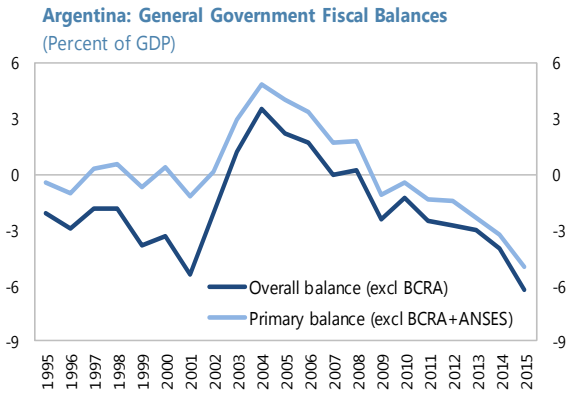
ARGENTINA'S FISCAL ADJUSTMENT: HOW CAN IT BE DONE?[1]

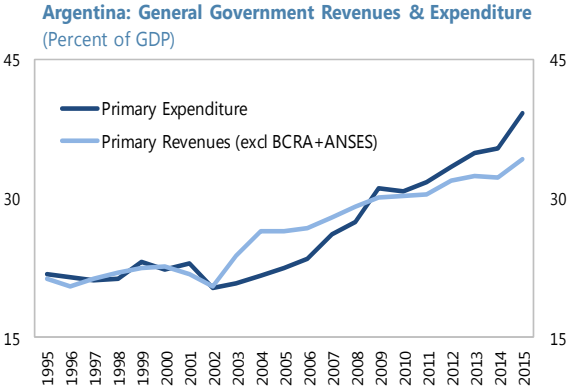
A. Introduction

1. **Argentina's fiscal balances deteriorated sharply over the past decade, becoming a key contributor to growing macroeconomic imbalances**. From a near flat overall fiscal balance in 2007, the overall balance of the general government[2] deteriorated to a deficit of 6½ percent of GDP in 2015, the worst deficit in over two decades. At the same time, the primary balance (net of transfers from the BCRA and ANSES) worsened from an average surplus of 1½ percent of GDP between 2002–10 to a deficit of 5¼ percent of GDP in 2015.



Sources: Mecon and staff extimates.

2. **The deterioration of the fiscal position was driven by a surge in government expenditure**. General government primary spending climbed by 13 percentage points of GDP from 26 percent of GDP in 2007 to 39 percent of GDP in 2015, with wages, pensions and subsidies contributing three-quarters of the increase. Government revenues also grew, from 28 percent of GDP in 2007 to 34 percent of GDP in 2015, reflecting an increase in the tax burden to 24½ percent of GDP, one of the highest ratios in the region. But they could not outpace expenditure. Moreover, the increase in tax revenues also involved a severely distorted tax structure, with several taxes directly hampering economic activity.



Sources: Mecon and staff extimates.

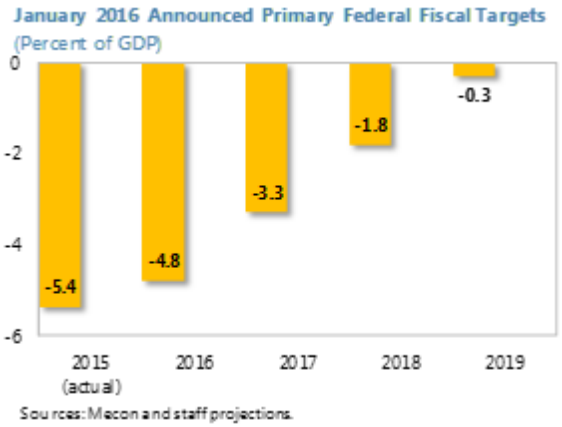
3. **With limited access to international capital markets after 2001, the fiscal deficit was increasingly financed by the central bank, which fueled inflationary pressures**. Above the line transfers, mostly unrealized valuation gains, from the central bank and social security administration (ANSES) to the Treasury averaged 1¼ percent of GDP from 2007–15. Since these gains were unrealized, their use by the Treasury compelled the central bank to print more money. In addition, the central bank gave below the line advances to the Treasury, which grew from

[1] Prepared by Diva Singh and Paolo Dudine.

[2] General Government refers to the federal government (including ANSES) and provinces.

0.1 percent of GDP in 2007 to 1 percent by 2015. Both types of central bank transfers added to the monetary base, increasing seignorage and inflation.

4. **In January 2016, the new administration announced a medium term fiscal consolidation plan, targeting a near-zero primary federal fiscal deficit by 2019 (Chart)**. Subsequently, the slowdown in economic activity prompted the government to revise its primary deficit target for 2017 to -4.2 percent in order to support activity. In 2016, measures resulting in a net consolidation of about 0.2 percent of GDP in 2016 have been announced. On the expenditure side, energy subsidies have been reduced[3] and a tight control of current spending, including discretionary transfers to provinces, instituted. Simultaneously, measures to safeguard social welfare have been introduced, such as the *tarifa social* for utilities, VAT tax credits for low income households, and expanded coverage for child subsidies. Pension measures have also been announced, including a retroactive payment to litigating pensioners to be paid over four years, and a 35–45 percent increase in the monthly pension of 2½ million pensioners. A number of revenue measures to reduce tax distortions have been introduced, including the removal of export taxes (with the exception of those on soy) and an increase in the minimum income level exempt from income tax. On financing, the government swiftly reached agreement with holdout creditors, which facilitated a return to international markets.



5. **This paper investigates how best to achieve the medium-term fiscal adjustment envisaged by the Argentine authorities in January 2016**. Despite the revision of the 2017 primary deficit target included in the Budget, this paper assesses the feasibility of the more front-loaded medium-term adjustment path announced by the authorities in January 2016. By examining the structure of public spending and revenues in Argentina, the paper evaluates what mix of fiscal measures would enable the authorities to attain their announced federal primary fiscal targets, with a contained impact on activity, and safeguards to limit the impact on the most vulnerable. Expenditure-cutting measures would need to be at the heart of the fiscal consolidation effort; identifying areas of inefficient spending would therefore be critical. An analysis of revenues would also be necessary, given the high tax burden and distortive tax structure.

6. **Our findings show there is room to achieve the targeted fiscal adjustment through expenditure rationalization while reducing distortive taxes, but the growth impact would**

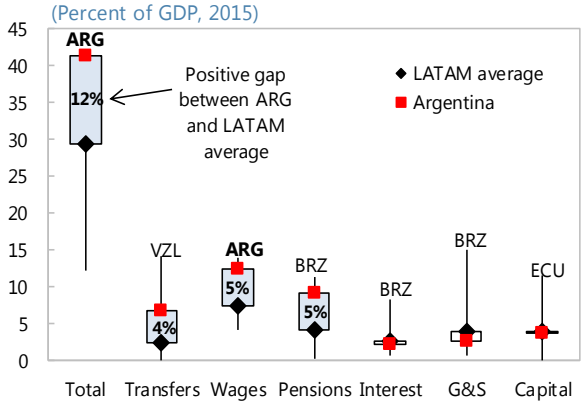
[3] The Supreme Court ruling in August 2016 to reverse the tariff hikes for residential natural gas is expected to reduce fiscal savings by about 0.2 percent of GDP.

critically hinge on its credibility. The public wage bill and energy subsidies are the main expenditure categories with scope for cuts, potentially yielding combined net fiscal savings of up to 5½ percent of GDP, after including cash transfers to safeguard the poorest. On the tax side, reducing the corporate income tax burden and adjusting personal income tax brackets are key priorities, together with the elimination of the financial transactions tax—which would collectively cost about 1¼ percent of GDP to the federal government. Finally, a general equilibrium approach indicates that the negative short-term impact of the fiscal consolidation on growth could be reduced significantly if firms and households were to find the adjustment credible. Enhancing the transparency and credibility of fiscal institutions would therefore be critical.

B. Primary Expenditure

7. **Argentina's level of general government expenditure is higher than LA6 and emerging market averages**. At 41 percent of GDP, Argentina had the highest ratio of general government expenditure in Latin America in 2015. From being lower than the LA6 and emerging market averages in 2007, Argentina's surge in spending over the past decade brought it to surpass all peers. Wages, pensions and non-pension transfers (including energy subsidies) are the largest components of public expenditure in Argentina, and each exceeded their respective Latin American average in 2015. In this section, we thus examine wages and non-pension transfers in more detail (for pensions, see Selected Issues Paper Chapter 3).

General Government Expenditure
(Percent of GDP, 2015)



Source: IMF staff estimates.

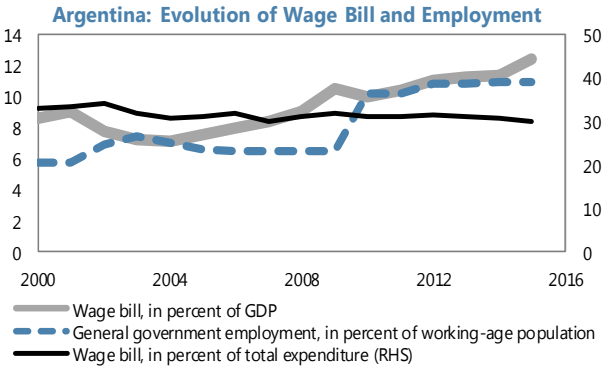
Wages

8. **Argentina's spending on wages as a share of GDP rose by 50 percent from 2007–15, and far exceeds the regional average**.

- Wages are the single largest component of general government expenditure in Argentina, at 12½ percent of GDP in 2015.

- Approximately 70 percent of general government wage expenditure, amounting to 8½ percent of GDP in 2015, owes to provinces. At the provincial level, the wage bill is the most important expenditure component, accounting for more than half of primary spending.

- Comparing general government expenditure on wages weighted by GDP across Latin America in 2015, Argentina had the highest spending on wages, well above the regional average of 7 percent. Indeed, Argentina's general government wage bill is not only well above regional peers and other EMs, but also above the advanced economy average of 10 percent of GDP.[4]



Sources: Mecon and staff projections.

9. **The increase in the general government wage bill was mainly driven by an increase in public employment**. Two pieces of evidence point to this:

- A breakdown of the price and volume effects driving the increase in the wage bill from 2007–15 demonstrates that two-thirds of the 4 percent of GDP increase in wages owed to volume effects, indicating that the increase in public employment over this period drove the surge more than wage levels (see Box 1).

- The number of public employees in Argentina increased steeply over the last decade. Between 2001 and 2014, the number of public sector employees in Argentina rose by 70 percent from 2.3 million to 3.9 million. Over 80 percent of this expansion happened at the provincial and municipal government levels.[5] As a result, the share of public sector employees in Argentina's workforce rose to 18 percent by end-2014, above the Latin American average of 12 percent, and the ratio of public employees to the working age population rose to 11 percent, comparable to the advanced country average, and well above the LA6 and EM averages of 7 percent and 8 percent, respectively.[6]

10. **While employment was the main driver of the wage bill, Argentina's public sector wage premium also stands out, above the LA6, EM and advanced economy averages**. Argentina's average public sector wage premium (measured as the public-private wage differential as a percent of private wage) was most recently estimated at 13¼ percent, above the LA6 and EM averages of 11 percent and 11¾ percent, respectively, and far exceeding the advanced economy average premium of 5½ percent.[7] It would be important to analyze the degree to which this premium is justified by the productivity and skill level of public employees

[4] IMF Board Paper "Managing Government Compensation and Employment—Institutions, Policies, and Reform Challenges", April 2016.

[5] Dieguez, Gonzalo and Gasparin, Jose, CIPPEC, "El rompecabezas del empleo público en Argentina: ¿Quienes hacen funcionar la maquinaria del Estado?", April 2016.

[6] IMF Board Paper "Managing Government Compensation and Employment—Institutions, Policies, and Reform Challenges", April 2016.

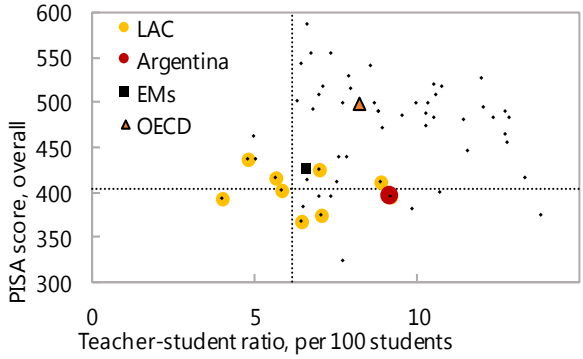
[7] IMF Fiscal Affairs Department staff estimates, and IMF Board Paper "Managing Government Compensation and Employment—Institutions, Policies, and Reform Challenges", April 2016.

in different sectors, given the pass-through of high public wages to the private sector, as well as the crowding out of other public spending by the wage bill.

11. **A closer look at functional areas of public employment in Argentina suggests potential savings from enhanced efficiency in education and health expenditure**. While the percentage of a country's workforce that is publically employed ultimately depends on national choices regarding the role of government, it is possible to assess the efficiency and cost-effectiveness of service delivery by looking at cross country data to estimate "efficiency frontiers."[8]

- *Education*: Over 70 percent of public expenditure in education in Argentina is directed towards teachers' salaries. While primary and tertiary education expenditure and indicators in Argentina are comparable to regional averages and produce relatively good outcomes, secondary school spending is high compared to peers, and does not appear to produce better education outcomes. In particular, the latest available estimates suggest that Argentina's secondary school expenditure per student was 70 percent higher than the LA6 average and 40 percent higher than the EM average, and Argentina's secondary school teacher-student ratio was higher than even the OECD average. However, Argentina's latest available PISA scores were below the average scores for the LA6, EMs and advanced economies (Chart).

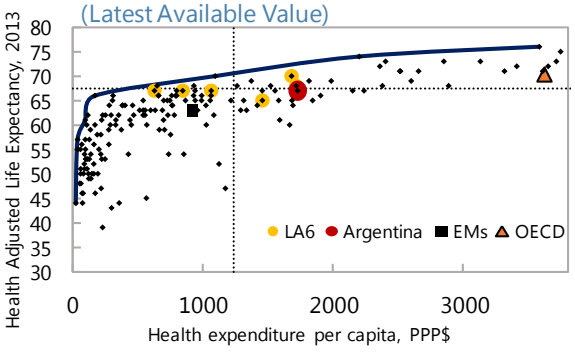
Secondary School Teachers and PISA Outcomes 1/
(Latest Value Available)



Sources: World Bank and IMF staff estimates.
1/ Dashed line is LA-6 average.

- *Health:* Public health expenditure, relative to total public expenditure as well as to total health expenditure, also appears to be high in Argentina relative to other countries with similar health outcomes (as measured through life expectancy and other indicators). Based on the most recent data, Argentina's public health expenditure amounted to 32 percent of

Health Spending Efficiency Frontier 1/
(Latest Available Value)



Sources: World Bank and IMF staff estimates.
1/ Dashed line is LA6 average.

[8] These are calculated using Data Envelopment Analysis (DEA), a non-parametric technique pioneered by Charnes, Cooper and Rhodes (1978), and further developed by Seiford and Thrall (1990), which helps measure the efficiency of activities with multiple outputs and inputs by focusing on frontiers rather than central tendencies.

total government expenditure, compared to 15 percent for the LA6 and OECD, and 12 percent for EMs. While this may simply indicate a policy choice to provide public healthcare in Argentina, PPP-adjusted *total* health expenditure per capita in Argentina was also significantly higher than the LA6 average, and almost double the EM average, while health outcomes were largely in line with peers, below the efficiency frontier. Furthermore, over two-thirds of public healthcare expenditure in Argentina is directed towards salaries rather than capital investment in machinery, technology and health infrastructure. These results suggest there could be room for enhancing efficiency by streamlining the public healthcare workforce.

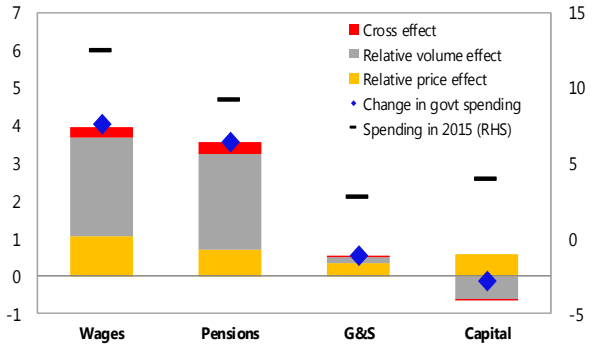
12. **A combination of judiciously implemented employment and wage measures could help reduce Argentina's general government wage bill without negatively impacting service delivery**. The IMF Board Paper "Managing Government Compensation and Employment—Institutions, Policies, and Reform Challenges" (April 2016) discusses lessons learned from several country cases and presents a host of wage and employment measures that have been effectively used to tackle wage bill pressures, many of which are relevant to Argentina. For example, strengthening payroll management to track and control public employees and their payroll, together with a census to identify ghost workers and double-dippers, could bring important savings, without any negative impact on service delivery. In addition, while a first-best approach involving a functional review of public sector ministries to merge units and streamline employment would take time, the paper suggests an attrition-based reduction in public employment, such as an elimination of certain retiring workers' positions, could help raise efficiency in the interim, without direct consequences to unemployment. On the wage-side of the equation, an ad-hoc public wage adjustment, such as a temporary across the board nominal wage freeze, could be warranted, especially given Argentina's high public wage premium. So far, the new administration has reportedly eliminated about 11,000 public sector jobs in 2016 through the downsizing of political employees and improperly hired personnel in various ministries. Going forward, in September 2016, the administration unveiled a comprehensive plan to increase efficiency in various ministries through voluntary retirement plans and the elimination of redundant positions over the next two years.

Box 1. Decomposing the Price and Volume Effects Driving Public Expenditure Growth

A decomposition of the price and volume effects behind public spending growth can provide useful information on the sources of expenditure growth, thereby disclosing what areas to target in order to enhance spending efficiency. For example, if wage and pension levels (price effects) were the drivers of spending growth in these categories rather than the number of public employees or pensioners (volume effects), policy responses could focus more on containing increases in the levels of wages and pensions.

To assess which effect was more pertinent in the case of Argentina, we employ the methodology used in the IMF's April 2014 Fiscal Monitor. Using the formula below, we separate the impact of volume growth from increases in prices across expenditure subcategories over the period 2007–15. The formula decomposes the change in each expenditure category over this period into three parts: the change in the price deflator for the category holding real expenditure for that category constant (price effect); the change in the real expenditure for the category holding the price deflator constant (volume effect); and the residual (cross effect). We use the nominal wage index as the deflator for wages and pensions (as the latter are linked to wages), and the consumer price index as the deflator for goods and services and capital expenditure. Social transfers were excluded given the lack of a suitable deflator.

Argentina: Decomposition of Change in Government Spending, 2007-15
(Percent of GDP)



Sources: Mecon and staff estimates.

$$\Delta\frac{C}{Y}=\left[\frac{P_T^G}{P_T^Y}-\frac{P_0^G}{P_0^Y}\right]\frac{c_0}{y_0}+\left[\frac{c_T}{y_T}-\frac{c_0}{y_0}\right]*\frac{P_0^G}{P_0^Y}+\left[\frac{c_T}{y_T}-\frac{c_0}{y_0}\right]\left[\frac{P_T^G}{P_T^Y}-\frac{P_0^G}{P_0^Y}\right]$$

where C = nominal government consumption; Y = nominal GDP; P^G = government consumption deflator; P^Y = GDP deflator; c = real government consumption; y = real GDP; T = time; and 0 = initial time.

Our results indicate that, as in other EMs, volumes drove the lion's share of spending growth in Argentina's two main expenditure categories: wages and pensions. Two-thirds of the increase in the wage bill between 2007 and 2015 owed to an increase in public employment. In the case of pensions, over 70 percent of the increase owed to volume effects or expanded coverage, given the moratorium of 2004–5.[2]

[1/] As demonstrated in Chapter 2, Box 2.1, of the IMF's April 2014 Fiscal Monitor.

[2/] Between 2005 and end-2011, 2.7 million elderly adults gained access to pension benefits due to the pension moratorium of December 2004 (Law no. 25994).

Energy subsidies

13. **Energy subsidies have risen dramatically in Argentina over the past decade causing social transfers to far exceed the regional average**. At the general government level, Argentina spent 6¾ percent of GDP on social transfers in 2015, against a regional average of 2¼ percent. Most of these transfers (6 percent of GDP) are at the federal level, and comprise energy subsidies (4 percent of GDP). The increase in federal energy subsidies, from 1¼ percent of GDP in 2007, happened as a result of the government's policy to keep domestic energy tariffs largely constant after 2002, in an attempt to prevent the pass-through of high international energy prices to consumers. The policy hurt the domestic energy sector—as tariffs fell well behind production costs and inflation. As investment in the energy sector declined due to the unpropitious environment in the sector, there was a gradual rise in the share of imported energy. Increased import dependency, in turn, hurt the fiscal accounts, particularly in light of the significant depreciation of the nominal exchange rate over this period (between 2011 and 2014, the average nominal exchange rate of the Argentine peso against the U.S. dollar depreciated 50 percent in foreign currency terms). Staff estimates for the impact of exchange rate depreciation on energy subsidy expenditures, using simple OLS regressions, suggest an elasticity of close to 1. Thus, the increasing share of energy imports coupled with currency depreciation were a direct blow to the government's energy subsidy bill. Indeed, staff estimates suggest the peso depreciation since December 2015 would have increased the energy subsidy bill to about 5½ percent of GDP in 2016, assuming no policy changes.

14. **Energy subsidies are poorly targeted**. As in other countries, energy subsidies in Argentina are largely regressive, with many poor segments of the population lacking access to the subsidized products. In particular, a 2015 study by CIPPEC estimated that the poorest 20 percent of households only received 12 percent of natural gas subsidies, and 18 percent of electricity subsidies, while the richest two deciles received 39 percent and 21 percent, respectively. The statistics for public transport are no better, with the poorest 20 percent receiving 11 percent of bus subsidies and 3 percent of train/tram subsidies, compared to 21 percent and 29 percent, respectively, for the top two income deciles. This suggests that public resources that are currently devoted to subsidize households that can afford to pay in full could be redirected towards well-targeted social programs and at the same time achieve fiscal savings. Given the small share of total energy subsidies received by low-income groups, staff estimates suggest that fully compensating the bottom 4 income deciles for a complete elimination of subsidies would bear a fiscal cost of only ½ percent of GDP (see Box 2). This compares to the gross fiscal gains from eliminating energy subsidies of 5½ percent of GDP. Thus, the net fiscal gains from subsidy reform, after fully compensating the bottom 40 percent of households, could potentially amount to as much as 5 percent of GDP.

Box 2. Measuring the Impact of Subsidy Reform on the Most Vulnerable

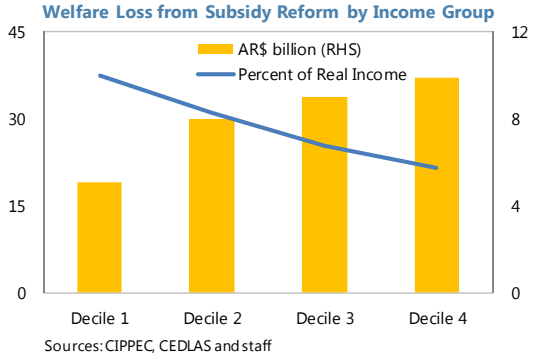
As per Coady et al (2013), an estimate of the direct impact of eliminating subsidies on the income of the most vulnerable can be calculated by multiplying the budget share of each income decile for energy by the increase in the cost of energy that would result from an elimination of subsidies.

Average Price in Argentina (percent of international benchmark)

	Nov-15	Feb-16 1/
Natural gas	0.39	0.24
Electricity	0.25	0.16
Fuel (public transport)	1.25	0.78

Sources: Montamat y Asociados and staff estimates.
1/ After 60 percent depreciation.

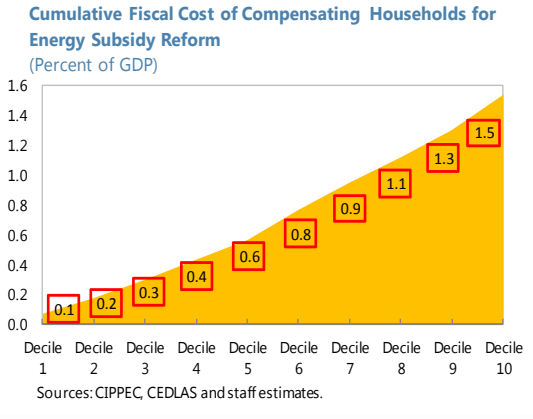
We estimate the increase in the cost of energy that would result from an elimination of subsidies by assuming an equalization of average domestic energy prices with their international benchmarks. As of February 2016 (see table), an equalization of the average natural gas, electricity and fuel prices in Argentina with their international benchmarks would have required average price increases of 310 percent, 540 percent, and 28 percent, respectively.



Sources: CIPPEC, CEDLAS and staff

Multiplying these price increases by the budget share of each income decile for each of these products gives us the percent loss in real income that they would face.[1] Thereafter, the income share of each decile allows us to quantify each income group's real income loss in pesos, and thereby the amount that they would need to be compensated.

Our results indicate a loss in real income of 37 percent, 31 percent, 25 percent, and 21 percent, for income deciles 1 through 4, respectively, corresponding to roughly 0.1 percent of GDP in each case. Compensating the bottom 4 deciles for their real income loss caused by the elimination of energy subsidies would therefore cost the government only 0.4 percent of GDP.

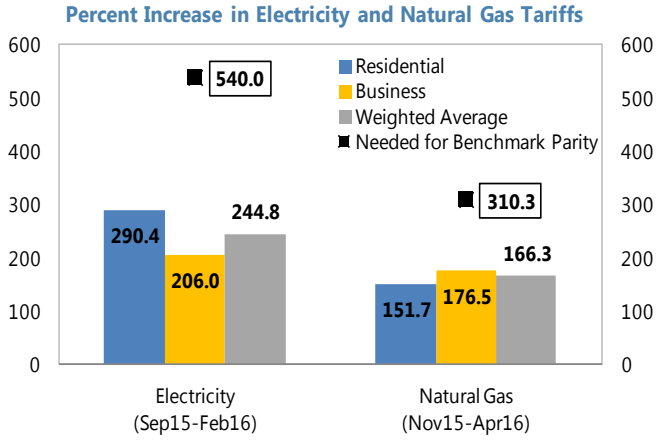


Sources: CIPPEC, CEDLAS and staff estimates.

[1/] The budget shares are available from CIPPEC's September 2015 report.

15. **The new government has increased electricity and natural gas tariffs in 2016 but went roughly halfway towards parity with international reference prices**.[9]

- The electricity and natural gas tariff increases executed by the new administration were not imposed on the entire population—a *tarifa social* was preserved for vulnerable segments, as was a basic monthly consumption level at or below which rates would remain zero.



Sources: CERES, Montamat y Asociados and staff estimates

- The electricity tariff hike implemented by the new administration in February 2016, raised the weighted average of residential and non-residential electricity tariffs by around 245 percent relative to September 2015.[10] Estimates of the post-December 2015 price differential between average domestic and international reference prices for electricity suggest an increase on the order of 540 percent would have been required to achieve parity.[11] Thus, other things equal, average domestic electricity tariffs appear to have moved 45 percent closer to parity with their international reference prices.

- In the case of natural gas, the tariff hikes implemented in April 2016 resulted in a weighted average increase of 166 percent relative to November 2015, whereas an increase of 310 percent would have been required to equalize the domestic price with its international benchmark.[12] However, in August 2016, the Supreme Court ruled for a reversal of the increase in residential (41 percent of natural gas subsidies) natural gas tariffs. The government subsequently announced a three-year plan to phase out natural gas tariffs and achieve import parity by 2019, with the exception of the *tarifa social* that will be maintained.

[9] Public transport tariffs have also been increased in 2016 but fiscal savings from this are unclear given the increased cost of fuel borne by the government to provide these services. Public transport (fuel) subsidies account for 1½ percentage points of energy subsidy expenditure projected for 2016.

[10] Estimates of the increase in residential and non-residential tariffs based on CERES, February 2016. Based on CIPPEC's September 2015 report, 46 percent of electricity subsidies are directed towards residential consumers, while 54 percent are directed towards non-residential (commercial and industrial) consumers.

[11] Estimates of the pre-December 2015 depreciation price differential between average domestic and international reference prices are from Montamat y Asociados. Estimates of the post-December 2015 price wedge, after the large nominal depreciation, are based on staff calculations, which deflate the pre-depreciation price wedge by the rate of depreciation to get the new wedge.

[12] The share of natural gas subsidies directed to residential and non-residential consumers are 41 percent and 59 percent, respectively. CERES, April 2016, and CIPPEC, September 2015.

- Since electricity and natural gas account for 75 percent of the government's energy subsidy expenditure, the executed increase in their tariffs, even after the Supreme Court ruling on residential natural gas tariffs, is estimated to reduce the fiscal cost of subsidies by about 1¾ percent of GDP in 2016.

16. **Full elimination of remaining electricity and natural gas subsidies would yield additional gross fiscal savings of about 2¼ percent of GDP**. Of the 5½ percent of GDP in energy subsidies estimated for 2016, 4 percentage points are accounted for by electricity and natural gas subsidies. Given the 1¾ percent of GDP reduction in these subsidies expected through the tariff hikes already implemented, another 2¼ percent of GDP in gross fiscal savings could be garnered from a full elimination of these subsidies through further tariff hikes of 55 percent for electricity and 46 percent for natural gas, to close the gap with international reference prices. Even after compensating the bottom 4 income deciles for their loss in real income arising from this, the government would see net fiscal savings of 1¾ percent of GDP.

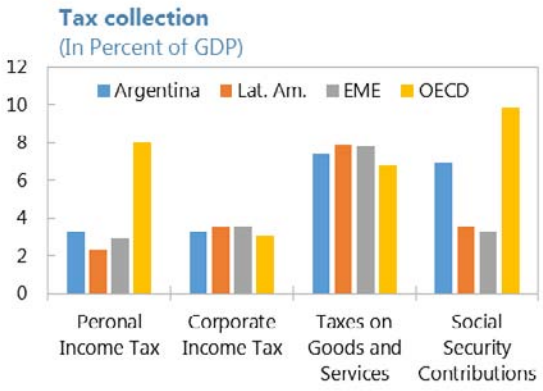
17. **In order to achieve and maintain full cost recovery on remaining energy subsidies, the adoption of a rule-based automatic price adjustment mechanism for setting energy tariffs is strongly recommended.** As international experience shows, adoption of an automatic price adjustment formula to set energy tariffs reduces the uncertainty on the future cost of energy, which is likely to be an important disincentive for investment, and also reduces the level and volatility of the fiscal cost of energy pricing policy. Implementing such a mechanism would require the establishment of a clear pricing structure for each energy product, linking retail prices of the product with international prices, based on costs, margins, taxes, as well as an agreed mechanism for handling import price volatility (see Coady et al, 2012).

C. Tax Revenues

18. **Argentina's tax burden increased dramatically in the past ten years and is one of the highest in the region and among emerging markets**. The ratio of tax revenue to GDP started to increase in 2001, following the introduction of the highly distortive financial transaction tax and export taxes. During 2006–15 overall general government tax revenue increased sharply, by over 7 percentage points of GDP reaching 32 percent of GDP, 10 percentage points above the regional average and only about 4 points below the OECD average.[13] Most of the increase came from a pickup in the VAT, a jump in social security contributions (mostly explained by the reabsorption of private pension schemes into the public sector), and, since 2011, a pickup in the personal income tax (PIT), mainly as the lack of indexation of income brackets since 2001 meant that inflation pushed more and more tax payers into brackets with higher marginal rates, and the lack of indexation of the non-taxable income and other deductions meant that the effective tax rates increased.

[13] It includes social security contributions.

19. **The contribution of individual taxes to total revenues is similar to that of regional peers and other emerging market economies**. On average, during 2011–15, indirect taxes (on goods and services) contributed about 44 percent of total revenues, social security contributions 21 percent, and direct taxes 18 percent. Although the distribution is skewed towards indirect taxes, which tend to be regressive, the structure of Argentina's tax revenues is common to most emerging market economies, where informality in the labor market and/or weak capacity in tax administration hamper effective taxation of income taxes (both personal and corporate).



Sources: MECON, WEO, and OECD.

20. **However, three features of Argentina's tax system stand out: a large number of taxes, concentration of collection into few taxes, and the existence of some highly distortive taxes with high revenue yields**. Without counting stamp duties at the local level, there are over 35 different type of taxes collected nation-wide, many of which are characterized by a great dispersion of rates (for example, there are 6 different rates on different types of fuel) and by special earmarking regimes. However, about 87 percent of total tax revenue comes from just 6 federal and 3 provincial taxes; another 10 percent is raised through 9 taxes; and the remaining 3 percent of total tax collection is distributed across the remaining taxes. In June 2016, the authorities approved the gradual elimination of the presumed income tax, and reduction of the tax on personal goods. However, a further simplification of the system, with the elimination of a number of taxes and the unification of others (for example, those on fuel) would likely result in little revenue loss, but savings in administrative and compliance costs. Distortive taxes include the financial transactions tax, provincial gross turnover tax, as well as export taxes on soy.

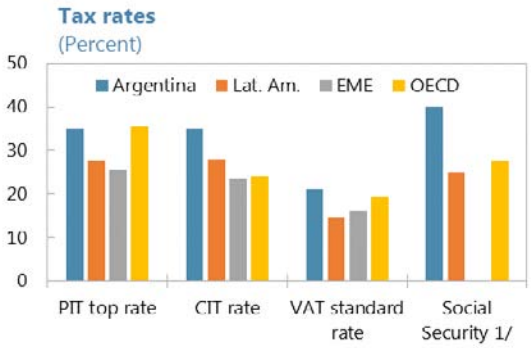
21. **Argentina's tax system suffers from four major weaknesses**:

- *Over the years, the personal income tax has lost progressivity***.** Bracket creeping and the decrease in the real value of deduction flattened the dispersion of PIT taxes paid by individuals in relation to their income. In January, to partially correct for the loss of progressivity, the authorities increased the minimum non-taxable income and other deduction, which effectively aligned their real value to 2011 levels.

- *Corporate income taxation hampers investment, innovation, and the growth of firms.* The Corporate Income Tax (CIT) rate, at 35 percent, is one of the highest among emerging market and OECD countries. There are no provisions to allow adjusting the cost of investment for inflation. In a context of high inflation, this effectively increases the marginal tax rate on investment. Also, provisions such as loss-carry forward (5 years), depreciation (straight line), and tax credit on R&D spending (with caps, limited resources in the budget, and a

competitive allocation system) are less favorable than in other countries. Finally, deductions and incentives target small firms rather than new, innovative, or growing firms.[14]

- *The tax wedge is large and makes labor expensive.* Social Security Contributions (SSC) are above OECD average: the sum of employee's and employer's rate spans between 40 and 45 percent of the wage (with a cap only for the employee). As employers are allowed to deduct a share of their SSC from their VAT obligation (at a rate that depends on the district where the employer is located), effectively the total SSC may drop by 10 percentage points for some employers. However, this reduction is highly inefficient because it is only based on location, irrespective of the size, age, productivity, or financing constraints of firms, and it does not create incentives to invest or innovate.



Sources: MECON, WEO, and OECD.
1/ Sum of employee's and employer's rates on gross wage. For Latin America, it includes Brazil, Chile, Colombia, Peru', and Uruguay.

- *Some taxes with high yield are distortionary***.** First, the financial transaction tax, which is levied on transactions in checking and saving accounts, create distortions in the payment systems, by generating incentives to settle payments in cash, has a form of cascading effects, and favors possibly inefficient vertical integration. In addition, with a rate of 0.6 percent on transaction, Argentina has the most onerous financial transaction tax among the four countries in the world that levy this type of tax. Second, at the provincial level, the turnover tax (levied on gross sales) creates distortions through cascading, as the tax paid by the final consumer does not depend only on the value (added or final) of the good or service, but it also depends on the number of transactions that occurred during production. Third, while export taxes on most agricultural and industrial exports have been eliminated, those on soy remain, albeit at a tax rate 5 percent lower than what was previously in place. These taxes hurt the competitiveness of Argentine farmers in this important sector.

22. **Addressing the weaknesses of the tax system would cost the federal government about 1¼ percent of GDP**. We consider two measures in particular:

- *Reducing the CIT by 5 percentage points and introducing incentives for research and development (R&D) and new firms*. As CIT revenues in 2015 were 3.1 percent of GDP, assuming that the cost is proportional to the rate cut, lowering the CIT rate from 35 to 30 percent would cost about 0.4 percent of GDP. At the same time, fiscal incentives that

[14] Moreover, private sector spending on research and development (R&D), an important engine of growth and innovation, is very low (about 0.1 percent of GDP in 2013, against 0.53 in Brazil, or an average of 1.35 in OECD countries) and existing incentives (120 million pesos in the 2016 budget) appear inadequate.

halve the private cost of R&D (which is estimated to be the efficient level of such incentives[15]) would cost 0.1 percent of GDP.[16] As the CIT is also shared with provinces, the revenue loss for the federal budget would be slightly above 0.2 percent of GDP. The loss at the provincial level from CIT reforms could partly be compensated by substituting the turnover tax for a more efficient provincial tax on goods and services, or by increasing property taxes, which are currently low by international standards.

- *Eliminating the financial transaction tax* would imply a loss for the federal government of 1 percent of GDP, excluding the provincial share in this tax.[17]

D. Assessing the Economic Impact of Fiscal Consolidation

23. **In this section, we assess the impact of fiscal consolidation packages on economic activity in Argentina**. The packages considered here deliver the adjustment in the federal primary fiscal deficit announced in January 2016 (for a cumulative 4½ percent of GDP). Leveraging on the review of Argentina's expenditure in Section II, we contemplate adjustment packages involving spending cuts in areas that lack efficiency, as well as measures to reduce the tax burden and improve the tax system, by addressing some of the major weaknesses identified in Section III.

24. **To do so we use the Flexible System of Global Models (FSGM), one of the general equilibrium models available at the IMF**.[18] The advantage of simulating the impact of fiscal policy on growth using a general equilibrium model is that it allows us to examine the behavior of the economy at large, by analyzing the interaction of various microeconomic decisions (IMF, 2014). Needless to say, the results of the analysis are very sensitive to the model's parameters and specific modeling assumptions; in particular:

- *Whether the fiscal consolidation package is credible*. If the fiscal authorities are credible and agents fully anticipate that the fiscal consolidation will be implemented as announced, this triggers agents to adjust their investment and consumption decisions, bringing forward the long-run benefit of the fiscal adjustment. For this reason, the short-term output costs of the consolidation are diminished.

- *The share of liquidity constrained agents in the economy.* The greater the share of households that lack access to financial markets and savings instruments, and thus consume all their income in each period, the stronger the impact of fiscal policy.

25. **For the purposes of our simulations, we assume partial credibility and a 60 percent share of liquidity constrained households**. It would be unrealistic to assume complete

[15] IMF, 2016, "Acting Now, Acting Together", Fiscal Monitor April 2016.

[16] It assumes an elasticity of 1 of R&D spending to its cost.

[17] This is the amount collected in 2015. Going forward, we assume an elasticity of 1 of this tax to GDP.

[18] A description of the model can be found in Annex II.

credibility for the new administration, given the track record of previous administrations and the history of expansionary fiscal policy in Argentina. Nonetheless, it would also be unreasonable to assume no credibility, given the multitude of measures already implemented by the new government. We therefore simulate our models under the assumption of *partial (or growing) credibility*, with agents only believing that the change in policy will be permanent once it has been in place for two years. With respect to liquidity constrained households, we assume a 60 percent share for Argentina, in line with the average share for EMs.

26. **First, we simulate a fiscal consolidation package that only includes expenditure measures**. This package (Table: Adjustment Scenario 1) assumes that the federal government achieves a 1½ percent of GDP consolidation per year from 2017–19 to meet its primary targets through expenditure measures that build on the analysis in Section II. In particular:

- A reduction in the wage bill of 2 percent of GDP.[19]
- A reduction in energy subsidies of 3½ percent of GDP.
- A ½ percent of GDP increase in cash transfers to households, which, as explained in Section II, compensates the bottom 40 percent of the population for the subsidy cuts.
- A ½ percent of GDP increase in capital expenditure (which, at 3½ percent of GDP in 2015 was below the regional average of 5 percent).

27. **Next, we simulate a fiscal adjustment scenario that also adds tax cuts**. This scenario assumes the same overall fiscal consolidation as the previous, but adds tax cuts in addition to spending measures, to correct some of the distortions highlighted in Section III (Table: Adjustment Scenario 2). In particular, the scenario incorporates:

- A 2¾ percent of GDP reduction in the wage bill.
- A 3½ percent of GDP reduction in energy subsidies,
- A ½ percent of GDP increase in cash transfers to the bottom 4 deciles to compensate them for the subsidy cuts.
- A ¼ percent of GDP increase in capital spending.
- A 0.6 percent of GDP decrease in taxes on households' income (through the financial transactions tax).

[19] As noted in Section II, the bulk of the wage bill is at the provincial level. Still, we assume that apart from reducing the federal wage bill, the federal government reduces discretionary federal transfers to provinces, and that provinces react by lowering their wage bill by the same amount.

- A 0.45 percent of GDP decrease in taxes on corporations (through the CIT and the financial transactions tax)

Adjustment Scenario 1

Changes in Expenditure and Revenue Components (In Percent of GDP)

	2017	2018	2019
Wages	-1.00	-1.00	0.00
Capital Expenditure	0.00	0.50	0.00
Transfers to OLG 1/	-1.00	-1.00	-1.50
Transfers to Liquidity Constrained	0.50	0.00	0.00
Taxes on household income	0.00	0.00	0.00
Taxes on corporations	0.00	0.00	0.00
Total adjustment	-1.50	-1.50	-1.50

1/ Assumes a reduction in electricity, natural gas and public transport subsidies.

Adjustment Scenario 2

Changes in Expenditure and Revenue Components (In Percent of GDP)

	2017	2018	2019
Wages	-1.00	-1.00	-0.80
Capital Expenditure	0.00	0.25	0.00
Transfers to OLG	-1.25	-1.25	-1.00
Transfers to Liquidity Constrained	0.50	0.00	0.00
Taxes on household income	-0.10	-0.20	-0.30
Taxes on corporations	-0.15	-0.30	0.00
Total adjustment	-1.50	-1.50	-1.50

1/ Assumes a reduction in electricity, natural gas and public transport subsidies.

28. **Our results indicate that the fiscal consolidation package including tax cuts can deliver stronger growth in the medium term** (Panel 1). We first run our simulation with partial credibility and holding monetary policy in the model constant, to isolate the impact of the fiscal consolidation on growth. The bigger cut in spending required to meet the fiscal targets in Scenario 2 results in a sharper drop in consumption and thus growth in 2017 (GDP growth falls by 1.2 percent in the first year of the adjustment compared to 0.7 percent in Scenario 1). However, from 2018 onwards, lower personal income taxes in Scenario 2 moderate the fall in consumption relative to Scenario 1 and eventually consumption grows at a faster pace. Moreover, investment is much stronger in Scenario 2 throughout the whole period, thanks to the corporate income tax cut, and GDP grows at a faster pace in Scenario 2 starting from 2018. On average over the first 3 years (2017–19), the loss in output in the two scenarios is quite similar (about ½ percent of GDP). Allowing a monetary policy reaction, the average output loss from 2017–19 reduces further, to 0.2 percent.

Average Impact on Growth 2017–19*

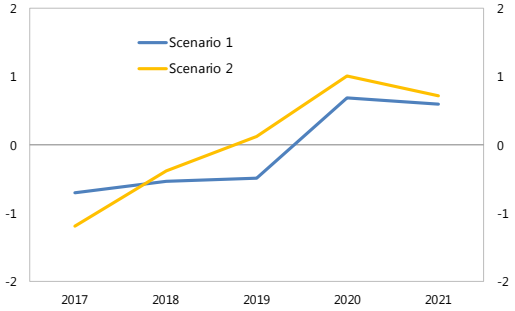
	Scenario 1	Scenario 2
Non-credible	-0.81	-0.91
Partially-credible	-0.57	-0.47
Credible	-0.40	-0.38

*Assuming no monetary policy reaction

29. **The results of our simulations also underscore the importance of policy credibility**. If the policy adjustment were *not* credible, the average loss in output during 2017–19 would be about ¼–½ percentage points higher relative to the partially-credible scenario, as agents would not fully internalize the benefits of the fiscal adjustment and would therefore not increase their investment or consumption accordingly. This suggests that strengthening the credibility of the fiscal policy framework could play an important role in reducing the negative impact of fiscal consolidation on growth.

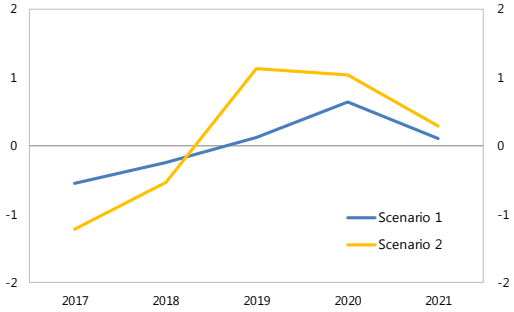
Figure 1. Partially Credible Policies, With vs. Without Monetary Reaction

Impact of Fiscal Consolidation on Real GDP growth: no monetary
(percentage points, relative to baseline)



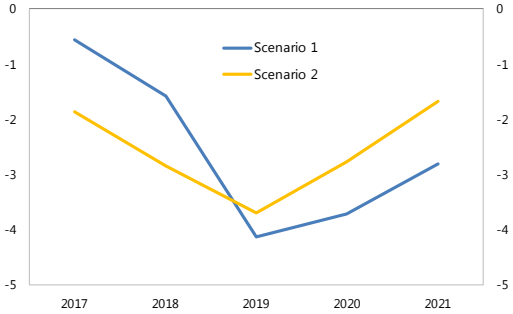
Source: staff estimates.

Impact of Fiscal Consolidation on Real GDP growth: with monetary
(percentage points, relative to baseline)



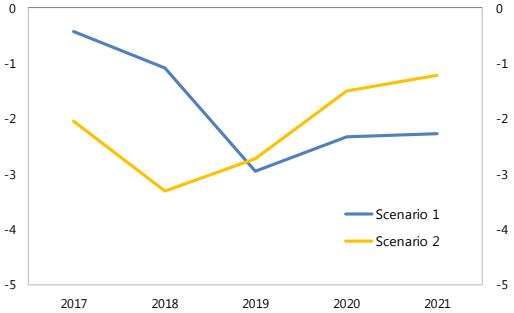
Source: staff estimates.

Impact of Fiscal Consolidation on Real Consumption: no monetary
(percent, relative to baseline)



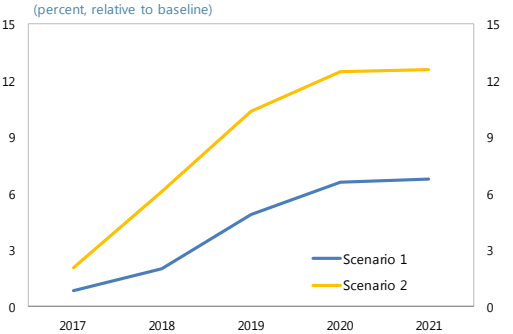
Source: staff estimates

Impact of Fiscal Consolidation on Real Consumption: with monetary
(percent, relative to baseline)



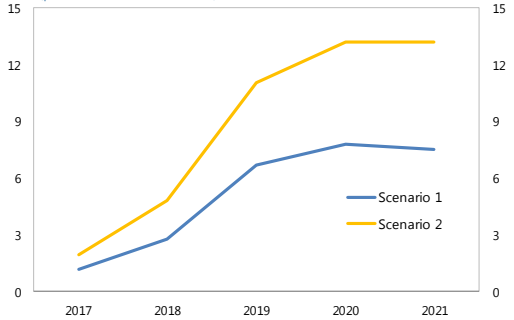
Source: staff estimates

Impact of Fiscal Consolidation on Real Investment: no monetary
(percent, relative to baseline)



Source: staff estimates.

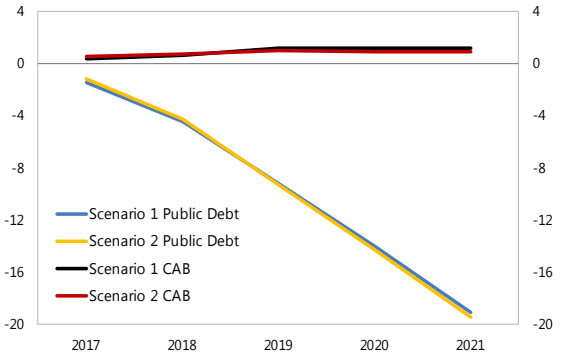
Impact of Fiscal Consolidation on Real Investment: with monetary
(percent, relative to baseline)



Source: staff estimates.

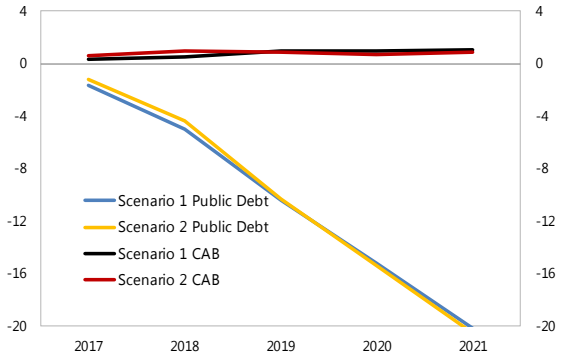
Figure 1. Partially Credible Policies, With vs. Without Monetary Reaction (concluded)

Impact of Fiscal Consolidation on Public Debt and CAB: no monetary
(percent of GDP, relative to baseline)



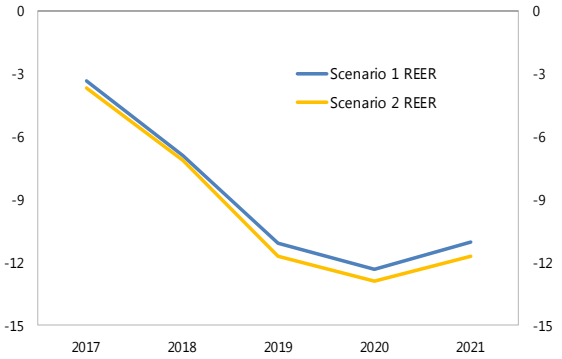
Source: staff estimates

Impact of Fiscal Consolidation on Public Debt and CAB: with monetary
(percent of GDP, relative to baseline)



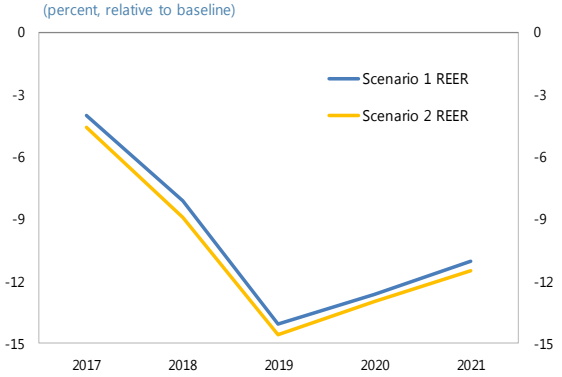
Source: staff estimates

Impact of Fiscal Consolidation on the REER: no monetary
(percent, relative to baseline)



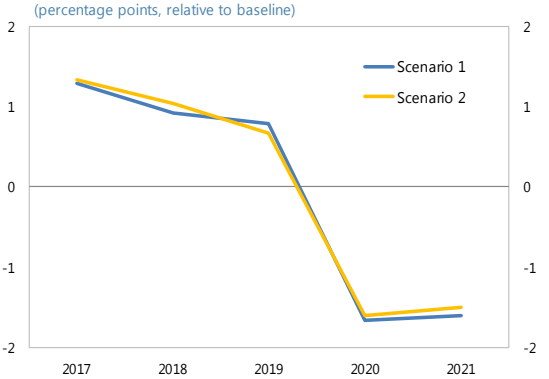
Source: staff estimates.

Impact of Fiscal Consolidation on the REER: with monetary
(percent, relative to baseline)



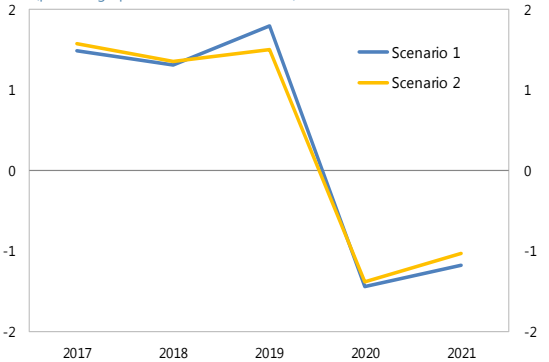
Source: staff estimates.

Impact of Fiscal Consolidation on Inflation: no monetary
(percentage points, relative to baseline)



Source: staff estimates.

Impact of Fiscal Consolidation on Inflation: with monetary
(percentage points, relative to baseline)



Source: staff estimates.

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Annex I. Model Description and Fiscal Policy Analysis

In this paper, we use the G20MOD module of the IMF's Flexible System of Global Models (FSGM) to assess the macroeconomic impact of fiscal policy measures (Andrle and others, 2015). This module encompasses an individual block for each G20 country and four other blocks that effectively complete the rest of the world. The FSGM is an annual, semi-structural, multi-region, general-equilibrium model. Each module features an identical economic structure, but differs in its coverage of countries, key steady-state ratios, and parameterization to capture each region's economic characteristics. The steady-state ratios are country-specific (including GDP composition, structure of fiscal revenue and expenditure, tax rates, trade structure, inflation, and interest rates), and the values mainly correspond to the values at the end of the WEO horizon. Furthermore, the reduced-form structure of the model allows for more empirical content in the determination of its properties in terms of introducing more heterogeneity into the behavior of individual countries.[1]

In particular, the FSGM uses estimated and calibrated parameters to describe particular behavior of each economy. A two-step approach is used to determine the parameter values in most of the equations of the FSGM. First, single equation estimation in panels is undertaken for all regions and countries covered in G20MOD to determine the initial values of the parameters. For example, the estimation of the inflation Phillips curve allows for country-specific values. In addition, especially for coefficients that have a more structural interpretation (for example, households' inter-temporal elasticity of substitution, consumption habit persistence), the calibration is fixed in accordance with the microeconomic and empirical literature. In the case of Argentina, most of these structural parameters are set in accordance to parameters of other emerging market economies. The second step is to use the full model to make adjustments to the initial parameter values to obtain sensible system-wide properties (e.g., through model responses to various shocks) by comparing these to other structural and semi-structural models.

Private consumption and investment have micro-foundations, with agents having model consistent expectations, while trade, labor supply, and inflation have reduced-form representations.[2] The model's potential output is determined by a production function with trend total factor productivity, the steady-state labor force, the non-accelerating inflation rate of unemployment (NAIRU), and the

[1] These reduced form equations differentiate FSGM from previous IMF's global models, such as the Global Economic Model (GEM) by Laxton and Pesenti (2003) and the Global Integrated Monetary and Fiscal Model (GIMF) by Kumhof and Laxton (2007). Both GIMF and GEM are complex structural models with multiple goods and full stock-flow consistency. This complex structure constrains the number of countries/regions that can be described at one time with these models. Relying on reduced form equations in the trade sector, FSGM is capable of handling a large number of blocks.

[2] The consumption block uses a discrete-time version of the Blanchard-Weil-Yaari overlapping generations model, based on a constant-elasticity-of-substitution utility function containing only consumption. For private business investment we use an updated version of Tobin's Q model with quadratic real adjustment costs. The private business capital stock is chosen by firms to maximize profits.

capital stock, and there is a full stock-flow consistency in the model (fiscal deficit/debt, investment and capital stock, and current account balances and NIIP).

While monetary policy follows a standard reaction function, fiscal policy is anchored by a debt rule that assures long-run sustainability.[3] In the case of Argentina, for some of the simulations, and in an attempt to isolate the fiscal policy impact, it is assumed that monetary policy does not change. For the fiscal policy, it is assumed that the primary deficit is reduced in the first three years in line with the illustrative scenarios of fiscal adjustment described in Section IV of this paper, and thereafter, primary balance remains unchanged (while the savings from lower interest spending are saved), putting the government debt on a downward path.

Frictions in the form of sticky prices and wages, and assumptions on the types of households imply an important role for fiscal (and monetary) policy. In particular, FSGM displays important non-Ricardian properties that affect how fiscal policy operates in the economy. First, rather than using infinitely-lived households, FSGM uses overlapping generations households. This way, households treat government bonds as wealth since there is a chance that the associated tax liabilities will fall due beyond their expected lifetimes. The OLG households can save and smooth their consumption, and national savings are endogenously determined given the level of government debt. Second, there are also liquidity constrained (LIQ) households. LIQ households do not have access to financial markets, do not save, and thus consume all their income each period. Ample micro and macro evidence suggests that such non-Ricardian consumption behavior is a key transmission channel for fiscal policy.[4] Thus, the larger the fraction of LIQ households, the larger the impact of temporary policies. Like most global models, we assume that the share of liquidity-constrained households is smaller for advanced economies (35 percent) than for emerging market economies (60 percent).

FSGM's fiscal sector is sufficiently disaggregated to capture peculiarities of different taxes and expenditure categories. This disaggregation captures each country particularities in terms of government size, spending and taxes composition, and enables the model to simulate fiscal policy reforms and to incorporate feedback mechanisms to the macro-economic variables. In particular, the expenditure categories include government consumption, investment, targeted transfers and general transfers. The revenue categories include corporate income taxes, personal income taxes, royalties, value-added taxes, and lump-sum taxes.

Given the micro-foundation of the households' sector, each policy instrument has a different multiplier. For example, the near-term effects of transfers are likely to depend on how the transfers are distributed across households. Cuts in transfers that are concentrated on households facing liquidity constraints are likely to be associated with a larger multiplier compared to cuts to general

[3] See Andrle and others (2015) for more details.

[4] Using micro data from the Consumer Expenditure Survey, Johnson et al (2006) and Parker et al. (2011) find evidence of a substantial response of U.S. household spending to the temporary tax rebates of 2001 and 2008. On the macro side, Gali, Lopez-Salio and Valles (2007) present evidence from structural VARs that government spending shocks tend to boost private consumption, and show how the inclusion of financial constrained agents in their DSGE model helps it account for this behavior.

transfers to all households. On the revenue side, a reduction in personal income taxes would reduce labor costs and increase the desired level of capital stock by firms, spurring investment spending. Alternatively, an equivalent reduction in corporate income taxes has a larger impact on investment spending, because it directly increases the returns on capital.