Commitment Institutions and Electoral and Political Instability: A Reduced-Form Approach

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IPEC 401 Thesis (Honors)- Professor George Shambaugh

April 28, 2020

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# Abstract

In this paper, I take a reduced form approach to test whether the limiting institutions of central bank independence and fixed exchange rates affect electoral and political instability. This provides insight into choice among social welfare, political business cycle, and economic voting theories, which provide for numerous competing mechanisms. Differing from previous work, I consider both varieties of instability, extend analysis to various branches of government, and take care to address important endogeneity problems by using panel data and instrumental variables techniques over a wide range of countries from 1970-2012. I find suggestive evidence that de jure central bank independence increases instability and weaker evidence of a similar impact for fixed exchange rates (perhaps political business cycle behavior), with a slight opposite effect for de facto independence (with some kind of welfare benefit). There is thus the potential for serious political economy complications in the implementation of these institutions.

# Introduction

The linkage between limiting institutions such as central bank independence and electoral stability in democracies is a largely relevant debate that evades a straightforward intuitive answer. On the one hand, independent central banks are widely known as welfare-enhancing institutions which reduce inflation (Fed Appointments | IGM Forum n.d.). This benefit comes no long run cost to real macroeconomic variables (Alesina and Summers 1993). It is not difficult to imagine a grateful populace consistently rewarding incumbents for better economic conditions. On the other hand, the capacity of central banks, rather than politicians to steer the economy has been assumed to have serious electoral costs in disputes such as those between President Donald Trump and Federal Reserve Chairman Jay Powell (Long n.d.). Over time, we might expect central bank independence to repeatedly harm the electoral chances of incumbents.

Central bank independence need not be the only economic constraint that matters for political outcomes. Fixed exchange rate regimes should also provide the same mechanism of economic policy “hand-tying” to politicians, with the outsourcing of monetary policy in open economies without capital controls (Fleming 1962; R. A. Mundell 1963). Previous work has widely documented the importance of considering these institutions jointly (Bernhard, Broz, and Clark 2002). We thus might expect to find similar stories of fixed exchange rates affecting political and electoral stability: this is indeed the case. For example, in February 2019 the President of Cote D’Ivoire, Alassane Ouattara said that the pegged CFA franc has played a key role in stabilizing the country by helping control inflation (Bassompierre n.d.). On the other hand, in Lebanon, a fixed exchange rate is considered to have led to increasing political unrest and reform pressures in the country (Diwan 2020).

Relationships between limiting regimes and political instability also need not be limited to democracies and non-violent electoral stability. China’s tight control of the renminbi with the aim of trade promotion fits within a broader national aim of economic development to maintain domestic stability (Kroeber 2011). Contrary arguments for growing unrest and coup attempts are easily extended to current crises in semi-autocratic Turkey (Turkish economy shrinks again as currency crisis bites - Reuters n.d.) and Venezuela (Venezuela approves parallel currency exchange system amid political crisis 2019). These nations are caught in currency crises with political spillovers, due in part to fixed rate mismanagement.

Having established the relevance of the issue, in this paper I examine arguments such as these and determine whether the limiting institutions of central bank independence and fixed exchange rates affect instability. In the first section, I begin by providing an overview of competing social welfare, political business cycle, and economic voting theories and relevant literature in line with these explanations and examples.

The presence of a robust, cross-national examination of these theories can be helpful. In the next section I provide an outline of the reduced form strategy pursued by this paper. This allows for a step back from mechanisms at work in various stages of the process to see if broad predictions align. I review similar work that has examined the reduced form relationship in democracies. General findings are that limiting institutions increase the durability of cabinets and leader tenure in open economies without capital controls (with disagreement over central bank independence), although the timing of and mechanisms affecting such effects is disputed.

In the next section I address a critical issue, attention to which sets me apart from this past literature: any potential interventions affecting limiting regimes may be electorally motivated, made in the interests of maintaining political stability, or as a result of confounding institutions. This is a critical endogeneity problem. For example, de jure central bank independence may not be implemented, or de facto central bank independence may be eroded. Politicians may threaten to remove central bank officials from office: President Trump has considered legal options to remove Federal Reserve Chairman Powell (Can Trump Fire Fed Chair Jerome Powell? n.d.). In the past, such electorally motivated erosions of independence may have been successful and influential in creating low interest rate environments in the United States in the Johnson and Nixon administrations (Trump is attacking the Federal Reserve. This explains why — and what comes next. - The Washington Post n.d.).

To deal with such endogeneity problems as these, I construct a design using panel data and instrumental variables techniques over a wide range of countries from 1970-2012. First, fixed effects and controls are employed to account for institutional differences between countries. With this specification, de jure central bank independence increases electoral and political instability, while de facto independence and fixed exchange rates reduce electoral turnover; fixed rates increase political instability events. Next, education and economics technical expertise provide an admittedly imperfect instrument for central bank independence, and aggregate GDP for fixed exchange rates. De jure central bank independence clearly increases electoral turnover and political instability events, and in certain specifications a similar result holds for fixed exchange rates. Finally, I observe a specification using lagged independent variables. Here I find that de jure CBI reduces head of government turnover over a long time horizon, but also mostly increases political instability events across a variety of time scales. Contemporaneously and in the short and long term, de facto CBI appears to reduce electoral turnover. Again, in some specifications fixed exchange rates increase electoral turnover in the mid-term. Overall, I find suggestive evidence that de jure central bank independence increases instability and weaker evidence of a similar impact for fixed exchange rates (perhaps political business cycle behavior), with a slight opposite effect for de facto independence (with some kind of welfare benefit).

Aside from testing of various codings of variables and linear and nonlinear models, I explore the role of capital controls and democratization in determining impacts. Capital controls may affect the level of constraints on monetary policy via the Mundell-Fleming trilemma, and democracy might be expected to be linked to the rule of law and de jure versus de facto independence. Although results are not yet endogeneity-robust, preliminary evidence suggests unexpected behavior, and it is not clear that either intervening factor is significant.

Finally, I investigate divergent results based on the branch of government considered. I add in interaction terms for whether the head of government and head of state are the same individual and whether the legislature has effective power. Again finding unexpected results, it appears that the effect of de jure CBI often occurs when the head of state and head of government are not the same individual (although the result is opposite for fixed rates), and that the relationship of de facto CBI and lower chamber turnover occurs mostly when legislatures have little power. These findings also are not yet endogeneity robust.

I conclude with a discussion of implications and directions for future research. Destabilizing effects of limiting regimes may add a new dimension to any normative debates over their adoption. More kinds of endogeneity should be explored in any literature on this topic. Adjustments to the methodology pursued might be useful. In an interesting case study, the Eurozone may offer a chance to compare results following varied entry dates of member nations, as well as an opportunity to examine the ideological style and type of upheaval as a result of central bank independence and a fixed exchange rate. Further study should be devoted to the political economy analysis of the choice of these institutions.

# Theory

In some sense, the adjudication of the question of whether limiting institutions affect instability, and in which direction, is one between two strands of theory (some sense of this division for central banks can be found in Alesina, Roubini, and Cohen 1997, p. 212). In both strands, incumbent politicians seek to deliver electoral victory and a secure hold on power. As will become clear, however, in one strand this incentive usually is aligned with the general or long-term welfare interests of the population, as adopting limiting institutions usually provide key benefits. In the other strand, however, interests are not aligned: limiting regimes prevent manipulations of the economy and are politically costly. Mechanisms from both strands are then translated into outcomes of increased or decreased stability through the economic voting literature.

## General Welfare Effects of Limiting Institutions

In the first strand lie the social welfare or planner-style implications of adopting limiting regimes. These are most often economic, but occasionally political. They affect the entire population or are focused on nationwide aggregates. They almost always rest upon the beneficial effects of commitment but may also account for a costly loss of flexibility.

The key economic commitment benefit derived from central bank independence is the resolution of the well-known inflation time-inconsistency problem. The appointment of an independent, conservative (relative to society) central banker can improve welfare by controlling expectations of inflation (Rogoff 1985), with little cost to long run real macroeconomic performance (Alesina and Summers 1993). Along with a similar time-inconsistency inflation benefit in reducing inflation (when there are no capital controls used to maintain monetary autonomy), a fixed exchange rate may provide economic benefits such as reducing uncertainty and barriers to external trade and investment (Robert A. Mundell 1961). It may also allow for access to foreign capital for any nations faced with an “original sin” problem, able only to borrow in foreign currency (Eichengreen and Hausmann 2005).

There may also be political benefits to limiting regimes which also increase stability and possible social welfare through increasing political efficacy. For example, monetary commitments such as central bank independence may provide information about policy for both sides of the government, increasing transparency and promoting trust (Bernhard and Leblang 2002). In terms of decisions, a fixed exchange rate may either provide a justification for hard but necessary choices or a focus for negotiations. There does not appear to be much empirical evidence to verify this part of the theory, admittedly difficult due to the abstract nature of these variables, but the theoretical logic is sound.

However, limiting regimes may also introduce costs to valuable policy flexibility. Harmful flexibility consequences in the event of a recession may not be a major issue for independent central banking, as technocratic officials are still capable of responding. There may be problems if an inadequately flexible monetary policy rule is adopted (Bernanke 2015), or central bankers are excessively conservative, as may have been the case in the early 2010s in the Eurozone (Krugman 2011). But there is no reason to believe that these problems always or directly correlate with central bank independence, while the evidence clearly shows that low and stable inflation does.

A more serious problem from the loss of flexibility is clear for regimes of fixed exchange rates. The fixed exchange rate precludes the free exercise of monetary and potentially fiscal policy unless capital controls are introduced (Fleming 1962; R. A. Mundell 1963). Policy is tied to that of other nations, which may not be experiencing a recession. Adjustment may be slow and painful.[[2]](#footnote-3)

Overall, net social benefits appear to outweigh the costs for limiting regimes, at least in the long run or on average, abstracting from specific incidents and problems. Commitment brings major benefits despite any costs of flexibility, especially for the case of central bank independence relative to fixed exchange rates. Arguments of net welfare drawbacks for central bank independence (to the point of advocating dependence) are especially rare, excepting complaints calling for the adoption of democratic oversight for distributional considerations or a desire for more inflation (Fels n.d.).

The merit of fixed exchange rates appears to be far more debatable, although a large number of countries still maintain them (IRR Data n.d.). Time inconsistency solutions, stable trade, and greater access to capital for “original sin” nations clearly provide serious value. If fixed rates had a net welfare cost and prevent manipulation of the economy as outlined in the section below, there would seem to be little reason left for their wide adoption, so here I maintain that they also provide a net welfare benefit.

## Political Business Cycle Effects of Limiting Institutions

The main driver of the second strand is the idea of a political business cycle: that politicians have a motivation to manipulate the economy in the short run and that institutions such as central bank independence and fixed exchange rates can limit this tendency. Motivations for political business cycles may be opportunistic (explicitly focused towards staying in office) or partisan (aimed towards implementing party policy; but as I would argue, in the process satisfying party elites and staying in power), and a wide variety of traditional and rational expectations models exist to characterize them (Alesina, Roubini, and Cohen 1997). In general, methods of manipulation for either of these sets of cycles may be monetary or fiscal (Fortunato and Loftis 2018), and there may be some sort of substitutability between instruments in the case of limits.

Limiting regimes should normally reduce these political business cycles. Independent Central Banking can put major limitations on incumbents’ capacity to engage in both monetary and fiscal policy business cycles. When monetary policy tools are in the hands of central bankers with non-electoral time horizons and relative freedom from political pressures, political manipulation is clearly limited. Evidence on the impact of independence on, for example, monetary, rational partisan business cycles in OECD nations have found serious reductions (Maloney, Pickering, and Hadri 2003).

Aside from limitations on monetary policy, central bank independence may also reduce the scope for fiscal policy manipulation. In democracies with adequate protections of the rule of law, independent central banks may prefer fiscal restraint and low deficits to avoid inflation, any may threaten interest rate increases or denial of credit to enforce it. This pattern has been found to hold particularly true in non-election years under left government tenure (Bodea and Higashijima 2017).

Fixed exchange rates are also likely to put major constraints on monetary policy. Again, citing the Mundell-Fleming trilemma, in an open economy without capital controls, fixed rates preclude independent monetary policy. They effectively represent an outsourcing of what was once a means to manipulate the economy. Policy is subject to the maintenance of the rate, rather than electoral opportunism or partisanship.[[3]](#footnote-4)

Adopting a fixed exchange rate may, on the other hand, allow for a loosening of fiscal policy. A fixed exchange rate may increase confidence in a nation’s ability to repay external debt which is not denominated in its own currency, opening access to vast amounts of foreign capital. This may be particularly important for any nations faced with an “original sin” problem, able only to borrow in foreign currency (Eichengreen and Hausmann 2005). The theoretical effect of fixed rates on overall manipulation is hence unclear.

However, the evidence for a net limiting impact of both CBI and fixed rates on political business cycles through these theoretical mechanisms seems to be convincing. For OECD nations from the 1960s to the 1980s, evidence suggests that both regimes, at least at levels above their average values, reduce cyclical (opportunistic) behavior in both time-series and cross-sectional analysis, although the effect of fixed rates is of net small and difficult to detect as significant (William Roberts Clark et al. 1998). This occurs for variables of both output and employment, potentially affected by both monetary and fiscal policy.

## Economic Voting

Central to the implications of the strands above is the literature on economic voting. There must be a mechanism in place through which voters respond to economic variables and manipulation, and politicians should be aware of this mechanism. Voters may be concerned with their own status (pocketbook concerned) or with the overall economy (sociotropic), and retrospective (backward-looking) or prospective (forward-looking).

A review of the literature generally reveals that economic voting exists, which means that political business cycles are in fact plausible. In particular, this economic voting is sociotropic and retrospective, with the exception of cases when an incumbent is not running, when voting is more prospective (Lewis-Beck and Stegmaier 2019; Nadeau and Lewis-Beck 2001).[[4]](#footnote-5) I abstract from these cases by noting that prospective evaluations are still likely to be informed by past performance.[[5]](#footnote-6)

Politicians also appear to be aware of economic voting, creating the appropriate motivations for welfare enhancing or manipulative behavior. There is at least good anecdotal evidence on this point.[[6]](#footnote-7) In the US, for example, statistical studies were actually commissioned by top government officials which found a clear responsiveness of vote shares to economic conditions as early as the 1970s (Tufte 1980). Perhaps the most famous articulation of awareness was that of the 1992 U.S. presidential campaign, when Bill Clinton’s chief strategist James Carville put up a sign in campaign headquarters that read: “It’s the economy, stupid!” (Anderson 2007)

With a sociotropic, mostly retrospective, and well-known model of economic voting in place, we can now move through to evaluate the electoral implications of limiting institutions through each strand of mechanisms. The implied instability consequences of welfare effects of limiting institutions fit well with findings of mostly retrospective and sociotropic voting. Voters reflect on their net improved present condition under the limiting regimes. They are glad to see that society is permanently better off with the new institutions, facing a better output-inflation tradeoff, stable trade, and greater political efficacy along with other net benefits despite some loss of flexibility. As a next step, a happy society and electorate consistently rewards elected officials for maintaining these good conditions and institutions.

Within the political business cycle strand, with sociotropic and mostly retrospective voting, the general effect seems to be that of increased instability from limiting institutions due to decreased manipulation. If political business cycles are opportunistic or directly driven by short-term desire to stay in office, economic voting predictions of the consequences of limits on manipulation are relatively straightforward. The incumbent would like to create socially desired short-term conditions for variables such as low inflation and unemployment but cannot do so.[[7]](#footnote-8) Retrospective voters may then explicitly punish them at the polls by voting for an opponent. This increases instability.

In a partisan model, the only real change to the consequences of failure to deliver on preferences comes from the fact that optimal levels of economic variables are not socially uniform, but instead specific to parties and groups of heterogenous agents. Again, the incumbent tries to satisfy their party optimums but cannot do so. Now retrospective elites or party voters are not adequately satisfied. They need not vote for opponents; however, a loss of turnout or participation may be enough to inflict electoral damage, a case especially strong if there is some cost to voting (Downs 1957). Here again, limiting institutions in the political business cycle model are likely to increase instability.

# Political Versus Electoral Instability

To account for potentially more autocratic situations or even democratic situations between elections, it should be noted that in this paper I generalize the same ideas about economic voting to situations when voting may not necessarily be fair and competitive. In other cases, disaffection may be expressed more loosely in “political”, rather than “electoral” terms (perhaps reaching the level of violence). Welfare benefits of commitment institutions may limit the results of this disaffection. Likewise, political business cycles do not necessarily adhere to an electoral calendar but may also manifest as efforts by leaders to head off rebellion in general by placating the population.

# A Reduced-Form Approach

The key merit in the reduced form approach to the question is that of the ability to take a step back from literature on specific mechanisms mentioned above. It could be the case that certain mechanisms are true and others false: partisan or opportunistic political business cycles, or action and limits through only fiscal or monetary policy. Mechanisms could be further tangled between each other in complex causal relationships such as substitutions between regimes (central banks and fixed rates) or kinds of policy. The reduced form approach allows for overall focus on whether the regimes weigh on instability, adjudicating whether basic intuitions are reasonable.

*Effects of Limiting Institutions on Instability*

*Welfare Model*

*De Jure Independent CB/Fixed Exchange Rate 🡪 (Welfare) Net Social Benefits from Commitment Despite Potential Cost to Flexibility --> (Economic Voting Theory) Net Less Turnover/Instability*

*Political Business Cycle Model*

*De Jure Independent CB/Fixed Exchange Rate –> (PBC Theory) Net Less PBC Manipulation -> (Economic Voting Theory) Net More Turnover/Instability*

Similar work has examined the use of monetary commitments to increase the durability of cabinets (as a share of maximum legal duration) in the face of growing international economic openness and globalization for 16 parliamentary democracies from 1972 to 1998 (Bernhard and Leblang 2002). These commitments are hypothesized to allow for the management of diverse interests and improve policy efficacy by providing information, justifying hard decisions, and providing a focus for negotiations, in line with the social welfare strand. In OLS results, independent central banks were found to increase cabinet duration by nearly three months, and fixed exchange rates by about five. Coalition governments saw stronger benefits, while openness to trade had a mixed impact on the scale of effects.

A focus on parliamentary democracies only as in Bernhard and Leblang unfortunately weakens the use of this paper in the judgement of political business cycles. Instability may be more a function of party and coalition dynamics, rather than actual voter stances in many situations. The particular nature of endogenous elections accounted for may be a unique dynamic. In my work, I instead focus on a broader range of regime types.

Probably the most similar work to mine I have located on the reduced form relationship between limiting institutions and political survival has made use of a Cox-proportional hazard model for leader tenure on 19 OECD countries during the recent era of high capital mobility (William R. Clark, Golder, and Poast 2013)**.** [[8]](#footnote-9)Included were controls for endogenous elections, single-party majority governments, and the number of electoral districts (to represent fractionalization). The hypotheses that under capital mobility, fixed exchange rates (with independent central banks) and dependent central banks increased leader survival after 7 years in office were seemingly confirmed.[[9]](#footnote-10) This is claimed to provide some evidence against political business cycle and economic voting literatures, at least in the early part of incumbent terms: outside means such as diversionary war or other factors such as resignations are said to be likely more important in determining leader survival.

# Endogeneity Issues

Importantly, I argue that both works on the topic are faced with potential endogeneity problems. Several institutional variables accounted for do give a good sense of changes relative to “normal” cabinet duration induced by limiting institutions. These include controls for fractionalization, polarization, and endogenous electoral timing, items which I seek to replicate using country fixed effects. But the provided OLS and hazard regressions do not rule out the potential that the choice of commitment institutions and their de facto strength may be dependent on politics and stability considerations specifically, nor do they capture other potential confounders such as federalism or corporatism.[[10]](#footnote-11)

There is every reason to believe that central bank independence is a political question. For example, there are a wide variety of areas on which responsibilities between governments and central bankers can be divided where political considerations may come into play, such as the setting of broader targets and objectives and the appointment of central bank officials (Eijffinger and Haan 1996).

This point is especially salient in the consideration of de jure and de facto independence. De jure, or statutory independence tends to be rather fixed over time (Garriga 2016), meaning that it tends to be based on a single set of decisions when relevant legal measures are passed, perhaps limiting political considerations to that period. But the matter of de facto central bank independence is far more often political. This can be seen in the current example of the Trump administration given earlier: political interference and threats are very much possible. Political actors may be heterogenous in the value they place on independence, as outcry indicates.

Some authors have argued that de jure independence is not important in developing nations or non-democracies. In terms of predicting the impact on average inflation rates, turnover of bank executives is superior to de jure independence in a number of countries (Cukierman, Webb, and Neyapti 1992). Justification for the fact that independence seems to create fiscal restraint only in democratic and rule of law countries comes from the fact that, due to political circumstances, these countries have de jure and not just de facto independence (Bodea and Higashijima 2017).

If politics in general may influence the level of central bank independence, then it is not a far leap to presume that stability or instability has an impact; we should be wary of endogeneity problems in this reduced form examination. The literature in fact documents specific models and mechanisms for this impact (Eijffinger and Haan 1996). Instability may lead to a more independent central bank as incumbents seek to limit the range of options available to opponents (see case studies discussed in Goodman 1991). On the other hand, increased instability may inspire a greater need to make use of the political business cycle to remain in office, reducing independence.

Attempts have been made to unify these theories by noting that in nations with high degrees of consensus or low polarization, instability increases independence, with the reverse true in nations with low consensus. Tests find expected signs when using appropriate measures of legal central bank independence and instability for each type of nation (party instability in high consensus nations, regime instability in low) (Cukierman 1992). Later work focused on de jure independence and found effects only for high-level changes in regimes and coups (Cukierman and Webb 1995) (J. D. Haan and Siermann 1996). Finally, other checks using the frequency of government changes and significant government changes and a variety of central bank autonomy measures find mixed results and negative or null results (J. de Haan and van’t Hag 1995).

Aside from these concerns that instability affects independence, there are many other channels through which independence and turnover may be related: competing mechanisms relative to political business cycle theory and economic voting. Here I cover several such confounding institutional mechanisms: checks and balances (including bicameralism, federalism, and judicial review), and corporatism.

Various components of systems of checks and balances within government have been shown to be positively associated with central bank independence. De jure independence has been shown to be far higher in OECD nations with two legislative decision making bodies and a veto system (Moser 1999). De facto independence in terms of the relationship between statutory independence and actual inflation outcomes has also been demonstrated to be stronger in nations with such checks and balances.

As another example, there is significant evidence suggesting a relationship between central bank independence and federalism (Lijphart 2012). A correlation of 0.60, significant at the 1% level was demonstrated, particularly strong in the period before the 1990s, when independent central banking was “internationalized.” Notable examples of the pairing included Germany, the US, and Canada. Aside from the association between bicameralism and federalism, subnational authorities may assert their own policy preferences on economic issues, providing another check. Overall, Lipjhart also places the power of judicial review on the same “unitary-federal” dimension as central bank independence, also demonstrating its linkage. Thus, we have one final link between a check and central bank independence.

It is also easy to see how checks and balances could be related to instability. One potential mechanism for this can be constructed from a model of retrospective voting similar to those considered earlier. Voters expect their elected officials to deliver on general, and not just economic policy promises. When checks and balances prevent officials from doing so, they may explicitly punish them at the polls or more simply fail to turnout and participate. As this mechanism occurs across governments, instability increases. Hence, checks and balances increase central bank independence but also instability directly, leading to a potential overestimate of effects.

Coordinated and centralized wage bargaining, often referred to as corporatism, may increase control of inflation. This can provide a helpful complement motivating central bank independence, as committed central bank reactions to negotiation developments improve outcomes (Hall and Franzese 1998). Inflation expectations are controlled, allowing for lower unemployment and inflation. A key example can be found in the remarkable success of the German Bundesbank before European integration. With this realization, one might expect these institutions to go together, although the evidence is not clear on this account (Lijphart 2012).

Corporatist institutions may also be linked to lower electoral or political instability. Centralizing demands for negotiation may lead to less need for strike, open protest, or other action. Since corporatism might be linked to central bank independence and decreased instability, we may obtain an underestimate of the effects of independence on turnover.

Exchange rate regimes are also likely to face endogeneity problems. As an example of an endogeneity problem, electoral instability is also likely to effect choices of rate regimes in democracies. One mechanism functions through political economy desires to balance incumbent rent extraction and reelection. When there is no approaching election, the incumbent seeks to extract rents from a strong tradeable goods sector helped by a competitive and flexible exchange rate. Non-tradeable workers prefer fixed rates which minimize inflation, and due to numerical superiority, their preferences are critical when an election approaches. Overall, frequent elections and the associated higher levels of electoral instability should support the maintenance of a fixed exchange rate.

This argument found support with the usage of hazard models to analyze the duration dependence of Latin American exchange rate arrangements from 1960 to 1999. Results showed that impending election increases the conditional likelihood of staying on a peg by about 8 percent, while the aftershock of an election conversely increases the conditional probability of going off a peg by 4 percent (Blomberg, Frieden, and Stein n.d.).

Under certain conditions, the probability of a change in cabinet may also fuel speculative attacks which precede changes in exchange rates (Leblang and Bernhard 2000). Market expectations about changes in government policy here are critical. Research seems to suggest that the link is causal, although effects are small: two standard deviations of increase in political uncertainty increased the chance of speculative attack by only about two percent.

Several factors may also have an impact on exchange rate regimes and instability. For example, different groups in society are likely to have different rate preferences. Firms involved in cross-border trade and investment are likely to support a fixed exchange rate, especially if currency options markets are insufficiently developed (Frieden 2015). These are likely to include specialized exporters, multinationals, and international banks. On the other hand, standardized exporters and tradeable producers are more likely to prefer flexible rates (often depreciated in reality). For both kinds of exporters, the tradeoff between stability offered by fixed rates and gains from depreciation is critical.

Institutional factors provide the link between groups with the most power (and hence control over rate regimes) and political stability. Federalism and bicameralism again provide good examples. Populations of commodities producers such as farmers may be widely geographically dispersed, increasing their power in federal systems and in bicameral ones when an upper house is geographically districted. This increases the likelihood of a flexible rate. For reasons similar to those above, these checks on power may also imply increased instability. Hence the potential for fixed rates to decrease stability is likely to be overstated.

Another example of potential confounding factors comes directly from the “original sin” argument (Eichengreen and Hausmann 2005). Original sin nations (and firms and citizens in them) are likely to have large amounts of foreign currency debt, providing incentives for the maintenance of a fixed rate regime. These nations may also be subject to increased economic instability, justifying their original sin nature. This may be tied or spill over into political or electoral instability. Again, the potential for fixed rates to decrease stability is likely overstated.

# Methodology

When using the reduced form approach, I implement several measures to account for these sources of endogeneity across both types of limiting regimes. First, I aim to use panel data from a broad range of countries over the period considered. The implementation of fixed effects with panel data may help deal with some of the confounders mentioned. Institutions such as bicameralism or other institutional variables may be constant for many nations over the period studied. In the same vein lie issues such as the “regular” length or terms of office for leaders in a nation noted in previous work (Bernhard and Leblang 2002). Panel data should also allow me to conduct my analysis using the appropriate number of lags to help deal with endogeneity.

To deal with the potential endogeneity problem of political interference specifically, I use measures of de facto independence in terms of the irregular turnover of central bank governors as an independent variable in regressions. These events represent times when a governor is forced out on a time scale not consistent with the legally mandated or suggested schedule.

As an additional measure and robustness check to deal with endogeneity, I also pursue an instrumental variables approach for central bank independence. Past literature has used instruments such as governance indices from the World Bank’s Aggregate Governance Indicators Dataset on national measures such as “rule of law” and “voice and accountability” (Crowe and Meade n.d.). These measures are clearly inadequate for the study of turnover and instability, presenting poor exclusion restrictions as they could be obviously related to dependent variables.

Therefore, I introduce a novel instrument for central bank independence in the form of tertiary education enrollment rates. The theoretical justification for the first stage of this instrument is as follows: a requisite level of expertise is needed for the controlled, technocratic administration of monetary policy. For example, this may involve the presence of PhD economics graduates. Higher levels of education may proxy or at least signal for competence; they at least indicate higher private labor market returns (Card 1999). Outside of central bank operations, education may be necessary for the understanding of time inconsistency problems at the core of arguments for independence.

Of course, tertiary education enrollment may not be fully necessary or the only path to central bank independence. I abstract from technical assistance programs provided by the IMF and other organizations that may substitute for homegrown capacity achieved through education. Nevertheless, levels of education are likely to have an influence.

In terms of an exclusion restriction, past work has exogenously tied, for example, primary education to social-political instability in simultaneous equations models; results may be similar for tertiary education (Alesina and Perotti 1993). Theoretically, a connection can be explained by aspirations of modernization through education exceeding the reality of economic development, causing a peak of instability when measures such as literacy rates, for example, are at intermediate levels. Educated and unemployed students can form a serious source of instability, seen clearly in cases such as Korea in the 1960s (Huntington 1976, p.48).

I argue that such an exclusion restriction between tertiary education and instability remains defensible, however. First, statistical evidence for the of connection of the education, development gaps, and political violence appears to be somewhat weak, holding in some specific cases but not as broad cross-national model (Hibbs Jr 1973). Next, the case applies to imbalances, not levels of education more generally. We need not assume that on developmental paths towards higher education a gap between education and development always emerges at similar stages. Finally, in this paper, I will seek to use the instrument in the analysis of electoral turnover rather than political instability. Above theories seem to apply more to revolutionary activity.

The strongest counter case in democracies might come from an observation of events such as the Vietnam War protests in the United States or other movements of educated students with electoral implications. While an increase in education might cause animosity against certain policies or leaders particularly unpopular with key groups however, it is not clear that over the span of the full period this directly and generally translates into more frequent electoral turnover and alterations of power. Another notable counterpoint is that the youth share of the vote in national elections. In Western democracies, youth turnout is low compared to other groups, a fact compounded by aging populations and small shares of populations (mean of about 20%) (Youth Voter Participation: Involving Today’s Young in Tomorrow’s Democracy | International IDEA n.d.). Overall, for the period studied, the percentage of college graduates in national vote totals is likely to be small.

In the case that the restriction remains unconvincing, I also make use of an alternative instrument more specific than tertiary education. My original ideal instrument in the vein of technical expertise was the number or amount of Economics graduates (or PhD graduates) in a country. Unfortunately, data on this subject specifically was lacking. Nevertheless, the OECD does have some data from 2005 on for the percentage of all graduates in the more general fields of business and social sciences (Students - Tertiary graduates by field - OECD Data n.d.). I multiply these values by total population graduation rates to get a sense of the total availability of experts in these fields as a share of population. I believe that while the technical expertise first stage mechanism remains in place, the argument for an exclusion restriction between the amount of graduates in these fields and electoral instability is stronger.

The adaptation of an instrument for fixed exchange rates is somewhat more challenging. One good predictor of exchange rate regimes is inflation (Mauro and Juhn 2002), but here we run into a clear problem, as inflation is already a potential mechanism in the link between fixed rates and instability that we seek to consider. Other candidates may be a nation’s level of development, trading share with primary partners, terms of trade volatility, and various capital mobility indicators, but relationships with fixed rates appear to be unclear and disputed in the data.

As a solution, I adopt what is considered to be one of the best predictors found in the literature: absolute size of the national economy in terms of GDP or GNI. Large economies are associated with floating rate regimes in nearly all studies (Mauro and Juhn 2002). The explanation comes from optimum currency area literature. For these nations, the importance of a stable currency for trade is less important relative to the ability to control their own large domestic economy through monetary policy- reliance on external nations is minimal. The exclusion restriction for large economies is certainly not perfect, but it should at least be noted that economic size escapes any explanations for instability or turnover based purely on levels of economic development; here I do not use per capita values.

# Data

## Dependent Variables

I obtain data on most of my dependent variables from the compiled Varieties of Democracy Dataset (Michael Coppedge et al. 2020). V-Dem contains hundreds of variables, including numerous ones useful for noting electoral and political instability of various degrees and the tracking of institutional characteristics. The V-Dem project is a collaboration of dozens of experts and researchers from around the world which produces reliable data with a consistent methodology, and in this case, I mostly rely on factual data about events.

The most important dependent variables I make use of are V-Dem’s event variables for changes in the head of government, head of state, and control of the lower chamber of the legislature for a country in each election year. This allows for an event-based analysis of turnover (probabilities) with varying levels of central bank independence and fixed rates. For the head of government and head of state variables, a coding of 0 indicates the same individual, a coding of 1 represents a different individual but of the same party, and a coding of 2 indicates a change of individual and party. In parliamentary systems, changes within coalitions are coded as 1, and new party rule is coded as a 2. For the lower chamber variable, a coding of 0 indicates a majority comprised of the same parties, a coding of 1 indicates the assumption of a minority party or change of leadership in the same coalition or in a coalition with some new and old parties, and a coding of 2 indicates a loss of a majority or plurality dominant position.

For more profound political instability, I make use of V-dem’s event variables for attempted coups, civil wars, and internal conflict. For the simplification of regressions, I combine these variables into a single binary variable representing the fact that one of these events happened in a year (a coding of 1 versus 0). Like most of the V-Dem variables, the source variables are available for a wide variety of countries and years, representing thousands of individual observations.

Finally, for an idea of the overall perception of political instability and violence without a breakdown into components over a more continuous scale, I also make use of the World Bank Governance Indicators on Political Stability and Absence of Violence, a constructed index for 1996-2018 in over 200 countries (WGI 2019 Interactive > Home n.d.). The variable PV.EST follows a standard normal distribution. Lower values represent lower values for good governance variables- in this case, a lower value means more political instability. The index ranges from about -2.5 to 2.5. The index is compiled from country expert ratings which provide some measure or reliability: as will become clear it generally produces results in line with V-Dem’s factual event reporting.

## Independent Variables.

To measure Central Bank Independence I use the components of the Cukierman, Webb, and Neyapti (Cukierman, Webb, and Neyapti 1992) index as compiled by Garriga (Garriga 2016). The CWN index is a standard largely trusted in literature on Central Bank Independence. It gives a good sense of the statutory or de jure central bank independence particularly relevant in democracies and is based on legal characteristics concerning terms of office of governors, resolution of conflict, objectives, and limitations on lending to the public sector. Garriga provides data from 1970-2012 for 187 countries.

For de facto central bank independence, I use information about turnover rates for central bank governors. Past literature has found governor turnover to be related to at least inflation, particularly in developing countries (Cukierman, Webb, and Neyapti 1992). Dreher et al. compile information on changes in central bank governors for almost all countries in the world from 1970 (Dreher, Sturm, and Haan 2010). Of interest is the indicator for irregular central bank governor turnover, which fires when a governor departs before the end of their expected legal term. In other cases, use is made of the time in office variable, which counts number of years the current governor has served in each year.

For data on exchange rate regimes, I use annual classifications developed by Ilzetzki, Reinhart, and Rogoff which cover 1946-2016 for 194 countries (IRR Data n.d.). These are de facto values compiled by experts in the field. Here the distinction between de jure and de facto arrangements does not appear to be necessary: rate regimes do not have the same kind of rule of law or governance basis, so the de facto values are likely enough. I use their fine classification coding, which allows for nuanced analysis with 16 different categories or rate regimes. In binary cases, values of 1-8 are treated as fixed and 9-14 as floating. I also check usage of numeric values on the entire scale.

For the gross tertiary education enrollment (%) instrumental variable, I use global indicators data published by the World Bank (in turn collected from the UNESCO Institute for Statistics) (School enrollment, tertiary (% gross) | Data n.d.). At this point it is important to note the usage of percentages for enrollment versus absolute levels. It could be argued that a country only needs a certain raw number of tertiary graduates before it is capable of running an independent central bank. First, more populous nations may require more central bank staff. This may be particularly relevant when one considers the example of the system of regional Federal Reserve Banks in the United States. Next, the use of percentages better accounts for the actual availability of graduates for service to the central bank. Tertiary graduates are assumed to have a choice between occupations in the government or private sector; raw numbers do not necessarily mean more expertise available, and a large educated share of the populace provides a better proxy.

As mentioned above, for the secondary instrument of social sciences and business graduates I make use of OECD data provided from 2005-2017 (Students - Tertiary graduates by field - OECD Data n.d.). The restriction to OECD nations is not a major problem, as these make up a good representative share of worldwide democracies, but the short time horizon leaves some reason for concern, particularly given the emergence of the Eurozone and relevant monetary uniformity. The data is multiplied by World Bank figures used above to get a reliable total population share of social science and business graduates of tertiary education.

As my imperfect instrument for exchange rate regime, I use an estimation of aggregate GDP from V-dem, obtained by multiplying GDP per capita (Maddison’s estimate) in current US dollars by the level of population (Michael Coppedge et al. 2020). As a robustness check, I also use 2011 PPP adjusted GDP figures directly from the World Bank in some regressions (GDP per capita, PPP (current international $) | Data n.d.).

Finally, for most of my institutional controls I check variables built into the Varieties of Democracy Dataset. These are indices constructed based on expert opinion. Although many institutional characteristics are likely absorbed as country fixed effects for the period studied, I still seek to test significance making use of available data tracking changes over time where possible. One such included variable is the Inter-American Development Bank’s constructed index on checks and balances and other governmental stability measures for over 180 countries from 1975-2017 (Scartascini, Cruz, and Keefer 2018). For the evaluation of federalism, I use built-in V-Dem data on whether regional governments exist and their degrees of relative power. For a measure of corporatism there is no variable in V-Dem, but here I use Visser’s index compiled with methodology which seems to be in line with the literature (AIAS n.d.; Kenworthy 2003).

A table of summary statistics for all variables is available in the appendix (Table A1).

# Results

All of the following regressions were performed with robust and clustered standard errors, with the former proving useful for OLS models, and the latter for fixed effects panel regressions at the country level. Levels of variation in stability or number of turnover events are likely to vary considerably across the sample (Bernhard and Leblang 2002). In general, I note insignificant or preliminary results in the main text but defer tables to the Appendix.

Selected results for the full sample tests are shown in the first group of tables. In OLS regression (Table 1), de jure Central Bank Independence is associated with increased turnover of the Head of Government by 0.297 points on V Dem’s two point turnover scale- indicating, for example, a roughly 30% percent higher chance that either a new individual or new party occupies the Head of Government position when Central Bank Independence moves from its sample minimum to sample maximum (Cukierman index value 0 to 1). Importantly, in a country and year fixed effects regression (Table 2), this relationship loses significance.

Although the t-values are borderline, a lack of irregular turnover (representing high de facto CBI) does not significantly relate to electoral change in the head of government in OLS or fixed effect regressions. In regressions with just this variable and no other independent variables, however, (see Appendix Table A2) de facto independence is negatively related to change in the head of government with a coefficient of about 15%. Supporting this result is evidence that long time in office for central bank governors is negatively related to election turnover (Appendix Table A3). In OLS regressions (Table 1), a Reinhart-Rogoff exchange rate regime classification closer to a fixed rate seems to be associated with less change in the head of government, but again the result does not hold with fixed effects.

Stronger results, however, emerge with the positive relationship between turnover of the head of state, rather than the head of government and the de jure CBI index and a negative relationship between HOS turnover and fixed exchange rates. This relationship holds even in fixed effects models. But in this case, de facto central bank independence has a far weaker relationship. Finally, turning away from the executive branch and towards the legislative branch by examining changes in the lower house also reveals strong results for a positive relationship between de jure independence and electoral changes, and a negative relationship between de facto independence and changes. Exchange rate regimes are insignificant.

For the full sample it is also instructive to test the relationship between independence and measures of more profound political instability. The World Bank Governance Indicator for Political Violence is positively related to de jure central bank independence in OLS regression (meaning it is associated with less instability), but the coefficient becomes negative with the inclusion of country and year fixed effects (meaning independence is associated with more instability). Such a result suggests the importance of accounting for possible confounders in literature on this topic, and it is particularly insightful given that it holds even on the restricted timescale for which World Bank data is available. De facto independence and a more fixed exchange rate are associated with stability in OLS regressions only when accounting for all independent variables. However, a fixed rate increases political stability even in a fixed effects regression when considered individually (Appendix Table A4). Destabilizing events such as civil wars, coups, and internal conflict are positively related to de jure independence in both OLS and Fixed Effects regressions. When considered individually, fixed exchange rates tend to increase the probability of instability events in a fixed effects regression (Appendix Table A5), somewhat contradicting results for the World Bank index.

Table 1: Ordinary Least Squares (OLS), Robust Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.297\* | 0.695\*\*\* | 0.582\*\*\* | 0.371\*\* | 0.455\*\*\* |
|  | (2.23) | (6.24) | (4.91) | (3.29) | (10.59) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.133 | -0.201\*\* | -0.278\*\*\* | 0.161\* | 0.0381 |
|  | (-1.79) | (-3.14) | (-3.80) | (2.22) | (1.67) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0133\* | -0.0146\*\* | 0.00217 | 0.0292\*\*\* | 0.00198 |
|  | (-2.16) | (-2.76) | (0.36) | (5.26) | (1.06) |
|  |  |  |  |  |  |
| Constant | 0.768\*\*\* | 0.317\*\*\* | 0.624\*\*\* | -0.699\*\*\* | 0.147\*\*\* |
|  | (7.94) | (3.92) | (6.90) | (-6.70) | (5.05) |
| Observations | 1270 | 1270 | 1052 | 1973 | 3747 |

*t* statistics in parentheses. \* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table 2: Fixed Effects Panel Regression, Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.246 | 0.349\*\* | 0.423\* | -0.362\* | 1.010\*\*\* |
|  | (1.20) | (2.85) | (2.07) | (-2.35) | (10.72) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0810 | -0.0636 | -0.239\*\* | 0.0293 | 0.00793 |
|  | (-1.08) | (-0.90) | (-3.06) | (1.05) | (0.40) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0111 | -0.0203\*\*\* | -0.00342 | 0.00728 | 0.00921 |
|  | (-1.44) | (-3.48) | (-0.36) | (1.12) | (1.76) |
|  |  |  |  |  |  |
| Constant | 0.732\*\*\* | 0.417\*\*\* | 0.710\*\*\* | 0.0320 | -0.130\* |
|  | (6.27) | (4.98) | (5.81) | (0.32) | (-2.21) |
| Observations | 1270 | 1270 | 1052 | 1973 | 3747 |

*t* statistics in parentheses. \* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Overall, the full sample results lend credence to a political business cycle type model for de jure central bank independence, holding most strongly for results on the turnover of heads of state and in the lower chamber. Higher de jure independence is also clearly related to more political instability. The picture for de facto central bank independence through a lack of irregular governor turnover, and for fixed exchange rates, however, appears to be different. These institutions seem to be related to lower electoral turnover, although signs on political instability are unclear. Although the significant results are somewhat sparse, we can say that fixed exchange rates and de facto central bank independence may be governed by welfare effects, rather than political business cycle considerations.

Although such results do hint at the significance and sign of relevant variables, effect sizes are difficult to interpret. Electoral turnover may also be treated as an ordinal outcome, rather than continuous and linear variable. Table 3 displays the mean marginal effects results (without constants) for an ordinal panel logit with clustered standard errors but random effects (fixed effects are unavailable due to current limitations); for coefficients, see Appendix Table A6. Significance results are generally unchanged, except for exchange rate regime which is now just barely significant for turnover in the head of government. For both kinds of CBI, impacts are substantial, with a change from sample minimum to maximum levels being associated with double digit swings in probability. Considering the granularity of exchange rate classifications, ranging from 1 to 16 on Reinhart and Rogoff’s Index, these effects are of a similar scale.

Table 3: Ordered Logit Panel Regression, Random Effects, Clustered Standard Errors

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  | HOG Turnover | HOS Turnover | Lower Chamber Turnover |
| De Jure CBI (CNW Index) |  |  |  |
| No Turnover | -0.140 | -0.238\*\*\* | -0.321\*\*\* |
|  | (-1.75) | (-4.15) | (-3.56) |
|  |  |  |  |
| Half Turnover | 0.0134 | 0.0460\*\*\* | 0.0989\*\* |
|  | (1.62) | (3.54) | (3.11) |
|  |  |  |  |
| Full Turnover | 0.126 | 0.192\*\*\* | 0.222\*\*\* |
|  | (1.75) | (4.10) | (3.59) |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) |  |  |  |
| No Turnover | 0.0519 | 0.0443 | 0.143\*\*\* |
|  | (1.40) | (1.45) | (3.57) |
|  |  |  |  |
| Half Turnover | -0.00498 | -0.00855 | -0.0439\*\*\* |
|  | (-1.33) | (-1.38) | (-3.34) |
|  |  |  |  |
| Full Turnover | -0.0469 | -0.0358 | -0.0986\*\*\* |
|  | (-1.40) | (-1.46) | (-3.48) |
| Exchange Rate Classification (RR inverted, higher = more fixed) |  |  |  |
| No Turnover | 0.00762\* | 0.00915\*\* | 0.00110 |
|  | (2.26) | (3.29) | (0.25) |
|  |  |  |  |
| Half Turnover | -0.000731\* | -0.00176\*\* | -0.000339 |
|  | (-2.02) | (-2.99) | (-0.25) |
|  |  |  |  |
| Full Turnover | -0.00689\* | -0.00738\*\* | -0.000761 |
|  | (-2.27) | (-3.26) | (-0.25) |
| Observations | 1270 | 1270 | 1052 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

In a similar vein, it is also appropriate to treat the political instability variable event as binary. Table 4 shows the mean marginal effects from a panel logit regression with fixed effects and clustered standard errors (for coefficients, see Appendix Table A7). Again, de jure CBI is associated with a higher chance of events such as coups, civil wars, and revolutions. A fixed exchange rate also increases the chance of these events somewhat, but the effect size is generally smaller. This stands in contrast with results for fixed exchange rates which seemed to suggest greater electoral stability and less turnover.

Table 4: Instability Event Panel Logit, Fixed Effects and Clustered Standard Errors, Mean Marginal Effects

|  |  |
| --- | --- |
|  | (1) |
|  | Binary Instability Event |
| De Jure CBI (CNW Index) | 0.347\*\*\* |
|  | (9.05) |
|  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.000405 |
|  | (0.06) |
|  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.00280\*\*\* |
|  | (3.68) |
| Observations | 3450 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

In spirit of previous literature (Bernhard, Broz, and Clark 2002), interaction terms allow for the joint consideration of central bank independence and fixed exchange rates. These results can be found in Appendix Table A8. In general, the inclusion of interaction terms for institutions does not change the sign of variables, but data limitations and potential collinearity reduce significance in the current specification. De jure CBI alone still clearly decreases political stability. De jure CBI and de facto CBI in combination, however, are related to less lower house turnover. De jure CBI and a fixed exchange rate in combination increase instability.

As mentioned earlier, several institutional controls may have an impact on commitment institutions and electoral and political instability. As it turns out, however, most of these effects appear to already be accounted for in country fixed effects. Results are shown in Appendix Table A9 (for all controls) and Table A10 (for all controls but those concerning corporatism, due to data availability limitations). De Jure CBI still increases political instability, and de facto CBI reduces lower house turnover. When excluding corporatism, fixed exchange rates also still reduce Head of State turnover. The most significant controls appear to be those for regional government existence and autonomy and horizontal accountability and checks and balances (although multicollinearity is a concern) with electoral impacts. In almost all cases, these representations of federalism and checks and balances have a logical sign suggesting increased electoral turnover from some sort of limitation on power.

In Table A11 and A12, I test the sensitivity of the logit fixed effects results (although not the more endogeneity robust lag and IV ones) to varying binary specifications of the turnover variables and World Bank political instability index, coding for various levels of turnover (half or full) and instability above zero and the sample median. Signs and significance levels are preserved, with a small change for lower house elections and de jure independence. In Table A13, I test a coding of the commitment institution independent variables as binary. A few results for de jure CBI and fixed rates lose some significance, but this no more than would expected from the loss of valuable nuance and ordinal information.

All the results above not particularly instructive in the case of endogeneity- perhaps politicians adjust the strength of commitment institutions in response to perceived electoral or political threats. In these situations, the use of lags and instrumental variables can prove helpful. The results for the instruments of tertiary education enrolment rates for de jure central bank independence and aggregate GDP for fixed exchange rates are given in Table 5, and for de facto central bank independence and the same in Table 6 (only one instrument for central bank independence was readily available, so de jure and de facto measures were switched out). First stages are significant for OLS, but not panel regressions, likely due to limited data. [[11]](#footnote-12) Political stability regressions are excluded due to the poor exclusion restriction. The results suggest a link between de jure CBI and lower house turnover in line with earlier results, and signs are as expected for the Head of Government. The Head of State variable surprisingly flips signs, and de facto CBI, while insignificant, appears to behave similarly to de jure measures.

Table 5: Instruments of Tertiary Education Enrollment and Aggregate GDP, Robust Standard Errors

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover |
| De Jure CBI (CNW Index) | 0.564 | -0.346 | 0.906\* |
|  | (1.33) | (-0.98) | (1.97) |
|  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00366 | 0.0166 | 0.0227 |
|  | (-0.11) | (0.51) | (0.66) |
|  |  |  |  |
| Constant | 0.401 | 0.497 | 0.0601 |
|  | (1.30) | (1.78) | (0.21) |
| Observations | 889 | 889 | 709 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table 6: Instruments of Tertiary Education Enrollment and Aggregate GDP, Robust Standard Errors

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 1.237 | -0.325 | 2.402 |
|  | (1.16) | (-0.40) | (1.83) |
|  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0163 | -0.00392 | 0.0860 |
|  | (0.50) | (-0.13) | (1.96) |
|  |  |  |  |
| Constant | -0.511 | 0.762 | -1.997 |
|  | (-0.48) | (0.93) | (-1.53) |
| Observations | 1011 | 1011 | 818 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

The alternative instrument for central bank independence, that of social science and business graduates as a share of total population produces strong results in Table 7 despite a very small sample size. In this case, the exclusion restriction is better, as it is less convincing that more tertiary-educated social science and business graduates lead to political instability. De jure CBI appears to drive the likelihood of coups, civil wars, and revolutions, although the results are unclear for fixed exchange rates.

Table 7: Instruments of Social Sci./Business Graduates Share and Aggregate GDP, Robust Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 101.3 | 40.79 | -58.56 | 28.66 | 2.725\*\*\* |
|  | (0.20) | (0.20) | (-0.20) | (0.16) | (4.21) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -3.018 | -1.226 | 1.817 | -0.905 | -0.128 |
|  | (-0.20) | (-0.20) | (0.20) | (-0.15) | (-1.62) |
|  |  |  |  |  |  |
| Constant | -43.58 | -17.34 | 25.93 | -11.87 |  |
|  | (-0.20) | (-0.20) | (0.21) | (-0.16) |  |
| Observations | 21 | 21 | 18 | 57 | 13 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Under certain conditions, however, a significant endogeneity-robust relationship for fixed exchange rates can be uncovered. The exclusion of CBI as a variable (and associated instruments) and the usage of GDP estimates built into Varieties of Democracy (although not World Bank) data reveals that a fixed exchange rate increases turnover in the lower house and decreases political stability in Table 8. Thus, when accounting for endogeneity, fixed rates may follow a political business cycle model.

Table 8: Instrument of Aggregate GDP for Fixed Exchange Rates, Robust Standard Errors

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | Lower House Turnover | WB Political Stability (Absence of Violence) |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0779\*\*\* | -0.257\*\*\* |
|  | (3.35) | (-4.13) |
|  |  |  |
| Constant | 0.0991 | 1.992\*\*\* |
|  | (0.58) | (4.16) |
| Observations | 835 | 437 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

The results of a regression with lagged independent variables continue to build on the political business cycle case in Table 9. Across the entire time scale (3 years, 6 years, and 8 years), de jure central bank independence is associated with a higher chance of an instability event. On the other hand, in a somewhat odd case, de jure CBI is also linked to less turnover in the head of government with an about 8-year lag. This contradicts earlier findings which suggested that CBI decreased the survival of incumbents and their cabinets after roughly 7 years in office (William R. Clark, Golder, and Poast 2013). On the other hand, the result for the seven-year lag is of opposite sign and nearly significant, so such a finding should be interpreted with caution.

Middle-term fixed exchange rate results support the case for higher electoral and political instability. In the 4-7- and 9-year lag range, for about five results, fixed rates are associated with more lower house turnover and lower score on the World Bank political stability index (indicating instability). A lone contrary result appears for the 6-year lag on lower house turnover. Overall, these results strengthen the case somewhat for political business cycle behavior. On the other hand, de facto central bank independence lacks significant lags, although there may be contemporaneous association with reduced lower house turnover.

Table 9: Lagged Independent Variables, Fixed Effects, Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | -0.0223 | 0.166 | 1.062 | -0.281 | 0.199 |
|  | (-0.03) | (0.34) | (1.88) | (-1.68) | (1.33) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = de facto CBI) | -0.139 | -0.0352 | -0.392\*\*\* | 0.0171 | -0.0110 |
|  | (-1.34) | (-0.39) | (-3.89) | (0.47) | (-0.44) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = fixed) | -0.0489 | -0.0431 | -0.0180 | 0.000788 | 0.00577 |
|  | (-1.91) | (-1.97) | (-0.74) | (0.10) | (0.72) |
|  |  |  |  |  |  |
| L.De Jure CBI (CNW Index) | 0.772 | -0.0378 | -0.571 | -0.176 | -0.0234 |
|  | (0.87) | (-0.06) | (-0.74) | (-1.23) | (-0.31) |
|  |  |  |  |  |  |
| L2.De Jure CBI (CNW Index) | -0.919 | 0.0180 | 0.178 | -0.00448 | -0.0134 |
|  | (-1.29) | (0.03) | (0.22) | (-0.03) | (-0.11) |
|  |  |  |  |  |  |
| L3.De Jure CBI (CNW Index) | -0.268 | -0.405 | -0.836 | -0.0179 | 0.572\*\*\* |
|  | (-0.41) | (-0.85) | (-1.37) | (-0.12) | (3.54) |
|  |  |  |  |  |  |
| L4.De Jure CBI (CNW Index) | 1.042 | 0.129 | 0.313 | -0.0207 | -0.0913 |
|  | (1.30) | (0.21) | (0.35) | (-0.21) | (-1.06) |
|  |  |  |  |  |  |
| L5.De Jure CBI (CNW Index) | 0.374 | 0.939 | -0.101 | 0.00809 | 0.0625 |
|  | (0.35) | (1.21) | (-0.10) | (0.08) | (0.68) |
|  |  |  |  |  |  |
| L6.De Jure CBI (CNW Index) | -0.947 | -0.0975 | 0.632 | -0.160 | 0.353\* |
|  | (-0.89) | (-0.12) | (0.75) | (-1.85) | (2.30) |
|  |  |  |  |  |  |
| L7.De Jure CBI (CNW Index) | 1.758 | -0.393 | 0.171 | 0.0352 | 0.122 |
|  | (1.78) | (-0.39) | (0.20) | (0.38) | (1.23) |
|  |  |  |  |  |  |
| L8.De Jure CBI (CNW Index) | -2.427\*\* | -0.266 | 0.346 | -0.114 | 0.481\*\* |
|  | (-2.78) | (-0.25) | (0.48) | (-1.14) | (2.95) |
|  |  |  |  |  |  |
| L9.De Jure CBI (CNW Index) | 0.191 | 0.402 | -0.942 | 0.0134 | 0.221 |
|  | (0.29) | (0.76) | (-1.70) | (0.16) | (1.62) |
|  |  |  |  |  |  |
| L10.De Jure CBI (CNW Index) | 0.779 | -0.268 | 0.458 | 0.0239 | 0.207 |
|  | (1.58) | (-0.57) | (0.98) | (0.22) | (1.18) |
|  |  |  |  |  |  |
| L.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0388 | 0.0202 | 0.00834 | 0.0127 | 0.00437 |
|  | (1.11) | (0.71) | (0.36) | (1.46) | (1.44) |
|  |  |  |  |  |  |
| L2.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0190 | -0.0252 | 0.00699 | 0.00800 | 0.00638 |
|  | (-0.72) | (-1.33) | (0.38) | (1.13) | (1.47) |
|  |  |  |  |  |  |
| L3.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.00473 | 0.00979 | 0.000696 | -0.00670 | -0.00799 |
|  | (0.20) | (0.55) | (0.03) | (-0.70) | (-1.33) |
|  |  |  |  |  |  |
| L4.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0233 | 0.0433\* | -0.00430 | -0.0141\* | -0.00320 |
|  | (0.95) | (2.13) | (-0.21) | (-2.10) | (-0.66) |
|  |  |  |  |  |  |
| L5.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0243 | -0.0360 | 0.0466\* | -0.000797 | 0.00681 |
|  | (-1.09) | (-1.66) | (2.15) | (-0.13) | (1.80) |
|  |  |  |  |  |  |
| L6.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00393 | -0.0120 | -0.0573\* | 0.00613 | 0.0000887 |
|  | (-0.17) | (-0.60) | (-2.32) | (1.13) | (0.03) |
|  |  |  |  |  |  |
| L7.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0440 | 0.0211 | 0.0473\* | -0.0135\* | -0.00130 |
|  | (1.89) | (1.32) | (2.17) | (-2.52) | (-0.36) |
|  |  |  |  |  |  |
| L8.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0281 | -0.0109 | -0.0418 | 0.00519 | -0.000281 |
|  | (-1.31) | (-0.73) | (-1.77) | (1.16) | (-0.08) |
|  |  |  |  |  |  |
| L9.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0119 | 0.00896 | -0.00235 | -0.00986\* | 0.00759\* |
|  | (0.58) | (0.57) | (-0.11) | (-2.14) | (2.07) |
|  |  |  |  |  |  |
| L10.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0151 | -0.00631 | 0.0163 | -0.00427 | -0.00188 |
|  | (-0.85) | (-0.42) | (0.86) | (-0.72) | (-0.40) |
|  |  |  |  |  |  |
| L.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0962 | 0.120 | 0.106 | 0.0339 | 0.0297 |
|  | (-1.00) | (1.65) | (1.02) | (0.96) | (1.09) |
|  |  |  |  |  |  |
| L2.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.118 | -0.0980 | -0.182 | 0.0114 | 0.0277 |
|  | (-1.16) | (-1.24) | (-1.72) | (0.26) | (0.94) |
|  |  |  |  |  |  |
| L3.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0720 | -0.0370 | -0.146 | -0.0124 | -0.0125 |
|  | (-0.75) | (-0.50) | (-1.70) | (-0.30) | (-0.48) |
|  |  |  |  |  |  |
| L4.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0381 | -0.0413 | 0.180 | 0.000371 | 0.00852 |
|  | (0.35) | (-0.54) | (1.80) | (0.01) | (0.32) |
|  |  |  |  |  |  |
| L5.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.151 | 0.104 | 0.0912 | -0.00458 | 0.0185 |
|  | (1.54) | (1.66) | (0.96) | (-0.12) | (0.64) |
|  |  |  |  |  |  |
| L6.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0834 | 0.0140 | -0.124 | -0.0216 | -0.00364 |
|  | (-0.94) | (0.22) | (-1.35) | (-0.61) | (-0.12) |
|  |  |  |  |  |  |
| L7.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0722 | 0.0860 | -0.128 | -0.00884 | 0.0412 |
|  | (-0.77) | (1.63) | (-1.27) | (-0.29) | (1.17) |
|  |  |  |  |  |  |
| L8.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0116 | 0.140\* | -0.0756 | -0.0255 | -0.0199 |
|  | (0.13) | (2.09) | (-0.84) | (-0.98) | (-0.67) |
|  |  |  |  |  |  |
| L9.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.132 | -0.187\* | -0.129 | -0.0163 | -0.0181 |
|  | (-1.19) | (-2.12) | (-1.53) | (-0.66) | (-0.60) |
|  |  |  |  |  |  |
| L10.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0383 | -0.0334 | 0.0164 | -0.00801 | 0.0147 |
|  | (0.44) | (-0.46) | (0.18) | (-0.31) | (0.53) |
|  |  |  |  |  |  |
| Constant | 1.135\*\*\* | 0.489\* | 1.013\*\*\* | 0.524\* | -0.623\*\* |
|  | (4.08) | (1.99) | (3.54) | (2.37) | (-3.11) |
| Observations | 829 | 829 | 702 | 1574 | 2257 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

It is also possible to implement lagged independent variables in an ordinal logit and regular logit model, albeit at the cost of the inability to add crucial fixed effects. Results for coefficients are displayed in Table 10; current computing resources available preclude the calculation of marginal effects. This is a fairly close specification to that presented in Clark, Golder and Poast, although not in a hazard setting. De jure CBI still is related to a contemporaneous increase in lower house turnover; de facto CBI appears to reduce it. Examining a longer time horizon, de jure CBI still very clearly reduces head of government turnover 8 years out, and increases the chance of instability events at 3, 6, and 8 years. De facto CBI has impacts at 2 years, 3 years, and 9 years. Importantly, the impact of fixed exchange rates vanishes.

Table 10: Lagged Independent Variables, Ordinal Logit and Logit Specification Coefficients, Random Effects, Clustered Standard Errors

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | Instability Event Indicator |
|  |  |  |  |  |
| De Jure CBI (CNW Index) | -0.176 | 1.809 | 3.255\* | 2.048 |
|  | (-0.11) | (0.79) | (2.22) | (1.55) |
|  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.310 | -0.295 | -0.968\*\*\* | -0.0909 |
|  | (-1.28) | (-0.82) | (-3.96) | (-0.51) |
|  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.117 | -0.171 | 0.00342 | 0.0433 |
|  | (-1.78) | (-1.85) | (0.05) | (0.78) |
|  |  |  |  |  |
| L.De Jure CBI (CNW Index) | 2.590 | -0.130 | -1.353 | -0.283 |
|  | (1.17) | (-0.05) | (-0.67) | (-0.42) |
|  |  |  |  |  |
| L2.De Jure CBI (CNW Index) | -3.030 | 0.102 | -0.409 | -0.186 |
|  | (-1.71) | (0.05) | (-0.20) | (-0.18) |
|  |  |  |  |  |
| L3.De Jure CBI (CNW Index) | -0.360 | -2.296 | -1.267 | 4.439\*\*\* |
|  | (-0.20) | (-0.87) | (-0.70) | (3.39) |
|  |  |  |  |  |
| L4.De Jure CBI (CNW Index) | 2.438 | 1.222 | 0.752 | -0.840 |
|  | (1.18) | (0.40) | (0.34) | (-1.22) |
|  |  |  |  |  |
| L5.De Jure CBI (CNW Index) | 1.026 | 3.344 | -0.131 | 0.586 |
|  | (0.44) | (1.17) | (-0.06) | (0.84) |
|  |  |  |  |  |
| L6.De Jure CBI (CNW Index) | -2.488 | -0.268 | 1.257 | 2.792\* |
|  | (-1.03) | (-0.09) | (0.74) | (2.16) |
|  |  |  |  |  |
| L7.De Jure CBI (CNW Index) | 4.066 | -1.674 | 0.908 | 0.942 |
|  | (1.72) | (-0.50) | (0.42) | (1.11) |
|  |  |  |  |  |
| L8.De Jure CBI (CNW Index) | -5.912\* | -0.557 | 0.267 | 5.526\* |
|  | (-2.53) | (-0.14) | (0.13) | (2.37) |
|  |  |  |  |  |
| L9.De Jure CBI (CNW Index) | 1.172 | 1.473 | -2.107 | 3.010 |
|  | (0.59) | (0.69) | (-1.38) | (1.61) |
|  |  |  |  |  |
| L10.De Jure CBI (CNW Index) | 1.363 | -0.670 | 0.661 | 0.870 |
|  | (1.02) | (-0.39) | (0.54) | (0.36) |
|  |  |  |  |  |
| L.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0994 | 0.0956 | -0.00867 | 0.0193 |
|  | (1.13) | (0.78) | (-0.13) | (0.88) |
|  |  |  |  |  |
| L2.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0401 | -0.0642 | 0.0352 | 0.0415 |
|  | (-0.60) | (-0.77) | (0.72) | (1.26) |
|  |  |  |  |  |
| L3.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.00287 | 0.0293 | -0.0221 | -0.0596 |
|  | (0.05) | (0.36) | (-0.34) | (-1.33) |
|  |  |  |  |  |
| L4.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0518 | 0.116 | 0.0236 | -0.0261 |
|  | (0.82) | (1.35) | (0.45) | (-0.70) |
|  |  |  |  |  |
| L5.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0494 | -0.0814 | 0.0827 | 0.0507 |
|  | (-0.89) | (-1.00) | (1.50) | (1.93) |
|  |  |  |  |  |
| L6.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0230 | -0.0796 | -0.123 | 0.00497 |
|  | (-0.41) | (-1.01) | (-1.83) | (0.18) |
|  |  |  |  |  |
| L7.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.112 | 0.0951 | 0.105 | -0.0123 |
|  | (1.82) | (1.11) | (1.65) | (-0.41) |
|  |  |  |  |  |
| L8.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0592 | -0.0307 | -0.0940 | -0.00127 |
|  | (-1.10) | (-0.39) | (-1.33) | (-0.05) |
|  |  |  |  |  |
| L9.Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0159 | 0.0176 | -0.0225 | 0.0530 |
|  | (0.31) | (0.27) | (-0.38) | (1.87) |
|  |  |  |  |  |
| L10.Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0224 | -0.0131 | 0.0589 | -0.0179 |
|  | (-0.53) | (-0.22) | (1.29) | (-0.50) |
|  |  |  |  |  |
| L.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.238 | 0.430 | 0.191 | 0.209 |
|  | (-1.08) | (1.35) | (0.75) | (1.09) |
|  |  |  |  |  |
| L2.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.231 | -0.731\* | -0.396 | 0.191 |
|  | (-0.92) | (-2.14) | (-1.48) | (0.96) |
|  |  |  |  |  |
| L3.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.289 | -0.366 | -0.527\* | -0.133 |
|  | (-1.26) | (-1.01) | (-2.57) | (-0.79) |
|  |  |  |  |  |
| L4.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.112 | -0.383 | 0.414 | 0.00305 |
|  | (0.41) | (-1.16) | (1.59) | (0.02) |
|  |  |  |  |  |
| L5.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.248 | 0.156 | 0.340 | 0.106 |
|  | (0.99) | (0.57) | (1.37) | (0.58) |
|  |  |  |  |  |
| L6.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.107 | -0.0542 | -0.244 | -0.00241 |
|  | (-0.48) | (-0.18) | (-1.04) | (-0.01) |
|  |  |  |  |  |
| L7.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0722 | 0.444 | -0.368 | 0.293 |
|  | (-0.32) | (1.64) | (-1.45) | (1.21) |
|  |  |  |  |  |
| L8.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0784 | 0.488 | -0.104 | -0.156 |
|  | (-0.36) | (1.47) | (-0.43) | (-0.81) |
|  |  |  |  |  |
| L9.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.297 | -0.887\*\* | -0.388 | -0.110 |
|  | (-1.16) | (-2.72) | (-1.69) | (-0.55) |
|  |  |  |  |  |
| L10.(Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0790 | -0.310 | -0.0201 | 0.157 |
|  | (0.36) | (-0.96) | (-0.08) | (0.81) |
|  |  |  |  |  |
| Constant |  |  |  | -8.343\*\*\* |
|  |  |  |  | (-4.76) |
| cut1 |  |  |  |  |
| Constant | -0.534 | 1.262 | -0.414 |  |
|  | (-0.90) | (1.44) | (-0.75) |  |
| cut2 |  |  |  |  |
| Constant | -0.101 | 1.926\* | 1.037 |  |
|  | (-0.17) | (2.22) | (1.80) |  |
| sigma2\_u |  |  |  |  |
| Constant | 0.929\*\* | 3.588\*\*\* | 0.695\*\* |  |
|  | (3.20) | (3.31) | (3.07) |  |
| / |  |  |  |  |
| lnsig2u |  |  |  | 2.469\*\*\* |
|  |  |  |  | (8.00) |
| Observations | 829 | 829 | 702 | 2257 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

# Further Explorations

In Tables A14 and A15, I test the importance of the Mundell-Fleming trilemma type prediction that the presence of capital controls and capital account openness may affect the relevance of monetary commitment institutions. One might expect that impacts of commitment institutions are likely to be stronger in open countries. Reliable data on capital controls and capital account openness comes from the IMF for a wide range of countries and periods studied. Chinn and Ito compile the KAOPEN index from this data covering 1970-2017 for 182 countries (Chinn and Ito n.d.). KAOPEN tracks de jure controls based on the presence of multiple exchange rates, restrictions on current and capital account transactions, and measures concerning the surrender of export proceeds. Results using the index can be compared with assumption that all nations were open in the period studied.

Again analyzing the linear panel fixed effects data, I first split the sample at about the median based on ratings on the Chinn-Ito index. No signs of effects change. However, the de jure CBI indicator displays higher t-statistics (although insignificant for measures except for lower house turnover) in the high openness (low capital controls) group. Evidence for political stability and de jure CBI falls in the opposite direction: effects on the world bank indicator occur only in the low openness group, and the difference in coefficients is quite large. The de facto CBI measure’s effect on lower house turnover is significant only in the high openness group, but the exchange rate classification effect is significant only in the low openness group. From these scattered results a clear difference is not yet evident. I also test the relevance of the capital account in a continuous interaction term model in table A16 with similar results.

In Tables A17 and A18, I test the relevance of democratization to impacts. Theoretically, it may be possible that de jure CBI has more of an impact in democracies with a stronger rule of law, while de facto CBI may have more impact in autocracies. Separation into autocracies and democracies is provided by the Polity IV dataset from 1800-2017, (PolityProject n.d.). I make use of the revised combined Polity Scores for each country, with a cutoff at the midway point between -10 and +10, with a low number denoting an autocracy. The polity index is a standard in the literature and is constructed based on expert research on factors such as constraints on a country’s executive and political competitiveness and openness variables.

Preliminarily, the panel fixed effects results appear to demonstrate opposite results to those predicted. Beginning with a split sample, the significant positive impact of de jure CBI on the political instability event indicator is stronger in autocracies. De facto CBI also appears to only matter for lower house turnover in democracies. Another interesting finding is that the link between a fixed exchange rate and increased electoral and political stability (in the panel model) appears to be stronger in autocracies. This may be evidence of the endogenous fact that stable, autocratic regimes may choose a fixed rate to increase transparency (although the theorized substitution for CBI does not appear to occur, except for in de facto terms) (Broz 2002) . Again, further testing with instrumental variables and lags would be extremely valuable. Interaction term analysis in Table A19 further confirms these findings, and significant signs appear for fixed rates decreasing lower house turnover in autocracies with a nullifying coefficient for democracies.

Table A20 and A21 aim to explore divergence in results based on the branch of government and position considered (although again only for panel fixed effects models). Table A20 makes use of a binary variable built into V-Dem which indicates whether the Head of State and Head of Government are the same individual. In a strange turn of events, it appears to be the case that the effect of de jure CBI on head of state turnover is driven by situations when the head of state and head of government are not the same individual. This may represent parliamentary or semi-presidential systems and contradicts expectations of accountability falling on heads of government as well as an expectation of stable monarchies. On the other hand, effects for fixed exchange rates imply less turnover when the head of state and head of government are the same. Table A21 examines effects on lower house turnover based on whether the lower chamber legislates in practice. Most effects are not significant, but in another strange turn of events, the relation between de facto CBI and lower chamber turnover occurs mostly with lower legislative efficacy, perhaps some product of stable, long-term career positions.

# Conclusion

To summarize results broadly, both styles of commitment institutions tend to suggest political business cycle style mechanisms. Their implementation imposes electoral costs on incumbents. De jure Central Bank Independence appears to decrease electoral and political stability. This result is stronger in the political case and may suggest that de jure independence reduces the capacity of incumbents to control the economy and run some sort of political business cycle. De facto CBI tends to be related to less electoral turnover in both fixed effects and lag models, but the instrumental variables results are insignificant; it may weakly follow the pattern of welfare effects, perhaps driven by actual positive consequences from low inflation. In panel fixed effects and logit models, fixed exchange rates appeared to reduce electoral instability (welfare effect) but decrease political stability. But in more endogeneity-robust instrumental variables and lag specifications, if anything, fixed rates increase all forms of instability, again suggesting political business cycle behavior. The varied findings for fixed rates based on IV specification and linear or ordinal assumptions to some degree cast doubt on this impact.

The fruits of the inclusion of endogeneity-robust methods and a larger sample in my work lead to conclusions different from the literature. I do not concur with OLS findings that both fixed exchange rates and central bank independence increase the survival of cabinets, although I have to some degree reproduced the OLS result for fixed rates (Bernhard and Leblang 2002). I agree that de jure central bank independence may harm the survival of incumbents, but add the observation that this is mostly clear when considering political rather than electoral stability previously studied and that the relationship may be insignificant or the opposite for de facto independence (William R. Clark, Golder, and Poast 2013). After accounting for the potential for endogeneity, I do not agree with survival benefits of fixed exchange rate regimes and find some political stability results to the contrary. On the other hand, all previous works appear to have considered something akin to my head of government turnover variable in their focus on cabinet and executive survival, and I found few significant results with this variable specifically. These works also focused on democracies, and although I have not yet found differences in at least panel models based on regime type, endogeneity robust methods should be employed.

The consideration of any destabilizing effects of limiting regimes may add a new dimension to any normative debates over their adoption. As evidenced by occasional debate over issues such as term limits for politicians, opinions on optimal lengths in office vary (Greenberg n.d.). Within the political economy literature, short shadows of the future can have adverse effects on the provision of public goods and peaceful order (Olson 1993). The results of this paper show that the institutions of de jure central bank independence and possibly fixed exchange rates specifically should be weighed with respect to these potential effects through political costs on times in office. Normative revaluations may thus be appropriate. The policy work and recommendations of bodies such as the IMF may need to contend with political incentives regarding the adoption of these institutions.

Importantly, the consideration of endogeneity should be adequately considered in future work on the impacts of limiting regimes. Sign flips and significance changes for fixed exchange rates in particular were present. In some cases, the careful usage of panel data with adequate fixed effects and measures to handle reverse causality may be enough. In other cases, the introduction of instruments as in this paper should be helpful.

A number of possible future directions for research present themselves. Many of these could be completed with the same already prepared dataset. Primarily, more explorations should be completed using the endogeneity robust IV and lagged models, particularly given the sign reversal of fixed exchange rates in these specifications. This should include testing of the null effects of democracy and capital controls and potentially more theoretical discussion of predictions in these cases. It would also be interesting to investigate other advanced estimators as ways to bring the ordinal interpretation of dependent variables to an endogeneity-robust model equivalent, similar to allowing for fixed effects and instrumental variables in an ordinal logit model.

Greater attention should also be given to the treatment of Reinhardt-Rogoff exchange rate regimes as a continuous variable in regression. One cut as a binary variable of floating or fixed was presented, but others should also be tested for significance. It would also be possible to test individual variables for each exchange rate classification category.

In the institutional controls regression presented, if there is interest in the actual impact of controls, the the specification should be adjusted to reduce collinearity. As it stands it remains clear that the controls do not change coefficients for the key institutional variables. But it may be better not to include two indices for federalism, for example, if the size of its effect should be ascertained.

Several other advanced methods of analysis were also considered. A robust Arellano Bond specification or other dynamic panel models could provide another means to check results beyond lags and instrumental variables. Over the full sample and with relevant controls and adjustments for endogeneity it would also be possible to perform another survival analysis for electoral turnover in the style of Clark, Golder, and Poast.

Another possible instrumental variable to predict central bank independence could be the level of financing through foreign aid for monetary institutions. This data should be readily available from the OECD, if only for a shortened time span. Aid is likely to be another factor influencing the technical capacity of a nation to operate a central bank. Foreign aid is likely to be somewhat divorced from electoral and also hopefully political circumstances in a country and not as driven by stability. To further improve the exclusion restriction, attention could be given to multilateral donors, perhaps such as the IMF, which supposedly allocate aid on a less political and more impartial bias. For fixed exchange rates, openness to trade may be another instrumental variable, with a relationship to with of land area and status as a landlocked nation, and problems for the exclusion restriction may not be evident. Overall, the inclusion of more instruments could also allow for the simultaneous testing of de jure and de facto central bank independence.

A few minor adjustments to methodology were also considered but have not yet been implemented. The applicability of economic voting theory may vary based on whether incumbents are running for reelection or not; original intent was that of excluding cases when incumbents were not up for re-election. Unfortunately, data on this variable did not seem to be available in Varieties of Democracy, but on the other hand the split into different categories of turnover by party and individual with different marginal effects should be expected to help mitigate this kind of situation.

Previous literature made use of adjustment for endogenous election calling, particularly in parliamentary democracies (Bernhard and Leblang 2002; William R. Clark, Golder, and Poast 2013). A preliminary search of variables to account for endogenous elections was made in Varieties of Democracy, but no solutions easily presented themselves. It may be possible to find variables for parliamentarism itself or to split the sample into parliamentary and non-parliamentary countries.

Several efforts could be made to expand analysis if solutions were found to adjust for missing data. Some preliminary preparations were made for the integration of the Grilli et al index of de facto CB independence into analysis, which focuses largely around governor appointment terms and practices (Grilli et al. 1991). However, even with updated data (Romelli n.d.), the sample size appeared to be far too small and limited to democracies. Also considered was the testing of more specific predictions about the importance of de jure versus de facto CBI given levels of polity executive constraints or electoral versus political stability given levels of polity competitiveness, but sample sizes here were also far too small. In these cases, interpolation or extrapolation might be used to improve availability across time, although solving the problem of a lack of countries in the panel will be difficult.

Finally, examination of an interesting case study could shed more light on the mechanisms at work. It would be useful to examine the implications of the joint arrangement of central bank independence and a fixed exchange rate on the European continent. Trouble concerning the Eurozone is a common explanation for turmoil on the continent (Stiglitz 2016). Varying dates of entry into European systems provide a means to track political impacts. European elections also offer a more detailed picture of the specific kinds of upheaval following from limits. Populist victories overturning the status quo may come from the Left, as in Greece, or the Right, as in Italy, or there may be a change in centrist parties with reform promises (Henley n.d.). Factors which determine the style of revolt are worth examining.

Overall, there may be some merit to current arguments concerning the political costs of welfare-enhancing commitment institutions such as central bank independence and fixed exchange rates. This suggests some role for the political economy analysis of the choice of these institutions.

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# Appendix

Table A1: Summary Statistics

|  |  |  |  |
| --- | --- | --- | --- |
|  | mean | sd | count |
| Country name | . | . | 0 |
| Head of Govt. Turnover | .6118573 | .8793629 | 2159 |
| Head of State Turnover | .37205 | .7400175 | 2161 |
| Election executive turnover ordinal | .7411648 | .8704437 | 2009 |
| Lower House Turnover | .6871024 | .8311507 | 1729 |
| Regional government exists | .7458008 | .4354359 | 8454 |
| HOS = HOG | .4006152 | .4900521 | 8452 |
| Legislative Efficacy | .2197277 | 1.285369 | 7653 |
| Tertiary Education Enrollment (V-Dem) | .1985459 | .2012579 | 4386 |
| Horizontal accountability index | .1907048 | 1.036031 | 8454 |
| WB Political Stability (Absence of Violence) | -.1668258 | .9817535 | 3490 |
| Coups | .0277497 | .172266 | 5946 |
| Polity Democracy Score (v2) (+10 coding) | 11.32542 | 7.343784 | 7498 |
| GDP per capita | 11644.17 | 15425.2 | 7207 |
| Population total | 29396.92 | 108078.6 | 4771 |
| Civil war | .0853969 | .2794969 | 5492 |
| Armed conflict, internal | .0520362 | .2221229 | 4862 |
| Coups d'etat | .0484171 | .2808156 | 8055 |
| Aggregate GDP (V-Dem) | 2.47e+08 | 8.36e+08 | 4404 |
| Instability Event Indicator | .3782051 | .4849812 | 5772 |
| bv2elturnhog | .3441408 | .4751973 | 2159 |
| bv2elturnhos | .2151782 | .411041 | 2161 |
| bv2eltvrig | .4493927 | .4975762 | 1729 |
| be\_wbgi\_pve | .4661891 | .498927 | 3490 |
| b2v2elturnhog | .2677165 | .4428716 | 2159 |
| b2v2elturnhos | .1568718 | .363764 | 2161 |
| b2v2eltvrig | .2377097 | .4258035 | 1729 |
| mwbgi | -.0815 | 0 | 8454 |
| b2e\_wbgi\_pve | .5 | .5000716 | 3490 |
| cowcode | 451.1118 | 254.6708 | 6859 |
| ccodewb | 433.6191 | 257.3641 | 6803 |
| CB creation | .0094312 | .0966624 | 6786 |
| CB reform | .057766 | .2333176 | 6786 |
| CBI reform direction | .0344878 | .2258141 | 6785 |
| CBI increase | .0433309 | .2036159 | 6785 |
| CBI decrease | .008843 | .0936276 | 6785 |
| Regional central bank | .1374889 | .3443882 | 6786 |
| CBI Garriga (raw average) | .474866 | .1850039 | 5866 |
| De Jure CBI (CNW Index) | .472807 | .1911018 | 5866 |
| Component 1: CB CEO (0.20) | .5496134 | .2078907 | 5866 |
| Component 2: CB objectives (0.15) | .485598 | .2602124 | 5845 |
| Component 3: Policy formulation (0.15) | .4074395 | .3229385 | 5866 |
| Component 4: CB lending (0.50) | .4699342 | .2615269 | 5845 |
| 2016 version | .4964349 | .1994838 | 5866 |
| 2016 version | .4898539 | .2034256 | 5867 |
| uHighCBI | .3958404 | .4890721 | 5866 |
| wHighCBI | .398568 | .4896452 | 5866 |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 9.312206 | 4.466359 | 8725 |
| float\_rate | .2618911 | .4396889 | 8725 |
| xrcomp | 2.105931 | .9045868 | 6306 |
| xropen | 3.781161 | .7119688 | 6306 |
| xconst | 4.33205 | 2.30556 | 7273 |
| parreg | 3.501444 | 1.102193 | 7273 |
| parcomp | 2.916403 | 1.531534 | 7273 |
| hxconst4 | .5337286 | .498894 | 7590 |
| hxconst5 | .4301713 | .4951326 | 7590 |
| hcomp3 | .4343874 | .4957089 | 7590 |
| time to regular turnover | -85.76577 | 227.1733 | 5930 |
| number of actual turnovers | -48.31021 | 189.2258 | 6789 |
| regular turnover dummy | .0413928 | .1992109 | 7151 |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | .8858262 | .3180445 | 7147 |
| time in office | 3.96868 | 4.316364 | 6737 |
| legal duration | -77.4644 | 220.6923 | 6320 |
| SP.POP.TOTL | 2.24e+08 | 7.30e+08 | 12809 |
| Aggregate GDP, 2011 PP (WB) | 2.90e+12 | 9.23e+12 | 6734 |
| SE.TER.ENRR | .2246435 | .2207567 | 7681 |
| Autonomous Regions | .1305215 | .3369003 | 7018 |
| State Government Authority over Taxing, Spending, or Legislating | .4599431 | .4984942 | 2459 |
| Checks and Balances | 2.566904 | 1.676025 | 6883 |
| Coord | 2.584133 | 1.338687 | 1979 |
| Type | 2.073118 | 1.83036 | 1860 |
| vssbizagg | .2195591 | .0575988 | 32 |
| Pop. Share of Tertiary Ed. Social Science/Business Graduates | .2349682 | .063707 | 244 |
| atertEd | .2171937 | .2176764 | 9135 |
| itertEd | .2131696 | .2156816 | 10091 |
| issbizsh | .3566224 | .0783327 | 355 |
| ivaggGDP | 2.47e+08 | 8.36e+08 | 4404 |
| iwbaggGDP | 2.90e+12 | 9.23e+12 | 6734 |
| issbizagg | .2353083 | .0692435 | 345 |
| Chinn-Ito index, normalized | .4497587 | .3591833 | 7237 |
| mka\_open | .4164419 | 0 | 14495 |
| highka\_open | .3892497 | .4876138 | 7237 |
| deme\_polity2 | .5366764 | .4986863 | 7498 |

Table A2: OLS Regression on the left, FE panel regression on the right. Low irregular turnover (high de facto CBI) is associated with less turnover in the HOG.

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | Head of Govt. Turnover | Head of Govt. Turnover |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.222\*\*\* | -0.156\* |
|  | (-3.43) | (-2.29) |
|  |  |  |
| Constant | 0.840\*\*\* | 0.784\*\*\* |
|  | (13.86) | (13.24) |
| Observations | 1796 | 1796 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A3: OLS Regression on the left, FE panel regression on the right. Long central bank governor terms in office (high de facto central bank independence) is associated with less turnover in the HOG.

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | Head of Govt. Turnover | Head of Govt. Turnover |
| CB Governor Time in Office | -0.0196\*\*\* | -0.0161\* |
|  | (-4.18) | (-2.43) |
|  |  |  |
| Constant | 0.736\*\*\* | 0.722\*\*\* |
|  | (25.23) | (27.51) |
| Observations | 1764 | 1764 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A4:

Note that in this regression variables and labels have not yet been updated. A higher RR rate scale is the opposite of a fixed exchange rate.

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | e\_wbgi\_pve | e\_wbgi\_pve |
| RRrate | -0.0334\*\*\* | -0.0203\*\* |
|  | (-7.30) | (-2.75) |
|  |  |  |
| \_cons | 0.0524 | -0.0281 |
|  | (1.74) | (-0.62) |
| *N* | 2962 | 2962 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A5:

Note that in this regression variables and labels have not yet been updated. A higher RR rate scale is the opposite of a fixed exchange rate.

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | instabEvent | instabEvent |
| RRrate | 0.00131 | -0.00944\* |
|  | (0.88) | (-2.13) |
|  |  |  |
| \_cons | 0.368\*\*\* | 0.442\*\*\* |
|  | (30.16) | (14.50) |
| *N* | 5273 | 5273 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A6. Ordinal regression (ordinal panel logit with clustered SEs), Random effects, Coefficients

|  |  |  |  |
| --- | --- | --- | --- |
|  | (1) | (2) | (3) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover |
|  |  |  |  |
| De Jure CBI (CNW Index) | 0.684 | 2.083\*\*\* | 1.523\*\*\* |
|  | (1.72) | (4.25) | (3.49) |
|  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.254 | -0.387 | -0.677\*\*\* |
|  | (-1.39) | (-1.46) | (-3.52) |
|  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0373\* | -0.0799\*\*\* | -0.00522 |
|  | (-2.22) | (-3.36) | (-0.25) |
| cut1 |  |  |  |
| Constant | 0.379 | 2.087\*\*\* | 0.279 |
|  | (1.44) | (5.60) | (0.95) |
| cut2 |  |  |  |
| Constant | 0.789\*\* | 2.646\*\*\* | 1.668\*\*\* |
|  | (2.99) | (7.14) | (5.54) |
| sigma2\_u |  |  |  |
| Constant | 0.714\*\*\* | 2.942\*\*\* | 0.702\*\*\* |
|  | (3.68) | (4.52) | (3.85) |
| Observations | 1270 | 1270 | 1052 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A7: Binary Instability Event Panel Logit, Fixed Effects and Clustered Standard Errors, Coefficients

|  |  |
| --- | --- |
|  | (1) |
|  | Instability Event Indicator |
| Instability Event Indicator |  |
| De Jure CBI (CNW Index) | 6.357\*\*\* |
|  | (15.05) |
|  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.00741 |
|  | (0.06) |
|  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0512\*\*\* |
|  | (3.43) |
| Observations | 3450 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A8. Institutional Interaction Terms Panel Regression with Fes, Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.515 | 0.860\* | 0.981\* | -0.0819 | 0.596\*\* |
|  | (1.09) | (2.42) | (1.99) | (-0.25) | (2.93) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0710 | 0.191 | -0.0519 | 0.0892 | -0.0769 |
|  | (-0.28) | (0.96) | (-0.26) | (0.75) | (-1.20) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00385 | -0.0213 | -0.0355 | 0.0260 | -0.0136 |
|  | (-0.15) | (-1.16) | (-1.55) | (1.58) | (-1.54) |
|  |  |  |  |  |  |
| De Jure CBI (CNW Index) \* (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0917 | -0.576 | -0.837\* | -0.0490 | 0.0961 |
|  | (-0.26) | (-1.90) | (-2.19) | (-0.28) | (0.80) |
|  |  |  |  |  |  |
| De Jure CBI (CNW Index) \* Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0221 | -0.00291 | 0.0192 | -0.0268 | 0.0393\* |
|  | (-0.55) | (-0.13) | (0.55) | (-1.07) | (2.17) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) \* Exchange Rate Classification (RR inverted, higher = more fixed) | 0.00494 | 0.00420 | 0.0297 | -0.00366 | 0.00635 |
|  | (0.27) | (0.25) | (1.95) | (-0.71) | (1.37) |
|  |  |  |  |  |  |
| Constant | 0.629\* | 0.182 | 0.602\*\* | -0.154 | 0.0827 |
|  | (2.41) | (0.92) | (2.66) | (-0.79) | (0.94) |
| Observations | 1270 | 1270 | 1052 | 1973 | 3747 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A9: All controls, Fixed Effects and Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.239 | -0.0838 | 0.804 | -0.0844 | 0.828\* |
|  | (0.62) | (-0.32) | (1.28) | (-0.30) | (2.38) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.266 | 0.0263 | -0.589\* | 0.0984\* | -0.0282 |
|  | (-0.99) | (0.15) | (-2.25) | (2.50) | (-0.60) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.0383 | -0.00274 | 0.0227 | -0.0154 | 0.0190 |
|  | (1.91) | (-0.20) | (0.63) | (-1.00) | (1.04) |
|  |  |  |  |  |  |
| Regional government exists | -0.462 | 0.400 | -0.463 | 0 | -0.266 |
|  | (-1.08) | (1.33) | (-0.80) | (.) | (-1.54) |
|  |  |  |  |  |  |
| Horizontal accountability index | 0.00170 | 0.227 | 0.155 | -0.0411 | 0.269\* |
|  | (0.02) | (1.79) | (1.21) | (-0.33) | (2.50) |
|  |  |  |  |  |  |
| Checks and Balances | 0.0841 | -0.0942\* | 0.0857\* | 0.0281 | -0.0262 |
|  | (1.94) | (-2.47) | (2.25) | (0.82) | (-1.06) |
|  |  |  |  |  |  |
| Autonomous Regions | 1.169\*\* | -0.0641 | 0.169 | 0 | -0.123 |
|  | (3.12) | (-0.25) | (0.42) | (.) | (-1.57) |
|  |  |  |  |  |  |
| State Government Authority over Taxing, Spending, or Legislating | 0.740\*\*\* | 0.110 | -0.184 | 0 | 0.0341 |
|  | (4.69) | (1.03) | (-0.73) | (.) | (0.45) |
|  |  |  |  |  |  |
| Coord | 0.0928 | 0.171 | 0.00277 | -0.0836 | -0.0482 |
|  | (0.50) | (1.17) | (0.01) | (-1.58) | (-0.46) |
|  |  |  |  |  |  |
| Type | -0.00809 | -0.0732 | 0.120 | 0.0979\* | -0.0308 |
|  | (-0.06) | (-1.07) | (0.86) | (2.43) | (-0.62) |
|  |  |  |  |  |  |
| Constant | -0.330 | -0.242 | 0.366 | 0.723\* | -0.0928 |
|  | (-0.71) | (-0.58) | (0.57) | (2.13) | (-0.28) |
| Observations | 192 | 192 | 178 | 281 | 488 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A10: All Controls Excluding Corporatism, Fixed Effects and Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.158 | 0.136 | 0.527 | -0.527 | 1.003\*\*\* |
|  | (0.55) | (0.63) | (1.42) | (-1.96) | (5.56) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.236 | -0.106 | -0.374\* | 0.0620 | 0.0474 |
|  | (-1.69) | (-0.89) | (-2.50) | (1.46) | (1.36) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00200 | -0.0333\*\*\* | 0.00672 | -0.000914 | 0.0213\* |
|  | (-0.15) | (-3.51) | (0.33) | (-0.09) | (2.34) |
|  |  |  |  |  |  |
| Regional government exists | 0.856\*\* | 0.0101 | 0.974\*\*\* | 0.129\* | -0.203\* |
|  | (3.40) | (0.06) | (4.49) | (2.11) | (-2.04) |
|  |  |  |  |  |  |
| Horizontal accountability index | 0.376\*\* | 0.342\* | 0.203 | 0.0967 | 0.0678 |
|  | (2.74) | (2.64) | (1.81) | (0.83) | (1.41) |
|  |  |  |  |  |  |
| Checks and Balances | -0.0150 | -0.0429 | 0.00127 | 0.0106 | 0.00423 |
|  | (-0.38) | (-1.49) | (0.03) | (0.82) | (0.39) |
|  |  |  |  |  |  |
| Autonomous Regions | -0.707 | -0.0667 | -1.265\*\*\* | -0.374\*\*\* | -0.0339 |
|  | (-1.35) | (-0.63) | (-4.28) | (-7.99) | (-0.54) |
|  |  |  |  |  |  |
| State Government Authority over Taxing, Spending, or Legislating | 0.301 | 0.0884 | 0.437 | 0 | -0.0601 |
|  | (0.39) | (1.38) | (1.53) | (.) | (-1.13) |
|  |  |  |  |  |  |
| Constant | -0.0944 | 0.606\*\*\* | -0.314 | 0.0641 | -0.191 |
|  | (-0.21) | (3.69) | (-1.16) | (0.33) | (-1.71) |
| Observations | 461 | 461 | 398 | 749 | 1283 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A11: Panel Logit Regression, Binary Dependent Variables Coding 1, Fixed Effects, Coefficients

Any change in party or individual (any turnover), WBGI >= 0

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
|  | bv2elturnhog | bv2elturnhos | bv2eltvrig | be\_wbgi\_pve |
|  |  |  |  |  |
| De Jure CBI (CNW Index) | 0.604 | 1.702\*\* | 1.635\*\* | -3.189\* |
|  | (1.34) | (2.86) | (3.23) | (-2.37) |
|  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.167 | -0.173 | -0.696\*\* | 0.177 |
|  | (-0.89) | (-0.75) | (-3.12) | (0.64) |
|  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0370 | -0.0893\*\* | -0.0153 | 0.134\* |
|  | (-1.55) | (-2.82) | (-0.61) | (2.43) |
| Observations | 1114 | 733 | 901 | 712 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A12: Panel Logit Regression, Binary Dependent Variables Coding 2, Fixed Effects, Coefficients

Full change in party and individual (full turnover), WBGI >= Median

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
|  | b2v2elturnhog | b2v2elturnhos | b2v2eltvrig | b2e\_wbgi\_pve |
|  |  |  |  |  |
| De Jure CBI (CNW Index) | 0.637 | 1.551\* | 0.686 | -3.757\*\* |
|  | (1.38) | (2.38) | (1.15) | (-2.76) |
|  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.231 | -0.293 | -0.627\* | 0.229 |
|  | (-1.17) | (-1.18) | (-2.57) | (0.80) |
|  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0213 | -0.104\*\* | -0.00529 | 0.169\* |
|  | (-0.86) | (-2.95) | (-0.18) | (2.57) |
| Observations | 1008 | 634 | 716 | 726 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A13: Regime as a binary independent variable

0.5 as the De Jure CBI cutoff, and 1-8 as fixed, 8-16 as floating on the RR scale

Does not adequately capture variability

Fes, Clustered Standard Errors

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| High De Jure CBI (CNW Index) | 0.00533 | 0.0951 | 0.101 | -0.0908 | 0.364\*\*\* |
|  | (0.06) | (1.63) | (1.12) | (-1.64) | (8.21) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0763 | -0.0600 | -0.229\*\* | 0.0304 | 0.0137 |
|  | (-1.01) | (-0.84) | (-2.89) | (1.09) | (0.70) |
|  |  |  |  |  |  |
| Fixed Exchange Rate Classification (RR 1-8) | -0.0502 | -0.141\*\* | -0.00731 | 0.0767 | 0.0228 |
|  | (-0.77) | (-3.24) | (-0.10) | (1.56) | (0.51) |
|  |  |  |  |  |  |
| Constant | 0.794\*\*\* | 0.480\*\*\* | 0.847\*\*\* | -0.116\* | 0.254\*\*\* |
|  | (10.00) | (7.35) | (10.21) | (-2.01) | (7.35) |
| Observations | 1270 | 1270 | 1052 | 1973 | 3747 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Sample split based on capital mobility/controls

Some changes in significance, probably driven by sample size but no sign flips

Table A14: Low kaopen

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.445 | 0.268 | 0.429 | -0.713\*\* | 0.948\*\*\* |
|  | (1.12) | (0.98) | (1.20) | (-2.64) | (4.26) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0521 | -0.0157 | -0.123 | 0.0278 | 0.0121 |
|  | (-0.56) | (-0.20) | (-1.13) | (0.52) | (0.49) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0136 | -0.0255\* | -0.00382 | 0.0137 | 0.0115 |
|  | (-0.99) | (-2.48) | (-0.28) | (1.69) | (1.85) |
|  |  |  |  |  |  |
| Constant | 0.669\*\* | 0.443\*\* | 0.625\*\*\* | -0.235 | -0.108 |
|  | (3.16) | (2.80) | (3.43) | (-1.42) | (-1.05) |
| Observations | 637 | 637 | 510 | 858 | 2143 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A15: High kaopen

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.299 | 0.221 | 0.528\* | -0.0254 | 1.047\*\*\* |
|  | (1.26) | (1.37) | (2.14) | (-0.21) | (7.76) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.0373 | -0.133 | -0.301\*\* | 0.0117 | 0.00176 |
|  | (-0.27) | (-0.94) | (-2.94) | (0.48) | (0.05) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0120 | -0.0117 | -0.00590 | 0.00274 | 0.0132 |
|  | (-0.99) | (-1.12) | (-0.49) | (0.25) | (1.34) |
|  |  |  |  |  |  |
| Constant | 0.641\*\* | 0.491\*\*\* | 0.719\*\*\* | 0.175 | -0.197\* |
|  | (3.38) | (3.62) | (4.40) | (1.75) | (-2.16) |
| Observations | 633 | 633 | 542 | 1115 | 1604 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A16: Capital Account Index Interaction Term

The general story is one of no real impact. CBI has greater instability increasing impact with openness on the event measure, but not the WB measure, painting an unclear picture. The interaction term for fixed rates is surprisingly insignificant.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.502 | 0.331 | 0.591 | -0.627\* | 0.532\* |
|  | (1.23) | (1.20) | (1.48) | (-2.41) | (2.22) |
|  |  |  |  |  |  |
| Chinn-Ito index, normalized | 0.209 | 0.247 | 0.0942 | -0.0971 | 0.104 |
|  | (0.59) | (0.99) | (0.30) | (-0.37) | (0.69) |
|  |  |  |  |  |  |
| De Jure CBI (CNW Index) \* Chinn-Ito index, normalized | -0.378 | -0.189 | -0.242 | 0.483 | 0.639\* |
|  | (-0.74) | (-0.55) | (-0.48) | (1.47) | (1.98) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI)=1 | 0.0209 | 0.00919 | -0.104 | 0.0332 | 0.00350 |
|  | (0.20) | (0.10) | (-0.84) | (0.57) | (0.12) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI)=1 \* Chinn-Ito index, normalized | -0.291 | -0.125 | -0.316 | -0.00772 | -0.00836 |
|  | (-1.35) | (-0.58) | (-1.55) | (-0.10) | (-0.16) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0189 | -0.0296\*\* | -0.0121 | 0.0159 | 0.0173\* |
|  | (-1.22) | (-2.65) | (-0.83) | (1.71) | (2.14) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) \* Chinn-Ito index, normalized | 0.0206 | 0.0126 | 0.0226 | -0.0198 | -0.0278 |
|  | (0.88) | (0.72) | (1.10) | (-1.45) | (-1.82) |
|  |  |  |  |  |  |
| Constant | 0.624\*\* | 0.374\* | 0.642\*\* | 0.0956 | -0.0578 |
|  | (2.80) | (2.42) | (2.97) | (0.52) | (-0.53) |
| Observations | 1195 | 1195 | 990 | 1897 | 3540 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A17: Split sample democracies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.0936 | 0.166 | 0.129 | -0.414 | 1.035\*\*\* |
|  | (0.43) | (1.13) | (0.52) | (-1.89) | (10.12) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.137 | -0.00728 | -0.267\*\* | 0.00569 | 0.0353 |
|  | (-1.52) | (-0.09) | (-2.99) | (0.19) | (1.32) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00795 | -0.0186\* | 0.0104 | -0.000947 | 0.0113 |
|  | (-0.75) | (-2.44) | (0.83) | (-0.13) | (1.73) |
|  |  |  |  |  |  |
| Constant | 0.978\*\*\* | 0.533\*\*\* | 0.871\*\*\* | 0.292\* | -0.241\*\*\* |
|  | (7.77) | (5.28) | (6.16) | (2.28) | (-3.87) |
| Observations | 865 | 865 | 743 | 1343 | 2207 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A18: Split sample autocracies

De jure coefficient is somewhat stronger in autocracies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.393 | 0.260 | 0.399 | -0.310 | 1.438\*\*\* |
|  | (0.63) | (1.05) | (0.74) | (-1.29) | (3.58) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0258 | -0.0134 | 0.158 | 0.0945 | -0.00524 |
|  | (0.25) | (-0.15) | (1.54) | (1.89) | (-0.16) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0148 | -0.0151\* | -0.0268\* | 0.0348\* | 0.0102 |
|  | (-1.14) | (-2.31) | (-2.23) | (2.50) | (1.66) |
|  |  |  |  |  |  |
| Constant | 0.210 | 0.181 | 0.312 | -0.784\*\*\* | -0.255 |
|  | (0.59) | (1.49) | (1.15) | (-4.07) | (-1.60) |
| Observations | 313 | 313 | 249 | 496 | 1336 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A19: Democracy Interaction Term Analysis

Democracies see more HOG and Lower Chamber turnover, clearly

Low de facto CBI in irregular turnover of CB governors has a stronger effect on lower chamber turnover in democracies. It also increases stability in democracies.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | Head of Govt. Turnover | Head of State Turnover | Lower House Turnover | WB Political Stability (Absence of Violence) | Instability Event Indicator |
| De Jure CBI (CNW Index) | 0.576 | -0.0333 | 0.841 | -0.544\* | 1.152\*\*\* |
|  | (1.47) | (-0.10) | (1.97) | (-2.05) | (4.22) |
|  |  |  |  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0781 | 0.0127 | 0.0144 | 0.0943 | -0.0450 |
|  | (0.83) | (0.13) | (0.13) | (1.85) | (-1.24) |
|  |  |  |  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00307 | -0.0214\* | -0.0253\* | 0.0107 | 0.0101 |
|  | (-0.28) | (-2.31) | (-2.44) | (1.04) | (1.55) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Polity Democracy | 0.955\*\*\* | 0.326 | 0.717\*\* | 0.302 | -0.0350 |
|  | (3.78) | (1.71) | (2.68) | (1.32) | (-0.30) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Polity Democracy \* De Jure CBI (CNW Index) | -0.444 | 0.300 | -0.668 | 0.151 | -0.152 |
|  | (-1.12) | (0.92) | (-1.43) | (0.47) | (-0.55) |
|  |  |  |  |  |  |
| Polity Democracy \* (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.230 | -0.0422 | -0.286\* | -0.0841 | 0.0854\* |
|  | (-1.83) | (-0.36) | (-2.03) | (-1.40) | (1.99) |
|  |  |  |  |  |  |
| Polity Democracy \* Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00855 | -0.000388 | 0.0318\* | -0.00868 | -0.000304 |
|  | (-0.63) | (-0.03) | (2.20) | (-0.77) | (-0.04) |
|  |  |  |  |  |  |
| Constant | 0.0296 | 0.234 | 0.185 | -0.160 | -0.154 |
|  | (0.13) | (1.41) | (0.78) | (-0.89) | (-1.35) |
| Observations | 1178 | 1178 | 992 | 1839 | 3543 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A20: HOG = HOS binary, Fixed effects clustered SEs

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
|  | Head of Govt. Turnover | Head of State Turnover |
| De Jure CBI (CNW Index) | 0.220 | 0.330\* |
|  | (0.83) | (2.51) |
|  |  |  |
| HOS=HOG | -0.00735 | 0.323 |
|  | (-0.03) | (1.29) |
|  |  |  |
|  |  |  |
| HOS=HOG \* De Jure CBI (CNW Index) | -0.163 | -0.131 |
|  | (-0.39) | (-0.38) |
|  |  |  |
|  |  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.102 | -0.0301 |
|  | (-1.17) | (-0.40) |
|  |  |  |
|  |  |  |
| HOS = HOG \* (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | 0.0656 | -0.0857 |
|  | (0.40) | (-0.56) |
|  |  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | 0.00477 | -0.00836 |
|  | (0.51) | (-1.30) |
|  |  |  |
|  |  |  |
| HOS = HOG \* Exchange Rate Classification (RR inverted, higher = more fixed) | -0.0420\*\* | -0.0314\*\* |
|  | (-2.94) | (-2.68) |
|  |  |  |
| Constant | 0.748\*\*\* | 0.315\*\*\* |
|  | (5.71) | (3.43) |
| Observations | 1270 | 1270 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A21: Lower chamber legislates in practice (v2lglegplo)

|  |  |
| --- | --- |
|  | (1) |
|  | Lower House Turnover |
| De Jure CBI (CNW Index) | 0.310 |
|  | (1.31) |
|  |  |
| Legislative Efficacy | 0.0649 |
|  | (0.50) |
|  |  |
| De Jure CBI (CNW Index) \* Legislative Efficacy | 0.0364 |
|  | (0.17) |
|  |  |
|  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) | -0.270\*\* |
|  | (-2.83) |
|  |  |
|  |  |
| (Lack of) Irregular CB Governor Turnover (higher = more de facto CBI) \* Legislative Efficacy | 0.0475 |
|  | (0.65) |
|  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) | -0.00692 |
|  | (-0.69) |
|  |  |
| Exchange Rate Classification (RR inverted, higher = more fixed) \* Legislative Efficacy | 0.00544 |
|  | (0.69) |
|  |  |
| Constant | 0.704\*\*\* |
|  | (4.75) |
| Observations | 1027 |

*t* statistics in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

1. Georgetown University: Contact at ijl7@georgetown.edu.

   Acknowledgements: Prof. George Shambaugh, Prof. Joel Simmons, Dr. Greg Fischer, Joshua Levy, Tranae Hardy, Olivier Malle, Rachel Shapiro. [↑](#footnote-ref-2)
2. Probably the most serious other welfare loss attached to fixed exchange rates is a lack of automatic trade rebalancing through rates (Friedman 1953). A lack of automatic trade rebalancing is not an a priori problem for fixed rates with consequences for instability: the level of the rate may be adjusted or other trade deficit correcting measures may be taken, and there is evidence that trade is not a top issue for voters (Guisinger 2009). Also not a “flexibility” welfare loss per se, currency crises and speculative attacks may also be a problem of fixed rates (Krugman 1979). These situations may be mitigated, however, if IMF lending can be obtained and credible commitment to the fixed rate can be established. [↑](#footnote-ref-3)
3. One notable manner of escaping a fixed exchange rate constraint may come from the synchronization of electoral cycles identified as a growing trend worldwide (Tufte 1980). A synchronized electoral cycle may allow a nations monetary policy controlled from abroad through a pegged rate to again align with domestic political interests, provided that the nation which the currency is pegged to experiences its own political business cycles, perhaps due to factors such as a lack of central bank independence. [↑](#footnote-ref-4)
4. Argument for more widespread prospective voting in the literature does appear to be common, so the simplifying consensus here is perhaps overstated. US Index of Consumer Sentiment data seems to indicate that presidential approval ratings, for example, can be fully accounted for by prospective evaluations and forecasting (MacKuen, Erikson, and Stimson 1992). [↑](#footnote-ref-5)
5. In future work, I aim to account for prospective cases by making use of data on whether incumbents are running. [↑](#footnote-ref-6)
6. To my knowledge, there has been no statistical or cross-national analysis of politician beliefs on the importance of the economy to voters, or on which economic variables they think matter to voters. [↑](#footnote-ref-7)
7. In rational opportunistic or partisan models covered in detail in earlier drafts of this paper, a similar mechanism is at play as incumbents try to demonstrate competence to society or the party but cannot do so under limits. [↑](#footnote-ref-8)
8. As a key difference, in my further explorations section, I employ data on capital controls and openness rather than making any temporal assumptions of this nature. [↑](#footnote-ref-9)
9. The assumption here appears to be that fixed exchange rates actually free up access to fiscal policy manipulation (with increased access to capital), which is an acceptance of the counterargument mentioned near the end of the section “Political Business Cycle Effects of Limiting institutions” at the end of this paper. This seems to contradict the evidence arguing fixed rates reduce manipulation at least for output and unemployment (William Roberts Clark et al. 1998), although (note again) results on this topic are tentative (correctly signed but not very significant) and there may be other means of fiscal policy manipulation such as transfers not as easily detectable in the aggregate. [↑](#footnote-ref-10)
10. Cox hazard models in particular may be vulnerable to endogeneity if there is rate dependence with time varying covariates (Goodliffe n.d.). Decisions of political leaders may be affected by cabinet duration. To some extent, the inclusion of lags in regressions may mitigate such issues, and I deploy this solution for this project, but given that the question of correct specification is critical, I also use instrumental variables methods. [↑](#footnote-ref-11)
11. Please contact the author for this and other first stage results. [↑](#footnote-ref-12)