STRUCTURAL BUDGET BALANCE

Methodology and Estimation for the Chilean Central Government 1987-2001

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I. INTRODUCTION

The governments, analysts and observers confront two main obstacles in relation to the analysis and evaluation of fiscal policies. On one hand, since the government accounting methods correspond to a listing of sources and uses of funds, the resulting fiscal aggregates depend on conventions on what items are classified “above or below the balance line”. As the inclusion or removal of revenues and expenditure items can substantially modify fiscal balances and their evolution in time, the understanding of the stance and evolution of fiscal policy depends fundamentally on the approaches utilized to assemble these balance statements. On the other hand, the public revenues and expenditures do not depend entirely on the current decisions of the fiscal authority. Several expenses are the result of legal or contractual commitments signed-on previously by the State of which a newly elected government has scarce or null control. Moreover, significant components of public expenditure and especially of public revenues are adjusted automatically according to the evolution of the economy, which in turn is subject to fluctuations that far from being the outcome of decisions on fiscal policies, merely reflect phenomena that surpass the will of the economic authority.

The second difficulty listed above, the simultaneous movements of fiscal accounts originated in policy decisions and exogenous factors, generates substantial difficulties for the fiscal policy-making and for its interpretation. If during a period of economic contraction a deficit takes place, is this the result of a deliberately expansive policy or the result of the decline in the tax revenues caused by factors unknown to the authority? How compatible is the budget with the macroeconomic policy goals? How temporary are the fiscal deficits? What pressures will the current expenditure decisions generate on the public finances in the medium and long run? The direction of fiscal policy and concern about government finances is at the center of public debate today in all countries.

Although the questions regarding the path and the impact of fiscal policy can be answered by using macro-economic models or simulation exercises, this alone is not enough. If a successful economic policy depends ultimately in the generation of a certain fiscal responsibility "common sense" that extends beyond the reduced realm of economic authorities then it is necessary to have simpler and more direct means of presenting the economic problems, the alternatives available to confront them and the limits of fiscal policy.

The conventional fiscal balance does not respond entirely to this need. It is an *ex-post* measurement of the public sector's financial operation during a given period of time. Variables such as economic activity, inflation, the exchange rate or the level of interest rates determine, to a great extent, the evolution of the tax revenues and of some expenditure items. While analysts and other economic agents are interested in the discretionary fiscal policy stance, the conventional budgetary aggregates are usually dominated by several exogenous factors which do not allow to isolate the cyclical or temporary changes from the more permanent changes resulting from interventions by the economic authorities.

To extract conclusions on the orientation and results of fiscal policy, it is necessary to distinguish the exogenous and temporary components from the discretionary component in the evolution of fiscal aggregates. In order for these conclusions to have a useful impact on the formulation, analysis and evaluation of fiscal policy, it is necessary that the separation of these components be expressed in simple and comprehensible indicators, oriented to the general public.

Throughout the years, many economists have developed alternative methods attempting to achieve these objectives. An important part of these efforts has been translated into the construction of fiscal policy indicators, which vary in their construction and results according to the objectives that they seek to attain[1]. Some of the different objectives pursued by these indicators include: (i) the identification of fiscal policies; (ii) evaluation of the macroeconomic impact of fiscal policy; (iii) avoidance of a pro-cyclical bias in the management of public finances, (iv) reinforcement of fiscal discipline; (v) assurance of continuity and stability in the management of public finances.

The objectives listed above are not always compatible with one another. The relative simplicity required for this kind of indicator imposes, on the one hand, limitations to their analytic sophistication. This explains the wide variety of techniques and indicators that have appeared at different times and in different circumstances, according to the needs of the times and the objectives of their authors.

The challenges related to the measurement and evaluation of fiscal policy are particularly relevant for developing economies. On one hand, the public finances in these countries tend to be more volatile and vulnerable to external shocks. On the other hand, developing countries have a greater exposure to changes in the external perception of their economic performance and therefore require a significant effort to ensure consistency and credibility in the handling of their economies.

This is the case of Chile, a country that has based a significant share of the trust accumulated in the financial markets in its prudent handling of public finances. Nevertheless, the development of an

[1] Marcel et al. (2001) reviews these fiscal policy indicators.

appropriate group of fiscal policy indicators will allow the country to deepen this trust based on a greater transparency. In this context, the contribution seeked by this document is the development of a methodology used to calculate the structural budget balance for the Chilean public sector. This methodology confronts both difficulties mentioned before in relation to the analysis and evaluation of fiscal policy. On one hand, it makes accounting adjustments so that the fiscal indicator captures changes in net worth (VPN). On the other hand, the indicator developed in this document isolates the changes in fiscal policy generated by the most significant exogenous factors present in the Chilean case. Thus, the indicator reflects the fiscal balance that would have been if the economy had been in its medium term trend and temporary influences had been absent.

But the contribution derived from the structural budget balance indicator extends beyond the mere task of providing information for a complete analysis of fiscal policy. It constitutes by itself an essential tool for formulating medium term fiscal policy in Chile. In fact, starting in the year 2000, the authorities announced a fiscal policy rule which established a structural surplus target of 1 percent of gross domestic product (GDP) to be pursued on an ongoing basis.

Considering the indicator's public nature and wide broadcast, this rule provides an anchor of credibility on fiscal policy which means that the economic agents will know how fiscal policy will react when changes in the macroeconomic environment occur. Moreover, this increased predictability generates trust and space to take advantage of the counter-cyclical characteristic of the rule. Otherwise, it is very difficult for the different economic agents to distinguish effectively between a legitimate and responsible policy reaction and a purely populist fiscal expansion. It is important to keep in mind that an eventual loss of credibility in the management of fiscal policy can become dramatically contractive through increases in the long-term interest rates and/or the country-risk.

The design of the rule implies a counter-cyclical fiscal policy , since it allows automatic stabilizers to operate. While fiscal revenues fluctuate along with the economic cycle, the expansion of spending is smoother because it follows the evolution of the economy's medium term productive capacity. In this manner, the rule implies that during the expansionary phase of the cycle the government registers a higher conventional surplus and in the recessive phase of the cycle it registers a lower surplus or even a moderate deficit. This is exactly the reason for the counter-cyclical properties of policy and it has the great virtue of limiting the need of sharp changes in fiscal policy at the extremes of the business cycles. For example, it diminishes the probability of having to carry out a severe fiscal adjustment in the face of an abrupt change in the external conditions since expenditures don't expand excessively in times of good economic performance nor do they contract excessively during economic slowdowns.

In comparison to alternative fiscal policy rules, such as the preservation of a constant conventional balance or the orientation of increases in government spending according to the estimated expansion of GDP, the conduction of fiscal policy based on an structural budget balance target contributes to reduce the amplitude of economic cycles.

On the other hand, the structural surplus target of 1 percent of GDP ensures an adequate dynamism in the accumulation of assets. This accumulation is necessary to face future commitments, which are growing at a faster rate than fiscal revenues, and contingent liabilities. In this last category, the most significant ones are the guarantees given to ensure a minimum return for investments in public works concessions, those stemming from judicial lawsuits against the government and the guarantee of a minimum pension in the social security system. The possible losses of the Central Bank should also be added to the list.

In addition to the benefits mentioned above, the definition of an explicit target for fiscal policy together with the changes in the monetary and exchange policies of the Central Bank, combine into a new macroeconomic policy framework. In the monetary policy side, the Central Bank guides its policy instruments to keep the inflation rate in the 2% to 4% range, centering its full attention in the underlying inflation for the horizon set from 1 to 12 months and in the total inflation for the horizon of 13 to 24 months. This inflation-targeting rule is carried out in a framework of floating exchange rate and of growing integration to the international financial market. This new macroeconomic design is extremely modern and efficient. On one hand, it combines a set of objectives and rules, which are predetermined and well known, with growing degrees of transparency. This makes economic policy decisions more predictable by the economic agents and therefore diminishes uncertainty and increases credibility. On the other hand, it also ensures a certain margin for the existence of counter-cyclical macroeconomic policies. Also, the structural surplus rule, combined with the flotation of the exchange rate, facilitates the coordination between the monetary and fiscal policies.

Hence, the adoption of the fiscal policy rule based on the structural surplus indicator contributes to the strengthening of the public finances and the modernization of the country's macroeconomic framework. This document presents the methodology used to calculate the structural budget balance indicator used in the fiscal rule. Section II describes the methodology used to construct the indicator, and section III analyzes the results of applying this methodology to the 1987-2001 period. In section IV some considerations are made with regard to the use of the structural budget balance for the *ex-ante* analysis of fiscal policy and for the formulation of the policy rule. Finally, in section V some methodological considerations are also presented.

II. THE INDICATOR OF STRUCTURAL BUDGET BALANCE APPLIED TO THE CHILEAN PUBLIC SECTOR: METHODOLOGICAL ASPECTS

One of the main features of the handling of the Chilean economy during the past 15 years has been the discipline with which public finances have been managed. The Central Government balance was in surplus for 14 years and this, in a context of fast growth, has resulted in a reduction of the public debt/GDP ratio from 47.2% in 1990 to only 15.6% in 2001.

These achievements are due mainly to an effective budgetary institution. Indeed, in Chile the budgetary framework assigns a clear responsibility to the Executive power in the overall handling of public finances. The international experience on this subject confirms this appreciation and studies find an important correlation between the degree of hierarchy present in the budgetary institutions and fiscal policy results[2]. Nevertheless, in countries with highly hierarchical budgetary regimes the evolution of fiscal policy is subject to important degrees of uncertainty. This uncertainty is due to the crucial dependence on the commitment of a relatively small group of authorities. The same authority that allows a strong Ministry of Finance to control the public finances could also allow a weak one to lean in favor of political pressures or a populist temptation. Although these possibilities may not represent the intentions of the authorities, the mere possibility that these authorities could act irresponsibly without counter-balances prevents the economy from fully bringing forward, to the present, the benefits of future responsible and prudent handling of fiscal policy.

A way of overcoming these limitations is to set rules to guide the administration of fiscal policy in the future by establishing objectives that serve as a reference points for the rendition of accounts on the part of authorities, according to the attributions that have been assigned to them. A growing number of countries have adopted these types of rules during the last few years. The best-known case being the rules set for fiscal convergence for the countries included in the Treaty of Maastricht which establish a maximum limit to the fiscal deficit and to the level of public debt for all the member countries of the European Monetary Union. New Zealand and Switzerland are other examples.

Nevertheless, for fiscal policy rules to achieve their objective it is necessary they contain a certain degree of flexibility in order for the changes in the external environment not to be translated in an endless and unpredictable sequence of exceptions. For example, a balanced budget rule is potentially pro-cyclical and it can generate serious difficulties when used in periods of downturns or booms because its utilization would exacerbate the economic cycle[3]. And if exceptions to the rule are

[2] For an analysis of the available studies on the subject, see Marcel (1997).
[3] For a description of problems related to the use of the balanced budget rule, see Alesina y Perotti (1999).

established for such cases then definitions concerning *when* and *in what* magnitude could the rule be violated are required.

The use of fiscal policy indicators that adjust to consider the effect of the economic cycle and other relevant exogenous factors would contribute to solve these problems by focusing policy rules in the discretionary component of the budget. Fiscal policy indicators can provide the balance among transparency and flexibility that is required for the formulation of credible and efficient fiscal policy rules[4].

Within the group of possible indicators, which allow for the adjustment of economic cycle effects and other exogenous factors, the Chilean government has turned to the structural budget balance indicator for the formulation of a rule to conduct its fiscal policy. The government has chosen, through the use of this indicator, a simple, broadly communicated and known methodology that has been used during the past few years by developed economies[5]. This choice has been made because this indicator will allow for an increase in transparency, credibility and effectiveness of fiscal policy. Additionally, and contrary to other developing economies, the characteristics of the public finances in Chile –a wide tax-revenue base, the indexation of most fiscal revenues and the low level of public indebtedness- guarantee the viability of the construction and use of this indicator.

1. Definition

To calculate the structural budget balance indicator for the Chilean public sector (BESP), the approach that has been followed is the one used by the International Monetary Fund (IMF) for estimating structural budget balances in the developed countries that are included regularly in the *World Economic Outlook* [6]. The standard methodology has been adapted to the structural characteristics of our economy in order to obtain more representative conclusions. Two adjustments were made. First, public expenditures were not adjusted during the economic cycle because of the absence of programs that respond automatically to changes in economic activity. And second, a specific adjustment was

[4] These types of indicators have been constructed for many countries in Latin America under the methodology utilized by Marshall y Schmidt-Hebbel (1988).

[5] The structural budget methodology has attempted to follow standardized criteria. Nevertheless, it is widely recognized that this indicator can sacrifice relevant additional information used to conduct fiscal policy. However, other complementary tools used to support the management of fiscal policy cover part of these shortfalls.

[6] The methodology used by the IMF in the calculation of the structural budget balance and used as the basis for the present document is described in Hagemann (1999). As one is able to observe in Giorno et al. (1995), this methodology is equivalent to that used by the OECD (Organization for Economic Cooperation and Development).

made for copper revenues since it is an important source of fiscal revenues which is generated by the exploitation of a primary product whose price exhibit a cyclical behavior.

The BESP reflects the amount revenues and fiscal spending would reach if the product were at its potential level and the price of copper were at the medium term price; therefore it excludes the cyclical and random effects of two very important factors: economic activity and the price of copper.

This concept is based on the assumption that GDP evolves around an underlying trajectory that reflects the economy's long-term rate of potential growth and that it is subject to permanent and temporary shocks of different sizes and duration. The permanent shocks, as for example significant technological changes, generate persistent effects in the trajectory of GDP. On the other hand, the temporary shocks vanish in time. Therefore, successive negative and positive temporary shocks translate into cyclical movements of GDP around potential output. The resulting estimation of the BESP indicator is based on the quantification of these deviations of GDP from potential GDP (the output gap) and on the estimation of the output elasticity of the fiscal budget. This estimate also incorporates the quantification of the deviations of the price of copper from its medium term trend and the resulting effect on fiscal revenues.

In contrast, the conventional fiscal balance includes the effect of economic downturns and booms and for this reason its use limits the medium term interpretation of fiscal results. Therefore, the first objective of adjusting the fiscal accounts to fluctuations in the economic activity and in the price of copper is to have an indicator of the structural fiscal situation that can be used as a tool to conduct medium term fiscal policies.

As mentioned above, the institutional scope of the BESP measure is the Central Government. This coverage includes the institutions that are subject to the same planning and budgetary execution norms and that maintain a strong relationship of dependence with the Executive. Therefore, the focus of the indicator corresponds to that part of the public sector most under Central Government control, thus allowing tighter accountability to be placed on the Central Government. The Central Government contains the centralized institutions (ministries), the autonomous public entities (National Congress, Judiciary, Controllership and others) and the decentralized public institutions (public services), all of which are included in the Public Sector's Budget Law. Although this coverage excludes the state-owned enterprises, the municipalities, the public universities and the Central Bank, most of the fiscal policy's influence exercised through these institutions is represented by the transfers from or towards these organisms, all of which are included in the Central Government's accounts.

Lastly, it must be noted that although the BESP eliminates the effect of the two most significant exogenous factors in the fiscal accounts, it cannot be considered an exhaustive indicator of fiscal policy discretionality. The BESP for Chile was obtained by eliminating the effects of the cyclical fluctuations of the economic activity and of the price of copper in the fiscal aggregates. Both are exogenous factors that are not controlled by the authority. Nevertheless, several sources of non-discretionary shifts in the fiscal balance will not be extracted in the BESP computation. What remains once the cyclical effects of output and copper are eliminated is determined both by policy decisions and other exogenous factors. To obtain an accurate indicator of the discretionary component of fiscal policy would require the estimation of all of the exogenous factors that affect fiscal aggregates, which, needless to say, would be far too complex due to the enormous quantity of exogenous factors and the involved assumptions.

For this reason, Chilean authorities have followed other countries and international organizations and have opted for the most pragmatic road: subtracting only the most important exogenous factors. Thus, it must be recognized that the behavior of this indicator will be determined by all the factors different from economic cycles and the price of copper that affect fiscal accounts, and not only by autonomous decisions made by the fiscal authority.

In practical terms the estimation of the BESP for Chile was developed in three stages that are described in detail in the following section. The first one consists in accounting adjustments made to the conventional balance to achieve a fiscal balance that provides a more appropriate base for the construction of the BESP. The second includes the estimate of the cyclical components of the budget, in other words, the estimate of the impact of the cyclical evolution of economic activity and the copper price on fiscal aggregates. Finally, the BESP is estimated on the basis of the adjusted balance and the calculation of the cyclical components.

2. Relevant Fiscal Aggregates: Adjustments to the Conventional Balance

There are several alternative fiscal aggregates which, depending on the location of the line that separates the causes of the deficit from their financing sources, have different meanings. The one used in the construction of the BESP for Chile is based on the concept of public sector's net worth variation (VPN), which considers as "causes" of the deficit (above the line) all those operations that change the public sector's net worth. In turn, it considers the purchase and sale of assets of the public sector, even if these don't constitute public debt, as financing (below the line). The difference between

the indicator based on the VPN concept, which in this document is named the adjusted balance, and the conventional fiscal balance is that the granting and recovery of loans by the government and the purchase and sale of financial assets are recorded below the line[7].

In order to understand this option it is important to remember that one of the objectives of the use of this indicator is to place the analysis of fiscal policies in a medium term perspective and to promote fiscal discipline. The operations excluded in the concept of VPN have characteristics similar to those of other financial operations recorded below the line in the conventional deficit. In other words, these are operations that don't affect the public sector's net worth. They don't increase or reduce the availability of medium term public resources and, therefore, are not compensated by an injection or absorption of resources that affect private expenditure but rather they impact on the composition of their portfolio. If the sale of profitable assets or the reduction of public loans to the private sector reduces future fiscal revenues, it is important to incorporate them in the fiscal indicators. If, on the contrary, these operations are recorded as revenues above the line, as it is the case in the conventional fiscal balance, then the effect is exactly the opposite.

The adjusted balance, which better captures changes in net worth, is obtained by carrying out a series of accounting adjustments to the Central Government's conventional budget balance. First, the granting and recovery of loans and the purchase and sale of financial assets are excluded from the conventional budget balance since they don't represent a flow of revenues or disbursements but rather a change in the composition of the government's assets or liabilities. Also, given the fact that conventional budget accounting excludes the changes in the Copper Stabilization Fund (FCC) and in the Oil Price Stabilization Fund (FEPP) from the fiscal balance, the necessary adjustments are made to incorporate them in the adjusted budget balance. Finally, the accounting methodology of the Recognition Bonds and Revenues from Privatization is also modified. Table 1 shows the accounting adjustments performed to obtain the adjusted balance starting from the conventional balance for the 1987-2001 period. The adjustments are explained briefly below[8].

In the conventional fiscal balance the entries named Purchase of Bonds and Securities, Sale of Financial Assets and Recovery and Granting of Loans are registered above the line. However, when constructing the adjusted balance, based on the concept of changes in net worth, these entries are recorded below the line since they only correspond to changes in the composition of assets or liabilities of the government and not to flows of revenues or expenditures.

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[7] A strict application of the concept of VPN would demand three additional conditions from the fiscal accounts: (i) operate on an accrual base; (ii) register the cost of capital or depreciation, and (iii) quantify the capital gains and losses of financial assets. However, the Chilean public accounting system does not allow for such adjustments yet.

[8] For a more complete description, please see Marcel et al. (2001).

Similarly, the accounting treatment of privatizations has been adjusted. Since the sale of state owned enterprises corresponds to a change in the composition of public assets, the privatization receipts are also recorded below the line when constructing the adjusted balance[9]. This is obvious in the case of the revenues that correspond to the book value of the companies since they do not constitute a change in net worth.

However, the case of revenues obtained from sales at a price higher than the book value of the firm deserves a brief discussion regarding the concept of capital gain. In principle, in an accounting system based on the concept of VPN capital gains or losses originated by the sale of assets should be recorded at the moment in which that they are generated (accrued). However, the conventional accounting methodology, which is cash-based and records the capital gain as the difference between market value and book value, generates two serious distortions. First, the economic concept of capital gain is subordinated to the book value of public companies that rarely corresponds to its real economic value. And second, it registers the net worth variation that the company has experienced during many years in only one year, the year of the sale. To avoid these distortions and since these revenues are clearly identified as one time revenues, all of the revenues generated by privatizations are registered below the line.

The accounting of the FCC and FEPP has also been adjusted. The conventional accounting treatment of these two funds is compatible and consistent with the functions for which they were designed: to partially isolate the available fiscal revenues from the cyclical fluctuations in the price of copper and to soften the fluctuations of domestic oil prices and their derivatives, respectively. However, the conventional treatment is not the appropriate one to fully reflect the government's net worth changes.

The conventional fiscal balance only registers the net copper revenues of the FCC, that is the gross transfers of the public mining company (CODELCO) minus the deposits made to the FCC or plus the withdrawals made from the fund. However, the adjusted balance registers the complete increase in public sector’s assets, that is the full amount of revenues generated by CODELCO. For this reason, the adjusted budget balance registers the gross transfers from CODELCO to the Central Government by adding to the record in the conventional fiscal balance the deposits to the FCC and subtracting the withdrawals from this fund.

[9] The accounting mechanics for this adjustment depend on the period under analysis because the accounting treatment was modified in 1999. Prior to that year, the general norm was to register all of the privatization receipts below the line and, exceptionally, they were registered above the line when the sales were carried out for political reasons. Starting from 1999 the revenues from privatizations corresponding to the value book of the company were registered below the line and the rest of the revenues were registered above the line (under the title Investments’ Rents).

In the case of the FEPP, when the fuel prices oscillate outside the reference limits of the established price band, the operation of the FEPP translates into taxes and fiscal subsidies that are not registered in the conventional budget. However, due to the evident impact on the Central Government's net worth, such movements in the use of the FEPP are registered over the line in the adjusted balance, in the same way as that the rest of the taxes and fiscal subsidies are recorded.

Finally, the accounting of Recognition Bonds has also been modified. Workers who participated and contributed in the old social security system and shifted to the new system of individual fully funded saving accounts received from the government an interest-earning past-service recognition bond reflecting an estimate of the value of their contributions into the old system. This bond is indexed to the Consumer Price Index (CPI), has a 4% real annual rate becomes payable into the individual's saving account at the time the individual reaches the age of eligibility for retirement, or upon the individual's death or disability. The conventional treatment of these bonds uses cash accounting: once the payment is made by the government's social security agency (INP) to the Pension Fund Administrator (AFP), the full amount of the payment is registered as a current expenditure in the conventional balance. The record is made for the total value of the recognition bond. That is, it considers both the payment of the original debt and the interests earned by the bond in the period that started when the worker switched to the new system and ended when he retired, died or became disable. Since the payment of the principal only represents a change in the composition of assets and liabilities of the public sector and, therefore, doesn't affect its net worth, when computing the adjusted balance it is not recorded as an expenditure. A calculation is performed to decompose the interest payment, which is made all at once, into each year's corresponding accrued interests. The calculated per year interests are recorded as expenditures (above the line) in the corresponding years when computing the adjusted balance.

The Effect of the Accounting Adjustments

The result of the recently described accounting adjustments is presented in Table 2 and Figure 1. Figure 1 shows how different fiscal aggregates tell different stories about the evolution of the fiscal policy in the 1987-2001 period. The adjusted balance shows a substantial increase in the fiscal surplus until 1989 when it reaches 3.2% of GDP, afterwards, in 1990 and 1991, it falls and it exhibits a recovery in 1992. Then the adjusted fiscal surplus remains at approximately 1% of GDP for two consecutive years and in 1995 it rises significantly and is followed by a downward trend until it becomes a 2.4% of GDP deficit in 1999. The adjusted deficit is partly reverted in the years 2000 and 2001. On the other hand, the conventional balance, which excludes the significant deposits made to the FCC, gives a more stable picture with surpluses that fluctuate among 0.8% of GDP in 1990 and 2.6% of GDP in 1995. Later, the fiscal balance deteriorated sharply and registered a deficit of 1.5% of

GDP in 1999. This deficit was reverted in the year 2000 with a surplus of 0.1% of GDP. Finally, in the year 2001 the conventional fiscal balance registers a slight deficit of 0.3% of GDP.

The differences between the conventional balance and the adjusted balance are explained fundamentally by revenues from privatization, deposits made to the FCC and the accounting treatment of the recognition bonds. Table 2 shows the magnitude of each of these adjustments. The largest and most volatile ones correspond to the deposits to the FCC and the revenues from privatization. The size of the adjustment made to the recognition bonds is very large at the beginning of the period (larger than 1% of GDP between 1987 and 1990), and it then decreases gradually until it changes sign in 1999. Although, in the period under study both the granting and recovery of loans reach individually a significant level, their combined net effect is smaller and stable. The importance of the FCC and of the revenues from privatization adjustments is evident when one observes what happened in 1988. The adjustment without the FCC turns the conventional surplus of 1% of GDP into a fiscal deficit of 1.7% of GDP, which is mainly explained by the subtraction of the revenues obtained from privatizations. However, an adjusted surplus of 1.3% of GDP is obtained when the deposits to the FCC are considered.

The Treatment of Inflation

An important part of the effort incurred in the calculation of fiscal policy indicators in other countries has been devoted to adequately record the effects of inflation on the real public revenues and expenditures and also on the real value of public debt. These adjustments are required in economies in which instruments to protect fiscal resources from inflation have not yet been developed. However, this is not the case in Chile. After the inflationary experience that lasted almost a century, with annual rates of inflation bordering the two digits for several decades, the economic agents of both the public and the private financial sector have developed a wide set of indexation mechanisms. In the case of the public sector, starting from the 1975 reform, all the tax credits and debits are expressed in a common unit, the *Unidad Tributaria Mensual,* that is adjusted monthly according to the rate of inflation of the previous month. In consequence, for all practical purposes there are no variations in tax revenues originated from inflation.

On the other hand, financial instruments are for the most part expressed in *Unidades de Fomento* that are readjusted daily, according to the inflation of the previous month. Thus, except for very limited exceptions, ex-ante interest rates are also the real interest rates and therefore inflation has no effect over the real value of public debt.

Public expenditures are not fully indexed as in the “real budget" system implemented in the United Kingdom during a brief period in the 70s. Nevertheless, a good part of them is subject to adjustment systems for inflation, in some cases determined by the law[10]. The public sector’s budget is prepared using inflators that consider the expected inflation rate for the year. Under these circumstances, and taking into account Chile’s long inflationary experience, the effects of inflation on real expenditures can be interpreted in the application of fiscal policy indicators as part of the discretionary -non neutral - component.

This means that the use of fiscal policy indicators in Chile does not require additional adjustments to account for inflation.

3. Adjustments for the Cyclical Components

According to the standard international methodology used to determine the structural budget balance, the following step consists in the estimation and extraction of the effect of the cyclical component of output on the fiscal balance. For the Chilean case, where the price of copper is another exogenous factor that also has a significant effect on fiscal revenues, it is necessary to adapt the standard methodology to take into account this relevant feature of the Chilean public sector[11]. In this way, the calculation of the cyclical component considers two sub-components. The first one is the effect of the economic cycle on tax revenues and on the mandatory health contributions[12]. And the second one consists in the effect that the copper price fluctuations have on fiscal revenues.

In the case of the Chilean economy, the cyclical component of spending has not been considered because there is no significant relationship between public spending and economic activity. In some developed economies, this relationship is included through the expenditure associated to unemployment, as the unemployment subsidies. However, in Chile these benefits are not too significant and, moreover, starting in 2002 the existing unemployment subsidy will be replaced by an unemployment insurance scheme in which the fiscal contribution will be independent of the unemployment rate[13].

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[10] This is the case, for example, of pensions and educational vouchers.

[11] For a statistical analysis of the significance of the variables that generate the cyclical behavior of fiscal revenues, see Marcel et al. (2001).

[12] Social Security contributions for pensions are excluded from the calculation of the cyclical component because its behavior is determined mainly by the Pension System Reform. This implies that these contributions will fall continuously until the final closure of the old pay-as-you-go public pension system.

[13] The new unemployment insurance consists in a mandatory saving scheme based on individual unemployment accounts, which is complemented by a fund financed by employers’ contributions and a fixed annual public contribution.

The Cyclical Component of Tax Revenues and Mandatory Health Contributions

The estimation of the cyclical component of tax revenues and mandatory health contributions was done by estimating potential output and the output elasticity of tax revenues and mandatory health contributions.

Potential Output

The potential output series used in the calculation of the BESP corresponds to the one estimated by the Chilean Ministry of Finance for the 1986-2006 period. This estimate, which is based on Roldós (1997) and described in more detail in Marcel et al (2001), was derived using a production function approach and the HP filter. This methodology is the one most frequently used by the IMF in developed countries. The main advantage of this methodology consists in the existence of a transparent relationship between the output level and the trend in production factors and their total productivity (Hagemann (1999)).

The results for the 1986-2001 period can be observed in Figure 2, which shows the estimated output gap, that is the difference between potential output and GDP, expressed as a percentage of GDP.

Output Elasticity

To obtain the parameters required for the calculation of the structural budget balance, the following lineal relationship was assumed[14]:

(1) Log (Tax Revenues + Mandatory health contributions) = ∀ + , Log GDP

The estimate of the parameter *„* which is required to construct the BESP indicator, is carried out using real and seasonally adjusted series.

Additionally, due to the existence of a series of structural changes that occurred in the estimation period, several alternative estimates were considered. Specifically, OLS estimates were considered for two different samples, one for the 1986-I 2000-IV period and another from 1991-I to 2000-IV. The second sample corresponds to a period of relative tributary invariability. Moreover, estimates of maximum verisimilitude (Johansen method) and Stock-Watson were made for the smaller sample (1991-I to 2000-IV). And OLS estimates augmented with dummies that take a value equal to 1 for each of the years in which major tributary changes were introduced were estimated for the complete sample (1986-I to 2000-IV).

[14] An alternative equation including a lagged GDP term was also estimated, however the estimated coefficient was not significant.

The estimated coefficient of the output elasticity is, in all the estimates, robust and somewhat larger than 1. For the rest of the paper a conservative approach is taken and the value of the output elasticity that is used in all the calculations is 1.05, a number amount which lies in the lower range of the estimates that were carried out. This elasticity estimate is in line with other estimates for other countries.

The tax revenues plus the mandatory health contributions can be broken-down into structural and cyclical revenues. The structural revenues correspond to the tax revenues in domestic currency plus the mandatory health contributions that the Central Government would have collected if GDP had been at its potential level. On the other hand, the cyclical revenues correspond to the revenues that are originated by the difference between the actual GDP and potential output.

Structural revenues are obtained by adjusting public revenues proportionally to the output gap. This proportion is determined by the estimated output elasticity.

(2) $$T_{s,t} = T_t \left(\frac{Y_t^*}{Y_t} \right)^{\varepsilon}$$

Where:

$T_{s,t}$ = Structural Tax Revenues plus Mandatory Health Contributions, in period t, T_t = Actual Tax Revenues plus Mandatory Health Contributions, in period t, Y^*_t = Potential Output in period t, Y_t = GDP in period t and , = Output Elasticity of Tax Revenues plus Mandatory Health Contributions.

The cyclical component of Tax Revenues plus Mandatory Health Contributions ($T_{c,t}$) is calculated as:

(3) $$T_{c,t} = T_t - T_{s,t}$$

The Estimated Effect of Copper Prices on Revenues

The cyclical component of copper revenues has been estimated by considering CODELCO's physical sales of copper and cyclical fluctuations in the price of copper. Although the concept is similar to the one used in the FCC mechanism, the results obtained are different because the latter does not include the total impact of cyclical fluctuations in the copper price on fiscal revenues from copper. The fact that

the FCC[15] operates by trenches makes it difficult to totally capture cyclical fluctuations in revenues from copper, and there may be a cyclical component that is not captured that is significant in size.

For that reason, the cyclical component of revenues from copper was estimated on the total difference between the FOB price of CODELCO exports and FCC reference price. The latter corresponds to the long-term price of refined copper adjusted by the discount for quality. The use of the FCC reference price as a long-term price to define the tendency of revenues from copper was contrasted with the use of the moving average of the last 10 years, being the first a more conservative estimate. Figure 3 shows the evolution of the copper price, the reference price and the 10-yr. moving average[16].

Figure 4, which plots the quarterly evolution of the FCC reference price and of the FOB price of CODELCO exports during the 90's, shows its volatility and the importance of incorporating the cyclical variations in the price of copper into the estimate of the cyclical component of the budget.

The quarterly cyclical component of the revenues from copper is calculated as:

(4) $$C_{c,q} = VF_q\left(PFOB_q - PREF_q\right)$$

(5) $$PFOB_q = PBML_q\left(1 - dcode\right)$$

Where:

$C_{c,q}$ = Cyclical Copper Revenues in quarter q in millions of dollars, VF_q = Physical Sales of CODELCO in quarter q in equivalent units of refined copper, $PFOB_q$ = FOB Price of CODELCO Exports in quarter q that corresponds to the spot price in the Metals Exchange of London ($PBML_q$), expressed in US cents per pound of refined copper, minus the discount applied for the quality of Copper (dcode) and $PREF_q$ = Reference price given by the long-term price of refined copper minus the discount for quality.

The calculation of the cyclical component is carried out by considering the quarterly balances of CODELCO sales, including a correction to transform the revenues from an accrued basis to cash basis and to make them consistent with the other entries in the conventional balance that are accounted in a cash basis. This correction is made because of the existing lag between the sale by CODELCO and the transfer to the Central Government. The adjustment is similar to the one used in the calculation of the deposits to the FCC that are included in the public finance statistics. This

[15] For the first USc 4 difference between the FOB price and the reference price, no withdrawals nor deposits are meda form the FCC. For the following USc 6 difference, 50% of the difference is withdrawn or deposited to the fund. For all differences larger than USc 10, all of the difference is withdrawn or deposited to the fund.

approach considers as actual income of a given quarter 66% of the revenues accrued in that quarter and 34% of those accrued in the previous quarter. Summing up, the annual cyclical revenues from copper correspond to:

(6) $$C_{c,t} = \left(0{,}34C_{c,-1} + C_{c,1} + C_{c,2} + C_{c,3} + 0{,}66C_{c,4}\right)TCN_t$$

The annual cyclical component of revenues from copper $C_{c,t}$, converted to Chilean pesos using the average annual nominal exchange rate (TCN_t), considers 34% of the revenues accrued in the fourth quarter of the year t-1, all of the revenues accrued in the first three quarters of year t and 66% of the fourth quarter of year t.

Once the cyclical component of revenues from copper, $C_{c,t}$, and the cyclical component of tax revenues plus mandatory health contributions are calculated, the structural budget balance can be obtained.

4. The Estimate of the Structural Budget Balance Indicator

As stated, the structural budget balance ($B_{s,t}$) is obtained from the conventional balance (B_t) making accounting adjustments (A_t) in the items Recognition Bonds, Revenues from Privatizations, Purchase of Bonds and Securities, Granting and Recovery of Loans, FCC, FEPP, and deducting the cyclical components of tax revenues plus health contributions and copper revenues.

(7) $$B_{s,t} = B_t + A_t - T_{c,t} - C_{c,t}$$

(8) $$BA_t = B_t + A_t$$

(9) $$B_{s,t} = BA_t - T_{c,t} - C_{c,t}$$

Where BA_t corresponds to the adjusted balance in the period t.

Another way of expressing it is:

(10) $$B_{s,t} = BA_t - T_t + \left(T_t \left(\frac{Y_t^*}{Y_t} \right)^{\varepsilon} \right) - C_t + C_{s,t}$$

Where C_t corresponds to the gross revenues of CODELCO in period t.

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[16] The possibility of using copper future prices was discarded because its evolution is extremely erratic, similarly to the behavior of the spot price. Moreover, since CODELCO sells a significant share of its production at future prices, for CODELCO it is part of its current price.

III. THE STRUCTURAL BUDGET BALANCE ESTIMATE FOR 1987-2001

The use of the structural budget balance as an indicator of the government's financial position facilitates the interpretation of the fiscal results when quantifying, by means of an objective concept, the magnitude of the impact of the economic cycle on the budget balance. The results of applying the methodology presented above for the case of Chile in the 1987-2001 period are presented in Figure 5 and Table 3.

The importance of using the indicator of structural budget balance is evident when comparing its evolution with that of the adjusted balance and the conventional balance. In 1989, for example, there was a conventional fiscal surplus of 1.5% of the GDP; nevertheless if the economy had been at its potential level and the price of copper had been at the long-term level, there would have been a structural deficit of 1.6% of GDP. The fiscal accounts adjusted to the definition of VPN show a surplus of 3.2%, which is explained fundamentally by the high level of deposits made to the FCC and the effect of adjusting the accounting of Recognition Bonds. However, while the conventional balance and the adjusted balance showed a surplus, structurally the fiscal accounts registered a deficit hidden by the high cyclical components of the fiscal revenues for that year. In 1989 tax revenues and mandatory health contributions were higher than their structural level, since the economy was in an expansive phase of the cycle in which GDP was higher than potential output. In addition, the price of copper was considerably above its long-term price; at the end of 1988 and the start of 1989 the FOB price of copper exports was higher than 145 USc/lb so actual revenues from copper were considerably higher than the structural revenues of copper. In total, the cyclical component in 1989 was 4.9% of the GDP.

In 1999 the situation was reversed: while the fiscal result showed a conventional deficit of 1.5% of GDP and 2.4% of GDP in the adjusted balance, the structural deficit was of only 0.9% of GDP. This was due to the economic recession that year and the drop in the copper price combined to generate the largest cyclical drop in revenues of the entire period being analyzed (1.5% of GDP). Although from 1997 to 1999 a reduction in the structural position of the public finances took place, this was magnified by the effect caused by the fall in economic activity and the strong deterioration experienced by the price of copper. In fact, the fiscal impulse only explains half of the deterioration in the conventional fiscal balance between 1997 and 1999; moreover, if the comparison is made with the adjusted balance, the relationship decreases to a third. In the year 2000, the trajectory of the structural budget balance is reverted and a positive value is recovered. This adjustment is stronger than the cyclical component of the budget that still remains negative because the GDP was still below its potential level and the price of copper remained below its long-term value. In 2001, the conduction of the public finances, based on the new fiscal rule, reached the target of a structural surplus of 1% of GDP.

For the complete 1987-2001 period, the adjusted balance reached an average surplus of 0.9% of GDP while the structural average surplus was 0.1% of GDP. The average cyclical component was 0.8% of GDP, which breaks down into a cyclical component of tax revenues plus health contributions of 0.0% of GDP and a cyclical component of revenues from copper of 0.8% of GDP.

The evolution of the structural budget balance during the last decade shows a positive trend between 1989 and 1993, followed by a period of stability between 1994 and 1996 and a decrease starting in 1997, which accelerates toward the end of the period and ends with a structural deficit of 0.9% of GDP in 1999. In the year 2000 this is reverted, closing the year in equilibrium, 0.0% of GDP. Finally, in 2001 a structural recovery of fiscal accounts is achieved and the policy target of a 1% of GDP structural surplus is achieved.

The structural budget balance series shows a much less erratic behavior than the adjusted balance series since elimination of the cyclical component present in the conventional fiscal aggregates makes it possible to capture of a more gradual evolution of the fiscal balance, explained by the structural changes in the fiscal accounts. The difference from the adjusted balance is explained therefore by the evolution of the cyclical component of the fiscal aggregates.

The breakdown of the cyclical component in fiscal aggregates confirms the importance of including in the estimate of the structural budget balance not only the cyclical component of tax revenues plus health contributions but also the cyclical component of copper revenues. Graph 6 shows the magnitude of this component, whose annual average (in absolute values) in the period was 1,3% of GDP.

Finally, relevant information can be obtained from decomposing the structural budget balance into structural revenues and structural (adjusted) spending (Figure 7 and Table 4). The fall in the adjusted balance in 1998 and 1999 is marked by an increase in adjusted expenditures as a percentage of GDP in 1998, a small reduction of them in 1999 and a reduction in adjusted revenues as a percentage of GDP in both years. However, after deducting the cyclical component of the revenues, it can be seen that in both years structural revenues grew as a percentage of GDP. Nevertheless, the larger increase in adjusted spending resulted in a reduction of the structural budget balance. During 2000, structural revenues continued growing and were accompanied by a fall in adjusted expenditure and, together, they permitted a recovery of the structural budget balance. In 2001 the continuing growth of structural revenues together with the continuing reduction in adjusted spending translated into a structural surplus of 1% of GDP.

IV. THE USE OF THE STRUCTURAL BUDGET BALANCE FOR THE PROSPECTIVE ANALYSIS OF FISCAL POLICY

The government's objective for developing the methodology of the structural budget balance for Chile has been to facilitate its use for the prospective analysis of the fiscal policy by the general public. Although this document applied the methodology of the structural budget balance to estimate the fiscal accounts ex - post, the true interest and utility of this methodology are in the ex – ante analysis and formulation of the fiscal policy.

The discussion of the Public Sector's Budget Law every year will be enriched by an additional element constituted by the evolution of the structural budget balance. The following equations summarize the application of the structural budget balance indicator in the process of elaboration of the Budget Law with the structural surplus target of 1% of GDP. The variables are expressed as percentages of GDP and they correspond to the Budget Law's annual period.

The first step consists in determining a forecast of the structural revenues, which are obtained from the forecast of conventional revenues implicit in Budget Law after carrying out the necessary accounting adjustments and the adjustments for the economic cycle and the fluctuations in the price of the copper. Therefore, they will depend on the forecasted output and copper price gaps.

(11) $$IE = ICO + DFCC - RP - IP - VAF + AC$$

Where each variable is the forecast for the budgetary year:

IE = Structural Revenues, ICO = Conventional Revenues in the Budget Law, DFCC = Deposits to the FCC, RP = Recovery of Loans, IP = Revenues from Privatizations, VAF = Sale of Financial Assets and AC = Cyclical Adjustments for Economic Activity and the Price of Copper.

Once the evolution of structural revenues is estimated, structural spending consistent with the target of a structural surplus of 1% of GDP must be calculated.

(12) $$GEM = IE - 1$$

Where:

GEM = Maximum Level of Structural Spending Consistent with the Fiscal Policy Rule and 1 = Structural Surplus Target.

Starting from the level of structural spending that satisfies the previous condition, conventional spending that is compatible with the fiscal goal is derived by carrying out the necessary accounting adjustments.

(13) $$GCM = GEM - CTYV + CP + GBR - IBR + FEPP$$

Where:

GCM = Maximum Level of Conventional Spending Consistent with the Fiscal Policy Rule, CTYV = Purchases of Bonds and Securities, CP = Granting of Loans, GBR = Conventional Spending in Recognition Bonds, IBR = Interests Accrued by Recognition Bonds and FEPP = Use of FEPP

Therefore, a limit to the maximum allowed growth of conventional public spending is obtained based on the previous year's execution.

When interpreting the evolution of the structural budget balance implicit in the Budget Law it should be taken into account that during the 90s fiscal spending was not fully executed. Thus, some measure of the historical under – execution of the Budget Law must be considered to achieve a better approximation of the structural result implicit in Budget Law. For this purpose it is useful to point out that the average execution of approved public spending, after adjustments to the Law, has been 99,1% since 1990.

V. FINAL CONSIDERATIONS

When the structural budget balance indicator stops to be used as a simple indicator of fiscal policy and starts to be used as the base for the formulation of fiscal policy, methodological aspects that deserve bigger discussion appear.

The first one refers to the institutional scope of the measure. Although structural budget balances can be estimated for a wider coverage than the Central Government, it is a coverage particularly representative of the influence of fiscal policy in Chile because of the following reasons: (i) Institutional constraints assure that the aggregate overall balance of the municipal governments is essentially zero. (ii) Although public universities are allowed to borrow, they have a relatively reduced financial weight inside the public sector. (iii) Except for rare cases, state owned enterprises register surplus, and the participation of the government in their profits is registered in the accounts of the Central Government. The government's accounts also capture the capital transfers provided to those public firms for which their profits are not enough to finance investment plans. (iv) The Central Bank's quasi-fiscal deficit has

decreased in the last years to levels below 1% of GDP, without exhibiting significant variations from one period to another. Thus, although it is appropriate to include it in the analysis of the global balance of the public sector, it is not indispensable to analyze the annual changes in the fiscal position. Having justified the chosen coverage, if the scope of the indicator was enlarged then it would be necessary to adjust the target balance so that it results in an accumulation of assets consistent with the accumulation implicit in the current rule.

A second relevant methodological issue is the calculation of the reference price of copper because it occurs that the determination of a high price implies higher spending and/or the estimation of a larger structural surplus. To limit the possibility of an irresponsible fiscal behavior through the determination of this reference price and to increase the credibility of the new policy framework, the Ministry of Finance asks an external committee of experts from universities, research centers, mining companies and the financial sector, to determine this price. This committee gives the most probable average price for the next 10 years as the reference price. This is done immediately before the preparation of the Budget Law.

A third methodological issue refers to the possibility of adjusting spending entries that might contain cyclical effects. Perhaps the most emblematic case is that of the emergency employment programs, which in the limit could be excluded completely from the structural budget balance. The structural budget balance indicator developed in this paper doesn't consider this type of adjustment since all of the public expenditures with cyclical components depend on policy decisions. Therefore they are not exogenous. Indeed, there are no relevant expenditure programs that have a cyclical behavior mandated by law.

Finally, it is important to point out that the interpretation in real time of the structural budget balance should put special attention to the estimates of the interests of the recognition bonds and of the output gap. The estimate of the recognition bonds' interests uses the information available at the date of the estimate and, since there are new recognition bonds issued continually with affiliation dates prior to the date of the estimation and problems with part of the information in the records of the INP, it is incomplete. For this reason, each time that new information is available and the interests are recalculated, it will also be necessary to correct the estimates made for previous years. Similarly, the estimation of the output gap also deserves special attention because the potential output is not observable and its estimate might also vary when new information is available. For this reason, every time that new information is available it will be necessary to update the last estimates of potential GDP and the forecasts used for the prospective analysis. Indeed, when the IMF publishes the structural budget balance indicator for developed economies it recommends considering it as an approximation

because of the implicit uncertainty in the estimation of the indicator. This uncertainty, however, doesn't limit the utility of the indicator.

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Table 1
Series of Accounting Adjustments made to the Conventional Budget Balance 1987 – 2001.
(Millions of Chilean pesos of each year)

Year	Purchase of Bonds and Securities	Recovery of loans	Granting of loans	Use FEPP*	FCC**	Revenues from Privatization included in Sale of Financial Assets	Total of Sale of Financial Assets	Rent of Investments	Recognition Bonds (RB)	Interests RB
1987	3,804	32,885	24,875	0	21,153	0	56,336	0	18,490	78,433
1988	3,227	36,922	41,483	0	179,867	104,437	105,441	0	25,115	91,856
1989	903	40,570	64,896	0	281,867	89,569	93,330	0	31,199	115,647
1990	195	50,087	57,791	0	215,445	47,765	49,695	0	46,293	152,253
1991	381	64,860	75,495	21,274	81,473	24,178	38,418	0	53,276	186,568
1992	4,608	77,805	121,462	-4,137	40,148	16,648	55,566	0	75,233	216,591
1993	2,120	101,730	108,676	-12,089	-35,191	12,725	35,620	0	110,950	248,720
1994	4,479	114,854	122,443	-11,047	36,228	7,700	33,202	0	143,291	275,011
1995	1,519	135,103	120,115	2,702	278,719	2,809	43,529	0	178,953	299,436
1996	3,442	147,532	144,223	18,824	77,960	925	14,413	0	210,369	318,589
1997	26,704	153,206	180,184	17,368	43,784	55	13,340	0	259,933	332,805
1998	5,437	154,213	193,982	-47,074	-161,553	142	25,934	0	303,754	338,006
1999	29,224	152,396	147,769	60,443	-233,779	1,186	19,812	75,522	368,807	328,831
2000	4,115	126,176	200,648	184,743	-63,935	0	12,224	359,313	415,935	317,823
2001	1,485	145,839	172,869	8,458	267,434	0	17,492	0	493,158	308,167

Source: Budget Office.
**FEPP: Oil Price Stabilization Fund.*
***FCC: Copper Compensation Fund.*

Table 2
Accounting Adjustments 1987-2001
(Percentage of GDP according to non-deflated series)

Levels	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Actual Revenues	27,4	25,0	23,7	21,8	23,2	23,9	24,0	23,2	22,9	24,0	23,8	23,5	23,0	24,1	24,3
- Recovery of loans	0,7	0,6	0,6	0,5	0,5	0,5	0,6	0,5	0,5	0,5	0,5	0,5	0,4	0,3	0,4
- Privatization Revenues	0,0	1,8	1,2	0,5	0,2	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,2	1,0	0,0
- Sale of Financial assets (*)	1,2	0,0	0,1	0,0	0,1	0,3	0,1	0,1	0,2	0,0	0,0	0,1	0,1	0,0	0,0
+ Anticipated return of taxes	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,2	-0,2
Adjusted Revenues without adjustment of FCC	25,5	22,5	21,9	20,7	22,3	23,0	23,2	22,5	22,2	23,4	23,3	23,0	22,3	23,0	23,6
+ Accrued deposits to FCC	0,5	3,0	3,8	2,3	0,7	0,3	-0,2	0,2	1,1	0,3	0,1	-0,5	-0,7	-0,2	-0,7
Adjusted Revenues	25,9	25,6	25,7	23,1	23,0	23,3	23,0	22,7	23,3	23,7	23,5	22,5	21,6	22,8	23,0
Conventional Expenditures	25,5	23,9	22,2	21,0	21,6	21,6	22,0	21,5	20,3	21,7	21,9	23,1	24,4	24,0	24,6
- Purchase of Bonds and Securities	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,1	0,0	0,0
- Granting of loans	0,5	0,7	0,9	0,6	0,6	0,8	0,6	0,6	0,5	0,5	0,6	0,6	0,4	0,5	0,4
+ Use FEPP	0,0	0,0	0,0	0,0	0,2	0,0	-0,1	-0,1	0,0	0,1	0,1	-0,1	0,2	0,5	0,0
- Recognition Bonds	0,4	0,4	0,4	0,5	0,4	0,5	0,6	0,7	0,7	0,7	0,8	0,9	1,1	1,1	1,2
+ Interests of Recognition Bonds	1,7	1,6	1,6	1,6	1,5	1,4	1,4	1,3	1,2	1,1	1,1	1,0	1,0	0,8	0,8
Adjusted Expenditures	26,2	24,3	22,5	21,5	22,3	21,7	22,1	21,5	20,3	21,6	21,5	22,5	24,0	23,7	23,6
Conventional Budget Balance	1,9	1,0	1,5	0,8	1,5	2,3	2,0	1,7	2,6	2,3	2,0	0,4	-1,5	0,1	-0,3
Adjusted Budget Balance without the FCC Adjustment	-0,8	-1,7	-0,6	-0,8	0,0	1,3	1,1	1,0	1,9	1,8	1,8	0,5	-1,7	-0,7	0,0
Adjusted Budget Balance	-0,3	1,3	3,2	1,5	0,7	1,6	0,9	1,2	3,0	2,1	2,0	0,0	-2,4	-0,8	-0,7

(*) Sale of Financial Assets is net of the privatizations revenues included in previous row.

Table 3
Structural Budget Balance 1987-2001
(Percentage of GDP according to non-deflated series)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001(*)
LEVELS															
(1) Conventional Budget Balance	1,9	1,0	1,5	0,8	1,5	2,3	2,0	1,7	2,6	2,3	2,0	0,4	-1,5	0,1	-0,3
(2) Adjusted Budget Balance	-0,3	1,3	3,2	1,5	0,7	1,6	0,9	1,2	3,0	2,1	2,0	0,0	-2,4	-0,8	-0,7
(3) Cyclical Component Tax Revenues + Mandatory Health Contributions	-0,3	-0,1	0,4	-0,3	-0,3	0,3	0,1	-0,3	0,2	0,4	0,6	0,5	-0,5	-0,3	-0,6
(4) Cyclical Component Copper revenues	1,3	3,7	4,5	2,9	1,1	0,6	-0,4	0,2	1,3	0,4	0,3	-0,7	-1,0	-0,5	-1,0
(5) Total Cyclical Component	1,0	3,6	4,9	2,6	0,8	0,9	-0,3	-0,1	1,6	0,7	0,9	-0,3	-1,5	-0,8	-1,7
(6) Structural Budget Balance = (2) - (5)	-1,3	-2,3	-1,6	-1,1	-0,1	0,7	1,2	1,3	1,4	1,4	1,1	0,3	-0,9	0,0	1,0
ANNUAL VARIATIONS															
(1) Conventional Budget Balance	-	-0,9	0,4	-0,7	0,7	0,7	-0,3	-0,3	0,9	-0,3	-0,4	-1,6	-1,9	1,6	-0,4
(2) Adjusted Budget Balance	-	1,6	1,9	-1,7	-0,8	0,9	-0,7	0,3	1,8	-0,9	-0,1	-1,9	-2,4	1,6	0,2
(3) Cyclical Component Tax Revenues + Mandatory Health Contributions	-	0,2	0,5	-0,6	-0,1	0,7	-0,2	-0,4	0,5	0,1	0,3	-0,2	-1,0	0,2	-0,3
(4) Cyclical Component Copper revenues	-	2,4	0,7	-1,6	-1,8	-0,5	-1,0	0,6	1,1	-1,0	-0,1	-1,0	-0,3	0,5	-0,6
(5) Total Cyclical Component	-	2,6	1,2	-2,2	-1,9	0,1	-1,2	0,1	1,7	-0,8	0,2	-1,2	-1,3	0,7	-0,9
(6) Structural Budget Balance = (2) - (5)	-	-1,0	0,7	0,5	1,0	0,8	0,5	0,1	0,1	0,0	-0,3	-0,8	-1,1	0,8	1,0

(1) Total Revenues – Total Spending.
(2) Total Revenues - Total Spending + Purchase of Bonds and Securities +Expenditure in Recognition Bonds – Interest of Recognition Bonds – Use FEPP + FCC –Privatization Revenues Capital Gains - Revenues from Privatizations Sale of Financial Assets – Recovery of Loans + Granting of Loans +Adjustment for Anticipated return of taxes.
(3) Adjusted Budget Balance – Tax Revenues –Mandatory Health Contribution + Structural Tax Revenues + Structural Mandatory Health Contributions – Gross Copper Revenues + Structural Copper Revenues.
(*)Preliminary

Table 4

Structural Budget Balance Revenues and Expenses 1987-2001

(Percentage of GDP according to non-deflated series)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
LEVELS															
(1) Conventional Revenues	27,4	25,0	23,7	21,8	23,2	23,9	24,0	23,2	22,9	24,0	23,8	23,5	23,0	24,1	24,3
(2) Adjusted Revenues	25,9	25,6	25,7	23,1	23,0	23,3	23,0	22,7	23,3	23,7	23,5	22,5	21,6	22,8	23,0
(3) Conventional Spending	25,5	23,9	22,2	21,0	21,6	21,6	22,0	21,5	20,3	21,7	21,9	23,1	24,4	24,0	24,6
(4) Adjusted Expenses	26,2	24,3	22,5	21,5	22,3	21,7	22,1	21,5	20,3	21,6	21,5	22,5	24,0	23,7	23,6
(5) Total Cyclical Component	1,0	3,6	4,9	2,6	0,8	0,9	-0,3	-0,1	1,6	0,7	0,9	-0,3	-1,5	-0,8	-1,7
(6) Structural Revenues = (2)-(5)	24,9	22,0	20,9	20,4	22,2	22,3	23,3	22,8	21,7	23,0	22,6	22,8	23,1	23,6	24,7
(7) Structural Budget Balance = (6) -(4)	-1,3	-2,3	-1,6	-1,1	-0,1	0,7	1,2	1,3	1,4	1,4	1,1	0,3	-0,9	0,0	1,0
ANNUAL VARIATIONS															
(1) Conventional Revenues	-	-2,5	-1,2	-1,9	1,4	0,7	0,1	-0,7	-0,3	1,1	-0,2	-0,3	-0,5	1,1	0,1
(2) Adjusted Revenues	-	-0,3	0,1	-2,7	-0,1	0,3	-0,2	-0,3	0,6	0,4	-0,3	-1,0	-0,9	1,2	0,1
(3) Conventional Spending	-	-1,6	-1,7	-1,2	0,6	0,0	0,4	-0,5	-1,2	1,4	0,2	1,3	1,3	-0,5	0,6
(4) Adjusted Expenses	-	-1,9	-1,8	-1,0	0,8	-0,6	0,4	-0,6	-1,2	1,3	-0,1	1,0	1,5	-0,3	0,0
(5) Total Cyclical Component	-	2,6	1,2	-2,2	-1,9	0,1	-1,2	0,1	1,7	-0,8	0,2	-1,2	-1,3	0,7	-0,9
(6) Structural Revenues = (2)-(5)	-	-1,0	-1,1	-0,5	1,8	0,1	0,9	-0,5	-1,1	1,2	-0,4	0,2	0,3	0,5	1,0
(7) Structural Budget Balance = (6) -(4)		-1,0	0,7	0,5	1,0	0,8	0,5	0,1	0,1	0,0	-0,3	-0,8	-1,1	0,8	1,0

Figure 1
Evolution of the Adjusted Budget Balance
(% GDP)

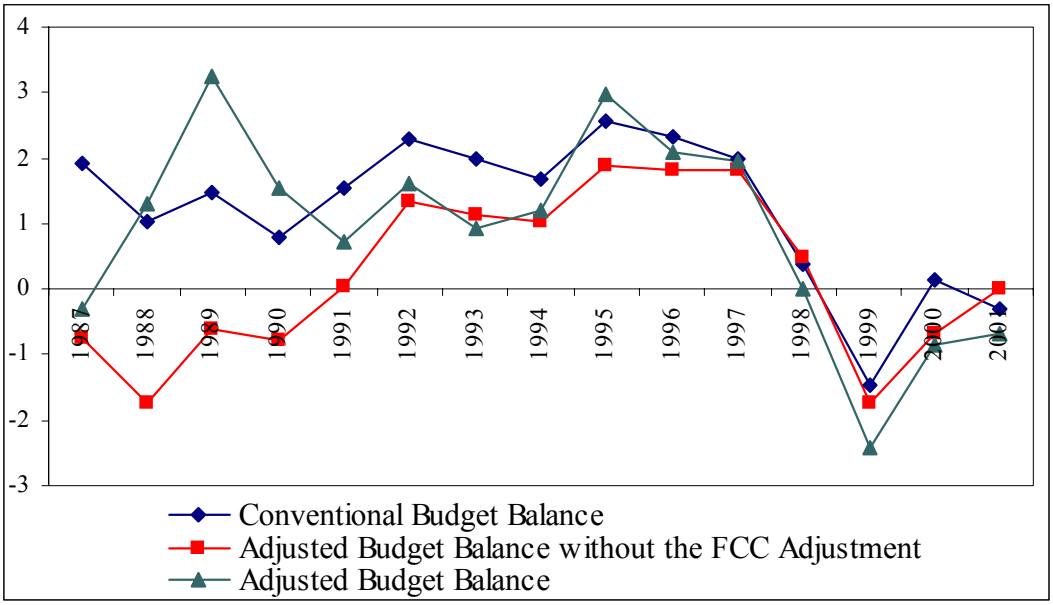
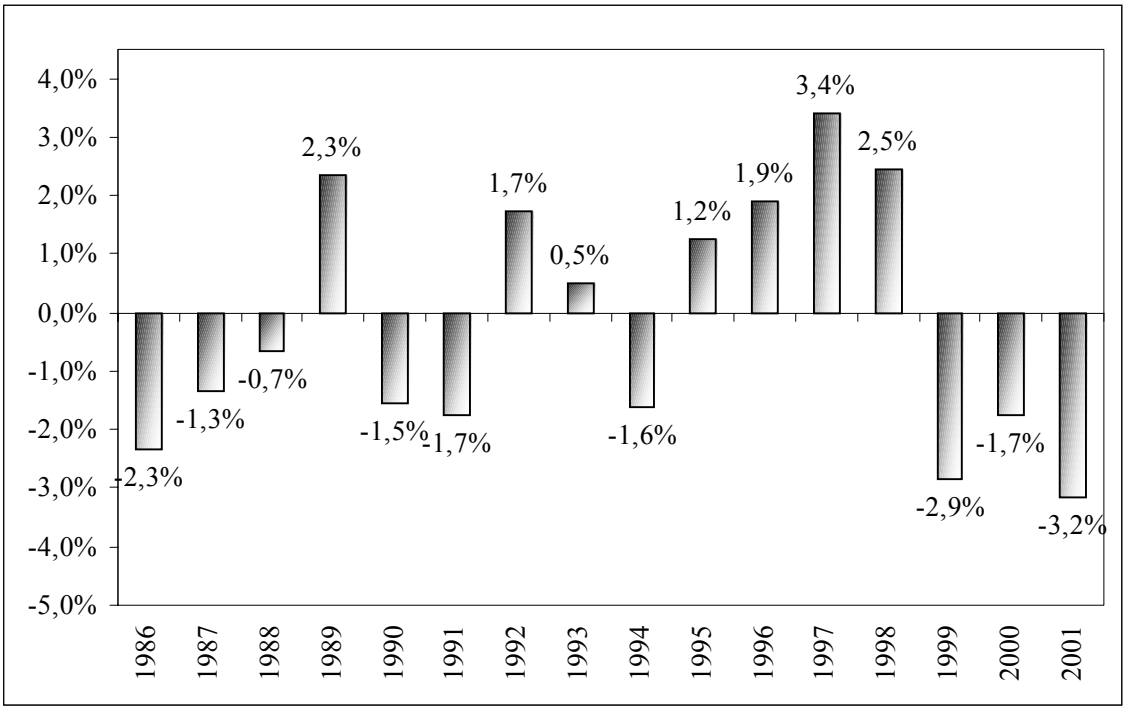


Figure 2
Output Gap
(As a % of GDP)



Positive sign implies GDP > Potential Output.

Figure 3
Evolution of the Price of Refined Copper
(USc/lb)

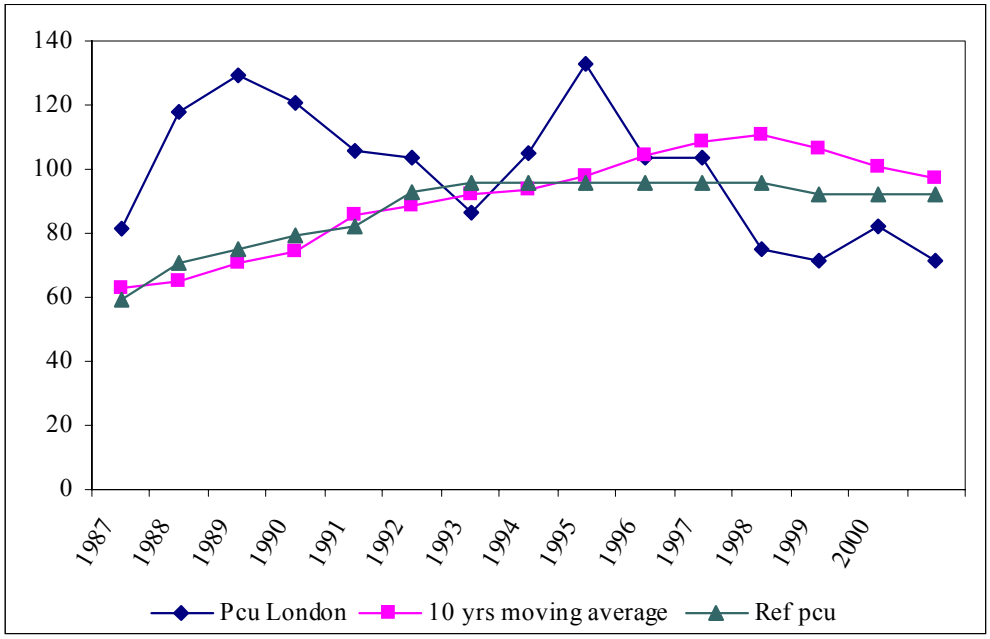


Figure 4
Evolution of the FOB Price of CODELCO'S Exports and of the Reference Price of the FCC
(USc/lb)

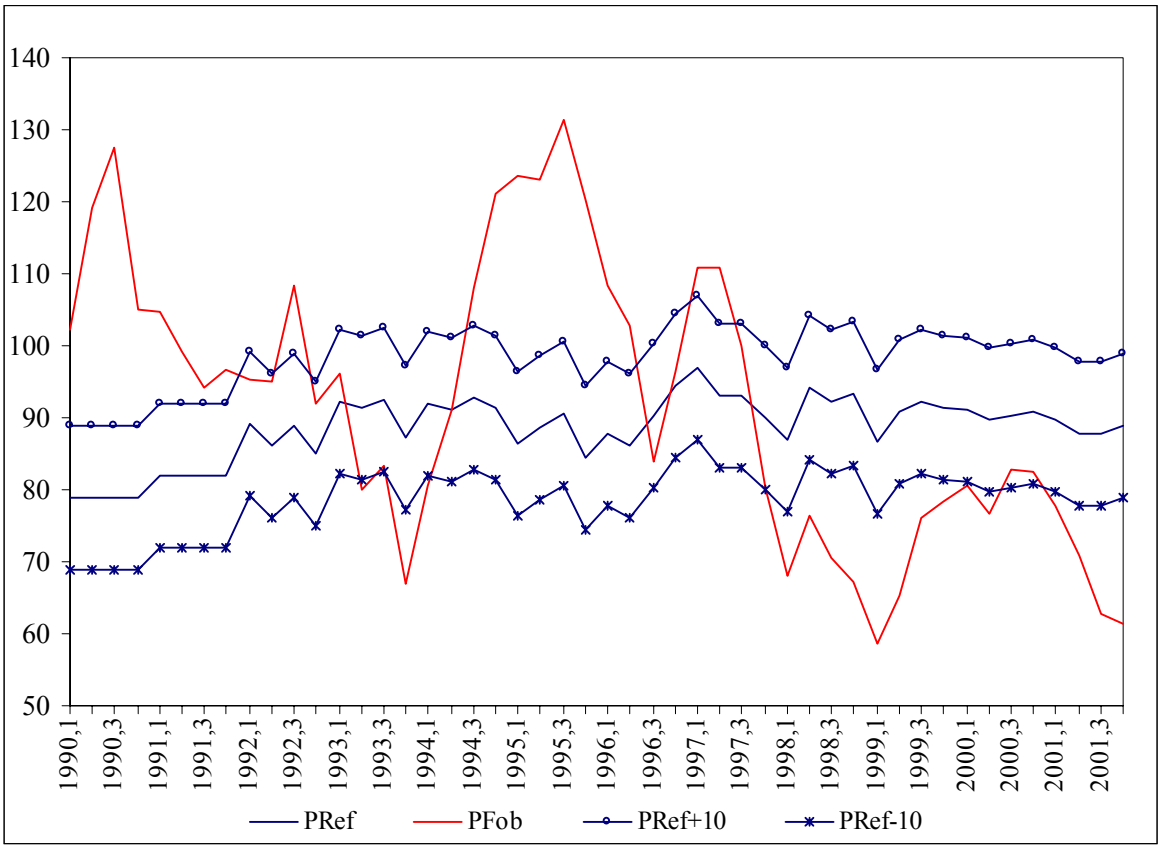


Figure 5
Structural Budget Balance
(As % of GDP)

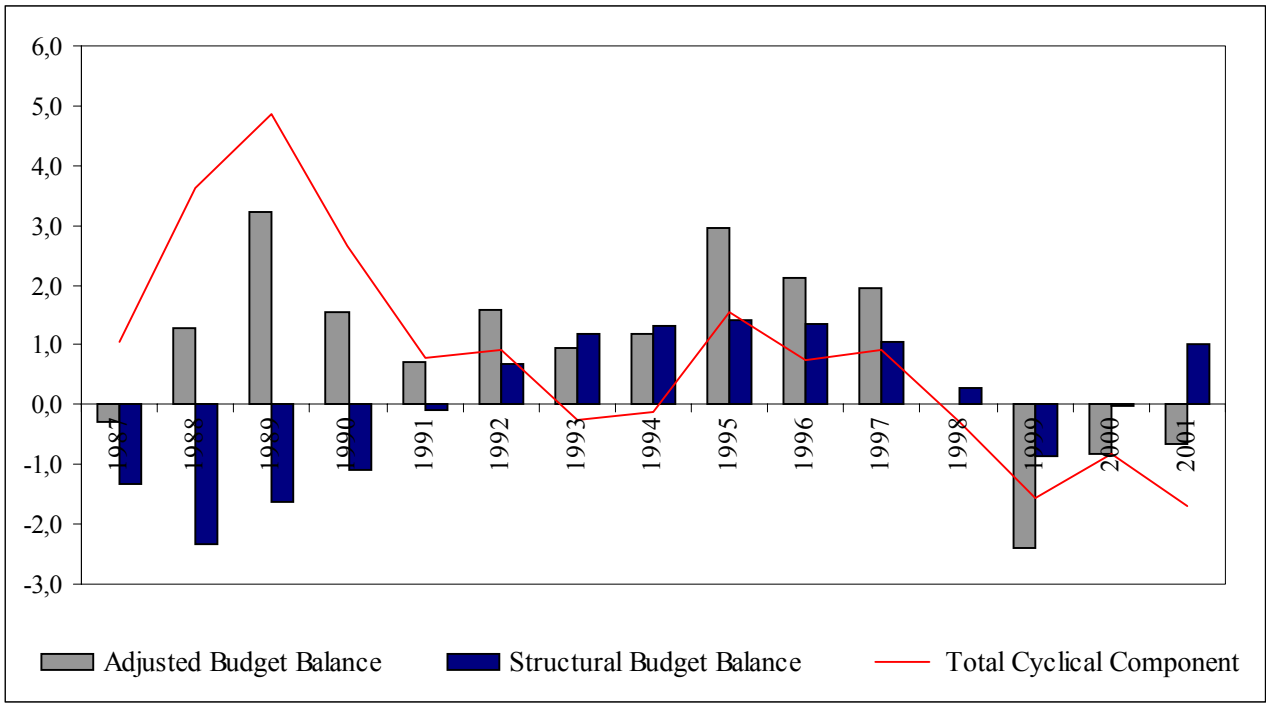


Figure 6
Composition of the Cyclical Component of the Structural Budget Balance
(As a % of GDP)

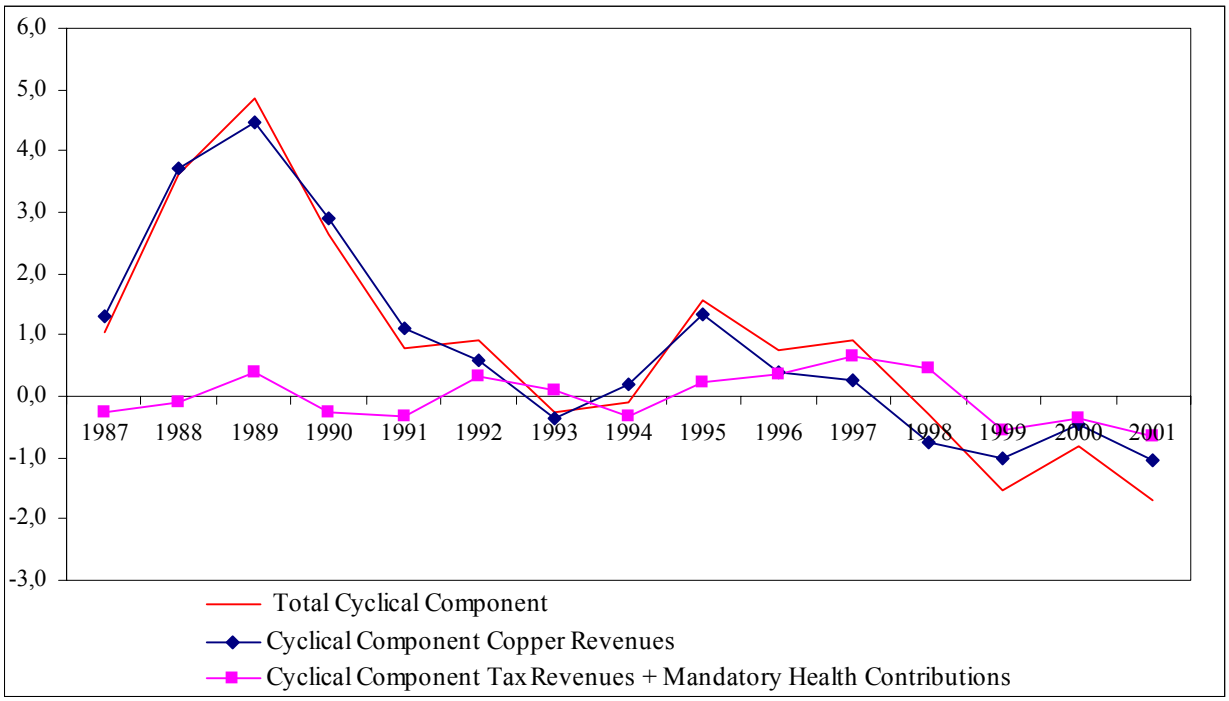


Figure 7
Structural Budget Balance
Structural Revenues and Adjusted Spending
(As a % of GDP)