**IDB**

# The Structural Balance Rule in Chile: Ten Years, Ten Lessons

Mario Marcel

# The Structural Balance Rule in Chile: Ten Years, Ten Lessons

Mario Marcel

**IDB**

Inter-American Development Bank

2013

http://www.iadb.org

# Abstract[*]

This paper describes the adoption and application of the structural fiscal balance rule in Chile, evaluates its outcomes after the first 10 years, and draws 10 lessons from the experiences that may be useful for the further development of fiscal policy in Chile, as well as for the implementation of a similar rule in other countries. The paper examines the fiscal rule in its conceptual, economic, institutional, and political dimensions, and concludes with a discussion of the future of the fiscal rule in Chile and an examination of some alternatives to improve its performance in an environment marked by the consequences of the 2008–09 international financial crisis, the 2010 earthquake in Chile, and changes in the Chilean government.

**JEL Codes:** E62, H60
**Keywords:** Fiscal Policy, Fiscal Rules, Structural Budget Balance

---

# 1.    Introduction

In May 2000, President Ricardo Lagos announced the adoption of a structural fiscal rule as the foundation of Chile's fiscal policy. During the 10 years after its adoption, the fiscal rule was applied by three administrations through two complete business cycles. The rule has been in force during two recessions, an expansionary period, and an earthquake, including recovery and reconstruction. Experts in public finance, financial analysts, and international organizations single out the Chilean fiscal rule as a fundamental pillar of the country's macroeconomic stability and an example to be followed by other countries of the world (IDB, 2008; IMF, 2008; OECD, 2010).

This positive record does not imply that the structural fiscal balance rule has not been criticized or adjusted over time. Initially, some people were skeptical, believing that the rule was too rigid and imposed an exceedingly demanding goal. Depending on the stage of the economic cycle and the observer's preferences, the rule has been criticized either for not limiting public expenditure growth, being too timid or conservative, or not contributing enough to stabilization. On several occasions, the rule's transparency and stability have been called into question. In response to these criticisms, changes have been introduced to the methodology used to estimate the structural fiscal balance, and efforts have been made to give greater sophistication to the institutions that support the rule. Although on several opportunities analysts predicted that the structural fiscal balance rule would end, the rule has proven highly resilient, and no solid alternative has arisen to replace it. The government that took office in March, 2010 ratified its intention to continue applying a structural rule, while summoning a group of experts to improve its methodology and its institutional architecture.[1]

This paper describes the adoption and application of the structural fiscal balance rule in Chile, evaluates its outcomes after the first 10 years, and draws 10 lessons from the experiences

---

[1] This group is the "Advisory Committee for the Design of a Second-Generation Structural Fiscal Balance Policy for Chile," chaired by Vittorio Corbo, with the participation of Ricardo Caballero, Francisco Rosende, Klaus Schmidt-Hebbel, Rodrigo Vergara, Joaquin Vial, and this author. A preliminary version of this paper was presented to the committee as a contribution to its deliberations.

that may be useful for the further development of fiscal policy in Chile, as well as for the implementation of a similar rule in other countries. The paper examines the fiscal rule in its conceptual, economic, institutional, and political dimensions, and concludes with a discussion of the future of the fiscal rule in Chile and an examination of some alternatives to improve its performance in an environment affected by the 2008–09 international financial crisis, the 2010 earthquake in Chile, and changes in the Chilean government.

## 2. The Structural Fiscal Balance Rule

### 2.1. Origins and Rationale of the Fiscal Rule

When President Ricardo Lagos announced his government's commitment to apply a fiscal policy rule based on the notion of a structural fiscal balance in May 2000, his decision was not based on improvisation or stubborn determination. It was backed by four months of intense and thoughtful reflection on how to conduct fiscal policy during his tenure. Lagos was coming to power as the first socialist president in 30 years and after intense controversy on the handling of fiscal policy during the 1997–99 Asian crises. Even before entering the presidential office, Lagos understood the advantages of adopting a fiscal rule, and his new economic team was working intensely to find a methodological design to combine the predictability associated with fiscal rules and the flexibility required to cushion the volatility of revenues.

The rule that was finally proposed was based on a structural fiscal balance measure that adjusts fiscal balances by taking into account the effects of the business cycle and the volatility of copper prices on revenues. Based on this indicator, the defined policy goal was to generate an annual structural surplus equivalent to 1 percent of GDP. The enforcement of the fiscal rule began with implementation of the 2001 National Budget.

The structural fiscal balance rule combined three streams of economic thought. In the first place, adopting a fiscal rule reflected a search for more predictability in the evolution of fiscal policy. This need arose from the crises of the 1970s and 1980s, which revealed the limits of fiscal discretion and spurred the emergence of new perspectives on how economic agents adjust their behavior according to expectations about future fiscal decisions. The capability of fiscal rules to steer the expectations of economic agents was reflected in the importance given by

the European Monetary Union to fiscal convergence norms, in the notoriety of the so-called "golden rule" of the United Kingdom, and in the inclusion of policy rules into fiscal responsibility laws that Latin American countries enacted toward the end of the 1990s. The search for greater predictability and transparency in fiscal policy became particularly intense during the 1997–99 Asian economic crises, contributing to the emergence of best practices codes for fiscal transparency, such as those proposed by the IMF (2007) and the OECD (2002).

The second contributing factor, the Chilean rule, resulted from more than 50 years of effort to generate fiscal policy indicators that could differentiate between the impact of the business cycle on public finances and the effects of policy decisions made by authorities. The document that explains the methodology adopted by Chile dedicated an entire chapter to history of fiscal policy indicators, beginning with an appendix to the Beveridge Report written by Kaldor in 1944, and continuing to the methodologies used by the OECD and the IMF to measure structural or cyclically adjusted balances in developed countries (Marcel et al., 2001). Although most of these studies aimed at generating indicators to analyze the direction of fiscal policy, the Ministry of Finance team used them to generate a policy rule to prevent the traditional procyclical behavior of public finances.

Third, the establishment of a structural surplus goal reflected concern over Chile's fiscal sustainability in the face of significant macroeconomic and budgetary uncertainties. Specifically, at the time of defining this policy, the country was experiencing the last throes of the Asian crisis, and the Chilean Central Bank had not been able to overcome impacts of the financial crisis of the early 1980s: a sustained operational deficit, a growing deficit in the pension system, and ambitious goals for public-private-partnership (PPP) programs. In these circumstances, establishing a structural surplus goal was equivalent to creating a self-insurance policy designed to neutralize the various fiscal and quasi-fiscal risks involved.

In addition to these economic reasons, the structural surplus rule also had a political justification. In spite of Chile's evidently prudent management of fiscal policy—reflected in 13 consecutive years of budget surplus and a significant reduction of public debt—the Asian crisis moved public finances into deficit, making some analysts doubt not only the motivations of the authorities, but also the direction of their policy decisions. These problems were exacerbated by the arrival of a socialist president who prevailed in a contentious election and was stigmatized by

4

the memory of irresponsible fiscal management during the *Unidad Popular* government of the early 1970s. In these circumstances, adopting a structural fiscal balance rule significantly increased political commitment to fiscal discipline, a step that was expected to reduce the uncertainty of economic agents.

The significance of adopting such a rule ought to be understood in the context of the characteristics of the country's fiscal institutions. Chile has one of the most hierarchical budgetary institutions in Latin America and it makes up the backbone of the highly political presidential regime of the last 80 years (Marcel, 1998; Haussman and Gavin, 1995). The adoption of a fiscal policy rule meant that President Lagos' government was prepared to renounce to a significant degree his control over the management of public finances to increase the trust of economic agents.

## 2.2. Description of the Rule

The structural fiscal balance rule is composed of three elements: (a) an indicator of the central government's consolidated structural fiscal balance; (b) a numeric target for that measure; and (c) a methodology for budget formulation and execution to meet the target.

### 2.2.1. Structural Balance Indicator

The structural balance indicator relies on criteria similar to those used by the OECD and the IMF to calculate structural or cyclically adjusted balances.[2] All of these measures are based on a definition of structural balance as the fiscal balance that would be generated if an economy were growing at its trend rate, separating out the impact of the business cycle on public finances. Specifically, the structural balance is obtained by subtracting the business cycle's impact on the budget from the central government's actual budget balance:

(1) $BE = B - ECP$

---

[2] The OECD and IMF methodologies are summarized in Girouard, N. and C. André (2005), and Hagemann, R. (1999), respectively.

Where BE is structural balance; B is actual balance, and ECP is impact of the business cycle on the budget.

In other words, any change in the fiscal balance that is not determined by cyclical factors can be deemed as "structural." A structural balance measure may include temporary or random changes in income and/or expenditures, as long as they are not correlated with the business cycle. Since transitory changes can be endogenous (policy decisions) or exogenous (changes in other macroeconomic variables such as interest rates, exchange rates, or inflation), using the structural balance as the basis for the policy rule implies that authorities are sufficiently capable of anticipating or neutralizing such changes when they occur.

The IMF and the OECD define the ECP in developed countries as the impact of fluctuations in economic activity on tax income and on some government expenditures associated with unemployment. Estimating ECP requires being able to measure the business cycle and the elasticity of incomes and expenditures to such cyclical fluctuations; specifically:

$$(2)\ ECP = \mu\,(Y-Y^*)$$

Where $\mu$ is income and expenditure elasticity in relation to GDP; Y is real GDP, and $Y^*$ is trend GDP.

In estimating the structural balance in Chile, two important adjustments were initially incorporated to account for the realities of the country's public finances. The first was to restrict measurement of the cyclical component of the budget to the income side, considering its impact on tax revenues and pension contributions alone. The second was to incorporate the impact of copper price fluctuations as part of ECP, in view of the importance of copper revenues to the size and variability of government incomes. Therefore, for Chile, BE is estimated as follows:

$$(3)\ BE = B - \mu\,(Y\ Y^*) - C\,(P_{Cu}-P_{Cu}^*)$$

Where C is physical copper sales; $P_{Cu}$ is the actual price of copper, and $P_{Cu}^*$ is the long-term price of copper.

It becomes clear that to calculate structural balance—in the initial form of this indicator—it is necessary to measure three variables (B, Y, and C) and estimate one parameter (μ) and two trend or long-term variables (Y* and $P_{Cu}$*). Table 1 describes the methodologies that were used to estimate the structural balance indicator in Chile in its original (1999) version and in 2009.[3] While the original version directly applied expression (3), shown above, to an adjusted version of the fiscal balance of central government's budget level, the 1999 version targeted the consolidated central government,[4] based on the statement of government operations (as defined in IMF, 2001) and adding four cyclical adjustments. These adjustments are related to: (a) fluctuations in tax revenues from private mining; (b) fluctuations in fiscal incomes derived from changes in the price of the molybdenum marketed by the National Copper Corporation of Chile (Corporación Nacional del Cobre de Chile, or CODELCO); (c) fluctuations in interest proceeds from sovereign funds; and (d) fluctuations in "other income" that are presumed to be correlated with the business cycle.[5]

Table 1 underscores that the methodology to estimate structural balance has undergone important changes since its original application in 2001. These changes have affected each of the estimation's components, ranging from the basis of the fiscal accounts to the inclusion of new cyclical budgetary components. Section 2.3 assesses the rationale and directions of these changes.

---

[3] The first report of the Advisory Committee proposed some adjustments to this methodology, but at the time this paper was being written, the adjustments still had not been validated by the authorities.
[4] Includes the central government, both budgetary aspects (in accordance with the Public Sector Budgets Law) and off-budgetary aspects (income and expenditures associated with the Reserved Copper Law, adding the interest accrued by recognition bonds).
[5] "Other income" includes operational income, property income other than the yields of financial assets in sovereign funds, and other income.

# Table 1. Methodology for the Estimation of Structural Balance in Chile

| COMPONENT | ORIGINAL METHODOLOGY | PRESENT METHODOLOGY (2009)) |
|---|---|---|
| Actual balance (B) | Budgetary balance of the central government on a cash basis, including reclassifications to reflect changes in net worth (Adjusted balance) | Consolidated balance of the central government (budget and off-budget) based on GFSM-2001 (Net acquisition of assets in governmental state of operations) |
| GDP (Y) | Total GDP at market prices according to national accounts; base year: 1996 | Total GDP at market prices according to national accounts; base year: 2003 |
| Physical copper sales (C) | Physical CODELCO sales | Physical CODELCO sales<br>Income tax and additional tax on remittances revenues from the 10 main mining companies<br>Royalty revenues from the private mining companies |
| Tax revenues (T) | Total tax revenues plus social security contributions | Tax revenues, minus income tax and additional tax on remittances from the 10 main mining companies, minus royalty from private mining, plus health insurance contributions |
| Elasticity of tax revenues to GDP ($\mu$) | Aggregate elasticity of total tax revenues plus social security contributions to GDP | Elasticity disaggregated by five tax categories: annual income tax, monthly income tax, PPM, indirect taxes, other taxes; and health care contributions |
| Trend GDP (Y*) | Trend GDP estimated on the basis of a production function using Stock-Watson methodology<br>Production factors adjusted by quality<br><br>Total Factor productivity (PTF) obtained as a residual<br>Hodrick-Prescott filter to smooth out fluctuations in production factors and PTF<br>Off-sample observations obtained on the basis of assumptions prepared by the Finance Ministry | Trend GDP estimated on the basis of a production function using Stock-Watson methodology<br>Production factors adjusted with a new indicator of capital use, variable depreciation rate, hours worked and educational quality<br>PTF obtained as a residual<br>Hodrick-Prescott filter to smooth out fluctuations in production factors and PTF<br>Off-sample observations obtained from consultations with committee of independent experts |
| Actual price of copper ($P_{Cu}$) | Average FOB price of CODELCO's exports | Average FOB price of CODELCO's exports; BML price for taxation on big private mining companies |
| Long-term price of copper ($P_{Cu}$*) | Reference price of the Copper Compensation Fund (FCC), estimated by the Finance Ministry | Long term price of copper, estimated by a committee of independent experts as an average over the next 10 years |
| Revenue from molybdenum | Not considered | Revenue obtained by CODELCO from the sale of molybdenum, adjusted for differences with long-term price, calculated as a moving average of the previous 4 years |
| Interest earned | Not considered | Interest earned on financial assets, recalculated according to long-term nominal interest rate |
| Other income | Not considered | Operational income, property revenues other than interest and capital gains on financial assets in sovereign funds, presuming a unit elasticity regarding GDP |

Sources: Marcel et al (2001); DIPRES (2003b), (2005), (2007), (2008); Rodriguez et al (2006), and Velasco et al (2010).

*2.2.2. Structural Fiscal Target*

A fiscal policy rule requires more than an application base; it also needs a numerical target. In the case of the structural fiscal balance rule in Chile, that target was originally set as an annual surplus equivalent to 1 percent of GDP. The first documents explaining the fiscal rule justified such a target on the basis of a series of macroeconomic and fiscal risk factors. These can be grouped into three categories:

i. *Macroeconomic risks*: in the macroeconomic area, identified risks were the Central Bank's operational deficit (estimated at the beginning of the decade as close to 1 percent of GDP) and the financial vulnerability to exchange rate volatility derived from the fact that most long-term public and private indebtedness was denominated in foreign currency (also known as the "original sin" of emerging economies).

ii. *Contingent fiscal liabilities*: these include the state guarantee on bank deposits, the minimum pension guaranteed to pension fund affiliates, and the minimum revenue or traffic guarantees granted in infrastructure concession contracts.

iii. *Income from natural resources*: revenues originated in the exploitation of copper as a nonrenewable natural resource.

Targeting a structural surplus of 1 percent of GDP can thus be understood as government self-insurance, aimed at systematically reducing the weight of public debt to reduce the treasury's exposure to a number of risks and to accumulate assets or indebtedness capability to prevent liquidity constraints.

However, the use of the structural surplus target as a self-insurance mechanism had three intrinsic limitations: the amount of assets required to minimize risks; the possibility of changes in the risk profile; and the financial cost of self-insurance compared to other risk coverage alternatives. These limitations led the government to review the structural surplus target in 2007; the finance ministry requested the opinion of a panel of experts (Engel, Marcel, and Meller, 2007). This panel found significant improvements in the public sector's asset position, as well as significant changes in the fiscal and macroeconomic risk profile. Specifically, the report

highlights: (a) a decline in the Central Bank's operational deficit as a result of its capitalization by the government; (b) a decline of exchange rate risks related to the development of a substantial long-term debt market denominated in national currency; (c) the creation, through the Fiscal Responsibility Law, of a Pension Reserve Fund to cover future pensions and expected deficit reductions in pensions (due to the transition from the former pension system); and (d) a low expected value of guarantees under the concessions (PPP) program, deemed to equal no more than 0.2 percent of GDP. Based on the above considerations, the panel proposed to reduce the structural surplus target of 1 percent of GDP to 0.5 percent of GDP and examine the possibility of reducing it further to 0 percent of GDP as further progress was made in mitigating other fiscal risks, such as those associated with state guarantees to student loans and lawsuits against the government. The government accepted these recommendations and in 2008 reduced the structural goal to 0.5 percent of GDP.[6]

After a year the authorities modified the structural target again, reducing it to 0 percent of GDP in January 2009 to execute a more expansive fiscal policy in response to the international financial crisis. The reduction in the fiscal target was declared as temporary and was introduced as part of a stimulus package that included increases in government spending and investment, lending for working capital, tax rebate advances and temporary tax cuts.[7] Authorities then excluded temporary tax cuts in calculating the structural fiscal balance. Despite defining the reduction in the structural balance target as temporary, the government maintained 0 percent of GDP as the target when preparing the 2010 budget, and the administration that took over in March 2010 did not plan to return it to its pre-crisis level throughout its four-year mandate.

As can be seen, the structural balance target has by no means been an inflexible component of the fiscal policy rule. Over time the target has changed in response not only to changes in the profile of fiscal risks, but also to macroeconomic policy requirements.

---

[6] The rationale for the government's decision is described in Velasco et al. (2007).
[7] Specifically, the tax measures included: (a) an advance on the reimbursement of tax withholdings; (b) a reduction in the rate of income tax withholdings; (c) a temporary reduction of the tax on financial transactions (stamp tax); and (d) a temporary reduction in the gasoline tax.

*2.2.3. Application of the Rule in the Budgetary Process*

A fiscal rule can be applied essentially in two ways: ex-ante or ex-post. In an ex-ante approach the rule is applied when formulating the budget, allowing for changes due to unforeseen events during the year in income and expenditure components.[8] In the ex-post approach, on the other hand, the commitment to the fiscal policy target extends over the entire budget cycle in an attempt to ensure that the numerical goal is met at the end of the fiscal year. This approach may require some discretionary adjustments in revenues and expenditures to compensate for unforeseen changes in structural fiscal aggregates. Additionally, a fiscal rule may contemplate applying escape clauses in special circumstances, such as economic crises or emergency situations.[9] In Chile's case, the authorities' initial decision was to apply the structural rule in an ex-post manner, without escape clauses or exceptions, in order to bolster credibility.

The application of the fiscal rule in Chile should thus be analyzed in two settings: in the formulation of the budget and in its execution. Figure 1 summarizes Chile's budget formulation process under the structural fiscal rule.

---

[8] Switzerland requires that these deviations be compensated in the following years' budgets (Ter-Minassian, 2010)
[9] Ter-Minassian (2010), reviews some of the escape clauses contemplated in several countries' fiscal rules.

**Figure 1. Budget Formulation under the Structural Fiscal Balance Rule**
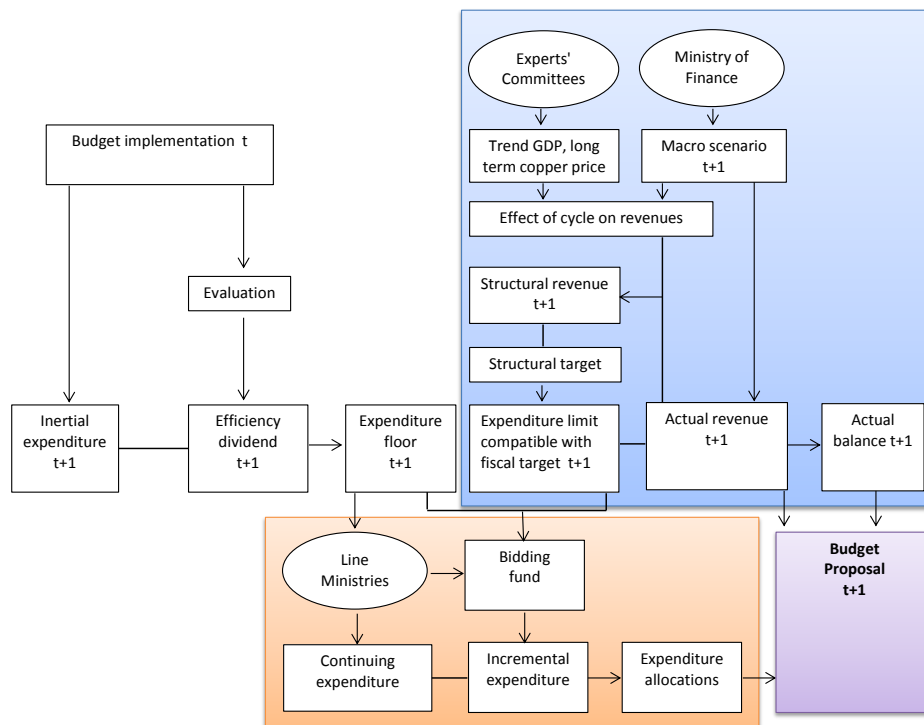


Source: Author's elaboration.

The fiscal rule generates hard budget constraints that frame the entire process of budget preparation. In order to define a spending envelope, structural incomes must be estimated by subtracting the cyclical component of revenues and the fiscal target.[10] Estimating structural incomes requires some basic assumptions that are provided by two expert committees: one on trend GDP and the other on long-term copper prices. On this basis the budget expenditure framework becomes independent of assumptions about the evolution of the business cycle that drive the estimates of actual tax collection, preventing it from being challenged in the executive's internal budget formulation process and, subsequently, in the legislative debate on the budget.[11]

---

[10] Additionally, starting in 2003 the fiscal goal is defined for the consolidated central government, which involves subtracting the central government's off-budget income and expenditures to define the limits of budgetary expenditures. Figure 1 doesn't take these adjustments into account in order to simplify the presentation.

[11] In contrast, many Latin American countries assume overly optimistic macroeconomic scenarios while formulating their budget's macroeconomic framework (see Hallerberg, Scartascini, and Stein, 2009).

The existence of hard budget constraints that are protected from unrealistic assumptions or discretionary decisions of the authorities makes the budget formulation process at the micro level—summarized in the lower panel of Figure 1—significantly easier. In the Chilean case, changes have resulted in some important elements of the budget formulation process.

Before the structural fiscal rule, the finance ministry would initiate this process by giving line ministries spending frameworks (or "ceilings") within which they were expected to accommodate their proposals. In actual practice, most line ministries would return proposals above the framework defined by finance. Anticipating this, the finance ministry would send the line ministries deliberately restrictive ceilings and the latter would respond with deliberately expansionary demands, opening a bargaining process with the finance ministry that could eventually involve the president himself.

The final outcome of this process was a spending total that combined top-down and bottom-up forces. With the structural fiscal rule in place, the finance ministry reversed the direction of this process by anchoring the overall spending envelope from the start, thereby transforming the sequence and content of the process. Instead of sending budgetary ceilings to line ministries, the finance ministry defined budgetary "floors" containing the inert components of expenditure. These include legal and contractual obligations, multiannual commitments, and running costs, all of which can be defined more objectively than a spending "ceiling." The difference between the overall spending envelope defined by the structural rule and the sum of inertial spending floors (from which an "efficiency dividend" can be deducted) is used to define a "bidding fund" from which resources are allocated in incremental components, including the creation of new programs or the expansion of existing ones.[12] The finance ministry asks line ministries to submit proposals for the bidding fund, specifying their logical frameworks and expected outcomes. These proposals are subjected to a technical review and prioritized according to quality and alignment with the government's priorities. At the end of this process, line ministries obtain their budget appropriations, including both inertial and incremental components.

Therefore, under the structural fiscal rule, a draft budget is structured on the basis of four components: (a) an estimate of actual income, obtained from a macroeconomic scenario; (b) a

---

[12] The bidding fund operated in full only from 2001 to 2004. In subsequent years a more informal version of this fund has been used, although a distinction has always been made between inertial and incremental expenditures.

spending total, determined by the fiscal rule; (c) a balance obtained as the difference between both aggregates, and (d) a distribution of resources that includes ongoing expenditures and incremental expenditures.

In order to comply with the ex-post fiscal goal, the structural balance estimate must be updated regularly and deviations from the goal must be identified so that revenues or expenditures can be adjusted to correct them. Such deviations are, by definition, smaller than those that occur when monitoring an actual, unadjusted budget balance. Specifically, changes in growth projections and in actual copper prices do not affect the structural balance estimate and do not prompt a discretionary response. Still, a number of factors can affect the level of structural incomes or expenditure commitments, which need to be properly neutralized during budget execution. Some of the most notable factors are: (a) changes in inflation, exchange rates, or interest rates; (b) changes in the physical production of copper or in CODELCO's production costs; and (c) changes in tax revenues related to the internal dynamics of certain taxes, changes in GDP composition, or changes in tax compliance. On several occasions these factors have led to the application of adjustments during budget execution; expenditure reductions in 2003 and expenditure increases in 2008 particularly stand out. Despite efforts to meet the structural target, deviations, occurring almost every year, have resulted from variations in structural income toward the end of the year when there is not enough time to neutralize them, or from changes in expenditure implementation rates or GDP estimates.

## 2.3. Milestones in the Application of the Rule

Table 2 presents a chronology of the most important milestones in the formulation and enforcement of the Chile's structural fiscal balance rule. The chart confirms that the rule's application has been far from rigid and that the rule has undergone modifications in several of its dimensions over time. The various changes can be classified into four large categories in order to understand their rationale and their effects.

i. *Adjustment of the accounting base*: Although fiscal accounting has a dynamic independent from the formulation and implementation of fiscal policy, the former provides the basic data to estimate the structural balance. The main changes to fiscal accounting during implementation of the structural fiscal balance rule include: (a) adaptation of fiscal statistics to the standards of the IMF's Government Finance Statistics Manual (GSFM) (IMF, 2001), based on accrual accounting; (b) inclusion of off-budget central government transactions; and (c) inclusion of capital gains and losses on sovereign funds as central government revenue.[13] Of these three adjustments, only the first two were retroactively applied to re-estimate the structural fiscal balance.

ii. *Institutional framework*: The structural fiscal balance rule was initially adopted as a political commitment by the government, with no legislative or institutional support. Over time, however, an institutional structure developed around it, consolidating its status as a formal component of public policy. The changes in this regard included: (a) creation of external advisory committees on trend GDP and long-term copper prices; (b) an obligation for the government to estimate the structural balance and define its fiscal policy framework as established in the 2006 Fiscal Responsibility Law (FRL); and (c) establishment in the FRL of a pensions reserve fund (PRF) and an economic and social stabilization fund (ESSF).

iii. *Measurement of the cyclical component of the budget*: Initially, the measurement of the cyclical component of the budget (CCB) only included the effects of economic activity on aggregate tax revenues and the impact of changes in copper prices on CODELCO's contribution to fiscal revenue. Over time it became evident that these adjustments were insufficient to account for the full effect of the business cycle on the budget, generating a pro-cyclical response of public expenditure. To eliminate this effect, the following adjustments were made: (a) including tax revenues from private mining in the copper price adjustment; (b) including an adjustment for fluctuations in molybdenum prices as they exceeded those of copper; (c) including a cyclical adjustment for "other revenues";

---

[13] The inclusion of capital gains/losses on sovereign funds as current revenue began in 2007. This increased fiscal income by US$686 million in 2007 and US$614 million in 2008. This adjustment is questionable, since it is incompatible with the rules of the IMF's GSFM, which classifies changes in asset valuation in the statement on "other economic flows," not in the statement on government operations. In 2009 the government eliminated this component in agreement with the IMF, but fiscal statistics for 2007 and 2008 were not corrected accordingly.

(d) disaggregating tax collections to estimate the effect of the business cycle on revenue collection; and (e) including an adjustment to interest rate fluctuations on revenues from financial assets.

iv. *Fiscal target*: The structural target was changed twice, to 0.5 percent of GDP in 2008 and to 0 percent of GDP in 2009 and 2010.

Thus, as knowledge about the rule has improved and it has been tested in various situations, flexibility to adjust in response to macroeconomic requirements has increased, particularly with respect to countercyclical capabilities. The rule's increasing credibility has also helped facilitate the introduction of methodological changes and has made target adjustments more possible.

**Table 2. Chronology of the Application of the Structural Fiscal Balance Rule in Chile, 2000–10**

| 2000 | May: President Ricardo Lagos announces adoption of the structural balance policy and the goal of achieving a surplus equivalent to 1 percent of GDP. <br> September: First budget issued (for 2001) that includes a structural balance estimate. |
|---|---|
| 2001 | August: Creation of the advisory committee on long-term copper prices. <br> September: Finance ministry publishes technical document, "Structural Balance of the Central Government. Methodology and Estimations for Chile: 1987–2000." |
| 2002 | July: Methodology review to estimate trend GDP. <br> August: Creation of advisory committee on trend GDP. |
| 2003 | October: Publication of fiscal statistics based on IMF, 2001 begins, meaning that accounting had to be done on the basis of revenues accrued and incorporate off-budget central government expenditures. First stage review 1997-2004. |
| 2004 | February: Migration towards fiscal statistics based on GFS2001. |
| 2005 | August: Inclusion of cyclical adjustment for taxation on private mining (income tax). <br> December: Inclusion of cyclical adjustment for the effect of the price of molybdenum sold by CODELCO, the price and quantity of which increased significantly during the previous period. |
| 2006 | January: Inclusion of cyclical adjustment for royalty on mining introduced by Law N° 20,026, in effect since 2006. |

| | |
|---|---|
| | September: Enactment of Law N° 20,128 on fiscal responsibility, which establishes the requirement that the president of the republic, when coming into office, must define his fiscal policy and that policy's implications for the structural balance. The law establishes that the government has a legal obligation to report, yearly, its structural balance estimate and the total amount of standing government guarantees. The law also creates the pension reserves fund (FRP) and the economic and social stabilization fund (FEES). The contingency program against unemployment is awarded permanent status.<br><br>December: Inclusion of cyclical adjustment for income tax from private mining companies. |
| 2007 | October: The structural balance target is adjusted down to 0.5 percent of GDP. Authorities reach the conclusion that the risks that motivated the original level have declined substantially.<br><br>December: Methodology for the cyclical adjustment of royalties on mining is improved in order to take into account various determinants of revenue. |
| 2008 | September: Inclusion of cyclical adjustment on revenue from the treasury's financial assets, isolating the effects of changes in fiscal asset profitability by using a long-term interest rate. |
| 2009 | January: The structural balance goal is adjusted to 0 percent for 2009, within the framework of the fiscal stimulus plan. The effects of tax changes that are deemed temporary are excluded from calculation of cyclical adjustment of tax revenue.<br><br>June: Elasticity estimates are adjusted, disaggregating them by types of taxes (annual and monthly revenues, provisional payments, indirect taxes [VAT], and others). |
| 2010 | January: Other fiscal revenues are included in calculation of the cyclical component of the budget. |

Source: Author's elaboration, based on finance ministry reports, budget office reports, and press sources.


## 3.      Results of the Application of the Fiscal Rule, 2001–09


Kopits (2001) and Ter-Minassian (2010) agree that the fundamental goal of a fiscal rule is to generate confidence in application of fiscal policy by reducing the opportunity for discretion by the authorities. In turn, each fiscal rule is designed to achieve a specific objective. The explicit objective of a structural fiscal balance rule is to reduce fiscal and macroeconomic volatility and to minimize the procyclical behavior of the budget. These three dimensions—reduction of discretionality, volatility, and risk perception—provide a basis for analyzing results of the structural fiscal balance rule in Chile from 2001 to 2009.

## 3.1. Reduction of Discretionality

It is possible to assess the effects of the structural fiscal balance rule in Chile on discretionality when managing public finances on the basis of actual compliance with the rule, as well as stability and methodological consistency in calculating the indicator.

### 3.1.1. Compliance with the Rule

Figure 2 shows the performance of the actual balance and the structural balance from 1990 to 2009, plus budget estimates for 2010.[14] The level of compliance with the fiscal rule can be assessed through the execution of the budget in the period in which the rule has been in force (2001–09).

As can be seen, attainment of the fiscal goal was strictly managed during most of the applicable period. From 2001 to 2008 the average structural balance was 0.9 percent of GDP. The main differences between the reported structural balance and the structural goal are concentrated in periods during which the business cycle was reaching its lowest depths, particularly in 2002, 2003, and 2009–10. In 2002 and 2003 these differences occurred in spite of the adoption by the government of intra-annual adjustments.[15] In 2009, on the other hand, authorities refrained from applying restrictive measures due to the severity of the international financial crisis, letting the structural balance slip below its target even after a number of methodological adjustments; 2010 shows the effects of the earthquake that hit the country in February of that year, the tacit suspension of the rule in response to that event, and the review of the rule methodology that was initiated by the new government. These factors led to structural balances of -1.2 percent and -1.6 percent of GDP respectively, well off the target of 0 percent that had been set for those two years.

---

[14] The numbers used for 2010 are those included in the budget approved by the congress before the last change in government. This budget experienced important changes due to resource reassignments and the use of supplementary funds to cover the reconstruction requirements generated by the February 2010 earthquake. For this reason, numbers on the chart are more an expression of President Bachelet's governmental plans than a prediction of budgetary implementation for 2010.

[15] The adjustments reached amounts close to US$ 250 million (announced in August 2002) and US$ 300 million (announced in July 2003), respectively. DIPRES (2003a) and DIPRES (2003b).

Compliance with the fiscal rule up to 2008 is especially remarkable in light of the large fluctuations of the actual balance as a result of the business cycle. These fluctuations were particularly severe in 2006–09 due to the commodities boom, initially, and later to the international financial crisis. During this period the authorities had to exercise strenuous efforts to contain political pressures to increase spending in a context of substantial accumulation of assets in the country's sovereign funds.[16] Therefore, the differences between the actual balance and the structural balance reflect not only the magnitude of the cyclical effect on the budget and the operation of automatic stabilizers associated with the application of the structural fiscal balance rule; they also reflect the discipline in fiscal management.

**Figure 2. Actual Balance and Structural Balance in Chile 1990–2010[(*)]**

**(Percentage of GDP)**
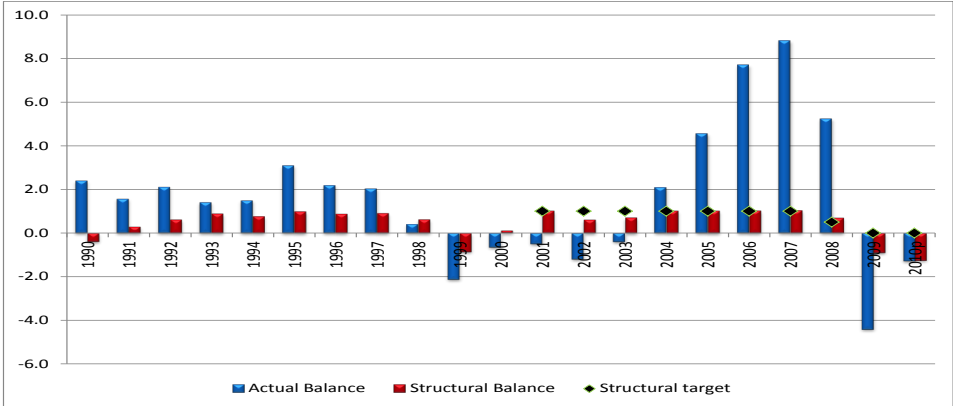


Source: Budget Office of Chile; Finance Ministry of Chile.
* 2010 corresponds to estimates updated up to June 2010.

---

[16]Although the government did not achieve its target in 2009, the numbers reflected the implementation of a deliberately expansionary fiscal package and a 21 percent fall in fiscal income that greatly overshadowed the effects of declining GDP, copper prices, and tax reductions. For detailed information on the decline of the central government's income in 2009, see DIPRES (2010).

*3.1.2. Methodological Stability and Intertemporal Consistency of the Structural Balance Indicator*

In principle, a fiscal policy rule must operate under a stable methodological framework in order to ensure transparency and limit discretionality from authorities. Stability is particularly important for a structural fiscal balance rule, as it is based on an indicator that is not obtained directly from public accounting, but is rather an estimate of an unobserved variable.

As indicated above, the methodology to calculate the structural balance has undergone important changes during the time in which the fiscal policy rule has been in effect. Using the characterization proposed by Velasco et al. (2010), with minor adjustments it is possible to distinguish three phases in this process:

(i) *Establishment and initial consolidation of the rule (2001–04)*: this period includes the initial formulation of methodology to estimate the structural balance and its immediate technical adjustments (e.g., estimate of trend GDP), accounting adjustments (e.g., expansion of coverage to off-budget central government transactions and changes in fiscal accounting practices to comply with IMF, 2001), and institutional adjustments (e.g., creation of advisory committees on long-term copper prices and trend GDP).

(ii) *Adjustments to cyclical component of copper income (2005–06)*: during this period a series of adjustments were introduced to the methodology to estimate the structural balance in order to account for structural changes in the amount, composition, and volatility of copper revenues, generated by increased taxes on private mining and the growing importance of revenue from molybdenum.

(iii) *Adjustments to cyclical component of tax and other income (2008–09)*: as the 2008–09 financial crisis unfolded, a series of adjustments were introduced in estimating the cycle's effects on tax and other income. These adjustments included a disaggregation of the elasticities associated with tax income and pension contributions; the inclusion of adjustments to account for (a) effects of interest rate fluctuations on revenues from financial assets, and (b) effects of the cycle on "other income"; and the exclusion of fiscal effects of tax cuts that were in the fiscal stimulus package implemented at the beginning of 2009.

The main characteristics of these three phases of methodological adjustments are summarized in Table 3. As can be seen, the three phases differ not only in the content of adjustments, but also in their direction and magnitude, as well as in how they were applied and communicated to the public. Specifically, while the first wave of adjustments raised the structural balance by 0.5 percent of GDP and the second one reduced it by 1.9 percent of GDP, the impact of the third wave contemplated an increase of almost 2.4 percent of GDP. The first and third rounds also differed in how adjustments were implemented. In the first round (in 2004), the experts' committee on trend GDP reviewed all adjustments before they were incorporated retroactively into the series of structural balance and fiscal statistics. Conversely, third-round adjustments were not subjected to the committee's consultation, were partially informed during the course of the year and were only implemented from 2009 on, without adjusting the statistical series retroactively.[17] The second round of adjustments involved changes caused by modifications in the tax regulations on private mining (termination of preferential systems of intensive depreciation and mining royalties); therefore, no retroactive statistical adjustment was required.

---

[17] Velasco et al. (2010), Chapter 4, presents a systematic summary of all these changes. Some of the changes were reported previously in the budget office publications. See Rodriguez, Tokman, and Vega (2006); DIPRES (2008); DIPRES (2009); and Rodriguez, Escobar, and Jorratt (2009).

**Table 3. Methodological Adjustments to the Calculation of Structural Balance in Chile, 2001–09**

| Adjustments | Period | Target | Components (a) | Application | Effect on structural income for initial year (b) |
|---|---|---|---|---|---|
| Initial consolidation | 2001–04 | Methodological, accounting and institutional consolidation | • Adjustments to methodology for trend GDP estimation<br>• Expansion to extra-budgetary CG<br>• Application of the IMF GFSM (IMF, 2001)<br>• BE assumptions established by experts' committees | Previously consulted and informed Retroactive | + 0,5% GDP (2004) |
| Copper income | 2005–06 | Incorporate structural changes in source, amount, and volatility of copper revenues | • Cyclical effect of taxation on private mining revenue<br>• Collection of mining royalties<br>• Cyclical adjustment to molybdenum prices | Informed simultaneously No retroactivity | -1,9% GDP (2005)[c] |
| Tax and other income | 2008–09 | Strengthen countercyclical capability of fiscal rule | • Disaggregation of elasticities in tax collection and pension contributions<br>• Adjustment of income from interest earned on sovereign funds<br>• Cyclical adjustment of other income<br>• Exclusion of transitory tax measures | Informed after the fact No retroactivity | + 2,4% GDP (2009)[d] |

(a) Specific details on these components are included in Tables 1 and 2 of this paper and in Velasco et al. (2010)
(b) Impact of first year of full enforcement of the adjustments
(c) This effect is separated into: estimate for adjustment in molybdenum prices, equivalent to 1.3 percent of GDP; inclusion of adjustment for tax income from mining, equivalent to 0.6 percent of GDP.
(d) This effect is separated into: 1.9 percent for disaggregation of elasticity and exclusion of transitory tax measures, 0.4 percent for adjustment of revenue derived from interest and 0.1 percent for cyclical adjustment to other income.

The authorities justified the third round of adjustments made to the methodology to estimate structural balance by citing the need to increase the rule's countercyclical power. As a result, the methodological changes introduced in 2009 exceeded the effect of the change in the structural

balance target by a ratio of 7 to 1 and accounted for more than a third of the fiscal stimulus applied in response to the financial crisis.[18]

The search for a more countercyclical fiscal policy was understandable given that the Chilean economy was experiencing its largest external shock in 50 years: private demand—particularly investment—was experiencing a significant contraction and fiscal revenues declined by 15 percent.[19] However, changing the structural balance methodology was not the only alternative. Section 4 compares this option with two alternatives: (a) establishing a more expansive structural target, and (b) establishing an exception or "escape clause," justified by exceptional macroeconomic circumstances.

## 3.2. Reduction of Volatility

Fiscal volatility can be measured in two dimensions: stability/volatility in the trajectory of public expenditures and the contribution of public finances to a country's macroeconomic volatility. Figure 3 shows the real changes in the consolidated central government's actual revenues and expenditures from 1991 to 2009.[20] A simple visual inspection suggests that during most of that period the trajectory followed by the central government's expenditure has been considerably more stable than its revenue. This stability is particularly evident during the period that the structural balance rule has been in effect (with the possible exceptions of 2003 and 2009), a period during which revenue fluctuations have been extremely wide.

The differences in the trajectories of revenues (determined by the business cycle and the copper market) and expenditures (determined by the structural rule) are reflected in the gap observed each year between the actual balance and the structural balance, a gap that to a great extent reflects the stabilizing capability of the structural fiscal balance rule. For the 2001–10 (budgeted) period, the average absolute difference between the actual balance and the structural

---

[18] Fiscal stimulus is defined as the change in total fiscal balance (net borrowing/net indebtedness) compared to the previous year. In 2009, the fiscal stimulus of the consolidated central government was 9.6 percent of GDP (from +5.2 percent of GDP to -4.4 percent). The stimulus of programmed policies for the year was 0.7 percent of GDP (structural surplus of 0.7 percent of GDP in 2008, falling to 0 percent in 2009), while the underachievement of the 0 percent goal and the methodological adjustments are equivalent to 3.6 percent of GDP.

[19] In 2009 the income of the consolidated central government actually fell by 23.3 percent in real terms. However, a fourth of this decline was associated with tax reductions that were part of the fiscal stimulus package itself.

[20] The consolidated central government total includes the consolidation of both budgetary and off-budget operations of the central government.

one is 3.2 percent of GDP, with a range that varies from +7.8 percent of GDP (2007) to -3.2 percent of GDP (2009). As can be seen in Figure 3, this stabilizing capability increased significantly after 2006 when confronting the extent of the expansive and contractionary phases of the business cycle.

Rodriguez, Tokman, and Vega (2006) undertake a more rigorous analysis of fiscal stability over the period during which the structural fiscal balance rule has been in effect. Based on a fiscal volatility index, these authors find that during 2000–06, this volatility would have been less than half of the volatility experienced by expenditures during 1970–99, and they conclude that the fiscal rule significantly reduced volatility in the consolidated central government's expenditures when compared to previous periods.

**Figure 3. Real Changes in the Consolidated Central Government's Total Revenues and Expenditures**
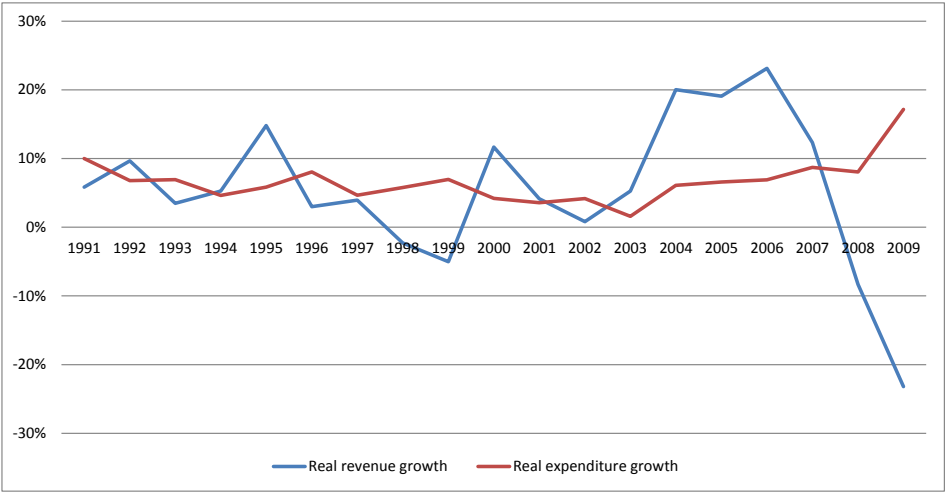


Source: Budget Office, Finance Ministry of Chile.

Larraín and Parro (2008) analyze the contribution of the structural fiscal balance rule to the reduction of macroeconomic volatility in Chile since 2000. They argue that despite the growing magnitude of external shocks, volatility declined over this period. This decline was due to institutional changes that have allowed a smoothing of the cycle: introduction of a floating exchange rate system in September 1999 and introduction of the structural fiscal balance rule in

2001. Specifically, this study estimates that establishing the fiscal rule reduced GDP growth volatility in Chile between 1988–99 and 2000–05 by a third, even after taking into account the greater external shocks that impacted the Chilean economy during the second period. According to the authors, the floating exchange rate regime also contributed to the decline in volatility. They believe that these two factors are responsible for close to 60 percent of the decrease in GDP volatility in the Chilean economy during that period.

In an analysis of the effects of the structural fiscal balance rule on the volatility of the business cycle in Chile, Kumhof and Laxton (2009b) show that the main effect of the structural surplus rule was to minimize the variability of fiscal instruments (expenditures and tax rates) and also to reduce product and inflation volatility in relation to a rule that had sought to achieve a balanced budget. Their main conclusion is that the structural rule in Chile performs well even under a policy framework that gives less weight to product volatility than to inflation volatility. A more aggressive countercyclical fiscal policy could lead to lower product volatility, but would also generate an increase in the volatility of inflation and fiscal variables.[21]

The stabilizing capability of the structural fiscal balance rule has been particularly important during the 2008–09 crisis. In this regard, OECD (2010) reveals not only that Chile had, along with Peru, the most countercyclical fiscal policy of the entire Latin American region, but also that the policy had been as effective during the financial crisis as it was during the preceding expansionary years.[22]

## 3.3. Effects on Risk Perception

The application of the structural fiscal balance rule reduced the risk exposure of the Chilean economy. By allowing the operation of automatic stabilizers, the rule prevented the procyclical behavior of public finances that has characterized Latin American economies for many

---

[21] It is worth noting that the three papers quoted address, at most, the period until 2007, and therefore do not capture the period of greatest macroeconomic volatility and changes in the fiscal target. For this reason, their conclusions must be approached with reservations and should be considered more representative of the first stage of the rule's implementation.

[22] Although Schmidt-Hebbel (2010) puts this anticyclical capability in doubt, arguing that the structural fiscal balance would not have allowed a sufficiently anticyclical response from 2007 to 2009, he does not provide a standard against which to analyze this behavior.

decades.[23] The systematic generation of structural and actual surpluses also contributed to a significant reduction of public debt and the risks associated with interest rate volatility and refinancing. As can be seen in Figure 4, during the period in which the rule has been in force, the central government's net financial debt declined from 12 to -2 percent of GDP, combining a reduction of gross debt with a significant increase in financial assets, which by the end of 2009 had reached US$31 billion.

However, what is more relevant for the evaluation of the fiscal rule's performance is its influence on the risk perceptions of economic agents. It is clear that during the period the fiscal rule has been in force, Chilean sovereign risk spreads have diminished significantly, both in absolute terms and compared to those of other emerging countries.

Figure 5 shows the behavior of the sovereign spreads associated with Chile, Latin America, and emerging markets in 1997–2009. Since the fiscal rule entered into effect Chile's sovereign risk not only has remained lower and diminished over time, but also has improved in comparison with the two other country groups (Latin America and Emerging Markets). In fact, toward the end of the period Chile's country risk spreads returned to their pre-crisis levels, while for Latin America and other emerging countries indicators continued to remain significantly over that benchmark.

---

[23] For an analysis of Latin American macroeconomic volatility, see IDB (1997).

**Figure 4. Central Government Gross Debt, Gross Financial Assets, and Net Debt, 1990–09 (Percentage of GDP)**
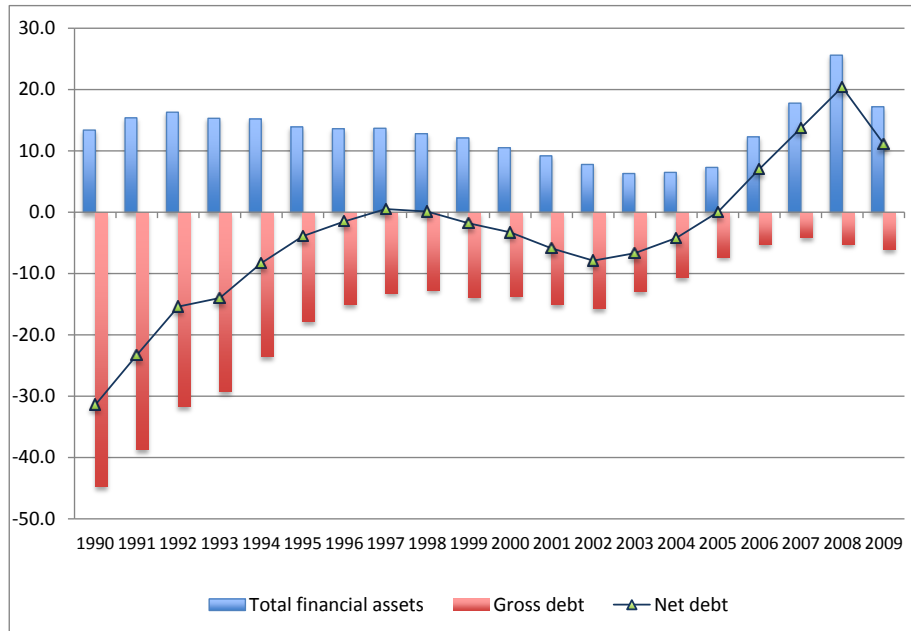


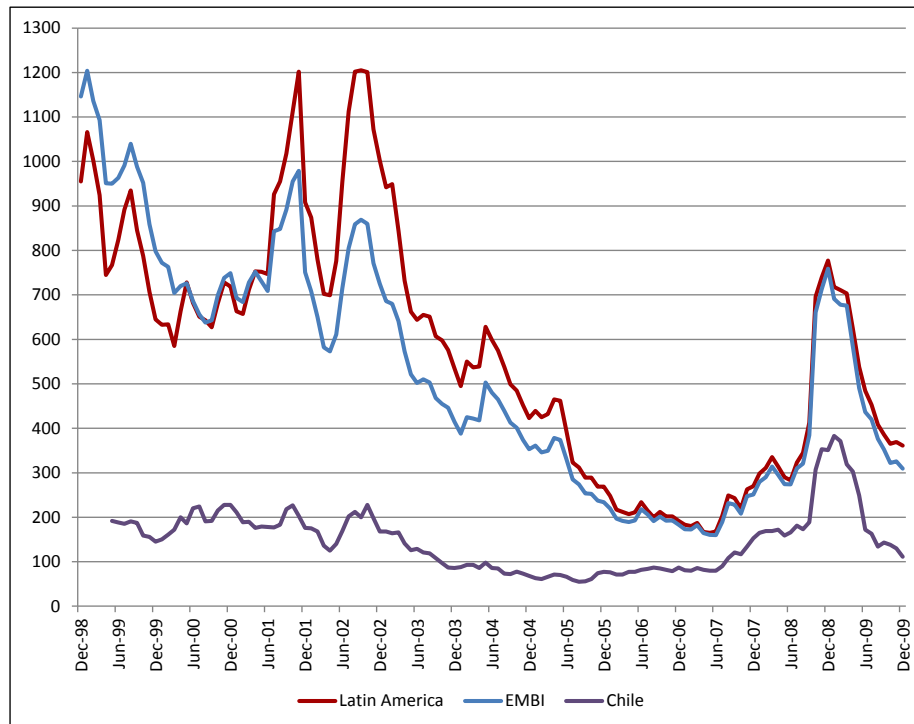Source: Budget Office, Finance Ministry of Chile.

**Figure 5. Chile's Country-risk spreads compared with other economies (Basis points)**



Source: Central Bank of Chile.

However, since multiple factors may have contributed to reduce Chile's risk since its adoption, the impact of the fiscal rule must be verified more rigorously. Lefort (2006) provides econometric evidence that the structural fiscal rule had a distinct impact, reducing country risk in addition to public debt reduction and other internal factors.[24] Such conclusions are similar to those of DIPRES (2005), where both econometric estimates of the value for a dummy variable for the fiscal rule and a test of structural change in the determinants of risk provide evidence of a specific and significant impact of the fiscal rule on Chile's sovereign spreads.

In sum, the structural fiscal balance rule shows favorable results in each of the dimensions of its performance, notably during the first seven years of its implementation. While the fiscal rule has been a crucial tool to consolidate discipline in the management of public finances, several studies also conclude that the rule helped reduce fiscal and macroeconomic volatility, net public debt, and risk perceptions, also reducing sovereign spreads and internal and external financing costs.

## 4. Ten Lessons from the Application of the Structural Fiscal Balance Rule in Chile

The experiences from the application of the structural fiscal balance rule under varying economic and political conditions offer relevant lessons for the future of the Chile's fiscal policy, as well as for other countries that may be contemplating adopting a similar rule. The following 10 lessons draw on the experiences provided in this paper and in other studies on the subject.

### 1. *A good fiscal rule must be measurable and open to evaluation.*

A rule does not guarantee good fiscal policy, but it should be complied with, be measurable, and be open to evaluation to demonstrate any positive outcomes. Several authors, particularly Kopits and Symansky (1998), have proposed that fiscal rules must have certain attributes to achieve their goals: credibility, transparency, and stability. In addition, the rule must be based on a measurable indicator that is timely and precise enough to detect deviations for correction or

---

[24] Regarding this study, the same reservations expressed in footnote 27 above apply.

recognition. Authorities must be accountable to citizens with respect to their ability to meet targets and achieve expected results. Although the structural balance is a more complex fiscal policy indicator than those arising directly from fiscal accounting—such as changes in spending, the actual balance, or public debt—it can be calculated regularly and in a timely fashion to allow attainment of the policy's goals to be monitored and evaluated.

Structural balance estimates can be updated during the fiscal year to allow conclusions about whether a government is diverting from or converging to a pre-established target. In contrast, rules based on such notions as "balance during the entire business cycle," or "balance over the medium term," can only have compliance confirmed at the end of the fiscal year or even after several years. Since the structural balance indicator can be estimated during the fiscal year, deviations from the target can be detected in time to make corrections during budget execution, if necessary.

Thus the level of compliance with the structural goal at the end of the year demonstrates the fiscal rule's capability to impose discipline on authorities and to effectively limit discretion in the management of public finances, not only during the budget's formulation but also during implementation. Once the rule is complied with, its ability to foster a more effective fiscal policy becomes possible to evaluate.

2. *The structural fiscal balance rule is more effective at stabilizing public expenditure than GDP.*

On several occasions the Chilean fiscal rule has been described as the instrument of countercyclical fiscal policy. This statement conflicts with the conclusions of authors such as Perry (2003), who have cast doubt over the rule's countercyclical capability. To elucidate this apparent contradiction, it is important to distinguish between countercyclical fiscal policy as such and so-called "automatic stabilizers" of the budget.

Automatic stabilizers are changes in fiscal revenues and expenditures that result from normal operation of the tax system or public spending programs in response to fluctuations in economic activity, with no explicit intervention from authorities; automatic stabilizers tend to mitigate business cycle effects. For example, when tax revenue falls during a recession as a

result of declines in consumption and income, if other things remain constant, budget deficits will rise (or surpluses will decline), tending to increase demand and cushion impacts on economic activity. Something similar happens when outlays of certain unemployment-linked programs—such as unemployment insurance—increase during a recession. A countercyclical fiscal policy, on the other hand, is associated with discretionary changes that reflect authorities' decisions to act in response to the business cycle rather than rely on the automatic behavior of revenues and/or expenditures.

An extensive body of research on fiscal policy indicators has aimed at distinguishing between these two elements. Since the structural balance is one of the indicators that emerged from this research, it could be said that countercyclical fiscal policies should be expressed through changes in the structural balance that move in an opposite direction from that of the business cycle. Automatic stabilizers, on the other hand, are equivalent to the difference between observed fiscal balance and structural balance.[25]

A structural fiscal balance rule with a constant structural target lets the budget's automatic stabilizers operate freely, counteracting the business cycle's impact; however, this trait does not constitute a countercyclical fiscal policy as such. A structural fiscal balance rule contributes more to stabilizing public expenditures than economic activity, but this fact does not diminish the rule's relevance.

Several authors have underscored the costs of fiscal volatility and the importance of reducing it, particularly in emerging countries (IDB, 2007). A fiscal rule that can stabilize public finances represents a significant improvement over the traditionally procyclical behavior of fiscal policy in Latin America. Stable spending frameworks contribute to the effectiveness of public policies by extending planning horizons and allowing countries to avoid the "repetitive budgeting" phenomenon that Caiden and Wildavsky (1974) identify as one of the main problems of budget formulation in developing countries.[26]

---

[25] This distinction is well described in Daude, Melguizo, and Neut (2010), where structural balances are estimated for six Latin American countries and the existence of countercyclical fiscal policies is determined by analyzing changes in structural balances during the cycle.

[26] This does not mean that an alternative to a structural fiscal balance rule could be based on a predetermined rate of expenditure expansion. In fact, this kind of rule leads to situations in which the trajectory of public expenditure is not only unable to recognize permanent increases and declines in fiscal income; it even prevents the rationalization of fiscal information and tax expenditures.

The countercyclical capabilities of a structural fiscal balance rule can increase or diminish, depending on the share of revenue and expenditure that is adjusted for a cycle and on the size of respective elasticities. In other words, the larger the cyclical component of the budget, the greater the countercyclical effect of a structural fiscal rule will be. However, if this balance is achieved artificially, exceeding automatic income and expenditure adjustments (for example, by applying cyclical adjustments to items whose behavior is not cyclical or by artificially increasing elasticities), fiscal aggregates will become more volatile, weakening the ability to achieve stable horizons for public policy planning (Kumhof and Laxton, 2009b). Alternatively, the magnitude of automatic stabilizers can increase as changes in the structure of public finances amplify the responsiveness of income and expenditures to the business cycle; examples include increasing the relative weight of taxes with greater elasticity to GDP (such as progressive income taxes); establishing new taxes on natural resource income (such as mining royalties); or designing compensatory unemployment programs (such as unemployment insurance).

### 3. *The effectiveness of a structural balance rule rests on its credibility.*

Kopits (2001) inquired whether a fiscal rule has any advantages compared with responsible fiscal policy management with no pre-established rules. The suspicion exists that fiscal rules may be unnecessary for disciplined countries or may serve as a distracting element in countries that, opposing discipline, wish to present themselves otherwise. This discussion gained momentum with the breach of the Euro fiscal convergence rules and the fiscal problems of the United Kingdom. The experience with the structural fiscal balance rule in Chile is that it has had a significant impact on stability and public confidence, even when compared to periods in which the government obtained similar results without a fiscal rule.

DIPRES (2005) estimates of the structural balance in 1987–99 indicate that during a substantial portion of that period (1992–98) the central government's structural balance was very close to 1 percent of GDP. In other words, during most of the 1990s, fiscal policy was conducted as if the goal of authorities was to obtain a structural surplus of 1 percent of GDP, even though it was not measured, known, or disseminated as such.[27] However, sovereign risk ratings and

---

[27] It should be pointed out that the DIPRES study indicates that during this period the structural surplus was greater than the one prescribed at the time by the Copper Price Compensation Fund as being in effect.

monetary policy in 1992–98 substantially differed from those in 2001–09, suggesting that implementation of the rule in the later period made a difference.

In effect, the results obtained by Larraín and Parro (2008), Lefort (2006), and DIPRES (2005) estimate reductions in Chilean sovereign risk spreads during the period in which the fiscal rule has been in effect—compared with prior periods with positive fiscal results—that go beyond what can be explained using other macroeconomic and financial variables. This means that a preannounced goal has an added value beyond fiscal discipline when the latter retains certain margins of discretionality, even if it is not exercised. The potential value of a fiscal rule can be realized only if the rule is credible, that is, if economic agents are certain that authorities will keep their commitments.

### 4. *The credibility of a fiscal rule depends on its transparency and predictability.*

Chilean authorities wagered that the credibility of the fiscal rule would depend less on the existence of legal norms that mandated its enforcement than on the political will and technical capability to enforce it. That wager seems to have paid off, given the recent experience of other fiscal rules that have been breached. However, verifying compliance with fiscal rules is not a trivial exercise.

In order to verify the attainment of fiscal policy targets, it is crucial that they be clear, understandable, and transparent. A structural fiscal balance rule begins at a disadvantage: it is based on a counterfactual estimate, not on a directly observable aggregate. That estimate depends on a specific methodology and key assumptions. In principle, the methodology must be widely known and open to independent replication, and its assumptions must be generated by mechanisms that minimize discretionality to ensure that the indicator is not being manipulated. Manipulating a fiscal rule may have worse consequences for fiscal credibility than discretionary management of fiscal policy without the use of a rule.

To this end, the enforcement of a structural rule requires a methodological and institutional architecture stricter than the one associated with the normal requirements of fiscal transparency contained in the best practice codes of the IMF and the OECD. In Chile's case, this methodological and institutional architecture has been structured around a set of key elements:

·   Public dissemination of the methodology to estimate the central government's structural balance, as well as of any changes made to it.

·   Adoption of an international norm—IMF's GFSM (IMF, 2001)—as the basis for its fiscal statistics and the inclusion of the central government's off-budget operations.

·   Establishment of external committees—advisory committees on long-term copper prices and on trend GDP—constituted by independent experts and entrusted with the task of providing values for the assumptions necessary to estimate the structural balance.

·   Creation of special funds—the Economic and Social Stabilization Fund and the Pensions Reserves Fund—to act in coordination with the policy rule for accumulating and managing financial assets.

·   Enforcement of the fiscal rule on an ex-post basis, that is, seeking to achieve the fiscal target during the budgetary implementation period, even if such timing required intra-annual adjustments to revenues and expenditures.

Based on the results during the 10 years after its application, it is possible to conclude that these elements are as essential to the architecture of the Chilean structural fiscal balance rule as its methodological and conceptual design. Any adjustment to these elements must be carefully evaluated, given their impact on the fiscal rule's credibility.

## 5. *A fiscal rule must to be easy for citizens and politicians to understand.*

A structural fiscal balance rule must not only have a good methodological design; citizens and politicians must also be able to understand it since it is always exposed to questions, doubts, pressures, and comparisons with simpler indicators such as actual fiscal balance, expenditure growth in relation to GDP, or public debt. In order to facilitate comprehension of the rule, the formula to calculate the structural balance should be as simple as possible.

The Chilean rule has gained legitimacy and support on the basis of three fundamental ideas. First, the structural rule seeks to obtain savings in periods of plenty that can be spent in periods of scarcity, a message that is in tune with the common sense of citizens who have repeatedly been exposed to the volatility of the business cycle and who may wish to apply this

principle in managing their own affairs. It is possible that most people see this principle as more sensible than other philosophies: that the public sector should always balance its accounts; that expenditures should grow at a pre-established pace, or that public expenditure is the solution for every economic problem.

Secondly, creation of sovereign funds has contributed to bolster the social dimension of the fiscal rule. Although the Economic and Social Stabilization Fund and the Pensions Reserve Fund are not really essential for saving and distributing assets in response to changes in actual fiscal balance under the structural fiscal balance rule, these funds serve as instruments that illustrate the opportunity cost of the fiscal policy and keep these resources away from short-term political interests.

Finally, the Chilean fiscal rule is applied to the Statement of Government Operations and does not include paid or earned interest as a cyclical component. Therefore, the reduction in net debt generated in periods of fiscal surplus has led to a decline in net interest outlays, which in turn has increased the fiscal space for social spending. Although this treatment of interest flows could be placed into question within a rigorous definition of structural balance (interest payments follow the evolution of debt as a result of the actual balances, which are determined by the cycle), it has been crucial to demonstrate the benefits of fiscal discipline during periods of expansion, when such discipline becomes more difficult to enforce.

Even so, the search for a greater countercyclical capability of the Chilean fiscal rule in the last few years has added complexity by including new disaggregation and adjustment factors. The benefits of a more countercyclical rule should thus be weighed against related costs associated with loss of understanding and transparency.

6. *The structural fiscal balance rule provides flexibility to respond to the business cycle, but does not limit the range of responses that may be needed to implement economic policy.*

The structural fiscal balance rule has allowed substantial changes in the actual fiscal balance without abandoning its midterm structural goal. Setting aside the exceptional case of the 2007–09 period, the rule's operation has allowed actual fiscal balance to oscillate over or under the

estimated structural balance by up to 3 or 4 percent of GDP, a much more robust response than has usually been observed in Latin American countries, including in Chile in prior years.

However, the structural balance is not a fiscal policy, but a mechanism to distinguish between effects of the cycle on the budget, on one hand, and of fiscal policy decisions made at other levels of authority, on the other. When the fiscal policy target is set—that is, when fiscal policy remains stable—the rule allows operation of automatic budget stabilizers, achieving a stable trajectory of expenditures during the entire business cycle and avoiding procyclical behaviors in public finances[28]; however, this effect does not limit implementation of other fiscal policies or other general economic policies.

The government can exercise a more active fiscal policy by modifying the structural balance goal or by establishing "escape clauses" for exceptional circumstances.[29] Since the first application of the rule in Chile, the structural target has been modified twice. In 2008 the target was reduced from 1 percent of GDP to 0.5 percent because changes in the fiscal risk profile made maintaining such a demanding target unnecessary. In 2009, as a temporary response to the international financial crisis, the target was reduced to 0 percent of GDP. That was the first time it was explicitly recognized that the target was being used as an instrument of fiscal policy.

Fiscal policy must be complemented by monetary policy. Operation of the structural fiscal balance rule is based on the premise of a mostly passive fiscal policy that operates through the budget's automatic stabilizers. However, macroeconomic stabilization requires a monetary policy that is considerably more active, possibly recognizing among its goals stabilizing not only inflation, but also GDP. In Chile, monetary policy has adjusted to fiscal policy changes, substituting a point inflation target with a band whose center should be reached within a three-year horizon; a floating exchange rate policy is also required. During the latest financial crisis, these features allowed Chile's monetary policy to be much more aggressive, with a monetary stimulus in effect over an extended period of time.

---

[28] The fiscal rule's initial document recognized the instrument's limitations, arguing that the structural balance is a "simple indicator," not a macroeconomic model, and that it is not capable of reflecting all complexities of the economy or of exhausting all possible responses to the cycle (Marcel et al., 2001).
[29] Point 8 below addresses the conditions and features associated with escape clauses.

7. *Although a fiscal rule needs stability, it must be open to improvements; limits to methodological adjustments are set by transparency, conceptual coherence, and inter-temporal consistency.*

The very essence of a policy rule is that it must be stable over time. Stability, however, does not mean absolute rigidity, particularly in the first years of a fiscal rule's application. Chile's experience illustrates how accumulated experience and new developments justify improvements to the rule, yet some questions arise. Where are the boundaries between improvement, instability, and discretionality? How does one determine the limits to methodological modifications and adjustments?

Ter-Minassian (2010) underscores that the various goals sought by adopting fiscal rules—control of discretionality, transparency, and flexibility—are not independent of each other and are subject to evident trade-offs. Efforts at achieving one of these targets may seriously compromise the attainment of others. The structural fiscal balance rule is no exception; its advantages in terms of flexibility to respond to cycles are offset by the need to estimate an unobserved variable—an exercise involving methodological choices and assumptions that may generate greater controversy than conventionally observed fiscal aggregates.

Consequently, a fiscal rule's initial design and modifications should be subjected to a careful evaluation of costs and benefits. In order to preserve transparency, it is essential that these analyses are available to experts, economic agents, and the public. When necessary changes are identified, they should be applied in a consistent manner over the entire data series. These principles are particularly important when adjustments are associated with fiscal accounting.

An important limit to methodological changes has to do with the conceptual coherence of the policy rule. Every rule has certain components that are intrinsic and others that are secondary; also, some situations can be incorporated into the rule, while others are best dealt with outside of its scope. Introducing changes to a rule's essential components may generate instability and uncertainty that are incompatible with the goals that the rule seeks to achieve.

In the case of Chile's fiscal rule, the notion of the structural balance as a cyclically adjusted balance can be considered intrinsic to the rule, while stabilizing public expenditure is

relevant as an objective. A cyclically adjusted balance represents an option that differs from a measurement that seeks to establish distinctions between the budget's permanent and temporary components. Under the latter concept, the indicator should exclude income or expenditures related to temporary situations, whether or not they are associated with the business cycle. The main problem with trying to measure permanent budgetary components is that in principle many income and expenditure items can be defined as temporary, which leads to significant discretionality in selecting the items to be defined as such in estimating the indicator. Temporary budget components may be found not only on the revenue side, but also in many expenditure items. Studies conducted in several Latin American countries have estimated that spending not associated with legal or contractual commitments may reach 15 to 30 percent of the entire budget (IDB, 2009). Under these circumstances, factors such as choosing which changes are labeled as temporary, declarations of authorities about the timeframe of policy measures, and classification of income and expenditure items significantly increase the discretionality that the fiscal rule was intended to limit.

Attempts to maximize the countercyclical capabilities of public finances by artificially raising the scale of the budget's cyclical component in a structural balance measure may face similar challenges. This approach faces four particularly difficult problems. First, the effectiveness of macroeconomic fiscal policy, a topic that has been debated by economists for decades,[30] becomes particularly questionable in the case of a fiscal policy rule that, by definition, can be anticipated by economic agents and neutralized through their actions. A second problem is the impossibility that a fiscal rule can incorporate all of the complexities of a macroeconomic model capable of interpreting macroeconomic junctures and generating appropriate fiscal policy responses.[31] The third problem involves the difficulty in making fiscal policy responsible for macroeconomic stabilization in economies such as Chile's, where the public sector's weight is relatively low. A fourth problem has to do with the distortions that the goal of maximizing the countercyclical capability of public finances may inject into a structural balance indicator, since

---

[30] The debate on rules versus discretionality in the conduct of economic policy originates with Milton Friedman's examination of monetary policy, and was further developed by Robert Barro from the perspective of rational expectations. The most influential paper on the matter is probably one by Kydland and Prescott (1977), which argues that the rules maximize welfare in a world composed of agents that build their expectations rationally.
[31] This matter was already highlighted in the document that created the fiscal rule (Marcel et al., 2001).

this goal can lead to introducing cyclical adjustments into income and expenditure components whose behavior is dominated by variables other than economic activity.[32]

### 8. *One way of protecting the fiscal rule's stability is to admit that certain circumstances justify overriding the rule on an exceptional and temporary basis.*

When the structural fiscal balance rule was introduced in Chile, authorities wagered that only if it was strictly applied would it gain credibility, without exceptions, guaranteeing its achievement ex-post even if budget adjustments were required during the course of the year. Evidence shows that this approach paid off, reducing the country's risk and volatility. However, recent events have raised awareness on the limitations of this approach. Both the 2008–09 financial crisis and the February 2010 earthquake substantially shocked the country's economy and public finances, shocks that could not be accommodated within a rule designed to operate within the boundaries of a conventional business cycle.

Trying to respond to exceptional circumstances without breaking a fiscal rule can lead to permanent fiscal policy changes as responses to temporary shocks. For example, if in response to a substantially negative shock, tax elasticities to GDP were artificially increased, an additional reduction of expenditures during the cycle's expansionary phase would occur, even if the increases had moderate effects on tax collection.

When confronted with these kinds of situations, other countries have contemplated escape clauses in designing fiscal rules. Ter-Minassian (2010) provides several examples of escape clauses in the fiscal rules that operate in other countries. In order to prevent an escape clause from eroding a fiscal rule's credibility, the definition of an "exceptional circumstance" must be clearly specified in advance, along with plans for restoring the rule's operation once the contingency has been overcome.

An escape clause is a better alternative than an improvised suspension or abandonment of a fiscal rule, or an ex-post elimination of the commitment to achieve the goal. In the first case, the very notion of a fiscal rule is put into question, eroding the credibility of any future rule; in the

---

[32] A similar distortion is the proposal made by Schmidt-Hebbel (2010), in the sense of artificially increasing tax revenue elasticities in calculating BE for the purpose of forcing an increase in the countercyclical behavior of the budget's other components.

second, new spaces are opened to the possibility of fiscal policy manipulation. In fact, since many Latin American countries are known to base their budgets on artificially optimistic macroeconomic scenarios,[33] it would be difficult to believe that applying an ex-ante structural rule would not be affected by the same bias if no ex-post compliance were required.

## 9. *The structural fiscal balance rule generated a virtuous circle that contributed to strengthening public financial management.*

In the Chilean experience, the structural fiscal balance rule has been more than an instrument of macroeconomic fiscal policy; it has provided a framework to reorganize public financial management and the budgetary process. In point 3, above, we explain how the fiscal rule helped stabilize the expenditure trajectory, expanding the planning horizons of public policies. Point 6 describes institutional adjustments that were adopted to increase the credibility and predictability of the rule. Finally, Section 3, above, shows how the Chilean budgetary process has been reorganized, strengthening the rationality of resource allocation. The structural fiscal balance rule, far from being an isolated measure, has been part of a process that can be described as a virtuous circle, in which progress in one dimension has generated new improvements in others.

The structural fiscal balance rule contributed to this virtuous circle by imposing a hard budget constraint that made reshaping the entire budget cycle possible. The rule helped make the opportunity costs of bad decisions and defective projects more apparent and increased the visibility of future problems in public finance. In this manner, the structural rule became the greatest enemy of inter-temporal inconsistency and of hidden political agendas. Weakening the structural rule would also weaken much of the progress achieved in other dimensions of public financial management in Chile.

---

[33] See various references to experiences in several regional countries in Hallerberg, Scartascini, and Stein (2009).

***10. Only some emerging countries have the conditions to adopt a structural fiscal balance rule.***

The structural fiscal balance rule is a complex construct, adopted in Chile only after a long process of strengthening budgetary institutions and fiscal discipline. Countries at an earlier stage of this process may not be prepared to adopt such a rule. Specifically, the following factors can be identified as conditions that made possible the application of the fiscal rule in Chile:

· A relatively simple tax system with broad and predictable tax bases. VAT, which represents nearly 40 percent of tax revenue, is collected on a broad basis with uniform rates and few exemptions.

· Nontax fiscal revenues are rather limited in Latin America and are concentrated in the copper mining industry. Copper revenues represent, on average, less than 20 percent of the central government's revenue, in contrast with the 40 to 50 percent for oil industry revenue in countries, such as Mexico, Ecuador, and Venezuela.

· A low level of public debt, close to 15 percent of GDP at the end of the 1990s. Also, the operation of the Copper Stabilization Fund allowed an accumulation of financial assets that did not run out completely during the Asian crisis. The low level of net indebtedness guaranteed not only lower financial risk, but also the flexibility to design an optimal financing strategy that was protected from liquidity constraints.

· A hierarchical budgetary institutionality where the executive branch concentrates most of the responsibilities for conduction of fiscal policy and in which the treasury department has comprehensive control of public financial management processes (see Marcel, 1998). This division of responsibilities not only increases the credibility of fiscal policy, but also facilitates its implementation.

· With the support of budgetary institutions, Chile was able to materialize core principles of sound public financial management, such as a comprehensive budget, unified treasury

management, and an orderly fiscal accounts system. These elements facilitate the implementation of fiscal policy and its external monitoring.

·   A monetary policy compatible with the fiscal policy rule, based on medium-term inflation targets and a floating exchange rate and backed by healthy levels of reserves.

All of these elements have contributed to the transparency, stability, enforcement, or credibility of the structural fiscal balance rule. They also provide a useful template to assess the viability of a similar rule in other emerging countries.

However, the absence of any of these conditions does not necessarily prevent the adoption of a structural balance rule; rather, it might indicate the need for an organized transition toward a new fiscal regime. In fact, a country that begins from a position of significant public indebtedness can establish a multiannual trajectory toward achieving a structural balance target, with high initial surpluses that can become more moderate as the treasury's net debtor position diminishes. In the same fashion, a country that begins from a lower debt position but has significant short-term fiscal imbalances could gradually increase its structural goal.[34] Finally, the adoption of a structural rule can be the last step in a process designed to strengthen public finances, including enactment of comprehensive tax reform. The adoption of a structural fiscal balance rule is not necessarily reserved for countries that already have responsible and effective fiscal policies and may even be more valuable if such adoption helps the country approach these objectives. However, in such cases, the strategies and implementation process chosen might be substantially different.

## 5.      The Future of the Fiscal Rule in Chile

The Chilean structural fiscal balance rule has not only been successful in achieving its goals, but it has also been the center of a comprehensive process of modernizing public finance management. By imposing hard and credible budget constraints, the rule has fostered a virtuous circle of fiscal consolidation that has included fiscal transparency, midterm financial

---

[34] It should be noted that when the structural rule was adopted in Chile, it was decided that convergence to the structural surplus goal of 1 percent of GDP would take place over two years to avoid imposing an exceedingly restrictive bias on the country's public finances.

programming, asset and liability management, and budgetary institutionality, among other benefits. In addition, the structural fiscal balance rule has imposed an intellectual and political discipline that has raised awareness of opportunity costs in the use of public resources and the future consequences of fiscal decisions. One of the main benefits is that the rule requires that financing needs be resolved concurrently with adoption of expenditure commitments or tax reductions. In these circumstances, it is now difficult to imagine public financial management in Chile without the structural fiscal balance rule. Abandoning the rule would generate high levels of uncertainty, endangering much of the progress achieved during the last few years in various dimensions of fiscal management.

Also, there is no obvious rationale for abandoning the rule. Many initial objections have gradually disappeared as the result of better knowledge of the rule, improvements in its design, and an honest recognition of its limitations.[35] The greatest detractors of the rule are not proponents of a better alternative, but rather actors who view the rule as an obstacle for development of political agendas with substantial fiscal implications.

For these reasons, it is important not only to maintain the structural fiscal balance rule as Chile's main instrument of fiscal policy, but to care for the rule as well. Caring for the rule does not mean immobility. In fact, applying the rule in its original form would be naive in view of the international financial crisis of 2008–09. The need for a vigorous fiscal response to this crisis led to significant methodological adjustments in the rule; also, the country experienced its first change in the ruling coalition in 20 years, as well as a strong earthquake that significantly damaged infrastructure, generating substantial reconstruction needs. The fiscal target was breached in 2009 and 2010, and despite that period's exceptional circumstances, the previous trajectory cannot be recovered easily. The best alternative would be to subject the fiscal rule to detailed scrutiny in order to re-legitimize it in a new political and economic context, ratify its basic principles, strengthen its institutional foundations, and recalibrate its methodology.[36]

The lessons presented in section 4 suggest that any review of the structural fiscal balance rule must be based on three central foundations: (a) the notion of structural balance as a cyclically adjusted balance; (b) stabilization of public expenditure given priority over the goal of

---

[35] A good compendium of the initial methodological objections made to the fiscal rule can be found in Tapia (2003).
[36] This scrutiny is also being undertaken by the Advisory Committee for the Design of a Second-generation Structural Fiscal Balance Policy for Chile convened by the current government.

macroeconomic stabilization; and (c) establishment of additional macroeconomic stabilization mechanisms to complement the fiscal rule.

The first two elements, as suggested in section 4, are essential to assure that methodological adjustments do not undermine the rule's capacity to prevent discretionality in fiscal management. Abandoning these principles would create unlimited scope for speculation on classifying budget items as temporary or permanent, as well as on the size of elasticities that determine the cyclical component of the budget. Once these two foundations are secure, rigorous review should be conducted of each component of the formula used to estimate the structural balance, which in turn are associated with each cyclical factor that affects public finances. To this end, the following steps might be appropriate:

i.   Identify the income and expenditure components that explain most of the variance in the fiscal balance.

ii.  Of the components with the greatest impacts on the variance in fiscal balance, select those that respond primarily to exogenous variables.

iii. For the components thus chosen, identify the exogenous variables with which they are correlated and estimate the corresponding statistical relationships. Discard the income and expenditure components for which no significant statistical relationships with public and measurable exogenous variables can be estimated; also discard those associated with variables—other than GDP and the copper price—for which estimating structural values would require excessive macroeconomic modeling efforts.

iv.  Evaluate additional adjustments to allow greater simplicity and transparency in structural balance calculation.

v.   Validate the proposed adjustments with independent experts, then give the adjustments wide public dissemination.

vi.  Re-estimate the structural balance for the longest possible period of time, using the newly modified methodology.

Special attention should be paid to the treatment of copper revenues. Historically, these represented about 10 percent of the central government's revenue, but their wide variability and structural changes since 2006 have made their impacts on the variance of fiscal income much

greater. In fact, during the last few years copper revenues have increased to nearly 20 percent of central government income. For this reason the methodology to estimate structural balance in Chile has included an adjustment component to address cyclical changes in copper revenues from the very beginning of the industry.

The initial methodology used to estimate structural balance focused on CODELCO transfers to the central government and presumed that changes in copper revenues depended only on two variables: price and quantity. Price was deemed to respond to the volatility of international markets, and quantity to the industry's structural conditions. The methodology used to estimate structural balance therefore included an adjustment for the first of these variables. However, reality soon proved to be more complex.

First of all, copper prices do not necessarily follow a cyclical path, but rather an erratic one—usually described as a "random walk"—based on the behavior of supply and demand in international markets. To solve this problem, a committee of independent experts was consulted to provide an estimate of future copper prices. Although the predictions provide a better solution to the problem than those offered by other stabilization mechanisms,[37] in practice, the long-term copper price estimates vary substantially, since experts' projections tend to be influenced by current price levels (Marfan, 2008).

Second, part of government copper revenues is channeled through an off-budget mechanism—the Reserved Law on Copper—to finance procurement for Chile's armed forces. Broadening the coverage of the structural balance in 2002 to include off-budget operations of the central government allowed this component to be incorporated into the rule.

Third, CODELCO profits depend in part on the evolution of production costs, exchange rates, CODELCO's policy of profit capitalization, and the prices of copper mining by-products, such as molybdenum. The initial methodology implicitly incorporated these elements into structural revenues; however, once the price of molybdenum began to fluctuate substantially, it became necessary to incorporate a specific cyclical adjustment factor to account for this element.

Finally, starting in 2005 private mining companies representing two thirds of Chile's copper production began to pay taxes as accelerated depreciation regimes in their foreign investment contracts ended and after a royalty on mining was established. Soon this revenue

---

[37] For example, moving averages of past periods or prices in futures markets.

represented close to 40 percent of transfers from CODELCO to the central government, necessitating incorporation of another cyclical component in the structural balance equation. However, as these revenues depend on different bases and collection regimes, the formula to estimate this component is considerably more complex than others.[38]

Moreover, an issue of greater importance underlies the methodological complexities associated with these adjustments: how should fiscal policy properly deal with copper revenues? This question arises from the origination of mining income in the extraction of a nonrenewable natural resource, with price variations that result from a wide set of changes, each of which is difficult to categorize as cyclical or structural. Any review of the fiscal rule must address these problems and explore alternatives to adjustments to the structural fiscal balance rule associated with copper price variations. Three alternatives may deserve consideration: (a) create an intergenerational fund to capture an important part of copper income[39]; (b) transfer the copper income to the treasury as a yield based on a permanent revenue formula[40]; and (c) use market mechanisms to reduce copper income volatility.[41] These alternatives involve decisions that are more political than technical, since they require defining how copper wealth will be distributed among several successive generations.

The third pillar of a revalidation of the structural fiscal balance rule should be to develop macroeconomic fiscal policy instruments that could complement the automatic budget stabilizers

---

[38] The methodology of cyclical adjustment of tax revenues from private mining companies (the 10 most important private mining companies) includes an adjustment for the difference between the actual price of copper and the long-term price of copper, defined by the Experts' Committee as having three components: corporate income tax, mining royalties, and additional taxes on remittances from abroad. In the first two cases the formula applied is complicated due to the need to include in the calculation provisional income tax withholdings (PPM); this requires incorporating an intertemporal adjustment to account for the difference between pension payments and actual payments. The cyclical adjustment to tax revenues comprises: (a) a cyclical adjustment to corporate income tax that takes into account the price difference of mining companies' total sales, (b) a cyclical adjustment to the mining royalty that takes into account the price difference applied to the amount of copper sold, and (c) a cyclical adjustment of tax revenues from the additional tax on remittances that takes into account the price difference applied to the amount of copper sold, adjusted by the difference between the effective rates of additional tax and the corporate income tax on mining, multiplied by a factor that reflects remittances by companies.

[39] In 1990, Norway established a fund with oil revenues that finances the budget deficit of the economy's non-oil sectors. In 2001, the Norwegian parliament approved a fiscal policy that required that the annual transfer to the budget must be equivalent to the real expected profitability of the fund, estimated at 4 percent per annum. The actual transfer depends on Norway's position in the business cycle: it is smaller in periods of substantial use of installed industrial capacity and greater when confronted with declines in activity such as those observed between 2003 and 2005 Gjedrem (2008).

[40] For a discussion of some of these alternatives, see the articles in parts 2 and 3 in Humphreys, Sachs, and Stiglitz (2007).

[41] A review of the possibility of issuing bonds based on natural resources ("commodity-indexed bonds") is analyzed in Caballero (2002).

in the structural fiscal balance rule. Specifically, Section 4 of this paper suggests two mechanisms to achieve this goal: defining the structural fiscal target in accordance with macro-adjustment needs, and establishing escape clauses designed to respond to extraordinary circumstances.

Regarding possible adjustments to the structural target, it must be recognized that Chile's structural balance indicator is built on the premise of a conventional business cycle, spurred by fluctuations in terms of trade and domestic demand, where inflation responds fundamentally to demand pressures. However, many other plausible scenarios exist that differ from this conventional cycle. Clear examples of such scenarios are the recent financial crisis and the expansion that preceded it.

When facing a business cycle that differs from the traditional pattern, either in source, intensity, or mechanisms of transmission, macroeconomic policy must be capable of reacting in ways that go beyond the budget's automatic stabilizers. A first level of response must be the examination of possible changes to the structural balance target. To provide these responses while avoiding an excessive volatility in the target, it would be necessary to disclose the macroeconomic model that would underpin any changes, as well as to establish that the target shall comply with certain minimum thresholds and ranges of variation.

Escape clauses may be necessary to respond to situations that go beyond the scope of foreseeable macroeconomic scenarios. Specifically, escape clauses should be reserved for situations that involve large-scale external shocks and natural disasters of dimensions that surpass the capabilities of existing risk management instruments. However, the grounds and procedures through which an escape clause can be invoked should be clearly specified in advance to prevent the clause from becoming a recurring source of fiscal discretionality and a means through which the structural rule can be eroded.

These mechanisms require more than methodological definitions to make them compatible with an effective structural fiscal balance rule. In order to maintain a credible rule that effectively limits discretionality in the presence of structural target adjustments and escape clauses, an institutional platform is needed to guarantee greater levels of transparency and consistency. To this end, the rationale of the experts' committees on trend GDP and copper

prices could be extended to the creation of a fiscal council that could guarantee transparency, equanimity, and consistency in managing the rule and its future modifications and exceptions.[42]

A fiscal council should not be in charge of conducting fiscal policy—a responsibility that must necessarily remain in the executive branch—but should instead guarantee the transparency of the structural balance's accounting and methodological foundations. A fiscal council could therefore validate: (a) statistics, including accounting classifications and the availability of data that can supplement conventional fiscal accounts; (b) methodology to estimate the structural balance; (c) assumptions and parameters required to estimate the structural balance; (d) outcomes achieved in implementing fiscal policy and complying with the government's commitments; (e) the macroeconomic model that would underpin any adjustments to the structural balance goal and the required compliance with minimum thresholds; (f) establishment of escape clauses; and (g) design of convergence trajectories after allowing for exceptions.

To achieve these ends, the fiscal council should comprise independent experts in fiscal and macroeconomic affairs; furthermore, it should have autonomy from political authorities, have an executive secretariat to record its deliberations and agreements, and publicly disseminate minutes and recommendations. An institution such as the proposed fiscal council would keep Chile at the forefront of the fiscal policy development and would be a natural continuation of the efforts initiated with the adoption of the structural fiscal balance rule.

Finally, a revalidation of the structural fiscal balance rule requires a careful design of transition mechanisms. Just as in 2001, these mechanisms should comprise a conciliation or recalculation of previous data and make a gradual adjustment toward new targets, particularly in the context of the aftermath of the financial crisis and the earthquake.

A rigorous recalibration of the structural balance methodology and a revalidation of the fiscal rule could take stock of progress achieved since the application of the rule in Chile, and project it into the future. Such a review is not only timely (in fact, urgent to preserve the gains from the rule), but it also provides a useful opportunity to learn from accumulated experience, factoring in changes that have affected Chile's fiscal policy.

---

[42] A similar proposal can be found in Schmidt-Hebbel (2010).

# Bibliographical References

Arellano, J. P. 2006. "Del déficit al superávit fiscal razones para una transformación estructural en Chile." Estudios Públicos 101. Santiago, Chile: CEP.

Caballero, R. 2002. "Coping with Chile's External Vulnerability: A Financial Problem." Central Bank of Chile, Working Paper Series no. 154. Santiago, Chile: Central Bank of Chile.

Caiden, N., Wildavsky, A. 1974. "Planning and budgeting in poor countries." New York: Wiley-Interscience.

Daude, C., A. Melguizo, and A. Neut. 2010. "Fiscal Policy in Latina America: Countercyclical and Sustainable at Last." OECD Development Centre Working Paper no. 291. Paris, France: OECD.

DIPRES (Dirección de Presupuestos). 2003a. "Evaluación de la gestión financiera del sector público en 2002 y proyección 2003." Santiago, Chile: DIPRES, Ministerio de Hacienda.

———. 2003b. "Informe de finanzas públicas. Proyecto de ley de presupuestos del sector público para el año 2004." Santiago, Chile: DIPRES, Ministerio de Hacienda.

———. 2005. "Informe de finanzas públicas. Proyecto de ley de presupuestos del sector público para el año 2006." Santiago, Chile: DIPRES, Ministerio de Hacienda. *http://www.dipres.cl/572/articles-37447_doc_pdf.pdf*

———. 2006. "Informe de finanzas públicas. Proyecto de ley de presupuestos del sector público para el año 2007." Santiago, Chile: DIPRES, Ministerio de Hacienda.

———. 2007. "Informe presupuestario del gobierno central. Cuarto trimestre 2006." Santiago, Chile: DIPRES, Ministerio de Hacienda. *http://www.dipres.cl/572/articles-23950_doc_pdf_presentacion.pdf*

———. 2008. "Informe de finanzas públicas. Proyecto de ley de presupuestos del sector público para el año 2009." Santiago, Chile: DIPRES, Ministerio de Hacienda. *http://www.dipres.cl/572/articles-41339_doc_pdf.pdf*

———. 2009a. "Evaluación de la gestión financiera del sector público en 2008 y actualización de proyecciones para 2009." Santiago, Chile: DIPRES, Ministerio de Hacienda. *http://www.dipres.cl/572/articles-47877_doc_pdf.pdf*

———. 2009b. "Respuesta consulta ley de trasparencia de libertad y desarrollo." Santiago, Chile: DIPRES, Ministerio de Hacienda.

———. 2010. "Evaluación de la gestión financiera del sector público en 2009 y actualización de proyecciones para 2010." Santiago, Chile: DIPRES.

Engel, E., M. Marcel, and P. Meller. 2007. "Meta de superávit estructural: elementos para su análisis." http://www.dipres.cl/572/article-21746.html.

Garcia, M., P. Garcia, and B. Piedrabuena. 2005. "Fiscal and Monetary Policy Rules: the Recent Chilean Experience." Central Bank of Chile Working Paper Series no. 340. Santiago, Chile: Central Bank of Chile.

Girouard, N., and C. André. 2005. "Measuring Cyclically-adjusted Budget Balances for OECD Countries." OECD Working Paper no. 424. Paris, France: OECD.

Gjedrem, S. 2008. "From Oil and Gas to Financial Assets—Norway's Government Pension Fund." Speech by Governor Gjedrem at Conference "Commodities, the Economy and Money" in Calgary, Canada.

Hagemann, R. 1999. "The Structural Budget Balance: The IMF's Methodology." IMF Working Paper no. 95. Washington, DC: IMF.

Haussman, R., and M. Gavin. 1995. "Hacia una economía menos volátil. Segunda parte de progreso económico y social en América Latina". Informe 1995. Washington, DC: IDB.

Hallerberg, M, C. Scartascini, and E. Stein, eds. 2009. "Who Decides the Budget? A Political Economy Analysis of the Budget Process in Latin America." Cambridge, MA: IDB and David Rockefeller Center for Latin American Studies.

Humphreys, M, J. Sachs, and J. Stiglitz, eds. 2007. "Escaping the Resource Curse." New York: Columbia University Press.

IDB (Inter-American Development Bank). 1997. "Latin America after a Decade of Reforms." Economic and Social Progress Report (IPES) 1997. Washington, DC: IDB.

———. 2007. "Tras una década de reformas en América Latina: ¿Cuáles son los próximos pasos?" Presentation at Board of Governors Meeting. Washington, DC: IDB.

———. 2008. "All that Glitters May Not Be Gold: Assessing Latin America's Recent Macroeconomic Performance." Washington, DC: IDB.

———. 2009. "Efectividad en el desarrollo y gestión presupuestaria por resultados." Documents presented at the reuniones de la Red de Gestión y Transparencia en la Política Pública del Dialogo Regional de Política. Washington, DC: IDB.

IMF (International Monetary Fund). 2001. "Government Finance Statistics Manual 2001." Washington, DC: IMF.

———. 2007. "Code of Good Practices on Fiscal Transparency." Washington, DC: IMF.

Kydland, F. E., and E. C. Prescott. 1977. "Rules Rather than Discretion: The Inconsistency of Optimal Plans." The Journal of Political Economy, 85 (3).

Kopits, G. 2001. "Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?" IMF Working Paper no. 01/145. Washington, DC: IMF.

Kopits, G., and S. A. Symansky. 1998. "Fiscal Policy Rules," IMF Occasional Papers no. 162. Washington, DC: IMF.

Kumhof, M., and D. Laxton. 2009a. "Simple Implementable Fiscal Policy Rules," IMF Working Paper no. 09/76. Washington, DC: IMF.

Kumhof, M., and D. Laxton. 2009b. "Chile's Structural Fiscal Surplus Rule: A Model-based Evaluation Simple." IMF Working Paper no. 09/88. Washington, DC: IMF.

Larraín, F., and F. Parro. 2008. "Chile menos volátil." El Trimestre Económico, LXXV (3) 299: 563–96. July–September.

Lefort, G. 2006. "Política fiscal con meta estructural en la experiencia Chilena." Cartagena, Colombia: Presented to the Second Annual Meeting of the Latin American Group of Specialists in Public Debt (LAC Debt Group).

Marcel, M. 1998. "Los caminos de la gobernabilidad fiscal en América Latina." Revista Internacional de Presupuesto Público Año XXV, no. 37. Buenos Aires, Argentina.

Marcel, M., M. Tokman, R. Valdes, and P. Benavides. 2001. "Balance estructural del gobierno central, metodología y estimaciones para Chile: 1987–2000." Estudios de Finanzas Públicas no.1. Santiago, Chile: DIPRES.

Marfan, M. 2008. "Fiscal Policy and Economic Cycles: the Chilean Fiscal Rule." Presentation prepared for the G-20 Workshop Fiscal Space for Growth and Social Policy, section III: Fiscal Policy, Stability and Growth: Country Experiences. Buenos Aires, Argentina, June 19–20.

Organisation for Economic Co-operation and Development (OECD). 2002. OECD/PUMA: OECD "Best Practices for Budget Transparency." Paris, France: OECD.

———. 2010. "OECD Economic Surveys: Chile." vol. 2010/1 January. Paris, France: OECD.

Perotti, R. 2007. "Fiscal Policy in Developing Countries: A Framework and Some Questions." Policy Research Working Paper no. 4365. Washington, DC: World Bank.

Perry, G. 2003. "Can Fiscal Rules Help Reduce Macroeconomic Volatility in Latin America and Caribbean Region?" Policy Research Working Paper no. 3080. Washington, DC: World Bank.

Rodríguez, J., C. Tokman, and A. Vega. 2006. "Política de balance estructural: Resultados y desafíos tras seis años de aplicación en Chile." Estudios de Finanzas Públicas no 7. Santiago, Chile: DIPRES.

Rodríguez, J., L. Escobar, and M. Jorratt. 2009. "Los ingresos tributarios en el contexto de la política de balance estructural." Estudios de Finanzas Públicas no. 13. Santiago, Chile: DIPRES.

Schmidt-Hebbel, K. 2010. "Lessons from Chile." Presented at the Conference on Independent Fiscal Institutions, Fiscal Council, Republic of Hungary, March.

Tapia, H. 2003. "Balance estructural del gobierno central de Chile: análisis y propuestas." CEPAL, División de Desarrollo Económico, Serie Macroeconomía del Desarrollo no.25. Santiago, Chile: CEPAL.

Ter-Minassian, T. 2010. "Preconditions for a Successful Introduction of Structural Fiscal Balance-Based Rules in Latin America and The Caribbean: A Framework Paper." IDB Discussion Paper 157. Washington, DC: IDB.

Velasco, A., A. Arenas de Mesa, L. F. Céspedes, and J. Rodríguez Cabello. 2007. "Compromisos fiscales y la meta de superávit estructural." Dirección de Presupuestos, Estudios de Finanzas Públicas no. 9. Santiago, Chile: DIPRES.

Velasco, A., A. Arenas, J. Rodríguez, M. Jorrat, and C. Gamboni. 2010. "El enfoque de balance estructural en la política fiscal en Chile: resultados, metodología y aplicaciones al período 2006–2009." Estudios de Finanzas Públicas no. 15Santiago, Chile; DIPRES.

Vergara, R. 2003. "Política y sostenibilidad fiscal en Chile." Centro de Estudios Públicos, Documento 88. Santiago, Chile; DIPRES.