THE IMPACT OF THE INTERNATIONAL FINANCIAL CRISES UPON EMERGING ECONOMIES AND THE PERFORMANCE OF DISCRETIONARY FISCAL POLICIES: THE CASE OF ARGENTINA

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1   Introduction

The last world financial crisis that started in the United States in September 2007, and spread thereafter across countries in the European Union, did not hit Latin America with the same negative impact that previous crises did for the simple reason that emerging countries in the Region exhibited in this occasion both lower external private and public debt exposure and better macroeconomic fundamentals which somehow permitted them to isolate their public sectors and domestic financial systems from turbulences.

Nevertheless, negative impacts began soon to be felt via economies' external sector as the international debacle dwindled the world demand for developing countries' manufactured and non manufactured exports which not only reduced economic sectors' levels of activity and employment but also imposed serious strains upon their public finances, as governments found themselves not only with fiscal revenues curtailed but also facing internal demands for more active fiscal polices implying tax reductions, expenditure increases or both.

In the meantime, and contemporaneously to the development of the crises, an important debate was taking place on whether discretionary fiscal policies should be resorted to, in place of automatic stabilizers, in order to check cyclical problems, whose reach went beyond the pure theoretic interest as it held important economic policy implications. Let it in this connection suffice to mention Auerbach's (2002) arguments that while considerable doubts remained about the real impact of discretionary fiscal policies upon output and its effectiveness to really play stabilizing roles, automatic stabilizers contributed to reducing cyclical fluctuations, despite attributes in tax systems that tended to weaken their real potential. In the same line of reasoning, Taylor (2008) asserted that "despite this widespread agreement of a decade ago, there has recently been a dramatic revival of interest in discretionary fiscal policy (…) nevertheless, after reviewing the empirical evidence during the past decade and determine whether it calls for such a revival, I find that it does not".

In the light of the preceding observations, and having been Argentina one of countries whose manufacturing sectors suffered the consequences of the international recession, the paper aims at showing, in the first place, the extent to what the international crises hit government's tax revenues (both those stemming from the external trade as well as those whose yield depends on the internal activity level). Second, the reduction of the primary fiscal surplus will be analyzed in order to determine the percentage of the fiscal loss that can be explained by the working of automatic stabilizers as compared to the percentage directly responding to the fall in the activity level.

Next, the argument will be assessed that in Argentina, contrariwise to other emerging countries, international crises can not solely be blamed for the government's fiscal difficulties as other causes, stemming mainly from domestic economic and political decisions, intertwined with the former's negative impact on fiscal balances and contributed also to eroding primary fiscal surpluses. In this connection, the point will be assessed of whether required stimulus measures were of an adequate size and, at the same time, if discretionary fiscal actions combined tax

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reductions and increased expenditures or only privileged one side of the government's budget restraint.

The plan of the paper is as follows: Section 2 surveys some seminal papers and the recent theoretical and empirical literature related to the actual effectiveness or efficacy of discretionary fiscal policies, in the light of international crises and their world impact; Section 3 presents the stylized facts, which include a brief analysis of the performance of some relevant Argentine macroeconomic variables as well as the evolution of economic activity indexes and of government revenues and expenditures, as of the occurrence of the last international crisis; Section 4 includes methodologies for assessing the impact of alternative fiscal policies and present some results, and Section 5 concludes.

2   Discretionary fiscal policies in the literature

Even though discretionary fiscal policies have been, more often than not, used to produce countervailing expansionary or contractive effects to reverting the impact of cycles upon aggregate demand, the literature has in general not shown unanimity at the moment of assessing its efficacy nor are empirical evidences conclusive in supporting the argument of active fiscal policies' superiority respect of automatic stabilizers (such us built-in flexibility of taxation) or monetary policies.

Despite Keynesian discretionary fiscal policies' appeal to policy makers, attention received in the literature, as early as the forties in the past century, adopted a critical stance towards their effectiveness. In particular Friedman (1948) expressed that no attempt should be made to vary the volume of government expenditures (goods, services or transfers), either directly or inversely, in response to cyclical fluctuations in business activity, as changes in spending should solely be made on the basis of the community's desire, need, and willingness to pay for public services. In the same line, Friedman considered that tax structures should not be changed in response to cyclical fluctuations, though actual receipts will, of course vary automatically.

Johansen's text (1965), in discussing alternative forms of stabilization policy, gathered in turn the most common criticisms on the use of active fiscal policy; first, the question of timing or how to ensure that measures were applied at the right moment; second, the matter of the appropriate dosage of measures, in terms of strength or size, faced both the problems of shortage of information and a somewhat incomplete knowledge of the reaction mechanisms in operation; third, unavoidable lags of various kinds in the case that time was needed to perform decisions (*i.e.*, parliamentary delay in studying and enacting tax or spending laws, tax legal lags, administrative lags) might cause that the expected impact of measures to be thwarted and, even worse, that untimely discretionary measures helped to deepen rather than to ease the effect of cycles; fourth, certain capital outlays proved difficult to be used counter cyclically as their planning, construction and legal arrangements could take a long time and, at the same time, stopping constructions for stabilization purposes might cause a greater loss in terms of efficiency of resource allocation, particularly when expenditures were directed towards sensible projects. In discouraging the use of capital expenditures for stabilization, Johansen ended by suggesting that taxes were more suitable to regulate the level of total demand.

On a slightly different but also valuable view of the matter, the seminal paper by Musgrave and Miller (1955) started by emphasizing that the essence of compensatory fiscal policy lied in adjusting government receipts and expenditures so as to induce stabilizing patterns in the economy by increasing spending and reducing tax revenues during depressions, and proceeding in a converse way when inflationary pressures prevailed. These authors expressly acknowledged that compensatory effects could not only stem from properly timed changes in expenditure programs

and in tax rates but also be brought about automatically by diverse means, as for instance when built-in flexibility features characterized tax structures.[1] Nevertheless, and quoting empirical evidence from the United States, Musgrave and Miller arrived at the important conclusion that although preliminary results suggested that automatic stabilizers might be important to maintaining stability over the long run, the empirical analysis did not confirm the growing assertion that built-in flexibility sufficed and that deliberate countercyclical fiscal policy could be dispensed with.

More recently, Blanchard and Perotti (1999) somehow entered the debate by using a structural VAR model based on institutional information[2] on tax, transfer systems and the timing of tax collection in order to assess their automatic response to activity or, in other words, to identifying the dynamic effects of fiscal innovations upon economic activity in the United States in the period following World War Two. In documenting the effect of fiscal policy on economic activity, the authors emphasized that budget variables might move for a set of reasons within which output stabilization might not be predominant whereas, and at the same time and due to decision and implementation lags, at a quarterly frequency, little or no discretionary responses of fiscal policy to unexpected movements in activity have been noticed. In concluding Blanchard and Perotti, though confirming respectively the positive and negative effect of government spending and tax shocks upon output, their empirical investigation cast doubts on the size and variation of these effects as in most cases multipliers were small and often close to one; added to this, they found that, conversely to the case of private consumption, private investment was crowded out by spending innovations.

In well known contribution by Taylor (2000) a rather critical stance was sustained on the actual countercyclical strength of discretionary fiscal policies, in view of what he asserted to be more frequently seen a greater effectiveness of automatic stabilizers and monetary policies in stabilizing the level of aggregate demand backed, in the case of the former, by the larger overall size of changes in taxes and spending compared to those in active fiscal policies, let alone the fact that automatic changes (especially those based on non cyclical progressivity of the tax and the transfer system) impacted upon aggregate demand in a more predictable way and more quicker than the discretionary ones. In analyzing the efficacy of both automatic stabilizers and monetary policies *vis-à-vis* discretionary fiscal policies Taylor recalled again that the latter were conditioned by implementation lags for what a substantial amount of time was required, after the need was acknowledged, to changing (in the right dosage) government spending and tax rates for impacting on the demand level affected by the cycle; apart from this, the possibility that forward looking agents disregarded temporary measures also run counter discretionary fiscal stabilization policies' chances of success.

Taylor also insisted on two important features of monetary policies and automatic stabilizers; that is, the greater flexibility to changing instruments and the element of certainty monetary policy rules provided, the latter feature being also found in fiscal automatic stabilizers owing to their greater predictability. On the contrary, the traditional contention that discretionary fiscal policies had to put up with the problems of implementation lags, irreversibility and political constraints seemed, in Taylor words, to have undermined more in recent years the confidence on the impact of active fiscal policies.[3] Nevertheless, Taylor pointed out a number of situations in which the performance of active fiscal policies seemed to fare better than its alternatives: first, when nominal

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[1] Musgrave and Miller provided in their article a form of measuring the degree of built-in flexibility in terms of the community's propensity to consume, the income elasticity of the tax yield and the average tax rate.

[2] In words of Blanchard and Perotti, this would permit to construct estimates of the effects of unexpected changes in activity upon fiscal variables (*i.e.*, estimates of fiscal policy shocks).

[3] Conclusions from Blanchard and Perotti (1999) are in this connection quoted by Taylor as an example of his assertion.

interest rates were approaching 0 and monetary policies lose power to stimulate demand further;[4] second, under a Mundellian fixed exchange rate with capital mobility framework world interest rates were given to countries, the cyclical function would have to be performed by fiscal policy as monetary policies were constrained not to react cyclically; third, in the consideration of long term issues, which naturally required less frequent changes, discretionary fiscal policies seemed to be reserved a more favorable position in relation to monetary policies or automatic stabilizers.

Contemporaneously to Blanchard's paper, Cohen and Follette's contribution (2000) on the theoretical and empirical analysis of automatic fiscal stabilizers using post World War II U.S. data also added collateral but rich arguments to the debate over alternative stabilizing fiscal policies. In assessing Romer's assertion 1999) that the fact that post war recessions had become less frequent and business expansions substantially longer in the U.S. should be attributed to the rise of macroeconomic policy in the period and, particularly, to automatic fiscal stabilizers (income-based tax system and unemployment insurance benefits mainly) playing a prominent role changing likely recessions into periods of normal growth,[5] Cohen and Follette presented intriguing and ambiguous empirical results as by means of frequency domain techniques they were able to show strong links between income cyclical variations and federal government and taxes that in turn suggested automatic fiscal stabilizers' potential to play a quantitatively important stabilizing role but their results were less conclusive when resorting to a large scale macro-econometric model of the U.S. economy (FRB/US) as, in spite of being able to prove that automatic fiscal stabilizers had a large damping effect upon personal consumption expenditures, they were seen to play a very modest role in damping the short-run effect of aggregate demand shocks in real GDP and also little stabilization provided in the case of an aggregate supply shock fell well short of expected.

The possible over reliance on automatic stabilizers, as a form of mitigating fluctuations in aggregate demand without any explicit, or only little, government intervention was also investigated by Auerbach and Feenberg (2000) using a simulation model based on a file of actual tax returns for the period 1962-95 and in which the impact of hypothetical changes in income and its components upon individual tax payments was considered. By recalling usual arguments they stressed that automatic stabilizers (such as the federal income tax in the U.S.) avoided lags in implementation that could cause discretionary fiscal policy to run behind the events. However, they conditioned the effectiveness of automatic stabilizers to theirs being able also to offset shock-caused falls or rises in aggregate economic activity; that is, the possibility of inducing also private purchases via an increase in disposable income.[6]

In analyzing results achieved, Aschauer and Feenberg pointed out that when measuring the tax system's role as an automatic stabilizer, the income elasticity of taxes had the severe shortcoming of being invariant with respect to whether the share of income taken as taxes was high or low, for what they suggested to take tax system's built-in flexibility or the ratio of the change in taxes with respect to a change in before-tax income. At the same time, the point was emphasized that the working of automatic stabilizers presumed that the effect of taxes on before-tax income changes made household expenditures on goods and services less volatile; nevertheless, such a result might not be consistent with the behavior of rational, forward-looking agents unless long lived increases were expected or when households faced a liquidity constraint depressing current consumption below its desired level. For all that, the authors concluded that there has been, since the 1960s, little change in the role of the tax system as an automatic stabilizer; in extending their arguments, they stressed that the tax system's effectiveness to stabilizing aggregate demand (via

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[4]   There is widespread consensus on that, with nominal interest rates hitting 0, further declines in the inflation rate would cause the real interest rate to increase and would reduce aggregate demand.

[5]   Let alone their contribution in boosting growth in the first year following the recession trough.

[6]   Aschauer and Feenberg quoted in this regard that it also mattered how large a private response in consumption the increase in disposable income generated.

changes in income tax, payroll tax, income distribution)[7] was lower than its estimated 1981 peak and rather similar to that of the 1960s. Finally, Aschauer and Feenberg acknowledged that regarding tax induced consumption responses as the most important single source of automatic stabilization of aggregate demand and considering that the former offset no more than 8 per cent of initial shocks to GDP, in line with what Cohen and Follette found in their application of a macro model, modest results somehow reaffirmed the limits of automatic stabilizers.

What seemed to be a stalemate situation in the controversy regained however recent strength, mainly as a consequence of last international crises started in 2007 in the U.S. and transmitted to European economies and to countries elsewhere, as several new papers on the revival of fiscal policy suggest. In this regard, Taylor's new contribution (2009), based on an empirical analysis for the U.S. economy as of 2001, was intended to reassert his traditional contention that fiscal policy should avoid countercyclical discretionary actions and focus instead on automatic stabilizers. In illustrating his viewpoint, Taylor referred to two important countercyclical discretionary measures in the decade: the large temporary tax rebates of 2001 and 2008 which, in both cases coincided with recessions started in March 2001 and December 2007 and exhibited no response or implementation lags or lack of timing that normally reduce the efficacy of active fiscal policies; nevertheless, when the evolution of series of disposable personal income with and without the inclusion of rebate payments to individuals and families and of personal consumption expenditures were drawn, results exhibited the conclusion that temporary rebates did not do much to stimulate consumption and aggregate demand. This revealing feature fell in line with the permanent income theory (life cycle theory) in which temporary increases in income were predicted to lead to proportionately smaller increases in consumption than a permanent rise in income[8] for what Taylor concluded that the effect of tax rebate payments on aggregate consumption did not avail the idea that a revival of discretionary fiscal policies was necessary for stabilizing purposes.[9] This author also analyzed empirical evidence on how automatic stabilizers had changed over time in the U.S., for what he resorted to an econometric estimation of coefficients of structural and cyclical deficit components on GDP gap and concluded from figures shown that while the coefficient on the cyclical component remained fairly constant around 0.34 or 0.35, the coefficient on the structural component increased a dramatically over time; should the latter's high responsiveness continue into the ongoing recession, automatic stabilizers would be very powerful. In sum, shown empirical results did not yield evidence – on Taylor's words – to change the agreement of a decade ago to focus fiscal policy on automatic stabilizers rather than on discretionary fiscal policy.

Feldstein (2009) in turn wondered why governments all around the world were now resorting to massive stimulus packages when no more than two years ago there was consensus among economists that active fiscal policy was not an appropriate countercyclical instrument. In attempting to rationalize the mentioned discredit of discretionary measures, Feldstein recalled that the potential stabilizing contribution of active tax and spending Keynesian fiscal policy was challenged by empirical research that showed that the Keynesian multipliers were in fact much more smaller than assumed due to crowding out of interest-sensitive spending caused by the induced rise in the demand for money and by the effect of the larger national debt on long term interest rates, let alone demand leakages produced by imports and fiscal impacts upon the exchange rate whose ultimate outcome were a reduced value for the multiplier. Also, uncertainties on whether stimulus packages performed after the trough in economic activity might also help active fiscal policies to increase cyclical volatility.

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[7]   They also included indexing provisions, factoring in heterogeneity with respect to consumption responses and income volatility.

[8]   Taylor stressed however that life cycle theories were approximations no taking into account liquidity constraints making it difficult for some consumers to borrow.

[9]   Taylor also included simulations for the impact of government spending finding also little reliable empirical evidence that discretionary public expenditures led to ending a recession or to accelerating a recovery.

In spite of the above mentioned shortcomings, Feldstein based the revival of fiscal policy in that, contrariwise to past recessions caused by sharp counter inflationary interest rates rises, the 2007 U.S. crisis was the result of underestimated risks and excessive leverage the natural sequence being widespread defaults on subprime mortgages, massive erosion of families' wealth, marked contraction of consumer expenditures and a fall in firms investment and real estate values. Feldstein completed this grim description by stressing that the high damaging impact the decline of value of mortgage-securities and derivatives had on the capital of financial institutions and the disruption of the credit market made monetary policy (reduction of interest rates) incapable of dealing with the problem and explained also the sudden economists' advocacy for fiscal stimulus.

In acknowledging the new different scenario, Feldstein further advanced in considering why traditional arguments against discretionary fiscal policies might not longer be an impediment, in particular the delays in starting infrastructure projects (as downturn in aggregate demand is expected to last longer than previous recessions) and the possibility of governments to accede to debt not likely to be offset by higher interest rate. In the same line of reasoning, the author mentioned alternative forms of tax reductions (other than the one-time tax cut) that could be successfully used, as well as various forms of investment tax credits. Finally, proposals of design were advanced as necessary conditions to make the fiscal package a successful stabilizing tool are advanced; in this connection, the objectives of increasing both private consumption and business investment called, according to Feldstein, for the indefinite postponement of individual income tax rate increases and tax rates on dividends and capital gains while, in turn, these tax policy recommendations needed to be accompanied by large and fast (speed of outlays) and government spending[10] properly targeted at fostering aggregate demand and employment.

Several years after the paper on automatic stabilizers (2000), co-authored with Feenberg, Auerbach (2009) revised U.S. crises and discretionary stabilizing experiences since 1982 and attempted in turn to explain the new fiscal activism on grounds that the effectiveness of monetary policy was challenged given the severity of the recession stemming from 2007-08 crisis and that the strength of automatic stabilizers weakened over time due to indexation of the individual income tax and reduction in marginal tax rates. Other arguments raised by Aschauer were the limit case of zero-nominal interest rate bound thwarting monetary policy's stabilizing efforts, in agreement with Taylor's stance on the matter, and also a new interpretation of the Lucas' critique[11] whereby there would be benefits for potential fiscal intervention in an environment characterized by nominal rigidities, liquidity constraints and credit-market disruptions.

But at the same time that Aschauer accepted that the particular circumstances of the 2007-08 U.S. recession gave room to a renewed fiscal activism, he warned about the relative little advances in discretionary policy application and made it clear that more and urgent attention should be given to policy design should policy makers expect active fiscal policy on a large scale render the expected results; in connection to this, the paper included an interesting empirical analysis of investment incentives in the period 1962-2007 and of how assumedly stabilizing designs might on the contrary end discouraging investments.

3   The stylized facts

The ensuing set of diagrams intend to show whether the recession started in the U.S. in the

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[10] In analyzing priority areas in which the government planned to increase outlays, Feldstein deemed as an important omission in the stimulus package to rule out temporary funding increases in the field of defense, intelligence and research.

[11] Let it be remembering that the core of Lucas' critique (1976) was the idea that rational agents should respond to changes in policy and that would in turn reduce whatever potential efficacy countercyclical policies might have.

Figure 1

Argentina – Quarterly Evolution of Gross Domestic Product
(seasonally adjusted, million of pesos of 1993)
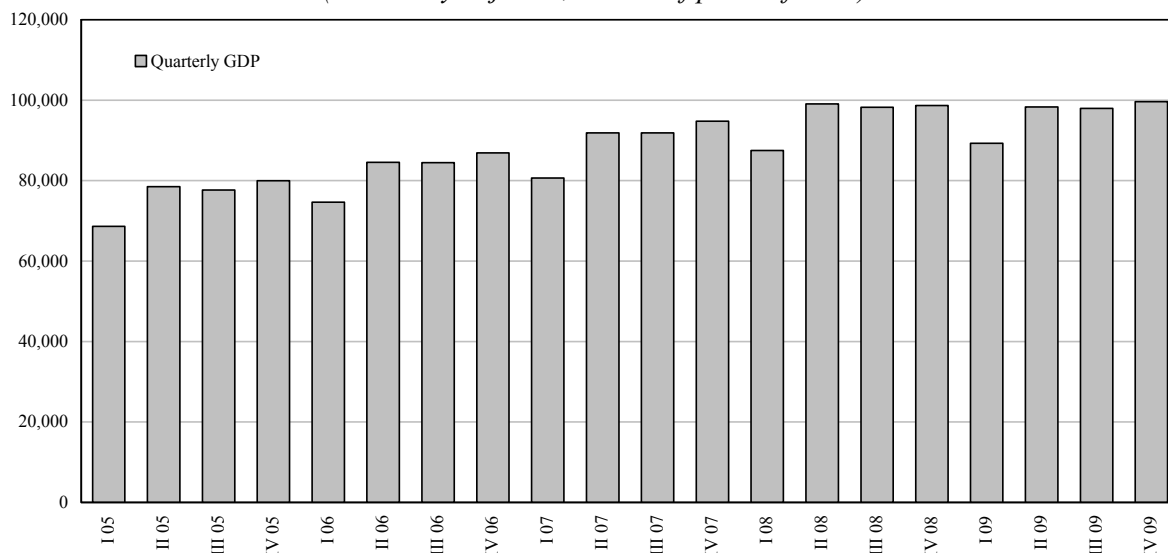
Source: Own estimates on the basis of data from the Secretary of Economic Policy, Argentina.

third quarter of 2007 and transmitted to Western Europe and other countries in Asia by the end of 2008 hit the Argentine or if, as hypothesized above, macroeconomic fundamentals somehow helped the country to insulate itself from the financial crisis, save for the negative impact of a dwindled world demand for its exports.

At first sight, the evidence yielded by the Figure 1 indicates a steady growth of the quarterly gross domestic product spanning until 2008, and only interrupted by the cyclical performance shown by all the first quarters. However growth rates, ranging from 8.5 to 9.2 per cent in the first three years, fell to 6.8 per cent in 2008 and reached an almost nil value in 2009 for reasons that partially responded to the international crises but also (and perhaps mainly) to government's policies adding uncertainty to the decision-making process of domestic economic sectors; in this regard, developed countries' contracted demand of manufactured goods and the subsequent export fall of emerging economies combined in Argentina with negative domestic government decisions including banning on certain agricultural exports (such as beef meat, dairy products, wheat and maize) and the raise of export duties on soybean that brought about supply's reductions, withholding of commercial transactions and the loss of government revenues.

The negative impact of the 2007-08 international crises on Argentine industrial sectors is partly reflected by the ensuing Figure 2 in which the performance of the inter annual rates of change of General Activity and Industrial Production Indices from 2006 through 2009 is depicted. As can be seen, the evolution of both indices kept a cyclical but slightly rising trend until the end of 2007 and fell abruptly thereafter with lower though positive figures in 2008 and negative values in 2009. It needs however be emphasized that, apart from the loss of markets abroad due to the crises (mainly those belonging to NAFTA), industrial production levels were also damaged by the sluggish rate of growth of private investment that fell from an annual 18.2 per cent in 2006, to 13.6 per cent in 2007, 9.1 per cent in 2008 and a negative figure of around 10 per cent in 2009. Most analysts coincided on that a greater government intervention in the economy, the state

Argentina – Inter Annual Rates of Change of General Activity and Industrial Production Indexes
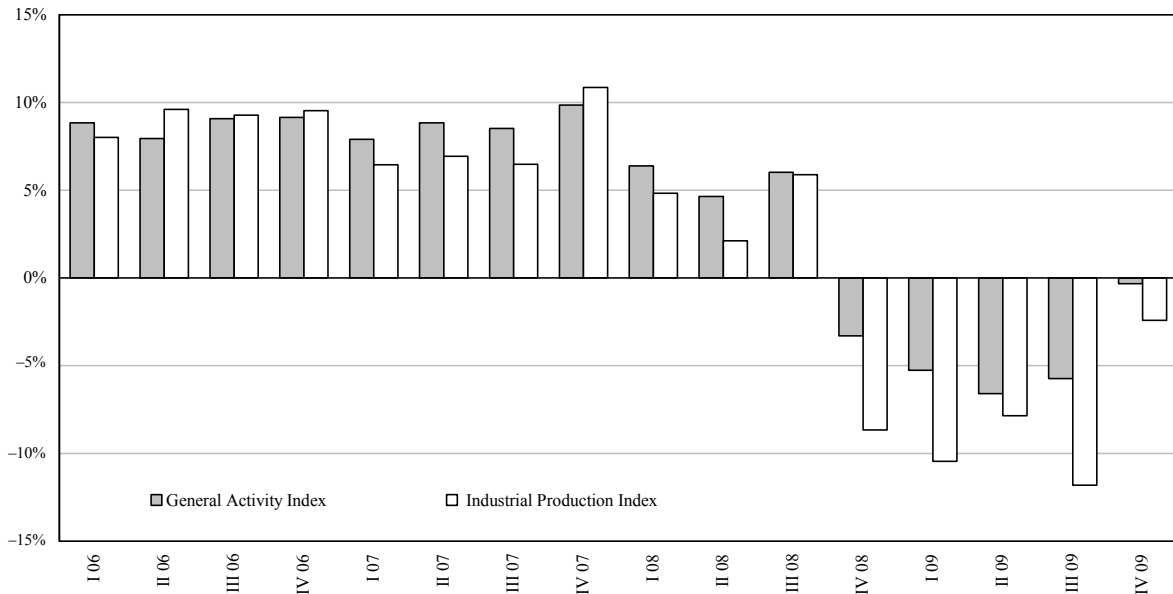

Source: Ferreres, O.J. y Asociados, Database, Buenos Aires (Argentina).

takeover of some formerly privatized public utilities and of the private pension system and advances considered unduly upon property rights were the main causes discouraging further domestic and international private investment in the country.

From a different angle, data from Figure 3 serve to confirm that whatever damaging effects smaller exports – due to international crises – might have had upon domestic industrial sectors, the sluggish behavior of investment mattered more; in this connection, import's component percentages show that the fall in the participation of capital and intermediate goods and of spare parts for
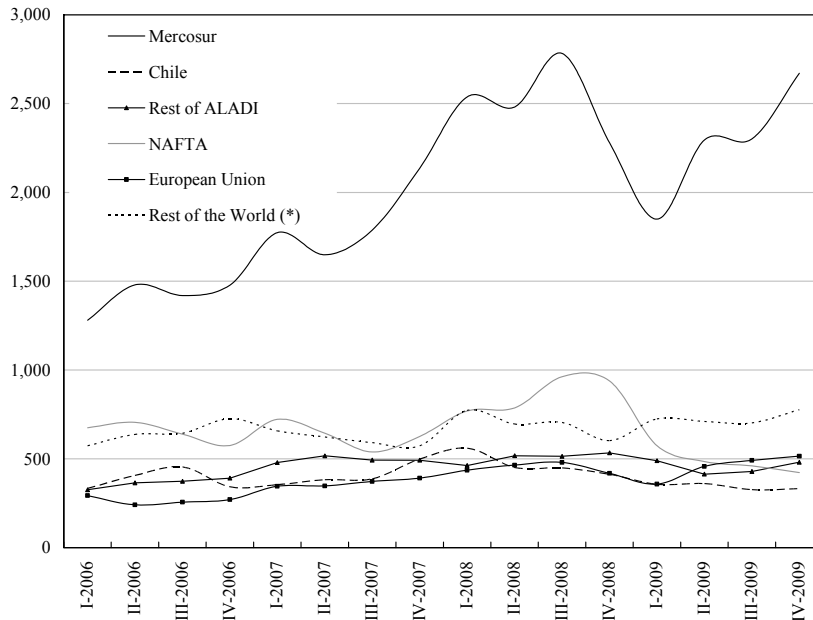
Argentina – Quarterly Evolution of Import's Components
(percent of total imports)
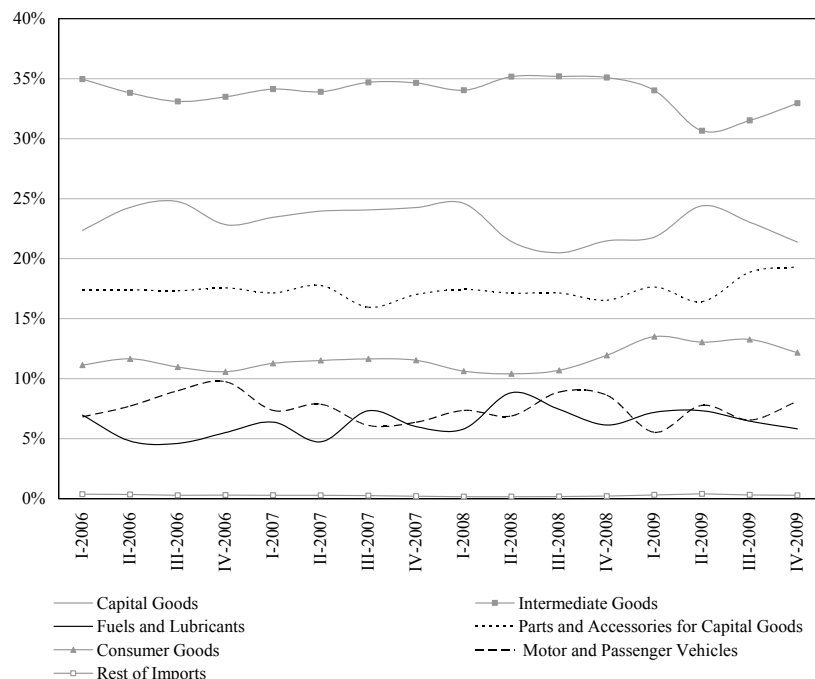
Source: National Institute of Statistics and Censuses (INDEC), Argentina.

Figure 4

Argentina – Quarterly Evolution of Industrial Goods Exports
(million of current dollars)

Source: Data from the National Institute of Statistics and Censuses (INDEC).
(*) Including: Rest of ALADI, EU, ASEAN, China, Republic of Korea, Japan, India, MAGHREB and Egypt and the rest of the world.

capital goods was noticeable as of I-2007, when the U.S. crisis was still to burst; thereafter only imports of intermediate goods and of spare parts and accessories for capital goods reverted in 2009 the downward trend whereas the relative participation of capital good imports continued declining. As imports did not keep up pace with exports, the impact of the mentioned feature was still higher as the smaller relative participation of imports needed for industrial sectors to keep going corresponded also to smaller total import levels, relative to other macroeconomic variables such as exports and output.

As referred to above, the negative impact of the 2007 U.S. crisis and the subsequent 2008 problems in many European developed economies upon Latin American countries' export sectors, intertwined in Argentina with domestically unsolved policy problems that outweighed the effects of international crises. In support of this assertion the coming Figure 4, depicting the quarterly evolution of industrial good exports in the period 2006-09, renders evidence that the negative impact of crises was only relatively felt by domestic manufacturing sectors in reason of the country's membership to the regional economic integration known as MERCOSUR; as shown below, whatever negative effects arising from NAFTA – as of 2007 – and European countries' imports in 2008 were compensated by increased exports to Brazil and that permitted to make up the trade losses from other importing origins.

Contrariwise to the above mentioned case, exports of agro-industrial goods and agricultural commodities highlight the already mentioned domestic problems as exports kept growing steadily throughout the crises' development and only fell by 2009 when the consequences of export bans and quotas and tax rate increases began to be felt. Negative effects of the international crises were however visible with respect to China (one of Argentina's single most important customers) as its agro-industrial imports moved back during 2008 whereas imports of soybean started to shrink in 2007 and behaved cyclically until the end of 2008. Again, lower 2009 exports responded to the supply scarcity in origin of exportable agricultural goods mainly due to domestic withholding of operations by farmers.

The extent to which the impact of the international crises and of domestic problems actually affected the sustainability of Argentine public finances, as well as the room the federal government had to undertake active fiscal policies, is immediately shown in the following diagrams depicting

the performance of public revenues and expenditures and the evolution of the federal government primary surplus in the period 2006-09, all in terms of GDP. At first sight, seasonally-adjusted series from Figure 5 show that tax revenues kept growing until year 2008 when they began to exhibit a cyclical pattern and, as of the third quarter of 2008, a marked declination; nevertheless, the negative effects upon federal revenues were modest and mainly reflected the stagnation of the income tax yield in less than 5 percentage points of GDP (Figure 7).

The Argentine federal government somehow succeeded in isolating its overall revenues' performance from the negative impacts of 2007 and 2008 international crises since, as shown by the Figure 5 for quarterly values and in the bars for annual values (Figure 6), both the series for tax revenues (inclusive of social security contributions) and total current revenues slightly rose in the period under analysis; the point is however worth mentioning that it was a discretionary change allowing contributors belonging to the Private Individual Capitalization Regime to switch to the PAYG system, followed

Argentina – Quarterly Evolution of Federal Public Revenues
(seasonally adjusted variables, percent of GDP)
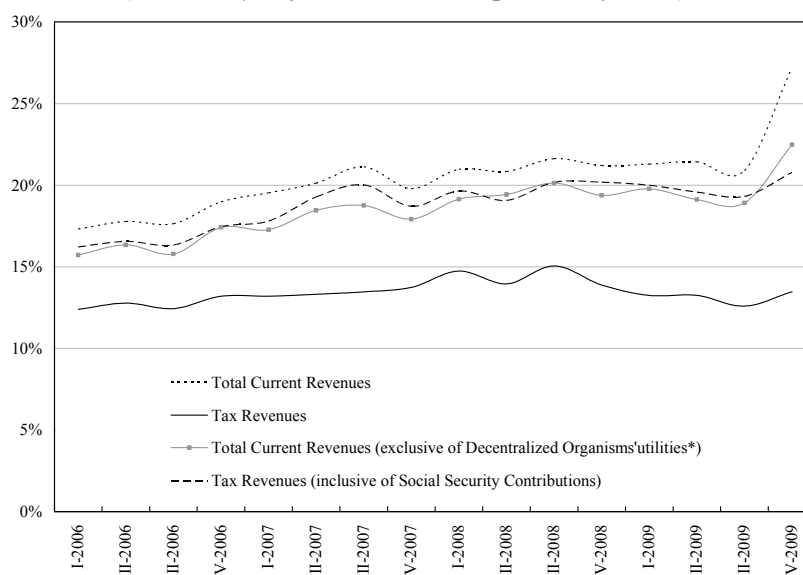
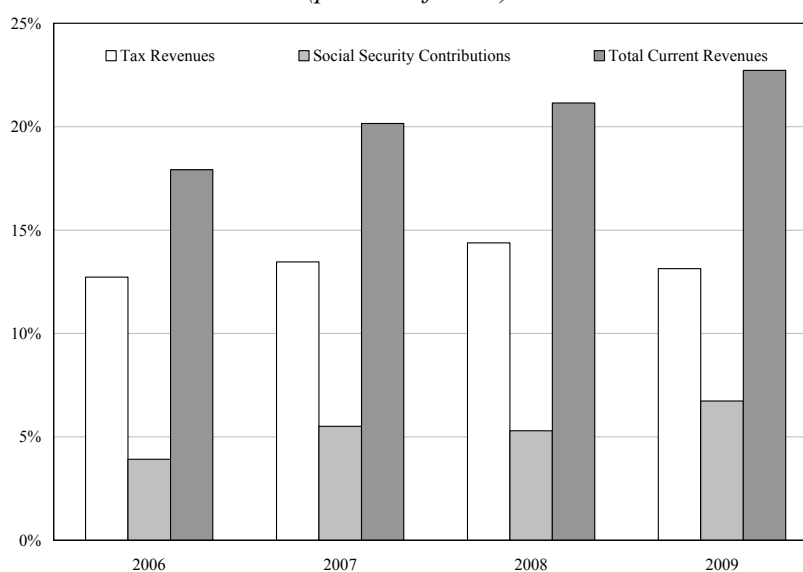Source: Data from Secretary of Economic Policy and National Bureau of Investigation and Fiscal Analysis, Argentina.
(*) Decentralized Organisms' utilities includes utilities from Central Bank and ANSeS and Special Drawing Rights.
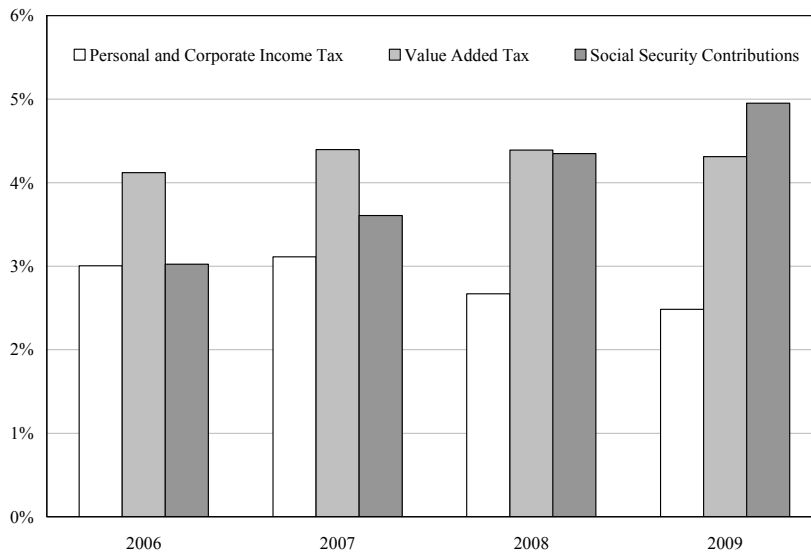
Argentina – Federal Government's Current Revenues
(percent of GDP)

Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.

Figure 7

**Argentina – Evolution of Income Tax,
Value Added Tax and Social Security Contributions
Perceived by the Federal Government**
(percent of GDP)

Source: Data from Secretary of Economic Policy and National Bureau of Investigation and Fiscal Analysis.

Figure 8

**Argentina – Evolution of Individual and Corporation Income
Tax perceived by the Federal Government**
(percent of GDP)
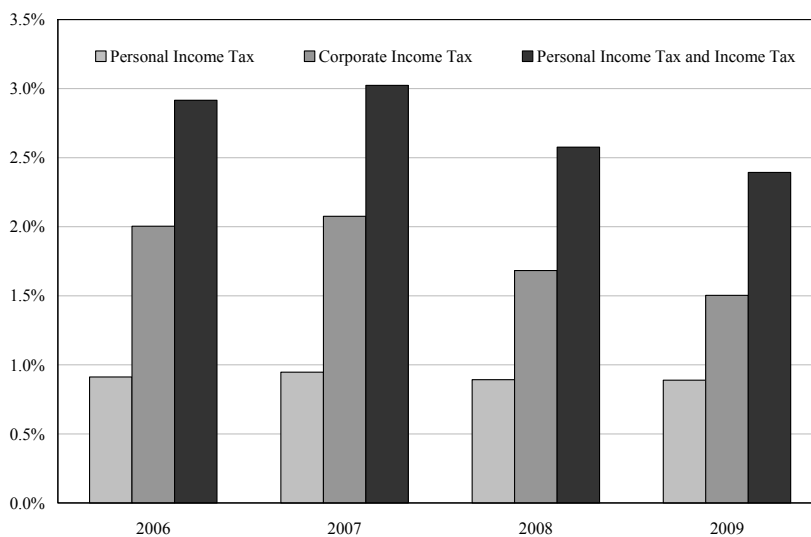
Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.

by the elimination of Private Pension Funds in 2009, what determined the evolution of the tax revenue series. The series for current revenues also reflects the favorable impact, in 2009, of the special drawing rights delivered by the International Monetary Fund among its member countries.

It must however be borne in mind that the negative effect of international crises upon government's revenues and budget surplus was rather limited on the following two accounts: the fall in industrial exports, by being generally tax exempted, did not directly affect tax revenues except for some slight loss in corporate income tax yield (see Figure 8) owing to industrial firms' lesser profitability; likewise the loss in revenues due to the mentioned withholding of agricultural exports was compensated in 2008-09 by a discretionary raise of tax rates for soybean and other commodities (Figure 9).

Figure 8 clearly reflect what has so far been argued in the sense that negative effects upon tax revenues stemming from ambiguous domestic economic policies outweighed those caused by international crises; in this connection, the declination of corporate income tax yield in

percents of GDP, shown by Figures 7 and 8, as well as the stagnation of economic growth rate in 2008-09 (Figures 1 and 2), reflect firms' lower production levels due to investment shortages in key sectors, lesser sales and an incipient unemployment rise that forced the government to resort to discretionary fiscal actions based on public expenditures.

In explaining therefore the Argentine federal government's fiscal strain, as said above hardly attributable to international crises, the emphasis must be placed in current public spending rather than in revenues since it results evident that the former's rate of growth did not keep pace but outweighed that of public current revenues; as shown by Figure 10, while revenues' participation in GDP climbed 27 per cent in the 2006-09, expenditures almost rose 60 per cent in the same period in response to the government's decision not to allow increases in tariffs of transport, electricity, gas and petrol. This in turn demanded ever-increasing budgetary subsidies to be permanently channeled to utilities and firms providing public services.

Figure 9

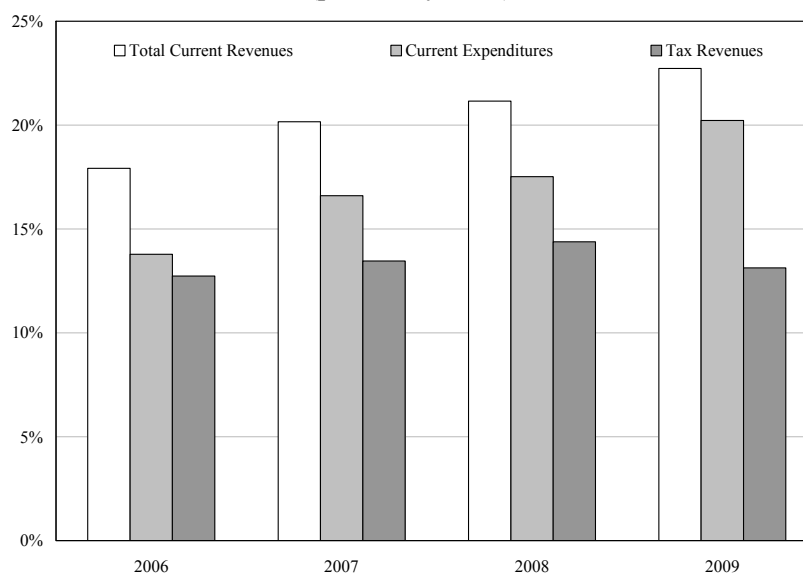**Argentina – Evolution of External Trade Taxes raised by the Federal Government**
(percent of GDP)
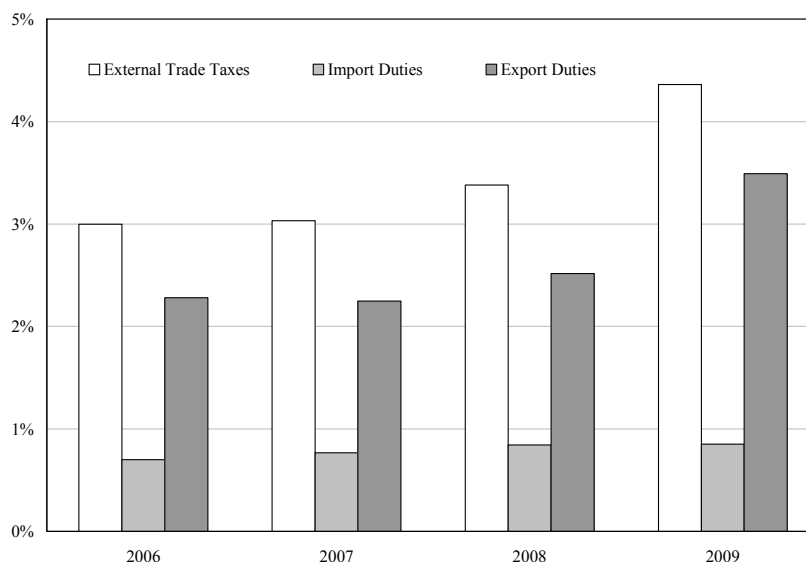
Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.
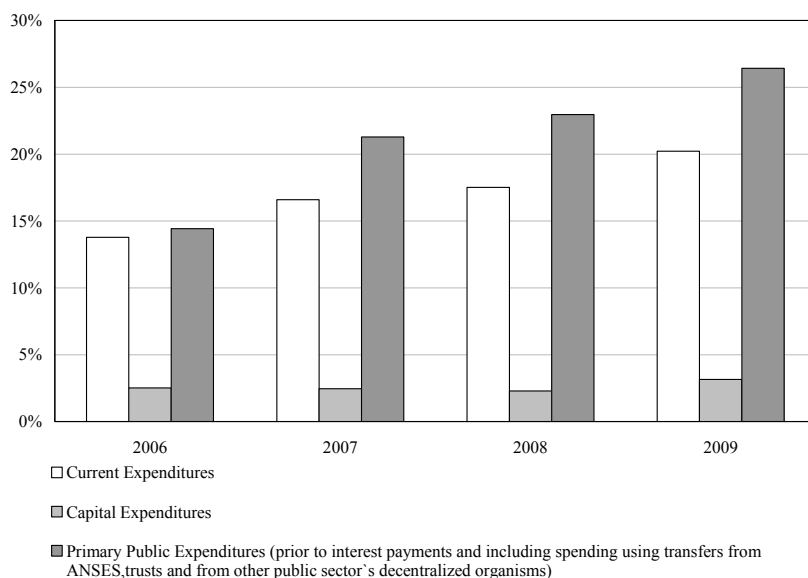
Figure 10

Argentina – Federal Government's Current Revenues and Expenditures
(percent of GDP)

Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.

Figure 11

Argentina – Federal Government's Primary Expenditures
(percent of GDP)

☐ Current Expenditures

◻ Capital Expenditures

■ Primary Public Expenditures (prior to interest payments and including spending using transfers from ANSES,trusts and from other public sector`s decentralized organisms)

Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.

Figure 12

Argentina – Federal Government's Total Revenues,
Primary Expenditures and Surplus
(percent of GDP)

☐ Primary Public Expenditures (prior to interest payments and including spending using transfers from ANSES,trusts and from other public sector`s decentralized organisms)

◻ Total Revenues (including Current Revenues; transfers from ANSES, trusts and from other public sector`s decentralized organisms and Capital Revenues)
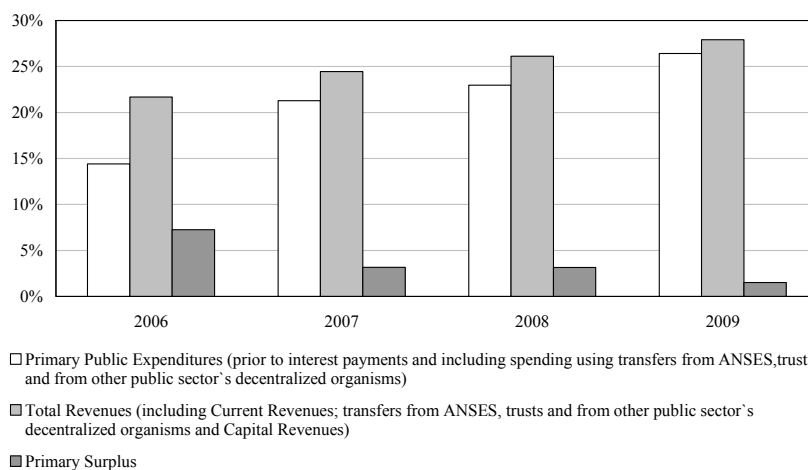
■ Primary Surplus

Source: Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis.

The impulse on public expenditures is also explained by the Argentine federal government's need to curb a slight but dangerous rise in unemployment following the stagnation of growth rates in 2008-09. The inflection point in the path of public spending is clearly depicted by the bar diagram in Figure 11 and mainly responded to fiscal discretionary actions basically concentrated in two programs: the first one, called Argentina works, seeking to promote micro firms and small cooperatives and the second one called Children's Universal Grant, aimed at curbing poverty and whereby households whose members were unemployed or informal labor were granted a monthly grant per child under eighteen.[12] Nevertheless, and as Figure 11 shows, capital outlays also grew in the period as the government also increased the financing of subnational and local infrastructure investment.

It goes without saying that the government's commitment to maintain, for political reasons, the freezing on

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[12]   Children's Universal Grant for Social Protection benefits unemployed persons and informal labor's 3,500,000 children (under eighteen) by granting their families a monthly payment of $ 180 (50 dollars) per child subject to the condition of theirs regularly attending school.

Figure 13

Argentina – Annual Evolution of Federal Primary Surplus
(percent of GDP)
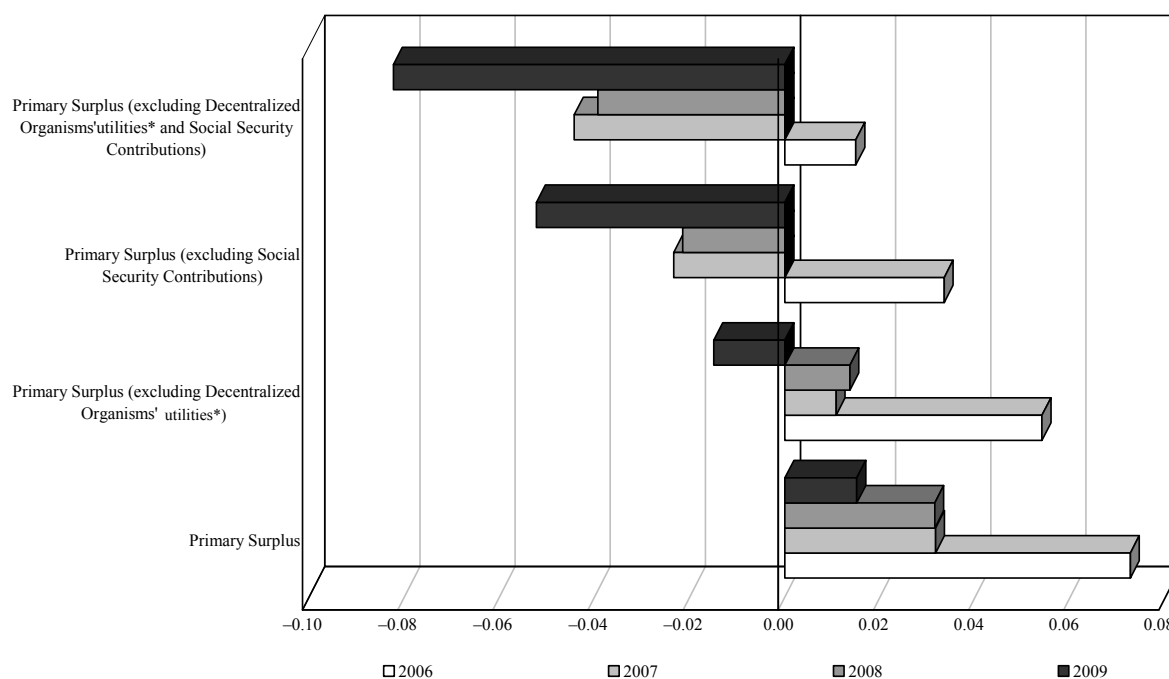
Source: Data from Secretary of Economic Policy and National Bureau of Investigation and Fiscal Analysis.
* Decentralized Organisms' utilities includes utilities from Central Bank and ANSeS and Special Drawing Rights.

tariffs immediately impacted upon the level of the primary surplus which, as Figure 12 shows, underwent a dramatic downward switch in the period 2006-09.

Figure 13, showing the evolution of the Primary Surplus when various definitions are taken into account, permits in turn to have a better knowledge of how the decision to use subsidies substantially eroded the former. By considering first the bottom of the figure, the primary surplus fell from 3.5 per cent of GDP, in 2006, to 1.5 per cent in 2009; nevertheless, the figure for the last year would be even smaller (0.6 per cent of GDP) should the exceptionally received IMF's Special Drawing Rights were not considered. Particularly worrying the picture at the top of Figure 13 results since, if social security contributions were not considered, the primary deficit would amount to 5-6 per cent points of GDP; the preceding assertion is revealing in respect of the present Argentine fiscal weakness which suggests, even ruling out effects of international crises, that the actual level of primary surplus mostly responds to exceptional revenue flows (as the special drawing rights) and to discretionary actions such as the seizing of the private individual capitalization regime occurred in 2009.

4   Recent fiscal actions in Argentina. Measures of discretional orientation and automatic stabilizers

4.1   *Two methodologies for assessing performance*

When analyzing fiscal policy actions, cyclical factors that have a transitory effect upon

budget balances must be distinguished from structural changes causing a lasting impact on the result of fiscal actions since, when changes derived from active fiscal policies are not isolated from those stemming of fluctuations in economic activity, the performance of the budget balance is far from being a good indicator of governments' discretionary policies. Thus, the resulting budget outcome can be considered to stem from the following two elements:

- an economic environment induced component, associated to the concept of "cyclical balance" and that leaves aside the effect of other variables;
- a "structural balance" which will exist if the economy follows its long run growth path; therefore, its behaviour will depend on the policy operation and not on the current economic circumstances.

The cyclical balance, or "built-in stabilizer", component of the budget balance should be self-cancelling as the cyclical output gap is closed so that it is temporary and non-structural. On the other hand, the structural budget is the one that would persist if the economy were to grow steadily at its highest sustainable unemployment rate, *i.e.*, the same as the potential output.

Muller and Price (1984) stated that the cyclically-adjusted indicator had advantages over the unadjusted budget balance in a number of respects:

- the analysis of short-term fiscal stance: the cyclically-adjusted budget balance can be interpreted as an index of "discretionary" policy action in the sense that it regards budget deficit changes as a cause rather than the effect of variations in economic activity;
- medium-term budget planning and control: separating cyclically self-correcting changes in the budget from more permanent shifts may enable the longer-run course of public spending and taxation to be controlled more efficiently;
- fiscal neutrality and economic stability: setting and pursuing budget balance targets independently of the phase of the business cycle implies the need to offset "automatic stabilizers";
- the monitoring of potential financial market pressures: private sector credit demands may be lower in periods of cyclical demand weakness, and financial markets may thus be unaffected by fluctuations in government debts which are perceived as temporary. In that case, interest rates may be particularly influenced by the long run trend of accumulation of government debt in private portfolios. As a result, the structural budget deficit may then be a better gauge of government pressures on interest rate than the actual budget deficit.

Two methodologies are resorted to in this paper: the one by the IMF due to Heller, Haas and Mansur (1986), and the OECD's, by Girouard and André (2005) and van der Noord (2000). In both cases, the quantification of the discretionary action is obtained from the observed budget deficit, net of the variation caused by cyclical and non discretionary factors.

The IMF's index of Fiscal Policy orientation was originally developed by the German Council of Economic Experts (GCEE) and described in detail by Dernberg (1975).[13] The measure

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[13]   The measure currently used by the GCEE differs from the measure currently used by the Fund. Specifically, the cyclically neutral level of government expending is defined as being equal to the actual budget in the base period; more precisely:

$$H_t^n = g_0 Y^P + (r_t - r_0)kY^P + (s_t - s_0)Y^P$$

where:

H_t^n: Cyclically neutral level of government expending.; $g_0 = \dfrac{G_0}{Y^P}$: Base-year expenditure ratio; $r_t = \dfrac{R_t}{kY_t^P}$:

(continues)

of the Cyclically Neutral Budget (CNB) was derived from the actual budget by assuming that nominal tax revenues are unit elastic with respect to actual nominal income, and government expenditures are unit elastic with respect to potential output valued at current prices. This indicator yields a measure of fiscal discretionary actions with respect to a benchmark year and is defined as:

$$CNB_t = (G_t - T_t) - (g_0 YP_t - t_0 Y_t) \tag{1}$$

where $g_0 = \dfrac{G_0}{YP_0}$ and $t_0 = \dfrac{T_0}{Y_0}$

T_t and T_0 stand for total public revenues for year t and 0, respectively;

G_t and G_0 stand for total public expenditures for year t and 0, respectively;

Y_t and Y_0 stand for the observed products in year t and the benchmark year, respectively;

YP_t and YP_0 stand for the potential products in year t and the benchmark year, respectively.

Equation (1) above permits to distinguish a cyclically budget profile[14] allowing for effects of the cycle upon the budget, known as the "Cyclical Balance" (CB), and coinciding with the second term in the right hand side of equation (1):

$$CB_t = g_0 YP_t - t_0 Y_t \tag{2}$$

As can be noticed, public expenditures will be cyclically neutral if they change in the same proportion as the nominal potential GDP whereas more than proportional changes will be expansive, irrespective of the causes for the increase (discretionary policies, inflationary effects). More than proportional variations in revenues, with respect to the observed nominal GDP, will in turn be contractive; the CB will therefore tend to rise in recessions and to diminish during peaks of economic activity. It transpires from equation (1) that when the observed deficit is greater than the Cyclical Balance, that is a positive CNB, the fiscal action will be expansive and the opposite will stand with a negative CNB.

The appeal of the IMF's index resides in that estimations of revenue and spending income elasticity are not required for what the process of calculus is much simpler than those of other measures. It is not however free from criticisms as the discretionary component is credited for the tax yield increase associated to fiscal progressivity; a consequence of this is that it tends to overestimate the contractive effect of fiscal policies during economic expansions, whereas the opposite occurs in recessions. Likewise, the discretionary component embodies the residual effect of automatic stabilizers, given the assumption that that revenue and spending income elasticity equal unity.

As for the second methodology (OECD's), the structural balance permits to assess the budgetary outcome from two alternative perspectives: In the first place, as a measure of discretionary fiscal actions in absence of cyclical variations or automatic stabilizers; in the second place, the budgetary outcome may also be interpreted as an index of fiscal policy sustainability.

Current-year tax ratio; $r_0 = \dfrac{R_0}{k Y_0^P}$: Base-year tax; ratio; Y^P : Potential Output; k : Normal capacity utilization rate;

$s_t = \dfrac{S_t}{Y_t^P}$: Current-year non tax revenue ratio; $s_0 = \dfrac{S_0}{Y_0^P}$: Base-year non tax revenue ratio. A complete description of the

GCEE's methodology can be found in Federal Republic of Germany (1983), pp. 267-68.

[14]   In determining this profile a benchmark year must be chosen, based on the sought objectives for what the index is used.

In using the OECD's methodology for assessing the impact of discretionary policies, in absence of cyclical variations, the respective cyclical components must be removed from observed actual revenue and spending levels.

In relation to tax revenues, four types can be distinguished: corporate and individuals income taxes, valued added tax and social security contributions. Public spending will only includes items related to the business cycle, for what only transfers oriented to enhancing employment are computed.

The budgetary cyclical component, b^{**}, is defined as:

$$b^{**} = b - b^{*} \tag{3}$$

whereas the cyclical adjusted budgetary outcome, b^{*}, is in turn defined as:

$$b^{*} = \frac{\left[(\sum_{i=1}^{4} T_i^{*}) - G^{*} + X \right]}{Y^{*}} \tag{4}$$

where:

G^{*} equals the cyclically-adjusted current primary public spending,

T_i^{*} is the cyclically-adjusted tax revenue of ith category,

X are not tax revenues, net of capital and interest expenses,

Y^{*} stands for the potential output.

Cyclically-adjusted components are computed, in the case of revenues, from the ratio between the potential and actual output weighted by its elasticity and, in the case of expenses, from the ratio between the structural and observed unemployment weighted by its elasticity.

$$\frac{T_i^{*}}{T_i} = \left(\frac{Y^{*}}{Y} \right)^{\beta_{i,y}^{t}} \; ; \; \frac{G^{*}}{G} = \left(\frac{U^{*}}{U} \right)^{\beta_{g,u}}$$

where:

T_i are i^{th} category's actual tax revenues,

G is the actual current public spending, net of capital and interest expenses,

Y stands for the observed gross product,

U^{*} indicates the level of structural unemployment,

U indicates the actual level of unemployment,

$\beta_{i,y}^{t}$: i^{th} category's elasticity of tax revenues respect of the output gap,

$\beta_{g,u}$: current public spending elasticity respect of the ratio between the levels of structural and actual unemployment.

From the above expressions, the cyclically-adjusted budgetary outcome may be defined as:

$$b^* = \frac{\left[\left(\sum_{i=1}^{4} T_i \left(\frac{Y^*}{Y}\right)^{\beta^t_{i,y}}\right) - G\left(\frac{U^*}{U}\right)^{\beta_{g,u}} + X\right]}{Y^*} \tag{5}$$

whereas the cyclical component of budget will be:

$$b^{**} = \frac{1}{Y}\sum_{i=1}^{4} T_i \left[1 - \left(\frac{Y^*}{Y}\right)^{\beta^t_{i,y}-1}\right] - \frac{G}{Y}\left[1 - \left(\frac{U^*}{U}\right)^{\beta_{g,u}-1}\right] + \frac{X}{Y}\left[1 - \left(\frac{Y^*}{Y}\right)^{-1}\right] \tag{6}$$

Expression (6) stresses that the cyclical component of the budgetary outcome corresponds to the cyclical components of tax revenue and current primary public spending. As observed, they are related to the output gap, the share of different tax and current spending categories in GDP and the respective elasticities.

From a conceptual stance, elasticities $\beta^t_{i,y}$ may be split into two components: i^{th} tax elasticity respect of its tax base and the latter's elasticity respect of the output gap. The elasticity of current public spending $\beta_{g,u}$, is computed as the product between the elasticity of unemployment respect of the output gap and the elasticity of current public spending respect of the unemployment gap (equivalent to the proportion of current spending oriented to employment actions).

As for the estimation of elasticities for the four tax categories and the primary public spending:

1) Individuals income tax and social security contributions

In this case the elasticity $\beta^t_{t,y}$ with respect to the output gap follows from the following expression:

$$\beta^t_{t,y} = \frac{dT}{dy}\frac{y}{T} = \frac{d[(T/L)L]}{dy}\frac{y}{T} = \left(\frac{dL}{dy}\frac{y}{L}\right)\left[1 + \left(\frac{d[(T/L)]}{dw}\frac{w}{T/L}\right)\left(\frac{dw}{dL}\frac{L}{w}\right)\right] \tag{7}$$

in which y is the gap between the observed Y and the potential product Y^* while L and w respectively stand for employment and wage levels.

In order to estimate the elasticity of Individuals Income Tax with respect to its tax base, marginal and average rates for a representative household, for several points in the earning distribution,[15] must first be computed. Formally, the elasticity of income tax collection respect of incomes may be expressed as follows:

$$\beta^t_{tGP,earnings} = \left(\sum_{i=1}^{n} \gamma_i MA_i\right) / \left(\sum_{i=1}^{n} \gamma_i AV_i\right) \tag{8}$$

where:

γ_i is share of the ith decile's earnings in total earnings,

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MA_i is the marginal income tax rate at point i over the earning distribution,[16]

AV_i is the average income tax rate at point i over the earning distribution,

Next, the elasticity of Social Security Contributions with respect to its tax base was set equal to unity given that the Contributions have a flat rate,

The elasticity of incomes perceived by wage earners with respect to the output gap was estimated by multiplying elasticities a_1 and b_1, in turn obtained from the following regressions:

$$\Delta Log\left(\frac{L_t}{L_t^*}\right) = a_0 + a_1 \Delta Log\left(\frac{Y_t}{Y_t^*}\right) + \varepsilon_t \tag{9}$$

$$\Delta Log\left(\frac{w_t L_t}{Y_t^*}\right) = b_0 + b_1 \Delta Log\left(\frac{L_t}{L_t^*}\right) + \mu_t \tag{10}$$

Thus, the elasticity of Individuals Income Tax, (7), stems from the product of expressions (8), (9) and (10);

2) Corporate income tax

In order to achieve the elasticity of Corporate Income Tax respect of the of the output gap $\beta^t_{t_{GC},y}$, the assumption was held that the tax rate was strictly proportional since in this case cyclical variations in tax collections keep proportion with variations in the tax base (*i.e.*, firms' returns). The corresponding elasticity can then be estimated as follows:

$$\beta^t_{t_{GC},y} = \frac{dT}{dy}\frac{y}{T} = \frac{dZ}{dy}\frac{y}{Z} \tag{11}$$

where y stands for the gap between the observed (Y) and the potential product (Y^*) and Z represent firms' returns.[17] Needless to emphasize, the proportionality assumption implies that the tax elasticity coincides with the elasticity of the tax base with respect to the output gap;

3) Elasticity of the value added tax

In computing the elasticity of indirect taxes, private consumption must be taken as the tax base and the following regression was resorted to:

$$\Delta Log\left(\frac{C_t}{Y_t^*}\right) = d_0 + d_1 \Delta Log\left(\frac{Y_t}{Y_t^*}\right) + \eta_t \tag{12}$$

4) Elasticity of current primary spending

The elasticity of primary current spending highlights the cyclical variation in expenditures devoted to enhancing employment. Owing to the assumption of proportionality between spending channeled to employment aims and unemployment, the elasticity of primary current spending equals elasticity of unemployment with respect to the output gap, weighted by the share of spending oriented to employment creation within the current primary spending; formally:

$$\beta_{g,u} = \left(\frac{dG}{dU}\right)\frac{U}{G} = \frac{UB}{G}\left(\frac{dUB}{dU}\right)\frac{U}{UB} = \frac{UB}{G} \tag{13}$$

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[16] According to the Argentine Income Tax (Law 24621).

[17] In order to estimate the share of firms' return upon the observed product, the Firms' Operating Gross Surplus as percentage of gross domestic product was used.

$$\beta_{g,y} = \left(\frac{dG}{dY}\right)\frac{Y}{G} = \frac{UB}{G}\left(\frac{dUB}{dY}\right)\frac{Y}{UB} = \frac{UB}{G}\left(\frac{dU}{dY}\right)\frac{Y}{U} = \beta_{g,u}\beta_{u,y} \qquad (14)$$

where:

$\beta_{g,u}$ is the elasticity of primary current spending respect of the unemployment gap,

$\beta_{g,y}$ is the elasticity of primary current spending respect of the output gap,

G is the primary current spending,

UB is spending oriented to enhance employment,

U is unemployment's observed level.

The OECD's methodology estimates the impact of the business cycle upon the fiscal balance using indexes that capture the effect of resource utilization's degree, and the deviation between the actual and potential output and between the actual and structural unemployment. The points need be stressed that calculations are in this case subject to measurement errors related to estimations of potential output and structural unemployment.

The OECD's theoretical framework has however two deficiencies. First, and as stated in Muller P. and Price R. (1984), the cyclically-adjusted budget embraces a wide set of discretionary policy actions, including inflation-induced fiscal drag and variations in nominal debt interest payments; second, and as stressed by André and Giraud (2005), surpluses adjusted by the cycle may be influenced by temporary shocks not directly related to the cycle, including one-off operations, creative accounting, classification errors and asset price cycles.

From the perspective of an index of fiscal policy sustainability, the cyclically-adjusted balance, developed by the OECD, exhibits deficiencies owing to the impossibility of counting with precise and complete information related to all factors inducing variations in the economic activity level.

4.2   Analysis of results

This section presents and analyzes results for the period 2006-09, obtained by using the methodologies developed above and aimed firstly at estimating the impact of the business cycle upon the fiscal balance and at determining the structural deficit, net of automatic stabilizers' effects (OECD's), and secondly, at assessing whether international financial crises favoured discretional fiscal policy actions (IMF).

In seeking to determine the business cycle adjusted balance, values of the elasticity of corporate and individuals income tax, value added tax and social security contributions with respect to the output gap were estimated and shown in the following Table 1, as well as the elasticity of primary current spending with respect to the gap between observed and structural unemployment levels.[18]

Table 2 shows results for the balance adjusted by effect of the cycle (*i.e.*, the structural balance), this being obtained by subtracting the budgetary cyclical component from the actual levels of revenues and expenditures.

In the first place, a continuous reduction of the structural balance is easily observed as of 2006, its lowest value being reached in year 2009. Total revenues (in terms of gross domestic product) exhibited also a positive though decreasing growth rate during the period considered,

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[18]   The Hodrick-Prescott filter was used for estimating potential gross product and the structural unemployment level.

Table 1

Argentina – Revenue and Expenditures Elasticities

Corporate Income Tax[*]	1.56
Social Security Contributions	1.96
Personal Income Tax	2.72
Current Expenditures	–0.18
Value Added Tax[**]	1

Source: Own estimates on the basis of data from Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis of Argentina.
* The estimation of the tax base elasticity of Corporate Income Tax through the OECD's methodology was not significant. For this reason, an alternative procedure was resorted to consisting in estimating the elasticity of Firms' Operating Gross Surplus with respect to the output gap.
** The estimation of the tax base elasticity of the Value Added Tax through the OECD's methodology was not significant for what, and given that the tax has a flat rate, the elasticity value was conventionally equated to one.

Table 2

Argentina – Actual and Cyclically-adjusted Fiscal Balance
(percent of GDP)

Item	2006	2007	2008	2009
Total Revenues[*]	21.68	24.46	26.12	27.93
Primary Public Expenditures[**]	14.42	21.29	22.97	26.42
Primary Surplus	7.26	3.17	3.15	1.51
Cyclical Component	–1.24	–0.52	2.07	0.17
Cyclically-adjusted Primary Surplus	8.50	3.68	1.08	1.34
Interest payments	1.76	2.03	1.73	2.14
Budget Balance	5.50	1.14	1.42	–0.63
Output Gap	0.96	0.99	1.05	1.00

Source: Own estimates on the basis of data from Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis of Argentina.
* Total Revenues (including current revenues; transfers from ANSES, trusts and other public sector's decentralized organisms and capital revenues).
** Primary Public Expenditures (prior to interest payments and including spending using transfers from ANSES, trusts and other public sector's decentralized organisms).

which can be explained by the following reasons: despite the 12.8 per cent increase in 2007, domestic problems impacted negatively in 2008 upon Value Added and Income Taxes' yield and caused in turn a contraction of tax revenues (in percent of gross domestic product). The fall was however made up with transfers from ANSES,[19] following the elimination of the Private Pension Fund System and with IMF' Special Draw Rights received in 2009, for what the evolution of total revenues continued to be positive during 2008 and 2009 although at lower rates (6.8 and 6.9 per cent respectively).

Second, Primary Public Spending (in terms of gross domestic product) increased 47.6 and 7.9 per cent in 2007 and 2008 respectively, due not only to the already mentioned policy of maintaining subsidies but also to a generalized increment in capital outlays which, given the performance of total revenues mentioned in the above paragraph, caused the Primary Surplus to shrink 56.3 and 0.6 per cent in 2007 and 2008, respectively.

It is worth emphasizing again that neither the 2007 and 2008

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19   The National Administration of Social Security.

increases in total revenues nor the increases in Primary Public Spending resulted from government's discretionary fiscal actions to countervail the effects of the international financial crises but rather to the political commitment of maintaining, via ever increasing budgetary subsidies, the freezing imposed on tariffs of public services and utilities (transport, electricity, gas and combustibles). As a consequence, Primary Public Spending (in terms of GDP) underwent an increase of 15 per cent during 2009 and the Primary Surplus (also in terms of GDP) suffered a substantial reduction of 52 per cent compared to its 2008 figure; at the same time, and owing to a substantial 23.4 per cent increase in interest payments, the Financial Budget Surplus also showed a marked reduction in 2009.

Reasons for the continuous declining of the structural superavit have to be sought at the observed superavit's decreasing evolution, in turn due to the lesser relative importance of the automatic stabilizers' role. This is visible from the output gap evolution that gradually converged to unity.

In particular, the 52 per cent reduction in the 2009 observed fiscal superavit, accompanied by the performance of automatic stabilizers (*i.e.*, cyclical component), which experienced a 91.7 per cent contraction in 2009, allowed the structural superavit to rise from 1.08 to 1.34 per cent points of gross domestic product in 2008 and 2009, respectively (24 per cent). The above numerical conclusion implies that to the extent that the economic activity level converges towards its potential level, the observed budgetary balance tends to equal its structural level.

In conclusion, the analysis of results obtained using the methodology by Girouard and André (OCDE) suggests that the main explanation for the weakness of the structural balance lies in the discretionary performance of fiscal actions used to deal with problems arising from the unsolved domestic economic situations.

Next, and in order to carry out a deeper analysis of the possible discretional orientation of fiscal policy the second methodology, due to the IMF, was resorted to and the results for the period 2006-09[20] are presented in ensuing the Table 3.

As previously described, fiscal policy was expansive in 2007 and 2009 which explains the observed reduction in the Primary Surplus, whose lower level was reached in 2009. There was however some countervailing fiscal policy during 2009, aimed at checking increased unemployment stemming from lower activity levels in industrial sectors facing both a shrink in exports due to the fall in the world demand and bottlenecks due to investment shortage. The assumedly government's discretionary response to world conditions amounted to 1.56 percentage point of GDP and was only limited to the spending side of the budget, as they consisted mainly of programs seeking to enhance social contention[21] and to check extreme poverty, as well as to finance infrastructure investment.[22]

Table 4, showing the structure of Current and Capital Transfers in 2009, serves the purpose of highlighting those discretionary fiscal actions that led to the marked decline of fiscal budget in that year. Current transfers exhibited an inter-annual increase of 0.97 percentage points of GDP, 50 per cent of which can be explained by additional transfers channeled to firms' financial assistance and trust funds and employment enhancing actions and social public spending, whereas 20, 17.6 and 12.4 per cent respectively went to household grants, financial assistance to

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[20] For obtaining the indexes, the budgetary balance was defined as "surplus" and not as "deficit".

[21] See footnote 12.

[22] Let the fact be noticed that that Argentina exclusively resorted to spending discretionary fiscal policies, and not to discretionary tax measures and that the size of measures amounted to a modest percentage of GDP, as was also stressed by international organisms. See in this connection IMF (2009), Table 4 (G-20 Estimative Costs of Discretionary Measures 2008-10) and Table 5 (G-20 Stimulus Measures 2008-10).

Argentina – Evolution of the Budget Balance
(percent of GDP)

Item	2006	2007	2008	2009
Total Revenues[*]	21.68	24.46	26.12	27.93
Primary Public Expenditures[**]	14.42	21.29	22.97	26.42
Primary Surplus	7.26	3.17	3.15	1.51
Cyclical Component	3.10	7.17	3.07	3.07
Cyclically-neutral Budget	4.16	–4.00	0.08	–1.56
Interest payments	1.76	2.03	1.73	2.14
Budget Balance	5.50	1.14	1.42	–0.63

Source: Own estimates on the basis of data from Secretary of Economic Policy, the National Bureau of Investigation and Fiscal Analysis and the Economic Commission for Latin America and the Caribbean.
[*] Total Revenues (including current revenues; transfers from ANSES, trusts and other public sector's decentralized organisms and capital revenues).
[**] Primary Public Expenditures (prior to interest payments and including spending using transfers from ANSES, trusts and other public sector's decentralized organisms).

Argentina – 2009's Discretionary Fiscal Actions

Item	Absolute Increment *(millions of current pesos)*	Absolute Increment *(percent of GDP)*
Current Transfers	14,803.80	1.29
- Transfers to Universities	2,474.80	0.22
- Budgetary Transfers to Aerolineas Argentinas	1,235.40	0.11
- Transfers to External Sector	24.1	0.00
Net Current Transfers	11,093.60	0.97
Capital Transfers	6,451.90	0.56
Total Transfers	17,545.50	1.53

Source: On the basis of data from the Budget National Bureau of Argentina.

provinces and the social security system. On the other side, social public expenditure and Infrastructure Investment in turn accounted for 90 per cent of the increase in capital transfers (0.56 percentage points of GDP compared to the previous year's figure). In all, figures show that the overall observed fiscal stimulus rose to 1.53 percentage points of gross domestic product.

Argentina – Overall Cyclical Responsiveness of the Budget

Parameter	2006	2007	2008	2009
Corporate Income Tax	5.20%	5.30%	5.00%	4.50%
Personal Income Tax	4.10%	4.30%	4.60%	4.60%
Value Added Tax	7.20%	7.70%	7.80%	7.60%
Social Security Contributions	7.40%	8.80%	10.00%	13.20%
Current Expenditures	−0.02%	−0.03%	−0.03%	−0.04%
Cyclical sensitivity of Tax Revenues	23.90%	26.20%	27.40%	29.90%
Overall cyclical responsiveness of the budget	24.00%	26.20%	27.40%	30.00%

Source: Own estimates on the basis of data from Secretary of Economic Policy and the National Bureau of Investigation and Fiscal Analysis of Argentina.

Was the Argentine fiscal stimulus appropriate in size? Or did it fall short of required by the prevailing economic conditions in the period considered? In conceptually dealing with the matter, Uxó and Salinas (2009), stressed that the size of the required discretional fiscal stimulus varies in function of several elements such as the actual demand contraction, automatic stabilizers' effectiveness and the efficacy of fiscal actions used to impact upon the product; thus, the necessary fiscal discretionary stimulus will be greater the larger the economy's output gap, the weaker the performance of automatic stabilizers and the lesser the size of fiscal policy multipliers.

The quotient between the deficit increase and the output gap, used to estimating the size of the necessary fiscal stimulus, rendered for 2009 a value of 0.52 percentage points of the output gap. This result is wholly explained by the fall of the primary surplus in that year, period in which the Argentine GDP approached its structural level. From a different angle, if attention is rather focused on exceptional fiscal measures taken to deal with crises, an alternative procedure is also at hand consisting in taking the quotient between the size of discretionary actions (in percents of the actual GDP) and the output gap, which renders a value of 1.56 percentage points of the output gap.

In seeking to complete the analysis of the structural balance performance, the overall cyclical sensitivity of the budget to the economic cycle, measured by the semi-elasticity of the budget balance (as a percent of GDP) with respect to the output gap,[23] is achieved. According to results from Table 5, the overall cyclical sensitivity has risen during the last four years from 24 per cent in 2006 to 30 per cent in 2009. In the last year, the increase in the effectiveness of the overall sensitivity of the budget can be explained by the elimination of the Private Pension Fund System, which caused the increment in Social Security revenues; the latter gives support to the idea that, in Argentina, automatic stabilizers do not suffice to check cyclical perturbations in isolation and discretionary fiscal policies must always accompany stabilizing actions.

Furthermore, the low Corporate Income Tax's cyclical sensitivity (5.2-5.3 per cent in 2006-07 and 5-4.5 per cent in 2008-09) does not come as a surprise as its tax yield stems basically from firms subject to flat tax rates, and not from individuals subject to progressive tax rates; also, a discretionary tax spending increase, whose effect was to reduce the income elasticity of the tax in

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[23] It is defined as the difference between the cyclical sensitivity of the four categories of taxes and the one expenditure item, weighted by their respective shares in GDP.

2009, helped in turn to reduce income taxation's stabilizing power. Nevertheless, the built-in flexibility of the Individual Income Tax slightly rose from a value of 4.1 per cent in 2006 to 4.6 per cent in 2009, due to the increasing share of its revenue in GDP.

As Rezk (1982) already asserted after reviewing VAT's implementation in the country, the automatic stabilizing function the theory traditionally assigned to Individuals Income Taxes was in Argentina mainly assumed by the Value Added Tax, as percentages from Table 5 indicate. Notwithstanding the mentioned feature, VAT's stabilizing power was seen to increase from 7.2 per cent in 2006 to 7.8 per cent in 2008, due to the increase in the share of its revenue in GDP; however, the cyclical sensitivity of the VAT diminished in 2009 following the occurrence of lower economic activity levels.

In sum, it can be concluded from the application of the IMF's that the Argentine structural deficit's performance in the period 2006-09 mainly responded to the discretional bias of the fiscal policy, whose main focus resided in poverty-checking and employment enhancement current public expenditures and infrastructure capital outlays. It is worth pointing out in this connection that the loss of automatic stabilizers' relevance can be explained not only for their actual low effectiveness but mainly for the convergence of the economic activity towards its structural level.

5   Conclusions

1.   Although international crises in part accounted for the recent weak Argentine economic performance, main causes for the latter have to be sought in domestic economic policies in so far they added uncertainty to the decision process of economic sectors. In this connection, the negative impact of international crises acted in Argentina intertwined with domestically unsolved policy problems that sometimes outweighed and amplified the former's effects.

2.   The negative impact of the international crises upon the balance of trade was only relatively felt by domestic manufacturing sectors in reason of Argentina's membership to the regional economic integration known as MERCOSUR. Whatever negative effects arising from NAFTA – as of 2007 – and European countries in 2008, were compensated by the increased exports to Brazil. Apart from the loss of markets abroad due to the crisis, industrial production levels were also damaged by the sluggish rate of growth of private investment, due to the profit loss of firms.

3.   The exports of agroindustrial goods and of agricultural commodities fell in 2009 when the consequences of the domestic problems (export bans and tax rate increases) began to be felt. The main negative effects of international crisis were visible with respect to China (one of Argentina's single most important customers).

4.   Total government revenues (in terms of GDP) exhibited a positive, though decreasing, growth rate during the period considered, which can be explained by the following reasons: despite the 12.8 per cent increase in 2007, domestic problems impacted negatively in 2008 upon Value Added and Income Taxes' yield and caused in turn a contraction of tax revenues (in percent of gross domestic product), in spite of the rise in transfers received from ANSES, stemming from the eliminated Private Pension Fund System, and of IMF's special draw rights received in 2009.

5.   An stagnated growth rate and local firms' lesser returns, were the major causes of the tax revenue shrinking, specially in Corporate Income Tax.

6.   Primary Public Spending (in terms of GDP) increased 47.6 and 7.9 per cent in 2007 and 2008 respectively. The increase in Primary Public Expenditures in 2008 did not respond to government's discretionary fiscal actions to countervail the effects of the international financial crises but rather to the policy decision of maintaining subsidies and continuing the freezing imposed on tariffs of public services and utilities, but also to a generalized increment in capital

outlays which, given the performance of total revenues, caused the Primary Surplus to shrink 56.3 and 0.6 per cent in 2007 and 2008, respectively.

7.   In explaining the Argentine federal government's fiscal strain, the emphasis must be placed in current public spending rather than in revenues since it results evident that the former's rate of growth did not keep pace but outweighed that of public current revenues. The present Argentine fiscal weakness which suggests, even ruling out effects of international crises, that the actual level of primary surplus mostly responds to exceptional revenue flows (as the special drawing rights) and to discretionary actions such as the seizing of the private individual capitalization regime occurred in 2009.

8.   Fiscal policy was expansive in 2007 and 2009 which explains the observed reduction in the Primary Surplus, whose lower level was reached in 2009, amounting to 1.56 percentage point of GDP of government's discretionary response to world conditions. On the other side, the observed fiscal stimulus rose to 1.53 percentage points of GDP, which was only limited to the spending side of the budget, as they consisted mainly of programs seeking to enhance social contention and to check extreme poverty, as well as to finance infrastructure investment.

9.   The overall cyclical sensitivity of total tax revenue has been increasing and stabilized around 30 per cent in 2009. However, the response of the budget balance to the GDP did not suffice to check cyclical perturbations, for this reason discretionary fiscal policies had to somehow accompany stabilizing actions.

APPENDIX

Effect of the output gap on employment, 1994: IV-2008: I

Dependent Variable: DLOG(WORK)
Method: Least Squares
Included observations: 54 after adjustments
DLOG(WORK)=C(1)+C(2)*DLOG(GAP)

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C(1)	$9.45E^{-13}$	$3.63E^{-11}$	0.02605	0.97931753
C(2)	$1.00E^{+00}$	$4.26E^{-10}$	2349215837.483	0
R-squared	$1.00E^{+00}$	Mean dependent var.		0.001
Adjusted *R*-squared	1	S.D. dependent var.		0.086
S.E. of regression	$2.67E^{-10}$	Akaike info criterion		−41.216
Sum squared resid	$3.70E^{-18}$	Schwarz criterion		−41.142
Log likelihood	1114.824	Hannan-Quinn criterion		−41.187
F-statistic	$5.52E^{+18}$	Durbin-Watson statistic		2.887
Prob(*F*-statistic)	0			

Effect of employment on wages, 1994: IV-2008: I

Dependent Variable: DLOG(WAGE)
Method: Least Squares
Included observations: 54 after adjustments
DLOG(WAGE)=C(1)+C(2)*DLOG(WORK)

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C(1)	0.01834	0.01468	1.24897	0.21726765
C(2)	0.96388	0.17220	5.59734	8.26E-07
R-squared	0.3760	Mean dependent var.		0.01915
Adjusted *R*-squared	0.3640	S.D. dependent var.		0.13528
S.E. of regression	0.1079	Akaike info criterion		−1.58E+00
Sum squared resid	0.6052	Schwarz criterion		−1.5055031
Log likelihood	44.6376	Hannan-Quinn criterion		−1.55E+00
F-statistic	31.3302	Durbin-Watson statistic		2.94E+00
Prob(*F*-statistic)	$8.26E^{-07}$			

Summary of elasticities

Employment Elasticity of Wages	0.96
Output Elasticity of Employment	1
Elasticity of Corporate Income Tax	1.56
Elasticity of Social Security Contribution	1.96
Elasticity of Personal Income Tax	2.7244
Elasticity of Total Income Tax	0.9113157
Elasticity on Unemployment with Respect to the Output Gap	–4.3996771
Share of Unemployment-related Expenditures with Respect to the Output Gap	0.04100992
Elasticity of Current Primary Expenditure	–0.1804304

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