

Fighting Past Economic Wars:

Online Appendix

# A Appendix

Table A.1: Variable Definitions and Sources

Variable	Definition and Measurement	Source(s)
Mainstream	Professional educational training of central bank presidents and finance ministers, coded from 0 to 1. If one or both of the two key ministers has an advanced graduate degree in mainstream economics, the value is 1. Otherwise, the variable is 0. The classification of mainstream economic institutions is corroborated by an in-country survey of local economists.	Index of Economic Advisors 2016
Mainstream IEA	Employs the original index value. If one of the two key ministers has an advanced graduate degree in economics, the value is 1. If both ministers have such training, the value is 2. Otherwise, the variable is 0.	Index of Economic Advisors 2016
Mainstream p	Coded as 1 if one/both advisors have either graduate economics training, or previous work experience with international financial institutions, global finance, or international business. Otherwise, the variable is 0.	Index of Economic Advisors 2016
Hyperinflation Legacy	I assign a value of 1 to a country when it has experienced hyperinflation and 0 otherwise. A hyperinflation crisis occurs when inflation is two standard deviations above the historical mean in the available time series covering 1961-2011. A country is classified as having a hyperinflation legacy after inflation returns to within one standard deviation of the mean.	Drazen and Easterly 2001; World Bank's World Development Indicators (WDI).
Hyperinflation (20yr. memory)	Hyperinflation legacy lasts 20 years after crisis.	Calculated from WDI.
Hyperinflation (yrs. since crisis)	Total years since the end of hyperinflation.	Calculated from WDI.
Unemployment Crisis Legacy	Assigns 1 for countries with a past unemployment shock, 0 otherwise. An unemployment crisis occurs when unemployment is two standard deviations above the historical mean, and a legacy is created after it returns to within one standard deviation of the mean.	Calculated from la Comision Economica para America Latina y El Caribe (CEPAL).
Fiscal Balance	Government revenues - primary expenditures Net of interest payments (+/- percent of GDP)	Calculated from CEPAL.
Global Growth	Global real GDP growth (annual percentage change).	Calculated from WDI.
Output Gap	Measure of the output gap, calculated as the log difference between real GDP and its country trend.	Country specific trend calculated using the Hodrick-Prescott filter on real GDP change.
Trade Openness	Total exports plus total imports (percentage of GDP).	Calculated from WDI.
Terms of Trade	Export value index / import value index (2000=100).	Calculated from WDI.
Inflation (log)	Change in log CPI (annual percentage change)	World Development Indicators (WDI)
Exchange Rate	4-point scale from fixed to floating currency regimes.	IMF exchange rate classification.
External Public Debt	Total public external debt as a percentage of GDP.	Global Development Finance Database.
Financial Depth	Broad money (M2) as a percentage of GDP.	World Bank's World Development Indicators (WDI).
Income	The log of GNI per capita, constant US(2000)	Calculated from WDI.
Unemployment (t-1)	Change in unemployment (percentage of labor force).	CEPAL.
Left Partisanship	1 if government classified as left-leaning, 0 otherwise.	World Bank's 2010 Database of Political Institutions.
IMF Program (Vreeland, 2003)	Coded 1 for country-years when there was a conditioned IMF agreement in force, 0 otherwise.	Vreeland, James Raymond (2003). <i>The IMF and Economic Development</i> . Cambridge University Press.
IMF Program (Dreher, 2006)	Coded 1 for country-years when there was IMF standby or EFF agreement for 5 months, 0 otherwise.	Dreher, Axel (2006). IMF and Economic Growth, <i>World Development</i> 34(5).
Age of Democracy	Total years of uninterrupted democracy	Calculated from Polity IV Index
Non-Democratic Regimes	Autocracies take a value of 1, 0 otherwise	Calculated from Polity IV Index
Coalition	Registers whether the cabinet includes members of parties other than the president's party.	Camerlo, M. and Perez-Linan, A. (2015). Minister Turnover, Critical Events, and Presidentialism.
Minority	Reflects whether president has legislative minority.	Camerlo and Perez-Linan (2015).
Regional Diffusion	Average regional share of mainstream advisors with U.S./European advanced graduate degrees.	Index of Economic Advisors 2016.
Regional Fiscal Balances (avg.)	Average regional primary fiscal balance.	Calculated from CEPAL.
Central Bank Independence	Measures autonomy of central banks as written into countries' laws and legal systems. Updates Cukierman, Webb, and Neyapti (1992) Index.	Polillo, S. and Guillen, M. (2005). Globalization Pressures and the State. <i>American Journal of Sociology</i> 110(6). See Section A.1 below for more details.

Table A.2: Summary Statistics (16 Latin American Countries)

	mean	sd	min	max
Mainstream	0.60	0.49	0	1
Fiscal Balance	0.01	3.61	-28	9
Global Growth	3.55	1.72	-2	7
Output Gap	0.95	1.89	-15	13
Trade Openness	42.86	23.96	9	146
Terms of Trade	1.18	0.50	0	7
Inflation (log)	2.83	1.25	-0	10
Exchange Rate	2.33	1.22	1	4
External Public Debt	40.88	60.99	0	830
Financial Depth	32.32	16.35	7	111
Income	7.77	0.64	6	9
Unemployment	8.87	3.81	2	21
Left Partisanship	0.25	0.43	0	1
IMF Program	0.34	0.47	0	1
Age of Democracy	12.23	18.45	0	92
Non-Democratic Regime	0.33	0.47	0	1
Regional Diffusion	0.52	0.27	0	1
Regional Fisc. Bal. (avg)	-0.25	1.35	-4	2
Central Bank Independence	0.50	0.19	0	1

Average inflation and income are converted to their natural logarithm.

Table A.3: Additional Robustness Checks: Variable Definitions and Sources

Variable	Definition and Measurement	Source(s)
Hyperinflation Legacy	I assign a value of 1 to a country when it has experienced hyperinflation and 0 otherwise. A hyperinflation crisis occurs when inflation is two standard deviations above the historical mean in the available time series covering 1961-2011. A country is classified as having a hyperinflation legacy after inflation returns to within one standard deviation of the mean.	Drazen and Easterly 2001; World Bank's World Development Indicators (WDI). <b>From Table A.1; employed in main regressions.</b>
Unemployment Crisis Legacy	I assign a value of 1 to a country that has had a past unemployment shock and 0 otherwise. An unemployment crisis occurs when unemployment is two standard deviations above the historical mean, and a legacy is created after it returns to within one standard deviation of the mean.	Calculated from la Comision Economica para America Latina y El Caribe (CEPAL). <b>From Table A.1; employed in main regressions.</b>
Inflation Crisis Legacy	I assign a value of 1 to a country when it has had an inflation crisis and 0 otherwise. This coding includes both hyperinflation episodes (2 standard deviations above the mean) and 'very' high inflation episodes (1.5 standard deviations above the mean, equivalent to 100 percent in the sample). A country is classified as having an inflation crisis legacy after inflation returns to within one standard deviation of the mean.	Drazen and Easterly 2001; Sachs and Larrain 1993 World Bank's World Development Indicators (WDI). <b>See Table A.7 for further details.</b>
Highest Past Inflation	An alternative inflation crisis variable measuring a country's highest level of past inflation over time.	World Bank's World Development Indicators (WDI).
Inflation (t-30)	Change in log CPI (annual percentage change) lagged by 30 years	World Development Indicators (WDI)
Inflation (t-20)	Change in log CPI (annual percentage change) lagged by 20 years	World Development Indicators (WDI)
Unemployment (t-5)	Change in unemployment (percentage of labor force) lagged by 5 years.	CEPAL.

Table A.4: The Effect of Past Inflation Crises on Policy Orientation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit							
Infl. Crisis Legacy	0.459*** (0.118)	0.467*** (0.134)						
Highest Past Infl.			0.175*** (0.046)	0.214*** (0.052)				
Inflation (t-20)					0.177** (0.081)	0.312*** (0.100)		
Inflation (t-30)							0.873*** (0.211)	0.606*** (0.217)
Unemp. (t-5)								-0.078* (0.042)
Global Growth	0.116** (0.050)	0.086 (0.055)	0.116** (0.050)	0.070 (0.056)	0.110** (0.051)	0.061 (0.057)	0.099 (0.084)	0.074 (0.089)
Output Gap	-0.073*** (0.028)	-0.084** (0.034)	-0.067** (0.028)	-0.080** (0.034)	-0.079*** (0.030)	-0.108*** (0.035)	-0.292*** (0.060)	-0.260*** (0.059)
Trade Openness	0.019*** (0.005)	0.021*** (0.006)	0.021*** (0.005)	0.024*** (0.006)	0.019*** (0.005)	0.023*** (0.006)	0.019*** (0.007)	0.013* (0.008)
Terms of Trade	-0.366** (0.158)	-0.167 (0.160)	-0.366** (0.149)	-0.150 (0.155)	-0.254* (0.148)	-0.037 (0.153)	-0.060 (0.196)	0.062 (0.200)
Inflation (log)	-0.052 (0.074)	-0.092 (0.083)	-0.217*** (0.066)	-0.291*** (0.076)	-0.241*** (0.078)	-0.345*** (0.095)	-0.580*** (0.208)	-0.508** (0.216)
Exchange Rate	0.168** (0.070)	0.155* (0.080)	0.139** (0.066)	0.155** (0.077)	0.173*** (0.066)	0.181** (0.078)	0.241** (0.112)	0.357*** (0.128)
Ext. Public Debt	-0.017*** (0.003)	-0.023*** (0.004)	-0.015*** (0.003)	-0.024*** (0.004)	-0.013*** (0.003)	-0.021*** (0.004)	-0.028*** (0.005)	-0.026*** (0.006)
Financial Depth	-0.024*** (0.006)	-0.025*** (0.006)	-0.019*** (0.005)	-0.024*** (0.006)	-0.021*** (0.006)	-0.028*** (0.007)	-0.035*** (0.010)	-0.035*** (0.011)
Income	-0.105 (0.136)	-0.185 (0.155)	0.060 (0.133)	-0.047 (0.154)	-0.058 (0.131)	-0.167 (0.155)	-0.461** (0.234)	-0.432 (0.263)
Year	-0.015 (0.011)	-0.024* (0.013)	-0.021* (0.011)	-0.039*** (0.014)	-0.020 (0.013)	-0.053*** (0.017)	-0.107*** (0.036)	-0.068* (0.040)
Left Partisanship		-0.242 (0.187)		-0.248 (0.187)		-0.245 (0.192)	0.724** (0.366)	0.560 (0.382)
IMF Program		-0.105 (0.176)		-0.152 (0.176)		-0.296 (0.186)	-0.461 (0.281)	-0.294 (0.312)
Age of Democracy		0.066 (0.188)		0.113 (0.188)		0.017 (0.195)	-0.414 (0.280)	-0.169 (0.301)
Observations	451	376	465	381	432	363	259	249

Standard errors in parentheses

Probit = Probit model for 16 Latin American countries. DV = Mainstream economists measured by graduate education training. In models 5-6, inflation crisis legacy is an ordinal variable accounting for hyperinflation and high inflation crises.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## A.1 Data and Methods

### A.1.1 Independent and Dependent Variables

**Professional Orientation of Economic Ministers** Based on the assumption that an individual's professional training can serve as a useful proxy for their policy orientation (Chwieroth, 2007; Nelson, 2014a; Nelson, 2014b; and Alexiadou, 2015), I constructed a new and original dataset, the *Index of Economic Advisors*, that characterizes key economic advisors' education credentials (i.e. whether or not they have a 'mainstream' advanced degree in economics) and professional background (i.e. whether or not they hail from global finance or business, or an international financial institution that emphasizes 'mainstream' economics) in 16 Latin American countries since 1960.

From this index, I created both dichotomous (*Mainstream*) and ordinal variables (*Mainstream\_IEA*) to employ in the probit and ordered probit regressions, respectively. In additional robustness checks, I also use an expanded definition of mainstream advisor (*Mainstream\_p*) that include professional background. If a minister either has 'mainstream' graduate economics training, or previous work experience with international financial institutions, global finance, or international business (which are likely to share a mainstream policy orientation), the variable is coded as 1, and 0 otherwise. Please see Table A.1 for further details.

Finally, a few caveats. The dataset also codes advanced graduate degrees in business or finance as having a mainstream ideological orientation, if they are closely associated with a mainstream economics department at their university. Additionally, the finance minister and central bank governor are considered to be the most high-ranking economic policy officials, but occasionally the index is adjusted to account for countries such as Venezuela, where the planning minister takes a more central policymaking role (see Table A.5).

**Inflation Crisis Legacy** In additional robustness tests, I also employ a more encompassing measure of inflation crises (*Inflation crisis legacy*) to account for the region's variation in inflation crisis experiences that include both hyperinflation and 'very' high inflation crises (see Table A.7). Additionally, I develop a binary measure of crisis memory for unemployment shocks to observe if the appointment of heterodox advisors is more likely at the other end of the business cycle. Next, I create an interaction term for countries that have experienced both shocks to see if inflation

crises are historically more salient, as expected. In further robustness checks, I also use a series of alternative crisis measures, including *Highest past inflation*, *Lagged inflation* (t-20 and t-30 yrs), and *Lagged unemployment* (t-5), to allay concerns about the *Hyperinflation legacy* variable's potential rigidity (see Table A.3).

### A.1.2 Control Variables

In the statistical tests, I control for a variety of global, domestic, and institutional factors that may affect ministerial appointments and national fiscal balances, including two of the main alternative explanations for changes in economic governance: regional diffusion (*Regional diffusion*) and left partisanship (*Left partisanship*). To provide a proxy for the influence of policy diffusion, I create a binary variable to account for the regional share of mainstream economic advisors, based on the expectation that politicians are sensitive to their neighbors' ministerial appointments. Notably, compared to the above measure of mainstream economists (*Mainstream*), which includes classifications of policy orientation for both Latin American and foreign universities, the regional diffusion measure is only based on U.S. and European universities. This measurement, however, is in line with the diffusion scholarship's expectation that policy orientation reflects academic training at foreign universities linked to an Americanized economics profession.

I also test for whether or not partisanship explains economic policy choices. The World Bank's Database of Political Institutions offers a measure that should help account for partisan behavior in Latin America's complex political spectrum, where political parties have often shifted their ideological priorities over time. It codes party orientation specifically with respect to economic policy along a right-left spectrum from 0 to 3.<sup>1</sup> Employing this coding, I designed the binary variable, *LeftPartisanship<sub>it</sub>*, to test for whether left-oriented politicians (compared to centrist and right-wing politicians) are more likely to appoint technocratic ministers to signal their ability to manage the economy.<sup>2</sup>

---

<sup>1</sup>Parties defined as conservative, Christian democratic, or right-wing take on a value of 1. Parties defined as centrist take on a value of 2. Parties defined as communist, socialist, social democratic, or leftist take on a value of 3. Otherwise, the variable is 0.

<sup>2</sup>For robustness, I replaced the initial left partisanship variable with a new binary variable constructed from Coppedge's (1997) ideological scores, incorporating updates by Stokes (2009).

$$LeftPartisanship_{it} = \begin{cases} 1 & \text{if government is classified as leftist orientation} \\ 0 & \text{otherwise} \end{cases}$$

To account for other alternative factors that may explain ministerial appointments and fiscal governance, I employ a series of control variables. However, I use a slightly different set of controls in the economic minister and fiscal policy regressions, as I expect different factors to be important for different outcomes. I also include two different lagged dependent variables to control for the possibility of highly persistent ideological minister types and the potential for slow implementation of fiscal policy respectively. Finally, I include a time trend (*Year*) to account for the possibility that ministers have become more economically liberal with deepening globalization over time.

When employing mainstream economic advisors as the dependent variable, there are several control variables that are unique to these regressions. I control for the type of exchange rate regime,<sup>3</sup> based on the assumption that governments are more likely to appoint mainstream economists under flexible exchange rate regimes (*Exchange Rate*) to help anchor inflation expectations and enhance government credibility with international investors. Assuming that larger, more complex financial sectors lead to greater demand for financial stability, and hence, inflation-checking mainstream ministers, I also include a proxy for the size of the financial sector (*Financial depth*) or outstanding banking sector liabilities: M2 as a percentage of GDP. Recall that no lagged independent variables are used in these mainstream advisor regressions based on the assumption that ministerial appointments reflect contemporaneous economic and political factors.

There are also many control variables that are common to both regression models. First, I control for the global growth (*Global growth*), given that our sample includes many small open economies. Because many Latin American countries are dependent on primary commodity exports, I also include a country's terms of trade position (*Terms of trade*) in our regressions to account for international commodity volatility. I also control for economic openness, employing a measure of imports plus exports as a percentage of GDP (*Trade*). In general, I expect global fluctuations in growth, trade, and commodities to show relative fast dynamics, influencing ministerial appointments and domestic budget balances primarily in the current year.

To account for the possibility that the same structural factors that led to the initial crisis are still

---

<sup>3</sup>For a review of the politics of exchange rate literature, see Steinberg and Shih 2012 and McDowell and Liao 2014.

present, I also control for lingering post-crisis inflation in all of the regression models. I anticipate that higher inflation (*Inflation*) should yield a greater proportion of mainstream economists in presidential cabinets and more fiscal restraint. I also include economic controls for the lagged value of unemployment (*Unemployment*), with the expectation that it should be associated with a relatively higher share of heterodox economic advisors. In addition, I include a measure of overall external indebtedness (*External public debt*) to account for debt-related changes in ministerial appointments or fiscal policy stances.

Some other control variables are exclusive to the fiscal policy regressions. When employing fiscal balances as the dependent variable, there are several standard control variables that are unique to such regressions. They are the output gap (*Output gap*) – lagged by one year – to control for a country’s position in its economic cycle. By comparison, inflation is not lagged to account for a potential Olivera-Tanzi effect, where high inflation contemporaneously erodes tax receipts, and hence, budgetary accounts in developing countries.

Finally, to account for institutional factors that may affect ministerial appointments and budget balances, I add several controls to the regression model, including measures of IMF participation (*IMF*),<sup>4</sup> the age of the democratic regime (*Age of Democracy*), non-democratic regime type (*Non-Democratic Regime*), coalitional cabinets (*Coalition*),<sup>5</sup> presidential legislative minorities (*Minority*),<sup>6</sup> and legal central bank autonomy (*Central bank independence*),<sup>7</sup> For example, Bodea and Higashijima (2016) find that legal central bank independence deters fiscal deficits in democracies. However, the central bank autonomy measure is not included in the results because publicly available measures assign numerical values to countries that do not vary much over time (i.e. many of them cover decades), making it indistinguishable from the country dummies already incorporated in the model. For further details, sources, and descriptive statistics, see Table A.1-Table A.3 above.

### A.1.3 Methodology

The empirical analysis proceeds in two stages. Employing a two-stage Heckman correction model, I first test for the effect of economic crises on the professional orientation of economic

---

<sup>4</sup> The IMF dummy is coded 1 for the country-years when there was a conditioned IMF agreement in force, 0 otherwise. I use two different measures of IMF participation from Vreeland (2003) and Dreher (2006).

<sup>5</sup> Registers whether the cabinet includes members of parties other than the president’s own party (see Table A.1).

<sup>6</sup> Reflects whether or not the president has a legislative minority (see Table A.1).

<sup>7</sup> Polillo and Guillén (2005) update of the Cukierman, Webb, and Neyapti (1992) index.

ministers (as measured by an advanced graduate degree in mainstream economics). Using the same cross-sectional data set, I then employ the procedures Heckman advocates to calculate the inverse Mills ratio from the selection equation. I then apply the inverse-Mills ratio as a switching value in an endogenous treatment selection model to control for non-random selection (Heckman 1988; Przeworski and Vreeland 2000; Vreeland 2003; Chwioroth 2007) of economic advisors in the second stage of the model exploring fiscal policy decisions.

Given the expected country-specific differences in the time-series cross-sectional (TSCS) data, I present the findings of the second stage of the model with fixed effects estimators to address unit heterogeneity (Green et. al., 2001). A potential problem with the fixed effects specification is that the lagged dependent variable will lead to biased parameter estimates (Nickell, 1981). The problem is thought to be especially severe in micro-panel data where the T is quite small. In political science datasets like this one with a T of 20 or more, scholars have found that the potential bias from using a fixed effects estimator in these regressions is likely to be quite small (Keele and Kelly, 2006; Wilson and Butler, 2007; and Beck and Katz, 2011).

I therefore proceed with the analysis employing the fixed effects estimator, but conduct a series of robustness checks using the GMM estimator introduced by Arellano and Bond (Wawro, 2002; Roodman, 2009). This estimation strategy uses first differences to transform the regressors and remove the fixed-country effect. It then instruments the differenced variables that are not strictly exogenous with all their available lags in levels in order to eliminate the potential source of bias. Finally, the use of first-differences also corrects for autocorrelation by instrumenting the first-differenced lagged dependent variable with its past levels. See Tables A.1-A.3 for data sources and descriptive statistics.

#### **A.1.4 Model Specification**

To test the first hypothesis ( $H_1$ ), I use a dynamic panel model specification (see equation 1a on page 13 of the main text) that employs a lagged dependent variable to both account for the possibility of highly persistent ideological minister types and to help eliminate residual serial correlation. In order to test the second hypothesis ( $H_2$ ), I also employ a dynamic panel model specification (equation 2), which has lags of both the dependent and independent variables. I chose a lagged dependent variable to both account for the influence of past economic performance on

present economic conditions, and to help eliminate residual serial correlation. From a theoretical macroeconomic perspective, the lagged dependent variable is a fundamental part of the specification because it captures potentially long fiscal policy lags. While fiscal policy may rapidly affect the economy through automatic stabilizers (i.e government spending increases because of recession-driven government benefits like unemployment insurance), its effect can also sometimes take years because of its dependence on a political process (Mankiw, 2012).

Lagged independent variables were also used, based on the assumption that many of the economic variables included in the model do not have an instantaneous effect on the outcome variable, and may be distributed across more than one time period (Keele and Kelly, 2006; DeBoef and Keele, 2008). However, I did include contemporaneous values for those international economic variables, including global growth and terms of trade, that are primarily expected to affect fiscal and economic outcomes within the current year because of a high degree of global interdependence (see section A.1.2).

## A.2 Empirical Results: Additional Robustness Checks

### A.2.1 The Effect of Past Inflation Crises on Policy Orientation

I conducted some additional robustness checks in order to test for the extent to which crisis acuity might influence ministerial appointments. First, I expand the scope of the measure of *Hyperinflation legacy* (inflation that is more than two standard deviations above the mean) to include more modest crises (1.5 standard deviations above the mean, equivalent to 100 percent in the data sample). When conducting such tests, I use a more encompassing measure dubbed *inflation crisis legacy*<sup>8</sup> that includes both hyperinflation countries, and the more moderate inflation crisis countries called ‘very’ high inflation countries<sup>9</sup> (see Table A.7). Notably, the coefficient for *inflation crisis legacy* does not change its direction or precision, but it is smaller in magnitude (see models 1 and 2 in Table A.4). These results suggests that countries that have suffered from less extreme inflation crises also possess a historical memory that affects ministerial appointments, albeit less salient compared to the hyperinflation country cases. Given that these countries incur price hikes

---

<sup>8</sup>See Table A.3.

<sup>9</sup>Sachs and Larrain (1993) consider 100 percent inflation to mark a crisis, and when a country crosses this threshold they denote it ‘very’ high inflation.

that are closer to their historical norm (1 standard deviation from their mean), it's not surprising that the crisis lessons are less salient. In most cases, the economic system remained in tact in contrast to the hyperinflation cases where countries experienced runaway inflation whose annual increases reached thousands of percentage points.

I also employ a few more robustness checks aimed at alleviating potential concerns about the rigidity of the *Hyperinflation legacy* variable to further examine the effect of inflation crises on ministerial appointments. In models 3 and 4 in Table A.4, I employ a country's *Highest past inflation*,<sup>10</sup> finding that the crisis coefficient remains positive and statistically significant. In other words, for every percentage point of highest logarithmic inflation that a country has experienced in the past, a mainstream ministerial appointment is about 7 percent more likely. For example, a country with peak inflation of 100 percent (equivalent to about 4.6 percentage points of logarithmic inflation) is approximately 32 percent more likely to appoint advisors with advanced education credentials in mainstream economics. Notably, if a country's inflation peak reaches 1,000 percent (equivalent to about 6.9 percentage points of logarithmic inflation), the likelihood of a mainstream appointment increases to 48 percent.

Additionally, I also employ lags of both inflation and unemployment to gauge whether longer-term lags between economic memory and ministerial choices are common.<sup>11</sup> I find that such memory lags are much longer for inflation than unemployment, which is in line with the theoretical prior that inflation crises are more salient than unemployment crises. In models 5-7 in Table A.4, the coefficients for lagged inflation (t-20, t-30) are positive and statistically significant. Comparatively, only the coefficients for shorter unemployment lags, such as unemployment (t-5), are negative and statistically significant (see model 8 in Table A.4). These findings suggest that memories from unemployment crises are less enduring than inflation crises. Moreover, they also uphold the earlier findings that unemployment and inflation crises have divergent effects on ministerial appointments, with higher unemployment five years ago leading to a lower likelihood of appointing a mainstream economic advisor today.

---

<sup>10</sup>See Table A.3.

<sup>11</sup>Ibid.

### **A.2.2 The Effect of Past Inflation Crises on Fiscal Policy Choices**

I repeated the statistical tests for the fiscal policy regressions (see empirical results in the main text), using the Arellano-Bond GMM first-difference estimator to help mitigate concerns about both (Nickell) bias resulting from the lagged dependent variable. Overall, the GMM results continue to support the governing hypothesis that inflation crises affect fiscal governance both directly, and indirectly through ministerial appointments (see models 2, 4, and 6 in Table 2). The coefficients for inflation crisis and mainstream economists (independent of their selection process) remain statistically significant and positively correlated with government budget balances (see Table 2). Inflation crisis legacies continue to yield more austerity relative to non-crisis countries (albeit with less magnitude compared to the fixed effects estimator), while mainstream advisors still exhibit greater budget discipline than their heterodox counterparts. Finally, the Arellano-Bond test for the GMM-estimators presents no significant evidence of serial correlation in the first-differenced errors at the second order ( $p = .372$ ). The Sargan test also suggests that the model has the correct specification and that the overidentifying restrictions are valid ( $p = .444$ ).

### **A.3 Coding Rules for the Index of Economic Advisors**

In order to test whether the region's economic shocks lead to changes in the policy orientation of economic advisers, I collected data regarding the academic and professional background of economic policymakers in Latin America. In this cross-sectional, time series data, there are 1896 observations. Each observation compiles information regarding the economic and financial government officials for 16 countries in Latin America throughout the 1960-2011 period. Coded according to academic training and professional background, the observations can be used to determine whether economic crises led to ideational changes (mainstream vs. heterodox) in the professional composition of presidential cabinets, and if so, how such ministerial appointments governed fiscally.

The data collected comes from a variety of sources, including, but not limited to, official ministries and central bank websites, news articles, *International Year Book* and *Statesmen's Who's Who* (1965-2009) attendees list of annual IDB and IMF/WB meetings, official government documents ("gacetas oficiales"), and official CVs. Secondary information was also collected from local newspapers and publications.

Originally, data was collected for every single minister and central bank president available, regardless of whether a given year had more than one finance minister and/or central bank governor. For the final dataset, however, only one finance minister and one central bank president were included, based on which individual held the position for the most days in that given year.<sup>12</sup>

**Variables included in database:**

*COUNTRY*: 16 countries in the region were included in the dataset. These are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela.

*ECON MIN*: Name of the minister of finance who held the position for the most amount of days in the given year.<sup>13</sup>

*CBGOV*: Name of the central bank governor who held the position for the most amount of days in the given year.

*EDUC*: Highest educational degree achieved by minister or central bank governor. This information includes not only the degree type (BA, MA, MBA, PhD and others), but also the subject area of the degree, academic institution, and location.

*EDUC CODE*: The extent of professional academic training in economics is expected to have an impact on an individual's approach to fiscal policy. Carter and Irons (1991), Babb (2001), Montecinos and Markoff (2010) have emphasized that the formal training of economists leads them to share a similar set of beliefs, often different from those of non-economists. This paper shares this perspective, but argues that technocrats' approach to policymaking (i.e. whether they prioritize austerity or stimulus) is conditional on the nature of past crises (inflation vs. deflation shock). However, unlike the earlier literature, it does not solely filter according to whether technocrats were trained at a Western institution, given that many Latin American universities, such as Pontificia Universidad Católica de Chile, Universidad Torcuato Di Tella in Argentina, or the Fundação Getulio

---

<sup>12</sup>The complete dataset is available upon request.

<sup>13</sup>While most countries have only one ministry assigned to fiscal policy, some have a variety of ministries involved in economic and financial planning, making it difficult to discern whether the government institution of interest should be the Ministry of Finance, the Ministry of Economy, or the Ministry of Economic Development, among others. For more information regarding the selection of ministry, including a table listing each Ministry per country, please refer to the end of this document.

Additionally, on some occasions (e.g. Argentina 2001/2002) there were more than 1 ministers of finance in a given year. The higher turnover often occurred at instances of financial crises, and consequently, the individual who held the seat for the longest amount of time during any given year was selected.

Vargas in Brazil, would embody a similar approach to economics as developed country institutions. The variable is coded as 0 if neither the finance minister nor the central bank governor have advanced training in economics/finance; and 1 if either or both the finance minister and central bank governor have advanced training in finance and/or economics.<sup>14</sup>

**PREVIOUS POST:** The individual's previous career position prior to being appointed minister of finance or central bank governor. On occasion, the most recent post prior to the appointment was not available, in which case an earlier post is used as proxy. The information includes prior position and institution.

**PREVIOUS POST CODE:** While some individuals may not have had formal academic training in economics, business, or finance, experience in the private sector – or at international financial institutions – are often considered to provide economic officials with a comparable level of training. For robustness, we expanded the definition of a technocrat to include previous career experience. We assume that officials hailing from the private sector or international financial institutions were appointed to their posts in light of their applied experience in business, finance, or global markets. For example, William Handal, the former minister of finance of El Salvador, had worked in finance, planning, and control for TACA Airlines for 31 years. Similarly, during Brazil's turbulent hyperinflationary years, Fernão Carlos Botelho Bracher, a vice president at Banco Bradesco, the largest private bank in country, was selected for the post of central bank president because of his experience in financial markets. The variable is coded as a 1, if the previous post prior to appointment was in the private sector or at an international financial institution (i.e. the IMF, UN, or the World Bank). All other sectors (government, non-profit, etc) are coded as 0.

**On the selection of the financial and economic planning ministry:**

While all countries (excluding Panama) only have one central bank or monetary authority, some countries have a variety of ministries involved in economic and financial planning, making it difficult to discern whether the government institution of interest should be the Ministry of Finance, the Ministry of Economy, or the Ministry of Economic Development, among others. These countries include Bolivia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Nicaragua and Panama. In the case of the Central American countries, the decision of which ministry to use was based on

---

<sup>14</sup>As this code attempts to capture academic training in economics and/or finance, I consider MBA, MA/PhD's in public policy and international affairs as further academic training in economics/finance.

the ministry participating in COSEFIN – the permanent forum for ministries of finance in Central America, Panama and the Dominican Republic. The ministries/secretariats used for each country can be found in the table below:

**Table A.5: List of Economic Ministries**

<b>Country</b>	<b>Institution</b>
Argentina	Ministerio de Economía y Finanzas Publicas (Formerly Hacienda)
Belize	Prime Minister is designed Minister of Finance
Bolivia	Ministerio de Economía y Finanzas Publicas (Formerly Hacienda and Finanzas Publicas)
Brazil	Ministerio da Fazenda
Chile	Ministerio de Hacienda
Colombia	Ministerio de Hacienda y Credito Publico
Costa Rica	Ministerio de Hacienda (Formerly Ministerio de Economía y Hacienda 1948-1966)
Dominican Republic	Ministerio de Hacienda (Formerly Secretaría de Finanzas 1966-2006)
Ecuador	Ministerio de Economía y Finanzas (Formerly Ministerio del Tesoro y Ministerio de Economía 1944-1963, Ministerio de Finanzas 1963-1985, Ministerio de Finanzas y Credito Publico 1985-2000)
El Salvador	Ministerio de Hacienda
Guatemala	Ministerio de Finanzas Publicas (Formerly Ministerio de Hacienda y Crédito Público 1945-1971)
Honduras	Secretaria de Finanzas (Formerly Secretaría de Economía y Hacienda 1954-1971; Secretaria de Hacienda y Credito Publico 1971-1996)
Mexico	Secretaría de Hacienda y Credito Publico
Nicaragua	Ministerio de Hacienda y Credito Publico
Panama	Ministerio de Economía y Finanzas (Formerly Hacienda y Tesoro 1998)
Paraguay	Ministerio de Hacienda
Peru	Ministerio de Economía y Finanzas (Formerly Hacienda 1969; Economía y Finanzas 1969-1980; Economía, Finanzas y Comercio 1980-1985)
Uruguay	Ministerio de Economía y Finanzas
Venezuela	Ministerio de Planificación y Finanzas (Formerly Hacienda 1894 – 1999, Finanzas 1999-2008, Economía y Finanzas 2008-2010)

**Table A.6: List of Mainstream Latin American Universities**

Country	University	Country	University
Argentina	Universidad Austral	El Salvador	Universidad Dr. José Matías Delgado
Argentina	Universidad del CEMA	El Salvador	Universidad Evangélica de El Salvador
Argentina	Universidad de Palermo	El Salvador	Universidad Francisco Gavidia
Argentina	Universidad del Salvador	El Salvador	Universidad Tecnológica de El Salvador
Argentina	Universidad de San Andres	Guatemala	Universidad del Istmo
Argentina	Universidad Torcuato Di Tella	Guatemala	Universidad de San Carlos de Guatemala (USAC)
Bolivia	Universidad Autónoma Gabriel René Moreno (UAGRI)	Guatemala	Universidad Galileo
Bolivia	Universidad Católica Boliviana San Pablo	Guatemala	Universidad Mariano Gálvez de Guatemala
Bolivia	Universidad Privada de Santa Cruz de la Sierra	Guatemala	Universidad Panamericana
Brazil	Fundação Getúlio Vargas – EAESP (Sao Paulo)	Guatemala	Universidad Rafael Landívar
Brazil	Fundação Getúlio Vargas – EPGE (Rio)	Guatemala	Universidad Rural
Brazil	Pontifical Catholic University of Rio de Janeiro	Honduras	Universidad Católica de Honduras
Brazil	Universidade de Brasília	Honduras	Universidad Global de Honduras (UNITEC)
Brazil	Universidade de São Paulo	Honduras	Universidad José Cecilio del Valle (UJCV)
Chile	Pontificia Universidad Católica de Chile	Honduras	Universidad Metropolitana de Honduras
Chile	Pontificia Universidad Católica de Valparaíso	Honduras	Universidad Tecnológica Centroamericana (UNITEC)
Chile	Universidad Adolfo Ibáñez	Honduras	Universidad Tecnológica de Honduras (UTH)
Chile	Universidad Austral de Chile	Mexico	El Colegio de México
Chile	Universidad de Chile	Mexico	Instituto Tecnológico Autonomo de Mexico (ITAM)
Chile	Universidad de Concepción	Mexico	Tecnologico de Monterrey (ITESM)
Chile	Universidad Diego Portales	Mexico	Universidad Iberoamericana (UIA)
Chile	Universidad del Talca	Nicaragua	Universidad Católica Redemptoris Mater
Chile	Universidad Tecnica Federico Santa Maria	Nicaragua	Universidad Thomas More Nicaragua
Colombia	Colegio Mayor de Nuestra Señora del Rosario	Peru	Universidad ESAN
Colombia	Pontificia Universidad Javeriana	Peru	Universidad de Lima
Colombia	Universidad de La Sabana	Peru	Universidad Privada del Norte
Colombia	Universidad de los Andes	Peru	Universidad San Ignacio de Loyola
Colombia	Universidad del Norte	Uruguay	Universidad Católica del Uruguay
Colombia	Universidad Industrial de Santander	Uruguay	Universidad de la Empresa - UDE - Uruguay
Costa Rica	INCAE Business School	Uruguay	Universidad de Montevideo
Costa Rica	Universidad Autónoma de Centro América	Uruguay	Universidad ORT Uruguay
Costa Rica	Universidad Católica de Costa Rica	Uruguay	Universidad de la República
Costa Rica	Universidad de Ciencias Empresariales - UCEM	Venezuela	Instituto de Estudios Superiores en Administración
Costa Rica	Universidad de Costa Rica	Venezuela	Universidad de Los Andes
Costa Rica	Universidad de Costa Rica	Venezuela	Universidad de los Andes Mérida
Costa Rica	Universidad Latinoamericana de Ciencia y Tecnología	Venezuela	Universidad de Carabobo
Costa Rica	Universidad para la Cooperación Internacional (UCI)	Venezuela	Universidad Católica Andrés Bello
Ecuador	Escuela Politécnica Nacional	Venezuela	Universidad Central de Venezuela
Ecuador	Escuela Superior Politécnica del Litoral	Venezuela	Universidad Centroccidental Lisandro Alvarado
Ecuador	Universidad San Francisco de Quito	Venezuela	Universidad de Oriente Venezuela
Ecuador	Universidad Técnica Particular de Loja	Venezuela	Universidad Simón Bolívar
El Salvador	Escuela Superior de Economía y Negocios (ESEN)	Venezuela	Universidad del Zulia
El Salvador	Universidad Católica de El Salvador		

Note: Coding is based survey of Latin American economists conducted during 2015-2016.

Universities are coded as mainstream, if their economics departments received an average ranking that was greater than 3 (along the 5-point scale ranging from fully heterodox=1; mainly heterodox=2; mixed=3; mainly orthodox=4; fully orthodox=5).

There are no local universities in Belize that are coded as mainstream; ministers tend to have foreign university credentials when they are mainstream.

**Table A.7: List of Inflation Crisis Countries**

Country	Most Recent Inflation Crisis (Year)
<u>Hyperinflation cases</u>	
Argentina	1990
Bolivia	1986
Brazil	1994
Chile	1975
Nicaragua	1991
Peru	1991
<u>'Very' High Inflation cases (&gt;100% per annum)</u>	
Mexico	1988
Uruguay	1991

*Notes: Inflation crisis coding measures the duration of the historical memory of past inflation.*

*A hyperinflation crisis is measured as 2 standard deviations or more above the historical mean.*

*A 'very' high inflation crisis is measured as 1.5 standard deviations or more above the historical mean.*

*(Coincides with Sachs and Larrain (1993) definition of 'very high inflation' being above 100 percent per annum threshold).*

*Based on the assumption that past shocks condition currency policymaking, a country is classified as having a crisis legacy after inflation returns to the historical norm (within one standard deviation of the mean).*

**Table A.8: The Effect of Past Inflation Crises on Technocratic Orientation and Fiscal Policy Choices**

	2SLS	SEM	2SLS	SEM
<i>Fiscal Balance</i>	(1)	(1)	(3)	(3)
Mainstream	0.758** (0.344)	3.293*** (0.631)		
Mainstream_p			0.493* (0.260)	2.544*** (0.761)
Hyperinflation legacy	2.622** (1.067)	1.017** (.464)	2.144* (1.048)	0.874* (0.482)
Global growth	0.221* (0.125)	0.070 (0.134)	0.265** (0.121)	0.089 (0.130)
Output gap (t-1)	0.039 (0.032)	0.312*** (0.096)	0.009 (0.030)	-0.105*** (0.037)
Terms of trade	0.546 (0.365)	0.686* (0.404)	0.589 (0.372)	-0.176 (0.175)
Inflation (log)	0.383 (0.316)	0.043 (0.166)	0.259 (0.341)	0.003 (0.076)
External public debt (t-1)	0.002 (0.003)	0.003 (0.003)	-0.001 (0.003)	-0.019*** (0.003)
Left partisanship	-1.021 (0.773)	-0.640 (0.448)	-1.011 (0.772)	0.043 (0.233)
IMF program	-0.148 (0.327)	0.822** (0.413)	-0.032 (0.320)	0.136 (0.207)
Age of democracy	-0.659** (0.268)	-0.195 (0.406)	-0.668** (0.295)	-0.538** (0.214)
<i>Technocratic Orientation</i>				
Hyperinflation legacy	1.035*** (0.267)	1.141*** (0.248)	2.025*** (0.462)	2.610*** (0.601)
Global growth	0.080 (0.058)	0.060 (0.060)	0.143** (0.068)	0.049 (0.068)
Output gap (t-1)	-0.070** (0.034)	-0.075** (0.036)	-0.083** (0.035)	-0.105*** (0.037)
Trade Openness	0.019*** (0.006)	0.020*** (0.005)	0.008 (0.007)	0.013** (0.005)
Terms of trade	-0.126 (0.168)	-0.171 (.161)	-0.218 (0.186)	-0.176 (0.175)
Inflation (log)	-0.156* (0.088)	0.043 (0.076)	-0.109 (0.086)	0.003 (0.076)
External public debt (t-1)	-0.021*** (0.004)	-0.024*** (0.003)	-0.017*** (0.004)	-0.019*** (0.003)
Financial depth	-0.026*** (0.006)	-0.034*** (0.005)	-0.012* (0.007)	-0.030*** (0.007)
Left partisanship	-0.367* (0.192)	-0.176* (0.192)	-0.127 (0.226)	0.043 (0.233)
IMF program	0.145 (0.185)	-0.052 (0.185)	0.045 (0.207)	0.137 (0.208)
Age of democracy	0.012 (0.195)	-0.021 (0.186)	-0.319 (0.232)	-0.538** (0.215)
Observations	365	365	371	371

Note: Stage 1 of Heckman-type correction model reported in bottom portion of table; stage 2 results reported in top portion of table.

Based on models 1 and 3 in Table 1-2 of the main text. 2SLS=two-staged least squares. SEM=simultaneous equation model.

Standard errors in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## References

- Babb, S. (2001). *Managing Mexico: Economists from nationalism to neoliberalism*. Princeton: Princeton University Press.
- Beck, N. & Katz, J.N. (2011). Modeling dynamics in time-series-cross-section political economy data. *Annual Review of Political Science*, 14(1), 331-352.
- Bodea, C. & Higashijima M. (2016). Central bank independence and fiscal policy: Incentives to spend and constraints on the executive. *British Journal of Political Science*. Forthcoming.
- Camerlo and Pérez-Liñán (2015b). Minister turnover, critical events, and the election calendar in presidential democracies. *Journal of Politics*, forthcoming.
- De Boef, S. L. & Keele, L. (2008). Taking time seriously. *American Journal of Political Science*, 51(1), 184-200.
- Drazen, A. & Easterly, W. (2001). Do crises induce reform? Simple empirical tests of conventional wisdom. *Economics and Politics*, 13(2), 129-157.
- Dreher, A. (2006). IMF and economic growth: The effects of programs, loans, and compliance with conditionality. *World Development*, 34(5).
- Green, D. P., Kim, S.Y., & Yoon, D.H. (2001). Dirty pool. *International Organization*, 55(2), 441-468.
- Liao, S. & McDowell, D. (2014). Redback rising: China's bilateral swap agreement and RMB internationalization. *International Studies Quarterly*, 59(3): 401-422.
- Mankiw, G.N. (2012). *Macroeconomics*. Worth Publishers, 7th Edition.
- Montecinos, V., & Markoff, J. (2012). *Economists in the Americas*. Cheltenham: Edward Elgar.
- Keele, L. & Kelly, N.J. (2006). Dynamic models for dynamic theories: The ins and outs of lagged dependent variables. *Political Analysis*, 14(2), 186-205.
- Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica*, 49(6), 1417-1426.
- Polillo, S. & Guillen, M. (2005). Globalization pressures and the state. *American Journal of Sociology*, 110(6).
- Sachs, J.D. & Larrain, F.B. (1993). *Macroeconomics in the global economy*. Prentice Hall.
- Steinberg, D. A. and Shih, V.C. (2012). Interest group influence in authoritarian states: The political determinants of Chinese exchange rate policy. *Comparative Political Studies*, 45(11), 1404-1433.
- Wilson, S., & Butler, D. (2007). A lot more to do: The sensitivity of time-series cross-section analysis to simple alternative specifications. *Political Analysis*, 15, 101-123.
- Vreeland, J. (2003). *The IMF and economic development*. New York: Cambridge University Press.