Appendix 1. The Holdouts Problem

In 2016, Argentina closed one of its chapters in its long saga of debt defaults. Argentina had run into debt problems in 2001, as a result of a long recession that had started in 1998. An attempt to extend maturities at market rates by mid-2001 was not enough to calm the markets. Therefore, the government implemented an aggressive restructuring of domestic debt at the end of 2001, with haircuts between 40% and 60%, but shortly after declared a default on external debt. The result was tackled in 2005 with an again aggressive debt restructuring (where haircuts on some bonds ran as high as 88%)[1]. This initial restructuring, harsh as it was, was able to entice about 76.1% of participation. To entice participation the government also issued a law that forbid any future deal with any bondholder that decided not to participate (the so called "*lock law*"). However, given that the bonds did not have collective action clauses, a number of holdouts remained. Over the years, these holdouts attempted to attach several assets, always unsuccessfully (the most bizarre attempt was the attachment of a military school ship, *Fragata Libertad*, in the port of Tema, in Ghana; it was held for a couple of weeks before it was released).

In 2010, the government issued a second call for participation in the same terms of the original deal, though forfeiting the accrue of some payments since 2005. This second attempt had reasonable success, bringing participation in the restructuring deal to 92.4%.

Up to that point, Judge Griesa from the Second Circuit Court of Appeals in New York, who was in charge of the case, had somewhat procrastinated, allowing Argentina time to make a reasonable offer to bondholders at large and holdouts in particular. Once this second deal had been sealed, it summoned Argentine authorities asking them to put forward a proposal for the remaining holdouts. At that point, the authorities said that the law precluded them from making any offer, and that no payment would be forthcoming regardless of the court's decision. The court's reaction was to issue a ruling arguing that the "*lock law*" violated the *pari passu* clause contained in the defaulted bonds. According to the judge, the "*lock law*" violated the *pari passu* clause, which is defined as the obligation to allow any bondholder to participate in a restructuring. It ruled that, as a result, no payment could be done to any other bondholder, unless payments were not done pro-rata to holdout creditors. Argentina tried to coerce the paying agents to still pay to restructured bondholders, but they declined, so Argentina defaulted on restructured bondholders again. This was the state of affairs when the government took office.[2]

Macri´s government attempted to normalize the situation by offering a reasonable solution that was acceptable to the Judge. Argentina offered to pay 150% of the capital at stake or 75% of the litigation ruling (in case the bondholder had been awarded a settlement amount). Some funds had litigated and obtained rulings early on. After a judgement, amounts are

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[1] For the results and details of both restructurings, see Sturzenegger and Zettelmeyer (2006, 2007, 2008) as well as Cruces and Trebesch (2013).

[2] The government argued that it could not make any deal with the holdouts because bondholders that had participated in the exchanges had the right to a RUFO clause (Rights Upon Future Offers), thus impeding a betterment of options to remaining holdouts. At any rate, these clauses expired on 12/31/2014.

adjusted at a rate associated to US court rates. Thus, for these funds, the 150% offer represented more than their actual ruling obligation established in 2016. These funds immediately accepted Argentina´s generous offer.

However, other savvier participants had taken another route, buying some peculiar bonds that Argentina had issued in 1998. Among them, the most prominent was the FRAN, that was issued paying a return equivalent to Argentina´s country risk. As Argentina plunged into default in early 2002, these bonds started paying the implicit yield on defaulted bonds, a three-digit interest rate. This rate continued to accrue while bondholders did not have a ruling, even beyond the actual original expiration date. NML, a distressed debtholder, for example, had litigated on a small share of its holdings and obtained a ruling which wanted to apply to all its holdings. For FRAN holders, the claim was very high, in some cases reaching 20 times the original capital[3]. For these bondholders, the offer of 150% not even closely met their claims. Thus, the holdouts pushed forward and attempted a negotiation to improve this number. However, they met with stiff resistance from the judge's negotiator, Dan Pollack, who considered that Argentina's offer was at this point more than reasonable[4]. With the support of the court's negotiator, Argentina's proposal was accepted. At any rate, the USD 300 million original issue of FRAN bonds ended up representing a liability of nearly USD 6 billion.

The overall payment amounted to USD 9.3 bn; it was made to the creditors in cash and financed with the issuance of new bonds. At any rate, after the many years that Argentina had lived under the specter of this default, its resolution was considered a big success.

Appendix 2. Case-by-case Analysis for Countries that Introduced Inflation Targeting

Brazil

As part of the "Real Plan" stabilization program, Brazil adopted a crawling peg exchange rate regime from 1994 to 1999. The repeated financial crisis and the Russian crisis forced Brazil to abandon the fixed exchange regime. In 1999, after a devaluation of 57% of exchange rate, Brazil adopted a floating exchange rate and an inflation targeting regime. The IT regime's main features included a multiyear targets scheme, the regular publication of inflation reports and the minutes of the board meetings. Flynn (1996), Arestis, de Paula & Ferrari-Filho (2011) and Barbosa-Filho (2008).

Chile

In 1990, the Central Bank of Chile started publishing its projections of inflation and adopted a pegging regime with bands of +/- 2%, using exchange rate as anchor (bands widened to +/- 10% in 1992 and to +/- 12.5% in 1997). In September 1990, the Central Bank of Chile published its first inflation target, a 15-20% target range, later lowering gradually the

[3] A detailed computation can be find at: https://www.bloomberg.com/opinion/articles/2016-02-08/argentina-s-bond-fight-comes-down-to-its-worst-bonds.

[4] It is said that at one hearing, the holdouts brought a document explaining what they were owed. Pollack browsed through it and, with a smile, said "this is where this is going" and threw it into the garbage bin.

inflation target. In 1999, with an inflation of 3%, Chile adopted a full-fledged Inflation Target and floating regime. Policy transparency was raised significantly in 2000 with publication of a regular inflation report, a calendar for monetary policy meetings, and the minutes of policy meetings (published with a 3-month delay). Rojas (2000), Massad (2001), Morandé (2001), De Gregorio et al. (2005) and Schmidt-Hebbel & Tapia (2002).

Colombia

After a new Constitution in 1991, which granted autonomy to the Central Bank, the disinflation process started with a crawling peg in 1991, which was changed to a crawling peg with bands in 1994 (bands expanded multiple times until eventually disappeared). In 1999, Colombia adopted a full-fledged inflation-targeting regime with a floating exchange rate and the short-term interest rate as the main instrument, establishing an inflation target of 2-4 %. Carrasquilla (1995), Urrutia (2005), (Giraldo, Misas y Villa, 2011) and Perez-Reyna & Osorio-Rodriguez (2016).

Czech Republic

The stability of the Czech koruna has been the monetary policy target of the Czech National Bank (CNB) 1993. During 1993–1997, the CNB the koruna was pegged to a basket of currencies, and bands widened from 0.5% in 1993 to 7.5% in 1997. In 1996, short term rates were used as main instrument for the first time, and in December 1997, after an episode of sharp exchange rate turbulence, CNB introduced inflation targeting (IT) as its monetary policy regime with a managed floating regime without explicit bands for interventions. Šmídková & Hrnčíř (2000), Bažantová (2017) and Rusnok (2018).

Dominican Republic

Until the end of 2002, the Dominican Republic maintained several exchange markets. In 2002, the Monetary and Financial Law established a floating exchange rate, with price stability as the main mandate of the Central Bank. Starting in 2004, the Central Bank moved away from exchange rate targeting and transitioned to monetary targeting, creating a corridor for the interbank rate which served as signal of the monetary policy stance. This process anticipated the transition to the inflation targeting regime, which was finally adopted in 2012. Starting in February 2013, the authorities introduced the monetary policy rate as the benchmark rate. A 4% inflation target from 2015 onwards has been set, with a +/- 1% tolerance band. OAE (2008), Rodriguez (2008) and Grigoli & Mota (2017).

Hungary

After the use of an adjustable peg relative to a basket of currencies (weighted by their importance in Hungarian trade), Hungary adopted a crawling band exchange rate system as main pillar of its stabilization program in 1995. The currency basket was modified and initial bands of +/- 2.25% were later widened to +/- 15% in 2001. In June 2001, an inflation targeting framework was adopted, and the crawling band system was substituted with a target zone system against Euro, with bands of +/-15%. The authorities set a 7% inflation target by December 2001, 4.5% by December 2002 and 2% long-run objective, and the new monetary policy scheme included the publication of inflation forecasts and inflation reports. In February 2008, the Hungarian National Bank chose to abandon the target zone against

Euro and let the forint float freely on the market. Zoican (2009), Siklos & Ábel (2002) and Golinelli & Rovelli (2002).

Iceland

During the nineties, Iceland used a hard peg attached to a basket of 17 currencies, with a band of +/- 2.25%. Bands changed several times during the period until February 2000, when the band was once again widened to +/- 9% relative to the basket target (which had been redefined for last time in 1996). In March 2001 the exchange rate target was eliminated in favor of a floating exchange rate, and an inflation-targeting framework was introduced, establishing a target of 2.5%. That 2.5% target was reached in late 2002. Gu (1997), Matthiasson (2008), OECD Survey (2017), Edwards (2018) and Pétursson (2018).

Indonesia

Before the currency crisis in 1997, monetary policy was conducted mainly by using base money as the operational instrument. The anchor of monetary policy during this period was the nominal exchange rate, which was managed through a crawling band exchange-rate regime. The crisis led to the adoption of a floating exchange rate in 1997. The enactment of a new Central Bank law in May 1999 gave full autonomy to Bank of Indonesia in implementing monetary policy, establishing its independence, and allowing it to set an inflation target every year. The exchange rate was regarded only as an information variable and the base money was set as the operational instrument. First target of 3%–5% for core inflation was announced in early 2000. At the beginning of 2002, the BI moved to the conventional practice of setting long-term targets. BI set a longer-term target of 8% from 2002 to 2006, which was mostly achieved until the establishment of a new IT framework in 2004, when the government was put in charge of setting the target. The government issued its first inflation target for 2005 to 2007. In July 2005 BI officially moved from base money to interest rates as its operational target starting a full-fledged inflation targeting. Central Bank of Indonesia (2005), Ramayandi & Rosario (2010), Kenward (2013) and (Alamsya et al., 2001).

Israel

In mid-1985, in a context of an annual inflation rate of 450%, the government implemented a stabilization program that succeeded to quickly reduce inflation to 16-20% between 1986-1991. The stabilization plan was based on a mix of policies that included a tightening of monetary policy, a wage freeze, and a temporary price freeze on various goods and services, as well as the freeze of the exchange rate, used as nominal anchor. In late 1991, Israel adopted a crawling exchange rate band and set its first inflation target for 1992 at a rate of 14 to 15% as part of the new crawling band system. Gradually, the interest rate became the main instrument of monetary policy, together with an increased flexibility of the nominal exchange rate regime through a gradual widened of the bands. Klein (1998), Maman & Rosenhek (2009), Bufman & Leiderman (1998) and Leiderman & Bar Or (2010).

Jamaica

Jamaica adopted a flexible exchange rate system in September 1991. In September 2017, Bank of Jamaica adopted an inflation targeting framework, and since then conducts monetary policy with the objective of attaining its long run inflation target of 4-6%,

intervening eventually in the FX market in order to smooth the volatility in the exchange rate. IMF (2009), Bank of Jamaica (2009, 2010, 2011, 2017) and Barrett (2014).

Kazakhstan

Kazakhstan pursued the stability of exchange rate as main objective of monetary policy during the post-Soviet period. In 1999, after a devaluation, a path for the floating of the Tenge was designed. An implicit corridor was established, with bands of +/- 3%. This near-fixed exchange rate ended abruptly in February 2009, with a devaluation of about 25%. The February 2009 devaluation was followed by a new corridor for the dollar/tenge exchange rate, and then in March 2011 by a managed float centered on the dollar until September 2013, when the National Bank of Kazakhstan switched to the use of a multi-currency basket target. The currency corridor was canceled in May 2015, when National Bank moved to a freely floating currency. In August 2015 the National Bank moved to the inflation targeting regime, adopting the short-term interest rate in the money market as main instrument. Frankel (2013), Epstein & Portillo (2014), National Bank of the Republic of Kazakhstan (2015) and Zholamanova et al. (2018).

Mexico

By the end of 1994, due to the financial crisis, Mexico was forced to float the currency and abandon a target zone for the exchange rate. In 1995 Bank of México defined as main instrument to affect interest rates the cumulative balance of commercial banks' current accounts at the Central Bank. By 1998, announcements of changes in the instrument began to be accompanied with a discussion of the reasons behind the decision to modify it, enhancing transparency in the implementation of monetary policy. In 2000 the Central Bank started publishing quarterly inflation reports. This transparency process was reinforced in 2001, when Banco de México announced that it was formally adopting an inflation targeting framework. Then, in 2002 a long-term inflation target was defined at 3 percent for CPI inflation, with an interval of variability of +/- 1 percentage. Since 2003 monetary policy announcements have been made at preestablished dates. Martínez et al. (2001) and Francia & Torres (2005).

Moldova

Until 1998, the exchange rate policy included an official exchange rate for bank transactions, and an exchange rate for cash transactions, which was freely determined. In 1998, due to the Russian crisis, the National Bank of Moldova (NBM) gave up its policy and moved to a floating exchange rate regime. At the same time, the foreign exchange policy was targeted at avoiding the excess fluctuations of the official nominal exchange. In 2006, the NBM changed its aim to price stability. With the global financial crisis of 2008, the NBM intervened to avoid the excessive depreciation of national currency. Interventions were reduced gradually, and in 2013 the NBM adopted an inflation targeting framework, setting a 3.5–6.5% inflation target. National Bank of Moldova (2010, 2011) and Petroia (2013).

Poland

In 1990, in a context of high inflation, Poland abolished its old multiple exchange rate system and adopted a unified fixed exchange rate against the US dollar. In May 1991, after a devaluation, authorities shifted from a dollar peg to a basket peg, and in October the fixed

peg was replaced by a crawling peg regime, initially with a monthly declining rate of devaluation. The exchange rate worked during this period as nominal anchor. In May 1995, Poland introduced a crawling band with a fluctuation band increasing from +/- 7% to +/- 15% in 1999, keeping a decreasing monthly devaluation rate, which was reduced to 0.3% by March 1999. In September 1998, Poland announced its decision to shift to an inflation-targeting framework, establishing an inflation target of 8% to 8.5% for 1999 and the interest rate on short-term open market operations as main instrument of monetary policy. In April 2000, Poland adopted a floating exchange rate regime. Since 2004 the inflation target is 2.5% with a +/-1% fluctuation band. Gottschalk & Moore (2001), Kokoszczynski (2001) and Polański (2004).

Romania

Starting from 1999, National Bank of Romania (NBR) used the exchange rate as nominal anchor. In July 2005, NBR shifted from a monetary policy frame based on the exchange rate towards an inflation targeting scheme. This framework has been combined with a managed float exchange rate regime, where the NBR has intervened in repeated opportunities. Dobrota (2007), Daianu & Kallai (2008) and Niculina & Catalina (2009).

Russian Federation

During the post-Soviet period of 1992–98, the monetary policy of the Bank of Russia was essentially exchange rate-oriented due to overall economic and financial instability combined with hyperinflation (1992–94) and high inflation (1995–98). An exchange rate corridor system was introduced in 1995, and later the government debt crisis of 1998 triggered a shift to a managed floating exchange rate. The exchange rate continued to be tightly managed until 2005, when the Bank of Russia introduced a dual-currency basket (US dollar and euro) as the operational indicator for it exchange rate policy. In 2007, the price stability was explicitly stated as a primary policy objective. Since 2009, the flexibility of the exchange rate policy was increased, and the intervention volumes decreased steadily. In 2014, Bank of Russia abolished the exchange rate policy mechanism creating the conditions for a transition to a fully floating exchange rate regime by 2015 and the adoption of a full-fledged inflation targeting regime, setting the consumer price index as operating landmark. The current inflation target is 4%. Korhonen & Nuutilainen (2017) and Central Bank of Russian Federation (2013).

Slovak Republic

After its independence in 1993, National Bank of Slovakia conducted monetary policy based on the regulation of M2. The objective was to achieve currency stability by reducing inflation and maintaining a fixed exchange rate of Slovak koruna within a fluctuation band of ± 0.5 %, while the fixed exchange regime served as the nominal. By 1997/98, the target zone exchange rate system became unsustainable, and the Central Bank adopted a managed floating system. The year 2000 brought the adoption of an implicit inflation targeting regime, and Central Bank shifted to a qualitative management of the monetary policy until 2004, when Slovak Republic joined the European Union and inflation targets were established so as to fulfill the Maastricht criterion to adopt euro as common currency. Beblavy (2002) and Nagy (2016).

Turkey
In the aftermath of a significant macroeconomic crisis and after a standby program with IMF, in 2001, Turkey adopted a floating regime and a reform of the Central Bank. In the beginning of 2002, CBRT announced the adoption of an implicit inflation targeting with targets of 35%, 20% and 12% for the following 3 years using short-term interest rate as main policy instrument. Base money and inflation targets were used together as anchors to affect expectations, and the rationale behind interest rate decisions was explained in press releases. In 2006, the CRBT adopted a full-fledged Inflation targeting framework. Over time, discretion regarding monetary decisions was reduced and the communication of the Central Bank, as well as the disinflation mechanisms was improved. After an initial success, Turkey had problems to reduce its inflation to a single digit and achieve its targets, which were changed in 2008. Serdengecti & Dervis (2001), Ersel & Özatay (2008), Culha et al. (2008) and Central Bank of Turkey (2019).

Uganda
Following the liberalizations of the financial sector in 1993, Uganda adopted a floating exchange rate regime. Since then the foreign exchange rate has remained market determined, though it intervenes in the foreign exchange market to help stabilize exchange rates in times of high volatility, which arise due to seasonal effects. In June 2011, Uganda moved from money growth targeting to inflation targeting as monetary policy framework. The Central Bank rate was adopted as the main instrument and is set in order to achieve an inflation target of 5% over the medium term. Anguyo (2017), Katusiime & Agbola (2018).

Ukraine
Until 2014, the stability of the exchange rate was the key anchor in Ukraine with intense FX interventions. In February 2014 when international reserves were depleted to critical levels, the NBU adopted a floating exchange rate. After floating the exchange rate, the NBU adopted an interest rate based monetary policy framework with targets for the NBU's net domestic assets and net international reserves, and instituted reforms to transition to inflation targeting. The NBU formally adopted an inflation-targeting framework in December 2016, setting a medium-term inflation objective of 5%. Khutorna & Bartosh (2015), Grui & Lepushynskyi (2016), IMF (2016, 2017 & 2019), National Bank of Ukraine (2015, 2016.a, 2016.b, 2016.c).

Appendix 3. VECM Estimation

Table 4 displays the resulting estimates of the cointegrating equations derived from a standard Vector Error Correction Model (VECM), based on the interaction between prices (*Prices*), the exchange rate (*FX*), regulated prices (*Reg*) and inflation expectations (*Exp*). The general specification applied is the usual:

$$\Delta y_t = \alpha\beta' y_{t-1} + \Gamma X_{t-1} + u_t$$

$$\text{Where } \Gamma = \left[\Gamma_1, \ldots, \Gamma_{p-1}\right], \text{ and } X_{t-1} = \begin{pmatrix} \Delta y_{t-1} \\ \vdots \\ \Delta y_{t-p+1} \end{pmatrix}$$

In this specification, y_t is the vector of four variables mentioned above, while Γ_i stands for the coefficients associated with the lagged differentiated variables (the matrix X_{t-1}). The term $\alpha\beta' y_{t-1}$ represents the so-called "Error Correction Term", which describes the long-run relationship among the cointegrated variables ($\beta' y_{t-1}$) and the speed of adjustment to it (α). More specifically, Table 4 shows the coefficients corresponding to the long-run cointegrating equation (β') for the different time periods and variables included.

The data used has weekly frequency. The sources of data are the following: *Prices* is derived from the Pricestats Index, *Reg* comes from the weekly series of the consulting firm Elypsis, *FX* is obtained from the BCRA's Com. A3500, and *Exp* from the BCRA's Market Expectations Survey (REM). For *Exp*, two different variables were alternatively included: 1) one-month-ahead expectations, and 2) 12-month-ahead expectations, and their levels were computed based on the actual level of the CPI in each moment (monthly expectations data was interpolated daily with an exponential trend, and weekly averages were computed). All the variables were included as the natural logarithm of their levels.

The stationarity of the series was examined by ADF tests. We verified that all of them are clearly I (1), except for the expectations, in which case there is some evidence pointing to the fact that they may be I (2). This problem could possibly arise from the small size of the sample under analysis, which makes it impossible to carry out a comprehensive study of the series and also diminishes the power of the tests. The cointegrating relationships were tested by standard Johansen Tests, while the absence of autocorrelation was tested by LM tests and the absence of Heteroskedasticity, by White's tests. The optimal lag structure for the short-run coefficients was selected by optimizing the Akaike Information Criterion (AIC), and afterwards excluding the non-significant lags according to Wald tests (the significance of each lag was tested jointly for all variables at each moment of time t).

The following table shows the other coefficients of the equation corresponding to *Prices* within the VECM, i.e., the adjustment coefficient (α) and the coefficients associated with the short-run effects estimated by the model:

Table A1. VECM Model for Inflation in Argentina. Short-Run Coefficients.

Dependent variable: Δ *Prices*

Period	**Aug2016 – Nov2017**			**Aug2016 – Mar2018**			**Aug2016 – Apr2019**		
Specification	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Observations	58	58	58	75	75	75	130	130	130
α	-0.0403***	-0.4777***	-0.5051***	-0.0161***	-0.3824***	-0.4134***	-0.0062***	-0.0504**	0.0048
Δ Prices (-1)	0.2753**	0.3601**	0.3635***	0.1443	0.3089***	0.2648***	0.2989***	0.062	0.0858
Δ Prices (-2)		0.1622	0.1677*	-0.0679	0.0511	0.0163	0.0981	-0.0107	0.0010
Δ Prices (-3)		0.1025	0.0999	-0.0141	0.0240	0.1225	-0.0712	-0.1776**	-0.1517**
Δ Prices (-4)				-0.1263		-0.1099			
Δ Prices (-5)				-0.1410*					
Δ FX (-1)	0.0190	0.0140	0.0146	0.0007	0.0151	0.0044	0.0486***	0.0204**	0.0251**
Δ FX (-2)		-0.0400**	-0.0377**	-0.0290**	-0.0226*	-0.0300**	0.0267**	0.0157	0.0265**
Δ FX (-3)		-0.0396**	-0.0431**	-0.0208*	-0.0275**	-0.0271**	0.0105	-0.0013	0.0075
Δ FX (-4)				-0.0259**		-0.0418***			
Δ FX (-5)				0.0072					
Δ Reg (-1)	-0.0041	0.0548*	0.0394*	-0.0193*	0.0113	-0.0079	0.0180	0.0112	0.0086
Δ Reg (-2)		0.0292	0.0294	-0.0340***	0.0050	-0.0116	-0.0070	-0.0099	-0.0116
Δ Reg (-3)		-0.0093	-0.0097	-0.0294**	0.0037	-0.0107	-0.0232*	-0.0272**	-0.0282**
Δ Reg (-4)				-0.0317***		-0.0236**			
Δ Reg (-5)				0.0013					
Δ Exp t+1 (-1)		0.3600			0.1313			0.2953*	
Δ Exp t+1 (-2)		-0.2632			-0.4654			0.3252	
Δ Exp t+1 (-3)		-0.9602			-0.7723			0.2251	
Δ Exp t+12 (-1)			-0.3144			-0.4356			0.2472
Δ Exp t+12 (-2)			0.4704			-0.0583			0.6798*
Δ Exp t+12 (-3)			-1.5260**			-0.9468			0.1136
Δ Exp t+12 (-4)						-0.1908			

*p-value<0.1, **p-value<0.05, ***p<0.01

Additionally, aiming to assess the joint significance of the lags associated with each variable as a group, block exogeneity Wald tests were performed for each variable in each specification (Table A2).

Table A2. Block Exogeneity Wald Tests. Joint Significance of Short-Run Coefficients.

Block Exogeneity Wald Tests (p-values)

Null Hypothesis: Joint non-significance

Period	**Aug2016 – Nov2017**			**Aug2016 – Mar2018**			**Aug2016 – Apr2019**		
Specification	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Observations	58	58	58	75	75	75	130	130	130
Δ FX	0.2369	**0.0132**	**0.0051**	**0.0330**	**0.0709**	**0.0014**	**0.00004**	0.1304	**0.0025**
Δ Reg	0.8656	0.3412	0.2380	**0.0071**	0.8794	0.2026	0.2762	0.2196	0.2294
Δ Exp t+1		0.3110			**0.0508**			**0.0008**	
Δ Exp t+12			**0.0306**			**0.0349**			**0.0004**
All	0.4905	**0.0957**	**0.0087**	**0.0082**	0.1120	**0.0054**	**0.00008**	**0.0001**	**0.00001**

Note: Dependent variable: Δ *Prices*

From the resulting estimates, it can be derived that inflation expectations appear to be significant (in block) to explain the short-run evolution of Prices in almost every specification (12-month-ahead expectations are significant in all the regressions).

It is worth noting that all the results reported are robust regarding changes in the order of variables for the Cholesky factorization. Neither the variance decompositions nor the values of the coefficients experience significant modifications.

Appendix 4. Cyclically and Inflation-Adjusted Primary Fiscal Balance

Two technical adjustments were made to the primary fiscal balance reported by the Ministry of Finance. The first was a relatively standard cyclical adjustment to take account of the effects on the fiscal result derived from GDP cycles. The second was a more country-specific adjustment for the case of Argentina to consider the impact that accelerations or decelerations in inflation produce on the portion of government spending devoted to pensions and social transfers. The results are shown in Figure 7.

For the cyclical adjustment, the methodology applied follows Escolano (2010). First, based on the seasonally adjusted series of real GDP (y) published by INDEC, the potential GDP ($\underline{y}$) was computed by a Hodrick-Prescott filter. The output gap (γ) is defined as:

$$\gamma = \frac{y - \underline{y}}{\underline{y}}.$$

After that, real series were converted to nominal series (Y and $\underline{Y}$, respectively) applying the corresponding GDP deflator. Fiscal revenues (R) and expenditures (G) were corrected by applying the following equations:

$$R^* = R(1+\gamma)^{-\mu},$$
$$G^* = G(1+\gamma)^{-\kappa}.$$

As mentioned in Escolano (2010), international evidence found that, in practice, the elasticity of revenues (μ) is typically slightly above, but close to, 1. Also, the elasticity of expenditure (κ) is estimated near zero for many countries. The latter is the case because, by definition, κ should reflect only the fiscal automatic stabilizers from the expenditure perspective (e.g., unemployment insurance), which are typically a small fraction of spending (as it happens in Argentina), and should not reflect discretionary actions, even if these are motivated by cyclical developments.

Hence, κ=0 was used. But to compute the response of government income to the GDP cycle more precisely, the elasticity of tax revenues was estimated separately from the elasticity of social and employment contributions. Using data published by AFIP for the different types of revenues and from INDEC for nominal GDP (from 2010 to 2018), a regression of this form was computed in order to estimate the different elasticities:

$$lnX = \mu\, lnY + constant$$

Here, X was alternatively the tax revenues or the social contributions. The resulting elasticities were 1 and 1.2, so those numbers were applied to correct the revenues according to potential GDP.

The inflation adjustment was based on a comparison between the evolution of the observed spending on pensions and indexed social assistance (which are indexed to past inflation and wages, according to National Laws N° 26417 and 27426), and the evolution that they would follow in the case they were contemporaneously indexed to current inflation. In years of accelerating inflation, real expenditure decreases because of this lagged indexation, while, in the case of disinflation, expenditure increases in real terms for the same reason.

Thus, in Figure 7, the fiscal balance was adjusted to take account of these effects, correcting the spending on pensions and social assistance, as if they followed current inflation perfectly (and not past inflation, as they actually did). This adjustment allows a visualization of the real dynamics of the fiscal budget without considering the impact of mere temporary changes in the level of inflation.

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