.19)	0.294* (4.40)
$\pi/(1+\pi)$	-14.636* (-3.30)	-15.526* (-3.49)	-15.874* (-3.57)
D^{BR86} (trend ^{0.5})	9.641* (7.98)		
D^{BR86} (trend ^{0.75})		3.914* (7.88)	
D^{BR86} (trend)			1.728* (8.00)
$D^{CR81-85}$	30.967* (9.96)	26.881* (9.53)	24.790* (9.36)
Adjusted R-squared	0.97	0.97	0.97
Co-integration test	Yes	Yes	Yes

Note: *t* tests are in brackets. *, *** Significant at 1% and 10% level respectively. Yes: Co-integrates at 1% significance level according to Mackinnon's critical values.

⁴⁴ Note that in this new functional form inflation still has a non-linear effect on the development of the banking sector.

TABLE 14
FINANCIAL DEVELOPMENT IN CHILE: 1986-2005 vs 1961-1974

Equation Explained by:	Absolute change in financial development index between 1986-2005 and 1961-74 (% GDP): 51.8		
	(1)	(2)	(3)
Pension Reform	11.6%	23.8%	30.5%
Other Structural Reforms	22.8%	24.7%	25.5%
Low Inflation Periods	6.6%	7.0%	7.1%
1986 Banking Sector Reform ($\alpha = 0.5$)	57.5%		
1986 Banking Sector Reform ($\alpha = 0.75$)		42.6%	
1986 Banking Sector Reform ($\alpha = 1$)			35.1%
Others	1.5%	1.3%	1.8%

Note: Financial development is defined as banks' total credit to the private sector as a share of GDP.

7. FINAL REMARKS: THE CHALLENGES AHEAD FOR LATIN AMERICA

This paper addresses the issue of explaining the contrasting experience of Chile, that during the 1990s grew at high rates and reduced its poverty rate sharply, with that of the rest of the Latin American region, that although recovering from the very poor performance of the 1980s (the so-called lost decade), failed to resume the growth rates of the 1960s and 1970s.

Based on recent theoretical and empirical findings, we argue that Chile's success story is due to the breadth of its reform process, that continues to this date and has been much deeper and broader in scope than that carried out in other countries. The reform has not only boosted the country's macro fundamentals but also upgraded and strengthened its institutions. The high payoff from Chile's reform is due to its breadth and continuance through time.

Our econometric exercises show the importance of institutions in explaining long run economic growth, and this result is very robust to different econometric specifications. Indeed, we argue that the better performance of Chile vis-à-vis Latin America during the 1990s is explained by both better policies and better institutions in almost equal shares. In addition, we estimate that by having institutions of quality similar to Chile's, the average Latin American country could raise its per-capita GDP growth rate by about 1.5%, on average. Time series estimations showed that Chile's 1981 pension reform and 1986 banking sector reform and macro stability (reduction in inflation) were critical to foster the development of the financial sector and thus accelerate economic growth.

One conclusion that emerges from looking at the Chilean experience is straightforward: countries should advance in all fronts, in many cases completing the so-called first generation reforms: *e.g.*, fiscal stability, trade liberalization,

inflation reduction. But there is also the need to advance in second generation reforms: upgrading the supervisory and regulatory framework of banks, and reforming pension systems. The latter in the case of Chile has proven to be key to the attainment of deeper financial markets and higher economic growth.

The need to advance in all these fronts becomes even more urgent given the impending globalization trend. In other words, given the increasing (and unavoidable) integration of the world economy, in both goods and capital flows, countries that do not reform their economies and institutions not only will not reap all the benefits from this trend, but will also become increasingly prone to crises. It should also be mentioned that the longer countries try to delay –most likely unsuccessfully– their integration into the world economy, the larger the income gap with the industrial world will be. The latter because in a world of very rapid and frequent technological changes, opportunities arise and are exploited quickly by the most dynamic and open economy. In sum, the globalization trend presents opportunities, but the potential benefits will not materialize if countries do not upgrade their institutions and policies.

The above is more easily said than done. This, because there are no short cuts and the experience of one country cannot be easily replicated by another; what works in one case does not necessarily work in another. So, to make progress countries should be innovative in the design of their policies and institutions. Each country has to design its own policies and implement them taking into account its own characteristics: the way China has proceeded in the past two decades is certainly not a replica of the reforms implemented elsewhere. Similarly, Chile's 1981 pension reform which, as said, was key to foster the development of the country's financial sector, was not copied from elsewhere; it was brand new and started from scratch. Further, countries that have tried to copy the Chilean system, however, have not always succeeded because of their own idiosyncrasies. Another example is the unremunerated reserve requirement or *encaje* that Chile used in the 1990s that, albeit some controversy about its effectiveness in achieving all the objectives for which it was designed, changed the composition of capital inflows toward those more stable and with longer maturities, reducing the country's exposure to capital flight. This policy tool worked in Chile because of the rule of law and the tight monitoring exerted by the Central Bank on commercial banks, but by its nature is a potential source for corruption.

A second conclusion of the paper, supported by our econometric exercises, refers to the importance of other institutions –rule of law, control of corruption, government effectiveness, political stability– that are beyond the realm of political economy but, nevertheless, affect growth significantly. Although there is no straightforward conclusion in this respect, we share the view that these institutions are not given and countries are not condemned to their legacy, and the Chilean experience confirms it. For instance, in Chile after 30 years of reforms the general public has begun to acknowledge the importance of building a strong institutional setup to provide and support a market friendly environment with stable rules of the game that attracts investors, foreign or domestic. The latter allowed the government recently to pass legislation to establish a merit-based career for public servants,

which reduces the chances of appointing political allies. Similarly, after about 25 years since the pension reform, workers (in the formal market) have become increasingly aware that their pension depends on their own contributions to their retirement funds and not on governmental policies. Therefore, they are much more demanding than in the past with regards to transparency, disclosure, regulatory issues and other aspects pertaining to the pension fund industry.

Finally, one final challenge of Latin American countries, including Chile, is the urgent need to make real progress in social policies, especially those aimed at protecting the poorest and unskilled groups. This, because the current speed of technological change increasingly demands skilled workers who are more capable to adjust to the new technologies. Thus, making progress in the macro, micro and institutional fronts to accelerate growth and reap the benefits from the ongoing globalization trend is not enough; this must be accompanied by adequate social policies –better opportunities to acquiring human capital– to assure that the poor are not left behind. Not making progress in improving income distribution could undermine public support for the reform process, jeopardizing its continuance through time and risking social unrest and major setbacks or worse, reversals.

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APPENDIX
TABLE A.1
VARIABLE DEFINITIONS AND SOURCES

Variable	Description	Source
Growth rate of GDP per capita	Annual GDP growth rate minus population growth rate, 1960–2005	World Bank, World Development Indicators 2007 and Penn World Tables.
Standard deviation of growth	Standard deviation of GDP per capita growth rate, 1960–2005	Own elaboration
GDP per capita 1960	Logarithm of GDP per capita, on Purchasing Power Parity Basis, in 1960	World Bank, World Development Indicators 2007
Average schooling years 1960	Logarithm of average years of schooling in 1960	Barro and Lee (2000)
Openness1	Logarithm of sum of exports and import of goods and services as percentage of GDP, 1960–2005	World Bank, World Development Indicators 2007
Openness2	Residual of regression of volume of trade over GDP on country size and dummy for oil exports, 1960–2005	Own elaboration
Financial development	Logarithm of credit to private sector over GDP, 1960–2005	Beck, Demirgüç-Kunt y Levine (2006)
Government consumption	Logarithm of government consumption over GDP, 1960–2005	World Bank, World Development Indicators 2007 and Penn World Tables
Government Consumption Vol.	Standard deviation of government consumption, 1960–2005	Own elaboration
Exchange rate overvaluation	Logarithm of real exchange rate overvaluation index, 1960–2005	Easterly and Levine (2002) using the methodology of Dollar (1992)
Exchange rate overvaluation Vol	Standard deviation of exchange rate overvaluation index, 1960–2005	Own elaboration
Black market premium	Black market premium on foreign exchange, 1960–2005	Easterly and Levine (2002)
Term of trade growth	Annual growth of terms of trade, 1960–2005	World Bank, World Development Indicators 2007
Term of trade volatility	Standard deviation of terms of trade, 1960–2005	Own elaboration
Inflation	Logarithm of annual inflation, 1960–2005	World Bank, World Development Indicators 2007
Inflation Volatility	Standard deviation of inflation rate, 1960–2005	Own elaboration
Landlock	Dummy variable taking value 1 for countries without access to the sea, 0 otherwise	Gallup and Sachs (1998)
Lnd100	Proportion of land area within 100 km of the seacoast	Gallup, Sachs and Mellinger (1999)
Constructed trade share (Frankel and Romer)	Logarithm of predicted trade shares computed from a bilateral trade equation with "pure geography" variables	Frankel and Romer (1999)
Legal origin	Dummy variable for legal origin of laws: German, French, Scandinavian, Socialist or English	La Porta, Lopez de Silanes, Schleifer and Vishny (1999)
Ethnolinguistic fraction	Ethnolinguistic fraction of the population	La Porta, Lopez de Silanes, Schleifer and Vishny (1999)
Fraction of the population speaking English	Fraction of the population speaking English	Hall and Jones (1999)
Fraction of the population speaking one of major languages of Western Europe	Fraction of the population speaking one of major languages of Western Europe	Hall and Jones (1999)
Distance from Equator of capital city	Distance from Equator of capital city	La Porta, Lopez de Silanes, Schleifer and Vishny (1999)

TABLE A.2
ROBUSTNESS CHECK FOR ECONOMIC GROWTH EQUATIONS
Dependent Variable: GDP per capita Growth (PPP)

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Institutions	0.0098** (2.37)	0.0097** (2.35)	0.0104** (2.38)	0.0089*** (2.24)	0.0089*** (1.87)	0.0091** (2.26)	0.0089*** (1.93)	0.0095** (1.97)	0.0088** (2.13)	0.0093* (2.18)	0.0095** (2.10)	0.0113** (2.10)	0.0080*** (1.85)
Others Controls:													
GDP per capita 1960	-0.0174* (-6.15)	-0.0172* (-6.04)	-0.0178* (-5.84)	-0.0172* (-6.55)	-0.0171* (-5.80)	-0.0173* (-6.13)	-0.0175* (6.08)	-0.0177* (-6.10)	-0.0170* (-5.79)	-0.0170* (-5.56)	-0.0177* (-6.48)	-0.0188* (-5.80)	-0.0173* (-6.31)
Average schooling years 1960	0.0070* (3.59)	0.0068* (3.21)	0.0069* (3.21)	0.0068* (3.55)	0.0072* (3.03)	0.0068* (3.04)	0.0065* (2.64)	0.0066** (2.47)	0.0061* (2.66)	0.0061** (2.54)	0.0066* (2.64)	0.0058** (2.17)	0.0062** (2.52)
Openness1	0.0028 (1.15)	0.0024 (0.86)	0.0023 (0.79)	0.0027 (0.97)	0.0027 (0.97)	0.0016 (0.53)	0.0016 (0.53)	0.0002 (0.04)	0.0002 (0.04)	0.0002 (0.04)	0.0014 (0.46)	0.0002 (0.05)	0.0020 (0.69)
Openness2													
Financial development	0.0061** (2.18)	0.0061** (2.16)	0.0059** (2.01)	0.0071** (2.42)	0.0063** (2.01)	0.0067** (2.23)	0.0084 (1.33)	0.0074 (1.11)	0.0079 (1.37)	0.0073 (1.13)	0.0072 (1.07)	0.0081 (1.34)	0.0095 (1.52)
Government consumption			-0.0020 (-0.54)								-0.0020 (-0.61)	-0.0021 (0.65)	
Exchange rate overvaluation	-0.0083** (-1.99)	-0.0092*** (-1.87)	-0.0084*** (-1.68)	-0.0083** (-2.03)	-0.0079*** (-1.79)	-0.0079*** (-1.84)	-0.0076*** (-1.69)	-0.0083*** (-1.64)	-0.0078*** (-1.79)	-0.0079*** (-1.82)	-0.0077*** (-1.71)	-0.0073*** (-1.64)	-0.0072*** (-1.61)
Black market premium		0.0019 (0.59)	0.0008 (0.22)					0.0018 (0.54)					
Term of trade growth	0.0886 (1.05)		0.0872 (0.92)				0.0789 (0.92)						
Endogenous variables													
Landlock					-0.0004 (-0.10)								
Lnd 100						-0.0011 (-0.29)							
Instruments:													
Constructed trade share	No	No	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Legal origin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnolinguistic fraction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F. P. S. E.(1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
F. P. S. W. E.(2)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Distance(3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
R-squared	0.67	0.66	0.65	0.67	0.66	0.67	0.65	0.71	0.62	0.62	0.68	0.68	0.67
Number of observations	72	71	71	73	71	73	71	73	74	74	75	75	75

Notes: *t* tests are in brackets. *, **, *** Significant at 1%, 5% and 10% respectively.
 (1) Fraction of the population speaking English. (2) Fraction of the population speaking one of the major languages of Western Europe. (3) Distance from Equator of capital city.

TABLE A.3
ROBUSTNESS CHECK FOR GROWTH VOLATILITY EQUATIONS
 Dependent Variable: Std. Deviation of GDP per capita Growth

	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Institutions	-0.0082** (-2.34)	-0.0076** (-2.04)	-0.0075** (-1.99)	-0.0110* (-4.45)	-0.0118* (-5.60)	-0.0170** (-2.02)	-0.0159** (-1.94)	-0.0104* (-5.40)	-0.0095* (-4.21)	-0.0108* (-5.10)	-0.0105* (-5.42)	-0.0109* (-4.86)	-0.0135* (-2.87)
Others Controls:													
Financial development	-0.0040 (-1.08)	-0.0041 (-1.11)	-0.0039 (-1.04)			0.0097 (0.80)	0.0083 (0.74)						
Government consumption			0.0058 (1.21)					0.0045 (0.96)	0.0049 (1.00)		0.0045 (0.95)		
Exchange rate overvaluation	0.0188* (3.42)	0.0182* (3.31)	0.0181* (3.17)	0.0186* (2.76)	0.0200* (3.61)	0.0217* (3.00)	0.0219* (3.00)	0.0194* (3.79)	0.0170* (3.02)	0.0219* (3.82)	0.0194* (3.79)	0.0208* (3.74)	0.0182* (2.68)
Inflation	-0.0002 (-0.12)	-0.0002 (-0.11)	-0.0002 (-0.11)			0.0015 (0.77)			0.0008 (0.53)				
Openness1	0.0035 (1.01)	0.0026 (0.75)	0.0023 (0.64)			0.0121*** (1.75)	0.0102 (1.58)	0.0071*** (1.71)	0.0078*** (1.65)		0.0070*** (1.66)		
Openness2										0.0057 (0.91)			
Term of Trade Volatility		0.0001 (0.75)	0.0001 (0.89)	0.0001 (0.90)		0.0001 (0.58)			0.0001 (0.53)				
Government Consumption Volatility				0.0641 (0.67)									
Inflation Volatility				0.0004 (-0.79)									
Instruments:													
Constructed trade share	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Legal origin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Ethnolinguistic fraction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
F. P. S. E. ⁽¹⁾	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes
F. P. S. W. E. ⁽²⁾	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Distance ⁽³⁾	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
R-squared	0.52	0.53	0.54	0.48	0.45	0.31	0.35	0.49	0.50	0.44	0.49	0.46	0.43
Number of observations	74	73	73	84	85	74	73	76	75	82	76	85	85

Notes: *t* tests are in brackets. *, **, *** Significant at 1%, 5% and 10% respectively.

(1) Fraction of the population speaking English. (2) Fraction of the population speaking one of the major languages of Western Europe. (3) Distance from Equator of capital city.