"A Third-Generation Framework:
Reconsidering the Relationship between Central Bank Independence and Fixed Exchange Rates"

by

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Abstract: This paper offers a new framework for political scientists studying the relationship between central bank independence (CBI) and fixed exchange rates (FIX). It begins by evaluating some untested hypotheses within the second-generation framework focused on whether CBI and FIX function as substitutes or as complements in terms of inflation control, finding little support for either proposition. It then presents and tests the macrofoundations underlying a third-generation framework. The first macrofoundation is that these monetary institutions are generally used by governments to achieve different macroeconomic objectives: CBI has been the monetary institution for domestic price stability, while FIX has been directed more towards external currency stability. The second macrofoundation is a monetary policy tension between achieving these two macroeconomic objectives, which diminishes the effectiveness of each monetary institution towards its primary policy goal in the presence of the other institution. This tension predicts that central bank independence should be associated with higher inflation when accompanied by a more fixed exchange rate commitment and that a fixed exchange rate commitment should be less associated with less external currency stability in the presence of a legally independent central bank. The paper provides evidence consistent with these macrofoundations.

After a "roaring start" at the turn of the century (Bernhard, Broz, and Clark 2002, 719), the research program on monetary institutions with its joint focus on central bank independence and fixed exchange rates regimes seems to have stalled. Stated differently, while some scholars continue to study these institutions, the activity within this research program appears to be on the decline with fewer papers presented at conferences and appearing in political science journals.[1]

There are several possible reasons for a reduced academic interest in these monetary institutions. First, it could be argued that all the major questions have already been answered. As a result of its success, a research program's intensity should be expected to decline. However, while many important puzzles related to central banks and exchange rate regimes have indeed been solved, there remain several key propositions related to both the choice and performance of these monetary institutions that have yet to be systematically considered, as we will demonstrate below.

Second, one could also argue that this research program is no longer interesting. As we will discuss later, the first- and second-generation frameworks for understanding monetary institutions largely focused on independent central banks and fixed exchange rate regimes as possible means to fight inflation. And in the 21st century, the price stability problem that tormented many countries, especially in the last quarter of the 20th century, seems to have largely disappeared. However, there are growing concerns that "the world could emerge from the pandemic into an era of higher inflation"[2]

[1] The TRIP team at William and Mary collected data on the number and percentage of articles published in 12 major International Relations and Political Science journals from 1980 to 2017 in different subject areas. While "money" has never been a top subject in Political Science, it ranked above the environment, migration, and even sanctions: https://www.duckofminerva.com/2020/03/public-health-research-in-mainstream-international-relations-outlets.html. The publishing peak for international money occurred around 2002 with the percentage of articles dropping by about 50 percent by 2017: https://twitter.com/antonpeez/status/1242104084989194242. The data presented by Pepinsky and Steinberg (2020, 132) show an even steeper drop from a peak around 2003 at almost six percent of articles published to less than two percent by 2010.

[2] "Will inflation return?" *The Economist*, December 12-18, 2020, p. 15.

due to the expansionary monetary and fiscal policies employed by many governments in response to the covid economic shock. Furthermore, as societies age, especially in the global North, a shortage of workers further exacerbated by populist immigration restrictions can be expected to put long-term upward pressure on domestic prices. Likewise, new populist trade protection can be expected to have the same effect. Thus, the study of these monetary institutions remains important given the potential return of inflation.[3]

Figure 1: Frameworks for Studying CBI and FIX.

		Study CBI and FIX: separately	Study CBI and FIX: together
Primary macroeconomic objective:	Domestic price stability	**First-generation**	**Second-generation**
	Include others, notably external currency stability		**Third-generation**

Third, this research program may have stalled because some key assumptions about the relationship between these two monetary institutions require reconsideration. Indeed, this is the central argument to be developed in this paper. As illustrated in Figure 1, the first-generation framework studied central bank independence (CBI) and fixed exchange rate regimes (FIX) *separately* as different means to achieve the same macroeconomic policy objective: solving the time-inconsistency problem related to monetary policy, or promoting domestic price stability (e.g., Giavazzi and Giovannini 1989, Cukierman 1992). Bernhard, Broz, and Clark (2002, 694) offered a second-generation framework for studying these two monetary institutions *together* "as a response to same

[3] Consistent with this understanding, Pepinsky and Steinberg (2020, 133) describe how "the TRIP survey of senior policymakers in the area of national security shows that policymakers find monetary issues to be some of the most pressing foreign policy issues faced by the United States and the rest of the world."

economic problem" (inflation control), considering if these two monetary institutions function more as "institutional substitutes (where the presence of one negates the need for another) or complements (where each reinforces the effect of the other)".

Arguably, the political science research program on monetary institutions has now diverged back into separate communities, one studying central banks and another studying exchange rate regimes.[4] While scholars in one community typically control for the other institution in their empirical analyses, few build their arguments/theories through both monetary institutions.[5] Our third-generation framework seeks to bring CBI and FIX back together both empirically *and theoretically*, but with a broader focus than domestic price stability. Indeed, Bernhard, Broz, and Clark (2002, 694 *emphasis added*) previewed a third-generation framework when they wrote: "it may be the case that the time-inconsistency framework does not capture how political actors evaluate the benefits and costs of different monetary arrangements. The choice of these institutions *may have less to do with fighting inflation*…. While the time-inconsistency framework informs much of the work in this volume, we may need to move beyond it to incorporate factors that influence the opportunity costs of adopting alternative monetary institutions."

While we agree that CBI has been primarily used for inflation control, FIX has more often been employed to achieve a different and often contradictory policy goal, namely external currency stability. This is not to say that a fixed exchange rate could not be used for the former (e.g., Argentina's peg to the dollar); instead, we argue and demonstrate that fixed exchange rates have been generally matched to a different macroeconomic objective than central bank independence. On this basis and

[4] We identify our own work (e.g., Bearce 2014, Garriga and Rodriguez 2020) as consistent with this divergence.

[5] There are some important exceptions to this statement. We highlight Clark and Hallerberg (2000) as presenting theory explicitly considers both monetary institutions in a context broader than just domestic price stability.

with reference to the central question underlying the second-generation framework, CBI and FIX have functioned *neither as substitutes nor as complements*, at least not in terms of inflation control.

However, even if these monetary institutions have been employed for different purposes, the now largely separate research programs on CBI and FIX need to be recombined not only because they implicate the same policy instrument, but because *these institutions tend to pull monetary policy in opposite directions*: upward pressure on the short-term interest rate to fight inflation with downward pressure on the same to maintain exchange rate stability, following the interest parity condition. Indeed, this understanding identifies inflation control though central bank independence as a form of domestic monetary policy autonomy, potentially inconsistent with external currency stability given international capital mobility (e.g., Bearce 2008). It also explains why efforts to fix the exchange rate, especially at competitive levels (e.g., China's undervalued fix to the dollar), may be associated with domestic price *in*stability (Rodrik 2010, Steinberg 2016). For political scientists, this suggests a battle for the control of monetary policy between the actors favoring domestic price stability and those preferring external currency stability with CBI and FIX as a possible way for each side, respectively, to "lock in" their preferred policy outcome.

The need for and the development of our third-generation framework proceeds in four steps. To demonstrate the limitations of the second-generation framework's focus on whether CBI and FOX are substitutes or complements in terms of inflation control, we first consider some untested hypotheses that emerge from what we consider to be its most important *substitution* theory (Broz 2002), finding little empirical support for the proposition that CBI and FIX are being used as alternative institutions to reduce inflation in different political regimes (more/less democratic). Second, we also evaluate some untested hypotheses from what we consider to be the second-generation's most compelling argument for why CBI and FIX could be inflation-reducing complements (Bodea 2010). But not only is there no evidence that these monetary institutions are chosen together, or as

complements, we also demonstrate that they do not behave as inflation-reducing complements in practice. Indeed, our models show that *central bank independence can be associated with higher inflation when accompanied by a more fixed exchange rate commitment*. Taken together, these empirical (non)results suggest that we need to study these monetary institutions as something other than substitutes or complements in terms of this single macroeconomic objective; hence, the need for a new framework linking CBI with FIX.

Our third step is to provide and then test the macro(economic) foundations underlying our third-generation framework. These macrofoundations begin with the proposition that these monetary institutions are generally used by governments to achieve different macroeconomic objectives. More specifically, CBI has been the monetary institution dedicated to domestic price stability, while FIX has been directed more towards external currency stability. Based on the understanding that the association between a monetary institution (e.g., CBI and FIX) and a macroeconomic outcome (e.g., domestic price stability and external currency stability) should be stronger when the former could be effective towards achieving the latter *and it is actually used for such*, we provide evidence of a strong association between CBI and lower inflation (not surprisingly), but no such correlation between fixed exchange rates and lower inflation. We also show a strong association between a fixed exchange rate commitment and external currency stability (not surprisingly), but no such correlation between CBI and external currency stability.

The next macrofoundation underlying our third-generation framework concerns the monetary policy tension between achieving these two macroeconomic objectives (inflation control requires a higher nominal interest rate, while exchange rate stability typically requires a lower nominal rate following the interest parity condition) that diminishes the effectiveness of each monetary institution in the presence of the other. Indeed, this tension not only explains why central bank independence has been associated with higher inflation when accompanied by a more fixed exchange rate

commitment, but we also demonstrate that a fixed exchange rate commitment becomes less associated with de facto exchange rate fixity in the presence of a legally independent central bank. Fourth, we discuss what this new framework means for political science research concerning monetary policy and related institutions.

1. CBI and FIX as Inflation Reducing Substitutes

In what might be considered the most important and interesting substitution theory within the second-generation framework, Broz (2002) argued that transparent policymaking is a prerequisite for governments in their fight against inflation. This transparency can come from either the political system (with democracies being more transparent than autocracies) or the monetary institution (with FIX being more transparent than CBI). Since less democratic governments lack transparency, they must select the more transparent monetary institution (e.g., FIX) to reduce inflation. However, since more democratic governments have greater transparency, they can select the less transparent monetary institution (e.g., CBI) to achieve more stable domestic prices.

This substitution theory about how to reduce inflation poses at least four testable hypotheses, two concerning the selection of monetary institutions and two about their effectiveness in different political systems. First, less democratic governments should be associated with more fixed exchange rates. Second, more democratic governments should be associated with greater central bank independence. Third, fixed exchange rates should be associated with lower inflation at least in less democratic regimes, although the same association may also be present in more democratic political systems. Fourth, central bank independence should be associated with lower inflation, but only in more democratic political systems. Broz (2002) tested and found support for the first and fourth hypotheses but did not have space to test the second and third. We will thus test, in sequence, these two remaining substitution propositions.

Before considering these hypotheses, it is important to describe our research design, which will be used consistently throughout the paper. Given that the arguments in the second-generation framework concerned formal institutions, we begin with *de jure* measures for both CBI and FIX. To capture the former, we rely on Garriga's (2016) dataset, which extends both cross-sectionally and temporally the measure of legal independence first introduced by Cukierman, Webb, and Neyapti (1992): *CBIlegal*. To measure the latter (fixed exchange rate commitments), we use on the four-value scale from the International Monetary Fund in their Annual Report on Exchange Arrangements and Exchange Restrictions: *FIXdejure*.[6]

However, given the gap between these formal institutions and how governments behave in terms of their official commitments (i.e., "informal" monetary institutions), we will consistently provide robustness checks using *de facto* measures of CBI and FIX. To capture the former, we rely on the turnover rate associated with the central bank over a five-year period, which has been inverted (*CBtorinv*) so that it can be expected to have the same sign as *CBIlegal*, its de jure equivalent. Using data from Dreher, Sturm, and de Haan (2008, 2010), this inverted rate considers not only irregular turnover, but also regular turnover since the government could create a less independence central bank by more regularly appointing members with preferences closer to their own, which is why a longer tenure is generally associated with a more independent central bank. To measure de facto exchange rate fixity (*FIXdefacto*), we use the expanded version of Reinhart and Rogoff's coarse classification (Ilzetzki, Reinhart, and Rogoff 2019).[7] So that the coefficients on these monetary

[6] These data are available at: https://www.elibrary-areaer.imf.org/Pages/Home.aspx .

[7] Following the advice of Reinhart and Rogoff (2004, 26), we drop the observations associated with "freely falling" since this category does not correspond to a deliberate policy choice in terms of an exchange rate regime. Our results are similar using their fine classification, but the coarse scale better corresponds to its parallel de jure measure using the IMF data. Furthermore, the coarse scale requires fewer assumptions about what precise classifications are more fixed (ibid, 25). For example, a "De facto crawling peg that is narrower than or equal to ±5%" is classified as more fixed than a

institutions are more directly comparable with each other, these four variables (*CBIlegal*, *CBtorinv*, *FIXdejure*, and *FIXdefacto*) are all scaled 0-1 with larger values indicating greater independence or fixity depending on the institution in question.[8]

These new and expanded datasets provide coverage for both a broader set of countries and a longer time-period, allowing us to consider relationships related to these monetary institutions from 1970 to 2014 with typically more than 4,000 country/year observations. This sample is effectively twice as large as those used by most scholars within this research program, thus reducing the sample selection problem associated with missing data. To further reduce this sample selection problem, we interpolate the missing internal observations in the country time-series for any variable used purely as a control measure (e.g., GDP, population, and others to be introduced below). However, there is no interpolation for any measure used as a dependent variable (e.g., inflation and exchange rate stability) or as a primary independent variable (e.g., *CBIlegal*, *CBtorinv*, *FIXdejure*, and *FIXdefacto*). This larger sample also provides us with greater statistical power (i.e., the ability to find a relationship to the extent that one exists), which is important given that we report several non-results. Stated differently, it will be hard to argue that these weak relationships are simply due to a small idiosyncratic sample.

Second, we test all hypotheses in a sequence of increasingly restrictive models. Given that our analysis begins by considering propositions advanced by other scholars, it seems unfair to begin with a highly restrictive specification and then declare no support for their hypotheses if they fail a single stringent test. Thus, we begin with a more generous specification, parallel to the one employed by Broz (2002, 873) including a lagged dependent variable (LDV) but not country or year fixed effects.

"Noncrawling band that is narrower than or equal to ±2%" using the fine scale, but these two classifications receive the same value using the coarse scale.

[8] As expected, *CBIlegal* and *CBtorinv* are positively correlated with each other (0.06 $p<.05$). Likewise, the correlation between *FIXdejure* and *FIXdefacto* is positive and statistically significant (0.55 $p<.05$).

Our second specification then adds country fixed effects, dropping the LDV given potential concerns about Nickell (1981) bias. Our third specification adds year fixed effects to produce a quasi difference-in-differences (DID) model for observational panel data.[9] Finally, our most restrictive specification reintroduces the LDV into the quasi-DID model.

Do More Democratic Governments Adopt Greater CBI?

Following the research design described above, our initial test of this first substitution hypothesis considers the variation in de jure CBI (*CBIlegal*), the extended version of the same measure used by Broz (2002), regressed on *Democracy*, measured using the same 21-point Polity scale as employed by Broz although recoded 0-20.[10] As control variables, we include *FIXdejure* as the alternative monetary institution, *Regional* to account for the country/year observations associated with a regional (rather than a national) monetary arrangement,[11] and *Inflation Target* to account for this third, perhaps confounding, monetary institution (Ogrokhina and Rodriguez 2019). To capture the observation's position within the international system, we control for its size both in terms of gross domestic product (*GDP*), measured in billions of constant US dollars, and *Population*, measured in millions of people. We also include the country/year's level of economic development, measured by the logged value of its GDP per capita (*lnGDPpc*). Finally, to capture the observation's integration into the global economy, we control for its *Trade Openness*, measured as exports plus imports divided

[9] We use the term "quasi" because while two-way fixed effects are equivalent to the DID model in a simple setting with two groups in two time periods (Angrist and Pischke 2009), this specification does not generalize completely in more complex settings (Imai and Kim forthcoming).

[10] The Polity data are available from: https://www.systemicpeace.org/polityproject.html .

[11] Regional monetary arrangements include Economic and Monetary Union in Western Europe, the Central Bank of West African States, the Bank of Central African States, and the Eastern Caribbean Central Bank.

by GDP,[12] and *Capital Openness*, using Aizenman, Chinn and Ito's (2013) measure. Table 1 provides the descriptive statistics for these variables.

Using the sequence of statistical specifications outlined above, our estimates of *CBIlegal* regressed on *Democracy* (Polity) are presented in Table 2. While the *Democracy* coefficient consistently takes on the expected positive sign, its association with *CBI* is only statistically significant in the more generous specifications (i.e., models 2.1 and 2.2). With the addition of year fixed effects in model 2.3 to produce a quasi-DID estimator, the *Democracy* coefficient loses statistical significance, and this non-result remains in model 2.4 when correcting for serial autocorrelation with the lagged dependent variable. To understand why this relationship weakens, there is a significantly positive time trend in the *CBIlegal* measure, consistent with a general democratization trend during this same period. Thus, once we control for the movement towards greater de jure CBI common to all countries in any given year regardless of their democratization treatment, the latter shows little effect on the former.

In the appendix, we provide two sets of robustness checks on these results. The first set (in Table A1) replaces the Polity measure of *Democracy* with an inverted measure of the same concept from Freedom House (FH), coded 0-12 with higher values indicating more political rights and civil liberties.[13] While there is a significant positive association between *CBIlegal* and *Democracy* (FH) using the more generous specifications, this relationship again loses statistical significance once year fixed effects are added to the specification. The second set (in Table A2) regresses our de facto measure of CBI (*CBtorinv*) on *Democracy*, again measured using the Polity scale, controlling for *FIXdefacto*. While the *Democracy* coefficient is statistically significant in most specifications, it enters with a negative sign, indicating that more democratic governments tend to have a lower inverted turnover rate, *equivalent to*

[12] The data for *GDP*, *Population*, *lnGDPpc*, and *Trade Openness* are available from the World Bank: https://databank.worldbank.org/source/world-development-indicators.

[13] The Freedom House data are available from: https://freedomhouse.org/.

a higher turnover rate. This result runs contrary to the substitution expectation that more democratic governments can be associated with greater de facto central bank independence.

Is FIX Effective at Reducing Inflation for Less Democratic Governments?

Broz (2002) already demonstrated that less democratic governments make more fixed exchange rate commitments, a result confirmed by Bearce and Hallerberg (2011) showing that less democratic governments also achieve greater de facto exchange rate fixity. But does this monetary choice allow the same set of governments to achieve lower inflation, an untested proposition that emerges from Broz's substitution theory? This argument implied that a fixed exchange rate commitment, as a more transparent monetary institution, should be effective towards this policy goal at least in less transparent political regimes, where it is arguably needed the most.

$$Inflation_{it} = B_1 FIXdejure_{it} + B_2 Democracy_{it} + B_3 FIXdejure*Democracy_{it.} \quad (1)$$

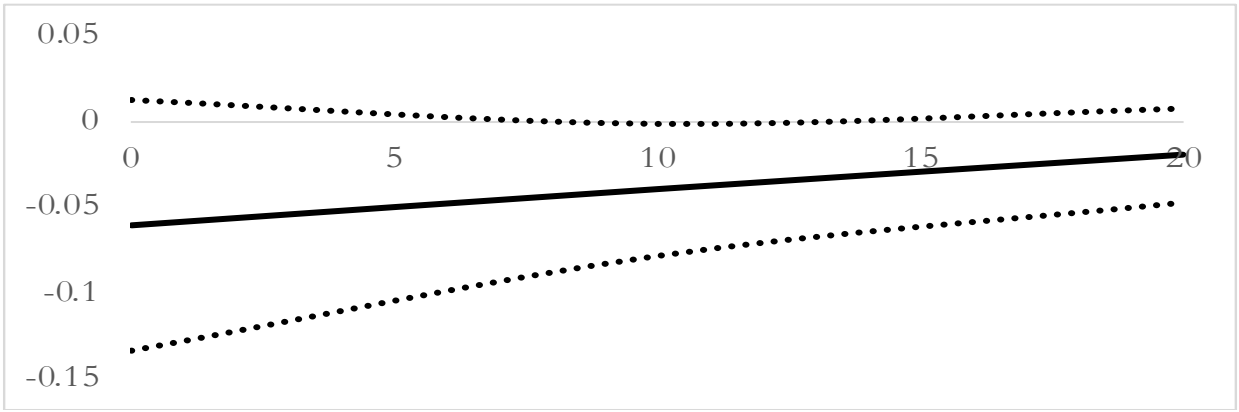
As written in equation (1), we test this proposition by regressing the country/year's transformed *Inflation* rate, using the formula offered by Cukierman, Webb, and Neyapti (1992, 370),[14] on *FIXdejure*, the same variable used by Broz (2002) to consider the choice for this monetary institution, *Democracy* (Polity) coded 0-20, and their interaction (*FIXdejure*Democracy*). Most importantly, this substitution hypothesis predicts a negative sign for the *FIXdejure* constitutive term, which captures a more fixed exchange rate commitment for the least democratic observations, or when Polity=0 using the 0-20 scale. It is important to note that Broz's argument makes no specific prediction concerning the coefficient on the interaction term (*FIXdejure*Democracy*): how much should a fixed exchange rate commitment reduce inflation in more democratic regimes? If greater

[14] This formula divides the inflation rate (π) by 1 plus the inflation rate: $\pi/(1+\pi)$. Cukierman, Webb, and Neyapti (1992) used it to reduce the influence of outlier hyperinflation observations, but it also provides a way to preserve observations associated with deflation, or negative inflation rates, which drop when taking the logged value of inflation.

transparency is the key for domestic price stability, then one might also expect to observe this monetary institution to be associated with lower inflation in more democratic regimes, although the relationship may be weaker.

The results in Table 3 show that while the *FIXdejure* constitutive term consistently takes on the expected negative sign, it is not statistically significant in any specification. It is also notable that the *FIXdejure* interaction term is insignificant in all specifications. These results suggests that a fixed exchange rate commitment has no strong association with lower inflation *in any political regime*, as illustrated in Figure 2 based on the DID results in model 3.3.

Figure 2: The Marginal Effect of *FIXdejure* on *Inflation* Conditioned on *Democracy* (Polity) from Model 3.3.



The y-axis is the marginal effect of *FIXdejure*, while the x-axis is the value of *Democracy* (Polity). The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

As a robustness check in Table A3, we replace the de jure measures with their de facto equivalents; thus, *FIXdefacto* becomes the primary independent variable with *CBtorinv* as a control variable. As already observed with the de jure measures, the *FIXdefacto* constitutive term is never statistically significant even in the more generous specifications, nor is the *FIXdefacto* interaction term. We thus have growing evidence that using monetary policy to fix the exchange rate provides no inflation control in any political regime (either less or more democratic/transparent). This result will be further discussed and explored in the third section of the paper.

2. CBI and FIX as Inflation-Reducing Complements

Bodea (2010) offered what we view to be the most compelling argument for why one might expect governments to have an independent central bank *and* to make a fixed exchange rate commitment: these monetary institutions are both imperfect in terms of their ability to control inflation, but they are flawed in different ways. More specifically, CBI lacks transparency, as argued by Broz (2002), although this flaw may be reduced with an inflation-targeting mandate (Mukherjee and Singer 2008). And while FIX may be more transparent, it is also subject to abandonment; hence, the gap between fixed exchange rate commitments and actual exchange rate stability as documented by Reinhart and Rogoff (2004). Bodea's (2010, 427) model "shows formally the complementarity between fixed rates and an independent central bank" leading to the key prediction that "if institutions do not suffer from similar weaknesses and are able to only partly fulfill their role, then one will observe some degree of institutional proliferation" (ibid, 438). Stated differently, CBI and FIX should often be adopted together, producing a positive association between these monetary institutions, or a "correlated choice". Since Bodea's focus was to provide a formal model, this proposition was not tested directly in her paper.

Are CBI and FIX Adopted Together?

It is important to state that this proposition is not a causal hypothesis, meaning that either FIX or CBI could be treated as the dependent variable in seeking to determine how much these two monetary institutions are correlated with each other. In Table 4, we use the two de jure monetary institutions, treating *FIXdejure* as the dependent variable regressed on *CBIlegal* and the set of control variables to reduce the probability that their association with each other is mis-estimated due to confounding factors. As a robustness check, the reader can also refer to the results in Table 2, where *CBIlegal* was the dependent variable, regressed on *FIXdejure* (as a control variable).

The results in Table 4 show CBI to be uncorrelated with FIX regardless of the statistical specification. Not surprisingly, these (non)results parallel those already observed in Table 2, where the dependent and primary independent variables were reversed. When *CBIlegal* was the dependent variable, there was no correlation with *FIXdejure* once country fixed effects were introduced into the specification. And in the most generous specification (model 2.1), while *FIXdejure* was significantly associated with *CBIlegal*, this correlation came in a *negative* direction, inconsistent with the expectations of this complementarity hypothesis.[15]

It is important to note that the weak association between CBI and FIX accords with the earlier analysis by Bernhard, Broz and Clark (2002) comparing the combination of monetary institutions across 76 countries. Somewhat at odds with the logic underlying their second-generation framework, they concluded that "the pattern of monetary commitments support[s] *neither case*" with one case being substitutes where "countries that have chosen one commitment mechanism" are "less inclined to adopt the other" and the other being complements where "countries that had one commitment mechanism…also choose the other" (ibid 703 *emphasis added*).

Are CBI and FIX More Effective at Reducing Inflation When Combined?

However, the fact that governments do not appear to be using CBI and FIX as complements does not mean that these two monetary institutions are not, in fact, complementary in terms of their ability to control inflation. Perhaps many governments do not understand or seek this anti-inflation advantage. We thus need to consider one additional complementarity hypothesis: CBI and FIX are more effective at reducing inflation when they are combined. To test this hypothesis, our transformed

[15] Another robustness check is provided in Table A4, using the de facto indicators for these two monetary institutions; thus, *FIXdefacto* is the dependent variable with *CBtorinv* as an independent variable. While *CBtorinv* takes on a significant positive coefficient in the second model, this result does not appear in any other regression.

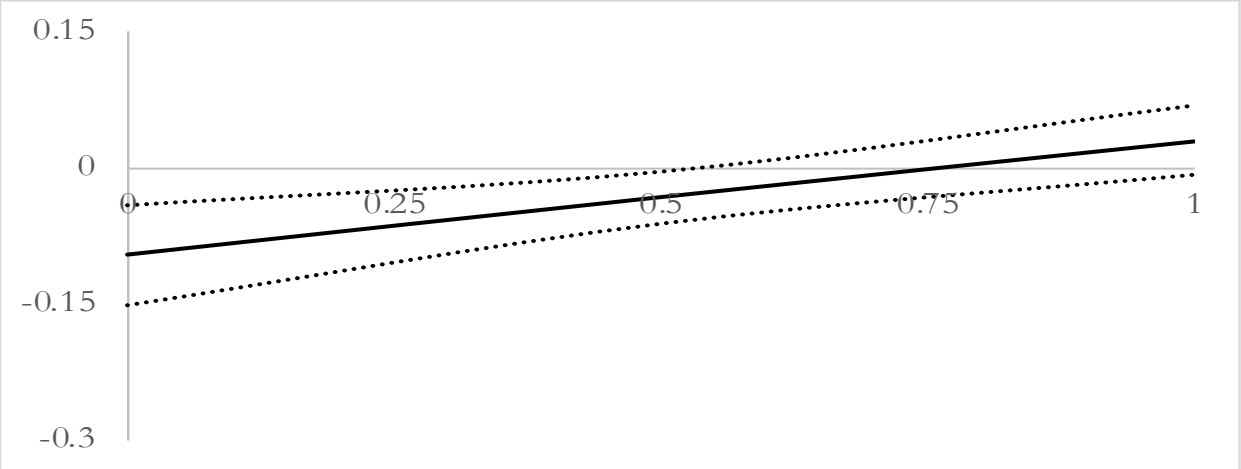
measure of *Inflation* again becomes the dependent variable, regressed on *FIXdejure*, *CBIlegal*, and their interaction, as written in equation (2). The most important term for this complementarity hypothesis is *FIXdejure*CBIlegal*. In this specification, the coefficients on the constitutive terms tell us if these monetary institutions are effective in isolation. But if they are more effective when combined, then B_1 must be significantly negative.

$$Inflation_{it} = B_1 FIXdejure*CBIlegal_{it.} + B_2 FIXdejure_{it} + B_3 CBIlegal_{it} \quad (2)$$

Our estimates of equation (2) appear in Table 5, and the results are consistent across all specifications. While the two constitutive terms generally enter with significant negative coefficients, suggesting that both a fixed exchange rate commitment and a legally independent central bank can be associated with reduced inflation when operating in isolation (although it is important to note that the isolated CBI association tends to be at least twice as large as the same for FIX), the interaction term always takes on a positive coefficient that becomes statistically significant once country fixed effects are added to the specification. This latter result indicates not only are these two monetary institutions *not* more anti-inflation effective when combined, they are associated with *significantly higher inflation when governments adopt them together*.

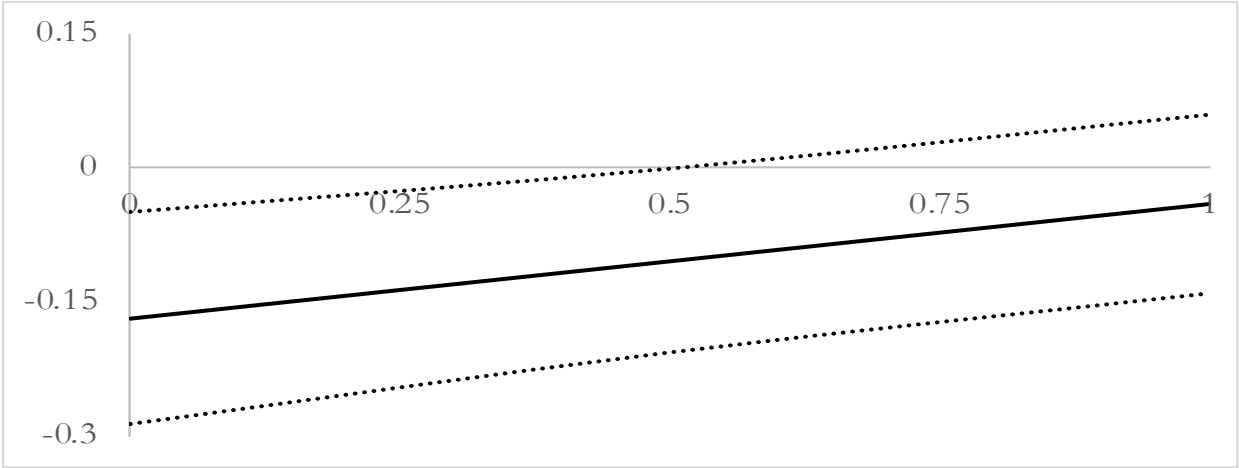
To better illustrate this relationship, we plot in Figure 3 the marginal effect of *FIXdejure* conditioned on the value of *CBIlegal* (0-1) from model 5.3. While a fixed exchange rate commitment is associated with reduced inflation when paired with a completely subordinate central bank, this association disappears when *CBIlegal* is greater than 0.5. And in Figure 4, we plot the marginal effect of *CBIlegal* conditioned on the value of *FIXdejure* also from model 5.3. Here one can similarly observe how CBI is strongly associated with reduced inflation when the government does not make a fixed exchange rate commitment. But as the government's exchange rate commitment becomes more fixed, the marginal effect of *CBIlegal* weakens, even becoming statistically insignificant when *FIXdejure* is greater than 0.5.

Figure 3: The Marginal Effect of *FIXdejure* on *Inflation* Conditioned on *CBIlegal* from Model 5.3.



The y-axis is the marginal effect of *FIXdejure*, while the x-axis is the value of *CBIlegal*. The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

Figure 4: The Marginal Effect of *CBIlegal* on *Inflation* Conditioned on *FIXdejure* from Model 5.3.



The y-axis is the marginal effect of *CBIlegal*, while the x-axis is the value of *FIXdejure*. The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

In Table A5, we provide a robustness check by replacing the de jure monetary institutions with their de facto equivalents (*FIXdefacto* and *CBtorinv*) and re-estimating the interaction specification. Once again, there is a consistent set of results across all four specifications. But now having a more fixed exchange rate cannot be associated with lower inflation *even when the central bank is completely*

subordinate as measured by its inverted turnover rate, suggesting that this first informal monetary institution provides no inflation control regardless of the central bank's status.[16] And while having a de facto independent central bank can be associated with lower inflation when exchange rates are flexible in some specifications, this anti-inflation association for *CBtorinv* tends to disappear as the exchange rate becomes more fixed. Together, the results in Table 5 and A5 provide no evidence to support the complementarity hypothesis that CBI and FIX are more effective at reducing inflation when they are combined; if anything, the opposite relationship appears to be the case. But why should this be true and what monetary policy framework might account for these results?

3. A Third-Generation Framework for CBI and FIX

To better understand the results above, which appear as inconsistent with the understanding that CBI and FIX function either as substitutes or as complements in terms of inflation control, we offer a new framework based on two primary propositions. First, these monetary institutions are generally used by governments to achieve different macroeconomic objectives. More specifically, CBI has been the monetary institution dedicated to domestic price stability, while FIX has been directed more towards external currency stability even if it could also be used for inflation control per the logic of the first- and second-generation frameworks. But second, there is a monetary policy tension between these two macroeconomic objectives that diminishes the effectiveness of each monetary institution in the presence of the other. Thus, while the first proposition alone might suggest that CBI and FIX should be studied separately (i.e., different monetary institutions for different policy goals), the second identifies why they need to be studied together: monetary policy choices consistent with

[16] These results arguably accord with those presented by Guisinger and Singer (2010), demonstrating that neither a de jure nor a de facto fixed exchange rate regime reduces inflation in isolation. Their results also show that when both are present, there may some inflation reduction. However, this result does not reproduce in our larger dataset (see Table A6 in the appendix).

the performance of one institution may be inconsistent with intended functioning of the other. We now turn towards demonstrating these macroeconomic foundations.

Matching Monetary Institutions with Macroeconomic Objectives

Our demonstration of the first proposition builds from the logic that an association between a desirable macroeconomic outcome (either lower inflation or greater external currency stability) and a monetary institution (FIX and CBI) should be strong when the latter *could* be used to achieve the former (i.e., it would effective if properly constructed)[17] and governments *actually* direct the latter towards the former. We thus regress, in sequence, *Inflation* and the measure of *Exchange Rate Stability* created by Aizenman, Chinn and Ito (2013) on *CBIlegal* and *FIXdejure*.

With *Inflation* as the dependent variable, our framework predicts that *CBIlegal* should take on a strong negative coefficient; conversely, the same should not be true for *FIXdejure*. And while we have already presented several sets of results for this dependent variable, these specifications always interacted one or more of the monetary institutions with some other variable. Thus, the next set of results are the first where we consider the unconditional relationship between *Inflation* and these formal monetary institutions.

The results in Table 6 accord with these expectations. Perhaps not surprisingly, *CBIlegal* shows a strong negative association with *Inflation* across these specifications. These results certainly do not indicate CBI has always been effective as reducing inflation. Instead, they should be read, based on

[17] We add the condition of "properly constructed" because CBI as a solution for the time-inconsistency problem requires not only that the central bank be independent but also that it holds a preference for low inflation (Adolph 2013). Likewise, FIX represents a solution for the time-inconsistency problem only if the national currency is fixed at a strong level to another currency that tends to remain strong (thus requiring a tight monetary policy).

the assumption that this monetary institution *could* be effective at reducing inflation,[18] that governments direct CBI towards this macroeconomic objective. However, *FIXdejure*, while statistically significant in models 6.2 and 6.3, is less strongly associated with reduced inflation. Indeed, its negative coefficient tends to be less than one-third the size of *CBIlegal*'s with both measured on a comparable 0-1 scale.[19] It is also important to clarify that this latter result certainly does not indicate a fixed exchange rate has never been used for inflation control; Argentina's 1991 decision to peg its peso one-to-one with the US dollar was clearly an effort towards this macroeconomic objective. Instead, the weak negative relationship between FIX and lower inflation (also observed in earlier results) suggests that government are not primarily directing this monetary institution towards domestic price stability *even if it has occasionally been used for this purpose*. In fact, this understanding accords with Frieden's (2002, 856) conclusion in the context of the second-generation framework that variables "intended to capture inclinations to fix currencies to gain anti-inflationary credibility were almost never significant."

As a robustness check in Table A7, we replace the de jure measures of FIX and CBI with their de facto equivalents: *FIXdefacto* and *CBtorinv*, and these *Inflation* models remain consistent with the third-generation framework's proposition that CBI has been directed towards this macroeconomic objective, while FIX has not. Indeed, the coefficient for *FIXdefacto* is sometimes positively signed (i.e., associated with higher inflation) although it is never statistically significant. Indeed, China's fixed exchange rate regime beginning in 1994 arguably accords with this non-result. This policy choice cannot be understood as an effort to control domestic prices (Steinberg and Shih 2012); if anything,

[18] Indeed, this assumption represents the primary macrofoundation underlying the second-generation framework: that CBI and FIX could both be used to reduce inflation.

[19] Aklin, Arias, and Gray (forthcoming) show that individual-level preferences about currency policy are based in part on inflation concerns, but this does not indicate that governments are necessarily using their currency policy for inflation control.

the deliberately undervalued yuan tends to increase inflation in China (Frankel 2005, Cline and Kim 2010). Instead, it was an effort to promote export-led growth by fixing the national currency at a competitive rate against the same in the world's largest national market (i.e., the United States).

With *Exchange Rate Stability* as the dependent variable, our proposed third-generation framework predicts that *FIXdejure* should enter with a strong positive coefficient, while *CBIlegal* should not, and the results in Table 7 accord with these expectations: *FIXdejure* is significantly associated with greater *Exchange Rate Stability* in every specification, while *CBIlegal* is not significant in any. Indeed, when *CBIlegal* does approach statistical significance (in model 7.3), its coefficient *is negative*, associating this monetary institution with reduced *Exchange Rate Stability*.[20] This result, and others noted above, hint at some potential tension between these two monetary institutions, leading the second proposition underlying our third-generation framework.

Monetary Policy Pulled in Opposite Directions

The second proposition underlying the third-generation framework is that the macroeconomic objectives of inflation control and external currency stability potentially pull monetary policy in opposite directions[21] and that this tension affects the intended performance of each monetary institution in the presence of the other. Most readers certainly understand that if prices are rising in the domestic economy, then the central bank should tighten monetary policy by raising the short-term

[20] As a robustness check, we provide another set of *Exchange Rate Stability* models in Table A8 with *FIXdefacto* and *CBtorinv* as independent variables. While it is not surprising to observe the strong positive correlation between Aizenman, Chinn and Ito's (2013) measure of *Exchange Rate Stability* and Ilzetzki, Reinhart, and Rogoff's (2019) measure for de facto fixity, it is notable that the same positive relationship is not present for the de facto measure of CBI.

[21] Indeed, this tension represents one particular manifestation of the tradeoff between domestic monetary autonomy and exchange rate stability given international capital mobility with domestic monetary defined as using the monetary policy instrument for an internal policy goal, namely domestic price stability.

interest rate as the basic instrument of national monetary policy (Leertouwer and Maier 2002).[22] Conversely, if monetary policy is being used to promote external currency stability, then the short-term interest rate typically needs to remain low on a nominal basis following the logic of the interest parity condition (Rose 1996, Shambaugh 2004).

The "uncovered" interest parity condition can be written as $\Delta e = i - i^*$, where Δe is the change in the exchange rate, i is country's nominal short-term interest rate, and i^* is the external, or world, interest rate.[23] Given international capital mobility, this equation implies that to achieve exchange rate stability ($\Delta e \rightarrow 0$), the domestic interest rate must move towards the external/world interest rate ($i \rightarrow i^*$). And if we think of the external interest rate as being largely determined by those in the largest and most developed economies (e.g., the United States, Japan, and the European Union), then i^* should be relatively low on a nominal basis, reflecting their capital abundance. Thus, moving i towards i^* to achieve exchange rate stability typically requires a *lower* nominal interest rate for most countries.

In Table 8, we provide evidence consistent with this monetary policy tension by regressing a transformed measure of the country/year's short-term policy *Interest Rate*[24] on both *Inflation*, which has

[22] These "short-term interest rates could be viewed as capturing the 'net effect' or the 'sum' of all monetary instruments. Short-term interest rates are variables that central banks can (and do) control" (Leertouwer and Maier 2002, 212).

[23] The interest parity condition is written in terms of the nominal interest rate differential rather than the real interest rate differential because the former captures the extent of domestic monetary autonomy, while the latter measures the extent of international capital mobility. With full capital mobility, the real interest rate differential is assumed to be zero because capital will move until differential real returns are zero.

[24] *Interest Rate* is measured using data from the International Monetary Fund's International Financial Statistics: https://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B. Where available, we take line 60 (the central bank policy rate), replaced in sequence by line 60a (the discount rate), 60b (the money market rate), and 60c (the treasury bill rate) when the former is not available. This nominal interest rate (i) is then transformed using the same formula as used for *Inflation* [$i/(1+i)$] to reduce the influence of outlier observations. It also effectively scales *Interest Rate* into a similar range as both *Inflation* and *Exchange Rate Stability* (see Table 1).

been measured using the same transformation, and *Exchange Rate Stability*, which was introduced above. Across all specifications, *Inflation* enters with a significant positive coefficient, consistent with the understanding that when the national economy experiences rising prices, the monetary authority predictably raises the short-term *Interest Rate* on a nominal basis. However, *Exchange Rate Stability* consistently enters with a negative coefficient, which accords with the interest parity logic above: to achieve a more stable exchange rate, the short-term *Interest Rate* needs to remain low on a nominal basis.

This monetary policy tension potentially influences the efficiency of both CBI and FIX in the presence of the other institution. Starting with the former, CBI is an efficient institution for inflation control not simply because an independent monetary authority (assuming low inflation preferences) is more able to respond to a price shock by raising the nominal interest rate, but because this ability to respond creates market credibility, thus allowing the same amount of inflation control with a smaller increase in the nominal interest rate. Stated differently, if inflation control is about assuring market actors that the government will respond to price shocks, then more independent central banks should be able to provide this assurance with a smaller increase in the nominal interest rate (compared to their more subordinate counterparts) because market actors are more confident that they could do the same again if more were needed (Bodea and Hicks 2015).

However, the efficiency advantage of CBI for inflation control may diminish in the presence of a fixed exchange rate commitment because the latter creates an incentive for the government to produce more and greater price shocks *through fiscal policy expansion*. As discussed by Clark and Hallerberg (2000), fiscal policy becomes an effective instrument for stimulating the economy with mobile capital and fixed exchange rates: fiscal expansion raises the nominal interest rate, which the central bank must offset with a monetary expansion to maintain external currency stability. But fiscal expansion is also potentially inflationary, forcing the central bank to choose between raising the

nominal interest rate for domestic price stability or lowering the same to honor the fixed exchange rate commitment.[25] Thus, market actors may become less confident that even a more independent central bank would do the former, thereby reducing its efficiency advantage, or requiring a larger increase in the nominal interest rate to demonstrate its credibility in terms of domestic price stability.

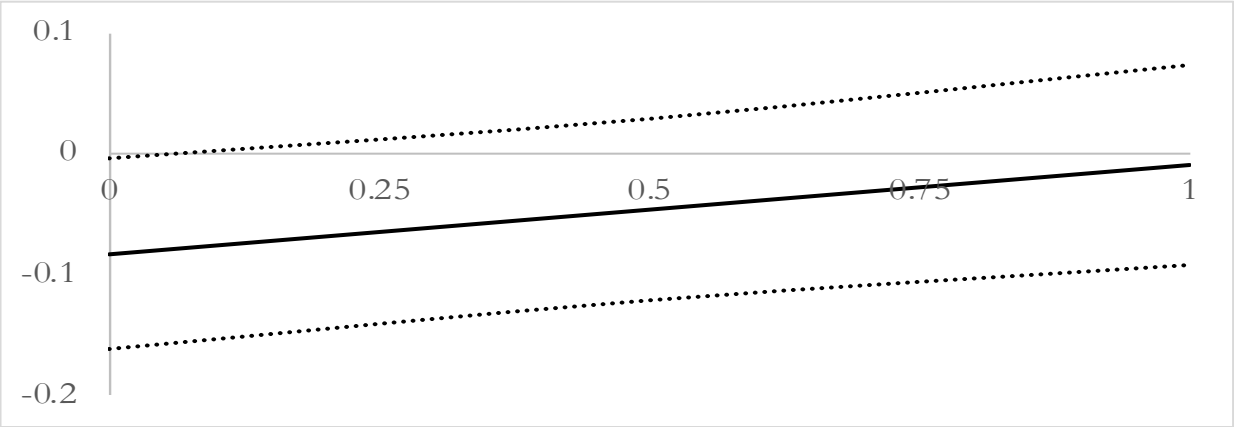
This same logic explains why the efficient operation of a fixed exchange rate regime should decline with a more independent central bank. Maintaining external currency stability often requires a lower nominal interest rate per the interest parity condition, especially when the government engages in fiscal policy expansion (Clark 2002, 736). However, a more independent central bank may be less likely to deliver the lower nominal interest rate required to maintain exchange rate stability (Bearce 2008).

We provide evidence consistent with this monetary policy tradeoff in Table 9 where *Interest Rate* is regressed on *CBIlegal*, *FIXdejure*, and their interaction. The *CBIlegal* constitutive term always enters with a significant negative coefficient, demonstrating the efficiency advantage of this monetary institution *when the other is not present*. But the positively signed interaction term shows how this efficiency advantage is only present when the exchange rate commitment is flexible (i.e., *FIXdejure*=0) with Figure 5 graphing the rising *Interest Rate*, or declining efficiency advantage, associated with *CBIlegal* at greater values for *FIXdejure* consistent with a more fixed commitment. We have already shown in Table 5 (and Figure 4) how the *Inflation*-reducing advantage associated with a legally independent central bank weakens with a more fixed exchange rate commitment, but the results in Table 9 (and Figure 5) also demonstrate that to obtain this declining lower inflation advantage, a more independent

[25] Indeed, Oatley (1997) and O'Mahony (2007) argue that governments (like the Schmidt government in West Germany) proposed fixed exchange rate regimes (notably the European Monetary System) to constrain their already independent central bank's (the Bundesbank) ability to maintain a tight monetary policy.

central bank must hold a higher *Interest Rate* given a more fixed exchange rate commitment on the part of the government.

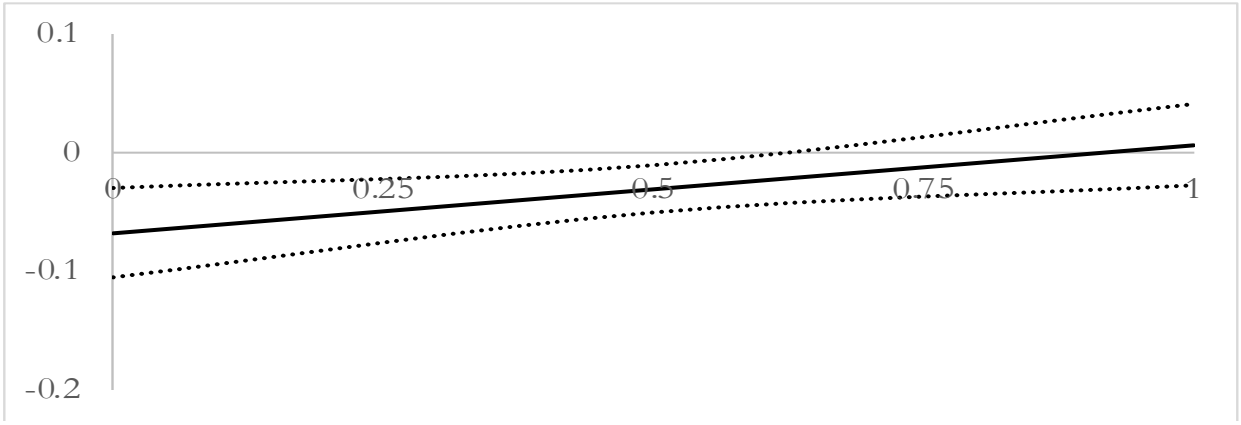
Figure 5: The Marginal Effect of *CBIlegal* on *Interest Rate* Conditioned on *FIXdejure* from Model 9.3.



The y-axis is the marginal effect of *CBIlegal*, while the x-axis is the value of *FIXdejure*. The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

Likewise, the results in Table 9 show that the *FIXdejure* constitutive term is always negatively signed and statistically significant in the more restrictive specifications. However, the positive sign on the interaction variable shows how the lower nominal interest rate expected with a fixed exchange rate commitment intended for external currency stability (following the interest parity condition) disappears with a more legally independent central bank. Figure 6 graphs the marginal effect of *FIXdejure* across the range of possible values for *CBIlegal*, showing that while the policy *Interest Rate* is significantly lower when the central bank is completely subordinate, the lower interest rate typically required to achieve exchange rate stability attenuates with a more independent central bank.

Figure 6: The Marginal Effect of *FIXdejure* on *Interest Rate* Conditioned on *CBIlegal* from Model 9.3.

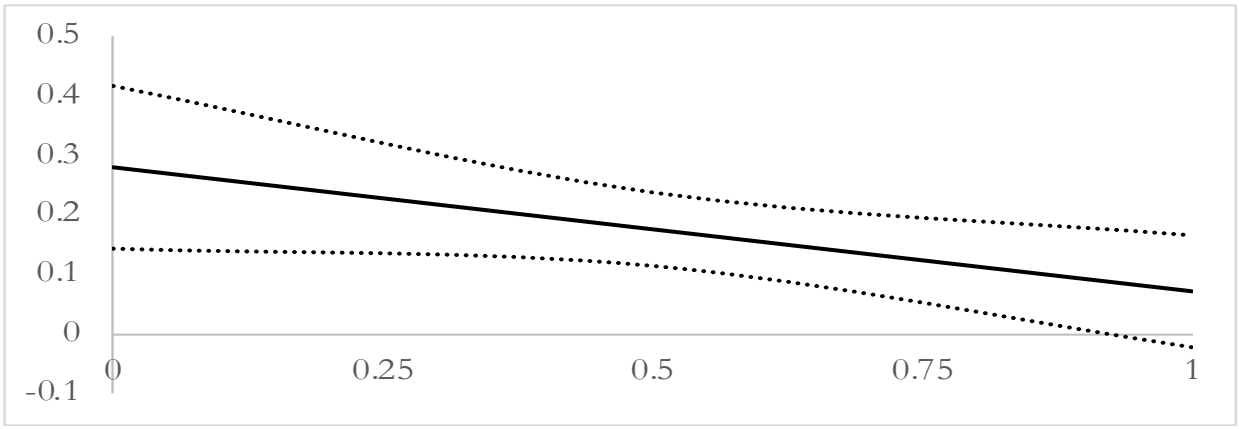


The y-axis is the marginal effect of *FIXdejure*, while the x-axis is the value of *CBIlegal*. The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

Indeed, this latter result suggests that the expected positive association between a more fixed exchange rate commitment and de facto exchange rate fixity should weaken in the presence of a more legally independent central bank. To make this demonstration, we regress *FIXdefacto* on *FIXdejure* and its interaction with *CBIlegal* in Table 10. The statistically significant positive coefficients on the *FIXdejure* constitutive term show the expected positive relationship *when the central bank is completely subordinate*. But the negative sign on the interaction terms also shows how this positive association weakens with greater values for *CBIlegal*. As graphed in Figure 7, the estimated positive association between a more fixed exchange rate commitment and actual *Exchange Rate Stability* is four times as large when *CBIlegal*=0 (0.28) as when *CBIlegal*=1 (0.07). Indeed, this result helps to explain the observed gap between de jure and de facto exchange rate regimes, consistent with the so-called "fear of fixing" (Alesina and Wagner 2006): governments that make a more fixed exchange rate commitment with a more legally independent central bank tend to operate with more flexible exchange rate regimes.[26]

[26] As a robustness check in Table A9, we replace, as the dependent variable, *FIXdefacto* with *Exchange Rate Stability*. Once again, one observes a strong positive correlation between *Exchange Rate Stability*

Figure 7: The Marginal Effect of *FIXdejure* on *FIXdefacto* Conditioned on *CBIlegal* from Model 10.3.



The y-axis is the marginal effect of *FIXdejure*, while the x-axis is the value of *CBIlegal*. The solid line provides the point estimate with the dashed lines indicating 95 percent confidence intervals.

4. Discussion

The macroeconomic foundations offered and tested in the previous section provide a new framework for political scientists studying CBI and FIX. First and important for scholars studying the policy preferences of different political actors (e.g., citizens who vote and firms that lobby), they imply a dilemma between using monetary policy for domestic price stability or for external currency stability. Indeed, this represents one important, but understudied, manifestation of the basic Mundell-Fleming tradeoff between domestic monetary policy autonomy and exchange rate stability given international capital mobility.

Thus far, the political science literature on this tradeoff has tended to identify domestic monetary autonomy with economic expansion (e.g., Clark and Hallerberg 2000) and exchange rate stability with inflation control (e.g., McNamara 1998). However, the analysis here shows how it has often been difficult to use monetary policy to achieve simultaneously the latter set (i.e., domestic price stability and external currency stability). Instead, the third-generation framework reverses the

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and *FIXdejure* when the central bank is not legally independent. But with greater CBI, this positive correlation weakens.

traditional logic about the dominant form of domestic monetary policy autonomy, associating it primarily with inflation control and an interest rate differential ($i > i^*$) that is often inconsistent with external currency stability per the interest parity condition ($\Delta e = i - i^*$). Going further, given a low world/external interest rate (i^*), exchange rate stability, especially when the national currency has been fixed at an undervalued rate (e.g., China post-1994), represents the choice for economic expansion (e.g., export-led growth) with predicable costs in terms of domestic price stability (Rodrik 2010).

Second and important for political economists studying how institutions (both domestic and international) influence policy outcomes creating winners and losers, this monetary policy dilemma highlights the difficulties facing governments that operate with both CBI and FIX. These monetary institutions are certainly not complements either for domestic price stability (see Table 5) or external currency stability (see Table 10). And while CBI and FIX both operate more efficiently towards their primary policy goal (respectively, inflation control and exchange rate stability) when the other institution is not also present, this does not mean they function as substitutes for achieving either of these two macroeconomic objectives. Instead, their use for primarily different macroeconomic objectives offers alternative explanations for two of the more prominent results associated with the second-generation framework. Notably, Broz (2002) showed that 1) less democratic governments are more likely to fix their exchange rates and 2) CBI can be associated with lower inflation but only in more democratic regimes, consistent with the earlier results from Cukierman (1992). Here we do not dispute either empirical relationship,[27] but both can be explained within our third-generation framework.

[27] However, other research (e.g., Garriga and Rodriguez 2020) shows that legal CBI can be associated with reduced inflation in less democratic regimes even if this monetary institution is more effective in more democratic regimes.

Beginning with the finding that less democratic governments are more likely to fix their exchange rates, this result has been read to show how less democratic governments choose to obtain their inflation control per the logic of the second-generation framework. However, given a tradeoff between using monetary policy for domestic price stability or for external currency stability, one can identify the first choice as the more public, or collective, good, based on the understanding that *all* citizens are consumers who can be expected to favor lower/more stable prices and the second as a more private good since a *lesser* proportion of citizens work in exporting industries/firms with an expected preference for a fixed exchange rate (Bernard et al. 2007, Frieden 1991). And if it is easier for less democratic governments to set policy according to more private interests (Bueno de Mesquita et al. 2005), then one would expect autocracies to be more likely to choose the second.[28] However, this choice is not about inflation control; instead, it represents a decision for exchange rate stability (Bearce and Hallerberg 2011) to boost exports and expand the economy. Indeed, Steinberg and Malhotra (2014) have already shown that less democratic tend to fix their currencies at more undervalued, or competitive, levels even if this policy choice also tends to increase inflation (Steinberg 2016).

Considering next the finding that CBI is more effective at reducing inflation in more democratic regimes, this result has been read to indicate either that autocratic governments tend to interfere more with their supposedly independent monetary authorities or that this monetary institution is too opaque to function properly in less transparent, or more autocratic, political regimes. However, our data provide no support for the first explanation as *Democracy* (measured using the Polity scale) is negatively (and often significantly) associated with the central bank inverted turnover rate

[28] The same logic offers an alternative explanation for why more democratic governments are more likely to accept legally independent central banks (see Table 2): they are more constrained to choose the public good (e.g., domestic price stability) with CBI as the monetary institution primarily associated with this macroeconomic objective (see Table 6).

(*CBtorinv*), indicating that more democratic regimes tend to experience *greater* turnover, both regular and irregular, within their monetary authority (see Table A2). And while CBI may be opaque, it can be made more transparent with inflation-targeting (Mukherjee and Singer 2008). Furthermore, FIX may be considered just as opaque as CBI based on the gap between de jure and de facto exchange rate regimes with Reinhart and Rogoff (2004, 40) reporting how "the official and other histories of exchange rate arrangements can be profoundly misleading, as a striking number of pegs are much better described as floats, and vice versa." Instead, the result that CBI is more effective at reducing inflation in more democratic regimes could be explained by combining the finding discussed above (less democratic governments tend to choose FIX for external currency stability) with our result showing that a legally independent central bank becomes less effective at reducing inflation in the presence of a fixed exchange rate commitment.

This understanding shows the basic direction for future research focused on these monetary institutions in the context of the third-generation framework: *studying the tension between CBI and FIX*. This tension suggests a political battle between actors favoring domestic price stability and those favoring external currency stability. In this political competition, the actors favoring domestic price stability might be expected to push for CBI to "lock in" future governments representing preferences for external currency stability. Likewise, governments favoring external currency stability may choose FIX to impose this preference on their successors who might favor domestic price stability. This logic may help to explain why, in certain countries, one can observe Bodea's (2010) "correlated choice" of CBI with FIX. But this combination does not represent a rational economic choice given their reduced performance both in terms of inflation control and exchange rate fixity when combined. Instead, it may represent a sequence of political choices where each side becomes able at different

points in time to impose the monetary institution consistent with its favored macroeconomic objective to frustrate the preferences of the other side based on this monetary policy tradeoff.[29]

Indeed, this logic offers a political explanation for the results in Table 9, showing that the gap between de facto and de jure FIX increases with legal CBI: this latter monetary institution indicates the political power of actors favoring domestic price stability and their ability to interfere with preferences of actors favoring external currency stability. Correspondingly in Table A10, we show how the expected positive association between *CBtorinv* and *CBIlegal* weakens, or the gap between de facto and de jure CBI increases, with a fixed exchange rate commitment. The latter monetary institution demonstrates the political power of actors favoring external currency stability and their ability to interfere with preferences of actors favoring domestic price stability.

2nd Generation Framework	
CBI and FIX function more as substitutes for inflation control	
H1	More democratic governments select greater CBI
H2	FIX associated with reduced inflation at least in less democratic regimes
CBI and FIX function more as complements for inflation control	
H3	There is a positive correlation between CBI and FIX
H4	CBI and FIX are associated with reduced inflation when combined
3rd Generation Framework	
CBI and FIX used to achieve different macroeconomic objectives	
H5	CBI more associated with inflation control than FIX
H6	FIX more associated with external currency stability than CBI
Tension between these macroeconomic objectives and these monetary institutions	
H7	Inflation control and exchange rate stability pull monetary policy in opposite directions
H8	CBI associated with increased inflation in the presence of FIX
H9	FIX associated with reduced external currency stability in the presence of CBI.

[29] It may also be possible to combine FIX with CBI at the regional level to *satisfice* both sides in this political competition. For example, Economic and Monetary Union in Western Europe created a common regional currency for a completely fixed exchange rate among participating countries and an independent regional central bank with a below two percent inflation target, which required a flexible exchange rate vis-a-vis all other currencies (i.e., hence, incomplete exchange rate fixity).

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Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CBIlegal	6,374	.4839836	.2167934	0	.98
CBtorinv	5,845	.8408897	.1712515	0	1
FIXdejure	6,229	.6277091	.4164025	0	1
FIXdefacto	7,424	.7598779	.2909022	0	1
Inflation	6,323	.0966339	.1338672	-.5585228	.9959202
Interest Rate	4,270	.0960977	.0940153	-.0002311	.9937022
Exchange Rate Stability	7,354	.6522035	.329858	.001342	1
Democracy (Polity)	6,666	11.18287	7.379175	0	20
Democracy (FHinverted)	7,264	6.522852	4.109479	0	12
Regional	8,611	.1154337	.3195632	0	1
Inflation Target	8,611	.0533039	.2246519	0	1
GDP (billions)	7,133	207.1682	887.9027	.0160449	14796.64
Population (millions)	8,611	28.26598	110.6062	.007296	1364.27
lnGDPpc	7,130	7.955418	1.605857	4.242465	11.97416
Trade Openness	6,882	79.32396	48.86869	.0209992	531.7374
Capital Openness	6,713	.4379814	.355715	0	1

Table 2: Estimates of *CBIlegal* on *Democracy* (Polity).

Model:	2.1	2.2	2.3	2.4
Democracy (Polity)	0.000572*	0.00830*	0.00317	0.000485
	(0.000152)	(0.00188)	(0.00188)	(0.000422)
FIXdejure	-0.00573*	0.00377	0.0181	0.00200
	(0.00247)	(0.0170)	(0.0159)	(0.00355)
Regional	0.0114*	0.313*	0.262*	0.0477*
	(0.00296)	(0.0390)	(0.0398)	(0.0104)
Inflation Target	-0.00341	0.0854*	0.0395	0.00142
	(0.00282)	(0.0253)	(0.0288)	(0.00533)
GDP	-1.24e-06*	8.32e-06	-7.66e-06	-1.74e-06
	(4.84e-07)	(1.40e-05)	(1.15e-05)	(1.85e-06)
Population	-1.87e-06	0.000114	-0.000121	-2.86e-05
	(9.94e-06)	(0.000267)	(0.000200)	(3.35e-05)
lnGDPpc	-0.000367	0.0413	0.00225	0.00262
	(0.000702)	(0.0263)	(0.0249)	(0.00424)
Trade Openness	2.08e-05	0.000827*	0.000526*	0.000103*
	(1.81e-05)	(0.000227)	(0.000188)	(4.67e-05)
Capital Openness	0.00401	0.0947*	0.0598*	0.00624
	(0.00323)	(0.0287)	(0.0288)	(0.00588)
LDV	0.958*			0.848*
	(0.00597)			(0.0176)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,458	4,548	4,548	4,458

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * $p<0.05$ (two-tailed).

Table 3: Estimates of *Inflation* on *FIXdejure* conditioned on *Democracy* (Polity).

	3.1	3.2	3.3	3.4
FIXdejure	-0.0100	-0.0713	-0.0595	-0.0191
	(0.0105)	(0.0361)	(0.0370)	(0.0129)
*FIXdejure*Democracy*	-0.000363	-0.00234	-0.00149	-0.000393
	(0.000534)	(0.00173)	(0.00170)	(0.000657)
Democracy (Polity)	0.000322	0.00211	0.00201	0.000710
	(0.000569)	(0.00197)	(0.00201)	(0.000753)
CBIlegal	-0.0173*	-0.137*	-0.101	-0.0421*
	(0.00593)	(0.0559)	(0.0528)	(0.0206)
Regional	-0.00654*	0.0754*	0.0878*	0.0271*
	(0.00296)	(0.0271)	(0.0264)	(0.00992)
Inflation Target	-0.00834*	-0.0681*	-0.0492*	-0.0119
	(0.00313)	(0.0260)	(0.0249)	(0.00710)
GDP	-1.07e-06	-2.49e-06	2.54e-07	8.06e-07
	(7.05e-07)	(2.85e-06)	(3.02e-06)	(1.09e-06)
Population	-1.55e-05*	-5.82e-05	1.18e-05	-2.09e-05
	(3.42e-06)	(8.80e-05)	(7.50e-05)	(3.22e-05)
lnGDPpc	0.00143	-0.0166	-0.00908	0.00717
	(0.000933)	(0.0132)	(0.0159)	(0.00556)
Trade Openness	-7.43e-05*	0.000123	7.70e-05	9.88e-05
	(2.44e-05)	(0.000144)	(0.000144)	(5.91e-05)
Capital Openness	-0.0216*	-0.143*	-0.139*	-0.0410*
	(0.00364)	(0.0248)	(0.0231)	(0.00874)
LDV	0.800*			0.713*
	(0.0266)			(0.0371)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,209	4,290	4,290	4,209

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 4: Estimates of *FIXdejure* on *CBIlegal*.

	4.1	4.2	4.3	4.4
CBIlegal	0.00677	0.0261	0.122	0.0562
	(0.0152)	(0.118)	(0.111)	(0.0334)
Democracy (Polity)	-0.00196*	-0.0138*	-0.00394	-0.000328
	(0.000437)	(0.00291)	(0.00309)	(0.00103)
Regional	0.0326*	-0.0224	-0.0133	-0.0544*
	(0.00887)	(0.0802)	(0.0733)	(0.0198)
Inflation Target	-0.0492*	-0.244*	-0.225*	-0.0525*
	(0.00654)	(0.0537)	(0.0539)	(0.0147)
GDP	-7.09e-06*	-1.02e-05	2.19e-05	1.27e-05*
	(2.42e-06)	(1.05e-05)	(1.36e-05)	(4.34e-06)
Population	-2.86e-05	-0.00138*	-0.000938*	-0.000180*
	(1.56e-05)	(0.000370)	(0.000233)	(5.55e-05)
lnGDPpc	0.000352	0.00186	0.0601	0.0118
	(0.00223)	(0.0437)	(0.0423)	(0.0110)
Trade Openness	6.19e-05	-0.00190*	-0.00154*	-0.000398*
	(5.64e-05)	(0.000637)	(0.000606)	(0.000163)
Capital Openness	0.00445	-0.100	-0.0761	0.00760
	(0.00890)	(0.0554)	(0.0546)	(0.0155)
LDV	0.871*			0.764*
	(0.00832)			(0.0133)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,466	4,548	4,548	4,466

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 5: Estimates of *Inflation* on *CBIlegal*FIXdejure* interaction.

	5.1	5.2	5.3	5.4
*CBIlegal*FIXdejure*	0.0138	0.149*	0.128*	0.0379*
	(0.0115)	(0.0367)	(0.0382)	(0.0186)
FIXdejure	-0.0126	-0.117*	-0.0962*	-0.0285*
	(0.00889)	(0.0272)	(0.0279)	(0.0129)
CBIlegal	-0.0246*	-0.216*	-0.168*	-0.0621*
	(0.00960)	(0.0609)	(0.0597)	(0.0232)
Democracy (Polity)	-0.000152	-0.000858	1.76e-05	0.000123
	(0.000211)	(0.000987)	(0.00107)	(0.000448)
Regional	-0.00784*	0.0756*	0.0877*	0.0272*
	(0.00272)	(0.0257)	(0.0252)	(0.00956)
Inflation Target	-0.00887*	-0.0717*	-0.0530*	-0.0134*
	(0.00311)	(0.0251)	(0.0237)	(0.00665)
GDP	-1.22e-06	-1.56e-06	1.35e-06	1.19e-06
	(7.53e-07)	(3.36e-06)	(3.39e-06)	(1.20e-06)
Population	-1.60e-05*	-9.84e-05	-1.72e-05	-3.01e-05
	(3.49e-06)	(8.77e-05)	(7.40e-05)	(3.13e-05)
lnGDPpc	0.00139	-0.0194	-0.0125	0.00601
	(0.000930)	(0.0136)	(0.0164)	(0.00537)
Trade Openness	-7.28e-05*	0.000115	6.75e-05	9.55e-05
	(2.44e-05)	(0.000145)	(0.000145)	(5.94e-05)
Capital Openness	-0.0215*	-0.141*	-0.137*	-0.0405*
	(0.00366)	(0.0250)	(0.0234)	(0.00875)
LDV	0.799*			0.711*
	(0.0266)			(0.0375)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,209	4,290	4,290	4,209

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 6: Estimates of *Inflation* on *FIXdejure* and *CBIlegal*.

	6.1	6.2	6.3	6.4
FIXdejure	-0.00545	-0.0412*	-0.0307*	-0.00889
	(0.00401)	(0.0138)	(0.0140)	(0.00619)
CBIlegal	-0.0171*	-0.136*	-0.102	-0.0425*
	(0.00591)	(0.0557)	(0.0533)	(0.0207)
Democracy (Polity)	-0.000140	-0.000843	-0.000132	7.87e-05
	(0.000210)	(0.00103)	(0.00110)	(0.000451)
Regional	-0.00696*	0.0746*	0.0870*	0.0268*
	(0.00283)	(0.0271)	(0.0263)	(0.00986)
Inflation Target	-0.00898*	-0.0722*	-0.0535*	-0.0134*
	(0.00308)	(0.0252)	(0.0238)	(0.00665)
GDP	-1.17e-06	-2.62e-06	-1.01e-07	7.27e-07
	(7.19e-07)	(2.90e-06)	(3.00e-06)	(1.05e-06)
Population	-1.53e-05*	-6.43e-05	1.80e-06	-2.45e-05
	(3.43e-06)	(8.66e-05)	(7.35e-05)	(3.16e-05)
lnGDPpc	0.00138	-0.0178	-0.0104	0.00670
	(0.000933)	(0.0135)	(0.0161)	(0.00536)
Trade Openness	-7.42e-05*	0.000121	7.11e-05	9.70e-05
	(2.44e-05)	(0.000145)	(0.000145)	(5.93e-05)
Capital Openness	-0.0215*	-0.143*	-0.140*	-0.0410*
	(0.00365)	(0.0248)	(0.0230)	(0.00872)
LDV	0.800*			0.714*
	(0.0265)			(0.0370)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,209	4,290	4,290	4,209

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 7: Estimates of *Exchange Rate Stability* on *FIXdejure* and *CBIlegal*.

	7.1	7.2	7.3	7.4
FIXdejure	0.112*	0.285*	0.267*	0.145*
	(0.0161)	(0.0272)	(0.0288)	(0.0195)
CBIlegal	0.0307	-0.0907	-0.130	-0.0469
	(0.0185)	(0.0785)	(0.0846)	(0.0456)
Democracy (Polity)	-0.00117	-0.00215	-0.00258	-0.00125
	(0.000680)	(0.00184)	(0.00199)	(0.00112)
Regional	0.0976*	0.416*	0.418*	0.212*
	(0.0128)	(0.0563)	(0.0587)	(0.0325)
Inflation Target	-0.0292*	-0.0412	-0.0596	-0.0295
	(0.0106)	(0.0292)	(0.0314)	(0.0176)
GDP	-2.27e-05	-3.13e-05	-2.80e-05	-1.09e-05
	(1.19e-05)	(3.29e-05)	(3.30e-05)	(1.75e-05)
Population	8.12e-05*	-2.81e-05	-7.12e-05	-2.39e-06
	(3.08e-05)	(0.000183)	(0.000199)	(0.000111)
lnGDPpc	-0.00172	0.0133	0.000800	-0.00397
	(0.00286)	(0.0273)	(0.0300)	(0.0159)
Trade Openness	0.000163	9.24e-05	-3.20e-05	5.60e-05
	(8.33e-05)	(0.000311)	(0.000339)	(0.000197)
Capital Openness	0.0683*	0.143*	0.135*	0.0893*
	(0.0127)	(0.0377)	(0.0360)	(0.0194)
LDV	0.655*			0.486*
	(0.0228)			(0.0222)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,384	4,447	4,447	4,384

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * $p<0.05$ (two-tailed).

Table 8: Estimates of *Interest Rate* on *Inflation* and *Exchange Rate Stability*.

	(1)	(2)	(3)	(4)
Inflation	0.199*	0.484*	0.482*	0.227*
	(0.0368)	(0.0841)	(0.0873)	(0.0507)
Exchange Rate Stability	-0.0110*	-0.0367*	-0.0189*	-0.0172*
	(0.00285)	(0.0101)	(0.00866)	(0.00457)
Democracy (Polity)	-3.92e-05	0.000723	-8.40e-05	1.72e-05
	(0.000112)	(0.000757)	(0.000644)	(0.000299)
Regional	0.00114	-0.00723	-0.0225*	-0.00371
	(0.00186)	(0.0106)	(0.0113)	(0.00577)
Inflation Target	-0.00616*	-0.0628*	-0.0603*	-0.0215*
	(0.00145)	(0.0122)	(0.0118)	(0.00489)
GDP	-2.58e-06*	-2.25e-06	-8.10e-06	-2.99e-06
	(1.06e-06)	(6.72e-06)	(1.20e-05)	(3.40e-06)
Population	1.59e-06	1.66e-05	-3.81e-05	-3.01e-05
	(2.58e-06)	(3.44e-05)	(3.65e-05)	(1.63e-05)
lnGDPpc	1.77e-05	-0.0219	-0.0222	-0.000352
	(0.000499)	(0.0111)	(0.0123)	(0.00453)
Trade Openness	-2.96e-05*	6.57e-05	3.42e-05	3.29e-05
	(1.16e-05)	(0.000101)	(0.000108)	(4.20e-05)
Capital Openness	0.00412	0.00599	-0.00735	0.000519
	(0.00300)	(0.00999)	(0.00909)	(0.00422)
LDV	0.739*			0.609*
	(0.0409)			(0.0457)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,125	3,229	3,229	3,125

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 9: Estimates of *Interest Rate* on *CBIlegal, FIXdejure* and *CBIlegal*FIXdejure*.

	9.1	9.2	9.3	9.4
CBIlegal	-0.0204*	-0.127*	-0.0827*	-0.0405*
	(0.00636)	(0.0381)	(0.0396)	(0.0183)
FIXdejure	-0.00920	-0.113*	-0.0671*	-0.0185*
	(0.00491)	(0.0257)	(0.0191)	(0.00731)
*CBIlegal*FIXdejure*	0.00864	0.127*	0.0738*	0.0248
	(0.00884)	(0.0352)	(0.0301)	(0.0139)
Democracy (Polity)	6.34e-05	0.00132	0.000896	0.000186
	(0.000117)	(0.00132)	(0.00120)	(0.000285)
Regional	-0.00220	0.0204	0.0211	0.0127
	(0.00194)	(0.0230)	(0.0219)	(0.00780)
Inflation Target	-0.00717*	-0.0936*	-0.0802*	-0.0153*
	(0.00191)	(0.0247)	(0.0207)	(0.00447)
GDP	-1.15e-06*	-1.58e-06	-5.87e-06	-7.89e-07
	(4.69e-07)	(4.08e-06)	(3.48e-06)	(7.91e-07)
Population	-7.04e-06*	-3.45e-05	-4.33e-05	-3.99e-05
	(2.67e-06)	(5.98e-05)	(5.54e-05)	(2.12e-05)
lnGDPpc	0.000452	-0.0324*	-0.0252	0.00557
	(0.000706)	(0.0117)	(0.0143)	(0.00502)
Trade Openness	-4.99e-05*	-4.58e-05	-5.52e-05	2.27e-05
	(1.63e-05)	(8.16e-05)	(9.51e-05)	(3.30e-05)
Capital Openness	-0.00723*	-0.0626*	-0.0678*	-0.0174*
	(0.00291)	(0.0176)	(0.0168)	(0.00496)
LDV	0.889*			0.790*
	(0.0205)			(0.0366)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	2,959	3,048	3,048	2,959

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table 10: Estimates of *FIXdefacto* on *FIXdejure* Conditioned on *CBIlegal.*

	10.1	10.2	10.3	10.4
FIXdejure	0.0419*	0.336*	0.280*	0.0651*
	(0.0147)	(0.0666)	(0.0688)	(0.0225)
FIXdejure x CBIlegal	-0.0255	-0.288*	-0.209*	-0.0425
	(0.0192)	(0.0950)	(0.100)	(0.0315)
CBIlegal	0.0564*	0.178	0.107	0.0325
	(0.0153)	(0.0923)	(0.0968)	(0.0310)
Democracy (Polity)	9.33e-05	0.000839	0.000642	-2.62e-05
	(0.000305)	(0.00207)	(0.00233)	(0.000701)
Regional	0.0266*	0.242*	0.241*	0.0421
	(0.00527)	(0.0766)	(0.0758)	(0.0248)
Inflation Target	-0.0271*	-0.141*	-0.153*	-0.0276*
	(0.00563)	(0.0346)	(0.0353)	(0.00874)
GDP	-8.85e-06*	-3.32e-05	-3.13e-05	-1.05e-07
	(1.65e-06)	(1.95e-05)	(1.76e-05)	(4.69e-06)
Population	3.14e-05*	0.000195	0.000167	2.39e-05
	(5.53e-06)	(0.000342)	(0.000341)	(5.29e-05)
lnGDPpc	-0.000665	0.00592	0.000911	-0.0104
	(0.00128)	(0.0305)	(0.0347)	(0.00743)
Trade Openness	0.000102	0.000192	0.000192	4.80e-05
	(5.86e-05)	(0.000277)	(0.000286)	(0.000102)
Capital Openness	0.0177*	0.140*	0.138*	0.0366*
	(0.00547)	(0.0416)	(0.0401)	(0.0126)
LDV	0.884*			0.801*
	(0.0110)			(0.0158)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,019	4,171	4,171	4,019

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Appendix: Additional Empirical Results

Table A1: Estimates of *CBIlegal* on *Democracy* (FHinverted).

	A1.1	A1.2	A1.3	A1.4
Democracy (FHinverted)	0.000578*	0.00911*	0.00266	-0.000124
	(0.000237)	(0.00353)	(0.00335)	(0.000643)
FIXdejure	-0.00678*	-0.0108	0.0106	0.000959
	(0.00235)	(0.0187)	(0.0165)	(0.00356)
Regional	0.0102*	0.302*	0.250*	0.0489*
	(0.00282)	(0.0375)	(0.0382)	(0.0107)
Inflation Target	-0.00182	0.105*	0.0506	0.00472
	(0.00307)	(0.0280)	(0.0303)	(0.00623)
GDP	-1.23e-06*	7.60e-06	-9.24e-06	-2.37e-06
	(4.47e-07)	(1.51e-05)	(1.22e-05)	(1.81e-06)
Population	-1.37e-06	0.000207	-0.000118	-2.98e-05
	(8.55e-06)	(0.000359)	(0.000230)	(3.71e-05)
lnGDPpc	-0.000392	0.0424	-0.00259	0.00197
	(0.000685)	(0.0285)	(0.0243)	(0.00418)
Trade Openness	2.01e-05	0.000932*	0.000557*	0.000106*
	(1.67e-05)	(0.000241)	(0.000186)	(4.60e-05)
Capital Openness	0.00546	0.0975*	0.0595*	0.00673
	(0.00308)	(0.0290)	(0.0290)	(0.00614)
LDV	0.959*			0.844*
	(0.00570)			(0.0178)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,635	4,665	4,665	4,635

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A2: Estimates of *CBtorinv* on *Democracy* (Polity).

	A2.1	A2.2	A2.3	A2.4
Democracy (Polity)	-0.000527*	-0.00368*	-0.00340*	-0.000296
	(0.000237)	(0.00151)	(0.00167)	(0.000649)
FIXdefacto	0.0109*	0.0478*	0.0372	0.00805
	(0.00542)	(0.0230)	(0.0225)	(0.00777)
Regional	0.00282	-0.0300	-0.0288	-0.00924
	(0.00326)	(0.0238)	(0.0237)	(0.00839)
Inflation Target	0.00514	0.0326	0.0292	0.00242
	(0.00381)	(0.0186)	(0.0197)	(0.00658)
GDP	2.07e-06*	1.17e-05*	1.28e-05*	1.54e-06
	(7.29e-07)	(5.60e-06)	(5.79e-06)	(2.27e-06)
Population	-1.56e-06	9.10e-05	8.42e-05	4.03e-05
	(4.03e-06)	(8.52e-05)	(8.43e-05)	(3.36e-05)
lnGDPpc	0.000240	0.0347	0.0519*	0.0214*
	(0.00113)	(0.0204)	(0.0248)	(0.00901)
Trade Openness	5.65e-05	-0.000267	-0.000307	-9.45e-05
	(3.25e-05)	(0.000246)	(0.000263)	(0.000103)
Capital Openness	0.0141*	0.0426	0.0397	0.0178
	(0.00506)	(0.0228)	(0.0233)	(0.00911)
LDV	0.772*			0.704*
	(0.00983)			(0.00966)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,911	4,011	4,011	3,911

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A3: Estimates of *Inflation* on *FIXdefacto* conditioned on *Democracy* (Polity).

	A3.1	A3.2	A3.3	A3.4
FIXdefacto	-0.0133	0.00971	0.00720	-0.00343
	(0.00872)	(0.0274)	(0.0284)	(0.0148)
*FIXdefacto * Democracy*	0.000508	-0.000405	-0.000387	0.000106
	(0.000512)	(0.00143)	(0.00143)	(0.000763)
Democracy (Polity)	-0.000347	-0.00134	-0.000157	-0.000203
	(0.000444)	(0.00106)	(0.00106)	(0.000568)
CBItorinv	-0.0145*	-0.0339*	-0.0348*	-0.0113*
	(0.00547)	(0.00968)	(0.0103)	(0.00554)
Regional	-0.0162*	-0.0114	0.00572	-0.00194
	(0.00272)	(0.00715)	(0.00776)	(0.00437)
Inflation Target	-0.0120*	-0.0387*	-0.0290*	-0.0125*
	(0.00293)	(0.00842)	(0.00820)	(0.00455)
GDP	-1.65e-06*	-4.34e-06*	-1.10e-06	-8.93e-07
	(7.11e-07)	(1.67e-06)	(1.34e-06)	(7.84e-07)
Population	-1.08e-05*	3.55e-05	9.76e-05*	5.41e-05*
	(2.31e-06)	(4.11e-05)	(2.65e-05)	(1.50e-05)
lnGDPpc	-0.000598	-0.0343*	-0.0140	-0.00478
	(0.000774)	(0.00748)	(0.00880)	(0.00454)
Trade Openness	-7.12e-05*	0.000193*	0.000135	0.000100
	(1.90e-05)	(8.76e-05)	(8.90e-05)	(5.49e-05)
Capital Openness	-0.0142*	-0.0612*	-0.0543*	-0.0193*
	(0.00342)	(0.0111)	(0.0101)	(0.00506)
LDV	0.544*			0.470*
	(0.0348)			(0.0443)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,816	3,837	3,837	3,816

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A4: Estimates of *FIXdefacto* on *CBItorinv*.

	A4.1	A4.2	A4.3	A4.4
CBItorinv	-0.00107	0.0704*	0.0535	0.00501
	(0.0111)	(0.0346)	(0.0328)	(0.0131)
Democracy (Polity)	0.000220	0.000501	-0.000569	0.000481
	(0.000261)	(0.00244)	(0.00248)	(0.000626)
Regional	0.0278*	0.272*	0.266*	0.0349*
	(0.00470)	(0.0703)	(0.0708)	(0.0166)
Inflation Target	-0.0267*	-0.184*	-0.194*	-0.0299*
	(0.00527)	(0.0359)	(0.0379)	(0.00777)
GDP	-7.30e-06*	-5.18e-06	-6.01e-06	-1.85e-06
	(1.94e-06)	(1.48e-05)	(1.42e-05)	(2.45e-06)
Population	1.63e-05	-2.16e-05	-4.49e-05	1.49e-05
	(9.37e-06)	(0.000366)	(0.000336)	(3.89e-05)
lnGDPpc	0.00131	-0.0145	-0.0217	-0.0110
	(0.00121)	(0.0389)	(0.0449)	(0.00913)
Trade Openness	3.11e-05	0.000351	5.94e-05	6.94e-05
	(6.29e-05)	(0.000442)	(0.000444)	(0.000102)
Capital Openness	0.0117*	0.116*	0.104*	0.0172
	(0.00447)	(0.0441)	(0.0431)	(0.00938)
LDV	0.916*			0.827*
	(0.0100)			(0.0132)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,131	4,221	4,221	4,131

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * $p<0.05$ (two-tailed).

Table A5: Estimates of I*nflation* on *FIXdefacto*CBtorinv*.

	A5.1	A5.2	A5.3	A5.4
*CBItorinv*FIXdefacto*	-0.0247	0.0197	0.0228	-0.00754
	(0.0205)	(0.0334)	(0.0354)	(0.0224)
FIXdefacto	0.0138	-0.0113	-0.0162	0.00399
	(0.0181)	(0.0285)	(0.0308)	(0.0190)
CBItorinv	0.00187	-0.0470*	-0.0500*	-0.00623
	(0.0155)	(0.0220)	(0.0226)	(0.0161)
Democracy (Polity)	2.64e-05	-0.00162*	-0.000430	-0.000129
	(0.000168)	(0.000576)	(0.000516)	(0.000285)
Regional	-0.0158*	-0.0124	0.00461	-0.00162
	(0.00278)	(0.00716)	(0.00784)	(0.00442)
Inflation Target	-0.0130*	-0.0381*	-0.0285*	-0.0126*
	(0.00298)	(0.00853)	(0.00838)	(0.00466)
GDP	-1.98e-06*	-4.20e-06*	-9.58e-07	-9.39e-07
	(7.68e-07)	(1.69e-06)	(1.35e-06)	(7.90e-07)
Population	-1.06e-05*	3.77e-05	9.97e-05*	5.35e-05*
	(2.21e-06)	(3.96e-05)	(2.55e-05)	(1.47e-05)
lnGDPpc	-0.000622	-0.0344*	-0.0143	-0.00465
	(0.000778)	(0.00748)	(0.00889)	(0.00462)
Trade Openness	-6.98e-05*	0.000193*	0.000133	0.000101
	(1.88e-05)	(8.72e-05)	(8.84e-05)	(5.49e-05)
Capital Openness	-0.0142*	-0.0611*	-0.0542*	-0.0193*
	(0.00336)	(0.0112)	(0.0102)	(0.00505)
LDV	0.545*			0.471*
	(0.0346)			(0.0445)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,816	3,837	3,837	3,816

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A6: Estimates of *Inflation* on *FIXdejure*FIXdefacto*.

	A6.1	A5.2	A5.3	A5.4
*FIXdejure*FIXdefacto*	-0.0154	-0.00261	0.0122	-0.000610
	(0.00884)	(0.0114)	(0.0128)	(0.00900)
FIXdefacto	-0.00247	-0.00117	-0.00528	-0.00102
	(0.00719)	(0.0116)	(0.0122)	(0.00824)
FIXdejure	0.00917	-0.0104	-0.0181	-0.00392
	(0.00714)	(0.0100)	(0.0103)	(0.00715)
CBIlegal	-0.00756	-0.0606*	-0.0370	-0.0226
	(0.00533)	(0.0255)	(0.0250)	(0.0135)
Democracy (Polity)	9.09e-05	-0.000990	3.29e-05	0.000276
	(0.000185)	(0.000529)	(0.000589)	(0.000363)
Regional	-0.0103*	0.00667	0.0208	0.00724
	(0.00293)	(0.0116)	(0.0119)	(0.00658)
Inflation Target	-0.0139*	-0.0427*	-0.0309*	-0.0145*
	(0.00367)	(0.00899)	(0.00887)	(0.00551)
GDP	-2.15e-06*	-6.02e-06*	-2.85e-06	-1.00e-06
	(9.17e-07)	(1.58e-06)	(1.66e-06)	(9.03e-07)
Population	-9.19e-06*	-2.11e-05	4.63e-05	2.59e-05
	(2.74e-06)	(2.74e-05)	(2.70e-05)	(1.50e-05)
lnGDPpc	-0.000536	-0.00717	0.000776	0.00244
	(0.000832)	(0.00884)	(0.00955)	(0.00420)
Trade Openness	-6.25e-05*	0.000204*	0.000124	0.000107*
	(2.06e-05)	(7.53e-05)	(6.38e-05)	(4.99e-05)
Capital Openness	-0.0147*	-0.0642*	-0.0652*	-0.0278*
	(0.00389)	(0.0117)	(0.0110)	(0.00672)
LDV	0.518*			0.434*
	(0.0367)			(0.0467)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,872	3,949	3,949	3,872

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A7: Estimates of *Inflation* on *FIXdefacto* and *CBItorinv*.

	A7.1	A7.2	A7.3	A7.4
FIXdefacto	-0.00664	0.00430	0.00202	-0.00201
	(0.00420)	(0.0117)	(0.0129)	(0.00638)
CBItorinv	-0.0148*	-0.0337*	-0.0346*	-0.0113*
	(0.00551)	(0.00949)	(0.0101)	(0.00556)
Democracy (Polity)	4.10e-05	-0.00162*	-0.000422	-0.000131
	(0.000166)	(0.000577)	(0.000523)	(0.000285)
Regional	-0.0161*	-0.0121	0.00502	-0.00176
	(0.00278)	(0.00701)	(0.00761)	(0.00437)
Inflation Target	-0.0128*	-0.0383*	-0.0286*	-0.0126*
	(0.00298)	(0.00860)	(0.00845)	(0.00468)
GDP	-1.88e-06*	-4.34e-06*	-1.09e-06	-8.95e-07
	(7.78e-07)	(1.65e-06)	(1.34e-06)	(7.87e-07)
Population	-1.05e-05*	3.75e-05	9.96e-05*	5.35e-05*
	(2.25e-06)	(3.97e-05)	(2.56e-05)	(1.47e-05)
lnGDPpc	-0.000652	-0.0343*	-0.0140	-0.00477
	(0.000775)	(0.00747)	(0.00881)	(0.00454)
Trade Openness	-6.99e-05*	0.000194*	0.000135	0.000100
	(1.91e-05)	(8.76e-05)	(8.91e-05)	(5.48e-05)
Capital Openness	-0.0142*	-0.0612*	-0.0543*	-0.0193*
	(0.00338)	(0.0111)	(0.0101)	(0.00505)
LDV	0.545*			0.470*
	(0.0347)			(0.0444)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,816	3,837	3,837	3,816

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A8: Estimates of *Exchange Rate Stability* on *FIXdefacto* and *CBItorinv*.

	A8.1	A8.2	A8.3	A8.4
FIXdefacto	0.187*	0.344*	0.325*	0.187*
	(0.0254)	(0.0600)	(0.0602)	(0.0376)
CBItorinv	-0.0249	0.0651	0.0534	0.0131
	(0.0198)	(0.0360)	(0.0368)	(0.0220)
Democracy (Polity)	-0.00226*	-0.00331	-0.00207	-0.00105
	(0.000683)	(0.00212)	(0.00236)	(0.00123)
Regional	0.0688*	0.327*	0.341*	0.174*
	(0.0103)	(0.0572)	(0.0573)	(0.0353)
Inflation Target	-0.0194*	-0.0512	-0.0501	-0.0210
	(0.00867)	(0.0295)	(0.0316)	(0.0167)
GDP	-5.34e-06	-5.46e-07	3.71e-06	-5.54e-07
	(9.92e-06)	(4.61e-05)	(4.62e-05)	(2.53e-05)
Population	1.04e-05	-0.000135	-9.06e-05	-1.40e-05
	(3.40e-05)	(0.000236)	(0.000225)	(0.000114)
lnGDPpc	0.00274	-0.0379	-0.0161	-0.0165
	(0.00325)	(0.0336)	(0.0400)	(0.0201)
Trade Openness	0.000113	0.000353	0.000242	0.000334
	(7.92e-05)	(0.000357)	(0.000386)	(0.000214)
Capital Openness	0.00246	0.00416	0.0157	0.0116
	(0.0143)	(0.0475)	(0.0452)	(0.0239)
LDV	0.659*			0.481*
	(0.0254)			(0.0290)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,946	3,947	3,947	3,946

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A9: Estimates of *Exchange Rate Stability* on *FIXdejure* Conditioned on *CBIlegal*.

	9.1	9.2	9.3	9.4
FIXdejure	0.121*	0.399*	0.359*	0.184*
	(0.0245)	(0.0538)	(0.0583)	(0.0362)
*FIXdejure*CBIlegal*	-0.0165	-0.231*	-0.185	-0.0766
	(0.0362)	(0.0936)	(0.0978)	(0.0577)
CBIlegal	0.0398	0.0349	-0.0322	-0.00699
	(0.0225)	(0.0883)	(0.0923)	(0.0504)
Democracy (Polity)	-0.00116	-0.00200	-0.00269	-0.00131
	(0.000684)	(0.00186)	(0.00202)	(0.00113)
Regional	0.0987*	0.416*	0.418*	0.213*
	(0.0133)	(0.0556)	(0.0584)	(0.0325)
Inflation Target	-0.0295*	-0.0430	-0.0612	-0.0303
	(0.0108)	(0.0308)	(0.0322)	(0.0180)
GDP	-2.25e-05	-3.69e-05	-3.43e-05	-1.39e-05
	(1.20e-05)	(3.29e-05)	(3.33e-05)	(1.76e-05)
Population	8.17e-05*	4.42e-05	-2.33e-05	1.76e-05
	(3.06e-05)	(0.000183)	(0.000199)	(0.000112)
lnGDPpc	-0.00171	0.0141	0.00255	-0.00326
	(0.00287)	(0.0255)	(0.0286)	(0.0154)
Trade Openness	0.000161	0.000111	-1.83e-05	6.24e-05
	(8.32e-05)	(0.000307)	(0.000333)	(0.000197)
Capital Openness	0.0682*	0.141*	0.131*	0.0881*
	(0.0128)	(0.0385)	(0.0368)	(0.0198)
LDV	0.655*			0.484*
	(0.0228)			(0.0221)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	4,384	4,447	4,447	4,384

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).

Table A10: Estimates of *CBItorinv* on *FIXdejure* and *CBIlegal*FIXdejure*

	10.1	10.2	10.3	10.4
CBIlegal	0.00352	0.175*	0.159*	0.0410
	(0.0135)	(0.0672)	(0.0693)	(0.0234)
*CBIlegal*FIXdejure*	-0.0144	-0.157*	-0.180*	-0.0408
	(0.0159)	(0.0567)	(0.0622)	(0.0257)
FIXdejure	0.0170	0.0964*	0.0941*	0.0215
	(0.0107)	(0.0357)	(0.0376)	(0.0166)
Democracy (Polity)	-0.000547	-0.00308*	-0.00346*	-0.000700
	(0.000277)	(0.00148)	(0.00165)	(0.000673)
Regional	0.00875*	-0.0636*	-0.0680*	-0.0199*
	(0.00415)	(0.0275)	(0.0272)	(0.00978)
Inflation Target	0.00755	0.0180	0.00516	-0.000664
	(0.00390)	(0.0214)	(0.0218)	(0.00743)
GDP	1.63e-06*	7.01e-06	5.14e-06	-4.47e-07
	(6.58e-07)	(6.02e-06)	(6.39e-06)	(2.25e-06)
Population	7.00e-06	0.000162	9.62e-05	6.43e-05
	(4.22e-06)	(0.000108)	(0.000111)	(4.68e-05)
lnGDPpc	-0.000398	0.0256	0.0381	0.0144
	(0.00127)	(0.0269)	(0.0318)	(0.0136)
Trade Openness	6.81e-05	-4.37e-05	-0.000156	-9.15e-05
	(4.12e-05)	(0.000302)	(0.000324)	(0.000126)
Capital Openness	0.0252*	0.102*	0.0899*	0.0329*
	(0.00596)	(0.0280)	(0.0274)	(0.0115)
LDV	0.783*			0.701*
	(0.0132)			(0.0123)
Country FE	N	Y	Y	Y
Year FE	N	N	Y	Y
Observations	3,703	3,792	3,792	3,703

OLS coefficients with robust standard errors clustered on the country in parentheses.
Statistical significance: * p<0.05 (two-tailed).