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Sturzenegger's paper details Argentina's transition to an orthodox, center-right government that employed experts like himself to stabilize the economy following 12 years of populist administrations. Four years later, and with inflation twice the level inherited from the populists, there is widespread disappointment with Macri's handling of the economy. What went wrong? According to Sturzenegger, the key mistake was the change in the inflation target in the middle of a "successful disinflation program." While this is an intriguing claim, the paper does not explain why Macri and other members of the government failed to appreciate his progress and fired him. It would be ironic if all we could conclude from this episode is that Macri's Achilles heel was, in the end, just old-style populist short-sightedness.

Of course, a simpler explanation is that Argentina's macroeconomic performance was poor, that there was no significant disinflation relative to where the Kirchner's left off, and that Sturzenegger's defense of his surprising program was unconvincing. In brief, his plan simultaneously embraced fiscal gradualism and a pure form of inflation targeting (IT) that promised to keep the exchange rate freely floating at all times. The plan covered three distinct periods: an initial "informal" phase when restrictions on capital flows would be lifted, relative prices would be adjusted and when inflation would actually go up; a second phase when there would be disinflation to "normal" levels, and a third and final stage when economic cycles would take place around a rate of inflation that was lower than the one inherited from the Kirchners. I write that the plan was surprising because absence of fiscal dominance is a well-known pre-condition for IT and because pure IT, with a floating exchange rate and no room for the use of other tools, such as income policies, is an extremely unusual approach to stabilization (phase two). And I write that Sturzenegger's defense was unconvincing because it made assumptions that went against conventional wisdom (for example, contrary to what most Argentines believe, his plan assumed that there was no pass through from the exchange rate to local prices). This simpler explanation would at least be consistent with the rest of the information presented in this paper.

It is worth starting out by noting how unexpected Sturzenegger's plan really was. The paper's Table 1 suggests that Argentina had a reasonable fiscal performance in the years leading to the 2015 presidential election, registering a primary fiscal deficit of less than 0.4% per year on average for 2011-4. Then, during Cristina Kirchner's last year it jumped to 3.8%. Sturzenegger and his team expected (in June 2015) this deficit to shrink to 2.5 during 2016, which appears reasonable given that

[1] I am grateful to Juan Cruz Lopez del Valle for exceptional research assistance, as well as for helpful comments that greatly improved the substance of this paper. I thank Andres Velasco for helpful conversations, as well as the comments of participants at the Fall 2019 conference of the Brookings Papers on Economic Activity. Remaining errors are my own. Hindsight is 20/20 so I focus on problems in the design of the program and avoid discussing policies that involved gambles over which reasonable people can disagree (such as exchange rate appreciation or the risks arising from piling on short term debt). Where I fail, my excuse is that the crisis is still unfolding so this whole exercise is somewhat premature.

one-year changes should not be costly to undo. Some may see the projected adjustment as insufficient, but this is not obvious since, as emphasized by Sturzenegger at the time, a case could be made that debt levels were not large. A more pertinent observation is that larger adjustments might have been feasible, particularly if we note that government spending under the Kirchners had dramatically increased relative to historic levels. But, overall, I don't see the proposed fiscal path as unsustainable, even if not particularly amenable to a pure IT regime. Indeed, the absence of fiscal dominance is a well-known precondition for effective IT and the paper explains that the expectation was to contain it "by anticipating a path for transfers from the Central Bank to the Government." The question of how successful such "containment" was likely to be in practice given Argentina's context is moot because a series of highly visible "gifts" (income tax reductions, increases in pensions, etc) soon turned fiscal gradualism into a robust fiscal *expansion* that took the 2016 primary deficit to 5.4% of GDP. It is reasonable to expect that Argentines, having lived through hyperinflations and several episodes of debt default, give considerable weight to the consistency of fiscal plans in deciding whether to believe the monetary authority. Thus, Sturzenegger's plan to use IT in the presence of fiscal "gradualism" seems initially risky and, by the end of 2016, extremely hard to justify.[2]

Sturzenegger states that fiscal "gradualism" was a constraint decided by the political authority.[3] Even if one accepts this, there are two ways to read it. One is that it reflects a "political rationale" that is exclusively attached to the fiscal deficit by some *deus ex machina*, and there is not much else to discuss. The second is more natural and simply assumes that Sturzenegger is referring to a broad set of political constraints facing a weak government, and he provides some hints in this direction when he explains that fiscal gradualism would help the government avoid the "stigma" of being right wing. But this opens up more questions. For example, were there any political gains when the first year's projected fiscal adjustment turned into a strong expansion? Was there a plan to spend this political capital in ways that supported the economic program? The paper doesn't explain. The rest of the program included many non-gradual policies, such as the decision to reduce the income tax or to allow a sharp increase in regulated prices (see below). Are we supposed to view these policies as left-wing? Or is it that political constraints are irrelevant at the time of making these decisions? Political constraints in Sturzenegger's paper are a bit like the Cheshire cat of Alice in Wonderland: now you see them, now you don't.

The decision to embrace a pure version of IT for the three periods ahead was even more surprising given the country's historical love affair with the dollar. Macroeconomists have extensively explored the pros and cons of exchange rate-based stabilization programs, and the class of problems they address differs drastically from the class of problems discussed in models of IT. To my knowledge,

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[2] The paper's epigraph is a quote from Dornbusch dismissing explanations that are specific to particular countries, which is strange given the number of specific explanations that are later included in the paper, starting with the volatility of money demand in Argentina. A more relevant Dornbusch passage criticizes stabilization plans with inconsistent fiscal policy explaining that "there are many thousands of years of failed experiments since Diocletean," and calls"poets" and "magicians" those that implement programs "without paying attention to the sine qua non of fiscal correction" (see, Dornbusch and Simonsen, 1987, emphasis in the original).

[3] Given the centrality of fiscal weakness in Sturzenegger's account of the crisis it is a pity that this claim is not well documented. I note that one insider's account of Macri's campaign directly contradicts it, portraying Sturzenegger's optimism as an exogenous enabler of the gradualist approach. He cites a meeting where Sturzenegger rejects the need for privatizations, cuts in pensions, cuts in social subsidies, and cuts in other items and that Marcos Peña, Macri's future Chief of Staff, was "pleasantly surprised" (see, pages 152-3 in Iglesias Illa, 2016).

work on IT does not offer answers to the central challenges addressed in the stabilization literature, including the fact that sometimes changes in the price of the dollar represent much more than just a change in a relative price, or the presence of considerable inflation inertia (through contracts or other formal and informal institutions). A key challenge in stabilization episodes is to keep the real interest rate low as inflation levels fall and the use of IT seems to introduce forces pulling in the opposite direction. Sturzenegger does not really answer the critics who argued in favor of income policies, exemplified by the temporary freeze in wages, pensions and prices during several successful stabilization episodes (see, for example, the discussion in Dornbusch and Simonsen, 1986, who emphasize the requirement of consistent fiscal plans). Besides labeling them "old politics", Sturzenegger simply concludes that they weren't needed because "inflation expectations fell very quickly". Since he doesn't discuss the role of the appreciation of the exchange rate in this part of the paper, it is hard to evaluate this particular claim.

Similarly, Sturzenegger's paper does not offer a clear response to critics who advocated including the dollar in the Central Bank's objective function.[4] Of course, there are limits to what the monetary authority can achieve with very few reserves at hand, but that is a different argument. Besides, there were several episodes of forex intervention that, without some framework/guideline, appeared haphazard and one wonders how they affected credibility. He does mention the inconvenience of fixing following the experience of the Convertibility plan and he has emphasized, both now and in the past, that there are no theoretical reasons to expect passthrough (see, Sturzenegger, 2016). He has also offered empirical exercises demonstrating low pass through. This is a very lucky coincidence, but given that there is lots of evidence suggesting otherwise (see Cavallo, et al., 2018, who find extremely high levels of pass through in Argentina) one wonders if his optimism is not playing a role here. At a minimum, I note that the assumptions that Sturzenegger employs are at the top range of the distribution of optimism regarding macroeconomic constraints. And that this opens up a broader question in political economy, namely the selection of optimists and pessimists into public office (and perhaps also into the different political parties).

Perhaps the paper's most extreme claim concerns the suitability of IT to engineer a disinflation process in Argentina in 2015. Two aspects stand out. The first is that the mechanism through which IT was supposed to work is never spelled out. There is no place in the paper where we get a proper explanation of the channels through which an increase in the interest rate could be expected to moderate prices, both during the initial disinflation phase or later on. The paper emphasizes "that the coordination of expectations played a fundamental role, allowing to generate convergence in the inflation dynamics without need to exert an excessively contractionary monetary policy." I note that in June 2015 Sturzenegger's team expected growth for the year to be 2% and 1% for 2016 as inflation was expected to come down. Growth by the end of 2015 was somewhat higher at 2.7%, but for 2016 it was *negative* 2.1%. Of course, rapid reductions in inflation without "Phillips curve costs" have long been known to be possible in models with rational expectations. Sargent (1981) defends their applicability to "moderate" inflations, but he explains how changes in regime have to be widely accepted and understood if they are to be effective. This seems to differ drastically from the context in which Sturzenegger's costless disinflation was supposed to happen, so there is a

[4] He states "In the case of Argentina while many observers suggested this point was key to coordinate expectations, the Central Bank argued the opposite, that in order to lower passthrough levels, it was important that the Central Bank stated that it did not care about the exchange rate at all", which is, perhaps, relevant during phase three but seems to have the priorities backwards during a stabilization phase.

question of the applicability of these ideas in a politically divided context.[5] And when negative growth numbers came in for 2016, the authorities presumably had evidence that it was common knowledge that any convergence on lower inflation expectations was the result of other, more traditional channels (real exchange rate appreciation, recession, etc) and we were more in Thatcher's world rather than Poincare's. This is not to claim that one cannot find particular slices of the sample period where there is growth, and Sturzenegger engages in this activity.[6] But the point here is that it became clear early on that the costless disinflation mechanism envisaged was not at play and that monetary policy was very contractive. In brief, it was soon clear that any disinflation observed was taking place through other, more costly channels, contrary to the government's claims.

The second controversial aspect is Argentina's very high initial rate of inflation. Well-known examples of countries with a successful IT framework achieved disinflation through other means and only then adopted a full-fledged IT framework. One good example is the UK, a country where the big disinflations were achieved through a combination of 'monetarism' during Thatcher and exchange rate targeting (ERM 1990-92, after inflation revived from mid the 1980s).[7] In other words, it wasn't that IT was used to bring down inflation, but rather that IT was a way of 'cementing in' the fall in inflation that was achieved through other more painful mechanisms. In contrast, Sturzenegger claims that Argentina's case was standard amongst countries that had implemented IT and the the paper's Figure 3, on the left hand side, presents countries with a similar rate of inflation that "implemented disinflation through a pure float." In fact, in this version of the paper he seems to have doubled down, claiming mixed regimes were only used for countries with *lower* inflation rates, explaining that Figure 3 reveals that "Countries with lower inflation rates used the exchange rate tool, but had slower stabilizations, probably because the gradual adjustment in the exchange rate conditioned the rate of disinflation."

I have three different reactions to this. First, when I study the data, I arrive at a different classification. The sources reveal that these countries were not purely floating in the period that preceds IT, so that the disinflation involved other policies.[8] Second, I repeat the exercise in Figure

[5] Sargent describes how the stabilization of the French franc of 1926 took place after it was "universally recognized the country was in trouble again and all political parties, except the socialists and communists, gathered behind Poincare. Five former premiers joined the government. There was a political truce." (page 7). In Sturzenegger's case, it is precisely political weakness that is behind the "only gradual" fiscal adjustment constraint. Note also the strength of political support for the populists (in the 2015 ballotage they had obtained 49% versus Macri's 51%) and the fact that Macri's administration rejected calls for broadening the government coalition.

[6] I stay with the data presented in his paper, both for simplicity and because they are likely to be the ones that are relevant for forming expectations. I note that seasonal adjustments or other partitions of the sample period, for example, yield slighty different magnitudes, without affecting the conclusions.

[7] De Gregorio (2019) makes the point that IT is not a useful disinflation strategy. There is the question of whether applying IT at high levels of inflation is just unhelpful or if it is itself a significant source of new problems. Argentina seems to be an example of the latter. There is a parallel with the use of IT when inflation is below its steady state level (see Pill, 2019 for a discussion).

[8] The differences do not seem to be a "denomination issue", as Sturzenegger claims. For example, the same source used by Sturenegger to classify Turkey as purely floating states "Incomes policy will continue to play an important role in the program" and "Any other intervention in the foreign exchange market will be strictly limited to the smoothing of short-term fluctuations." (Dervis and Serdengecti, 2001). For Indonesia, Juhro and Goeltom (2013) state that the "Bank Indonesia must not only look at the inflation target merely in terms of policy formulation but also consider a number of other factors, including financial sector stability and the dynamics of capital flows and the exchange rate." For Mexico, Ramos-Francia and Torres García (2005) state that "Another element of the strategy to restore credibility in monetary

3bis below but including countries only since they focused exclusively on IT (in the case of Mexico, for example, it is 5 years later, 2001). This picture tells a very different story: looking only at countries since they claim to rely only on IT, Argentina's inflation rate is 2.1 standard deviations higher than the mean of the other countries. In other words, Argentina's context was nothing like the context of other countries relying exclusively on IT and Sturzenegger's plan was anything but standard in terms of the initial rate of inflation. Third, it is possible to derive a measure of how aggressive was the initial policy stand by subtracting the target from the initial rate of inflation. This is presented in Figure A. It reveals that Argentina's policy stand was 3 standard deviations more aggressive than the average of the countries considered in Sturzenegger's original sample.[9] Figure B repeats these two exercises using an expanded sample and reaches a similar conclusion.

Returning to the mismatch between the speed of fiscal adjustment determined by the politicians (gradual) and the speed of adjustment along other margins decided (or tolearted) by Sturzenegger's team, I note that it is extreme in the case of regulated prices. There was a lot of anticipation about the approach that the monetary authority would take, as some of these prices were obviously lagging, and studies provided estimates warning of a substantial short-term impact on inflation (see, for example, Navajas, 2015). The paper lists four of these increases, ranging from 100% to 300%, in the first months of 2016. Economists had long argued that any direct impact on inflation in the short run could be moderated by the subsequent improvement in the fiscal accounts. But, unfortunately, as Sturzenegger has explained, "a large fraction of the increase went to recover the profitability of energy sector firms, with a more muted effect on fiscal accounts." As I have alluded above, it is hard to understand what political rationale guided the adjustments: it is far more likely that they would fuel the "stigma of being right wing" than a simple fiscal adjustment. It is true that the starting point was extremely low and, even after these large increases, may fall short of the level that would help finance investment. But the impact on inflation, Sturzenegger's main policy objective, was consistently dismissed as an "adjustment to relative prices."[10] While this is certainly a possibility, changes that are a) so large, b) that take place in so many products, c) that take place so close in time and d) that take place so clearly as a result of government action, might have a different impact on inflation, perhaps because there is a signaling dimension to them (as compared to, say, the change in the price of one type of light bulb).

One possibility, of course, is that Sturzenegger and his team were concerned about all this but accepted the government's aversion to have one person centralize power over economic decisions (a "super-minister"). This would then be another political constraint accepted by Sturzenegger that made his job much more difficult than necessary and it is a pity we do not get his opinions on the

policy consisted of a set of pre-announced rules through which Banco de México intervened in the foreign exchange market."

[9] This underestimates Sturzenegger's initial aggressiveness because it uses the 2017 target announced by Prat Gay (and later endorsed by the Central Bank) and the effective annual inflation rate for December 2016. This yields 22.3%. If we use Table 2 numbers, the projected inflation rate is 38.2% while that for 2017 is 12.5%, for an aggressiveness of 25.7%.

[10] Sturzenegger (2016) explains how "rigorous reasoning" grounded in "general equilibrium" is enough to dismiss critics of his program who expect an impact of the adjustments in regulated prices (or of the dollar) on inflation. Even if one disagrees with Sturzenegger's view, one has to accept that it is consistent with some of his other claims (e.g., that there was a "successful disinflation" led by expectations anchored by an increasingly credible central bank). Surprisingly, in successive versions of the current paper, he contradicts this claim by writing that the increases in the inflation rate during 2017 originate in the two increases in regulated prices that took place during that year and the increase in 2016 was due to the lifting of capital controls.

trade-offs involved, including if so much deference to political constraints might, in the end, have undermined the perception of independence of the monetary authority.

Even if this political constraint existed, it is still hard to square Sturzenegger's position on pass through, which appears to play a key role in his decision to embrace IT, with his early projections. Indeed, the team's June 2015 projections have inflation for 2016 *increasing* to 38.2% (from a 2015 inflation rate of 26% under Kirchner). The challenge is figuring out how they arrived to that number without any pass through. As noted above, the obvious channels involving pass through from the devaluation and hikes in energy prices are ruled out (Sturzenegger, 2016). It is difficult to justify the 38.2% through money growth because the plan projected a drastic reduction in monetized deficits (both because the primary deficit was expected to drop and because they were expecting to issue more debt). Perhaps Sturzenegger and his team were making an extreme assumption regarding the change in the Central Bank's credibility after a few months of their arrival (but not immediately after) and, in turn, extreme assumptions regarding the impact of the regime's credibility on pass through. Or perhaps the team simply used a model with standard assumption regarding pass through to make the 2016 projections and then they changed it when they had to think about the benefits of IT. If this is the case, and given that they actually hit that projection, most readers will wonder why the economic team did not continue using the standard model.

The least interesting part of the paper is the one concerned with blaming the demise of his program on political interference leading up to changing the target on December 28th, 2017. There is the description of forces conspiring against the central bank, all following different logics, and all of this unappreciated by the political authority that Sturzenegger himself describes as enlightened. Take the conspirators from the Treasury. The idea is that, because pensions were indexed on past inflation, a "different sort of fiscal dominance" led to demands for *slower* disinflation and the changing of the target. This sounds outlandish, perhaps because Sturzenegger himself writes that in the second half of 2017 "disinflation stalled" and that inflation expectations for "2018 had increased 2.3p.p. in the previous 14 months, which, together with the fact that the target for 2017 would be missed by a margin that widened towards the end of the year led to continued doubts about the success of the disinflation program."

There is also a short discussion of how unusual and unhelpful changing the targets might be, independently of how much results differ from the target.[11] Apparently, the Central Bank's leitmotiv was "to change the target is not to have one." Presumably, there is a point beyond which retaining targets that have been repeatedly missed lowers credibility, but this is not discussed. There is also little discussion of the decision to lower nominal rates soon after. Following the change in the targets, survey-based inflation expectations went up by approximately 5%, which lowered the real rate and this was followed by a reduction in the nominal rate that stabilized the market (allowing a large bond issue). This presumably reduced the pressure on the Central Bank, so it is difficult to

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[11] The upper bound for the inflation target for 2016 was announced at 25% on January 12th 2016 by Prat Gay, in charge of the Treasury. He also announced 17% for 2017, 12% for 2018 and 6.5% for 2019. At that time, the statistical office (INDEC) was not yet able to produce CPI data following years of intervention by the Kirchners. So these numbers were, presumably, tentative. The targets were soon ratified by the Central Bank on April 28th, 2016. Argentina's inflation exceeded the target in 2016 by 14.3 percentage points and by 8.7 in 2017. Sturzenegger calls the first year a "transition period," and claims to have tried only to "approximate" the target for 2016, having "never endorsed" it. He laments the coincidence between the targets for 2017-18-19 announced by the Treasury in January and those adopted by the Central Bank in April as it could have suggested more commitment to the 2016 target.

understand why it was soon followed by a second lowering of the nominal rate, one that triggered the increase in dollar denominated government bond spreads. Sturzenegger has written that there was no "reasonable justification for it" but stops short of explaining why he did it (he was, after all, still President of the Central Bank). In the current version he writes that it was the "natural response to a softening of the targets", without referring to the fact that the real rate had already dropped considerably. Perhaps Sturzenegger did explain in detail this to the political authorities and they were simply insatiable. In that case, we should revise our view of who are the populists in Argentina.

At one level, this is an easy paper to comment: Sturzenegger explains that it is standard to use IT for disinflation purposes and I see this as anything but standard. He also explains that he and his team were aware of the fact that absence of fiscal dominance is a precondition for effective IT but that they insisted on relying on IT, even in early 2017 when it was clear that the fiscal position had worsened. While the paper makes many valuable points, it doesn't explain if Sturzenegger was concerned over this and if yes, why he failed to transmit this constraint to the political authorities or why he insisted on applying such a pure version of IT, with a floating exchange rate and unchanging targets. The relationship between politicians and economists in government is always complicated. Most of the time, politicians explain the constraints within which economists must design their policies. But, occasionally, economists are able to convince politicians of the benefits of avoiding certain paths. What is striking in this paper, if one accepts its basic premise of an exogenously mandated gradual fiscal adjustment, is how little Sturzenegger was able to shape the environment in which he and his team had to work, and how optimistic he remained as he interpreted the rest of the constraints he faced.

Sturzenegger ends his paper with some lessons. They differ from my own, which are relatively straightforward.

1. The use of inflation targeting with a floating exchange rate to stabilize the economy is non-standard. The usual approach is to use IT as a way of 'cementing in' the fall in inflation achieved through other means. While this certainly doesn't mean it couldn't work as a matter of principle, it does suggest that the paper's portrayal of the use of IT as "mainstream" is incorrect.
2. A credible fiscal path can help anchor expectations during a stabilization program. It is likely a pre-condition, particularly in countries with a history of fiscal indiscipline as most participants monitor the fiscal accounts. Under a "pure" version of IT with a floating exchange rate, it is particularly important because the relatively easy and immediate substitution of local price expectations by the (exogenous) process determining foreign price expectations that is offered by a traditional peg has been foregone.
3. Income policies and exchange rate interventions are reasonable instruments, at least in principle, so one should not accept "political" or "ideological" constraints on their use.
4. It seems that it wasn't easy for Sturzenegger to derive credibility from appearing "tough" or over-ambitious. I wonder if one can derive credibility from appearing to be "reasonable." For example, after missing the target, I wonder about the effects of recognizing it publicly in an effort to rally support for the new targets. In that sense, changing targets that one has missed might be more credible than appearing stubborn.
5. It can be useful to calibrate each of the assumptions of a program on an "optimism scale". If most/all of them are on the optimistic side, relative to other assumptions that can be made,

then one should wonder about is robustness and probably re-think. At a minimum, if one cannot convince the members of one's own government of the virtues of the program, the margin for error is small, so a case can be made for leaning towards policies that are seen as reasonable by most, rather than as the best by a few.

6. While some key elements of the economic program put together by Sturzenegger and his team depart from those observed in prior successful stabilization attempts, my main criticism is that the political authorities do not seem to have been aware of the non-standard nature of the plan and the uncertainties involved. We do not have many experiments in macroeconomics so most of our knowledge comes from historical narratives and simplified models. Thus, it is good to let the clients (politicians and voters) know the large margin of errors within which macro-policymakers work. Pretense of knowledge is unlikely to help build credibility and may even fuel resistance to experts, even amongst no-populist voters in Argentina.

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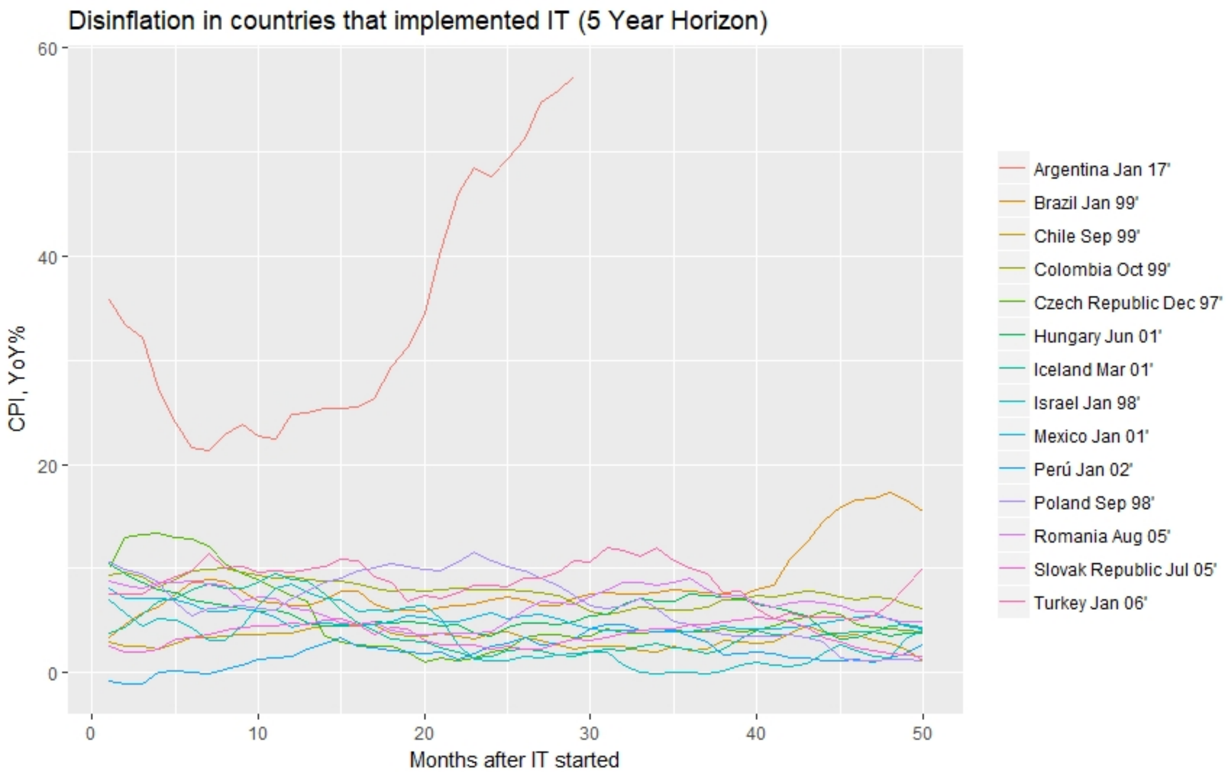
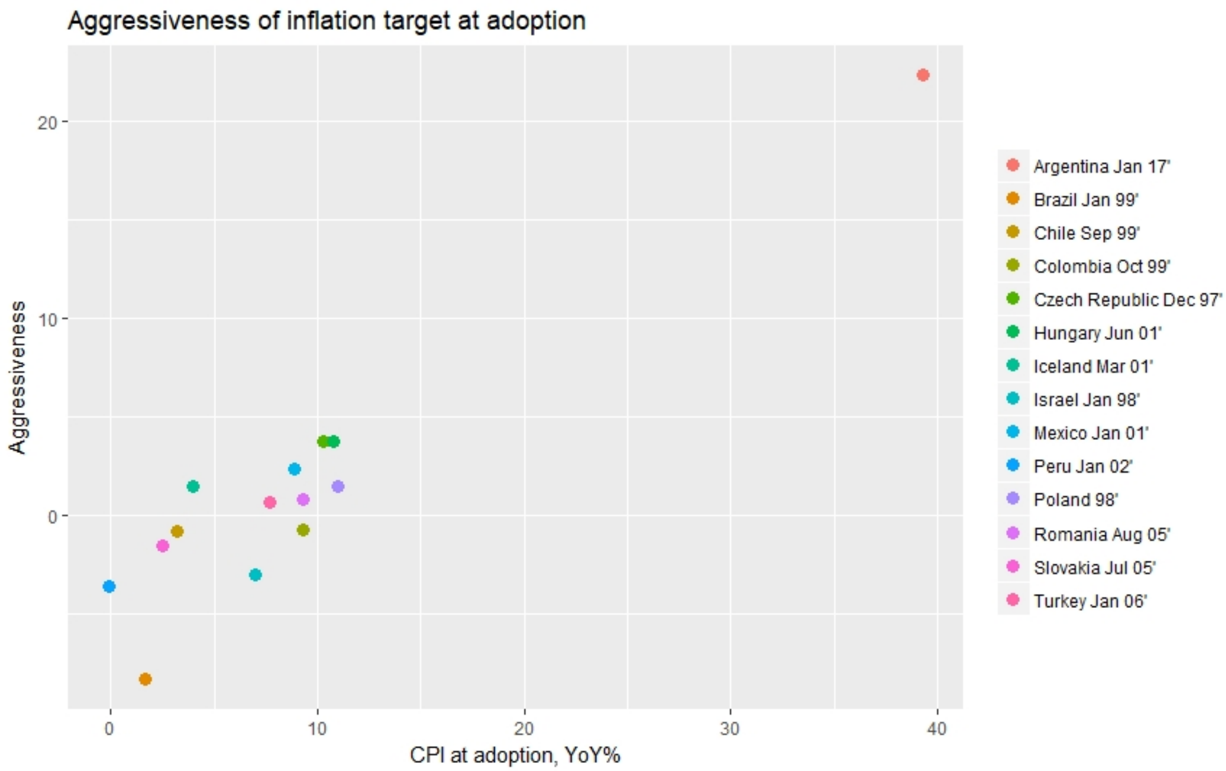
**Figure 3bis**




**Source:** IMF and national statistical institutes.
**Notes:** The chart plots inflation trajectories for the countries of "Macri's Macro" original Figure 3 after I judge them to be in an inflation targeting regime. Sturzenegger has them entering earlier. His original list of countires followed by the date that he judges them to be entering full IT (formally or informally), is Chile 1990, Indonesia 1999, Israel 1991, Turkey 2002, Hungary 1996, Iceland 1990, Mexico 1996, Colombia 1990, Czech Republic 1993, Brazil 1995, Romania 2001, Slovak Republic 1993, Poland 1992.

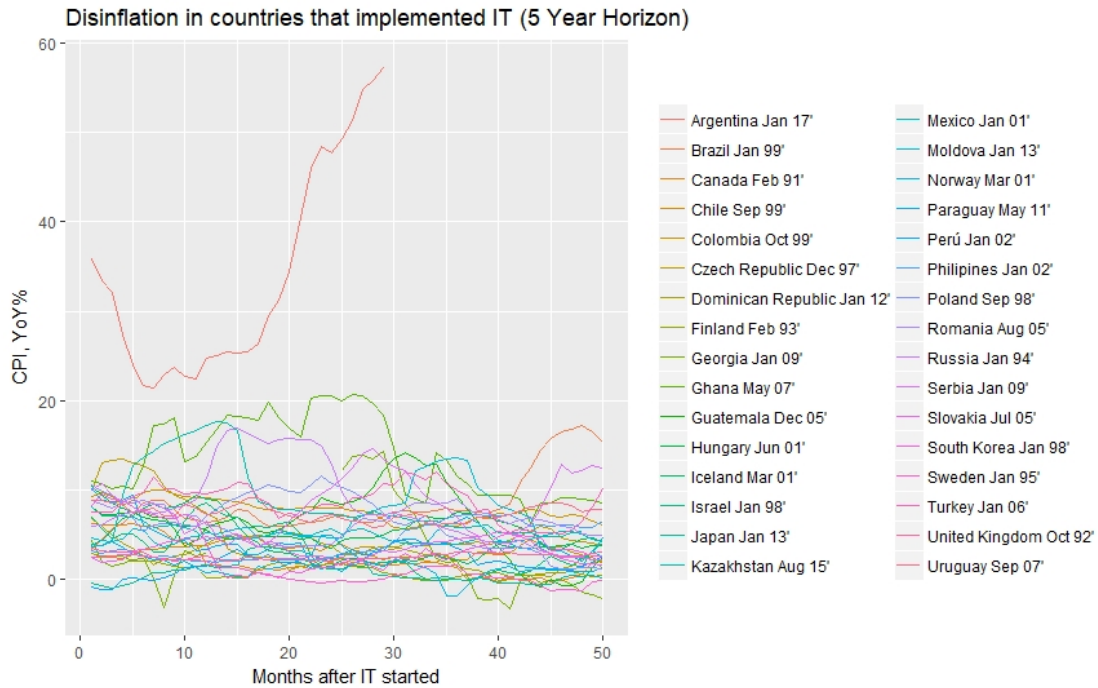
**Figure A**



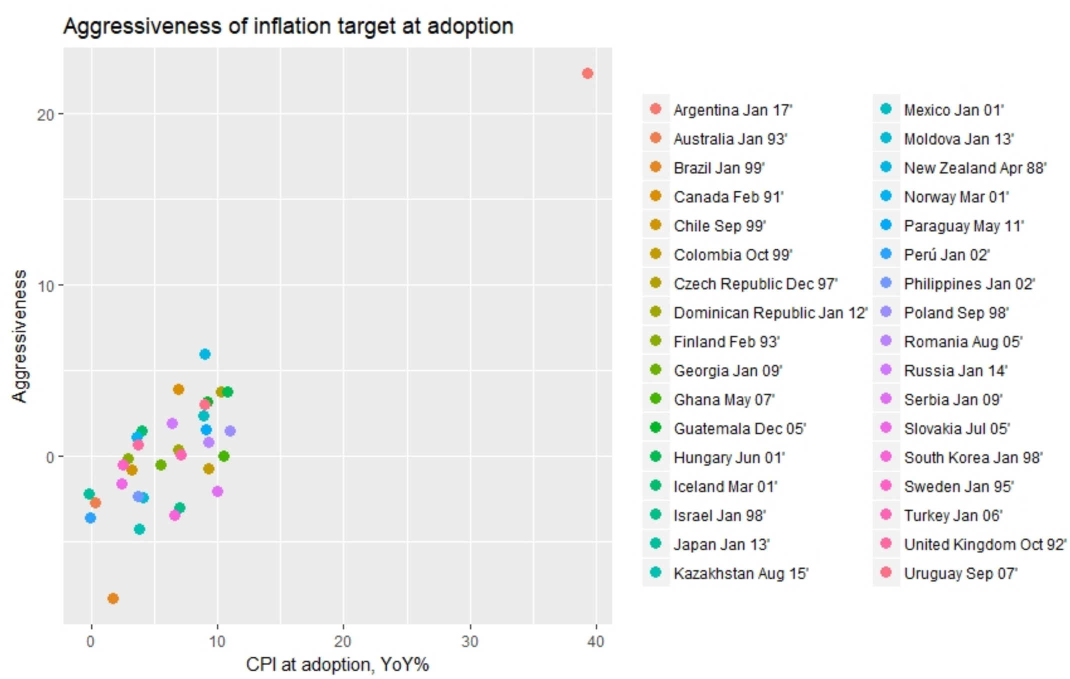

**Source:** IMFand national statistical institutes.

**Notes:** We call *aggressiveness* the difference between the YoY% CPI target at the adoption of the inflation targeting regime and YoY% CPI at the month before the adoption of the inflation targeting regime took place. If the target was a range, the upper band was taken into account.

**Expanded Sample**




**Source:** IMF and national statistical institutes.
**Notes:** The chart repeats the exercise in Figure 3bis with the maximum number of countries available.




**Source:** IMF and national statistical institutes.
**Notes:** We call *aggressiveness* the difference between the YoY% CPI target at the adoption of the inflation targeting regime and YoY% CPI at the month before the adoption of the *fully fledged* inflation targeting regime took place. If the target was a range, the upper band was taken into account.