Fiscal policy management: the experience of Chile

By Eric Parrado and Andrés Velasco*

Abstract

In Latin America, commodity booms almost always have triggered booms in government spending. Unsurprisingly, those booms almost always ended in disaster-including, of course, fiscal disasters. Chile did something different. And in the what, the how and the why of that experience there may be useful lessons for other nations. This paper discusses first, in some detail, what these policies entailed and how they were applied. The paper also examines the economic results of the shift in fiscal policy. The effects on fiscal variables were large: as we documented at the outset, a sharp drop in public debt and record fiscal surpluses in years of high copper prices. This fiscal prudence also mattered for some key macro variables, among them the real exchange rate and the volatility of output growth. The basic message is simple: shifting from a pro-cyclical to a mildly countercyclical fiscal stance has helped stabilize both relative prices and economic activity.

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I. Introduction

By the end of 2009, Chile was not only the newest member of the OECD, often described, however inaccurately, as the rich countries' club. On that date, Chile had arguably the best fiscal performance in the OECD. Chile´s gross public debt was, by a large margin, the lowest in the group. In the previous four years Chile had averaged the second largest overall fiscal surplus in the OECD, second only to oil-producing Norway's.

Things were not always that way. In 1982 Chile had suffered simultaneous and massive currency and banking crises. Foreign debt, both public and private, had to be rescheduled. The cost of the bailout was to weigh heavily on public finance in years to come. Chile´s economy grew fast in the second half of the 1980s and this helped turn around fiscal accounts. But even then, when the military dictatorship ended and the country returned to democracy in 1990, gross public debt stood at a substantial 45% of GDP. And to that one had to add another 33 percentage points of GDP in the debt issued to future pensioners as part of the transition to a private social security system.

How did Chile make the transition, in just two decades, from a fiscally weak to a fiscally strong economy? Sure enough, fast economic growth (especially until the late 1990s) and high copper prices (especially after 2004) helped. But history is replete with countries that squandered the fiscal benefits of growth. And in Latin America, commodity booms almost always have triggered booms in government spending, with governments spending not only the additional commodity revenue but also the addition credit that high commodity prices typically triggered. Unsurprisingly, those booms almost always ended in disaster-including, of course, fiscal disasters. Chile did something different. And in the what, the how and the why of that experience there may be useful lessons for other nations.

Chile´s fiscal discipline was not born overnight. Already in the reform period of the 1970s and in the growth period of the second half of the 1980s important policies were applied -privatization of money-losing enterprises was one, simplification and modernization of the tax code was another- that helped strengthen public accounts. With democracy´s return, and in contrast with many pessimistic prognostications, the administrations of Patricio Aylwin (1990-94) and Eduardo Frei (1994-2000) showed a deep-seated commitment to fiscal prudence, which they upheld even when it clashed with the expectations and demands of public sector unions and of some of the more populist members of the ruling left-of-center Concertación.

In new century Chile´s prudent fiscal policy entered a stage of institutionalization and consolidation. The administration of Ricardo Lagos (2000-06) introduced the key practice -in force still today- of constructing budgets on a cyclically adjusted basis and of setting explicit targets for the cyclically-adjusted (or "structural" budget balance). In turn, the administration of Michelle Bachelet (2006-10) crafted and passed the 2006 Fiscal Responsibility Law, which formalized the "structural" approach to fiscal policy and set up two sovereign wealth funds to hold and invest the resulting fiscal savings.

This paper discusses first, in some detail, what these policies entailed and how they were applied. Much thinking and design went into this approach -some of it local, some of it adapted from successful experiences such as that of Norway. The paper also examines the economic results of the shift in fiscal policy. The effects on fiscal variables were large: as we documented at the outset, a sharp drop in public debt and record fiscal surpluses in years of high copper prices. This fiscal prudence also mattered for some key macro variables, among them the real exchange rate and the volatility of output growth. The basic message is simple: shifting from a pro-cyclical to a mildly countercyclical fiscal stance has helped stabilize both relative prices and economic activity.

Last but certainly not least, the paper focuses on the political economy of the problem. What political failures existed and how did the rule help alleviate them? We tackle these questions with the help of a simple model, which we use to organize and motivate the discussion of Chile´s budget politics.

II. Politics and fiscal policy: a little theory

A first question is: Why would a country need a fiscal rule? What is the policy-making failure that requires fiscal behavior to be constrained by such a rule? In this section we outline a model of such a policymaking failure. We then explore its implications in later sections.

The basic setup

The essence of the story is a decentralized mechanism for deciding upon spending. There are n symmetric groups, indexed by *i, i =1,2…n*. Each can be thought of as a particular constituency or recipient of government resources. Public expenditure on group *i* can be interpreted as subsidies to its members or spending on a public good that only benefits those in group *i*, such expenditure can be financed out of a constant stream of government

income τ We suppose there is a shock ε_t to government income, which is *i.i.d.* with mean zero and finite variance.

Any excess of expenditure over revenues can be financed by borrowing in the world capital market at a constant gross real rate 1 + r, which is exogenous (the economy is small and open). Accumulated debts are a joint liability of all n groups, as would be the case with the national debt in any country. The government budget constraint therefore is:

$$b_t = (1 + r)b_{t-1} + \tau + \varepsilon_\tau - \sum_{i=1}^{n} g_{it}, \quad (1)$$

where b_t is the stock of the internationally traded bond held by the government at time t, earning the interest rate $1 + r$. We also impose the solvency condition:

$$lim_{t\to\infty}\ b_t(1 + r)^{-t} \geq 0 \quad (2)$$

Each group i has the objective utility function[1]:

$$U = \sum_{s=t}^{\infty} log(g_{it})\ (1 + r)^{-(s-t)} \quad (3)$$

Planner´s solution

If a planner solves the problem on behalf of the n groups, treating each of them symmetrically, the optimal spending rule is

$$g_{it} = \frac{1}{n}\left(rb_{t-1} + \tau + \frac{r}{1+r}\varepsilon_t\right) \quad (4)$$

Each group spends a share $1/n$ of permanent income $rb_{t-1}+\tau$ and of a portion $\frac{g}{1+r}$ of the transitory shock ε_t. Then, aggregate spending is given by

$$g_t = ng_{it} + rb_{t-1}\,\tau + \frac{r}{1+r}\,\varepsilon_t \quad (5)$$

Using this rule in budget constraint (1) we have

$$b_t - b_{t-1} = \frac{\varepsilon_t}{1+r} \quad (6)$$

[1] Note that the rate of time discounting is assumed to be equal to the world rate of interest. This eliminates standard reasons for running fiscal deficits or surpluses.

There is a budget surplus and government assets are accumulated whenever the shock ε_t to fiscal income is positive, and vice versa. That is, the government saves (dissaves) whenever it experiences a positive (adverse) income transitory income shock. This is in accordance with the smoothing theory of Barro (1980).

Political equilibrium

Now suppose each of the n fiscal groups acts independently, each setting the path $(g_{it})_{t=0}^{\infty}$ through lobbying or other political mechanism. Notice that all interest groups still share the same budget constraint, enjoying "common access" to government resources.

This policymaking regime can be interpreted in one of several ways, all of which have counterparts in countries' recent experience. First, spending pressures may arise from sectoral ministers or parliamentary committees with special interest. See von Hagen (1992), von Hagen and Harden (1994), and Alesina, Hausmann, Hommes and Stein (1996). Second, spending may be set by decentralized fiscal authorities representing particular geographical areas. The cases of Argentina and Brazil are instructive. Third, transfers may be determined by money-losing state enterprises facing soft budget constraints.

Solving the game among the n groups

Focus on a simple class of Markovian strategies in which spending is a function of the state variable only. In this log-linear setting one can postulate a linear policy rule for each player:

$$g_{it} = \phi\left(b_{t-1} + \frac{\tau}{r} + \frac{r\varepsilon_t}{1-r}\right) \quad (7)$$

where ϕ is a parameter to be endogenously determined.

Now, suppose that group i expects that all other groups will employ rule *(7)*. Then, assets evolve according to:

$$b_t = [(1+r) - (n-1)\phi]\left(b_{t-1} + \frac{\tau}{r} + \frac{\varepsilon_t}{1-r}\right) - g_{it} \quad (8)$$

Group *i*'s best response is therefore the solution to the problem

$$V(b_{t-1}) = max_{g_{it}} E_t[\log(g_{it}) + (1-r)^{-t} V(b_t)] \quad (9)$$

subject to *(8)*. The Euler equation that corresponds to this problem is:

$$E_t g_{1t-1} = [1 - (n - 1)\phi] g_{it} \quad (10)$$

Combining (8) and (10) and imposing symmetry on obtains:

$$g_{it} = \left(\frac{1+r}{1+nr}\right)\left(rb_{t-1} + \tau + \frac{r}{1+r}\varepsilon_t\right) \quad (11)$$

Hence, each group spends a share $\frac{1+r}{1+nr} > \frac{1}{n}$ of permanent income $rb_{t-1} + \tau$ and a portion $\frac{r}{1+\tau}$ of the transitory shock ε_t.

Therefore, aggregate spending is

$$ng_{it} = g_t = (\frac{n+nr}{1+nr})(rb_{t-1} + \tau + \frac{r}{1+r}\varepsilon_t) \quad (12)$$

And the equilibrum budget surplus or deficit is:

$$b_t - b_{t-1} = \frac{\varepsilon_t}{1+nr} - \frac{n-1}{1+nr}(rb_{t-1} + \tau) \quad (13)$$

Overspending and inefficient asset dynamics

How do the planner's solution and the political outcome differ? First, contrast the dynamics of spending. Under the political equilibrium aggregate spending is larger ($\frac{n+nr}{1+nt} > 1$, since $n > 1$). The share spent of permanent income $rb_t + \tau$ is larger. That is, too much (relative to the optimum) is spent out of permanent income.

The portion that is spent out of the transitory income shock ε_t is also larger than in the planner´s solution. Or, put differently, under the political equilibrium a smaller share of the income shock ε_t is saved via a budget surplus: $\frac{1}{1+r}$ under the planner, $\frac{1}{1+nr}$ under the political equilibrium. And when ε_t is negative, the disaving is too small. Fiscal policy is not as countercyclical as it ought to be. This is a violation of optimal smoothing.

What about the evolution of government assets? Under the planner's solution, experiencing no shock ($\varepsilon_t = 0$) implies a balanced budget (recall equation (6) above). Under the

political equilibrium, on the other hand, $\varepsilon_t = 0$ does not imply the budget is balanced. On the contrary, there is a trend deficit of size $\frac{n - 1}{1 + nr}(rb_{t-1} + \tau)$.

Summarizing, relative to the planner´s solution the decentralized political equilibrium implies a) overspending; b) an inadequate reacion to shocks; and c) inefficient budget deficits and asset deccumulation.

What is the intuition behind these results? Very simple: property rights are not defined over government assets. A portion of government wealth not spent by one group will be spent by another. This creates an incentive to raise spending above the collectively efficient rate.

Another way to see this has to do with the return to saving. The return on government wealth accruing to each group is $(1 + r) - (n - 1)\phi$. Since this return is below the rate of time discounting $(1 + r)$, each group has incentives to draw down government assets.

Where does a fiscal rule come in? We think of the rule as a way of overcoming the inefficiencies associated with the decentralized political equilibrium. For the rule to play this role, it has to include mechanisms for dealing with the tendency toward overspending and deficits, as well as with the insufficient saving displayed in response to temporary positive income shocks.

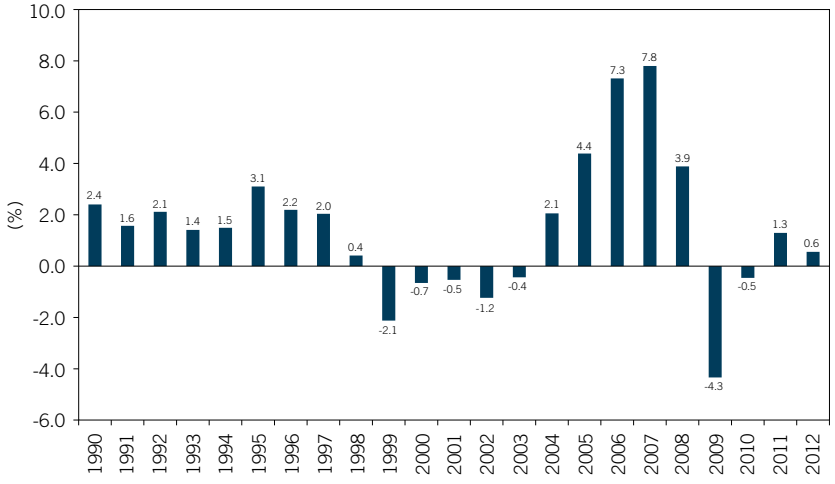
III. The case of Chile: initial conditions

A. *Fiscal performance before 2000*

Some countries have introduced fiscal rules as a last ditch attempt to turn around a difficult fiscal situation. This was not the case of Chile. On the contrary, Chile applied the new system from a position of relative fiscal strength. That may have contributed to its viability and success.

Between 1990 and 1999 Chile ran fiscal surpluses in 9 of those 10 years (see Figure 1). In that period the country achieved an average fiscal surplus of 1.5% of GDP and reduced the public debt from 44.8% of GDP in 1990 to 13.9% in 1999. This amounted to a strong fiscal performance, not just by Latin American standards but by the standards of any nation, rich or poor.

FIGURE 1_FISCAL SURPLUS
(% OF GDP)



Source: Ministry of Finance of Chile.

B. *Fiscal institutions*

A fiscal rule is an example of fiscal institutions at work. The stronger the institutional setup, the more likely a fiscal rule will be established and maintained. Chile had a strong starting point, enjoying sound fiscal accounts and reasonably robust budget institutions at the outset.

A first thing to note is that Chile, in contrast to other Latin American countries such as Mexico, Colombia, Argentina and Brazil, is fiscally very centralized. All taxes are levied by the Central government. Local governments get a transfer equal to the value of property taxes paid; all other tax revenue accrues to the central authorities. Local governments also get transfers from the center according to pre-set formulas. Even though local governments have important spending responsibilities (including schools and local clinics), they are legally unable to borrow.

Public enterprises have considerable autonomy in their day to day operations, but their annual budgets must be approved by the Central government. Like local governments, they cannot borrow without the approval of the Ministry of Finance.

The action, therefore, is in the fiscal stance of the Central government. What institutions and procedures determine that stance, and how good are those procedures?

Alesina *et al* (1999) compiled an index of fiscal institutions for Latin America. The index includes measures of how hierarchical/collegial and how transparent/opaque budget procedures are, with more hierarchical and transparent mechanisms associated with better fiscal performance. Chile leads the pack along with Mexico and Jamaica (see Figure 2). This measure of "strength" of fiscal institutions correlates well with one measure of fiscal performance, the average fiscal surplus in 1990-2000 (see Figure 3).

FIGURE 2_INDEX OF FISCAL INSTITUTIONS

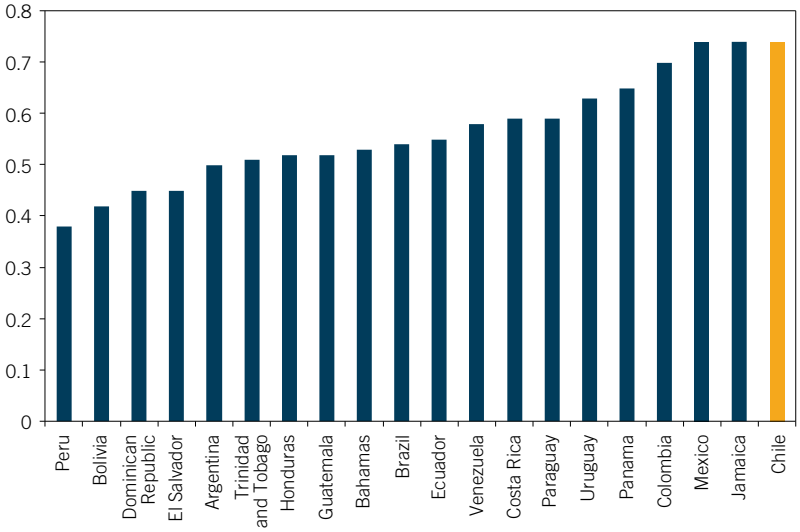
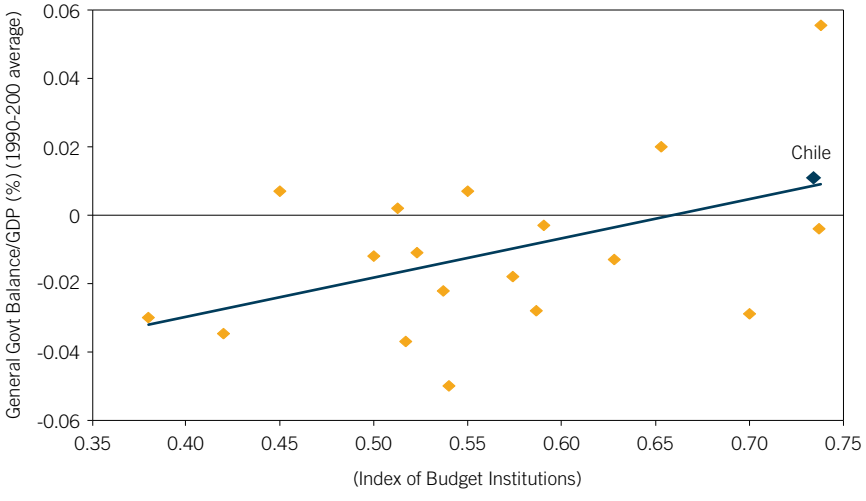


FIGURE 3_FISCAL BALANCE AND BUDGET INSTITUTIONS



Source: Alesina *et al* (1999).

Chile´s budget-making rules are unusual in the relative power they give the executive vis-à-vis the legislature. Several legal features, some of them dating back to the 1920s, stand out:

- Only the Executive can "initiate" bills involving changes in expenditure or taxation. If a member of Congress wishes to submit such a bill, he/she needs the sponsorship of the Executive.

- The budget process has very stringent deadlines: the Executive must submit the budget to Congress by September 30th and Congress must have approved the budget (with the amendments introduced by Congress) by November 30th. Otherwise, the budget bill initially submitted by the Executive becomes the law of the land.

- Congress can cut but cannot increase expenditure (on any one item or overall) in the course of budget approval.

The effect of such rules is to focus Congressional discussions largely the micro-economics of the budget -parliamentarians endeavor to ensure their preferred items are indeed funded, either by reassigning funds from other spending items or from the special reserve known as the Tesoro Público- but the overall spending ceiling is typically not at stake. However, on occasions congressional coalitions can threaten to withdraw support from programs dear to the government as a way of forcing the Executive to sponsor spending increases on certain items, but this is seldom done on a scale large enough to alter the overall macro limits.

The overall spending ceiling is set not in the course of Congressional discussions but in the previous stage: when intra-Executive negotiations set priorities and decide spending on non-entitlement big ticket items: typically public investment projects or new subsidy or transfer programs. This is a lengthy process, lasting several months. Here the Finance Ministry plays an important role (all spending items must be authorized by the ministry) and the President has the first and last say, but nonetheless meaningful discussions and negotiations do take place. The manner in which these negotiations take place, therefore, is crucial.

C. *Why a fiscal rule?*

Now, if Chilean fiscal institutions were hierarchical and transparent, if the Executive had (and has) important legal power to control spending and the budget, and if Chile´s fiscal performance over the previous decade was more than adequate, why did Chile in the early 1990s need a fiscal rule? What was broken that needed fixing?

In spite of the overall strength of fiscal institutions and performance, in the early 2000s five elements stood out that were susceptible to improvement[2]:

- Fiscal policy we designed and applied with little reference to a longer-term framework.

- Nor did the design of fiscal policy explicitly separate cycle from trend. For instance, the impact of higher copper prices on allowable expenditures is obviously different if the price increase is expected to be permanent or transitory.

- Intra-Executive budget negotiations were not guided by an explicit procedure or framework. Pursuit of fiscal sound fiscal policies was largely dependent on the commitment and determination of the President and the Finance Minister. That commitment was present in the 1990s, but could not be assumed to exist automatically under all circumstances.

- While explicit government liabilities were quite limited (in January 2000 public debt stood under 15% of GDP), but other contingent liabilities needed to be quantified and eventually reduced. Among them were government guarantees to pensioners in the private social security system and to private operators of concessioned public works (roads and tunnels).

- Local governments (municipalities), prevented from issuing debt, occasionally did it de facto simply by running up unpaid bills to contractors and suppliers. Public hospitals operating within the Central Government displayed a similar habit.

As we will see below, the introduction of a fiscal rule helped correct the first four of these five problems.

IV. The fiscal rule in action

A. *What did the rule do?*

A fiscal policy based on a structural balance rule, used for some time by a few industrialized economies,[3] was a significant innovation in Chile. During the 1990's Chile's fiscal

[2] As IMF (2009) pointed out fiscal rules have typically been being introduced when countries have already made at least some initial progress toward fiscal consolidation and macroeconomic stability.

[3] See IMF (2009).

policy was distinguished by his prudence, but public spending remained very sensitive to the revenue cycle, itself dependent on the economic cycle. And there was no explicit rule or framework to guide behavior and expectations concerning fiscal performance.

In 2001, a self-imposed fiscal rule (not a legally binding requirement) was introduced for the central government budget. Under the rule, annual fiscal expenditure is equal (except for a target surplus –see below) to the central government's structural income. Therefore, expenditure is independent of short-term of fluctuations in revenues caused by cyclical swings in economic activity, the price of copper and other variables that determine effective fiscal income. The fiscal rule aims to smooth government expenditure over both cycles, spending only permanent income (structural revenues). The government saves during upswings and dissaves during downturns. In this way it can avoid two problems that have long plagued Latin American fiscal policies: surges in spending when commodity prices rise and the economy picks up and drastic tightenings of fiscal spending when commodity prices drop and the economy slows. Hence, the growth of public expenditure becomes much more stable over time.

The Chilean structural surplus rule is based on three long term variables: the price of copper; the price of molybdenum; and the trend growth of GDP. Income of the Chilean government stems from two main sources: copper-related revenue and tax revenues, with the latter heavily influenced by economic activity. To avoid biases in the estimation of these values, since the 2002 and 2003 Budget Laws the estimation of the long-term price of copper and the GDP trend, respectively, are entrusted to independent committees of experts. In the case of the price of copper, each committee member submits his estimates of the average price of copper (per pound in the London Metal Exchange) for the next ten years. Then, the Budget Office calculates the average estimate for the next ten years for each expert. Each expert estimates are averaged, excluding the minimum and maximum.

Similarly, to determine the value of the GDP trend, each committee member submits estimates of gross fixed capital formation, the labor force, and total factor productivity for the next five years. For each of the three variables, the trimmed mean is calculated for each year, eliminating the minimum and maximum. Using these variables, capital stock hours worked (adjusted for education) series are constructed. The filtered series of hours worked, adjusted for education and total factor productivity, plus the unfiltered series of capital stock, are used as inputs in a Cobb-Douglas production function, whose parameters are estimated by the Ministry of Finance based on information from National Accounts

and the National Statistics Bureau (INE). With this production function and inputs above, the Budget Office calculates the GDP trend for the period.

The system began operating with the 2001 budget bill, sent to Congress in September 2000. From the start the rule involved a structural surplus target set at 1% of PIB. This meant that the actual surplus should average 1% of GDP over the cycle. Why was this necessary? The authorities at the time pointed to three reasons.

First, the fisc was still a net debtor in an amount equal to 11% of GDP. Second, there existed a potentially large stock of contingent liabilities -associated with minimum pension guarantees and public works concessions- as well as external vulnerabilities associated with currency mismatches and potential borrowing constraints. Third, Central Bank's financial position, weakened by the 1982-83 bank bailout, remained delicate, with the bank showing in the late 1990's an operating deficit of around 1% of GDP. Larger public savings could provide the resources to tackle all of these three issues.

These original conditions have evolved favorably in recent years. Largely thanks to the implementation of the fiscal structural balance rule, the fisc accumulated net assets and eventually became a net creditor. The risks associated with currency mismatches were reduced and the contingent liabilities of the Treasury were identified and quantified.[4] Finally, the financial situation of the Central Bank of Chile improved. These developments would eventually allow the government to reduce the structural balance target to 0.5% of GDP, starting with the 2008 Budget Law.

B. *Fiscal Results*

What did the application of the rule achieve? A few results follow.

Consolidated Central Government Balance

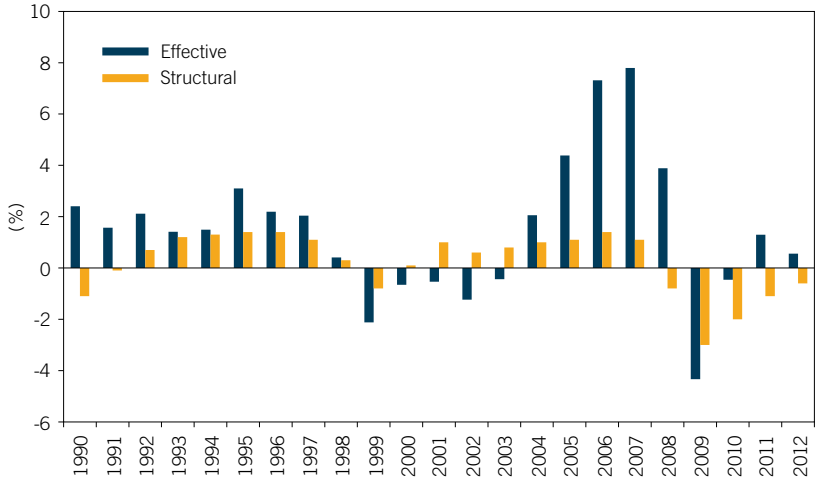
The Consolidated Central Government Balance, defined as the difference between total revenue and total expenditure of Consolidated Central Government, is traditionally used to analyze the financial sustainability of the Treasury. The current European credit crisis

[4] The main contingent liabilities of the Treasury in Chile are pensions, so the Pension Reserve Fund was created to meet these pension obligations.

has reminded us that Treasury financial insolvencies have disastrous economic and social consequences for the population, which may take years to recover.

Application of the rule in a context of high average copper prices meant, a large increase in the effective budget surplus, began rising in 2005 and reached 7.8% of GDP in 2007. Since 2005 fiscal surpluses have reached historical levels, with a cumulative tax savings equivalent to over 20% of GDP (see Figure 4 and Table 1).

FIGURE 4_EFFECTIVE AND STRUCTURAL FISCAL BALANCE
(% OF GDP)



Source: Ministry of Finance of Chile.

TABLE 1_FISCAL BALANCE
(% OF GDP)

Period	Average effective balance
1990-1993	1.9%
1994-1999	1.2%
2000-2005	0.6%
2006-2010	2.8%
2011-2012	0.9%
1990-2012	1.5%

Source: Ministry of Finance of Chile.

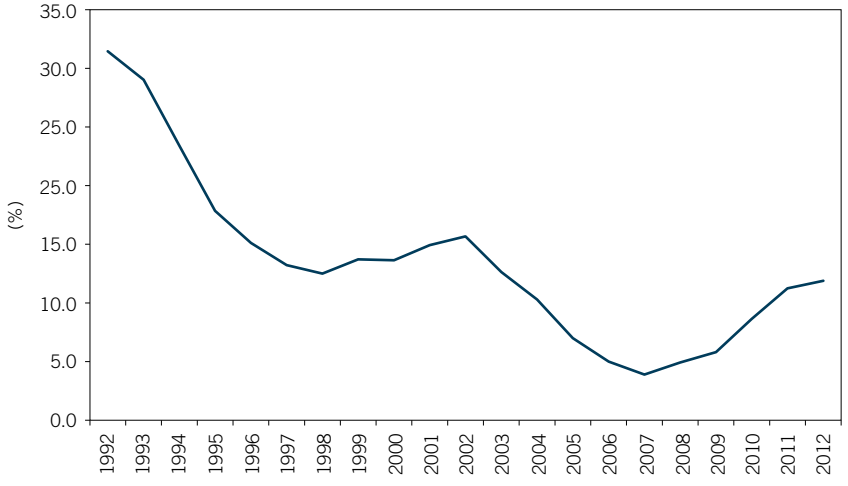
Total Central Government Debt

The level of government debt is also an important indicator of financial sustainability. It is not feasible to maintain a high level of debt relative to GDP over a long period without falling into insolvency. Keeping public debt in low levels increases the credibility of the Treasury as a debt issuer. It also improves access to external financing and reduces the cost of borrowing for companies issuing international debt, as the sovereign debt acts as a benchmark.

Since 1990, the Chilean government never had debt levels as low as in the period 2006-2009 (see Figure 5). On average for that period, the gross debt was less than 5% of GDP, in contrast to the period 1992-2005, which reached almost 17% of GDP (see Table 2), and especially in the early 1990s, when gross debt climbed to over 30% of GDP. In 2008 and 2009 there were slight increases in gross debt, partly to fund the Fiscal Stimulus Plan of 2009. Recently, gross debt has increased given additional debt issuance in international markets for benchmarking purposes. However, the trend indicates that debt will remain at historically low levels.

Chile's public debt is also one of the lowest in the world. OECD estimates indicate that in 2009 its members had an average public debt equivalent to 90% of GDP, while in 2012 reached almost 110% of GDP.

FIGURE 5_PUBLIC DEBT
(% OF GDP)



Source: Ministry of Finance of Chile.

TABLE 2_PUBLIC DEBT
(% OF GDP)

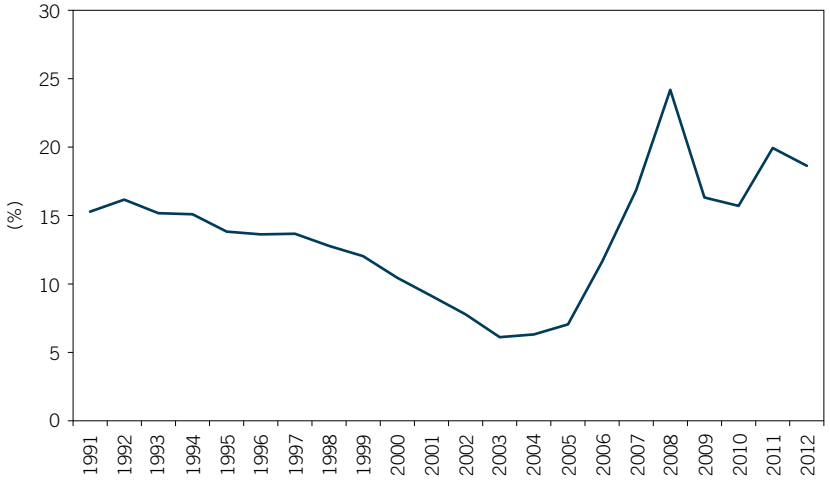
Period	Gross debt
1992-1993	30.2%
1994-1999	16.0%
2000-2005	12.4%
2006-2010	5.6%
2011-2012	11.6%
1992-2012	13.4%

Source: Ministry of Finance of Chile.

Financial Assets held by the Treasury

As a counterpart to debt, the level of Central Government's financial assets is a signal of financial strength, which is especially relevant in financial crisis periods. In the context of the structural balance policy, the high incomes of the Treasury in 2005-2008 resulted in a record increase of financial assets since beginning of the '1990s (see Figure 6), reaching almost 15% of GDP on average in the period, compared with 8% of GDP on average over the period 2000-2004 (see Table 3). This accumulation of financial assets helped to finance the Fiscal Stimulus Plan of 2009. In spite of the crisis, at the end of 2009 Chile had

FIGURE 6_FISCAL FINANCIAL ASSETS
(% OF GDP)



Source: Ministry of Finance of Chile.

TABLE 3_FISCAL FINANCIAL ASSETS
(% OF GDP)

Period	Total Assets
1991-1993	15.5%
1994-1999	13.5%
2000-2005	7.8%
2006-2010	16.9%
2011-2012	19.3%
1991-2012	13.5%

Source: Ministry of Finance of Chile.

gross assets equivalent to 6% of GDP, implying that the next administration (which took over in 2010) inherited financial assets like no other before in the history of Chile.

Net Debtor / Creditor Position

The net debt position of the Central Government is perhaps the most revealing indicator of its financial solvency. In the period 2006-2010, for the first time in its history the government of Chile reached a net creditor position, equivalent to an average of 11.3% of GDP, which contrasts with a net debtor position for the period 1990-2005 that averaged 5% of GDP (Table 4).

Interest Expenditure

High levels of consolidated central government debt do not only indicate a weak financial position, it also increases the costs of financing and make difficult to raise new debt for the government and local companies.

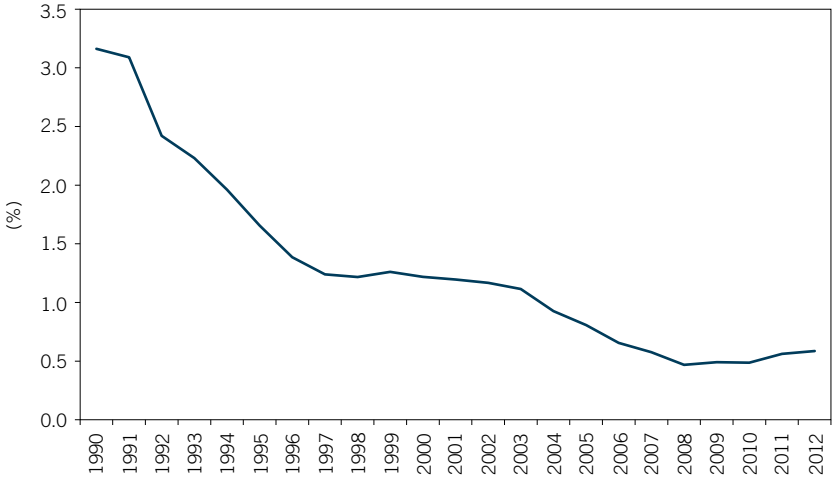
TABLE 4_NET GOVERNMENT POSITION
(LIABILITIES MINUS ASSETS AS % OF GDP)

Period	Gov position
1992-1993	14.6%
1994-1999	2.5%
2000-2005	4.6%
2006-2010	-11.3%
2011-2012	-7.7%
1992-2012	0.0%

Source: Budget Office and Central Bank of Chile.

Since debt has dropped to historically low levels, average interest expenditure has also been reduced to record low levels (see Figure 7). Interest expenses have been minimized to 0.5% of GDP and 2.7% of average consolidated spending, in contrast with 1.6% of GDP and 8% of spending in the 1990-2005 period (see Table 5). The importance of paying lower interest is that instead of having to pay financial obligations to close out past commitments, these resources can be used for current public policy priorities, namely either investment or social spending, which directly benefit the country's population.

FIGURE 7_AVERAGE INTEREST PAYMENTS
(% OF GDP)



Source: Budget Office and Central Bank.

TABLE 5_INTEREST PAYMENTS

Period	% of GDP	% Total Expenditure
1990-1993	2.7	13.3
1994-1999	7.3	7.3
2000-2005	5.1	5.1
1990-2005	1.6	8.0
2006-2009	0.6	2.9
1990-2009	1.4	7.0

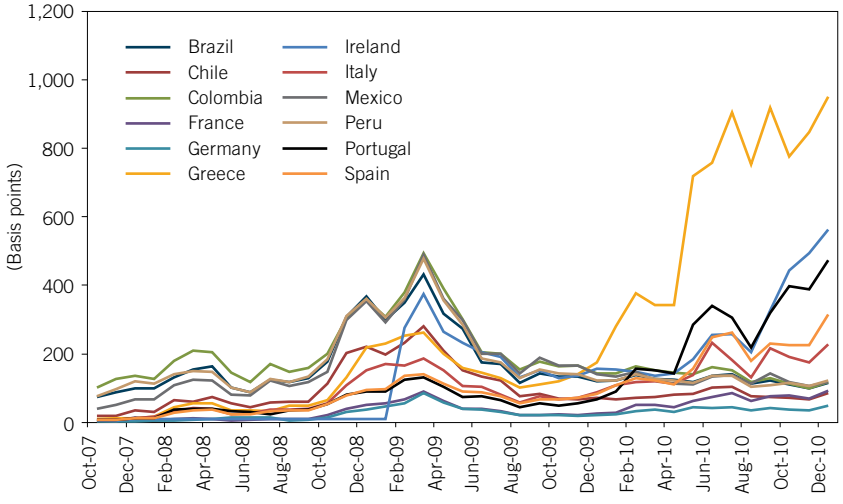
Source: Ministry of Finance of Chile.

Country Risk

The perception that foreign investors have on Chile is reflected in measures of country risk. Fiscal management is one factor that strongly affects foreign investors' confidence. Therefore, proper management is reflected in lower country risk, improving access and cost of external financing for both the government and domestic firms.

Chile's country risk has been lower than the reference countries. This situation continued even when the global economic crisis hit the markets. Chile's country risk increased but to a lesser extent than those of other reference countries. This situation is also particularly striking when is compared with the current situation of some European countries (see Figure 8).

FIGURE 8_COUNTRY RISK
(BASIS POINTS)



Source: Bloomberg.

C. *The Chilean rule in practice: asset dynamics*

How did the rule operate in practice and what kind of dynamics did it imply for government assets and liabilities?

If the surplus target is , the rule mandates that spending follow:

$$g_t = E_{t-1}(rb_{t-1} + \tau + \varepsilon_t + s_t) = rb_{t-1} + \tau - S \quad (14)$$

The law of motion for assets is

$$b_t = (1 + r)b_{t-1} + \tau + \varepsilon_t - g_{t-1} \quad (15)$$

Combining the two we have

$$b_t - b_{t-1} = s_t + \varepsilon_t \quad (16)$$

so that asset accumulation fluctuates with the realized shock.

Expressing this as shares of income we have

$$b'_t - b'_{t-1} = s' - \frac{\gamma}{1+\gamma} b'_{t-1} + \varepsilon'_t \quad (17)$$

where $x'_t = x_t/y_t$, y_t is GDP, γ is the rate of growth of GDP, and where the surplus target is assumed to be fixed as a share of GDP. The intuition behind this equation is simple: the government accumulates assets as a result of the surplus target (since $s' > 0$) and if and when the random shock is beneficial ($\varepsilon_t > 0$). Thus, in the absence of a sequence of bad shocks, net assets should grow with time (or net debt should fall, it is the same thing). This is exactly what happened throughout the decade beginning in 2000.

In steady state our last equation becomes

$$b' = \frac{1+\gamma}{\gamma} s' \quad (18)$$

so that long-term asset holdings are a multiple of the surplus target: the larger the target, the larger the stock of net assets toward which the government should expect to converge.

Given the above, in 2007 the Chilean government began considering whether the target equal to 1 percent of GDP should be maintained indefinitely. For that purpose it requested a study and evaluation from three reputed Chilean economists: Eduardo Engel (Yale University), Mario Marcel (Inter-American Development Bank) and Patricio Meller (Universidad de Chile).[5] The three argued in a paper that the 1 percent rule could lead to excessive asset accumulation.

Similarly, Velasco et al (2007), using fiscal data up to 2006, shows a possible path for government net assets. They conclude that the Chilean government would have been a net creditor to the tune of 17% of GDP by 2010. Based on this reasoning, the Chilean Ministry of Finance announced in 2007 that the 2008 budget would be designed with a lower surplus target of 0.5% of GDP.[6]

V. Macro effects of the structural approach to fiscal policy

While the fiscal policy has became countercyclical since the implementation of the structural balance rule, GDP has became less volatile. The obvious question is whether these good things happened because of the change in fiscal policy or because of something else (exogenous shocks became less volatile) or some other economic policy.

In this context, Franken, Le Fort, and Parrado (2006) shows that economic policy conditions registered the largest reduction in volatility, even larger than the output gap itself. This suggests that demand management and structural policies have made an economically significant contribution toward moderating business cycle fluctuations -in terms of both magnitude and amplitude. This outcome reflects the strengthening of the macroeconomic policy framework and an ongoing process of institutional building. On disaggregating this trend, the authors find that the volatilities associated with structural and monetary policies fell to about half their previous values, while the volatility of fiscal policy fell much more markedly (see Figure 9).

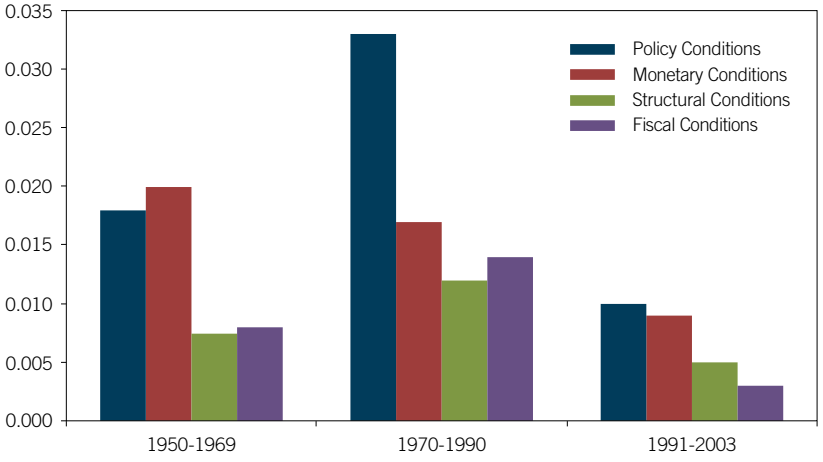
Resilience is commonly defined as the capacity to withstand shocks. It can thus be understood as the economy's capacity to limit the volatility of the output gap when confronting exogenous shocks. To measure resilience to external shocks -the most important type of exogenous shocks faced by the Chilean economy- the authors computed the ratio of the volatility of external shocks to the volatility of the output gap. Resilience to external shocks deteriorated markedly in the 1970s and 1980s and then improved sharply in the 1990s, to a slightly higher level than in the 1950s and 1960s.

The evidence gathered by the authors suggests that the Chilean economy has become more resilient to external shocks. An interpretation that helps reconcile these facts is that

[5] See Engel, Marcel, and Meller (2007).

[6] The target was later driven to zero at the outset of the world financial crisis.

FIGURE 9_VOLATILITY OF GAP COMPONENTS
POLICY CONDITIONS



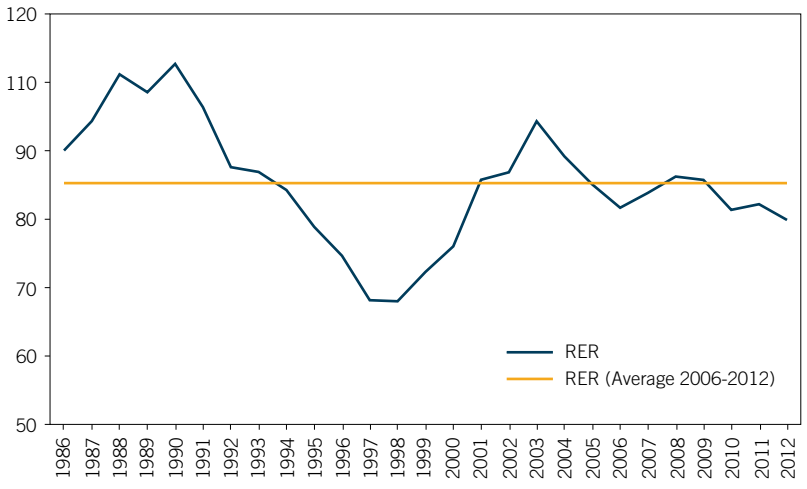
Source: Franken *et al* (2006).

policy actions can play a role as shock absorbers. Improved resilience to external shocks may result from policy actions that more effectively stabilize output, which would be manifested, for example, in a shift in the policy component from procyclical (positive correlation with the output gap) to countercyclical (negative correlation).

Overall, the strengthening of the policy framework in the last period of the sample (including the floating of the exchange rate, the adoption of the fiscal rule, and the refinement of the inflation targeting framework) seem to have played a significant role in the observed increase in the economy's resilience. This bodes well for these positive developments to be sustainable in the future.

In addition, in a small open economy -where the external sector plays a key role- the stabilizing action of a prudent fiscal policy has also been central to the external competitiveness of our economy. Indeed, the competitiveness of the Chilean economy has remained stable, largely due to the implementation of a fiscal policy framed in the context of the structural balance rule and the implementation of an investment policy that keeps these savings abroad. In the recent years, with high copper prices in average, the application of the fiscal rule has reduced the effect over the real exchange rate. Despite the significant increase in the terms of trade in recent years, the real exchange rate is currently slightly below the average real exchange rate between 1990 and 2009 (see Figure 10).

FIGURE 10_REAL EXCHANGE RATE
(1986=100)



Source: Central Bank of Chile.

VI. The political economy of the rule

Our discussion above suggests that there were two potential commons problems in the elaboration and approval of the Chilean budget: one among spending ministers who do not fully internalize the social costs of additional expenditure and one among parliamentarians who, representing individual districts, fully value the local benefits of additional spending but do not fully internalize the costs either. The introduction of the fiscal rule helped ameliorate both problems.

Begin with the interaction among ministers in the early phase of budget preparation and negotiation within the Executive. It matters a great deal how this process is structured. One alternative is to channel individual spending requests first and then let the spending ceiling emerge from the simple aggregation of those demands. An alternative is for a ceiling to be pre-set and then within that ceiling spending ministers bargain over their spending shares.

The latter system is clearly preferable, for it induces individual players to internalize the aggregate budget constraint. But the question arises: how is the spending ceiling to be determined? The fiscal rule provided the answer. Government could only spend its long-term, cyclically adjusted income (or slightly less, if the target implied a surplus); windfalls

had to be saved. Such a ceiling had several advantages: it was objectively determined; it was simply and easy to explain; it was intuitive (government was doing was any household would do: saving windfalls for a rainy day).

As a result, much of the debate and press speculation centered on what parameters the independent committees would issue and what they would imply for the spending ceiling (typically expressed, in Chilean practice, as the percentage real increase in spending over the previous year). Once the ceiling was set it was seldom questioned. Debate centered on how individual spending demands could be accommodated within the pre-set framework.

The operation of the rule also eased the relationship between Executive and Legislature in the process of amendment and approval of the budget. We saw above that Congress did not (and does not) have the power autonomously to increase spending on any given item. But negotiations did take place -sometimes fairly tense and charged negotiations- with blocks of parliamentarians withholding support for some items in an attempt to get other items funded. Having a pre-set and objectively chosen ceiling gave these discussions a measure of discipline, with individual players understanding that additional spending demands could not be too large, since they had to be funded by cuts elsewhere. The existence of a publicly acknowledged system also helped individual Congressmen or Senators explain to their constituencies why a particular spending item may not receive as much funding as the constituency might have desired.

It is important to underscore to note that the surplus target (at whatever level it was set) -and hence the spending ceiling- was a self-imposed discipline, not a legally mandated requirement. Recall that until the 2006 approval of the Fiscal Responsibility Law, the whole system rested on the power of decree of the Executive, which could be changed at a moment´s notice by another decree. And after passage, the law forced the government to prepare its budget on a cyclically-adjusted basis (it also mandated the government to allocate the resulting savings into the two sovereign wealth funds), but the actual level of the surplus target continued to be a free choice variable for the Executive.

Why then, one might ask, was it a useful and credible disciplining device for the discussions both within the government and between the Executive and the Legislature? One answer is that the ceiling provided by the rule served as a natural coordinating device or focal point. That is, agents may have understood that, in the absence of such a coordinating device, spending demands would mount and eventually the costs would be paid by all.

No agent would want to be the first unilaterally to reduce its spending claims. But if others are expected to do it because of the existence of an externally-imposed spending ceiling, then each agent individually may wish to do so as well.[7]

Notice that for the rule to play this role, what is essential that it generate a ceiling in an objective, predictably and comprehensible way. It is not essential that the ceiling be based on a cyclical adjustment or on any other particular criterion. This is not to say that the cyclically-adjusted or structural approach did not play a key role in improving fiscal performance; it did. The point, rather, is that the Chilean rule played a dual role: that of improving the political economy and thus the overall orientation of fiscal policy (by virtue of disciplining bargaining interactions both within and outside the Executive) and that of improving the macro properties of fiscal policy (by eliminating pro-cyclicality and introducing some mild countercyclicality).

Finally, note that the rule, by incorporating a positive surplus target in its early years, helped alleviate one more potential problem of the pre-2000 fiscal policy stance: that associated with contingent fiscal liabilities. At a general level, lowering public debt and accumulating assets provides a cushion against the materialization of those claims. More specifically, the Pension Reform of 2008 made explicit some of the pension liabilities that until then had (partially) been implicit and contingent. To match that, the Pension Reserve Fund created in 2006 began accumulating to the tune of a minimum of 0.2% and a maximum of 0.5% of GDP annually. An external actuarial review conducted by Stella and Guerra (2010) found that the PRF is on course to having sufficient resources to meet pension-related eventualities.

VII. From the budget rule to the Sovereign Wealth Funds

Application of the fiscal rule led, as we have seen above, to a substantial accumulation of government financial assets. Those assets had to be invested and managed. The institutional setup for doing that was provided by the 2006 Fiscal Responsibility Law.

[7] Formally, such a coordinating device would be enough to ensure such a "good equilibrium" if the underlying game among the many players displayed multiple equilibria, so what the device would do is simply coordinate expectations and actions on one give outcome -in this case, one without overspending. But notice, that was not the case in the model presented above, which displayed only one equilibrium for the set of strategies considered. However, if the model were extended to include "history-dependent strategies", in which actions depend on histories and not only on the current state, then the game would display many equilibria, and a rule such as the one could serve to provide coordination around a welfare-preferred outcome. See Benhabib, Rustichini and Velasco (2001) for a discussion of history-dependent strategies in a related model.

The law created two sovereign wealth funds (SWFs) as vehicles for managing those assets. The Pension Reserve Fund (PRF) was designed to help fulfill fiscal obligations in the areas of pensions and social security. Specifically, the fund is earmarked as backing for the government's guarantee to basic old-age and disability solidarity pensions and solidarity pension contributions for low-income pensioners.

The Economic and Social Stabilization Fund (ESSF) was created to finance fiscal deficits that may occur during periods of weak growth or low copper prices; it can also be used to pay down public debt and finance the PRF. In this way, it helps to reduce cyclical variations in fiscal spending, ensuring long-term financing for social programs.

Capital Contributions

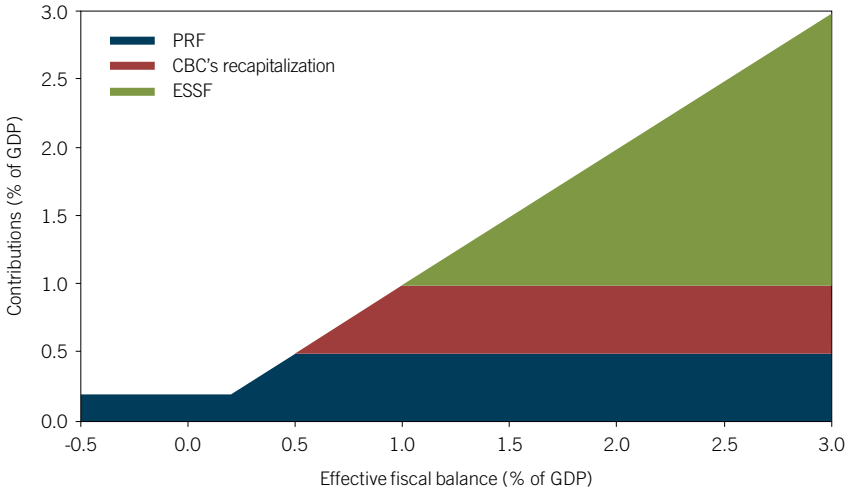
The minimum annual amount paid into the PRF is equivalent to 0.2 percent of the previous year's GDP, although if the effective fiscal surplus exceeds this amount, the contribution can rise to a maximum of 0.5 percent of the previous year's GDP. The transfer of resources must be made during the first half of the year. Under the Fiscal Responsibility Law, the government was authorized to capitalize the Central Bank of Chile (CBC) during five years beginning in 2006 by an annual amount of up to the difference between the government's contributions to the PRF and the effective fiscal surplus, with an upper limit of 0.5 percent of GDP. In 2006, 2007, and 2008, this capitalization was equivalent to 0.5 percent of GDP.

The remainder of the effective surplus, after payment into the PRF and capitalization of the CBC, must be paid into the ESSF. Repayments of public debt and advanced payments into the ESSF during the previous year can, however, be subtracted from this contribution (see Figure 11).

A. *Institutional Framework*

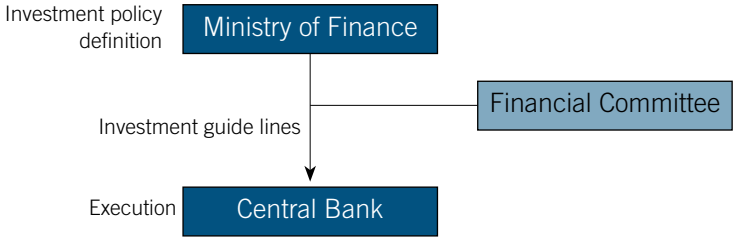
Investment of the assets of the PRF and the ESSF calls for a clear and transparent institutional framework that provides the necessary structure for making and implementing decisions, monitoring risk, and controlling investment policy. The basis for this framework was established in the Fiscal Responsibility Law. In addition, in 2006 the Finance Ministry appointed the CBC -subject to the approval of its governing board- as the fiscal agent for the management of both funds and established the general framework for their administration. The Finance Ministry also created the Financial Committee in 2007 to advise the Finance Minister on the investment of the assets of the ESSF and the PRF (see Figure 12).

FIGURE 11_FISCAL SAVINGS RULE



Source: Ministry of Finance.

FIGURE 12_INSTITUTIONAL FRAMEWORK



Source: Ministry of Finance.

b. *Investment Policy*

The investment policy, defined when the PRF and the ESSF were created, involved asset classes similar to those used by the CBC for international reserves. This choice was based mainly on the CBC's vast experience managing these asset classes. In the first quarter of 2008, a new investment policy more closely aligned with the funds' characteristics was drawn up, but its implementation was postponed as a result of the global financial crisis, and the original investment policy remained in force throughout 2008-2010.

Under the original policy, 66.5 percent of the funds' assets are held as nominal sovereign bonds, 30 percent as money market instruments -such as short-term highly rated bank

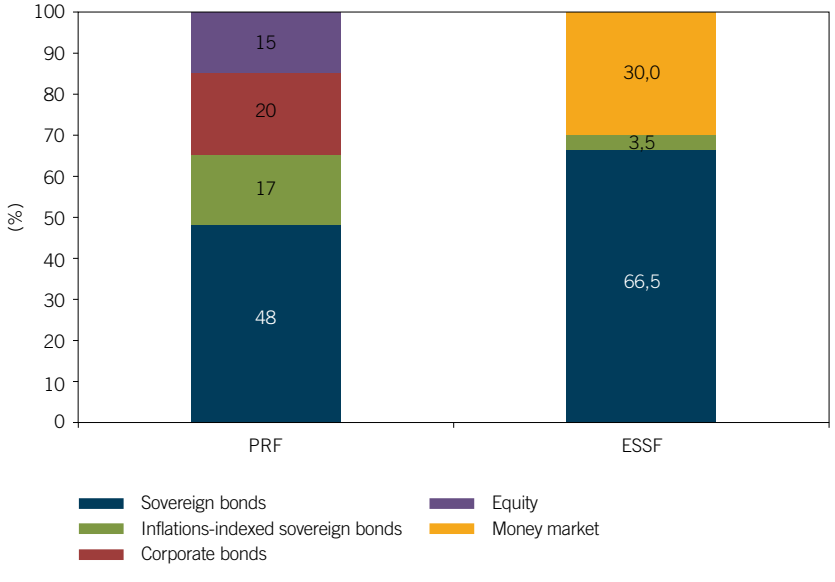
deposits and treasury bills- and 3.5 percent as inflation-indexed sovereign bonds (see Figure 13). This is a conservative policy given that it does not include asset classes with higher levels of risk such as equities, corporate bonds, and alternative investments.In the case of the PRF, the investment policy now includes 15% of equities and 20% of corporate bonds.

In addition, a reference allocation by currency has been established, specifying 50 percent in U.S. dollars, 40 percent in euros, and 10 percent in yen, with a restriction of up to a 5 percentage point variation on these values. These guidelines also allow investments in instruments in other currencies but require exchange-rate coverage tied to one of the three other currencies.

Notice that this investment strategy involves investing all of the funds´ assets in foreign currency and outside the country. This may seem surprising, given that the bulk of the government´s spending commitments are denominated in pesos. There are three reasons for this choice.

First, an investment policy based only in foreign currency is a natural hedge that generates a counter-cyclical influence on government income. Given the negative correlation between the nominal exchange rate and the price of copper, the government tends to ac-

FIGURE 13_INVESTMENT POLICY



Source: Ministry of Finance.

cumulate resources when copper is high and the peso strong, and to dissave whenever the opposite occurs. Put differently, the counter-cyclical effect provided by the movements of exchange rate in response to the most likely medium term path of the copper price may be sufficient to replace a potentially costly hedging strategy.

Second, saving the resources abroad helps stabilize the real exchange rate. The potential conversion of copper revenues (which the government receives in US dollars) into local currency may generate a significant appreciation of the exchange rate, generating the so-called Dutch Disease despite the application of the structural balance rule. This is avoided by keeping the savings in foreign currency.

Third, the magnitude of sovereign asset accumulation relative to local financial market size could create a bubble with the associated negative consequences. To reduce this risk the government of Chile decided to invest both funds entirely in foreign currency and outside the country.

The investment policy adopted by Chile´s two SWFs was very conservative, but this conservatism would serve the country well when the financial crisis hit. Despite the financial turbulence, the Chilean SWFs had among the highest returns of all the world's SWFs with data available in 2008. In 2009, international markets displayed a boom in riskier asset prices, so many SWFs enjoyed strong recoveries in their market values; meanwhile, Chile stayed with the same prudent portfolio with consequent lower returns in the year. On average, the rates of return of the Chilean funds in the 2007-09 period were still higher than those of their peers.

C. *Transparency*

The Chilean government's commitment to developing and improving all aspects of the funds' management includes the transparency of their decisions and access to relevant information. To this end, it systematically prepares and publishes reports about the SWFs' situations, provides information about the main issues discussed in each meeting of the Financial Committee and about its recommendations, and discloses all significant decisions about the SWFs' management adopted by the Finance Ministry.

To guarantee public access to all relevant information about the ESSF and the PRF, the Finance Ministry has created special Websites in Spanish and English containing all monthly, quarterly, and annual reports about the funds; the recommendations of the Fi-

nancial Committee and its annual report; the legal and institutional framework for the funds; and press releases and other information. This commitment to effective and opportune access to information was particularly important in 2008 when the global financial crisis and the liquidity problems experienced by different financial institutions around the world meant increased demand for information about the position of the institutions in which the funds' assets were deposited as well as about the intermediaries and custody services used. This led to a decision to publish quarterly reports about these institutions, rather than the annual report issued through September 2008.

As part of Chile's commitment to best SWF practices, the government decided to participate actively in initiatives launched by several international organizations in a bid to establish an operating framework for SWFs and promote their transparency. Both the Finance Ministry and the CBC have taken an active role in the International Working Group of Sovereign Wealth Funds (IWG). The IWG concluded its discussions with a broad agreement on best principles and practices of SWFs. This agreement is known internationally as the "Santiago Principles." Chile's active role in this meeting reflects its government's commitment to promoting transparency in the management of resources that belong to all Chileans and to the creation of a permanent forum for the exchange of views and information among different SWFs and the countries in which they invest.

Chile's efforts to improve transparency have been internationally recognized. In a ranking published by the Peterson Institute for International Economics in April 2008 the ESSF was awarded 82 points out of 100 for transparency and accountability, taking sixth place out of 34 SWFs. In the overall ranking, which also included other aspects, such as fund structure, objectives, fiscal treatment, organization, corporate governance, and use of derivatives, the ESSF ranked eighth. Similarly, in 2009, Chile obtained a perfect score in the Sovereign Wealth Fund Institute's global ranking of transparency and good administration of the world's 45 major sovereign funds.

VIII. Impact of the Global Financial Crisis

When the global financial crisis hit, Chile's economy was in an excellent position to mitigate its effects. The country's preparedness was, to a great extent, the result of lessons learned from previous crises. After a 1982 banking crisis, Chile began to implement prudent and modern financial regulations with high standards of supervision. This allowed Chile to face the recent global credit crunch with a solid and well-capitalized financial system.

The 2007-09 global financial crisis was the first crisis Chile had confronted with a flexible exchange rate. That policy helped it avoid building up currency exchange imbalances and facilitated the application of countercyclical policies. The inflation-targeting framework implemented by the CBC led naturally to an easing of monetary policy in the context of plummeting inflationary expectations resulting from the softening of the business cycle and the collapse of oil prices. The flexible exchange rate provided a natural cushion to accommodate fluctuations in external conditions. The CBC also accumulated a prudent quantity of international reserves that, together with treasury assets, helped Chile face the liquidity restrictions that began to arise in the latter months of 2008.

Last but certainly not least, Chile could fact the financial crisis. Public debt was negligible and the Treasury was a net creditor for the first time in its history. This combination of factors endowed Chile with a "fiscal space" to engage in countercyclical fiscal policy that many other nations in the world -many of them in Europe- were sorely lacking.

When the crisis hit, the first priority was to avoid a liquidity crunch in the domestic financial system. In October 2008, the Finance Ministry and the CBC implemented a number of measures to ensure the economy's liquidity in both national and foreign currencies. The CBC stopped buying U.S. dollars to accumulate reserves; opened a window for US$500 million auctions of 28-day currency swaps, which it later expanded to 180 days; eased collateral requirements for repo operations; and temporarily loosened bank reserve rules. At the same time, the government auctioned off US$1.05 billion of Treasury assets in U.S. dollars to be deposited in the local banking system.

Next it came the fiscal response. Chile's government put in place opportune, substantial, and temporary fiscal measures. In January 2009, Chile became one of the first countries to react to the global crisis by announcing an extraordinary fiscal stimulus plan. Close to US$4 billion, equivalent to 2.8 percent of GDP, was assigned to this package from the ESSF. At the time it was announced, this 2009 fiscal plan was the world's second largest as measured by resources committed relative to the economy's size.

To implement this expansionary fiscal policy, Chile opted for a diversified strategy, combining increases in public investment with transfers, employment subsidies, credit subsidies and stimuli, capitalization of state enterprises, and tax discounts. Special emphasis was placed on transitory measures, giving economic agents greater incentives to increase their short-term demand to take advantage of these stimuli.

The logic behind this design was as follows: in a situation of extraordinary uncertainty, with most components of private demand falling sharply, previous estimates of fiscal multipliers become unreliable, since it is nearly impossible to guess how private spending will react to the fiscal expansion. Given this uncertainty, it is prudent to act on many fronts simultaneously, maximizing the chances at least a subset of fiscal stimuli will have the desired effect.[8]

These measures were proportional to the shock the country was facing. The 2009 fiscal impulse (drop in tax collection plus increased spending) was similar in magnitude to the estimated decline in nonmining exports. By this token, the fiscal impulse could hope to stabilize available private income.

The fiscal plan was enhanced in March 2009 with 20 additional measures to stimulate the credit market -known as the Pro-Credit Initiative- and one month later with an unprecedented pro-employment agreement among government, workers, and businesses.

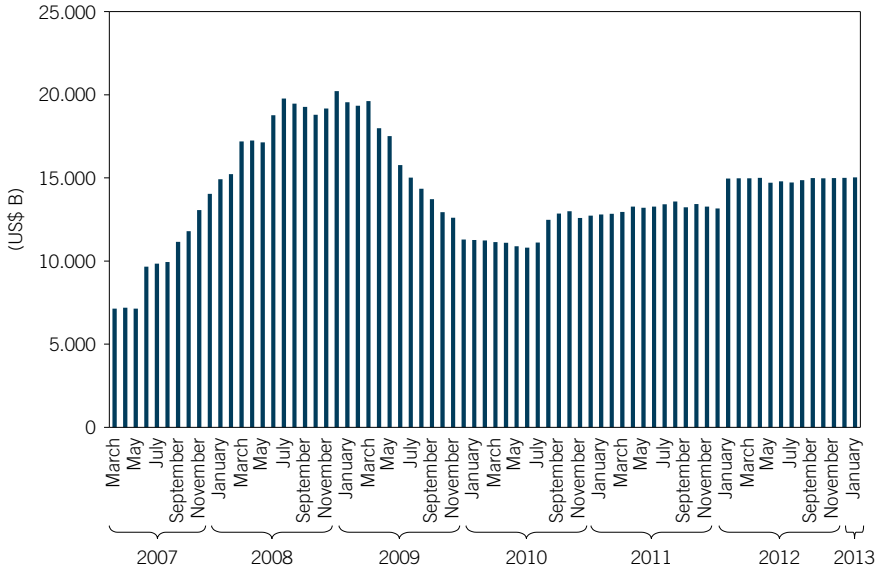
The sharp drop in aggregate demand hit fiscal revenues very hard. In addition, over the course of 2009 Chile experienced deflation, with the CPI falling by 1.4%. Since expenditure is fixed in the budget in nominal terms, this meant a higher-than-anticipated real increase in expenditure. The combination of sharply lower revenues and higher outlays meant that by the end of the year the fiscal deficit was higher than it had been estimated at the time of the launching of the fiscal stimulus. In the end the actual total deficit reached 4.5% of GDP and the structural deficit 1.3% of GDP, substantially higher than the structural balance that had been forecasted earlier in the year.[9]

The gap was financed by drawing down from the ESSF. Implementation of the stimulus and the drop in tax collection led the government to use the ESSF again in June 2009, drawing down US$4 billion on top of what had already been withdrawn in the first half of the year. Given the objectives of the funds, countercyclical fiscal policy triggered disbursements from the ESSF and not from the PRF (see Figures 14 and 15).

[8] See Blanchard, Cottarelli, Spilimbergo and Symansky (2008).

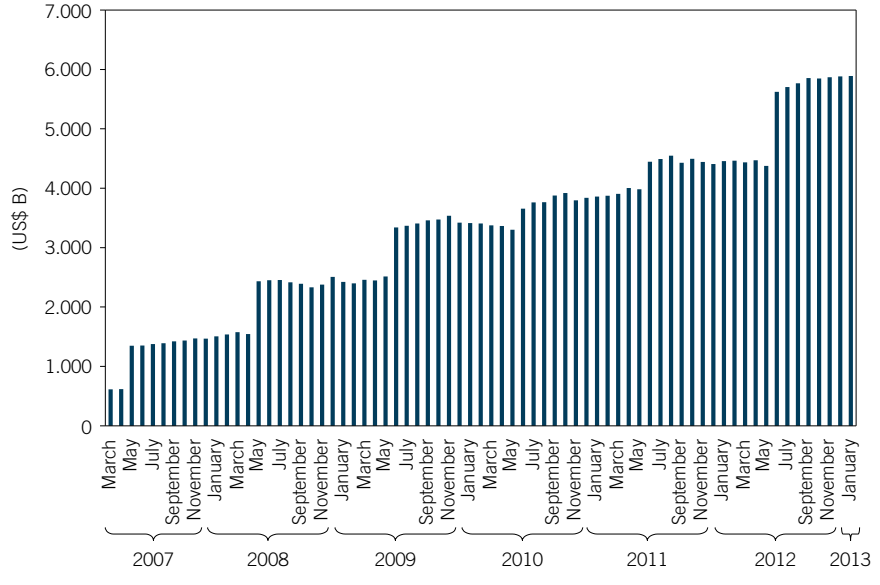
[9] That is the structural balance calculated employing the methodology that was in use in 2009. In mid-2010 the new administration, following a preliminary report by the Advisory Committee (see below) introduced some methodological changes which, if applied retroactively, would have enlarged the 2009 structural deficit. The bulk of the difference has to do with the treatment of temporary tax cuts which, in the 2009 methodology, were not considered to alter structural or "permanent" income.

FIGURE 14_ESSF MARKET VALUE



Source: Ministry of Finance.

FIGURE 15_PRF MARKET VALUE



Source: Ministry of Finance.

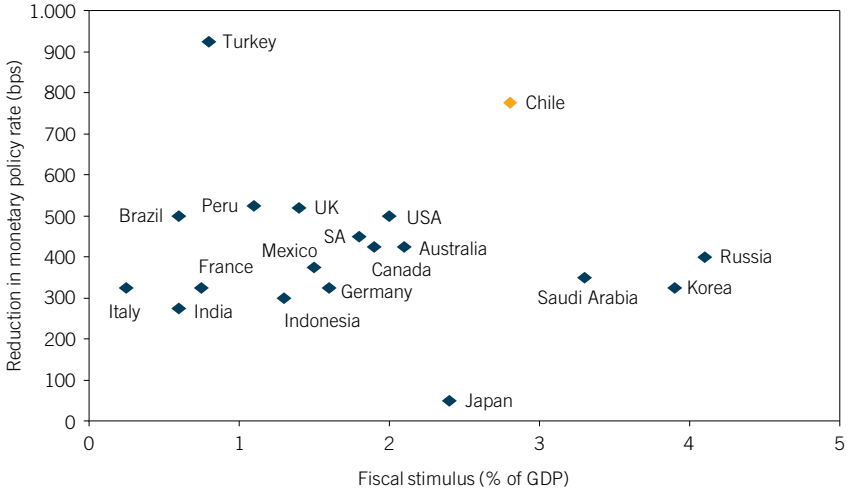
Expansive countercyclical policies were aided by an aggressive reduction in the CBC's monetary policy rate, taking advantage of lower inflationary perspectives and a widening output gap. The 775 basis point rate decrease over the course of 2009 brought the CBC's interest rate to a historic low of 0.5 percent.

To enhance the monetary policy stimulus, in mid-2009 the CBC adopted unconventional monetary policy measures, mostly by establishing a term lending facility for the banking system at the current monetary policy rate. The CBC stated that monetary policy would remain at that level until at least the second quarter of 2010.

There was a deliberate effort, to coordinate its fiscal and monetary policies. Chile stood out as the country with the most-aggressive countercyclical policies, which substantially eased credit conditions and a large fiscal stimulus (see Figure 16).

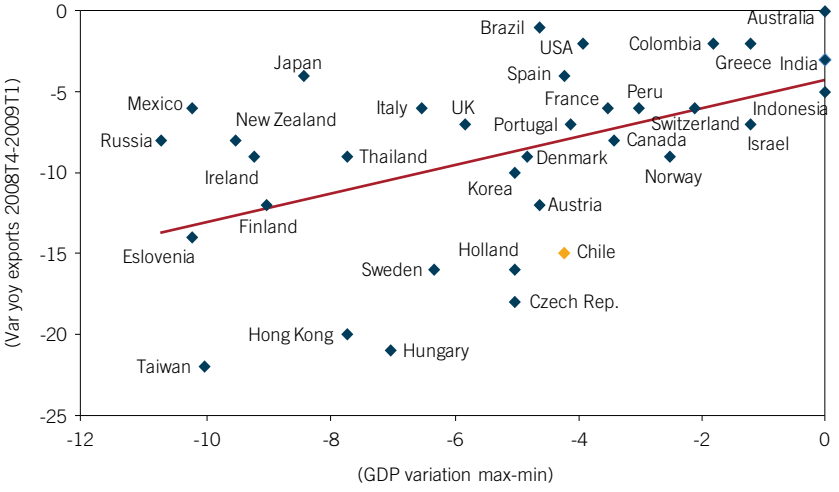
These policies paid off. Given the magnitude of the shock, the contraction in output was relatively small and short-lived. Figure 17 shows one proxy for the exogenous shock –the size in the drop of export values as a share of GDP-plotted against the fall in output from pre-crisis peak to trough. The figure shows that in a large sample of countries, both emerging and developed, only two (Norway and Canada) clearly outperformed Chile in the sense of having experienced both a larger export drop and a smaller output contraction.

FIGURE 16_FISCAL AND MONETARY POLICY STIMULUS



Source: International Monetary Fund and Bloomberg.

FIGURE 17_FISCAL AND MONETARY POLICY STIMULUS



Source: International Monetary Fund and World Bank.

In the end, real GDP fell by 1.5% in 2009, with the recovery in demand and output visible already beginning in the third quarter of 2009. A tremendous earthquake hit Chile in February 2010, causing substantial loss of life, a destruction of the capital stock put at around US$8 billion and long lasting production dislocations in the south-central portion of the country. But all this damage could not hold back the recovery: Chile grew 5.3% in 2010, with investment rising sharply both for cyclical reasons and to meet the needs of reconstruction. As of the time of writing, the country stands poised to have another strong year in 2011, with consensus forecasts putting growth in the vicinity of 6%, the highest in Latin America. This all suggests that the countercyclical fiscal and monetary policies were extremely effective: by limiting the size and the collateral damage of the 2009 demand collapse, they created the conditions for a strong and healthy recovery.

IX. Conclusions

Over the past quarter-century Chile has proven that the unthinkable is possible: a middle-income emerging nation can have a fiscal policy that is sounder and more sustainable than the fiscal policies of most nations, rich or poor. The mantra of this policy has been very simple: act responsibly, design policy for the long run, and accumulate enough fiscal space so that fiscal policy can play a stabilizing role in the short run. This orientation also implies a decidedly countercyclical approach during both phases of the cycle: saving dur-

ing the period of high copper prices and using those accumulated resources during the global economic crisis.

This new approach to fiscal policy also improved the political dynamics of budget design and approval. Structural income (minus the targeted surplus) provided a spending ceiling that helped discipline competing claims by spending ministers and parliamentarians. Chile´s budget-making arrangements, at the outset stronger than those of many emerging markets, were improved even further.

Chile´s fiscal policy underwent two demanding tests. In the early years of the copper boom, the key was to show that the copper windfall could be saved, in spite of mounting political pressures to the contrary. During the financial crisis, the key was to demonstrate that accumulated fiscal resources could be used aggressively to cushion the impact on economic activity and employment. Chile´s fiscal policy passed both tests, and with good marks.

But success should not breed complacency. Not everything is taken care of in Chile´s public finances. There are several challenges ahead.

The first challenge that must be met is to gradually withdraw the fiscal stimulus that began in 2009. As the economy recovers sharply, the unusual fiscal impulse is no longer necessary. On the contrary, a tighter fiscal policy leaves more room to the necessary monetary tightening to be more gradual, thus limiting incentives for capital inflows and helping prevent an excessively sharp appreciation of the Chilean peso. The macroeconomics of the situation is clear, but the political challenges are nonetheless there: the inertia of maintaining transitory spending programs that were created to confront a specific situation should be avoided.

The second challenge has to do with the institutional structure of fiscal policy. Using external and independent committees to fix the long term price of copper and the growth trend has proven very successful. There is room to build on this success and provide more institutional structure onto other aspects of the application of the structural approach: for instance, in determining what changes need to be made to the methodology for calculating structural or long term fiscal income. This methodology needs to be continuously improved to reflect underlying structural change in the economy. A balance must be struck between precision and simplicity: only a rule that is simple enough can be understood by the population and will remain legitimate and politically acceptable. At the same time, an effort must

be made continuously to provide additional degrees of transparency and accountability. In this context, the current government formed an Advisory Committee that will issue its final report in the first quarter of 2011.[10] This is an opportunity to take further steps to improve further the successful Chilean approach to fiscal policy.

The third challenge is permanent: how to improve continuously the quality of public spending. It is not enough to merely ensure the availability of fiscal resources and the sustainability of programs and benefits provided to the population. These benefits need to be high quality and must be provided efficiently.

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[10] The Advisory Committee, in a preliminary report, issued some technical recommendations regarding changes to the existing methodology for calculating structural fiscal income. In particular, it proposed that all temporary tax changes should be treated as if they were permanent. It also recommended eliminating the cyclical adjustment to interest income. We do not agree with these recommendations, which move the methodology away from the spirit of trying to approximate the "permanent income" of the fisc.

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