On the Impossibility of Central Bank Independence:

Four Decades of Time- (and Intellectual) Inconsistency

ABSTRACT

The intellectual justification for modern central banking, time-inconsistency, celebrates its 40th anniversary in 2017 alongside the *Cambridge Journal of Economics*. However, the key progeny of the time-inconsistency literature, central bank independence, has fundamental flaws that have been thus far neglected in mainstream research. In the first instance, the argument for independence relies on a utilitarian rather than institutional analysis, one that neglects the genesis of central banks and their relation to other institutions within a country. Secondly, central bank independence neglects the complex interdependencies of the global monetary and financial system. Applying an institutional lens to the concept of central bank independence, I conclude that "independence" fails under the reality of globalization as much as it does in a domestic context. With central banks reliant on all manner of political institutions, they are never really independent operationally or in terms of policy.

Keywords: Central bank independence, time-inconsistency, institutions, inflation

JEL Codes: E58, F33, O17

1. Introduction

Much like the *Cambridge Journal of Economics*, the intellectual justification for modern central banking, the idea of time-inconsistency as defined in Kydland and Prescott (1977), also turns forty years old in 2017. While not touching upon central banking explicitly, the Kydland and Prescott paper provided an intellectual framework which could be applied to monetary policy and, in particular, the arrangement of monetary institutions. Famously refined by Barro and Gordon (1983) and Rogoff (1985), the persistence of time-inconsistency pointed to shifting the institutional role of central banks in developing monetary policy, moving central banks (as Keynes had suggested at the very beginning of modern central banking) "outside the regular Government 'machine'" (Keynes 1914:160).

Kydland and Prescott's model thus begat the modern conception of "central bank independence" (CBI), an idea which had already existed for decades; indeed, CBI was mooted at the very beginning of modern central banking pre-World War I (Keynes 1914), with considerable leeway given to banks in the inter-war era (Kisch and Elkin 1928, Simmons 1996). Moreover, the organizational issues underpinning CBI were highlighted during major struggles between central banks and state treasuries for power during the post-war era (Stein 1969). But both theoretically and practically, the basis for CBI in the mainstream economics literature prior to 1977 tended to be narrowly focused on execution rather than institutions, concentrating on policy independence from the state treasury or instrument independence to use specific tools to control the money supply (Wray 2007).

By contrast, the stagflation of the 1970s and the apparent impotence of central banks in the developed world occasioned a reshaping of the CBI debate, with Kydland and Prescott providing a theoretical basis for this change. Subsequent research such as Cukierman (1992) focused on CBI as an institutional arrangement that could effectively insulate monetary authorities from political pressures, an arrangement which was truer in spirit to Keynes' (1914) original conception, albeit in service of a potentially different goal. With policymakers shifting incredibly quickly to an almost-uniform acceptance of political independence of central banks (Forder 2005a), a subsequent plethora of empirical evidence was produced showing CBI consistently delivered better inflationary outcomes, with no negative effects observed between CBI and growth (nor for that matter, positive effects, as shown in Alesina and Summers 1993). With both theoretical backing and apparent empirical success, central bank independence appeared to many mainstream economists as the optimal solution against time-inconsistency.

However, even with these apparent economic successes, there is good reason to believe that the modern practice of central bank independence does not actually solve the time-inconsistency problem as mooted by Kydland and Prescott. As Forder (1998:10) accurately noted, central bank independence is an *institutional* solution to an *incentives* issue, and "whenever an institutional proposal - such as central bank independence - is proposed as a solution to a time-consistency problem, there is the danger that the problem is simply relocated, or displaced." Unfortunately, an appraisal of this institutional possibility has been lost in the mainstream CBI literature, mainly because the extant research on independence has somehow managed to champion an institutional arrangement without making any recourse to institutional analysis. Indeed, mainstream economic and policy thought about CBI has studiously avoided insights from new institutional economics (NIE) in even understanding the core point on just how a central bank might actually be "independent," and how it might not be. In short, how can we talk about an institutional solution when we don't even mention institutions?

This omission is troubling, given the reality that a central bank is, by definition, a monetary institution embedded within a broader system of economic and political institutions, both domestically and internationally. Moreover, the institutional nature of a central bank means that it is not insulated from political pressure or "power struggles" (de Haan and Eijffinger 2016), merely that the pressure takes a different form than with a Ministry of Finance or parliament; one can make the case (as I do) that political pressures and interests are constantly pulling at the institution of the central bank despite any intended insulation, with modern central banks very sensitive to one domestic interest especially, that of the financial sector (Wray 2007). By ignoring the reality of a central bank as an institution within an institutional system, the debate on CBI has been skewed towards a myopic obsession on "*what* function [a central bank] should perform" (Giannini 1995:217) – or, more accurately given the CBI literature, on how to *avoid* actions that it would have the power to implement – instead of a focus on the normative reason for a central bank's existence ("*why* it should exist"). Such an approach also overlooks how one should understand the efficacy of modern central banking *vis a vis* alternatives, if the time-consistency issue is truly to be overcome. Without taking an institutionalist lens to the structure of monetary policy, the CBI debate has remained devoid of critical analysis.

The purpose of this paper is thus to rectify this omission in the central bank independence literature and re-examine the modern idea of "independence," but through an institutional lens. The institutional basis of CBI has been touched upon before in pluralist economic research, mainly from Forder (1996, 1998, 2005a) and Bibow (2004), but the events of and response to the global financial crisis call for an updated and much more explicitly institutionalist examination. Drawing on insights from NIE and new institutionalism, I show in this paper that the idea of CBI does not live up to the lofty claims of the early modern central bank literature, and in particular the time-inconsistency issues of Kydland and Prescott, a point made earlier by Bibow (2004 and 2013a). However, my argument deviates from Bibow (2013a) by showing specifically it is the overall domestic institutional framework that a central bank emerges which makes the entire concept of central bank "independence" a mirage, as political pressures are omnipresent and exert a powerful influence on the policies undertaken. This reality exists even for that rare central bank creature unmoored from (direct) democracy, the European Central Bank (ECB). Additionally, I show that political pressures are not limited to the domestic arena, as the growing globalization of monetary policy has also constrained central banks externally in their operations and their policies, forcing convergence in both. My conclusion is that true central bank independence is a goal which can never be achieved within the conventional approach to centralized monetary institutions, with true independence, if desired, only feasible via different (and radical) institutional alternatives.

The rest of this paper proceeds as follows: the following section explores the genesis of the concept of "central bank independence," focusing not only on its various facets over the past forty years but its original conception in the pre-, inter-, and post-war era. Section 3 then critiques the modern interpretation of central bank independence using the tenets of new institutional economics, with a focus on the realities of institutional endogeneity and the concurrent growth of financialization in developed countries; Section 4 continues this critique but expands it to include the reality of policy globalization over the past four decades, and how this has also constrained central bank independence. Section 5 concludes with some final thoughts on central banks as institutions and what this means for a post-financial crisis world.

2. Central Bank Independence: Genesis of a Concept

As Sawyer (2006:640) correctly notes, "central bank independence is not a notion that was suggested for the first time by Kydland and Prescott." Indeed, a shift in the emphasis of central banks in the early

20th century towards currency supervision and economic stability and away from the role of "banker to the government" (Blancheton 2016) also precipitated a change in thought on the institutional nature of the central bank. At the core of the debate was the question of how a central bank would operate within existing political structures, and whether the conduct of monetary policy should be entirely separate from other economic policy implementers (Forder 2005a).

Some of the earliest thoughts on this topic came from Keynes during his days in the India office of the British Foreign Service, where he formed the belief that "it was not meaningful to make monetary policy prescriptions without a clear prior formulation of the institutional framework of central banking…[as] the scope and limitations of the instruments of central banks are determined by institutions" (Chandavarkar 1989:101). Working to determine the optimal arrangement for the conduct of monetary policy in the prize of the dominion, Keynes asserted that the establishment of a central bank in India should rely on private ownership as a "bulwark against some kinds of political pressure" (Keynes 1913:160), with the bank itself under expert control to guard against governmental interference in the execution of policy. However, Keynes made clear that this independence he envisaged was severely limited, as there would be government appointment of representatives to the board and "ultimate responsibility for the currency would… be vested in the state" (Bibow 2002:758). Thus, the central bank would be entrusted to experts, due to the technical nature of monetary policy, but it would remain firmly enmeshed as an instrument of the state (Bibow 2013a).

Despite central banks having considerable leeway as custodians of the gold standard in the pre-war era, this technical independence was wholly subordinated to the financing needs for fighting a global war (Toniolo 2010). However, central banks were able to reclaim independence in the post-World War I world (Sawyer 2006), where the monetary hangover of the war and the descent into inflation (and hyperinflation) in many countries made a return to independence an attractive alternative. Independence was explicitly supported by the Brussels Financial Conference of 1920 under the auspices of the League of Nations, which resolved that "banks of issue should be freed from political pressure and should be conducted solely on the lines of prudent finance." Indeed, the practice of CBI in the interwar period went far beyond what Keynes had counseled (and would continue to counsel against), with bankers such as Emile Moreau of France and Montagu Norman, the governor of the Bank of England, "totally challenging the legitimacy of political intervention in monetary affairs" (Blancheton 2016:102).

But while central bank independence was kept in place by the force of personalities in France and the UK, elsewhere on the continent, especially in countries forged after the Great War, independence was far shorter-lived (see Hartwell [2016] for the example of Poland). The onset of global financial crisis and the neo-mercantilism of the mid-1930s was followed quickly by another global conflict, as governments swept aside nominal independence and subordinated central banks to their own policy choices; in fact, in many countries, "soft nationalization" of the banks was used to bring currency issuance under the control of the government (Toniolo 2010). The rise of fascism, communism, and other strains of authoritarianism meant that Keynes' developing ideas on the technical nature of central bank independence (Bibow 2002) were quickly overtaken by events.

Unlike the aftermath of the First World War, as Capie (1994:55) correctly notes, "the period from the Second World War until around 1970 was another period of great growth in central banking but on this occasion the desired and pursued relationship was of relative closeness – dependence." While there were notable exceptions during this period (the Accord between the US Treasury and the Federal Reserve in 1951 freed the Fed from monetizing US government debt) and even intellectual challenges from economists such as Milton Friedman (see Bibow 2013b), these moves were short-lived; the emphasis on full employment made the central bank a crucial player in implementing government policy, and central bank independence was whittled away during the 1960s (Meltzer 2009). I

It was not until the dire economic conditions of the 1970s that the concept of central bank independence was reborn. Much like its first wave in the 1920s, the attention paid to independence fifty years later was driven by pervasive inflation and the sense that the post-war monetary model was failing to deliver either stability or growth. Unlike the earlier Keynesian emphasis on the technical nature of central banking, research on CBI shifted towards the microeconomic incentives of monetary policy and, especially, policymakers. Typified in Kydland and Prescott (1977), the idea of "dynamic inconsistency" was extended by Barro and Gordon (1983) to show how monetary policymakers could be enticed by a theoretical short-term boost to employment from inflation. Given the time-inconsistency between when employment increased and when inflation materialized, a politician might never face the consequences of this decision (but would reap the benefits via re-election). However, labor markets also understood the incentives of policymakers, and thus inflationary expectations would already be built into the system; in fact, if there were perfect knowledge on the size and scope of a policymaker's intent to inflate, the theoretical boost from inflation to employment would never materialize, but inflation continuously would. Even with imperfect knowledge, the common knowledge regarding policymaker incentives in the labor market could result in high levels of inflation for little gain.[i]

To fight against such an eventuality, an economy had to either change the incentives for a central banker to create inflation or, more dramatically, remove discretionary the power entirely from the hands of policymakers. The first approach was attempted in the "rules versus discretion" debate, as papers such as Barro and Gordon (1983) suggested that binding rules would lead to better inflationary outcomes. In a similar vein, Rogoff (1985) showed that appointing more conservative policymakers would somehow overcome the incentives provided by an institutional system that rewarded inflation with little punishment. But while these workarounds appeared to address the time-inconsistency problem, even the authors of these papers acknowledged that policy rules, no matter how well-crafted, could not stop policymakers from falling prey to the political process (and their own incentives). As Alesina and Grilli (1992) noted, the populace could *ex post* wipe out gains of the conservative banker by "recalling" him with someone more amenable to inflationary temptations (although their model presupposes direct democracy in the election of a bank governor).

Given this reality, it appeared important to shift from the personalities running the monetary system to instead focus on the design of the institutions themselves. Much like the theorists and policymakers of the 1920s, economists began to model how changes in the administration of policy would help to insulate banks and bankers from the political pressures that were inherent in monetary policy. Papers such as Grilli *et al.* (1991) and Cukierman (1992) came down on the side of greater legal independence for monetary authorities, positing that *de jure* independence could be the solution against politicized monetary policy. These (and many other) papers theorized that, with no direct political linkages, an independent central bank would have no incentive to deliver temporary boosts to the economy via inflation, nor would it have an incentive to inflate away debt (having no control over budgetary matters).

Such legal "independence" could manifest itself in one of two ways: the first, "instrument independence," meant a central bank had "control over the levers of monetary policy and [was] allowed to use them" (Fischer 1996:202). Such an approach was in line with earlier conceptions of independence, as it represented a technocratic approach to the technical issues of monetary policy. However, the second form of independence, "goal independence", was a radical departure from pre-war Keynesian ideas of CBI, as it allowed a central bank to set its own policy goals, divorced from broader government desires. In reality, the optimal mix of these two types of independence has not been conclusively decided in the literature, with some researchers focusing on the benefits of instrument independence alone (Fischer 1996 and Siklos 2008), while others advocated for full goal independence (Baltensperger *et al.* 2007). Regardless of the specific allocation between these two types of independence, the conjunction of goal and instrument independence would resolve the time-inconsistency issues and thus deliver better macroeconomic outcomes than the alternative (as Bibow [2004] noted, providing policymakers with a seemingly "free lunch").

This recommended institutional reform of monetary policy was soon adopted throughout developed and, eventually, emerging economies, as it offered a compact theoretical explanation and an easy administrative fix to avoid inflation. A wealth of empirical evidence was also marshalled in favor of independence, with work from *inter alia* Cukierman *et al.* (1992), Brumm (2002), and Klomp and de Haan (2010) finding a strong negative relationship between central bank independence and inflation and no correlation with output volatility (Cukierman 2008).[ii] With central bank independence established as the leading institutional arrangement for monetary policy, not even empirical evidence to the contrary (Forder 1996, Hayo 1998) or (massive) hiccups such as the global financial crisis could cause a re-evaluation of the tenets behind CBI (Quiggin [2009] is a notable mainstream exception). Indeed, the onset of the crisis and its aftermath only strengthened the resolve of bankers to maintain their independence while aggrandizing more policy power (Bernanke 2010), with unconventional monetary policy, expanded mandates, and forays into financial regulation (Cukierman 2013). But even though the reasoning behind independence may have strayed far afield from its modern theoretical basis, the momentum propelling CBI has been maintained or even increased since the crisis. As Blinder (2010:124) put it in a moment of hubris, "I will neither elucidate nor defend the arguments for central bank independence here. To economists, at least, that debate ended long ago."

3. A Critique of CBI (Part I): How Can We Talk about Institutions without Mentioning Institutions?

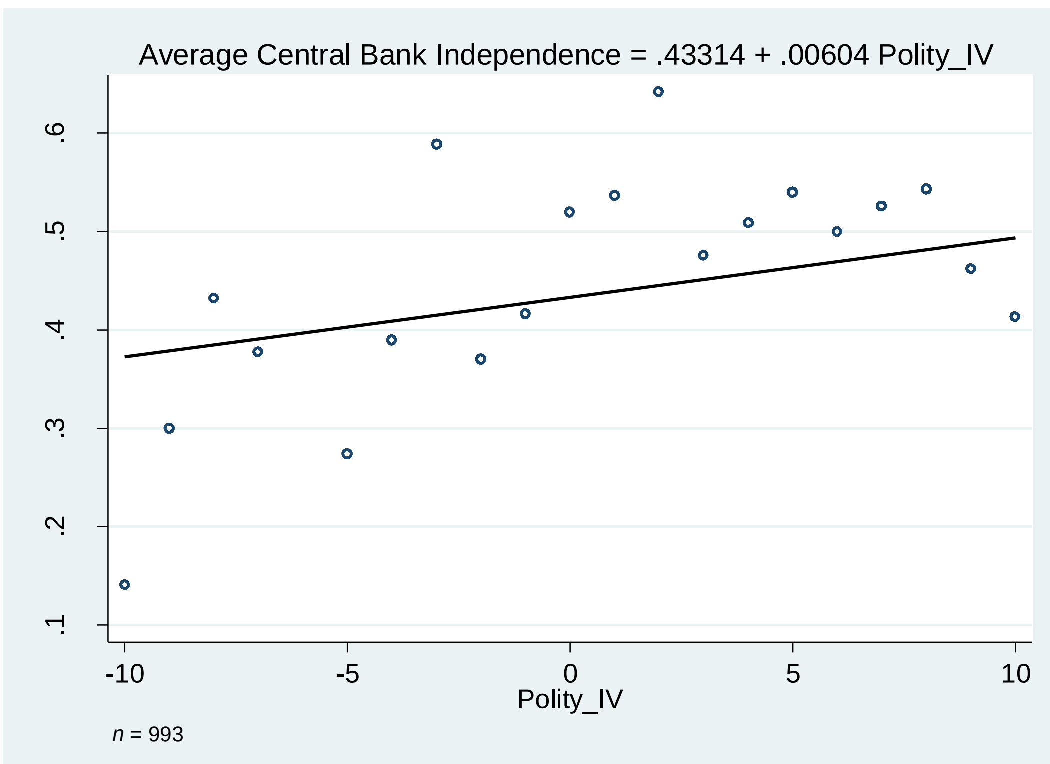
Unfortunately for Professor Blinder, economics is rarely a settled science, especially when a concept (such as central bank independence) exhibits major theoretical and practical flaws. The issue at the heart of central bank independence is that, as noted above, it is an *institutional* solution to an *incentives* issue, and thus must be evaluated using tools of institutional analysis. Unfortunately, the clear majority of the literature examining CBI focuses on incentives exclusively, leaving central bank independence as an institutional "black box" in which incentives go in and then are magically transformed coming out. Such an approach ignores the institutional mechanisms of "independence" and how a central bank might mitigate time-inconsistency, in particular neglecting the institutional genesis of a central bank and its purported role; how it functions in relation to other political and economic institutions within an institutional system; and how independence itself acts (or does not) as an institutional mechanism.

The starting point for understanding a central bank as its own institution is understanding how this particular institutional arrangement is birthed out of a pre-existing institutional structure, and what ramifications it has for making such an institution "independent." The approach prevalent in the mainstream literature merely notes that a central bank *is* an institution (see, for example, Romer and Romer 1997), but is more concerned with what issues it should *overcome* rather than what a monetary policy institution *should do* (and arguing from this first principle various suppositions on the institution's organization and placement within a complex institutional web). This question, of the role of the central bank in its institutional system, is incredibly important if one considers that any monetary policy and especially inflation preferences will be driven by the incentives of society and its political institutions and not controlled by just one institution. As Mas (1995:1639) pointed out, "a country's inflation record and central bank institutional arrangement are both shaped in part by political forces bearing on government."

This is directly counter to the mainstream CBI literature, which adheres to the erroneous assumption that the incentive to inflate is independent of a country's political institutional structure and only accrues to one specific class, that of the politician. But an economy's problems are very rarely exogenous, and, in the particular case of inflation, the incentives of political creatures and the polity are endogenous to the system. Put more explicitly, the political system of democracy itself creates the incentive structure for a pandering central bank (or politician) to inflate the money supply, in order to receive more votes, approval, or economic returns. As an institution constructed by democratic forces, the "independent" central bank faces the same incentives as the democracy it emerged from.

Given these inherent incentives, the modern conception of central bank independence tries to somehow tie the bulk of the polity's own hands, removing from itself the temptation to generate inflations (generally narrowly defined as price levels but, in earlier papers, also referring to the money supply) for evanescent gains. Indeed, if the political institutions of democracy did not generate the economic incentive to create inflation, an independent central bank would not necessarily be "required," as the temptation would not exist. But as Alesina and Grilli (1992) already showed, voters can be crafty in pushing their inflation preferences if given a direct say in the bank's operations, and thus more intricate ways to remove temptation must be found. Seen in this light, the creation of an independent central bank must necessarily flow from a country's overarching political institutions, specifically the extent of a country's democracy and the ability of a polity to vote itself inflationary gains. Some evidence can be found for this assertion, as shown in Figure 1: the countries that have the highest central bank independence on average also are rated as the most "democratic" on the Polity IV scale (a point also made by Bagheri and Habibi 1998).[iii] Democracies create independent central banks, but democracies also create the need for "independent" central banks.

Figure 1 - Levels of Democracy versus Central Bank Independence



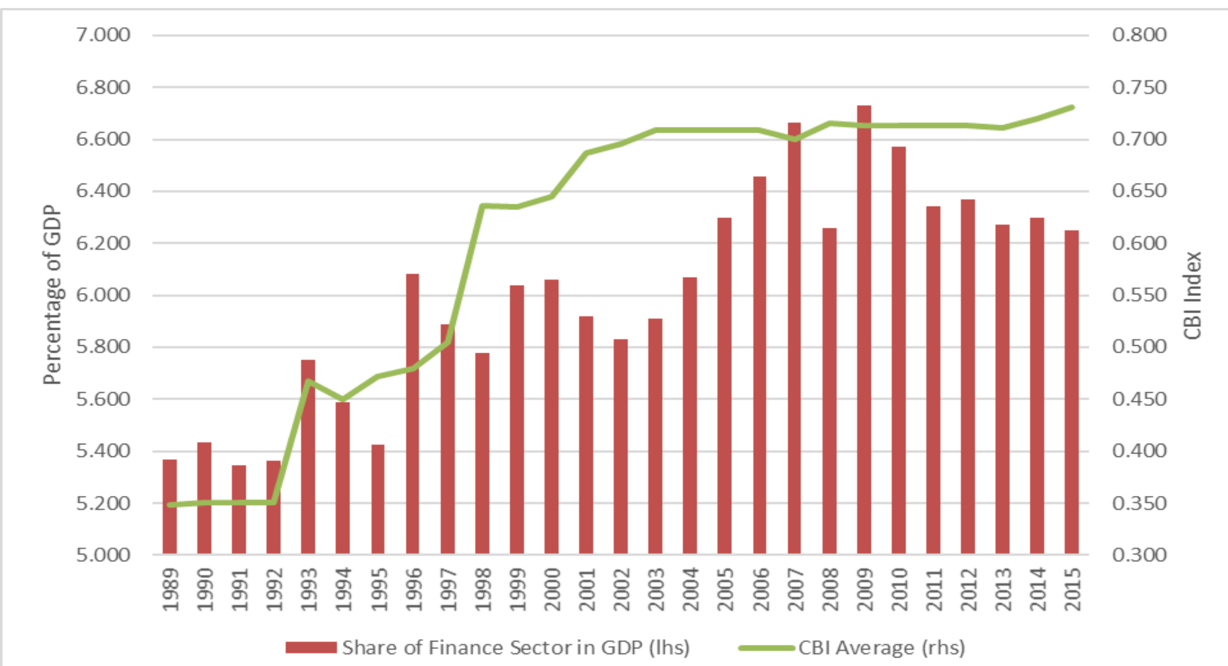
Source: Author's calculations based on data from Polity IV and Dincer and Eichengreen (2014)

The institutional endogeneity of inflationary preferences is overlooked in the empirical evidence on CBI more generally, due to its emphasis on macroeconomic outcomes rather than institutional ones

(Watson 2002). While this is an understandable emphasis – if we assume lower inflation means that time-inconsistency has been taken care of, there is no need to trace the process institutionally – it has obscured the possibility that perhaps it is not the endowment of independence to a single pre-existing institution which delivers lower inflationary outcomes, but the fact that inflationary preferences have already shifted within society due to other reasons (Hayo 1998).[iv] Mas (1995) takes such an argument to its logical conclusion, noting that CBI itself is needed least where it is most likely to succeed, given that the conditions for low inflation and/or fiscal rectitude are already present. Put another way, if the central bank as an institution already reflects the institutional make-up of a society, shifts in the entire institutional system could create a different incentive structure (and thus inflationary outcomes). This reality is also directly *contra* to Issing's (2013) assertion that an independent central bank is the guarantor of sound money, and if the state were to collapse, such an emphasis would be lost in anarchy; if the system were to collapse, the predilection for sound money would be the same as within the system, only the political institutions implementing this preference would no longer exist. In fact, central bank independence may be the last institutional step, as other institutional reforms have likely already occurred to enable a low-inflation environment, including opening the political system to create multiple veto points (as shown in Figure 1 and noted in Keefer and Stasavage 2003). Such a reality may also account for the correlation between central bank independence and other desirable policy outcomes, such as fiscal rectitude (as shown in Bodea and Higashijima 2015).

Of course, democracy is no more of a black box than a central bank, with a teeming mass of interests, classes, and incentives churning beneath the formal political institutions. While inflation-aversion can be anticipated from some segments of society (in particular savers and the poor, who survive on a cash basis), other segments may be in favor of various types of inflation, in particularly holders of assets, financiers, and bankers. These competing interests may be thrown out of balance by the presence of an independent central bank, which tends to reward banks (as part of its own incentives) rather than savers: an early example of this comes from Roberts (1911), who argues as a banker forcefully for a central bank, noting that competition constrains banks' ability to lend, and thus a lifeline from the state's reserves would help banks to create more lending. Indeed, the growing financialization of advanced economies almost entirely and utterly in lockstep with the spread of CBI (Figure 2) suggests a reinforcing relationship between bankers and central bankers, with central bankers facing more pressure, not from politics or voters, but from banks themselves. This critique has been leveled repeatedly by Post-Keynesians, showing that once a central bank has removed its legal shackles from government, it tends towards to governance by bankers rather than the people, reaching beyond monetary policy to issues of deregulation and supervision (Epstein 1992, Levy 1995).

Figure 2 – Central Bank Independence and the Share of Finance in Country GDP, OECD countries



Source: Author's calculations from OECD (share of financial sector) and Garriga (2016) for central bank independence. Figures shown are average of 20 OECD countries per year for both financial sector and CBI.

This does present us with a paradox, however, in that an anti-inflationary central bank cannot both pander to its constituents (the financial class) and to the polity at large, given their contradictory incentives. In advanced economies, it appears that this paradox has been neutralized via an odd sleight of hand. The official definition of "inflation" in "inflation-targeting" countries is narrowly centered on headline CPI (Hammond 2012), and thus the target of central banks is specialized in optimizing a loss function based on a specific underlying set of economic data (Svensson 2000). By avoiding monetizing public debt, central banks have kept inflation (at least as measured by CPI) low, pleasing the polity overall. On the other hand, policies of low interest rates in order to generate credit have pushed inflation away from goods in the CPI basket and into asset prices instead, satisfying holders of assets and financiers. In this manner, central banks have created a "grand bargain" between financiers and society; so long as wages are not eroded by general price rises, savers are happy, while asset inflation keeps financiers content as well (Tomaskovic-Devey and Lin [2011] detail the institutional drivers of this bargain). Intermittent economic busts are seen as just a consequence of the market economy, not a fact engineered by the central bank trying to please all of its constituents at once.

This idea of a grand bargain raises another crucial point and that is that endogeneity runs both ways. Just because an independent central bank reflects societal preferences for lower inflation does not mean that the central bank will have no influence on that same institutional system. As Giannini (1995:217) notes, "it is… questionable whether one could deal with complex institutions--as central banks undeniably are--without taking into account their evolutionary logic." The reality is that central banks, no matter how "independent" they are designed, influence the institutions around them, including social trust (Berggren *et al.* 2016) and the exigencies of a democratic political system with checks and balance and which requires a peaceful transfer of power (Moser 1999; Farvaque 2002; Landström 2013). One need only look at the personalities of central bankers to understand that they too are politicians, and they love adoration and acceptance as much as any President or Finance Minister (Alan Greenspan and his tarnished “rock star” status is a prime example of this). Their statutory goals may be different, but their incentives remain the same, shaped from the system from which they emerged.

Such an incentive includes aggrandization of power: a commonly-leveled charge is that CBI subverts the very democratic system that it came out of (Levy 1995) by divorcing the far-ranging consequences of monetary policy from elected representatives. More problematic is the reality that “if a constitutionally sanctioned central bank refuses to cooperate and insists on taking into account only its own target, this [policy] becomes dominant (whether or not this was intended by the authors of the constitution). The central bank's monetary policy is no longer an instrument of government, but is rather a control upon it” (Arestis and Bain 1995:163). But even this state of affairs is derived from the political environment: McCallum (1997:107) makes this point in a neoclassical framework, stating that “the standard literature involves the notion that it is useful to conduct analysis, involving institutional design, under the presumption that central banks can have preferences that are systematically different from society’s.”

This reality turns a common Post-Keynesian argument on its head: if a central bank is but an institutional expression of a prevailing institution system that is somehow supposed to act counter to that system, where then is its actual “independence?” That is, even though they may be legally “independent” from government, at no point is the central bank ever wholly insulated from politics, much less from market and societal institutions. In particular, as a political institution, staffed by political appointees, and having chosen a political approach to overcome economic problems (likely politically-determined), central banks are both political and economic institutions, nested within one set of political institutions (government), nested within another set of economic institutions (the institutions of the marketplace), nested within the meta-institution of society and then even further embedded into an international system.

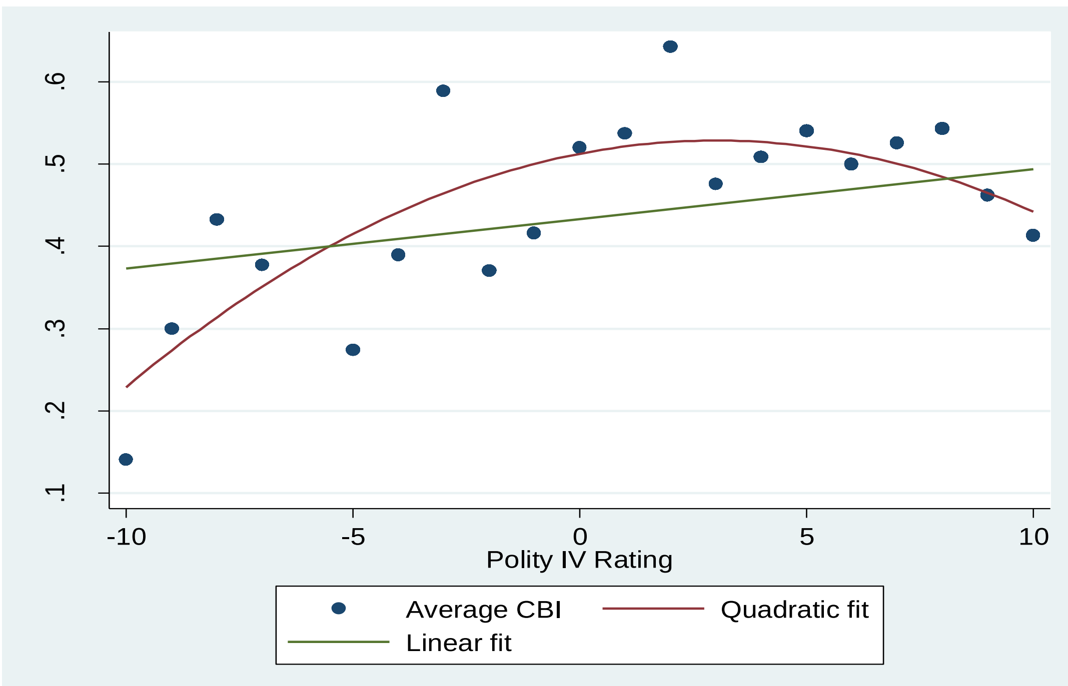
In practice as well, the exigencies of monetary policy have required independent central banks to cede some of their goal independence in pursuit of political goals. This may be only natural, as central banks are not omnipotent, but it does call into question how either policy or instrument "independence" is supposed to work. As Quiggin (2009) asserted in a (perhaps-premature) polemic, CBI was effectively neutralized as a result of the global financial crisis, simply because crisis responses by definition required coordination between national treasuries and central bankers. Thus, while bankers may have wanted to be independent, there was no way to get around the need for dealing with Finance Ministries in developing a crisis response. McCallum (1997:106) accurately predicted this reality by noting that "rules cannot plausibly be made contingent on all conceivable types of shocks that might occur… in this case… it can be better to violate an incomplete state-contingent rule and implement the discretionary outcome in those periods in which some shock realization is unusually large and of an unanticipated type." Lohmann (1992) also models this theoretically, anticipating Bibow's (2004) point on rules v. discretion being a continuum rather than a choice, showing that some discretion is always retained in a crisis; presumably this discretion would also include intense coordination and less independence. Capie and Wood (2013:379) were more explicit in their assessment on this issue, saying that "central bank independence never has survived a crisis and never can."

Given this situation, the political cycle may be the only true determinant of a bank's independence, and thus the current favored solution for ensuring independence focuses on appointing directors of the bank by elected officials for longer-terms, so that electoral cycles are not concurrent with governor cycles (Crowe and Meade 2008). But such "independence" can only last until the next election (Mas 1995), and the more democratic the society, the more the access points to influence central bank policies. Moreover, governments still retain some lever of power over central banks through control of their budgets (Beblavy 2003), a necessity in order to remove the central bank's incentive to inflate in order to maximize its own profits (Mas 1995).

In fact, the pervasive nature of a country institutional structure means that central banks will always be constrained and acted upon by government entities and society at large, as the same system that created an independent central bank to rein itself in can take away the independence. As Alesina and Grilli (1992) noted, a conservative central banker can be turned out by a populace that desires a little inflation now and then (although this may take some time), and even Walsh's (1995) solution of a contract concluded with the central banker to create an "optimal" level" of inflation can be revised by the populace (or penalties lessened). As Hayo and Voigt (2008:752) correctly noted, "if government has the capacity to create a formally independent central bank, it might also be strong enough to overrule its decisions, simply ignore them, or abolish the independent central bank again."

This fact that is hinted at in Figure 3, where the highest levels of democracy correspond to lower CBI on average but including a quadratic term confirms a Kuznets Curve relationship between central bank independence and democracy. This adds credibility to the argument that the most highly democratic societies likely have pulled back on full-throttle central bank independence simply because they prefer the supposed benefits of inflationary bursts (higher employment, higher asset prices) in the here and now (or, as Lohmann [1992] notes, they prefer to have flexibility in a crisis). Even where a powerful and independent central bank seems to exert influence across the institutions of government, it too can be reined in by the democratic process; some empirical evidence for this fact has already been shown in Bodea and Higashijima (2015:3), who note that "even in democracies, central banks will pragmatically guard their formal, de jure, independence by accommodating deficits under conditions related to the electoral calendar and government partisanship." It appears that, given all of the ways in which the populace can exert an influence on monetary policy, in a clash between democracy (loosely meant to include the manifestation of majority will through elected and representative institutions) and central bank independence, independence will surely lose (Adolph 2013).

Figure 3 – Democracy and CBI, the Quadratic Relationship



3.1 The Exception? The European Central Bank

The one institution that appears to be the exception to the domestic institutional constraints rule is the European Central Bank (ECB), created by the Treaty on European Union (TEU) and given "extreme independence… to reassure financial and business elites that price stability will trump other economic goals" (McNamara 2002:67). In fact, the legal independence of the ECB is much more iron-clad than national central banks due mainly to the fact that its mandate is granted by the Treaty; given the cumbersome process to alter Union-wide treaties, involving conventions, unanimity, and acquiescence of national governments, the ECB's mandate is well-nigh untouchable. Such an extreme case of independence would thus also offer the perfect laboratory to see how well insulated the ECB is from political pressures of the governments of all Member States, the EC and European Parliament, and civil society.

Despite the extreme legal independence that the ECB exhibits, it does not disprove the essence of the central bank as a political creature (Forder 2005b), as it too is constrained by the political institutions which gave it life (although these constraints affect the ECB to varying degrees). In the first instance, Magnette (2000) notes that the abdication of political oversight *a posteriori* has meant that political appointment assumes much more importance, and thus haggling over ECB board members is an important way for political pressure to be brought to bear. Similarly, even the ECB's legal focus on price stability was derived from political institutions in Member States, mainly the dominance of the Bundesbank and its supporters in the German government, with the ECB's mandate written in a way to secure German support for the institution (Bibow 2013b). Such a provenance leads to an interesting question, namely what would happen to the ECB if Germany were to severely disapprove of its policies? This question is less than theoretical, as Germany has indeed pushed back strongly against the ECB in the post-crisis period on a variety of fronts, including the Bundesbank, the German government (in particular the Finance Ministry), regional governments, and the German media. Given the oversized stature of Germany within the Eurozone, it is perhaps far-fetched to think that the safeguards of the TEU could prevent Germany from either effecting a change in the ECB, hindering ECB policy (as has actually happened) or, more drastically, leaving the euro altogether (leaving behind a theoretically independent ECB but with the shell of a currency).

But more important than the composition of the board is the reality that the ECB, as a supranational institution, it incredibly constrained by the democratically-chosen fiscal policies of the Member States. Indeed, the ECB lacks the luxury of the Fed in dealing with only one fiscal policy, and instead has to deal with 19 separate fiscal policies with the ability to render the ECB's policies "impotent" (Demertzis *et al.* 1999:217). While provisions such as the Stability and Growth Pact have attempted to "avoid overburdening the single monetary policy" (Bini Smaghi 2008:449), the Eurozone crisis has been and remains a crisis brought on by the institutional structure of fiscal policymaking at odds with the single currency; moreover, the crisis has exacerbated tensions between national governments and the ECB, restraining the maneuvers of the ECB in crisis management (Panico and Purificato 2013). Thus, even though the institutional mechanisms for fiscal policy are strong on paper (Cour-Thimann and Winkler 2012), they fall prey to domestic politics swiftly and often, meaning immense constraints on the ECB in pursuit of its goals. Until a fiscal union comes to pass (and its likelihood grows dimmer by the day), the ECB will remain in conflict with the political institutions of its Member States, especially as it undertakes its own quasi-fiscal actions to counterbalance the policies of national governments (Belke and Polleit 2010).

4. A Critique of CBI (II): Independence from What?

The reality of central banks being influenced by political institutions in their goals, policies, and operations, no matter how legally "independent" they may be, is a blind spot in a literature focused on inflationary outcomes and time-inconsistency. As noted above, the failure to analyze central banks as an institution within an institutional system creates difficulties in understanding what actually may be driving macroeconomic outcomes and whether or not this particular institutional arrangement is desirable. In a similar manner, the extant CBI literature has also overlooked the global institutional system in which a central bank operates and how this environment limits all dimensions of its independence. Indeed, the conception of central bank independence derived from time-inconsistency models was as a way to remove political pressure from a central bank's policy decisions, anticipating that this pressure would come *solely* from incentives generated within a national economy. However, the experience of the past two decades shows conclusively that central banks as an institution are also influenced by their external environment, as well as their peer group, further calling into question just what a bank is supposed to be independent from.

Just as central banks are limited in their own countries by the institutional system which gave them birth, so too have the exigencies of globalization created networks that restrain banks from truly being "independent." In particular, the processes of globalization have forced a convergence in *policy*, where central banks have seen a narrowing of the space for independent monetary policies, while also creating *institutional* convergence, where global institutional networks reinforce the idea of central bank autonomy domestically while circumscribing it internationally. These constraints have appeared not just in the coordination between central banks, but in the institutional system which forces such coordination above and beyond its constraints on policy space or national autonomy; much as occurs domestically, the international arena is its own institutional milieu which rewards certain actions, penalizes others, and consistently tempers any true independence.

4.1 Policy Convergence

In the policy realm, the convergence of monetary policies globally is not a new phenomenon, as central banks have always been intimately connected with the global monetary system and each other, especially under the Bretton Woods System. However, prior to the 1980s, the central bank acted "as yet another state agency, without much discretionary decision-making power” (Polillo and Guilen

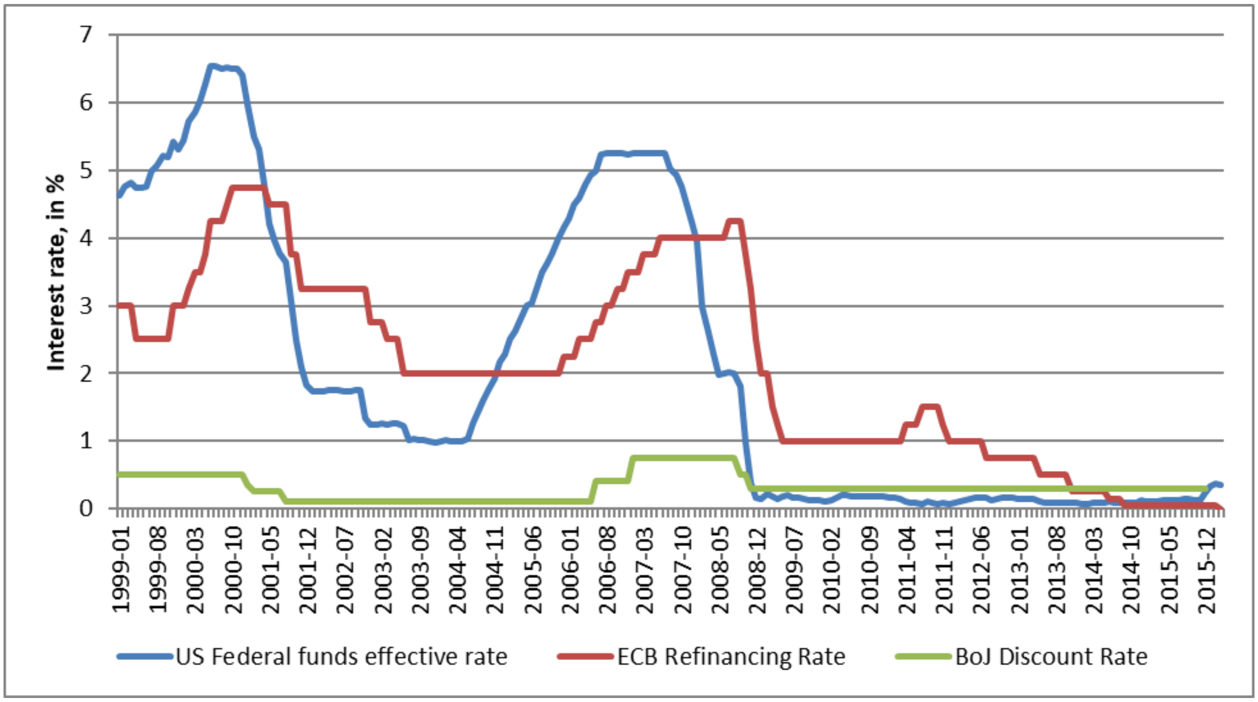
2005:1767). Despite the Bretton Woods system being “deliberately planned, the outcome of a long series of negotiations between eminent economists representing the interests of critical countries” (Rose 2007:671), the system itself worked within narrow parameters and central bank coordination was not done by a class of independent bankers but by government writ large. Even the Bank for International Settlements (BIS), the international organization tasked to foster central bank cooperation (including a common monetary doctrine), was constrained by the domestic politics of its members, seeing “international cooperation hold only as long as domestic lawmakers allow[ed]” (Toniolo 2005:11).

Indeed, one should not mistake the intensive “coordination” of central banks under Bretton Woods as a synonym for international *constraints* on independent institutions, for the “independence” of central banks during this period consisted of duly carrying out orders to maintain the status quo, with “a group of central banks… managing the fixed exchange rate system in ways that their governments could not” via intricate swap mechanisms (Fratianni and Pattison 2001:204). While the BIS provided a technical forum for bankers and did indeed foster cooperation (Howell 1993), the bankers themselves remained on a short leash from their national Ministries with no goal independence, even during the relatively more independent days of the 1960s.[v] And with countries themselves (to say nothing of central banks) having “little room to conduct an autonomous domestic monetary policy” (Eijffinger and de Haan 1996:29), the idea of there being serious international constraints on central banking, independent of domestic ones, is a spurious claim. As Wray (2007:122) noted, “even if U.S. domestic monetary policy had been relatively independent with the fixed-but-adjustable Bretton Woods exchange rates in, say, 1960, that was in conditions of a virtually closed economy and with private capital flows across borders so small that they could be ignored.”

However, the collapse of Bretton Woods in the late 20th century changed this dynamic immensely. Whereas the Bretton Woods system was a global monetary system, created by governments and implemented by central bankers, its retreat allowed for globalization of trade and finance, dismantling of capital controls, and expansion of international financial markets; in short, a much more uncoordinated-by-design international monetary system. In tandem with this removal of explicit coordination, the move towards central bank independence gave the banks of the largest developed countries the ability to set monetary policy autonomously (and, not coincidentally, set the tone for the world's monetary and financial conditions). The sum total of these global changes was the crafting of a new global financial order, replacing the planning ethos of Bretton Woods with a spontaneous institutional order led by central banks and not national governments (Rose 2007).

Important for our purposes is the fact that this new institutional order did not free banks from domestic political pressures (as noted in the previous section and we will see below), although it did put its own pressure on domestic polities (pressures memorably described by Slaughter (2001) as "agencies on the loose"). Instead, this transnational institutional system reinforced domestic pressures while adding new international constraints, constraints which arose from the imperatives of the new global monetary system and the institutional networks it engendered. In particular, the uncertainty of independent banks conducting autonomous monetary policies created a need for coordination, as the moves of major central banks, acting on domestic imperatives (Rey 2015), generated spillover effects which other monetary authorities had to take into account.[vi] Much like the new institutional order, this coordination was also spontaneous and was actually foisted upon nominally independent central bankers by the exigencies of the system; as Rajan (2015:8) notes, "international monetary policy coordination, of course, is unpopular among central bankers," but "international economic competition as well as the policies of a country's sociocultural peers" made such coordination crucial (Simmons and Elkins 2004:171).

Figure 4 - Policy Rates amongst Major Central Banks, 1999-2016



Source: US Federal Reserve, European Central Bank

The composition of this coordination has shifted from the days of Bretton Woods, and indeed provides more of a constraint to central banks than the fixed exchange rate system ever did. In the first instance, the need to prevent monetary imbalances has accelerated policy coordination in the last fifteen years (Taylor 2013), with harmonization of central bank policy becoming much more pronounced with the advent of the Euro in 1999 (itself a currency forged by harmonizing many disparate monetary policies under the aegis of one supranational central bank). Unlike much of the 20th century, however, this harmonization has come about via interest rates rather than exchange rates. As Figure 4 shows, the trend in the modern central bank's most important policy tool, the interest rate mechanism, has all but followed the same track for the ECB and the US Federal Reserve since 1999, with the Bank of Japan following the same trend but at a much lower level. In fact, a simple Pearson correlation between the rates utilized by the Fed and the ECB over this timeframe gives a result of 0.79, an incredibly strong positive correlation (which is significant well beyond the 1% level). At the time that central banks were assuming their highest levels of legal independence from domestic politics, they were suddenly beginning to move in lockstep with their peers, with the Fed taking the lead.

The endemic crises occurring even during the independent central bank renaissance have also created repeated episodes of intense and explicit policy coordination that far exceeds the technical coordination of Bretton Woods. As Benoit Coeure (2016:8), a member of the Executive Board of the European Central Bank, noted recently, such interaction is desirable, as "central banks need to be engaged in a constant dialogue so as to remain ready for rapid coordinated action in exceptional circumstances." During recent events, such as the September 11th terrorist attacks in the US and global financial crisis, concerted coordination was seen as a way to avoid major systemic disruption (Scotti 2006). Indeed, nowhere was this coordination more apparent than during the global financial crisis. Papadia (2013) expertly detailed the unprecedented coordination of the Fed and the ECB, the Swiss National Bank, the Bank of England and the Bank of Japan in 2007-2009 in setting up a swap mechanism to guarantee funding. This mechanism allowed central banks to issue liquidity in currencies different from their own, creating a global network with reciprocal privileges. As Papadia (2013) correctly notes, even more so than the similar small-scale mechanism set up after the September 11th attacks, the swap network instituted during the crisis represented the first instance of "global monetary policy."

4.2 Institutional Convergence

While there are undoubtedly policy reasons which explain this move towards coordination amongst (ostensibly) independent central banks, this growing *policy* convergence has occurred precisely due to *institutional* incentives provided in the international monetary realm. In fact, the two phenomena, of policy and institutional convergence, have been mutually reinforcing: as D'Amato *et al.* (2009:108) note, the "synchronicity of business cycles among countries [has been] a driving force of the institutional design of monetary authorities," while Cukierman (2008:726) asserts that globalization "reinforced the quest for price stability and raised the importance of CBI as a signal of macroeconomic nominal responsibility to domestic and international investors." This point was echoed for emerging markets by Wagner (2005:627), who noted that central bank independence became crucial for governments "in order to be able to sell bonds on the international financial markets, at least at a 'reasonable' price."

The pressure that globalization has created for a particular type of monetary institution, the independent central bank, has been aided and abetted by diffusion of information across newly-opened networks, which also has helped forge a consensus on central bank independence. There is ample evidence that central banks have been consciously modeling their actions and institutional imperatives on others; the revision of the law of the Bank of Japan in the late 1990s, which attempted to adopt the “western" central bank model wholesale, is such an example (but unfortunately, as Dwyer (2004} notes, this move did not translate through to greater credibility). The concomitant rise in power of a supra-national institution, the International Monetary Fund (IMF}, also gave a push to the diffusion of central bank independence, as the IMF "increasingly attached certain conditions, including an independent central bank, to its lending agreements" (Polillo and Guilen 2005:1774}.

In addition to formal institutional pressures, there also have been informal mechanisms at play, reinforcing central bank independence through "normative network pressures" (Polillo and Guillen 2005:1778). These same network pressures, present in any group, have now moved beyond merely influencing institutional design and are now permeating institutional functions. In reality, the network of central banks and central bankers has created an informal mechanism for coordination, with personal relationships and conferences forging an *esprit de corps* amongst central bankers (lrwin 2013). Even before ascending to the commanding heights of an economy, central bankers could have known each other via their work, given that the vast majority of central bankers come from a background within their own government, the financial sector, or as an economist (Adolph 2013). Additional formal organizations such as the Bank for International Settlements, meeting every second month and fostering "a collegial spirit among the members" while remaining patently "non-transparent" (Bayne 2008:11), reinforce these interactions, comprising a "transnational governance network" (Marcussen 2007). While this was true during the Bretton Woods years (Bank of Canada governor Louis Rasminsky was known to say that meetings in Basel were like “group therapy,” see Toniolo 2005:365), the relative impotence of central banks during that era meant that such meetings take on added importance today. There is also likely an element of competition amongst central bankers which has also facilitated the convergence of policies, for, as Guler *et al.* (2012) noted in the context of trade policy, competitors are likely to adopt similar patterns of behavior so as not to lose ground to others, a reality that could be motivating institutional policy biases as much as a worry of imbalances.

4.3 The Interplay of Domestic and International Constraints

This policy and institutional convergence amongst central banks has created an interesting dynamic between the international constraints on independence and those that exist in the domestic arena. Nowhere is this more apparent than in the post-crisis consensus amongst central banks on “unconventional monetary policy.” While central banks are never independent from the system that spawned them, there is a valid concern that a central bank could potentially upset a country's institutional balance, especially if it outpaces the same democracy that constrains it (Levy 1995). As its own political institution, a central bank has similar incentives in terms of staffing, budget, and power within the system, in addition to its own preferences regarding inflation, as other political institutions.

The extraordinary circumstances of the post-crisis world, and the reliance on unconventional policies, appears to have given banks leverage to remove their political shackles domestically, aggrandizing power to themselves to create inflation in many forms and transferring duties from other political institutions to itself as part of a broader mandate. This shift of policy would also seem to re-invigorate the charge that central banks have become too powerful, given that they are treading on the prerogatives of democratic governments: as Bibow (2013b) pointed out, "ECB policymakers are always quick to denounce any commentary made by politicians on monetary policy as an attack on their independence while happily considering it to be part of the bank's monetary policy mandate to notoriously call for budgetary discipline, wage restraint, and structural reform." There is no guarantee that such an outcome would be a subversion of democracy, for there is always a constituency for perpetual gain and never any pain, but the real threat may come from how such a transfer of responsibilities alters the political system.

However, I cannot emphasize enough that central banks, as institutions, are inextricably linked with the polity that they emerged from, and the polity always has sanctioning mechanisms on even an “independent” central bank that has gone rogue (as Levy [1995] suggest). Even in an environment where the institutional incentives faced by central banks are skewed to working with their peer group internationally rather than with their fellow institutions in government, the central bank cannot escape the limitations that accompany being part of a domestic political structure (Bibow 2004). Indeed, the dirty secret accompanying the continued aggrandizement of power that central banks have taken on after the crisis, including an expansion of policy independence, is that such an approach has been generally approved by the public - a public that needed CBI to remove the temptation of inflation, but to which it has once again succumbed.

Put another way, central banks have expanded their remit to look at growth, unemployment, or asset prices in addition to inflation in a manner that has received implicit (and in some cases, explicit) validation through the democratic process. One of the most obvious examples is that of US President Barack Obama, who, despite any economic recovery to speak of, won re-election and was able to install Janet Yellen, an ardent champion of central bank power, at the Federal Reserve. Similarly, even in the midst of the Eurozone crisis, protesters did not target the ECB but instead turned their ire on national governments that attempted to implement "austerity." In fact, based on a database from Bishop and Hoeffler (2016) on global election results, I calculate that, from 2008 to 2012 globally, 164 elections were held, with 116 of these elections having an incumbent stand; more importantly, the incumbent won 85 of these elections (approximately 73%). In Europe, which was perhaps the hardest hit by the global financial crisis, the numbers are slightly lower but still prove the point, as from 2008 to 2012, 32 elections were held, 24 with an incumbent standing, and the incumbent won 14 of these (approximately 59%). This is hardly evidence of a backlash against *any* type of economic policy, even though the governments returned might have been weakened (see Appendix B for the breakdown of the voting).

How does these results matter for the supposedly "independent" central bank? As James (2010: 25) notes, "After the financial crisis we have become wiser. Making monetary policy is more complex. But as a result, it is also more politicized." Following on this point, Adolph (2013) shows that partisan influence on monetary policy is still alive and well, while Ennser-Jedenastik (2014) demonstrates empirically how the ideology of the party in power continues to matter for who is being appointed as a central bank governor. Thus, a change in politics should also mean a change in central bank governor, if not necessarily on the same schedule but eventually, in line with societal preferences. As the evidence from Bishop and Hoeffler (2016) showed, this was not the case, even through the worst years of the crisis, mainly because the politics did not change. Instead, the political institutions of democracy have been able to circumvent the institutional arrangement that was designed to keep the temptation of inflation at bay; by returning to power the parties that appoint central bank governors and ensuring the institutional status quo, voters continue to endorse the efforts of central banks to deal with these same preferences of society, namely, for monetary approaches to what may be rather thought of as structural or fiscal issues. Indeed, the polities of many countries have been able to pat themselves on the back for fiscal prudence while shifting the same accommodative stances and preferences to the central bank. And while this one institution may feel that it is independent by expanding its powers internationally, in reality, the central bank is just playing a role that its institutional structure has already ordained.

5. Conclusions

This paper has examined the fortieth anniversary of the main idea underpinning the modern idea central bank independence, and how the focus on the concept of time-inconsistency has important flaws in its treatment of the central bank as an institution. Indeed, despite critiques of CBI from utilitarian, empirical, and policy perspectives proliferating in the literature, an analysis of central bank independence from an institutional angle in economics has been lacking. When such a lens is applied, we can see clearly that central bank independence at any level is impossible, given the political institutional structure from which the central bank has emerged. Democracy has created the incentives in place for inflation, democracy (via its various constituent actors) has expressed its own preferences for inflation, but, ashamed at these preferences, democracy has disingenuously tried to tie its own hands via an “independent” central bank. Moreover, the imperatives of globalization and the pressures that accrue to banks from their placement in an international institutional system create even larger constraints on central bank policies. Simply put, if an institution's policies are contingent on what other political institutions are doing, either domestically or internationally, it is difficult to say that this institution is truly independent, no matter how vociferously such independence is defended at the next conference in Jackson Hole.

But this brings us back to the original question, the one that the CBI debate neatly sidesteps, and that is *what should a monetary institution do* - and then what institutional arrangement would achieve that? Without opening the can of worms that is the first question, it is perhaps better to examine what CBI was intended to do as an institutional arrangement and how it lives up to that goal. The original thought animating CBI was to remove the political incentive for inflation from policymakers; the implicit assumption underpinning this approach is that a central bank should provide price stability, at the minimum, with other goals defined by the independent institution itself. However, as we have seen here, such an obsession on price stability is impossible so long as the central bank, any central bank, remains a political creature guided by the polity. If CBI is to truly live up to its own provenance, economists concerned with price stability must then look at other institutional arrangements to understand how to divorce political processes from monetary policy, if this arrangement is what is desired.

Indeed, if the temptation to inflate is too great to be trusted to even an independent bank, due to its position as part of a broader institutional web, than the only way forward is to remove the oversight of money from political institutions entirely. Unfortunately, the likelihood of such a solution is also predicated on the prevailing institutional order, and in particular the acquiescence of political institutions. Such an eventuality is highly unlikely if we look at the experience of central bank independence, which held sway for only a short period and gave way to political imperatives once a crisis erupted. Without an ironclad and actionable political consensus on the desirability of a truly independent monetary arrangement, any institutional solution is thus doomed to subservience under the tyranny of the majority. As a member of the Executive Board of the ECB put it, unwittingly proving my case, “Central bank independence needs to be continuously protected and maintained over time. This is the responsibility of political institutions” (Bini Smaghi 2008:455). This reality is the opposite of independence.

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APPENDIX A – Dispersion within CBI rankings, by Polity IV rating

Polity IV Category	Observations	Mean	Std. Dev.	Min	Max
-10	20	0.141	0.029	0.12	0.18
-9	9	0.300	0.085	0.25	0.45
-8	22	0.432	0.015	0.42	0.45
-7	72	0.377	0.136	0.24	0.65
-6	0	n/a			
-5	5	0.274	0.257	0.10	0.73
-4	18	0.390	0.079	0.28	0.46
-3	20	0.589	0.203	0.33	0.83
-2	47	0.370	0.181	0.11	0.67
-1	21	0.417	0.130	0.10	0.56
0	6	0.520	0.164	0.37	0.67
1	7	0.537	0.191	0.36	0.83
2	14	0.642	0.008	0.64	0.67
3	20	0.476	0.207	0.18	0.893
4	37	0.509	0.126	0.26	0.83
5	65	0.540	0.163	0.34	0.77
6	76	0.500	0.123	0.36	0.73
7	60	0.526	0.169	0.16	0.68
8	128	0.543	0.179	0.16	0.83
9	128	0.462	0.263	0.10	0.83
10	203	0.414	0.210	0.11	0.80

Author's calculations based on data from Polity IV and Dincer and Eichengreen (2014)

APPENDIX B – Voting Results in the world, 2008-2012

country	year	Incumbent Standing?	Incumbent Win?
Armenia	2008	no	no
Austria	2008	yes	yes
Azerbaijan	2008	yes	yes
Bangladesh	2008	yes	no
Barbados	2008	yes	yes
Belize	2008	yes	no
Bhutan	2008	no	no
Cambodia	2008	yes	yes
Canada	2008	yes	yes
Cyprus	2008	yes	no
Dominican Republic	2008	yes	yes
Georgia	2008	yes	yes
Ghana	2008	no	no
Grenada	2008	yes	no
Italy	2008	no	no
Macedonia, FYR	2008	yes	yes
Malaysia	2008	yes	yes
Maldives	2008	yes	no
Malta	2008	yes	yes
Montenegro	2008	yes	yes
Nauru	2008	yes	yes
Nepal	2008	yes	no
New Zealand	2008	yes	no
Pakistan	2008	no	no
Paraguay	2008	no	no
Russia	2008	no	no

country	year	Incumbent Standing?	Incumbent Win?
Afghanistan	2009	yes	yes
Albania	2009	yes	yes
Algeria	2009	yes	yes
Andorra	2009	no	no
Antigua and Barbuda	2009	yes	yes
Bolivia	2009	yes	yes
Botswana	2009	yes	yes
Bulgaria	2009	yes	no
Congo, Rep.	2009	yes	yes
Dominica	2009	yes	yes
Ecuador	2009	yes	yes
El Salvador	2009	no	no
Equatorial Guinea	2009	yes	yes
Gabon	2009	no	no
Germany	2009	yes	yes
Greece	2009	yes	no
Guinea-Bissau	2009	no	no
Honduras	2009	no	no
Iceland	2009	yes	yes
India	2009	yes	yes
Indonesia	2009	yes	yes
Iran	2009	yes	yes
Israel	2009	no	no
Japan	2009	yes	no
Kyrgyz Republic	2009	yes	yes
Lebanon	2009	no	no

country	year	Incumbent Standing?	Incumbent Win?
Serbia and Montenegro	2008	yes	no
Slovenia	2008	yes	no
Spain	2008	yes	yes
United States of America	2008	no	no
Vanuatu	2008	yes	no
Zambia	2008	no	no
Zimbabwe	2008	yes	yes

country	year	Incumbent Standing?	Incumbent Win?
Luxembourg	2009	yes	yes
Malawi	2009	yes	yes
Mauritania	2009	yes	yes
Moldova	2009	yes	yes
Mongolia	2009	yes	no
Mozambique	2009	yes	yes
Namibia	2009	yes	yes
Norway	2009	yes	yes
Panama	2009	no	no
Romania	2009	yes	yes
South Africa	2009	no	no
Tunisia	2009	yes	yes
Uruguay	2009	no	no

APPENDIX B (continued)

country	year	Incumbent Standing?	Incumbent Win?
Australia	2010	yes	yes
Azerbaijan	2010	yes	yes
Belarus	2010	yes	yes
Belgium	2010	no	no
Brazil	2010	no	no
Burkina Faso	2010	yes	yes
Burundi	2010	yes	yes
Chile	2010	no	no
Colombia	2010	no	no
Comoros	2010	no	no
Costa Rica	2010	no	no
Cote d'Ivoire	2010	yes	yes
Ethiopia	2010	yes	yes
Guinea	2010	no	no
Hungary	2010	no	no
Latvia	2010	yes	yes
Mauritius	2010	yes	yes
Moldova	2010	yes	no
Myanmar	2010	yes	yes
Nauru	2010	yes	yes
Nauru	2010	yes	no
Netherlands	2010	yes	no

country	year	Incumbent Standing?	Incumbent Win?
Andorra	2011	yes	no
Argentina	2011	yes	yes
Benin	2011	yes	yes
Cameroon	2011	yes	yes
Canada	2011	yes	yes
Cape Verde	2011	yes	yes
Central African Republic	2011	yes	yes
Chad	2011	yes	yes
Congo, Dem. Rep.	2011	yes	yes
Croatia	2011	yes	no
Denmark	2011	yes	no
Djibouti	2011	yes	yes
Estonia	2011	yes	yes
Finland	2011	yes	no
Gambia, the	2011	yes	yes
Guatemala	2011	no	no
Guyana	2011	no	no
Haiti	2011	no	no
Ireland	2011	no	no
Jamaica	2011	yes	no
Kazakhstan	2011	yes	yes
Kyrgyz Republic	2011	no	no

country	year	Incumbent Standing?	Incumbent Win?
Egypt	2012	no	no
France	2012	yes	no
Greece	2012	no	no
Japan	2012	yes	no
Lesotho	2012	yes	no
Papua New Guinea	2012	yes	yes
Russia	2012	no	no
Senegal	2012	yes	no
Serbia and Montenegro	2012	no	no
Slovak Republic	2012	no	no
Turkmenistan	2012	yes	yes

country	year	Incumbent Standing?	Incumbent Win?
Philippines	2010	no	no
Rwanda	2010	yes	yes
Slovak Republic	2010	yes	no
Solomon Islands	2010	-22	no
Sri Lanka	2010	yes	yes
Sudan	2010	yes	yes
Suriname	2010	no	no
Sweden	2010	yes	yes
Tanzania	2010	yes	yes
Togo	2010	yes	yes
Trinidad and Tobago	2010	yes	no
Tuvalu	2010	yes	no
Ukraine	2010	yes	no
United Kingdom	2010	yes	no
Iraq	2010	yes	yes

country	year	Incumbent Standing?	Incumbent Win?
Lao PDR	2011	yes	yes
Latvia	2011	yes	yes
Liberia	2011	yes	yes
Macedonia, FYR	2011	yes	yes
Morocco	2011	yes	no
Nicaragua	2011	yes	yes
Niger	2011	no	no
Nigeria	2011	yes	yes
Peru	2011	no	no
Poland	2011	yes	yes
Portugal	2011	yes	yes
Samoa	2011	yes	yes
Seychelles	2011	yes	yes
Singapore	2011	yes	yes
Slovenia	2011	yes	yes
Spain	2011	no	no
St Lucia	2011	yes	no
Switzerland	2011	no	no
Thailand	2011	yes	no
Turkey	2011	yes	yes
Uganda	2011	yes	yes
Vietnam	2011	n/a	no
Zambia	2011	yes	no

country	year	Incumbent Standing?	Incumbent Win?

Source: Bishop and Hoefler (2016). Where they have coded a country as being in transition or as having no incumbent, I have coded it as no win for an incumbent.

[i] As an anonymous reviewer astutely pointed out, it is an interesting issue of the time-inconsistency literature that it remains focused on financial markets for the transmission of "independent" monetary policy, but that the main issue of inflation is more centered on labor markets. Indeed, it is labor markets who are assumed to have the perfect foresight of inflation, and wage-setting is where the speedy adjustments occur which theoretically cancel out an inflation-prone politician's maneuvers.

[ii] Interestingly, this same literature found no significant relationship between output and CBI, with one paper (Jordan 1998) actually finding that, while average growth rates were unrelated to legal independence, high degrees of CBI caused real output loss during the 1980s.

[iii] The dispersion of central bank independence by Polity IV rating is shown in Appendix A. As can be seen, while there is a slightly higher dispersion for the highest levels of democracy, in general, the categories follow a normal distribution. Thanks are due to a participant at the Cambridge Journal of Economics 40th Anniversary Conference for suggesting including this dispersion.

[iv] Bibow (2013a) also makes a convincing case against the existence of time-inconsistency, meaning that the institutional make-up of a society may have learned the necessity of adequate policies rather than just looking to a benevolent, yet anti-inflationary, dictator.

[v] Thanks to an anonymous reviewer who noted this correct formulation of the issue.

[vi] In practice, this generally meant the Federal Reserve acting as the "leader of the band" in setting rates and emerging markets playing catch-up so as to not be left behind. Thanks are due to an anonymous referee who suggested the phrase "leader of the band."