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Reform, Growth and Slowdown: Lessons from Chile

Rodrigo Vergara

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Professor of Economics at the Catholic University of Chile and Center of Public Studies, Santiago de Chile. E-mail: rvergara@cepchile.cl. Website http://www.cepchile.cl/.

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Reform and Growth: Lessons from Chile

Summary

In the mid-seventies Chile began a large-scale economic reform process, which, after some initial setbacks, led to rapid economic growth in the mid-eighties -- averaging 7 percent per year from 1984 to 1988. The paper describes and analyzes Chile's reform and growth experience and suggests some lessons for emerging countries currently initiating or in the middle of economic reform processes.

The Asian crisis was the trigger for Chile's first recession in fifteen years, since when growth has resumed but at much lower rates than before. The paper also explores the possible explanations for this slowdown in economic growth and draws lessons for emerging countries in terms of long lasting growth policies.

1. Introduction

About three decades ago the Chilean economy began a process of deep economic reform. In the 1960s and early 1970s Chile had a closed economy with heavy state intervention. Import tariffs were on average 105 per cent with a high variance – ranging from 0 per cent on some products to 1000 per cent on others. Copper represented more than 80 per cent of total exports. Price distortions were enormous with absolutely no link between domestic relative prices and international prices (See Harberger, 2001).

Government intervention was not only related to heavy regulation, taxes, tariffs, price controls, minimum wages, subsidies and the like. The state had also a significant weight in the economy in terms of ownership. It controlled all public utilities, copper companies and many other enterprises. Hachette has estimated that in 1973 the state owned 600 companies, which represented about 40 per cent of total Chilean GDP (in terms of value added). A massive process of expropriation was implemented in the early 1970s, which also produced uncertainty about property rights.

In such an environment it is not a surprise that investment, saving and growth were very modest. Industry was based on an import substitution strategy with no incentives to create new firms, innovate and improve efficiency. As there was uncertainty about property rights, there were no incentives to invest. Chile was a stagnant economy, not very different from most Latin American economies. On the other hand, inflation was high (it reached its peak of 500 per cent in 1973). But high inflation (two digits) was, at that time, considered a normal state of things.

In the mid-1970s Chile started its process of economic reform. A group of mostly Chicago-educated young people took over the economic program of the dictatorial government and decided to implement radical (by the standards of those days) free-market economic reforms.[1] This was done in the midst of an economic crisis, which was a consequence of both the collapse of the previous economic system and a world economic slowdown (with a significant impact on Chile's terms of trade) as a consequence of the oil shocks.

At the beginning the results were impressive. After the recession of 1975, the economy grew 6.8 per cent on average during 1976–81. But then, Chile suffered the worst recession since the great depression. GDP fell 16 per cent in 1982–3 and unemployment climbed to 30 per cent of the labor force. Two causes have been mentioned to explain this recession. First, the world economic recession of the early 1980s. The huge increase in international interest rates, induced by the very tight monetary policy in the United States, had a devastating effect over Chile and the rest of Latin America. Second, there were clearly some policy mistakes that contributed to the magnitude of the recession. In particular, there was not enough banking supervision. The crisis hit banks, which went under. The banking crisis made things much worse. On the other hand – from a macroeconomic perspective – the authorities watched passively a massive real exchange rate appreciation and huge current account deficits (in 1981 the current account deficit reached 14.5 per cent of GDP) without taking any measure to correct these.

In 1984, Chile started a long period of economic growth, not seen before in its history. Its economy grew at an average rate of 7 per cent a year for fifteen years (Table 1, Figure 1).

[1] One of the most hotly discussed issues in Chile's economic reform has been the combination of an authoritarian government and a free market economic program. This was not usual for Latin America, where most military governments were also very interventionists in terms of economic policy. Fontaine (1992) describes this combination as the "original sin" of the Chilean economic reform process. He argues that when, in 1990, the free market model was adopted by the new democratic authorities, the sin was expiated and the model became legitimized (1992).

This was an outstanding achievement which produced a massive change in the standards of living of the population (Table 2 shows social indicators).

Unfortunately, this economic boom period seems to be over by now. For the first time in a decade-and-a-half, Chile had a recession in 1999. GDP fell 1.1 per cent that year and, although growth resumed in 2000, it has not come back to its high levels since then. Again, external factors had something to do with this economic slowdown. The Asian crisis and the decline of external capital flows to emerging economies had a negative impact over Chile. But there were also internal causes. Indeed, at some point Chileans thought that the process of reforms had been completed and there was nothing else to do but just wait and grow. One of the main theses of this paper is that the reform process is a continuous one. It is true that at the beginning the most visible and obvious reforms are carried out. But if countries stop reforming (or modernizing), at some point growth will go back to a more modest level. This is not to say that countries can grow forever at 7 per cent. We all know that there is a natural convergence process. But at the per capita GDP level that Chile has at this moment, there is no reason to think that the economic slowdown is just due to the natural convergence process.
The purpose of this paper is to draw lessons from the Chilean economic reform process. These lessons are divided in two groups. First, lessons from the initial period of reform. The paper discusses what could have been done differently and what can be learned by countries currently embarked on this type of reforms (the so-called first generation of reforms). Second, lessons from the latest period, when an economic slowdown has occurred. Here we put more emphasis on the so-called second or third generation of reforms.

The paper is organized as follows. The second section contains an analysis of the major reforms that Chile has undertaken in the last three decades, an overview of the results and some practical lessons. In the third section, the slowdown of the late 1990s is analyzed in terms of productivity growth. We analyze productivity growth for a number of countries and draw some conclusions for Chile and other emerging economies. Finally, section four presents the conclusions.

Table 1
Chile main macroeconomic indicators, 1974–2001

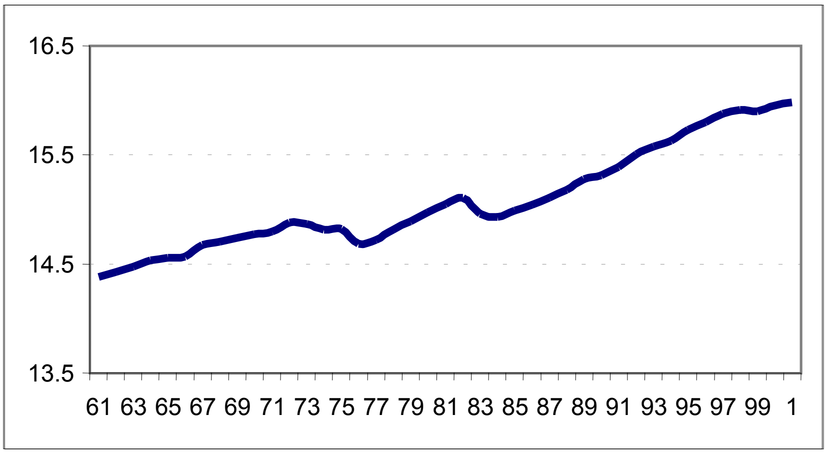
	1974	**1975**	**1976**	**1977**	**1978**	**1979**	**1980**	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**
1. GDP growth	1.0	-13.3	3.2	8.3	7.8	7.1	7.7	6.7	-13.4	-3.5	6.1	3.5	5.6	6.6
2. Unemployment rate (annual average)*	N/a	14.9	12.7	11.8	14.2	13.6	10.4	11.3	19.6	14.6	13.9	12.0	12.3	11.0
3. Gross fixed capital formation (% real GDP)	18.9	16.7	13.8	15.2	16.5	17.7	20.9	23.2	15.8	13.7	16.3	17.7	17.1	19.6
4. National saving rate (% nominal GDP)	N/a	9.5	16.9	13.8	15.3	16.7	19.3	14.2	4.9	6.9	6.5	7.8	11.5	17.3
5. Current account deficit (% GDP)	0.5	6.4	-1.4	3.9	6.8	5.6	7.1	14.5	9.0	5.5	10.8	8.6	6.7	3.6
6. Real exchange rate (1986=100)**	N/a	n/a	n/a	57.1	68.1	70.2	60.8	52.9	59.0	70.8	74.0	90.9	100	104.3
7. Inflation (CPI, Dec.–Dec.)	369.2	343.3	197.9	84.2	37.2	38.9	31.2	9.5	20.7	23.1	23.0	26.4	17.4	21.5
8. Fiscal balance (central government, % GDP)	-5.4	-2.0	4.0	0.4	1.6	4.8	6.1	0.8	-3.4	-3.0	-4.3	-2.6	-2.1	-0.2
9. Terms of trade (1986=100)	225.9	121.4	132.6	122.3	120.9	134.7	132.7	122.3	112.1	114.3	107.6	99.9	100	109.8
10. Real (in UF) interest rate on 90-days deposits	N/a	n/a	11.6	15.5	17.5	14.4	8.4	13.1	12.0	7.8	8.4	8.2	4.1	4.3

	1988	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
1. GDP growth	7.3	10.6	3.7	8.0	12.3	7.0	5.7	10.6	7.4	7.4	3.9	-1.1	5.4	2.8
2. Unemployment rate (annual average)*	9.9	8.0	7.8	8.2	6.7	6.5	7.8	7.4	6.5	6.1	6.3	9.8	9.2	9.1
3. Gross fixed capital formation (% real GDP)	20.8	24.5	24.2	22.4	24.7	27.2	27.4	30.6	31.0	32.2	32.2	26.9	26.6	26.5
4. National saving rate (% nominal GDP)	22.3	23.3	23.2	22.3	21.5	20.9	21.1	23.8	21.2	21.6	21.2	21.8	21.9	20.5
5. Current account deficit (% GDP)	1.0	2.5	1.6	0.3	2.3	5.7	3.1	2.1	5.1	5.0	5.7	0.1	1.4	1.4
6. Real exchange rate (1986=100)**	111.2	108.6	112.7	106.4	97.6	96.9	94.2	88.9	84.7	78.2	78.0	82.3	86.0	96.5
7. Inflation (CPI, Dec.–Dec.)	12.7	21.4	27.3	18.7	12.7	12.2	8.9	8.2	6.6	6.0	4.7	2.3	4.5	2.6
8. Fiscal balance (central government, % GDP)	0.2	1.3	0.8	1.5	2.3	2.0	1.7	2.6	2.3	2.0	0.4	-1.5	0.1	-0.3
9. Terms of trade (1986=100)	125.9	124.3	116.5	116.0	112.3	108.6	122.2	139.8	121.6	123.6	116.8	115.5	114.8	104.8
10. Real (in UF) interest rate on 90-days deposits	4.6	6.8	9.4	5.4	5.3	6.4	6.4	5.9	6.9	6.4	9.5	5.9	5.2	3.7

n/a – not available
* Change in methodology in 1992
** An increase in the index means depreciation of the local currency
Source: Central Bank of Chile

Figure 1

log GDP



Source: Central Bank of Chile

Table 2
Chile: Social Indicators

	1970	1999
Life expectancy at birth (years)	64	75
Death probability before one year of age (%)	8.2	1.0
Illiterate population (%)	11	4.6
Drinking water (%)	66	99
Telephone lines (per 1,000 inhabitants)	37	207
Automobiles (per 1,000 inhabitants)	16	83.4

Source: Central Bank of Chile

2. Economic reforms in Chile

The reforms initiated by the new economic authorities in the mid-1970s covered many areas. It is not the purpose of this section to make a comprehensive analysis of each reform, but to mention some of them, their main results and lessons. Specifically, we will talk about the public sector reforms, trade liberalization, financial sector reform, pension reform and central bank independence. There were many other areas in which significant reforms took place, such as education, health, regulation of public utilities, infrastructure, etc. All of them were very important in producing the so-called golden age of economic growth in Chile. However, for reasons of space it is not possible to include all of them in this paper.[2]

2.1. Public sector reforms

Public sector reforms can be divided into three types of reform:

- Rationalization of public spending
- Privatizations
- Tax reform

[2] For a comprehensive analysis of the whole process of economic reform in Chile, see Larraín and Vergara, eds. (2001).

Rationalization of public spending

A chronic problem of Chilean economic policy had been the large and persistent budget deficits. The basic problem was, of course, the lack of fiscal discipline, which collapsed in 1971–3, when on average the budget deficit of the non-financial public sector was 23.4 per cent of GDP. The peak was reached in 1973 at 30 per cent of GDP. Hence one of the basic measures was to adjust public spending in basically three areas: public investment, public sector wages and the elimination of most of the subsidies implicit in the operations of the state-owned companies. In 1974 the deficit was reduced to 5 per cent of GDP and in 1976 there was a surplus of 2 per cent of GDP.

However, the problem with the budget was not only the lack of fiscal austerity, but also a complete chaos in the administration of public spending. Indeed, there were no clear responsibilities in terms of spending, and in practice no one knew exactly what was going on with the public finances. In 1975, the new organic law on the "financial administration of the state" was approved. According to this, only the executive branch is responsible for proposing the budget for the year (the estimates of both revenues and spending) and Congress cannot increase spending. It only can approve the proposal of the Executive or, if it considers that public spending is too high, propose its reduction. All public debt issue must be approved by the Budget Office and has to be in line with the approved budget. There is some flexibility in the allocation of resources within the different areas of the state, but there is an absolute ceiling for public spending provided for by the budget.

This new institutional framework established clear responsibilities in the administration of the budget and allowed the government to control spending (see Larraín and Vergara, 2001).

Privatizations

There were three rounds of the privatization process in Chile. The first (1974–83) was aimed at returning the assets that had been expropriated to the previous owners. It involved for the most part farms and some industries. In addition, the government privatized enterprises that had been acquired by the state during the government of President Allende. These included mostly industrial enterprises and banks. In this first phase state-owned enterprises were reduced in number from 596 in 1974 to 48 in 1983. However, as the enterprises that remained in state hands were bigger than those privatized, their total value added was only reduced from 39 per cent of GDP to 24 per cent of GDP (table 3).

This first phase ended abruptly with the 1982–3 crisis. Several companies that had been privatized, including the largest two banks, failed, and the government took them over. As mentioned in the introduction, one of the factors behind the banking crisis was very lax banking regulation and supervision.[3]

In 1985, the second round of privatization was launched. This included the privatization of public utilities plus the re-privatization of companies that had returned to government hands during the crisis. The share of state-owned enterprises in GDP in terms of value added declined to 13 per cent in 1989. There exists a substantial amount of literature regarding this second round of privatization. Some authors claim that this process was a total success, while others maintain that it lacked transparency and that the privatized companies could have been sold at a much higher price. What is clear, in any case, is that these companies have invested heavily since privatization and that the services provided to the

[3] The owners of the failed banks were at the same time the owners of the failed companies. Loans from the banks to these companies surpassed all legal limits.

consumers have improved significantly (Hachette and Luders, 1992). They have been among the most dynamic companies in a very dynamic environment.

The third round began in 1990 and comprised basically infrastructure (through concessions) and water companies. By 1998 the share of public enterprises in GDP had fallen to 9 per cent. Currently, the most important state owned enterprises are CODELCO, a copper company, a state owned bank and the oil company.

Table 3
Public sector reform
Privatization of public enterprises

	1973	1983	1989	1998
Value added (% of GDP)	39	24	13	9

Source: Hachette (2001)

Tax reform

Chile has had two major tax reforms in the last three decades. In 1975, the value added tax was introduced at a flat rate (currently 18 per cent) and with very few exceptions (most importantly education and public transportation). Currently about 50 per cent of tax revenues come from the value added tax.

The second major tax reform came in 1984, reducing drastically the corporate income tax (currently at a flat rate of 16 per cent) and integrating this tax with the personal income tax. This means taxes paid at the corporate level are credited towards one's personal income tax.

Hsieh & Parker (2001) show that the reduction in the tax rate on retained profits contributed to the Chilean investment and growth boom. Bennett et al. (2001) argue that the tax structure had a positive and significant effect on saving. Additionally, tax evasion in Chile, estimated at around 22 per cent of potential tax revenues, is the lowest in Latin America and not very different from many developed countries (see Barra and Jorrat, 1999).

2.2. Trade liberalization

In 1974, Chile initiated a unilateral strategy of trade liberalization. The strategy consisted in reducing tariffs independently of what other countries did, so as to converge on a low and flat rate. By 1979 that rate was 10 per cent (Table 4). After the crisis of the 1980s, there was some attempt at protectionism and tariffs increased marginally. However, starting in the mid-1980s the process of tariff reduction was resumed. Currently the average tariff is 5 per cent. However, as Chile signed in the 1990s several bilateral free-trade agreements, tariffs remain low but are not uniform.[4]

The effect of trade liberalization has been a significant increase in exports, which went from USD 1bn in 1970 to close to USD 18bn currently (Figure 2), despite the fact that the prices of main export products (especially copper) have declined in real terms.

The other major effect has been a diversification of exports. The share of copper in total exports declined from 76 per cent in 1970 to 38 per cent in 2001, while non-traditional exports have increased their share in total exports from 10 to 38 per cent (figure 3).

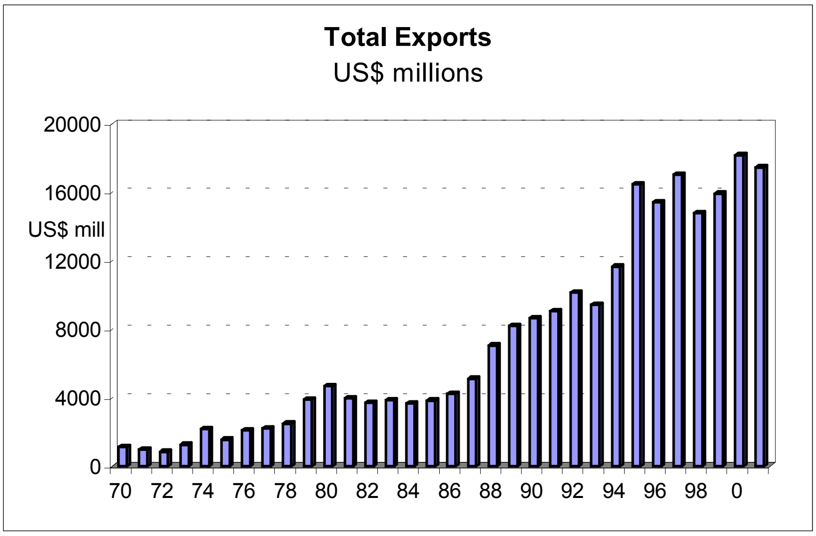
[4] In the case of countries with which Chile has signed free trade agreements, tariffs are zero for many products. There are also a few agricultural products that carry high tariffs.

Table 4
Average tariffs

1973	105%
1979	10%
1991	11%
2000	5%

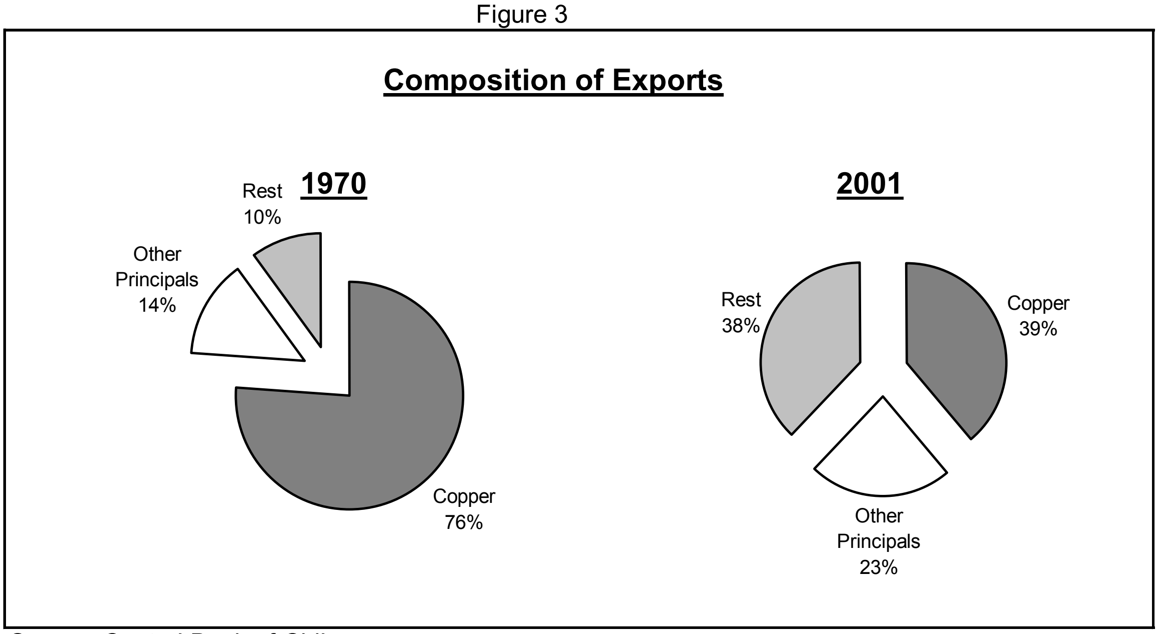
Source: Central Bank of Chile

Figure 2



Source: Central Bank of Chile

Figure 3



Source: Central Bank of Chile

2.3. Financial sector reform

In the mid-1970s, Chile initiated a process of financial liberalization. State-owned banks (with one exception) were privatized. Interest rates, previously set by the government, were liberalized. Reserve requirements were lowered. The scope of banking business was widened. Banks became involved in a variety of business activities, which they had never performed before. People who did not have any banking experience became bankers. At the same time they were owners of major companies in the country. As supervision was very lax, they used banks to lend to their own companies.

On the other hand, although the government liberalized the market, it soon became clear that it would protect the depositors if a bank failed. Indeed, in 1977 a major bank failed and the government backed all deposits. This, of course, created a serious moral hazard problem.

At the beginning everything looked very well, except that interest rates remained high during the whole period. In the early 1980s the world recession and domestic policy mistakes produced a slowdown in economic activity. Profits declined and it became difficult to serve the debt with the banks. Companies rolled over and asked for more credit in a situation which could be described as distress borrowing. As the owners of banks were the same as the owners of the companies, old credits were rolled over and new credits were granted. On the other hand, depositors continued lending to banks on the premise that there was an implicit state deposit insurance. Everything collapsed in 1982–3. In January 1983, the government took over four banks and four other financial institutions. About 50 per cent of total bank credit came under government control.

The cost of the banking crisis was enormous.[5] The lesson was that banking was not like any other sector in the economy. Banking supervision was strengthened and a new banking act was introduced in 1986. Today, banking supervision in Chile is considered one of the best in emerging economies. Despite the recession and slowdown of the late 1990s, the banking sector remains very strong.

Financial deepening, as measured by the ratio of various monetary aggregates to GDP, has increased significantly. For instance, M3 has increased from 14 per cent of GDP in 1970 to 48 per cent of GDP in 2001 (Table 5).

Table 5:
Financial liberalization
(% of GDP)

	M3	M7
1970	14%	n/a
1980	25%	24%
1990	28%	54%
2001	48%	89%

Source: Central Bank of Chile

2.4. Pension reform

In 1981, Chile adopted an individual capitalization pension system. This means each person saves a certain percentage of his/her salary (with a ceiling) for his/her retirement in an individual account. The funds in an individual account are administered by a private company. Individuals can freely move their funds among different private companies if they think that their funds are not properly administered. These companies are regulated and

[5] Eyzaguirre and Larrañaga (1990) estimate the total cost at about 25 per cent of the 1990 Chilean GDP.

supervised. For instance, there are restrictions as to the composition of their portfolio, so that a specific level of diversification is enforced.[6]

Pension funds have increased persistently over the previous two decades and currently approach USD 35bn, or more than 50 per cent of GDP (Table 6 and Figure 4).

Private pension funds have been key players in the growth of the financial sector in Chile, especially in the development of the long-term market. Chile is one of the very few emerging economies that have a long-term market denominated in their own currency. Bonds and mortgages with maturities of twenty years and more are the norm. Without the pension system it would have been difficult to achieve this level of development. It is also important to mention that private pension systems of the Chilean type have been adopted in a number of Latin American and Eastern European countries.

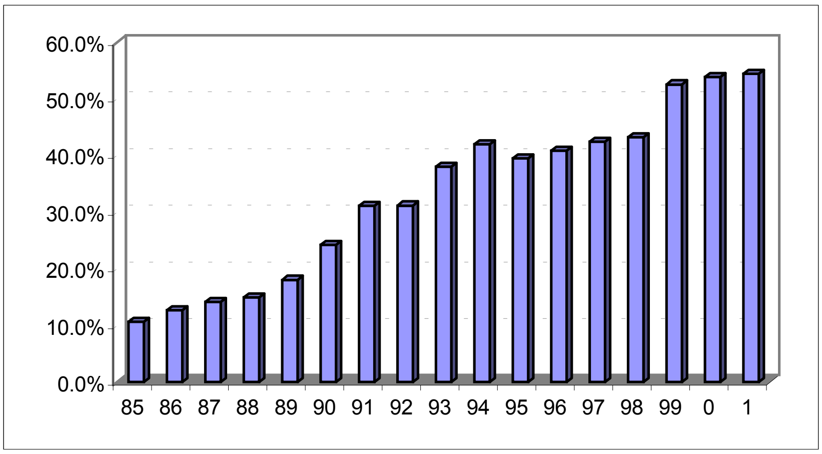
Table 6:
Pension reform
Basic Data
December 2001

Total fund	USD 34,307m
Number of affiliates	6,427,391
Annual Real Return (July 1981 – December 2001)	10.70%

Source: Central Bank of Chile

Figure 4

Pension Fund
(% of GDP)



Source: Superintendencia de AFP.

2.5. Central bank independence

Chile had a long tradition of high inflation, even longer than most Latin American countries. That is why in 1989 a new law giving independence to the Central Bank was

[6] There are at least two reasons why it is reasonable to regulate these companies. First, the funds amount to mandatory saving. This means each individual is required by law to save in one of these companies for his/her retirement. In this sense, there is a sort of responsibility of the state regarding the prudent administration of the funds. Second, there are explicit state guarantees.

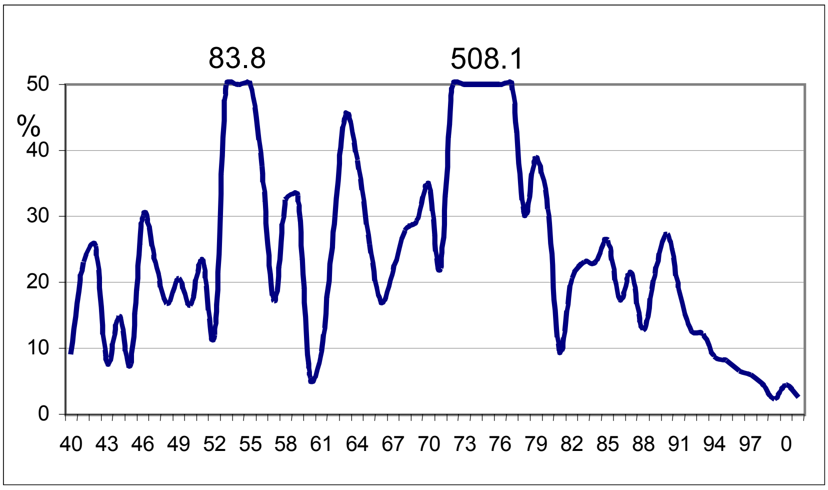
adopted. According to this new act, the board of the Central Bank consists of five members nominated by the president and approved by the senate. Each one has a 10-year term. Every two years one of the board members is changed. They are independent of the government (cannot be removed from their position). The Ministry of Finance has the right to participate in the board meetings but does not have any voting power.

The Central Bank's record in keeping down inflation is impressive (Figure 5). After the high inflation rates of the early 1970s, inflation in Chile remained in the 20–30 per cent range. The new autonomous central bank decided to implement inflation targets, starting in 1991. The purpose was to bring about a persistent and gradual decline in the inflation rate. As seen in Table 7, inflation targets have been met every year since 1991, with minor exceptions, such as 2000, when inflation at 4.5 per cent was somewhat above the 3.5 per cent target. The reason for this difference was the increase in the price of oil.[7]

Since 2000, a permanent target has been set (rather than on a year-to-year basis as was the case previously), which corresponds to a range between 2 and 4 per cent.

Figure 5

Inflation rate
(Dec.–Dec.)



Source: Central Bank of Chile

[7] In Chile the target is headline inflation rather than core inflation.

Table 7:
Inflation target (IT) and actual inflation (AI)
%

Year	IT	AI
1991	15–20	18.7
1992	13–16	12.7
1993	10–12	12.2
1994	9–11	8.9
1995	9.0	8.2
1996	6.5	6.6
1997	5.5	6.0
1998	4.5	4.7
1999	4.3	2.3
2000	3.5	4.5
2001	2–4	2.6

Source: BCCH

2.6. Main lessons of the reforms

From the Chilean experience, it is possible to derive several lessons for reforming countries. Among them, are the following:

- Reforms pay off. The results in Chile were impressive. When things stabilized after the crisis of 1982–3, the Chilean economy entered a golden period. Growth averaged 7 per cent for the next fifteen years, savings and investment boomed, unemployment fell and inflation was reduced to a 2–4 per cent level.
- It is important to be patient. In the case of Chile, high growth began just after the initial reforms. However, the crisis of 1982–3 showed that there had been some policy mistakes that needed correction. These corrections were implemented and high growth resumed, but this time for a much longer time. Being impatient and reversing the reforms when it seems that they are not working is the wrong reading of the situation. In the case of Chile, after the crisis the direction of reforms was maintained and they even deepened. For instance, banks and companies that returned to state hands after the crisis were soon after re-privatized.

- Financial regulation and supervision is key. Chile disregarded this issue in the first phase of reforms and paid dearly for it. It then corrected it with a new banking law and strengthened supervision.
- Public sector adjustment is essential. It would have been impossible to attain the outstanding economic performance that Chile achieved for many years without heavy fiscal adjustment. And this was done right away, with no delay.
- Tax and pension reforms are key in promoting investment and saving. The tax reform is associated with creating a favorable environment for investment, while the pension reform is instrumental in developing a long term capital market.

3. The economic slowdown: the role of TFP[8]

The crises that swept through Asia in late 1997 brought Chile's economic boom to an abrupt halt. Having grown at an average rate of 7.3 per cent per year in 1984–97, the Chilean economy has expanded by less than 3 per cent a year since then. So what happened?

[8] This section is based on Beyer and Vergara (2001)

One answer, often put forward by the authorities, posits significantly worse external conditions as the basic explanation. As Chile is a small open economy, when the world economy slows down, the demand for its exports declines, leading to lower export prices and volumes. If the price of oil rises at the same time, this small open economy, which imports nearly all the oil it consumes, will suffer even more. Things will become still worse if net capital flows to emerging economies suddenly dry up. Moreover, the argument follows, the proof of the strength of the Chilean economy is precisely the fact that it is still growing (although at low rates). This marks a difference from the previous external crises, which always produced an internal recession.

As documented in Beyer and Vergara (op. cit.), the problem with this explanation is that in the previous decade-and-a-half there were periods in which external conditions were no different from those prevailing in recent years and the economy was growing at much higher rates. Hence, although external conditions have clearly worsened, this provides only a partial explanation for the weak performance of the Chilean economy.

Chile's golden age in terms of economic growth was explained by a strong expansion in total factor productivity (TFP). This, in turn, is explained by the productivity effects of the reforms implemented in the 1980s and early 1990s. To some extent these have now been exhausted. Accordingly, what Chile now needs to reinvigorate economic growth is a new wave of reforms in areas were it has fallen behind — areas relating mainly to the "microeconomic foundations" of growth, namely institutions and their efficiency and efficacy. Another way to put it would be to say that new microeconomic reforms are needed to enhance the efficiency of the use of available resources.

If we view economic growth not as a linear process but rather as one marked by sporadic productivity shocks that lead to high growth for a period, before fading in convergence until the next productivity boost, then Chile would currently be in a phase in which the most recent productivity shock is contributing its last ammunition. If this is the case, the country needs a new shock to kick-start a new period of rapid economic growth. Of course this new boost could be luck – discovery of oil or a significant positive terms-of-trade shock, for instance. But, as luck is random, I prefer to consider a new productivity shock arising from economic policy initiatives aimed at improving economic efficiency. Improvements in these areas are likely to produce a new surge in economic growth in Chile. Furthermore, the deterioration in external conditions increases the need for policies to boost the country's currently sluggish growth rate.

3.1. Total factor productivity in Chile

Table 8 presents data on TFP growth in Chile over the last two and a half decades. TFP is measured as the residual GDP growth that is not explained by labor or by capital accumulation. There are no input quality adjustments. A productivity boom occurred in the second half of the 1970s in the wake of the first wave of structural reforms; this was followed by the crisis of the early 1980s. Recovery began in the mid-1980s, when there was a second productivity boom (associated with a second wave of reforms) which reached its peak in the first half of the 1990s. In the second half of that decade, productivity growth slowed down once more, and over the last four years (1998–2001) TFP growth has been nil.

These calculations clearly show that the key difference between this latest period (1998–2001) and the previous fourteen years of high economic growth (1984–97) is TFP growth. As Table 8 shows, capital's contribution to growth has been around 2.5 percentage points since the mid-1980s (1986–2000) and has not changed in recent years. On the other hand, labor's contribution to growth averages 1.3 points, but the share it accounts for has been declining in recent years. This is explained by a significant increase in unemployment since

1998. Finally, as mentioned above, TFP rose from two to three percentage points before falling back to a figure close to zero.

Table 8:
Chile – components of economic growth

	GDP growth	Contribution of: TFP	Labor	Capital
1976–80	6.8	3.2	2.4	1.2
1981–5	-0.1	-2.3	1.2	1.0
1986–90	6.5	2.2	2.0	2.2
1991–5	7.5	3.3	1.4	2.8
1996–2000	4.6	1.6	0.5	2.5
1998–2001	2.8	0.3	0.1	2.4

Source: Roldós (1997) and own estimates

3.2. TFP as an explanation for growth: cross country evidence

But is TFP an important source of economic growth? Or if you prefer, is economic growth affected by the quality of policies and institutions? To answer this question, a very simple exercise in growth accounting for the period 1980–2000 is needed. This consists of estimating the unexplained rate of GDP growth after controlling for investment and increases in employment. The data of the IMF collected in the International Financial Statistics is used. The labor share in GDP is supposed to be 0.6. Assuming a stock of capital that is 2.5 times output and a depreciation rate of 5 per cent, this implies an average rate of return of capital of 11 per cent, a reasonable return for the entire physical capital stock. Since there are no consistent data on employment for the sample, population data are used. TFP is the result of solving the following equation:

$$TFP_t = \hat{Y}_t - (r + \delta)I_t - s_L\hat{L}$$

meaning that TFP is the result of subtracting net investment weighted by the gross rate of return of capital (δ is the depreciation rate) and the rate of growth of labor weighted by the labor's share in GDP, from the rate of growth in GDP.

There is no doubt about the importance of TFP as an determinant of growth. Figure 6 draws the relationship between TFP and the rate of economic growth for the period between 1980 and 2000. Two thirds of the variance in growth rates is explained by variations in the rate of TFP growth. Of course this observation doesn't mean that factor accumulations do not play a role in explaining the differences in economic growth among countries. Since our estimations do not correct for human capital, it could be argued that our calculations for TFP exaggerate its actual importance. However it would be surprising if the inclusion of human capital reduced significantly the importance of TFP.[9] Chile shows a high rate of TFP growth that explains a significant portion of GDP growth. Here it is possible to notice the impact of the many reforms that have transformed Chile from a very closed and over-regulated economy into an open and competitive economy. To repeat these high rates of TFP growth is

[9] Indeed, for a smaller sample and the period 1970–91, Beyer (1997) corrects for human capital accumulation finding that, on average, TFP felt 0.48 percentage points, the decrease ranging from 0.04 to 1.01 percentage points.

precisely the challenge for Chile and, as the same graph shows, this is not an easy task. Many countries do have rates of TFP growth close to zero and indeed some do have negative rates of TFP growth.

To confirm the role that TFP plays in economic growth, I have analyzed country data on average growth in 10-year periods (1981–90 and 1991–2000). Since TFP is obtained for 107 countries, this allows the analysis of 214 periods. The top 10 per cent and bottom 10 per cent of the periods in terms of economic performance are chosen. Then the importance of TFP in explaining the differences in the rate of growth of GDP is compared. As table 9 shows, more than 80 per cent of the difference in growth rates is explained by differences in TFP growth.

The difference in the rate of growth in GDP among countries is explained almost exclusively by the differences in the rate of growth in TFP. Factor accumulation plays a relatively modest role. Beyer and Vergara (op. cit.) confirm this conclusion with other types of exercises. For instance, they rank countries according to per-capita income in 1980 (the first year of this analysis) using the Penn tables. They find that for both rich and poor countries, TFP differences are by far the major explanation of the rates of growth in each group.

Figure 6
TFP and growth: average growth 1980–2000

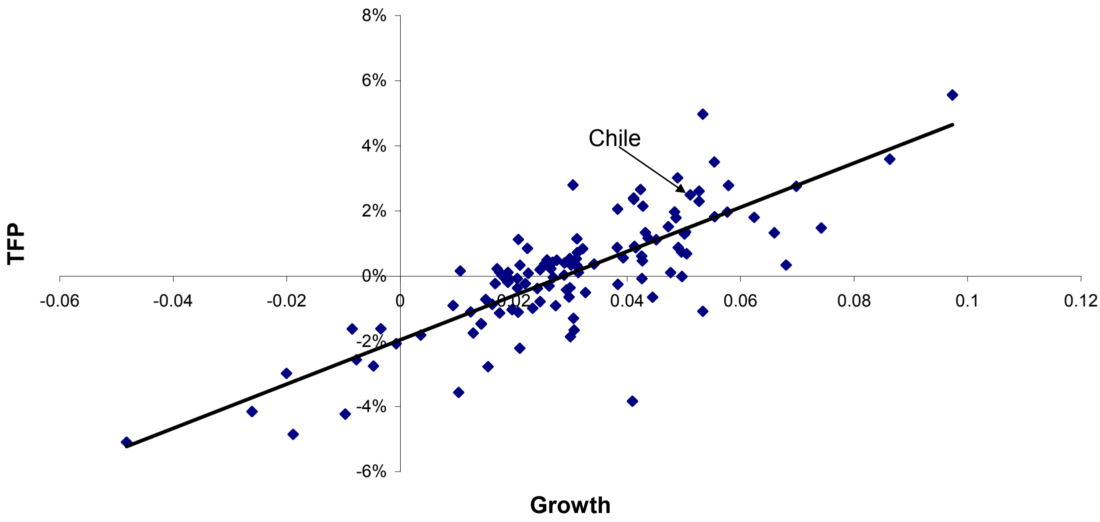


Table 9
The Sources of Growth: countries with highest GDP per capita

		Output	Factor accumulation	TFP
Highest periodic growth rates	Mean	4.57	3.48	1.09
Lowest periodic growth rates	Mean	0.50	2.79	-2.29
Difference in mean		4.07	0.69	3.38

3.3. TFP, policies and institutions

There is a large body of literature (for example, Easterly, 1993, and Krueger, 1990) pointing out that bad economic policies may affect economic performance heavily. A related strand in the literature targets the role that institutions play in the process of economic growth (for example, North, 1990). At the same time the discrepancies in levels of income and rates of economic growth among countries are far beyond the differences in factor accumulation. Therefore, it is worthwhile to explore in more detail the links between the rate of growth of

TFP and economic policies and institutions. Of particular interest is the role that microeconomic policies play in this story. The simple hypothesis that we are considering is that differences in the quality of these policies play a significant role in the rate of growth of TFP.

In the previous sections it was shown that countries that are unable to grow tend to exhibit negative rates of TFP growth. The differences in factor accumulation play a minor role in the variation of growth rates across countries. On the other hand, it is easy to verify that countries differ significantly in their economic policies and institutions. Moreover, these differences tend to persist in time. For example, changes in the effectiveness of government, in the legal system or in the quality of educational systems take a very long time to be put in effect and they remain broadly similar over considerable periods of time.

The positive or negative effect of policies and institutions on TFP may also last for very long periods of time. An inefficient government bureaucracy, for example, may hinder permanently efficiency gains. On the other hand, a state reform that substantially improves the efficiency of the state bureaucracy may generate an increase in the economic efficiency of an economy almost continuously. The same thing can be said of a once-and-for-all improvement in the quality of education. The increases in productivity associated with the entering of the "new" school graduates into the labor force will last until there is a complete replacement of the "old" labor force. This may occur even if the schooling level of the new labor is the same as that of the old labor force.

One of the problems faced by the empirical work on this subject is the lack of data on much of the economic policies and institutions we are interested in. However, in the last two decades there has been a systematic effort by different institutions trying to collect reliable data on the quality of economic policies and institutions. One problem is that much of the data relies on subjective measures of the quality of institutions. Another problem is that different indicators tend to be highly correlated within each data set. Probably this is not surprising, since most of the high-quality policies and institutions come in a package. So a country with a good regulatory framework probably has simultaneously a highly qualified bureaucracy and at the same times low levels of corruption. The reverse is true in the case of countries with a bad regulatory framework.

Gallego and Loayza (2001) consider four areas in which Chile could improve: quality of education, technological adoption, microeconomic restrictions and quality of governance. In the first three areas Chile is still far from the leaders, while in the fourth its position is good. The authors run a cross-section regression of growth depending on these and other variables and estimate that if Chile were to upgrade these four variables substantially, growth could increase by more than 2 per cent.

Beyer and Vergara (op. cit.) find that major gains in economic growth for a country like Chile may come from an improvement in its educational systems. Reasonable and reachable improvements may increase the rate of growth in Chile by 0.6 percentage points. Further gains are possible if the country's regulatory framework is improved. Although the country's policies are market friendly, they are less than optimal. Increasing government efficiency and more investment in R&D may produce additional gains in economic growth. Taking these results together, it is possible to conclude that reasonable changes in the country's policies and institutions may increase Chile's rate of growth by 1 to 1.5 percentage points.

3.4. Main lessons

The main lesson that can be obtained from the latest period of economic slowdown in Chile is that economic reform is a continuous process. Countries that think that they have done all necessary reforms, risk returning to a low-growth scenario. A dynamic world makes it necessary to be alert to changes and to be ready to upgrade institutions and policies all the time. Chile is in a better position than most Latin American countries. Chile made the reforms earlier, has a stable macroeconomic environment (low inflation and budget deficit) and a better climate for investment. This is the reason why it is still growing, although at a much lower rate than in the previous decade, while many of its neighbors are in recession. However, to come back to high growth rates, the dynamic reform process has to be resumed. This does not mean the first generation of reforms, which are already in place and have been successful, but rather a later generation of reforms aimed at improving the quality of human capital and of institutions. Having, on average, perhaps the best institutions in Latin America is not enough to grow at 6–7 per cent again. The good news from the Chilean point of view is that there is a growing consensus that new reforms should be implemented. The authorities have been involved in a process directed at identifying and implementing them. If this process is successful, sooner rather than later, high growth will resume.

Perhaps this kind of discussion can be seen as something too distant from the reality of many Eastern European and former Soviet Union countries that are in the first phase of reforms, still facing the costs of these reforms or just starting to see the benefits. But as time goes by, they will realize that long-term growth requires a process of long term reforms.

4. Conclusions

This paper analyzes the economic reform process that Chile has undertaken since the mid-1970s and draws lessons from this experience. Three decades ago Chile initiated a process of comprehensive economic reform. At that point in time Chile was a very closed economy with heavy government intervention. An import substitution and directed industrialization strategy (a way of picking the winners) – advocated by the ECLA (Economic Commission for Latin America) – had been adopted by Chile (and most Latin American countries) starting in the 1940s. The new economic authorities changed the economic model completely. Prices were liberalized, tariffs reduced, state-owned firms were privatized; there was a fiscal adjustment, a tax reform, a pension reform, financial liberalization and so on. Education, health, and other reforms in many areas were implemented, all with a free market orientation. Chile was the first country in Latin America to adopt this type of model, but in the late eighties and early nineties many countries followed the same path.

The results were a great success. In the mid-1980s, Chile entered what was later called the golden age of its economy. Between 1984 and 1997, Chile grew at 7 per cent on average per year, investment and saving boomed, inflation was reduced from around 25 per cent to a 2–4 per cent range, unemployment was significantly reduced and the number of people living under the poverty line fell from more than 40 per cent in 1987 to about 20 per cent in the late 1990s. However, these results took time to arrive. Indeed, just after the initial reforms in the mid-1970s, the economy boomed, but a few years later, in the early 1980s, it was in a deep recession. There were external and internal reasons for this recession. The latter included lax banking regulation and supervision. The cost of the banking crisis was huge and the lesson clear: financial liberalization has to come hand in hand with a proper financial regulation and a strong supervisory agency.

The Chilean experience also teaches us to be patient. Often the reforms take time to show their effects. Most likely, benefits come after the costs. However, in the end the balance is very positive. Chile, from a long-term perspective, is an example of a very successful reform process. The consensus on this matter in the country is so strong that the model was maintained in democracy despite the fact that it was implemented under a dictatorship.

Unfortunately, the golden age seems to be over. This year (2002) will mark the fifth consecutive year of modest growth in Chile (about three per cent per year). Although, this is not low compared to other Latin American countries, it is quite low when compared to Chile's recent attainments. This rather modest performance has opened the debate on what must be done to return to a high-growth path. Chile's economic success in the last years is associated to the application of sensible economic policies and the existence of a sound institutional environment. This paper suggests that if the country is able to keep and improve these policies and institutions, an additional period of high growth may be assured. The reform process can never be considered finished. In a dynamic world, countries that are not constantly upgrading their institutions and policies will sooner rather than later experience a slowdown in economic growth.

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