



2174 Macroeconomic Analysis

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Capital Controls in Chile in the 1990s

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Historical and Economic Context: Latin America during the 1970s and 1980s

The decade of the 1980s was one of the toughest decades in history for Latin American economies. Some Latin American economists call the 1980s “*La década perdida*” (the lost decade) because of the defaults, sudden stops, economic contractions and sharp increases in inequality and poverty in Latin American countries during this decade. It is important to understand what happened in this decade to better understand the situation of Chile’s economy in the early 90s.

Firstly, commodity prices during the 1970s increased sharply. This positive shock in the terms of trade can be modeled as an increase in productivity which leads to an increase in income. This increase in the terms of trade and increasing public investment as a result of the development model employed by many of the Latin American nations known as “Imports Substitution Model¹” Implied a strong increase in borrowing from American and European Banks. During the 1970s the international context was positive for Latin American nations to accumulate debt: high growth expectations, low international interest rates, high commodity prices and a high public spending. However, this did not last for long. In 1979, Paul Volcker became chairman of the Federal Reserve and increased the Federal Funds Rate from 11.2% in March 1979 to 20% in March 1980 aiming to curb inflation. These sharp increases can be observed in **(Figure 1)**. This tight monetary policy in the United States had strong implications for the Latin American economies. First, as demand plummeted, commodity prices decreased sharply, and international interest rates increased while a great number of the debt instruments in Latin America were indexed to some other benchmark interest rate. As a result of higher interest payments, the inability of generating budget surpluses and negative shocks in the terms of trade, there was a negative snowball effect that led to a series of defaults in the Latin American region during the 1980s. Chile was not the exception, in 1981 the country paid 1.3%

¹ The “Modelo de Sustitución de Importaciones” (Imports Substitution Model) was a model employed in several Latin American economies such as Mexico, Costa Rica, Argentina, Chile and Uruguay among others. This development model tried to specialize economies in products that were traditionally imported from European economies. The success of this model depended on cheap credit and high public spending. It proved to be unsuccessful and after the 1980s Latin America changed its development model towards more export-based one.

of its revenues as interest while in 1983, it paid 4.5% of its revenues. The country defaulted on its debt in 1983².

Economic Context: Chile

In 1975, after Pinochet had his power consolidated, the government adopted policies created by the Chicago Boys, which led Chile to free-market economics - reduction of tariffs, elimination of fiscal deficits, introduction of labor-market flexibility, liberalization of prices, privatization of 400 public companies. Three years had passed, and Chile gave up on monetary autonomy to fight inflation by creating the “Tablita” a fixed exchange rate relative to the dollar. Through the Tablita, the Chilean government would determine a pre-announced schedule of voluntary devaluations below the ongoing inflation. Between 1978 and 1982, Chile experienced a dramatic increase in total foreign indebtedness, which tripled in real terms throughout these years.

In 1982, Chile went through an economic crisis, there were drawdowns in reserves as pesos were being converted into dollars at the fixed exchange rate, which pressured the government into devaluing the currency although they said on the previous year that they would not do so. After the contraction that the Chilean economy suffered in the 1982 and 1983 due to the default, the debt crisis and the failed efforts to control inflation, the economy managed to rebound spectacularly and recover very fast from the crisis.

Moving forward 7 years, in 1990, there was a change in regime where the government in charge was a coalition between the center-left and the center-right parties, effectively setting up a democracy. This government set a crawling exchange rate band system with a band width of +-5% to the U.S. (United States) dollar. However, during this time, the Peso had been appreciating in real terms, developing a sense of unhappiness in Chilean exporters since they were losing competitiveness vis-à-vis the rest of the world, as a result of this, the central bank intervened in the foreign exchange market by buying foreign currency with Pesos, this way, increasing demand for the dollar and reducing the Peso’s relative price.

In 1992, the government widened the exchange rate band to +-10% and to 12,5% in 1997. Lastly, in 1998, the Chilean peso suffered three rounds of speculative attacks which led the central bank to hike the interest rates and massively intervene in the foreign exchange market,

² This time is different: Eight Centuries of Financial Folly. Reinhart, C. & Rogoff, K.

additionally, to enhance credibility, the central bank tightened the exchange rate band from 25% to 5,5%, by the end of august, one dollar was worth 474 pesos.

A constraint: The Impossible Trinity and the role of the URR

By the time of the elections, the Chilean economy was fully recovered and after years of strong and steady growth, it started to overheat. The central bank, which became independent by 1990, to prevent a rise in inflation, started to tighten its monetary policy. However, the effects were not those the central bank hoped for: if it was obvious that the domestic interest rate increased, this happened in a period in which the world rate was falling, and investors were more willing to lend to those countries that were experiencing a democratic transition. As a result, Chile experienced an even more severe surge of capital inflows. This situation created a vicious cycle that exacerbated the overheating Chilean economy: the more the central bank tried to keep the domestic interest rate high enough to fight inflation, the more foreign capitals kept on flooding the economy, driving up that same inflation that the central bank was trying to avoid.

At that time, the newly independent central bank was really committed to fighting inflation and even though monetary policy was primarily directed at controlling the rate of inflation, the central bank tried also to control the exchange rate. Again, the problem was that capital inflows were putting upward pressure on the demand for local currency, which resulted in pressure toward the appreciation of the Peso. In order to avoid further real appreciation, the central bank intervened with a sterilized intervention, buying dollars with local currency in the foreign exchange market, and at the same time issuing peso-denominated bonds to prevent an associated inflationary monetary expansion. This policy, however, was very costly for the central bank, which experienced a negative net worth.

It appears clear from this analysis that Chile was having a hard time maintaining the “impossible trinity” of autonomy over monetary policy, a fixed or managed exchange rate and free capital mobility.

Following its own belief that a managed exchange rate was the main objective to be pursued, the central bank decided to reinstate controls on capital inflows while keeping outflows free to move. So, when the Central Bank of Chile decided to have a managed exchange rate and capital restrictions (i.e. imperfect capital mobility), it gained autonomy over monetary policy and found its balance in the trilemma. Indeed, this trilemma did reveal itself stronger than ever during the 1990s. As we will analyze later, the consequence of not following this rule was to

be doomed to induce a financial crisis. This, for example was the case for the Mexican “Tequila Crisis” of 1993-94 and more importantly, the Asian financial crisis of 1997.

But why is this true? As we will see, the impossible trinity holds for two main reasons: firstly because, with perfect capital mobility, the elasticity of capital flows with respect to the differential between domestic and foreign interest rates becomes infinite. So, in this case, if the government allows the exchange rate to flow, it can control the money supply because it is not committed to buying or selling foreign exchange. Secondly, in case of a fixed exchange rate, the government can't sustain a money supply that would give an interest rate different from the world rate because that would produce an infinite excess demand or supply for foreign exchange reserves.

It is important to note that perfect capital mobility requires two conditions: that domestic and foreign assets are perfect substitutes and that there are no policy-imposed barriers to capital movements. Free capital mobility just refers to the latter. So, this means that the importance of the impossible trinity arises because, if there are no natural reasons that cause assets denominated in different currencies to be considered as imperfect substitutes, the government can only choose among two of the three options: free capital mobility, monetary autonomy and a fixed exchange rate. The exchange rate and the money supply are independent policy instruments only if there is imperfect capital mobility. Because the choice of one is constrained by the choice of the other, they cannot be chosen independently. When the Chilean government made its choice, the monetary policy, as we said before, found itself to constantly choose between domestic (economic activity and inflation) and foreign (the exchange rate) objectives. Theory suggested that one way to solve this dilemma would be to concentrate on just one of them, making sure that the other one is less pressing. Chile knew that having the exchange rate and the monetary policy as independent instruments required the presence of capital restrictions, but as natural barriers to capital declined, monetary autonomy tended to decrease. Those central banks that ignored this lesson and kept on pursuing domestic targets, lead to inconsistency between monetary policy and the exchange rate. On some degree, they overestimated the degree of monetary autonomy they had, given the level of financial integration with world capital markets (one of the reasons that led to the financial crisis of Mexico in 1994).

But what exactly Chile did to reinstate controls on capitals? The heart of its framework on capital controls was the Unremunerated Reserve Requirement (URR) also known as *Encaje*.

Implemented again in 1991, the URR served as an implicit tax on capital inflows: the shorter the terms of the capitals, the higher the tax. It was designed as an indirect, price-based measure. Initially, it required a 20% interest-free reserve deposit within the central bank every time new inflows of funds entered Chile. The central bank would hold those deposits for a period equal to the maturity of the loan. As an alternative, investors could pay an up-front fee equivalent to the interest cost of the reserve. In some sort of way, Chilean authorities tried to make the URR act as an asymmetric Tobin tax on capital inflows: a fixed percentage of the capital flow, independently of the duration of the loan. It is relevant to point out that the net or perceived cost of the URR during most of the decade may have been lower due to the continued appreciation of the real exchange rate. Indeed, during the first two years, investors had to undergo expensive and bulky bureaucratic processes to obtain central bank approval. However, things did not go as planned: investors, facing high costs, eventually tried and found ways to evade the controls. As an example, after the introduction of the *Encaje*, the central bank noted a shift in foreign capitals from loans to dollar-denominated deposits. This was reflected in the continual peaks and valleys in the power of the URR. In addition, use of trade credits, which never became subject to the URR, started to become popular throughout the period. (See **figure 19 as reference**)

For those reasons, the coverage of the URR has been partial in Chile. Its effectiveness may have been undermined by allowing substitution possibilities. Also, controls on capitals inflows were frequently tightened in Chile over the 1990s, suggesting a reduced effectiveness over time. The three major tightenings in terms of extension in coverage or increase in the rate happened in 1992, when the rate increased from 20% to 30%, then again in 1995 and 1996, in which the rate increased again up to a total of 40%.

In the end, the implementation of the URR in Chile was not straightforward, as agents always found ways to evade it.

The introduction of the URR was motivated by macroeconomic and prudential considerations. The URR was expected to expand the autonomy of Chile's monetary policy and so alleviate the policy dilemma arising from trying to pursue both domestic and foreign objectives. In addition, it was expected to increase the autonomy of monetary policy so that the effects of a monetary tightening would not affect the exchange rate much.

Push and Pull Factors, Sustained Interest Rate Differential & the Current Account

i) Push and Pull Factors

Latin America has historically been perceived as a volatile and even unstable region. Especially after the experience of the 1980s, investors were very reluctant to move their capital into the region. However, during the decade of the 1990s Chile became a very attractive destination for foreign capitals because of Push and Pull Factors. Firstly, one main Pull Factor was the newly constituted democratic regime. The new institutions and the legal security that came with it, made investors feel that Chile was a less risky place to invest vis-à-vis other Latin American countries that were still non-democratic or in between a transition which involved potential political turbulence. Secondly, the strong macroeconomic fundamentals observed in previous years³ boosted even more the investors' confidence to move their money to Chile. These strong macroeconomic fundamentals combined with a newly founded Central Bank independence were attractive Pull Factors that differentiated Chile from other countries in the investor's eyes.

However, not only were the Pull Factors important. One main Push Factor which influenced capital flows to Chile and other emerging economies, were the decreasing interest rates in the U.S. and other major economies as a result of expansionary monetary policy. After the 1980s, a decade in which the Federal Funds Rate was consistently above 5%, in the year 1990 it was necessary for the Federal Reserve to loosen its monetary policy in order to counter the recession in the U.S. This fact made investors seek higher returns in other latitudes such as Latin American Economies and the Asian Tigers⁴. These Factors discussed before are summarized in **Table 1**.

ii) The Sustained Interest Rate Differential & The Current Account

It is undeniable the pressure that interest rate differentials exerted on the Chilean economy across different periods. The crawling band exchange rate regime alongside with sizable inflation differentials, between Chile and the US, led in the begging of the 1980s to a real

³ For instance, these macroeconomic fundamentals were sustained and robust economic growth, moderated inflation, decline in poverty and a healthy job market.

⁴ The Asian Tigers are the four developed economies in East Asia: Singapore, Hong Kong, South Korea and Taiwan. These and other Southeast Asian economies suffered a strong financial crisis during 1997 which involved credit crunches, defaults and exchange rate depreciations.

appreciation of the peso. In the Pinochet years, a vicious cycle driven by inflation, regarding the appreciation of the peso, led to the protection of the exchange rate regime reliant on the rise of home interest rates.

The Chilean Central Bank, even though primarily focused on controlling inflation, also performed attempts to influence the real exchange rate. The quick real appreciation of the peso between 1985 and 1990, surpassing 20% in this period, led to challenges regarding the exporting capacity of Chile's economy. The medium-term sustained real interest rate differentials were exposing exporters to unpleasant losses regarding competitiveness. Between 1992 and 1997, the real interest rate differential between Chile and the US amounted to a yearly average of 5.2% (**Figure 11**). This process of real appreciation (**Figure 14**) continued during the 1990s leading to a deterioration of the Current Account towards a deficit ground, achieving a negative Current Account (CA) of 5,19% of GDP in 1993 and putting into question the soundness of the economy (**Figure 9 and 10**). The inwards capital controls were, however, unable to stop the capital flows coming to Chile. Despite this situation, the external imbalance did not trigger any effect on the sustainability of debt in the Chilean economy. The newly renewed democratic institutions created the institutional basis for an efficient fiscal framework.

In the 1990s, Chile achieved robust real GDP growth, around 8% and recording an even higher growth in the exporting sector, around 11%. At the same time, the curbing of inflation downwards was successful, although the downside to the Chilean economy was the remain differential between the domestic and the international interest rate.

After the Asian financial crisis, the exporting dependence of Chile towards Asia, accounting to one third of the total exports, alongside with a severe change in perceptions triggered by increased uncertainty, made Chile a good candidate for speculation. The substantial CA deficit and overvalued currency made capital controls useless in preventing several rounds of speculative attacks. The unsustainability of the 1990s CA deficit behavior made the following period of the 2000s (as theory predicts) a period of CA surpluses. The need to move from a deficit towards internal balance was still conditioned by wage indexation to the real exchange rate, not allowing the needed substitutability between the tradable and non-tradable parts of the economy.

In 1998, the Central Bank had to increase the domestic interest rate and intervene in the exchange rate market. The associated costs of these interventions were one of the explaining factors for the easing and later elimination of the capital controls.

The high domestic nominal interest rate combined with a controlled inflation, converging in the end of the decade of 1990 to the 3% target, made the real exchange rate in Chile achieve sizable annual rates, as recorded in 1990. The change in gross savings (as percentage of GNI) in the beginning of the decade of 1990s, passing from 14% in 1986 to 25% in 1990, accompanied with an increase in investment resulted in a destabilization of the external balance of the Chilean economy.

Terms of Trade

A period of high growth was interrupted in the late 1990s as more external shocks hit Chile. We are going to concentrate on the worsening of the terms of trade that the Chilean economy suffered especially from the contagion of the Asian, Russian and Argentinian crises of the 1997. We often refer to the terms of trade as a measure of a country's competitiveness.

If export prices rise relative to import prices, we say that there has been an improvement in the terms of trade; generally, this is a good indicator, signaling an improvement in living standards, as imported goods appear cheaper to citizens. On the other hand, a deterioration of the terms of trade happens when import prices increase relative to the exports, and so imported goods are perceived as more expensive. As one can imagine, terms of trade are much affected by the exchange rate and so, the domestic interest rate. *Ceteris paribus*, higher domestic interest rate should generate improvement in the terms of trade and vice versa.

Having this in mind, since the Central Bank became independent, it ran into conflicts with the Ministry of Finance whenever an increase in the domestic interest rate was on the table. If this did not bring Chile to suffer the Tequila crisis of 1994, difficulties started to arise in 1997-98: during 1994 the terms of trade were still very favorable especially because the exports in the Asian markets. What differentiated the Tequila crisis with what was happening in 1997 was that the deterioration of the external environment came when the economy was already overheating. This, in addition to speculative attacks on the local currency and the spread of the Asian crisis, resulted in a sharp slowdown of the economy as a whole. Following the contagion from the series of emerging market crises, the terms of trade fell 15.2% between 1997 and 1999. Keep in mind that roughly 33% of Chilean exports went to Asia; as the crisis put the Asian market into a recession, the share of Chilean exports to the Asian countries fell by 25%.

Looking closely at the tables, we see that for Chile there had been an improvement of the terms of trade between 1993 and 1995, if we analyze both the year by year and the original series;

this confirm the idea that Chile was not affected by the Tequila crisis. However, between 1996 and 1999 the terms of trade were severely hit and, in some way, never recovered to those levels seen in 1994 (**Figure 16**)

In 1996, Chile joined the MERCOSUR, deepening the trade relations with Argentina, Brazil, Paraguay and Uruguay. It is important to note that during the period between 1991 and 1999, the share that MERCOSUR occupied in world trade went from 11% to reaching almost 20% by the end of the period. The late entrance of Chile in this block can be explained by the country's hope to integrate other Free Trade Areas, especially the possibility to join NAFTA. However, the concise growth path of the neighboring Free Trade Area and increasing trade share made Chile join it. In the same year, Chile and Canada signed a Free Trade Agreement opening the so hoped possibility of the Chilean economy to trade with North American economies.

The most important exporting sector of Chile was associated with copper mining and transformations related to this raw material. The decrease in the real price of copper during the 1990s also has some explanatory power on the anomalies in the term of trade behavior (**Figure 12**).

In our analysis, it is important to remember what we said earlier: a higher interest rate should cause an improvement in the terms of trade. As the world approached the Asian crisis of 1997, Chile experienced abnormal high levels of interest rate (also due to the speculative attacks); now, one would have expected an improvement of the terms of trade, but that was not the case. The problem was that during those times of higher interest rates, the volume of exports fell so abruptly between Chile and the Asian markets that it outweighed the domestic rate spikes.

Sudden Stop

In 1999, the Chilean economy experienced the most severe sudden stop of Latin America. This new panorama and its inherent effects on the growth trajectory of Chile put into question the sustainability of the ongoing capital controls system (**Figure 10**).

In a general sense, sudden stops materialize due to systematic causes that disrupt the world perception towards emerging economies. Then the degree of development and the macroeconomic discipline determines what regions are more affected by the drop of capital inflows. Trough out the decade of 1990, the Mexican and Asian crisis started a process of

distrust regarding the inflows that were previously directed towards emerging economies. The Russian Crisis in 1998 had a strong effect on the capital flows moving towards emerging economies like Chile. Contagious effects started affecting the economic performance which can be related with high degree of trade openness of the Chilean economy.

In 1998, net capital inflows represented around 7% of the Chilean GDP, dropping to less than 1% in 1999. Chile entered in a recessionary period, however there was no substantial collapse in the financial sector. The response that the Chilean authorities adopted was focused on contracting aggregate demand in order to balance the sizable current account deficit. The set of policies used was successful in avoiding a major collapse.

Once again, the soundness of the financial system, that has been improved since the democratization of the country at the beginning of the decade, stopped possible multiplier effects that could arise from frictions in the financial market. At the same time the sound transmission mechanisms of monetary policy allowed that a contractionary monetary policy could make the external balance a quick process without dragging the economy to strong recessionary process of adjustment. The increase in interest rate differential was one of the roots of this policy response and was only possible due to the inexistence of liquidity risks from the government.

A strong debate arose, questioning if this was the best response. An alternative path could have been the adjustment through the relative prices, especially the real wages channel, that could have represented a smoother contraction of aggregate demand.

One important lesson that monetary authorities learned from this crisis was that interest rates hikes have non-linear effects on the economy. Unexpected adjustments occurred and overestimation of effects in private demand also occurred in this period. At the same time, a dangerous effect on the expectations of the private sector agents occurred. Credibility created in the short run came with a price, a more uncertain environment for economic agents to make their best choices. The sustainability of the crawling band was also more vulnerable in this crisis, arising from the increase in exchange rate risk that economic agents were subjected to.

Fiscal Policy

After the default in 1983, during the rest of the decade, the Chilean economy grew at rate of 6,32% per year on average. This meant that Aggregate expenditure was effectively recovering

after the downturn of 1982 and 1983. During the year 1988 before the plebiscite to decide the future of the country's political future, the Chilean regime implemented a fiscal reform which focused in reducing the Value Aggregate Tax (VAT) from 20% to 16% and adding a maximum on the income tax of 50%. However, in 1990 when democracy returned, most of these reductions were eliminated. These new tax increases meant an expansion on government revenues from 13,3% of GDP in 1990 to 15.2% in 1991. This can be observed in **Figure 6**.

This fiscal policy was consistent with what the newly elected government had planned: trying to increase the government's participation in the economy in order to try to reduce inequality, provide more public services and increase social spending. The government managed to do that, as can be observed in **Figures 4, 5**. Even though the newly elected government had this as one of its policy pillars, the Total Government debt of the country went from 37,4% of GDP in 1992 to 17,4% in 1995. This seems a priori like a contradiction; however, Chile grew at an average rate of 8,71% during these years as it can be observed in **Figure 2**.

It is important to remember that there are three ways of reducing the total debt of a country: via inflation, via tax increases or by economic growth. Chile in this case, reduced its debt by increasing taxes and growing rapidly (**Figures 2 and 6**). It is important to remember that along with democracy came Central Bank independence. This newly acquired independence meant that the Central Bank's focus now was on inflation and that legally, the Institution could not finance the government by using the printing press. This was an important event because central bank independence was not usual in Latin America in the 1990s. It was until the 2000s that central bank independence became widespread in this geographical area and even nowadays there are countries that have not managed to separate their central banks from the government's appetite.

Whilst taxes increased and growth rates were very high in the Latin American country, government expenditures increased. Private consumption was increasing, net investment was higher than in the previous decade and foreign direct investment grew sharply during the 1990s. Additionally, the government increased its expenditures on real terms. These facts implied a strong aggregate expenditure increase that led to higher borrowing needs which in turn, implied a deterioration of the Current Account. Hence, it can be argued that the increase in government consumption (measured in current U.S. dollars) worsened the current account deficit. However, it is important to point out that also during this decade, poverty almost halved from 38,6% in 1990 to 21,6% in 1998. This reduction in poverty can be observed in detail in **Figure 7**.

To conclude, it is worth mentioning the Unremunerated Reserve Requirement (URR) which was one of the main capital control mechanisms utilized by the Chilean government during the 1990s. This capital control method can be thought of as an asymmetric Tobin Tax⁵. This Tobin Tax can be considered asymmetric because it discriminates between inflows and outflows and does not penalize all spot conversions of one currency to the other⁶. It makes sense that this tax was thought to be asymmetric since the country had problems with inflows and not particularly with outflows. Even though the URR was not as significant as the VAT or Income tax in terms of government revenues, it also was part of the increase in taxation intended by the government whilst controlling capital inflows.

Labor Market

Throughout Chile's recent history, there have been some drastic regime changes and along with it came multiple political agendas taking place one after the other, which, alongside with external factors, can create an environment that is not adequate for a sustainable growth, posing a challenge for policy makers that must deal with such challenges.

One of the most relevant areas of an economy, especially during such times, is the labor market and its flexibility. It is not enough to know the unemployment rate of an economy, to know how healthy the labor market is. For one to better understand the reality of the labor market, it's of utmost importance to be in touch with its laws, how flexible it is intersectorally and intrasectorally, in other words, we must understand how easily works can climb the ranks within the same sector and how easily can one worker change sectors due to economic reasons. An economy that can be considered to have a mobile and flexible labor market is one that doesn't restrain firms a lot regarding their hiring and firing process. This will make each firm easily adjust to changes in the economy. However, it is also important to guarantee that workers have the means to acquire new knowledge in order to change firms or sectors altogether. Lastly, it is also recommended that workers can potentially achieve high wages in most sectors, to incentivize them to work hard in, and be attracted to, those same sectors in the economy.

As previously mentioned, Chile underwent some drastic changes, and the labor market is no exception. In order to briefly explain the chronological order of the changes in the main labor

⁵ A Tobin Tax is a kind of taxation which is applied on short-term currency transactions. It is levied on spot currency conversions with the intention of disincentivizing short-term currency speculation.

⁶ The Tax can be modeled as $T = \frac{r_{int}(i_{int+s})_{int}t}{(1-URR) \cdot D}$

laws, we shall make use of the data which was created by Víctor O. Lima and Ricardo D. Paredes in their paper “The Dynamics of the Labor Markets in Chile” (**Table 2**). In this table, it is important to note that the last changes made to the law were applied in 1991 and lasted until 2007. Before that the labor market underwent constant changes in its laws which does not help regarding expectations and safety of the Chilean people. Chile started from a point where firms were not able to fire their employees without cause and those who were fired with cause had to be compensated highly (very restricted labor market) and gradually adopted policies that caused the labor market to become more flexible. However, in 1991, as means to support the working class, Chile made some changes to their labor laws which made the firing process more bureaucratic and demanded the firms to compensate the workers they fired at a higher rate. These last changes caused the labor market to become less flexible than the previous years, effectively going the opposite direction regarding the policies adopted before.

One of the problems with a constrained labor market is the fact that, if the country loses competitiveness, for instance, a real appreciation of the currency, then firms that produce a tradable good and export it, will eventually start to make lower profits and may need to reduce their labor force in order to downsize it. Thus, these firms are now faced with two options, either fire workers and pay a compensation as the law states, which, in turn, will create greater costs, or keep the workers and slowly bleed out the firm as it is not efficient to keep the things running that way. Either way, this will decrease the overall welfare of society. Additionally, these workers, if fired, will now have to find a different job on a sector that produces a less tradable good, and depending on many variables such as unemployment benefits, re-education programs, easy creation of firms and other entrepreneurial activities, will define on how easily they can move sectors and how fast they can find a job, in other words, an economy with a flexible labor market will adjust their work force and decrease their unemployment rates (when faced with such shocks) faster than an economy with a constrained labor market.

As for Chile, as it is seen in the data and in **Figure 8**, we see exactly what has been said so far. Due to external shocks such as the Asian crisis and the real appreciation of the Chilean peso (loss of competitiveness) though the GDP kept on growing (at a slower rate) we see a big spike in unemployment and a constant, but somewhat slow, adjustment of this variable throughout the following years, indicating a not so flexible labor market.

Monetary Policy

Before the Pinochet years, the Chilean banking sector was highly repressed. The liberalization took place during the first year of the dictatorship with the help of the so-called “Chicago boys”, and after that the sector changed dramatically. Chile was the first country in Latin America to start moving away from a model based on pervasive government intervention to one in which the market plays a central role. The number of banks grew from 18 domestic banks and one foreign to 26 domestic and 19 foreign banks by 1981. The real volume of total credit to the private sector increased more than 11 times over the same period. The banking sector was so deregulated that it was even criticized for the lack of effective supervision.

After the 1982-1983 crisis, Chile’s macroeconomic objectives were mainly two: reduce inflation and bring balance into the current account. Considering that the means through which contain the current account deficit was to opt for an export-oriented economy supported by an appropriate exchange rate policy, monetary policy was geared at controlling inflation.

As we mentioned before, the RER (Real exchange rate) became the main target to strengthen the external sector, with its depreciation required to restore competitiveness. The local currency devalued by 220% during the 1980s and continued during the 1990s (**see figure 20 as reference**). The need to restore competitiveness motivated the introduction of a crawling peg to replace a fixed exchange rate. Introduced in 1983 it was designed to maintain a constant level of RER against the U.S. Dollar following a PPP rule.

The strengthening of the external sector worked well, and the current account deficit cut. Also, the economy grew at a sustained level (an average of 5.7% during a five-year period). However, it started to overheat in 1989. Initially, the central bank reacted to it by gradually increasing the interest rate from 5% in 1988 to 8.7% in 1990. As we mentioned, the combination of high domestic interest rate, the fall in the world rate and improvement sentiment towards Chile produced a surge in capital inflows starting 1989 that brought a policy dilemma.

As capital inflows were accelerating, the trade-off between the RER and the real interest rate became more acute: attempts by the central bank to set the real interest rate at higher level than the world one, would result in more capital inflows and an appreciation of the RER. The effects of the monetary policy were working in opposite directions concerning the external and domestic objectives. Authorities feared that higher domestic interest rates needed to control aggregate demand and inflation could deteriorate competitiveness and lower exports.

To contrast those effects, authorities reacted with a combination of measures that included foreign exchange intervention, partial sterilization, further liberalization of capital outflows, widening of the exchange rate band, imposition of capital controls and the continuation of the operation of fine tuning of the fiscal side of the economy.

As time passed, the wider the interest rate differential was getting, and monetary authority initially intervened heavily in the foreign exchange rate market to prevent further appreciation of nominal and real exchange rates. By 1990, international reserves were up to 5.4 billion dollars, with an 80% increase from the year earlier (**see figure 18 as reference**). To prevent a monetary expansion the central bank sterilized those interventions. However, this policy could not hold in the long run, as the central bank sustained large costs given the large differential between domestic and foreign rates. To reduce the net inflows of capital, the authorities liberalized outflows. However, the effect of this measure was not clear, since liberalization is always perceived as a signal of greater openness of the economy.

In addition, in order to increase the range of motion of the monetary policy, the exchange rate band was widened in 1989 from $\pm 3\%$ to $\pm 5\%$.

Eventually, as a last resort capital controls were introduced, and the exchange rate band was further widened up to $\pm 12.5\%$.

When the Asian crisis hit, Chile was able to withstand the initial effects. As the crisis deepened, the contagion hit Chile financial market too and authorities were obliged to lower the reserve requirement from 40% to 10% in response to capital outflows. At the same time the exchange rate band was reduced to $\pm 2.5\%$ to lower uncertainty in the foreign exchange rate market. Continued downward market pressure prompted the elimination of the reserve requirements in September 1998.

The Money Market

One important characteristic that allowed Chile to achieve the growth trajectory of the decade of 1990 was the free and developed financial market. The reallocation of resources within strategic investment areas was possible and no constraints on the internal borrowing conditions of agents were performed.

The money market could be described as freer and more developed than the neighboring economies of South America. The effective policy of the Central Bank of Chile in achieving

one-digit annual inflation rates made real money supply smoothly contract during the decade of the 1990s, since the small-scale increases in money supply were completely offset by the downward pressures in the price level (see **figures 13 and 17 as references**). One interesting aspect of the associated term structure of interest rates was that during this decade they were typically downward sloping, especially for medium-long term maturities. The inverted yield curves were associated not with the typical anticipation of a recessive period, but rather with a negative liquidity premium. This resulted from indexation of some parts of the Chilean economy alongside with the ongoing capital controls that influenced the liquidity relation between short- and long-term assets.

With the commitment to inflation targeting in 1991, the Bank of Chile, reduced the previous intervention in the market interest rates allowing them to be more influenced by supply and demand conditions. This can be explained by the importance that interest rates played on the transmission mechanism of monetary policy. The increases in interest rate closed the gap between aggregate demand and output, also reducing the inflationary pressures in the non-tradable sector of the economy. Despite the importance that interest rates have on this framework, it is also important to state that the monetary authorities influenced them on a still usual basis, exposing the domination of the interest rate towards the exchange rate stability and the constrained capital account.

Debate on the policies taken

As with most topics in economics, there is never one unique, true, answer to the question. This is especially true when the topic in question are extreme policies taken at a national scale, which, in turn, will also impact agents at an international level.

Given the nature of such policies, it would be expected to see different opinions on the topic defended by renowned economists, politicians, institutions, public figures.

On one hand, the Chilean Central Bank and other Government Officials supported the capital controls policies, arguing that by discouraging short run capital and attracting long term funds helped achieve the growth and stability of the economy. However, this isn't saying much because obviously government officials have a bias towards their own policies, it would be surprising to see that the ones who implemented such changes would be against it. Other private entities such as Goldman Sachs also supported such policies, saying that countries such as Chile without fully liberalized capital accounts did best in avoiding contagion from the Asian

financial crisis. Lastly, Ricardo Ffrench-Davis, an economist at the UN Economic Commission for Latin America in Santiago, supported that Chile's policies were justified due to the lack of an international regulatory body designed to manage bonanzas rather than crises. This last argument can be considered as the one most focused on the economic effects since it talks about the consequences that bonanza periods have on developing countries such as Chile back then, where capital would be abundant, and a misguided step would lead to huge dependence on external support which in turn could lead to high amounts of deficit and a sudden stop when the bonanza period itself stops.

On the other side, many economists defended that capital mobility should be unrestricted and that by doing this the country would greatly benefit from such policies, whereas by having supervised and regulated financial markets would lead to greater burdens. Additionally, it was reiterated the importance of capital inflows by letting emerging economies catch up to industrial structures and living standards of wealthier countries. Finally, one last popular opinion was the fact that by controlling capital mobility, there would be room for corruption and the eventual erosion of effectiveness of such controls over time, which this last result can in fact be seen in the data.

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Figures & Appendix

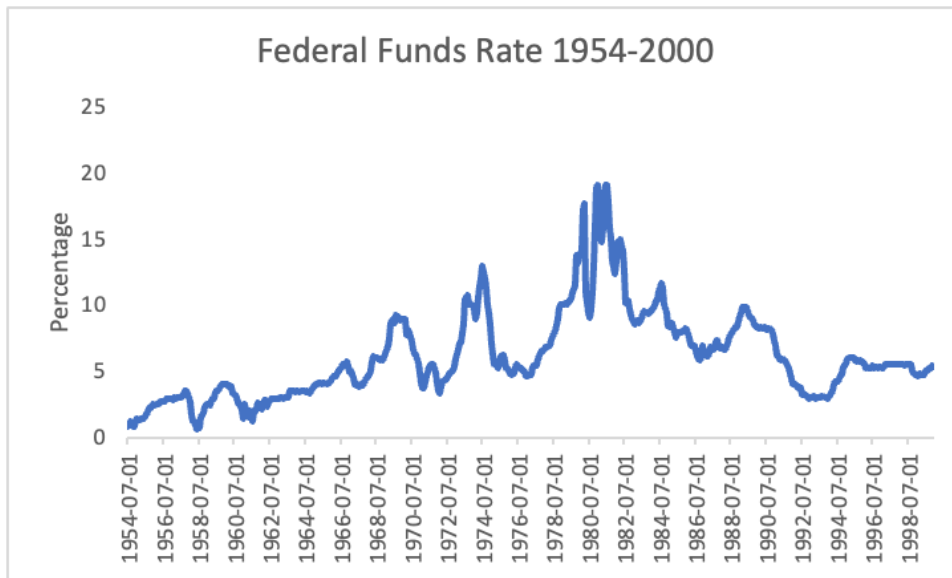


Figure 1: Federal Funds Rate 1954-2000

Source: Federal Reserve Data



Figure 2: Chile Gross Domestic Product Annual Rate of Growth

Source: World Bank Data

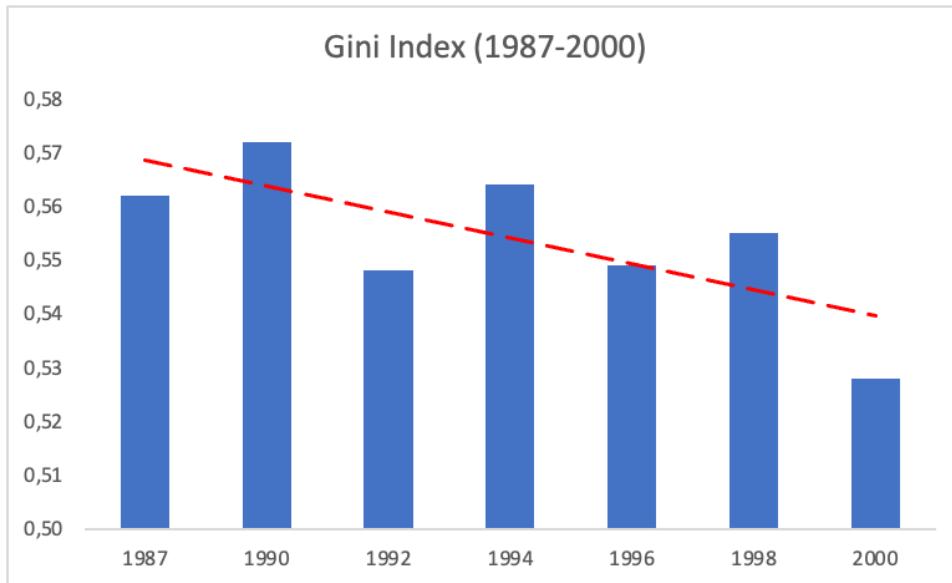


Figure 3: Gini Index Chile (1987-2000)

Source: World Bank Data

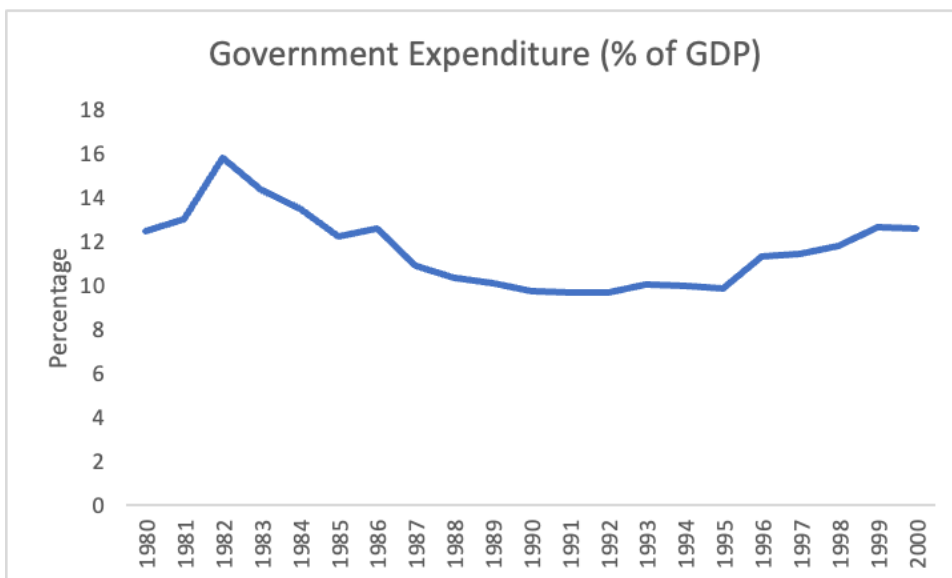


Figure 4: Government Expenditure as a Percentage of Gross Domestic Product

Source: World Bank Data

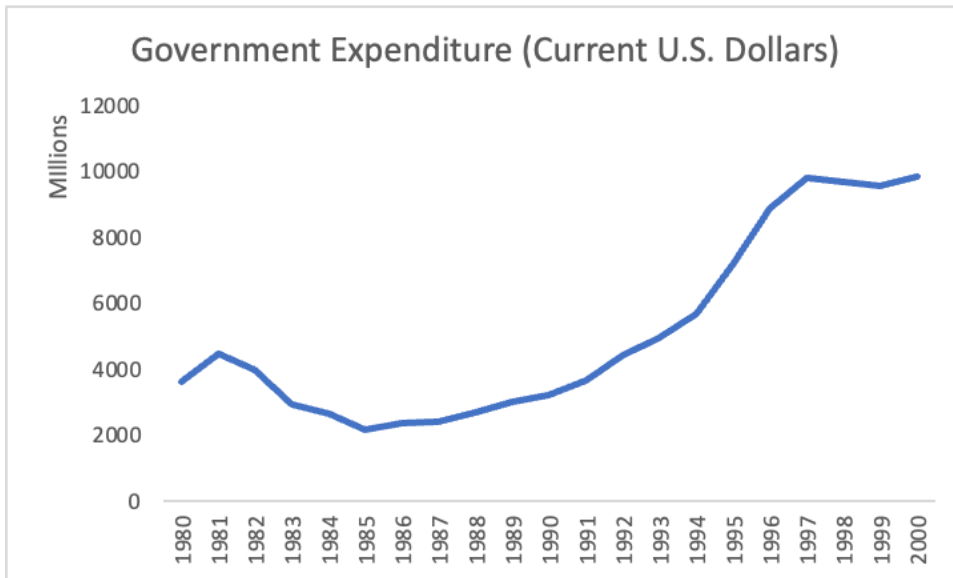


Figure 5: Government Expenditure in Current U.S. Millions of Dollars

Source: World Bank Data

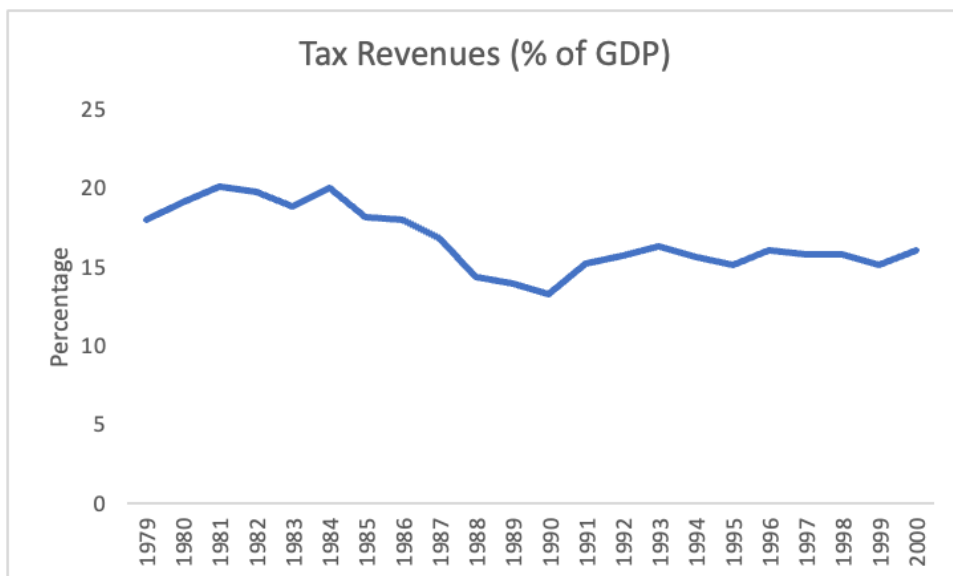


Figure 6: Tax Revenues as a Percentage of Gross Domestic Product

Source: World Bank Data

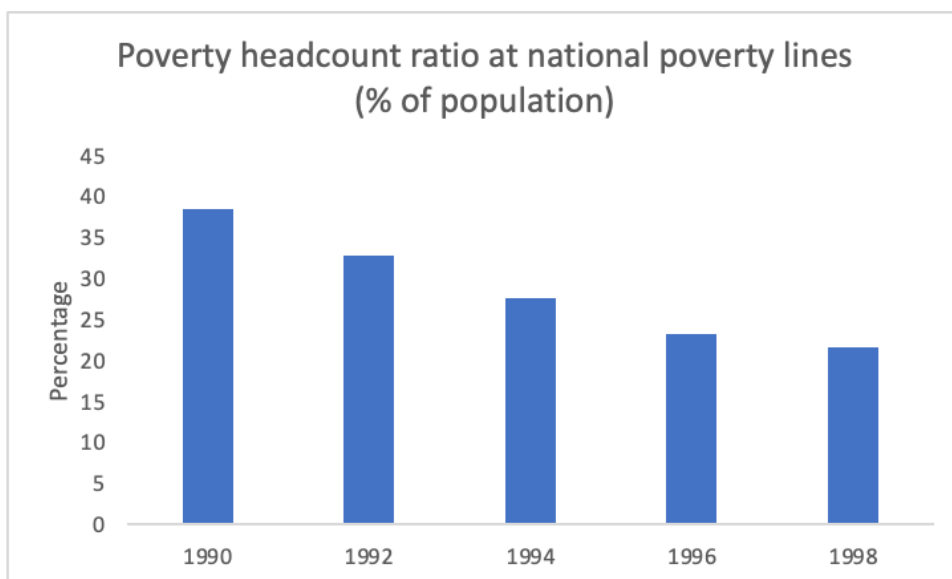


Figure 7: Poverty Headcount Ratio at National Poverty Lines as a Percentage of Population

Source: World Bank Data

Table 1: Push and Pull Factors

Factor	Push / Pull	Commentary
Newly Instituted democracy	Pull	New institutions guarantee property rights and decrease uncertainty
Central Bank Independence	Pull	Higher interest rates due to the Central Bank's mandate to control inflation
Strong Macroeconomic Fundamentals (after the default)	Pull	High growth rates, sound fiscal policies, increasing consumption and economic stability
Lower Interest Rates in "Central Economies"	Push	Capital flows towards "The Periphery" in search of higher returns

Table 2: Changes in the Labor market laws from 1960 to 2007.

Period	Dismissals	Compensation "Just Cause"	Compensation Unjustified Reason
1960-66	At will	At will	At will
1976-73	Courts opposed	No compensation	1 month p.y no limit + foregone wages
1974-78	Courts favored	No changes	Irrelevant
1979-90	Economic reasons at will	No changes	1 month p.y 5 months limit
1991-98	Justify economic reasons	1 month per year limit 11 months	1.2-1.5 months p.y
1999-07	No changes	No changes	No changes

Source: Lima, Victor O, and Ricardo D. Paredes. The Dynamics of the Labor Markets in Chile. Estudios de Economía. Vol. 34 – 2, December, 2007.

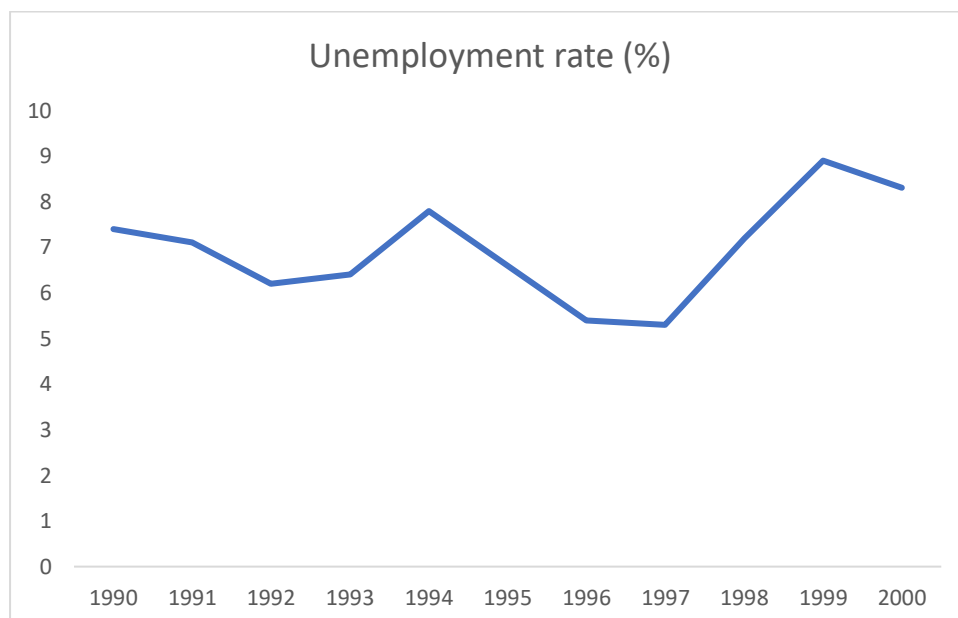


Figure 8: Unemployment rate (%) from 1990 to 2000

Source: Corbo, Vittorio and José A. Tessada. Growth and Adjustment in Chile: A Look at the 1990s. Central Bank of Chile Working Papers, March, 2003.

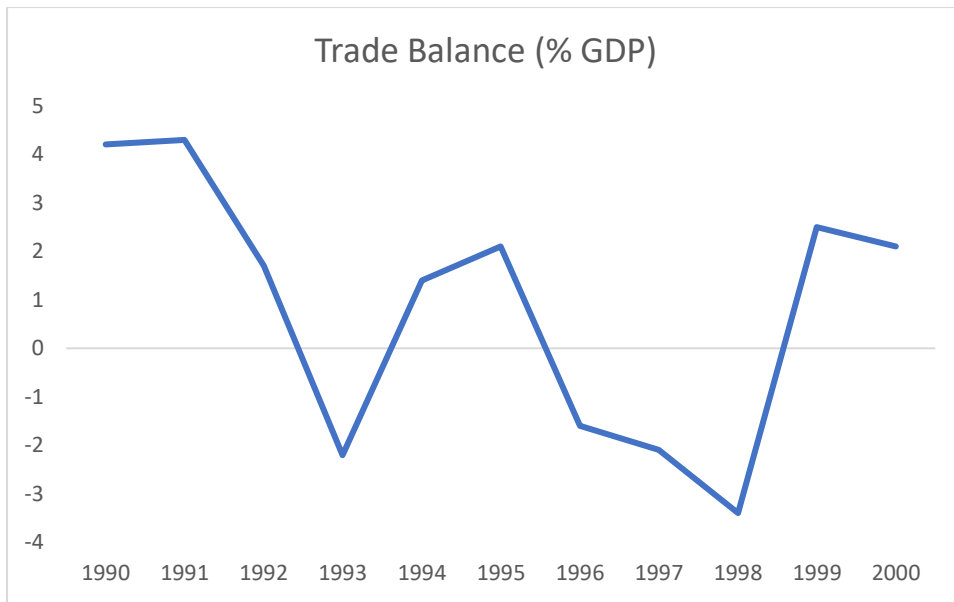


Figure 9: Trade Balance (% GDP) 1990-2000

Source: Growth and Adjustment in Chile, Corbo, 2003

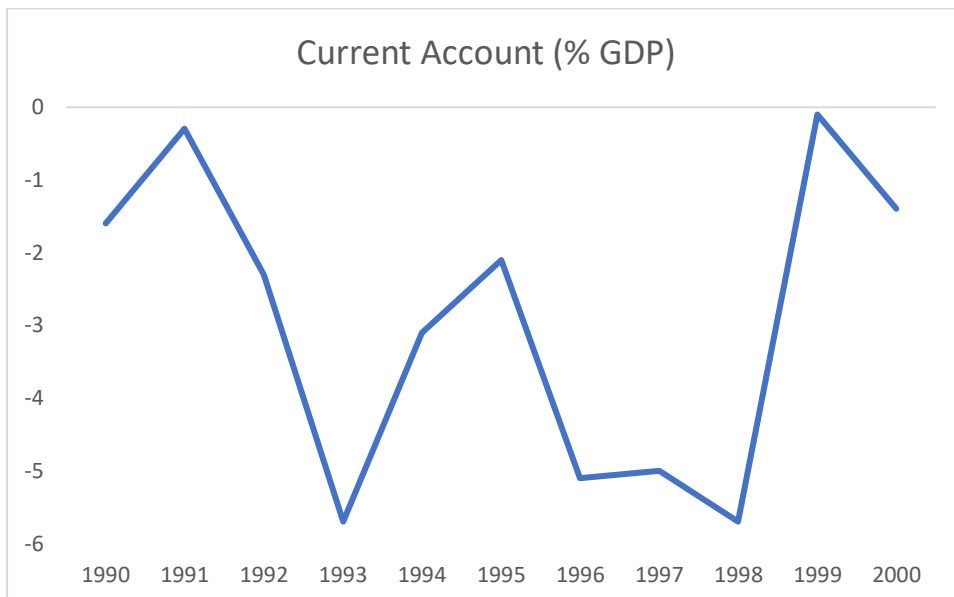


Figure 10: Current Account (% GDP) 1990-2000

Source: Growth and Adjustment in Chile, Corbo, 2003

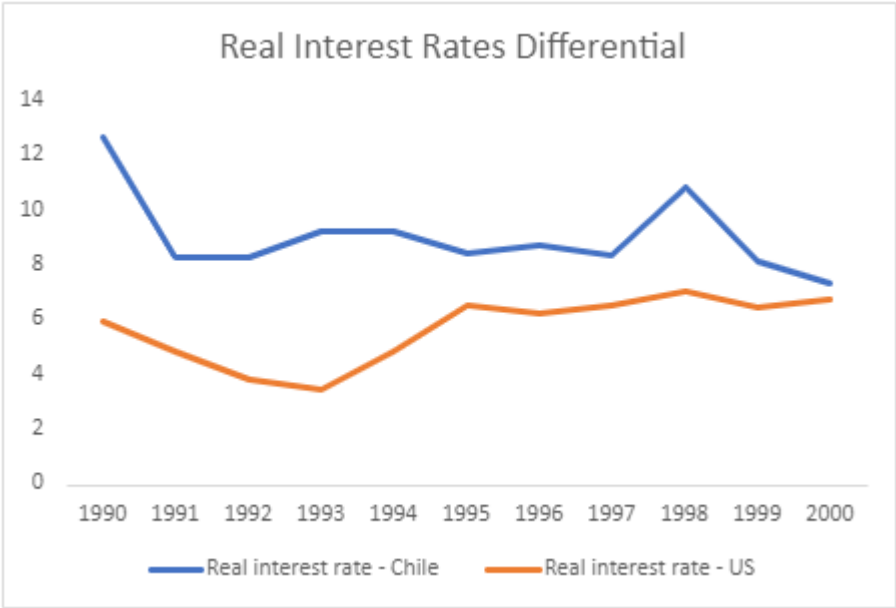


Figure 11: Real Interest Rates Differential 1990-2000

Source: Growth and Adjustment in Chile, Corbo, 2003

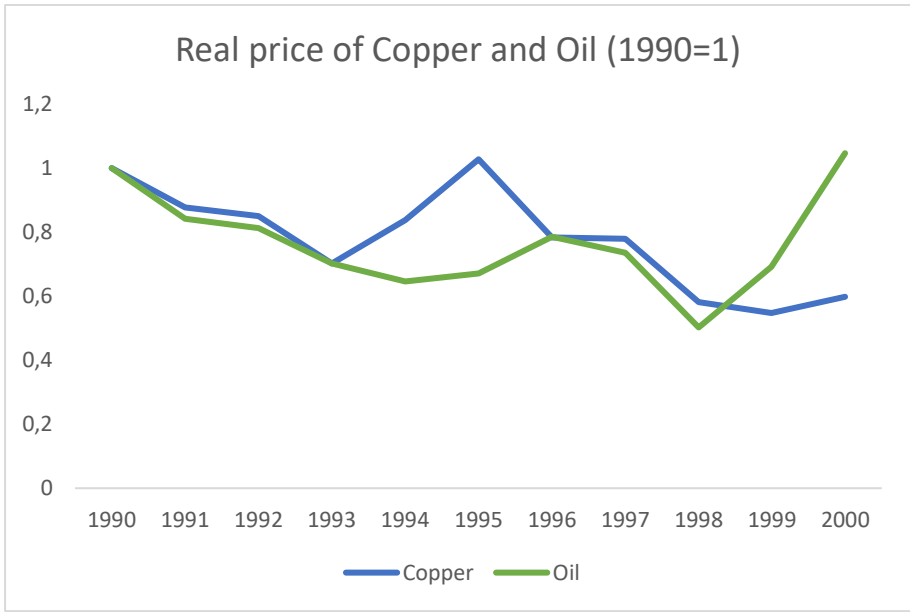


Figure 12: Real price of Copper and Oil (1990=1)

Source: Growth and Adjustment in Chile, Corbo, 2003

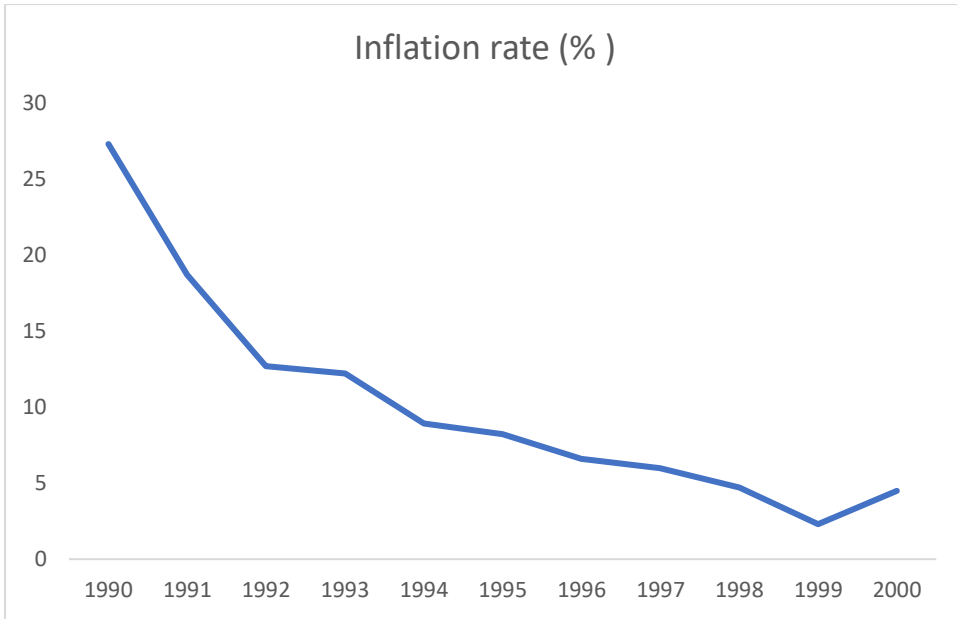


Figure 13: Inflation rate 1990-2000

Source: Growth and Adjustment in Chile, Corbo, 2003

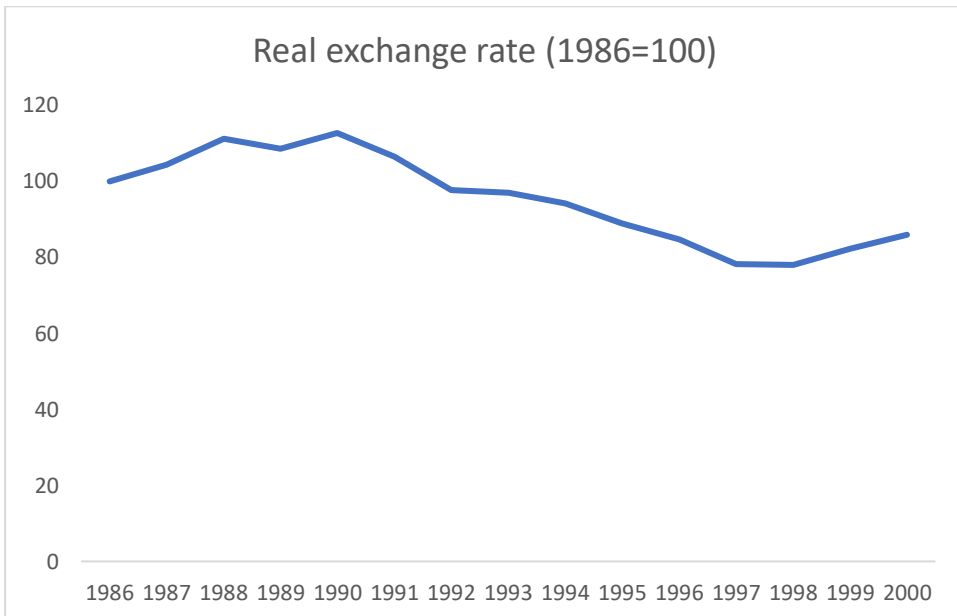


Figure 14: Real exchange rate (1986=100)

Source: Growth and Adjustment in Chile, Corbo, 2003

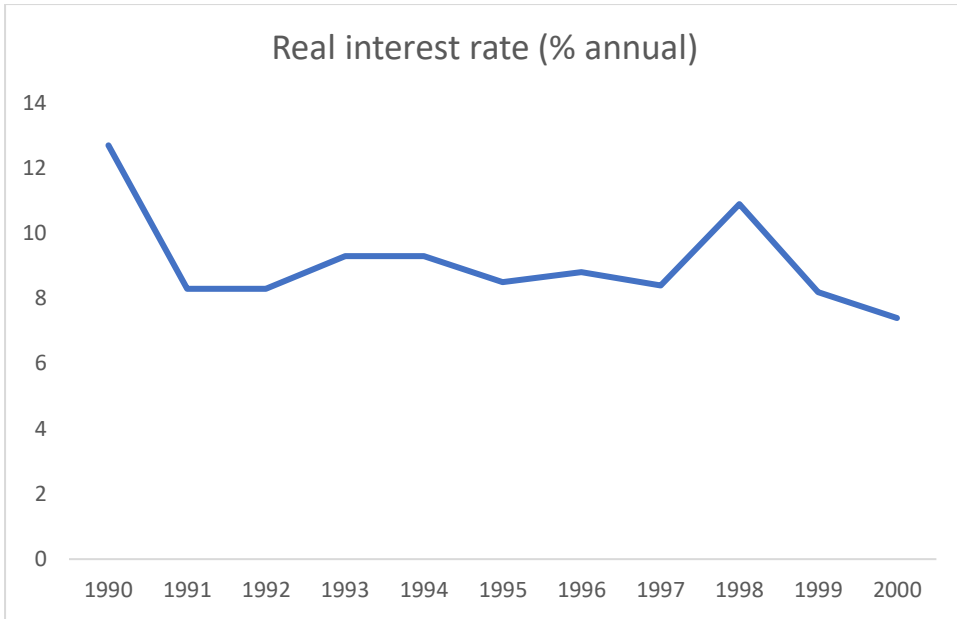


Figure 15: Real interest rate (% annual)

Source: Growth and Adjustment in Chile, Corbo, 2003

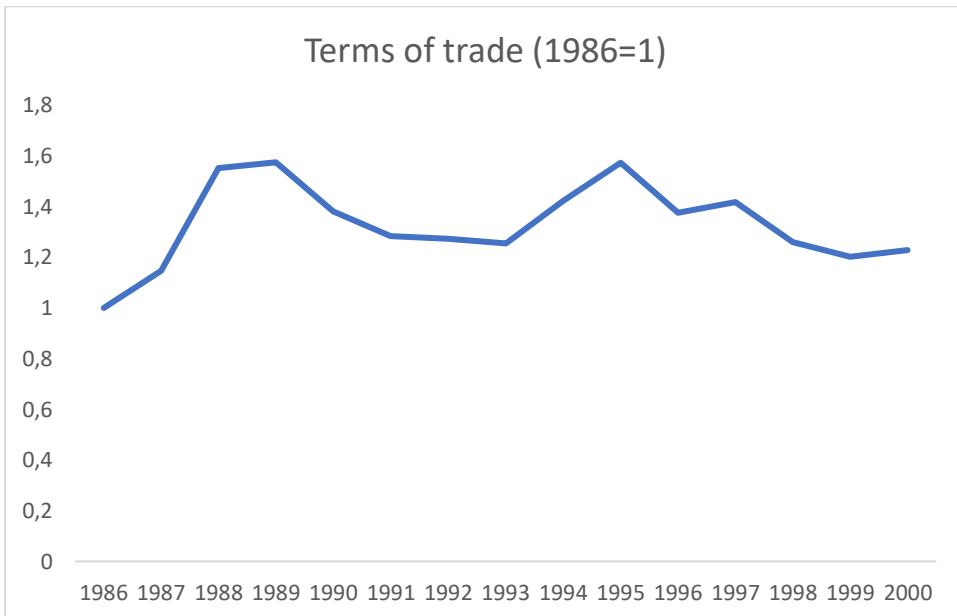


Figure 16: Terms of Trade (1986=1)

Source: Growth and Adjustment in Chile, Corbo, 2003

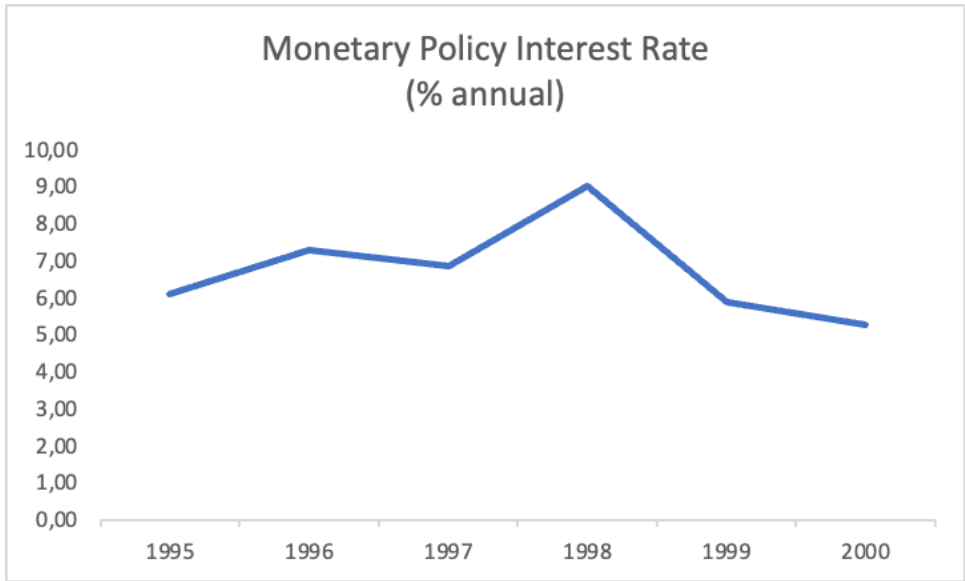


Figure 17: Monetary Policy Interest Rate 1995-2000

Source: Central Bank of Chile

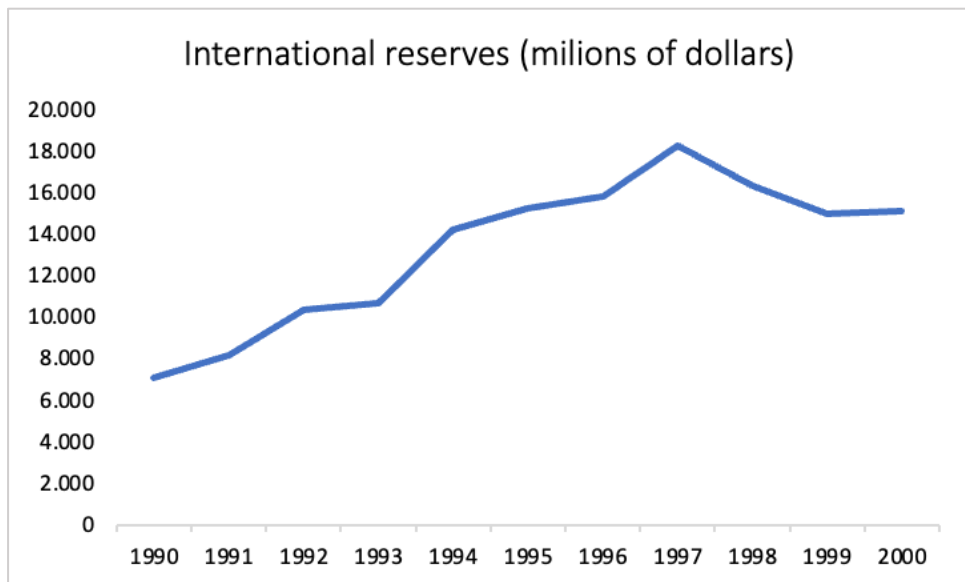


Figure 18: International reserves, 1990-2000

Source: Central Bank of Chile

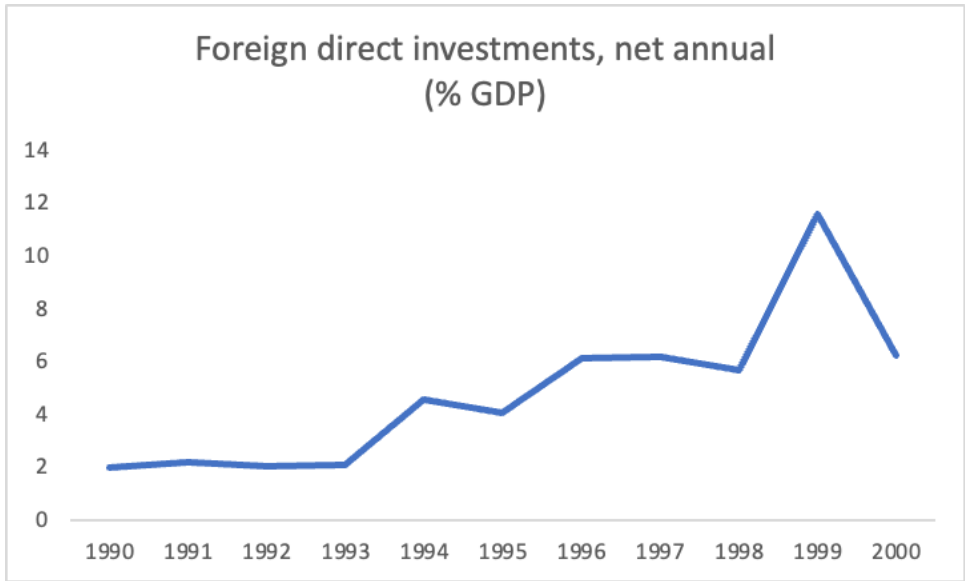


Figure 19: Capital Inflows net annual 1990-2000

Source: World Bank Data

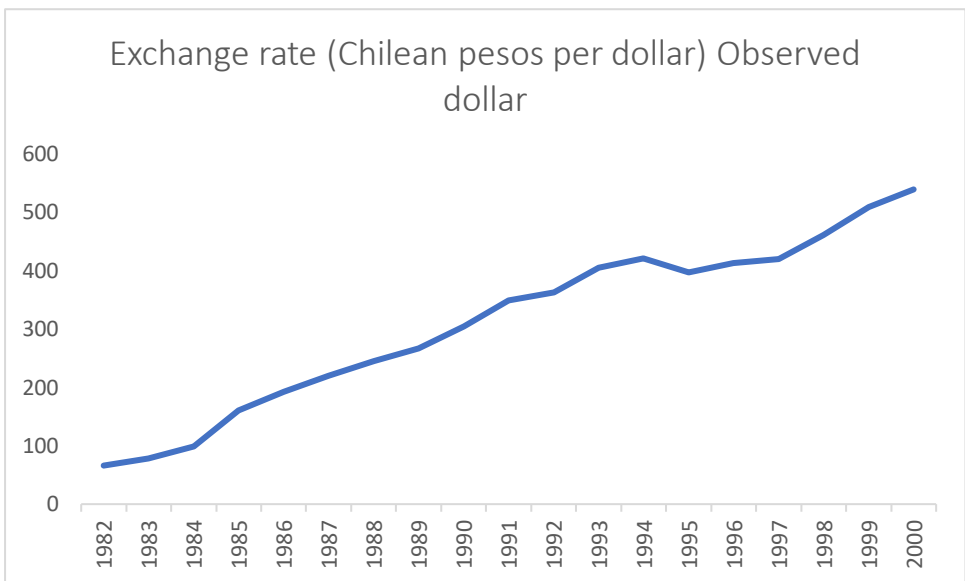


Figure 20: Exchange rate 1982-2000

Source: Central Bank of Chile. Note: The Observed dollar is the weighted average price of peso-dollar spot (cash) transactions performed in the Foreign Exchange Market (FEM)