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Mathias Sebastian Küpfer, BA

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List of Abbreviations

BoE	Bank of England
BoJ	Bank of Japan
Covid-19	Coronavirus Disease 2019
CPI	Consumer Price Index
CWN Index	Cukierman, Webb and Neyapti Index
ECB	European Central Bank
ERM	European Exchange Rate Mechanism
EU	European Union
Fed	Federal Reserve System
GBP	Pound Sterling
GDP	Gross Domestic Product
GMT Index	Grilli, Masciandaro and Tabellini Index
HM	Her Majesty's
INR	Indian Rupee
IMF	International Monetary Fund
MIT	Massachusetts Institute of Technology
MNB	Magyar Nemzeti Bank (Hungarian National Bank)
NBER	National Bureau of Economic Research
NIB	National Investment Bank
OECD	Organization for Economic Co-operation and Development
OMFIF	Official Monetary and Financial Institutions Forum
PIMCO	Pacific Investment Management Company, LLC
PQE	People’s Quantitative Easing
PRA	Prudential Regulation Authority
QE	Quantitative Easing
RBI	Reserve Bank of India
SSM	Single Supervisory Mechanism (ECB)
TCMB	Türkiye Cumhuriyet Merkez Bankası (Central Bank of the Rep. of Turkey)
USD	United States Dollar
W&M	Ways & Means Facility (BoE)

Country Abbreviations (GMT Data)

AGO	Angola	IDN	Indonesia
ARE	United Arab Emirates	IND	India
ARG	Argentina	ISR	Israel
AUS	Australia	JPN	Japan
BGD	Bangladesh	KEN	Kenya
BRA	Brazil	KOR	Korea, Rep.
CAN	Canada	MAR	Morocco
CHE	Switzerland	MEX	Mexico
CHL	Chile	NGA	Nigeria
CHN	China	PAK	Pakistan
COL	Colombia	POL	Poland
DZA	Algeria	RUS	Russian Federation
EGY	Egypt, Arab Rep.	SAU	Saudi Arabia
EMU	Euro Area	TUR	Turkey
ETH	Ethiopia	USA	United States
GBR	United Kingdom	ZAF	South Africa

I. Introduction

"The Federal Reserve is redefining central banking…it is breaking century-old taboos."
– Nick Timiraos and Jon Hilsenrath of the *Wall Street Journal* (2020).

In the past few years, central banks have been pushed back into the public and academic spotlight as their responses to economic crises have become increasingly extensive and controversial. As Timiraos and Hilsenrath point out, the Covid-19 crisis has forced central banks – in this case the Federal Reserve – to explore unconventional and unprecedented policies. But even before the ongoing Covid-19-induced economic depression widened the scope of monetary policy, central banks around the world had been accused of being subject to increased politicization: Last year, Rogoff outlined "How Central-Bank Independence Dies", Rajan saw the previously prevailing consensus on monetary autonomy "shattered" and this February, Davies wondered whether "Independent Central Banks [Were] Passé" altogether (Rogoff 2019b, Rajan 2019, Davies 2020).

It is generally undisputed that central banking and its monetary instruments are crucial for ensuring the functioning and prolonged longevity of our economic system – central banks exist to secure domestic macroeconomic stability. Historically, many central banks have freed themselves from political control in the late 20th century, which led to improved monetary policies and a more stable macroeconomic environment; since, the concept of central bank independence has been mostly multilaterally accepted. However, as Rogoff, Rajan and Davies, among others, have pointed out, this concept has seemingly been undermined by recent political and economic developments. In light of these, this paper takes a refreshed look at the status quo of central bank independence and attempts to find qualitative and quantitative evidence for a changed central banking environment.

To begin with, the following traces the theoretical and historical background of monetary autonomy to provide a basic understanding of the emergence and the academic justification for central bank independence. Secondly, *de facto* monetary independence is outlined by an analysis of the 'current climate': Seven prominent cases of recent political meddling in monetary policy are studied. This serves as an initial, qualitative assessment of the current status of monetary politicization. Subsequently, this paper presents an evaluation of *de jure* central bank independence by updating the GMT[1] index. The GMT measure, reflecting a quantitative analysis, allows for a more objective estimation of persistent changes in monetary independence. Moreover, as previous GMT scores from 2003 and 1991 are available, it is possible to visualize trends in monetary independence spanning nearly three decades. Lastly, by regressing economic indicators such as inflation, inflation volatility and GDP per capita on central bank independence scores, this paper provides an up-to-date assessment of the prevailing macroeconomic capacity of monetary autonomy.

Effectively, this paper incorporates an extensive approach to provide a '2020 status quo' on global central bank independence. It attempts to illustrate trends in monetary autonomy and finds proof for why it still remains economically relevant today.

[1] The Grilli-Masciandaro-Tabellini index, introduced in 1991, defines central banks' independence from political actors. Grilli et al. use multiple criteria to evaluate how dependent a central bank is to its political counterparts. More on the index in chapter IV.

II. Central Bank Independence: Theory, History and Evidence

a. Theoretical Background

Monetary independence incorporates the delegation of monetary responsibility and policy making to an independent institution – usually to a country's central bank. Hence, unlike fiscal policy for example, independent central banking is conducted by non-elected officials outside of a country's government. While in most cases the government sets the monetary policy objective (the so-called monetary mandate), an independent central bank is autonomous in its operations to fulfill that mandate. Typically, the mandate encompasses the safeguarding of price and financial stability within the domestic economy.

Conceptually, there are four key dimensions to central bank independence that need to be highlighted: *Institutional independence* implies that a central bank cannot receive instructions from a third party in any way; *personnel independence* implicates that there is no incentive for any central banker to pursue government-friendly policies; *financial independence* means the bank is both endowed with enough financial resources to autonomously operate and is not incentivized to engage in financing government deficits; and *functional independence* entails a central bank's freedom to choose its preferred monetary strategies, measures and instruments. While a 'fully' independent central bank[2] is defined to possess all four dimensions of autonomy, a necessary distinction needs to be drawn between *de jure* independence, i.e. the independence that is enshrined into legally binding acts, and *de facto* independence, the autonomy which is effectively 'granted' to the central bank by outside actors, especially by the ruling government (Neyer 2018, 5). In multiple cases, a central bank may legally possess large degrees of autonomy, which, however, are undermined by political pressure or interference.[3] Thus, *de jure* and *de facto* independence are not always congruent.

The Inflationary Bias

While the previous paragraph briefly outlined the core denomination of monetary independence, it does not cover the rationale behind granting large degrees of autonomy to monetary institutions in the first place. Nowadays, a strong consensus prevails among economists and political theorists that independent central banks are beneficial to keeping

[2] See page 9 for Malo de Molina's assessment of the concept of a 'fully' independent central bank.
[3] See, for example, the case of Argentina (page 38).

inflation in check – i.e. preventing inflation from rising beyond socially optimal price growth. A very influential theoretical approach underlining this consensus is the so-called inflationary bias of policymakers based on the Barro-Gordon model: An unanticipated monetary expansion, where actual inflation exceeds expected inflation ($\pi_t > \pi_t^e$), is expected to increase economic activity and is equivalently estimated to reduce unemployment (short-term Phillips curve[4] logic). In this case, a policymaker's optimal monetary policy choice would equate the marginal costs of surprise inflation to the marginal benefits of reduced unemployment and rising output. Additionally, surprise inflation decreases the real value of outstanding debt, as $\frac{D_t}{P_t} < \frac{D_t}{P_t^e}$ (just as it lowers real wages and real assets values)[5]. Thus, unexpected inflation implies a wealth transfer from creditors to debtors. For example, a U.S. surprise inflation increase of one percentage point would lower the 2019 real debt of the United States by around US$ 232 billion[6] (based on Barro and Gordon 1983b, 3f). For politicians, the threefold incentives to spur inflation – reducing unemployment, stimulating national output and diminishing the real value of government debt – appear obvious (especially just before and during election periods). However, politicians boosting their popularity with surprise inflation without considering long-term implication has its drawbacks: After an unexpected inflation, private agents will adapt their expectations, such that a monetary shock aiming at increasing inflation needs to be larger for every occurrence. This clearly carries the danger of spurring high and persistent inflation exceeding the social optimum. As soon as agents understand the policymaker's objectives, systematic surprises are impossible and "the rates of monetary growth and inflation [will be] excessive" (Barro and Gordon 1983a, 589). Once expectations are not reliable and the credibility of monetary policy is lost, the economic and financial stability of a country will most certainly fall out of balance.

Jensen argues that the inflationary bias prevails even without the 'surprise' component introduced above. He claims that the 'surprise-argument' is not applicable to today's policymakers, as none of them is "in the business of 'fooling' people" (Jensen 2000, 2). Hence, as soon as it is publicly conceived that the policymaker values the prevailing rate of unemployment as excessive, a rational agent expects that inflation rates will rise through

[4] Although the Phillips curve ultimately proved to be unstable for policy making in the long-run, it captures the inverse relationship between unemployment and inflation in the short-run.
[5] Where D is the value of debt, P the price level at time *t*, and P^e the expected price level at time *t*.
[6] With a corresponding total debt of USD 23.2 trillion as of 31 December 2019 (U.S. Department of the Treasury 2020).

expansionary policies to boost the economy. Through the newly formed expectation, inflation will eventually rise while unemployment will remain at the prevailing rate, as all private agents have comprehended the rationale behind the inflation – there is no money illusion (this would correspond to a shift of the Phillips curve instead of a move along the curve). Thus, the public knowledge of the policymaker's desire to curb unemployment self-fulfillingly leads to rising inflation – assuming the policymaker possesses monetary authority. And once inflation speeds up, people will behave in a way that makes prices climb even further: inflationary expectations create a spiral that is hard to contain (Wheelan 2017, 33). Or as Karl Otto Pöhl, former Bundesbank president, put it, inflation is like toothpaste, "once it's out, you can hardly get it back in the tube again" (Conway 2015).

This underlines central banks' ultimate mandate to keep inflation from skyrocketing by insulating it from political strategies. While this fear seems rather exaggerated considering today's prevailing levels of extremely low inflation rates in the developed world, it is important to note that central bank independence emerged when inflation rates were in the double-digits for many developed countries[7]; in 1980, average inflation among OECD countries peaked at staggering 15.7% (OECD 2020).

Time-Inconsistency of Discretionary Policy

The inflationary bias described by Barro and Gordon goes hand in hand with the time-inconsistency problem of policy making, which was first introduced by Kydland and Prescott's 1977 seminal paper. They found that discretionary policy making, even if consistent at the time of implementation, is not socially optimal in the long run. This counterintuitive finding is based on the principle that the decisions economic agents make today not only rely on current policies, but also on future expectations. Given that agents usually have some knowledge or assumptions about the future, the long-term expected implications of current policies may render the short-term aims of the current policy ineffectual. Moreover, as our economic system is a dynamic one where policy implementations may alter the economic structure, discretionary policies carry the risk of setting off a loop where policies change structure and, in turn, where the altered structure demands a follow-up change in policy. Consequentially, Kydland and Prescott argue to tie policy making to predefined rules rather than following volatile discretionary actions

[7] See the following section (b.) for more information on the historical background of central bank independence.

(Kydland and Prescott 1977, 487). This effectively serves as a pivotal justification to insulate monetary policy from the influence of discretionary, time-inconsistent politics. This is why Hartwell assessed that Kydland and Prescott's groundbreaking work forms the "intellectual justification" for central bank independence (Hartwell 2019, 61). Following Kydland and Prescott, implementing monetary policy based on rigorous rules – i.e. specific monetary guidelines and inflation targets – should eliminate time-inconsistent behavior such as the inflationary bias. Furthermore, by publicly establishing a rule, it becomes easier for economic agents to observe any policy deviations from the rule, which reduces the incentive of policymakers to deviate in the first place.

However, as central bank independence is an institutional response to an incentive-based problem, Forder also warns that whenever an institutional proposal is designed to solve a time-inconsistency problem, "there is the danger that the problem is simply relocated or displaced" (Forder 1998, 310). Although central bank governors may also be liable to (personal) incentives, conferring monetary responsibility to them as independent experts in the field of economics undoubtfully insulates politicians from time-inconsistent monetary behavior.

Central Bank Credibility

Further advocacy for central bank independence is based on its positive impact on solving a credibility problem. By theoretical definition, a new policy implementation has strong credibility when it is promptly believed by the public, regardless of its intrinsic policy goal. This is of such importance in the monetary realm because the achievement of long-term, future monetary objectives relies on private agents' expectations, which, in turn, depend on the policymakers' and their policies' perceived credibility: It is expected that the less credible a monetary policy is, the more persistent and severe is its adverse economic effect. I.e., if a central bank's shift in policy is not or only slowly believed by the public, the policy's targeted impact will not or only slowly affect the economic status quo (Cukierman 1986, 5-6).

Independent central banks are argued to be able to send more consistent and, thus, more credible signals to the public as they are not entangled in political, electoral or personal campaigns. This insulation from political agendas is especially relevant in countries where a stark polarized political environment prevails, such as in the UK or the US: In both countries, a change of the political administration is automatically associated with a shift in a certain bundle of economic policies. Assuming both countries have politically controlled central banks, a Tory or Republican government would almost certainly be expected to implement easier monetary policy than their respective opposing party. Ultimately, this would erode a central bank's policy making credibility and would allow for increased monetary volatility.

A survey conducted by Blinder among 84 central bankers revealed that central bank credibility was regarded to be of "the utmost importance": central bankers gave it an importance score of 4.83 out of 5 points, on average. The corresponding top three reasons for the necessity of strong credibility were to "keep inflation low", to "reduce the [social] costs of disinflation", and to "defend the currency". The basic theoretical approach to the importance of monetary credibility is underlined by an expectational Philipps curve relationship (Blinder 1999, 3f.):

$$\pi_t = \pi_t^e - \beta(u_t - u_t^*) + \gamma z_t + \varepsilon_t,$$

where π_t is the inflation rate, π_t^e is the expected inflation,
u_t is the actual unemployment rate and u_t^* is the natural rate of unemployment,
z_t represents a supply shock, and
ε_t is the error term.

In this model, actual inflation increases in inflation expectations and supply shocks while it has a negative relationship in rising unemployment rates. Based on this, the most frictionless and cost-effective way to reduce inflation rates π_t would entail decreasing inflation expectations π_t^e – and this is exactly what independent central banks are argued to be best suited for: reducing expectations by sending (perfectly) credible signals to the public. Thus, ideally, disinflation can be achieved without costly corrections in unemployment or supply variables.

The importance of credibility is underlined by an example of the Federal Reserve: After having realized that it needed to improve its credibility, it decided in 1994 to increase its transparency by publicly announcing its monetary objectives (Goodfriend 2007). This revolutionary move significantly improved communication with the public and effectively strengthened the bank's credibility. Many central banks' public announcement to pursue an inflation target[8] is a similar means to improve credibility, as public “announcements never increase (and usually decrease) the public’s uncertainty” about expected inflation (Cukierman 1986, 13). Consequentially, any deviations between expected or actual inflation and the target rate determine a central bank’s credibility.

Conclusively, the intrinsic case for central bank independence is predominantly based on a three-pillar-argument: It reduces the inflationary bias, curbs time-inconsistent behavior through rule-based approaches and is expected to be more efficient due to enhanced credibility. Adding to that, autonomous monetary authorities are also believed to extrinsically prompt for stricter fiscal discipline of governments and prevent the funding of government ‘pet projects’ through monetary financing (Yates 2015).

This theoretical foundation is underlined by evidence gathered by Grilli, Masciandaro and Tabellini (1991). They developed an index to measure central bank autonomy (the GMT index[9]) and regressed inflation rates from 1950-1989 against it. For every decade the statistical evidence showed an inverse relationship between central bank independence and inflation – hence, emphasizing that institutional monetary autonomy matters in terms of macroeconomic performance. In their conclusion they strikingly point out that “having an independent central bank is almost like having a free lunch; there are benefits but no apparent costs” (Grilli et al. 1991, 375).

In an IMF working paper Arnone et al. (2007) updated the GMT index; the authors’ results show that many countries seemed to have realized this ‘free lunch’: Monetary autonomy increased significantly from 1991 to 2004 for all types of economies (see figure 1). Yet, it remains striking that the gap between OECD countries and developing/emerging countries has persisted over time. Chapter IV of this paper provides more insights into the GMT index and presents an update thereof using current central bank legislation and macroeconomic data.

[8] As of 2020, more than 70 central banks follow a publicly announced inflation target. For example, while the ECB, the Federal Reserve and the BoE target a rate of around 2%, the Bank of Mexico and the State Bank of Pakistan target 3% and 5% respectively. For all current targets see Central Bank News (2020).
[9] It is important to note that Grilli, Masciandaro and Tabellini (1991) analyzed solely the institutional features of monetary authorities while not considering the behavioral and reputational dimensions of these institutions. In their analysis, the American, German, Swedish, Dutch and Canadian central banks were among the most autonomous monetary institutions. More on the GMT index in chapter IV.

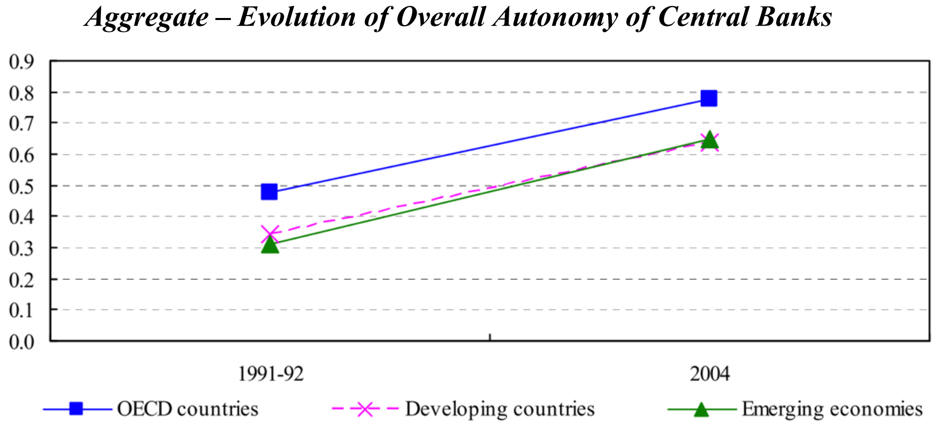


Figure 1: Evolution of Overall Autonomy of Central Banks (Source: Arnone et al. 2007)

Although there is plenty of empirical and theoretical evidence for monetary autonomy, Bank of Spain's Malo de Molina accredits that the concept of independence is rather "imprecise" and "illusionary" as it implies a self-sufficiency of central banks as well as the absence of any form of control – neither is the case even for so-called 'fully' independent monetary authorities. Further, he emphasizes the discrepancies between *de jure* and *de facto* independence of monetary policy as traditions and informal behaviors are not quantifiable into legislation or institutional frameworks (Malo de Molina 1994, 131f.). This gap between effective and legal/institutional autonomy will become important further in the course of this paper. Undeniably, there is no such thing as a 'fully' independent central bank; rather there are different degrees of independence, which will be shown and discussed in the following chapters.

b. Historical Background

„In many countries today [...] monetary policy making is entrusted to an independent central bank. This reflects the human wisdom that has been nurtured by history."
— Yasushi Mieno, former governor of the Bank of Japan (Werner 2015, 232).

Today's global monetary policy approach, as described by Mieno, goes back to the 1970s, where a monetarist 'revolution' led by Chicago school's Milton Friedman replaced Keynesian fiscal approaches of stabilization policy. Friedman argued that a capitalist market economy only needed inflation control guaranteed by an independent central bank as well as a balanced government budget to remain stable (Skidelsky 2020). Although Friedman already argued in 1948 for rule-guided monetary policy outside of discretionary political policy making (Friedman 1948, 246), which would later become a multilaterally accepted approach based on Kydland and Prescott's work, the global wave of monetary independence was still decades away. Unquestionably, today's central bank independence is not a hard-wired feature of economic history but rather a development of the second half of the 20th century. When the German Bundesbank was formed in 1957 it was considered a novelty within the global economic and financial community, as it arguably became the most independent central bank in the world[10] (Kaltenthaler 1998, 117). For other nations, however, the path to liberating their central bank from political control was bumpier. For example, when former British finance minister Lawson proposed the independence of the Bank of England (BoE) to Thatcher, she responded: "To hand over the responsibility for monetary policy, and thus for the fight against inflation, to an independent Bank […] would look as if the Government were admitting that […] it was unable to bring inflation down itself, which would be highly damaging politically" (Tucker 2018a, 406). It was only after a period of economic turmoil in the early 1990s and the drop out of the European Exchange Rate Mechanism (ERM) in 1992 that the Bank of England eventually gained independence in 1997 under a newly elected Labour government.

The U.S. Federal Reserve, effectively the most influential central bank in the world, was established through the landmark *Federal Reserve Act* in 1913. However, the Fed has

[10] The German Bundesbank was set up after the Second World War by the Allied Forces in Western Germany and was based on the American Federal Reserve System. It was given such vast degrees of independence due to its predecessor's (the Reichsbank) role of financing German war operations; this monetary financing unloaded a dangerous inflation potential after the war which was deemed to be tamable only by a strongly independent central bank. This level of autonomy was, however, an "absolute exception internationally" (Rürup 2020).

not always enjoyed its independence from politics: It was only after the *Treasury-Fed Accord* of 1951 – the foundation of the current Federal Reserve System – that the "liberation of [U.S.] monetary policy" was successfully implemented (Romeo 2020). The central bank has guarded this independence ever since – with the exception of its accession to pressure from president Nixon in the early 1970s: Nixon asked to maintain an easy monetary policy (Salama and Timiraos 2019), i.e. pushing interest rates low to boost the U.S. economy, which would then provide Nixon with higher approval ratings for his re-election. Ultimately, the Fed's giving way to short-term political aims led to the *Great Inflation* of the 1970s (see figure 2). Jeremy Siegel called this "the greatest failure of American macroeconomic policy in the postwar period" (Bryan 2013). Eventually, in order to get inflation under control, politicians "ceded power to the technocrats, [central bank economists], as the only way to stop themselves from printing money" (Baker 2019), i.e. the Federal Reserve re-gained (operational) independence. The success of that action can be observed in figure 2: Volcker, then-chairman of the Federal Reserve, managed to decrease inflation dramatically in the early 1980s through aggressive policy tightening; as a result, inflation would remain relatively stable within a corridor of two to six percent until the crisis of 2008 – this period is known as the *Great Moderation*.

U.S. Inflation (Annual CPI, in %)

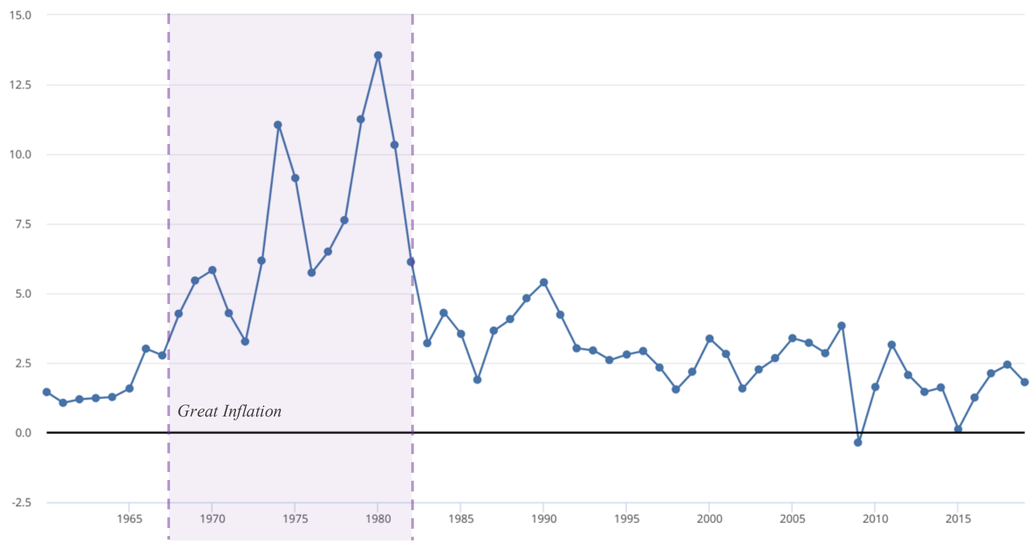


Figure 2: U.S. Inflation Rates 1960-2019 (Source: Federal Reserve Bank of St. Louis 2020)

Volcker's success was a very important signal to central banks around the world: Monetary policy itself, without any fiscal support, could permanently tame inflation without inflicting disastrous consequences to output or employment (Goodfriend 2007, 53).

This, effectively, vindicated Friedman's monetarist approach. Also, Bernanke argued that the improved monetary policies, introduced by Volcker and continued by Greenspan, have significantly contributed to the post-1984 decline in inflation and output volatility (Bernanke 2004). The establishment of a strictly rule-based approach[11] to setting policy rates (unlike in the 1970s) as well as a greater level of central bank autonomy laid the foundation for the improved efficiency of monetary policy. This is also supported by Johnson, who stated that since the 1980s a 'new consensus' emerged which stipulated that if the goal of price stability was pursued by independent and rule-guided central banks, economic stability would follow (J. Johnson 2016, 2). This 'new consensus' has been confirmed by the success of the *Great Moderation* and, thus, central bank independence has been heralded as one of the most effective policy decisions of the past four decades (Rogoff 2019b).

To summarize, while it seemed acceptable for politicians to "manipulate interest rates" in the 1970s (*The Economist* 2019), the 1990s and 2000s experienced the "priesthood of central banking" where politicians, in an "unusual act of self-abnegation", ceded powers to central bank economists to refrain themselves from fueling inflation (Baker 2019)[12]. The prolonged success of independent central banking was subject to the evolution of a 'new consensus' – also referred to as the *New Neoclassical Synthesis* – influenced by the monetarist school. Virtually all modern central banks until today have been set up to some degree based on this consensus. Price and economic stability up until 2007 catered for high levels of public trust and confidence in central banks and reinforced the success of autonomous central banking. Although the great financial crisis, the European debt crisis and the current Covid-19 pandemic would significantly change the public perception and

[11] A very prominent principle contributing to more rule-guided monetary policies is the so-called 'Taylor rule', which was developed by the eponymous economist John B. Taylor in the late 1970s. It established a relationship between the policy rate and the variables of real interest rate, real and target inflation rate and real and potential national output; thus, it was possible to derive interest rate policy recommendations from Taylor's equation. By the end of the 20th century it was shown that policy implementations during the *Great Moderation* were more congruent with the Taylor rule, while, in contrast, policies during the *Great Inflation* were less compliant with the Taylor principle (Koenig, Leeson, and Kahn 2012, ix).

[12] Some question whether the structural changes of the 1980s and 1990s actually produced completely independent central banks. Redwood, just as Malo de Molina, claims that there is no such thing as a fully independent central bank. His argument is based on the case that even the German Bundesbank yielded to pressure from the government to exchange East-German mark to West-German Deutschmark at a 1:1 ratio during German reunification, which was strictly against the central bank's own recommendation (Redwood 2019). Undoubtfully, while pressure from governments as well as country-specific traditions may impact a central bank's autonomy, the monetarist 'revolution' and 'new consensus' supported by the success of Volcker, Greenspan and the *Great Moderation* stimulated a wave of central bank liberations around the world in the late 20th century.

the prominence of central banks, their setup and justification remain based on the reforms of this ‘new consensus’.

Despite the monetary success of the *Great Moderation*, the ever-rising prominence of central banks since 2007/2008, persistently low inflation rates as well as central banks’ declining credibility may have strengthened and re-popularized political temptations of interfering in monetary policy. This is analyzed in more detail in chapters III. (‘The Current Climate’) and IV. (‘De-Jure’ Central Bank Independence).

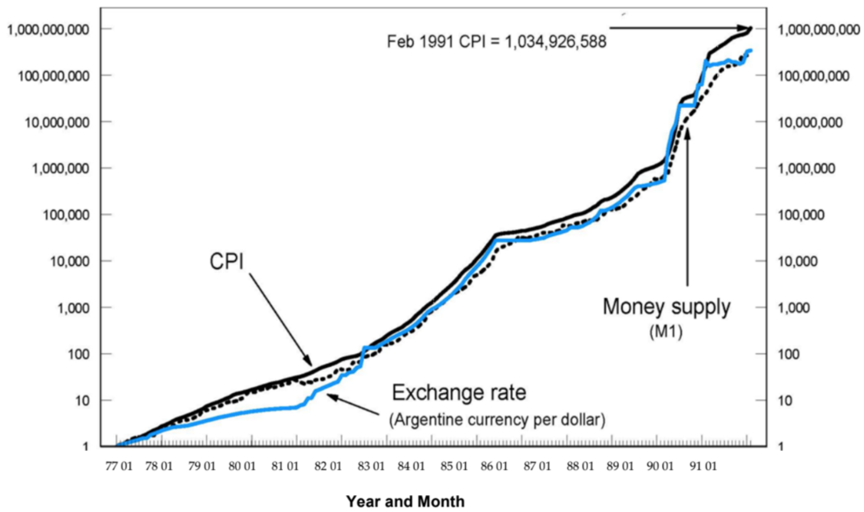
c. Examples of and Incentives for Political Interference in Monetary Policy

While central bank independence has been on the rise in scientific research and real-life implementation during the second half of the twentieth century, temptations for politicians and governments to interfere remained. Adding to Nixon's misstep of the 1970s, this section briefly outlines three other cases of political intervention gone wrong: Argentina between 1970 and 1990, Mexico during the 1970s and 80s and the UK in 1992. On top of the previously mentioned political appeals to intervene in monetary matters, this section provides two additional incentives for interferences: the democratic deficit of central banks and seemingly idle currency reserves.

Argentina, Mexico and the UK

In Argentina, the government devalued the Argentinian peso and increased money supply during the 1970s as a way to manage its rising fiscal deficit. Their subsequent inability to keep inflation in check led to political unrests and eventually to a military coup in 1976 (Alvarez and Zeldes 2011, 3). The government's failure to convince investors that its measures would stabilize inflation and exchange rates resulted in decades of prolonged inflation and currency devaluations (see figure 3). Evidentially, the government's constant interference in monetary policy translated to its loss of credibility and signaling power, which made it impossible for investors to form reliable future expectations. This, in turn, led to massive outflows of capital paralleled by a loss in productivity and a sustained

Price Level, Money Supply, and Exchange Rate in Argentina



Source: Instituto Nacional de Estadísticas y Censos (INDEC), Central Bank of Argentina, IMF, and authors' calculations

Figure 3: Inflation, Peso Devaluation and Money Supply in Argentina, 1977-1992 (Source: Alvarez and Zeldes 2011)

devaluation of the peso. Until today, Argentina battles highly volatile inflation and deals with a weakened central bank system.

In Mexico, after years of stable inflation and real exchange rates, an over-expansionary monetary policy, which was meant to boost consumption and investment during the run-up to the 1976 election, subsequently fueled rampant inflation. This broke the formerly stable Mexican economy and led to various rounds of devaluations and skyrocketing inflation rates, especially during election years (Dornbusch et al. 1995, 230 ff). Here, the political incentive of interference has been similar to Nixon's in the early 1970s: exploiting monetary mechanisms for public and economic euphoria before national elections.

In Britain, the pound (GBP) joined the European Exchange Rate Mechanism (ERM) in 1990 hoping to profit from the Bundesbank's sterling reputation for being relentless in their fight against inflation (Johnson and Collignon 1994, 231). For political and prestigious reasons – the Conservatives wanted to demonstrate strength to the public – the government decided to peg the pound to the Deutsche Mark at an ambitiously high rate, or more specifically, at £1 to DM 2.95 with a 6% floating corridor. As time would prove, this peg was at an unsustainably high rate which effectively overvalued the pound (Sloman 2019, 695). Rising Bundesbank interest rates, a measure to combat inflation in the aftermath of Germany's reunification, stood in contrast to Britain's economic struggles and high unemployment rates. However, due to the peg, the Bank of England had lost its monetary independence (i.e. its interest rate setting autonomy) and had to comply with the high rates of the German central bank. Thus, speculations about a pound devaluation grew louder and in 1992 speculative attacks on the GBP depleted the BoE's foreign currency reserves necessary to maintain the peg[13]. Ultimately, the pound had to drop out of the ERM and devalued immediately bringing about a budget loss of several billion pounds. As argued by Bonefeld and Burnham, the decision to join the ERM was, at least partially, politically motivated such that the government could reject liability for the consequences of austerity during the prevailing economic downturn; for the British executive, their entry into the ERM mechanism was regarded as "an 'automatic pilot' freeing the […] government from political responsibility for economic adjustment" (Bonefeld and Burnham 1996, 6). Political motivations for both, joining the ERM in the first place as well as overvaluing the

[13] Speculators, most famously Georg Soros, shorted billions of pounds until the Bank of England's foreign currency reserves were depleted in their efforts to create artificial demand for the pound. Consequentially, the bank lost its means to defend the currency as it had no more 'ammunition' to counter the downward pressure on the GBP.

pound eventually led to market uncertainty and speculation, which ultimately drained the BoE's foreign currency reserves and amplified the UK's economic troubles.

Two Additional Incentives for Political Interference

Albeit the risks of politically abusing monetary policy have become apparent in these examples, Thatcher's discomfort over ceding power to a non-elected institution remains a valid argument until today. Jürgen Hirsch, an economist at a regional Bundesbank branch, argued that the Bundesbank has been a quasi 'state within a state', strictly following the dogmatic mandate of price stability without any consideration for recessions, increasing government deficits or rising unemployment rates (Hirsch 2018, 28). The immense power of central banks is also emphasized by a Goldman Sachs study: According to their data, the Federal Reserve, the ECB and the Bank of Japan combined set monetary policy for 80% of the world's industrialized economic activity. They claim that "rarely, if ever, can so much power have been wielded by such a small number of institutions sitting outside the direct democratic process" (Werner 2015, 232). Considering this alongside Hirsch's assessment and the ongoing expansion of central bank responsibilities around the world (see chapter III.), the question whether democratic legitimacy has been disregarded needs to be raised. Paul Tucker, former Bank of England deputy governor, adds that a form of "schizophrenia" persists among the political and economic community: While the community unanimously supports the BoE's independence and its added mandate of banking supervision, it is the same community which is uneasy about the concentration of powers within the central bank (Tucker 2018b, ix). Josephine Witt, a young activist, struck the same nerve when she interrupted a 2015 ECB press conference, tossed confetti at Draghi and called the central bank a democratically "illegitimate institution" which rules in "autocratic hegemony" over a muted public. Witt further criticized that holding press conferences was not enough to account for democracy legitimacy (Witt 2015). The balancing act between central banking powers and democratic accountability lies at the heart of a long-running discussion over central banks' public legitimacy. Undoubtfully, ensuring democratic responsibility in the wake of ever-rising central bank responsibilities forms one of the strongest justifications for politicians to exert more control over monetary institutions.

While Nixon and the other examples provided evidence for political interference on grounds of reputational or electoral reasons, the utilization of foreign currency reserves[14] may form another temptation especially during economic turmoil. It may seem appealing for policymakers to (temporarily) misdirect vast amounts of accumulated foreign currency reserves to fill fiscal budget deficits – especially when the division of responsibilities between the government and the central bank are often blurry when it comes to reserve management. For central banks, however, currency reserves form an integral monetary insurance and serve as a policy space to react to large exchange rate volatilities to secure financial and price stability[15] (Schanz 2019a, 2): Currency reserves are often referred to as a central bank's 'ammunition' or 'war chest'. Intuitively, an independent central bank will experience no temptations to misallocate its reserves as public deficits and fiscal policies are out of the bank's scope. Contrarily, with political influence, abusing forex reserves for fiscal gains is a much easier step – particularly when accumulated reserves reach staggering levels. To emphasize the dimension of this issue, the Chinese central bank's forex reserves surpassed US$ 3 trillion in 2019 (*South China Morning Post* 2019), which exceeds the UK's entire 2018 nominal GDP (World Bank 2020a). Such enormous reserve accumulations may lead to absurd incentives in the private and public sector as agents take advantage of the increased safety feeling: large reserve cushions not only impact monetary stability, but also have spill-over effects on the entire economy and even public policy making. Once governments start depending on forex reserves, losses from reserve management could undermine central banks' autonomy (Arslan and Cantú 2019, 11). For example, the Swiss government relies on central bank dividends, which are generated from reserve management, to finance its federal states' budgets. When dividends fell short of expectations, political and public pressure on the central bank would increase enormously. Astonishingly, the reserve portfolio is even part of the government's balance sheet in multiple countries (e.g. in the US, UK, Japan), while in other countries central banks transfer their (reserve portfolio) profits to the government entirely (e.g. in Brazil) (Schanz 2019b, 51).

[14] Foreign currency reserves are central bank (cash) assets held in reserve currencies. As a central bank manages the domestic currency's exchange rate – usually trying to prevent stark fluctuations – it artificially increases demand for or supply of the currency. These operations lead to the accumulation (increasing supply of domestic currency) or to the depletion (increasing demand for domestic currency) of forex reserves.
[15] The utilization of forex reserves also depends on a country's exchange rate regime. In contrast to a pegged regime where a central bank actively manages the exchange rate, a central bank cannot use its reserves to manipulate the exchange rate when it pursues a free-floating currency regime.

Thus, forex reserves, their investment and the utilization of their returns give rise to a political incentive to influence central banks for purely financial reasons. Exactly this conflict of interest led to clashes between political executives and central bank governors in Argentina and India (see chapter III.).

III. The Current Climate: 'De-Facto' Central Banking Today

Chapter II has demonstrated the emergence of monetary policy independence and how it has become such a widely accepted approach around the world. Furthermore, it exemplified a multitude of reasons for which politicians are tempted to interfere in central banking and how that interference has backfired in several cases.

This chapter looks beyond the *Great Moderation's* 'heyday' of central banks. It briefly exposes some major shifts in monetary policy making after the great financial crisis (part *a.*) and subsequently analyzes the *de facto* state of monetary independence of the past five years in several high-profile cases (part *b.*).

It becomes apparent in part *a.* that the changed economic environment, including the vast expansion of central banks' toolkits and the consequential trespassing into fiscal realms, may incentivize politicians to increase their say in monetary matters. Furthermore, section *b.* reveals that several high-profile cases provide proof that political interference in central banking has reached unsettling levels of popularity. Hence, it is shown that especially following the financial crisis, there has been a reversal in both the monetarist approach and the political refrainment from interference: fiscal stabilization policies have experienced a comeback and central banks have seen their independence threatened in many cases.

a. Major Policy Developments Since 2008

During the past decade, the global political and public discourse on central banking has changed dramatically. The failure of monetarists to anticipate and moderate the great financial crisis as well as the European debt crisis has curtailed the confidence and trust central banks gained during the *Great Moderation*; the understanding that economic volatility was under control proved to have been an illusion. Just as Volcker seemingly invigorated the monetarist approach, the great financial crisis and its aftermath undermined the very same.

The 2008 financial crisis and a changed economic environment has led to a new reality for central banks. Not only did central banks expand their toolkits, but they also stood in for governments which did not act decisively or promptly enough; both actions ended up endowing central banks with new responsibilities and, most notably, blurred the division of fiscal and monetary policy. In the following, the most prominent policy developments of the past decade are outlined and their influence on central banks is illustrated.

i. Fiscal and Monetary Policy

The disenchantment with monetary policy in the aftermath of the 2008 crisis was paralleled with the necessity of large-scale fiscal programs around the world: for example, the Obama administration's Recovery Act, the EU's recovery programs, large-scale infrastructure stimuli in China or multi-billion yen stimulus packages in Japan pumped unprecedented amounts of public spending into domestic economies. Since, not only have fiscal programs started to accompany monetary stimuli, but also prominent central bankers have begun to ask for more support from fiscal authorities (Skidelsky 2020); at his confirmation hearing in March 2020, BoE governor Bailey stated that if his central bank had to act alone, without the support of fiscal authorities, "it would strain the bounds" of monetary policy. Adding to that, Blanchard, former IMF chief economist, argued that during the Covid-19 induced recession policy making would be "all about fiscal policy" (Harding, Greeley, and Arnold 2020); it was generally acknowledged that today's central banking environment in the developed world would struggle to manage the next crisis on its own due to liquidity trap[16]

[16] A 'liquidity trap' situation emerges when interest rates fall to such low rates that a monetary stimulus through cutting rates has become impossible; then, "almost everyone prefers cash to holding a debt" which bears virtually no interests (Keynes 1936, 208).

situations (Bartsch et al. 2019, 4) – the developments of the Covid-19 crisis would underline this statement retrospectively. Hence, the formerly predominant conviction that monetary policy has enough 'firepower' to singlehandedly cater for economic stability has been severely weakened. Rather, the past decade has experienced a lockstep of monetary and fiscal policy culminating in record-breaking recovery programs initiated by both authorities during the Covid-19 crisis. This trend has elevated the importance of fiscal policy and, effectively, equipped political authorities with more prominence and significance.

While fiscal policy has reached such levels of prominence, the immediate reaction to the great financial crisis or the Corona recession was almost exclusively left to central banks. Although independent central banks, by definition, are insulated from day-to-day politics, they had to stand in for political administrations that cannot or did not act decisively or quickly enough. This is underlined by Tucker, who points out that the crisis managers of the great financial crisis were called Bernanke, Trichet, Draghi and Geithner – all of them central bankers (at the time), none of them elected officials; this development risks pushing central banks into "de facto fiscal authorit[ies]" (Tucker 2020) – and any fiscal authority, even if it is a *de facto* one, demands political control and scrutiny. The strong involvement of central banks as crisis managers is symbolized by one of the Bank of England's Coronavirus responses: The Bank joined forces with the British Treasury in the operation of the *Covid 19 Corporate Financing Facility (CCFF)* – a credit facility which provides liquidity for corporate firms through the purchase of short-term commercial debt – where the Bank serves as "HM Treasury's agent" (Bank of England 2020a). This pushes the Bank further into fiscal territories and effectively blurs the division of monetary and fiscal policy.

ii. Negative Interest Rates

While negative nominal interest rates have a long academic history, it was only after the financial crisis of 2008 that central banks implemented them on a larger scale. This represented a novelty for the monetary community – many even believed that interest rates could not effectively drop below the zero lower bound (Haksar and Kopp 2020, 51). Among the central banks with sub-zero policy rates were those of Switzerland, Denmark, Sweden and Japan[17] (BIS 2020). While it did not lower its policy rate below zero, the ECB introduced negative interest rates on central bank deposits in 2014 while lowering its policy rate to 0%.

Experimenting with negative policy rates has become a necessary tool for some central banks in response to an economic environment where real interest rates and bond yields have also dropped below the zero lower bound (see figure 4[18]): As seen below, a trend of steadily declining real yields on short-term government bonds eventually drops into negative terrain in late 2009; i.e. inflation exceeded the return on these bonds. Government bond yields are a strong indicator for market sentiment and the prevailing market interest rates; in this case, they reflect the unprecedented low level of interest rates. This development poses extensive risks for central banks as their primary policy tool – manipulating the policy rate – has barely any margin of adjustment. This policy inflexibility has pushed central banks to pursue new policies, e.g. quantitative easing or negative policy rates, to safeguard the firepower of monetary signals.

Real Short-Term Yields, in % (Developed Countries)

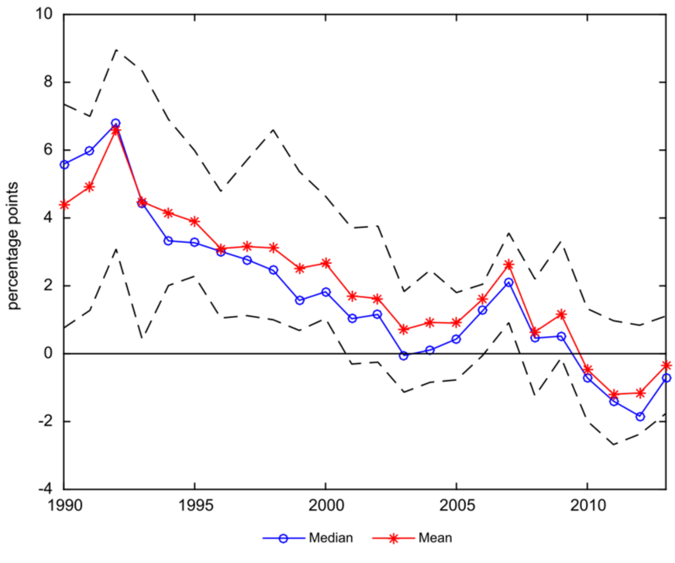


Figure 4: Real Short-Term Yields (Source: Carvalho, Ferrero and Nechio 2016)

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[17] Japan has struggled with persistently low inflation rates and slow GDP growth since the 1990s; the country is stuck in the 'liquidity trap' and has become the prime example of studying its implications (see Krugman 1998). To emerge from the trap, Japan has, among others, implemented policy rates of 0% already in 1999 which then dropped below zero in 2016.

[18] Short-term yields are defined as yields on government bonds with a maturity of less than one year; the real yields are defined as the bond yields minus realized CPI levels; the selected sample encompasses Belgium, Germany, Denmark, Finland, France, Greece, Iceland, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom and the United States, whereas the dashed lines reflect the 90–10 interval across countries (Carvalho, Ferrero, and Nechio 2016, 209).

However, cutting the nominal interest rate below zero is not only targeted at providing cheap credit to stimulate lending, but it also aims at pushing down exchange rates to spur exports. The latter rationale is especially relevant for Sweden, Denmark and Switzerland, all countries outside of the Euro-zone struggling with strong exchange rates.

Going hand in hand with extremely low interest rates is another distinct feature of the past decade: sustained inflation rates at very low levels. Some are even inclined to argue that, at least in the developed world, inflation poses no danger anymore to our economic stability. Indeed, evidence confirms that annual inflation in high income countries has been at 2.1% on average since 2000, and post-financial crises average annual inflation has only been at 1.6% (2010-2018)[19]. But, also globally, inflation has steadily come down from an average of 12.5% in 1981 to a world-inflation of just 2.4% in 2018[20]. Taking these numbers into consideration, it is not surprising that it has become popular to claim that low inflation rates are a hard-wired feature of the past two decades (Rogoff 2019b). Rogoff further fears that by having successfully tamed inflation, central banks have become "victims of their own success", which may open them up to more political interference.

iii. Quantitative Easing

A distinct feature of the post-financial crisis era is the vast expansion of central bank toolkits[21], which is most prominently represented by the initiation of quantitative easing (QE)[22] policies. Although BoE's Bailey warned against straining monetary bounds, the past recessions have already pushed central banks beyond previously prevailing monetary policy limits – formerly inconceivable measures were executed to ensure financial liquidity in the markets. This includes for example the Federal Reserve buying corporate bonds, the ECB accepting junk bonds as collateral for loans or the Bank of Australia buying government bonds to stabilize interest rates on public debt (Smialek and Ewing 2020).

Especially large-scale quantitative easing programs have become primary monetary policy tools for many central banks: QE has grown to a frequently used policy space because it circumvents central banks' inability to stimulate the economy through policy

[19] Based on World Bank Data. CPI Index for high income countries, 2000-2018 (World Bank 2020c).
[20] Based on World Bank Data: World CPI Index (World Bank 2020c).
[21] In general, the 'standard central banking toolkit' has been comprised of setting the policy rate and reserve requirements as well as conducting open-market operations.
[22] Quantitative Easing encompasses a central bank's creation of digital money which is used to buy government or corporate bonds to stimulate the economy, i.e. it is a tool to directly inject liquidity into the economy.

rate cuts due to persistent near-zero interest rates. The consequence of QE, however, entails increasingly blurry lines between monetary and fiscal policy as QE buys longer-term assets and directly injects liquidity into the economy – usually a distinct feature of fiscal policy. Unlike standard monetary policy, which is directed at manipulating interest rates and money supply, QE is targeted at supplying the struggling economy with needed funds, which is then hoped to have trickle-down effects on borrowing rates and inflation. This unconventional approach makes QE widely discussed for its "quasi-fiscality" (Rogoff 2019b).

The development of QE in the Euro-zone is visualized in figure 5[23]: The launch of large-scale asset purchases was responsible for the expansion of central bank balance sheets such that, in the ECB's case, securities accounted for more than half of the bank's total assets in 2019; total assets more than quadrupled from pre-crisis levels (€1.2 trillion in 2006) to €4.7 trillion in 2019 and securities held may exceed €4 trillion by 2021.

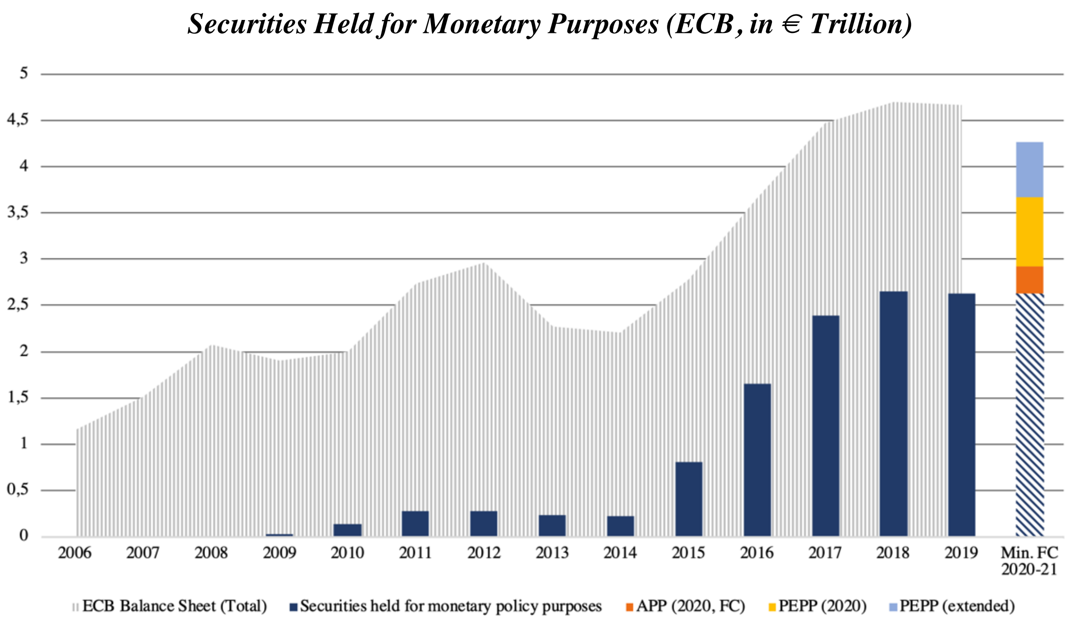

Figure 5: ECB Asset Purchases (Own depiction; based on ECB balance sheets, ECB website)

Key contributors to skyrocketing QE volumes are two programs. In 2014, the ECB launched the *Asset Purchasing Programme (APP)*[24], which, as of June 2020, accounts for

[23] *Min. FC* represents the minimum forecast of securities held by the ECB in 2020/2021 (Approach: holding 2019-levels constant and adding the purchasing volume of the two most significant programs, the APP and PEPP). Thereby, the minimum forecast reaches about €4.3 trillion.
[24] The APP encompasses the following components: the corporate sector purchase programme (CSPP), the public sector purchase programme (PSPP), the asset-backed securities purchase programme (ABSPP) and

the biggest chunk of the central bank's quantitative easing volume. And in 2020, the *Pandemic Emergency Purchase Programme (PEPP)* was initiated, which plans on buying assets worth €1.35 trillion as a reaction to the effects of the Corona pandemic. Not only the ECB's balance sheet expanded, but also the Fed's total assets climbed from $870 billion in July 2007 to more than $7.1 trillion in June 2020, whereas the response to Covid-19 itself accounted for a jump in central bank assets of roughly $3 trillion (Board of Governors of the Federal Reserve System 2020). Notably, also the Bank of England and the Bank of Japan engaged in large scale QE programs.

Undoubtfully, the volume of QE as well as the purchase of vast amounts of sovereign debt has significantly increased the responsibilities of central bankers. And yet, this rise in central bank powers has arguably also opened them up to more pressure and scrutiny from the political executive.

iv. Banking Supervision

After having realized that national financial regulation and supervision has failed to prevent the global financial crisis, many central banks have been endowed with additional supervisory powers (e.g. the ECB, BoJ or BoE) in the hope that their financial expertise improves regulatory effectiveness. Consequentially, this pushes central banks further towards political spheres.

Another potential issue with combining monetary and supervisory authorities is that the regulatory activity may have negative effects on the central bank's reputation. By definition, regulation and supervision are only effective if they induce institutions to act in a way they would not have without the regulation; thus, regulators are usually resented by the institutions they supervise (Goodhart and Schoenmaker 1993, 8). This resentment of the regulator can have spillover-effects on the monetary authority and, hence, may have negative implications for the central bank's reputation and credibility. Especially during recessions, market and public trust are key to an effective and crisis-resistant monetary policy.

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the third covered bond purchase programme (CBPP3). The PSPP is by far the largest contributor to the APP by volume.

These four key developments have shown foremost that central banks have become even more significant since the financial crisis, especially through QE and supervisory powers and secondly, that fiscal policy has experienced a resurrection, elevating the importance of politicians and governments; just as Skidelsky put it, “the pendulum has swung back” (Skidelsky 2020): Keynesian approaches have experienced a comeback while the ‘purely’ monetarist narrative has been rattled by the unanticipated economic turmoil of the financial crisis and its aftermath. Although Rogoff argues that fiscal policy is “far too politicized” to permanently replace independent monetary policy (Rogoff 2020), the rise in importance of fiscal stimuli and, thus, of finance ministries and political authorities cannot be denied. As a consequence, it must be argued that the increased responsibilities of central banks as well as the continuously blurry lines between fiscal and monetary policy may warrant more political intervention. By taking a look at prominent cases of the past years, the following section *b.* analyzes whether central banks currently have actually experienced more political interference.

b. De-Facto Case Analyses of Increasing Political Interference

This section highlights some recent and prominent examples in which monetary independence has been directly jeopardized by political actors or where interference in central bank policies has been publicly suggested.

i. High-Profile Cases of Political Interference in Monetary Policy

The United States

One high-profile-example is U.S. President Donald Trump's prolonged, aggressive stance against the Federal Reserve and its chairman, Jerome Powell. The Fed has rarely, if ever, experienced a backlash of this magnitude and of such persistence from a U.S. president in its recent history. Trump's behavior is described by Rogoff as "routinely bash[ing]" the Federal Reserve (Rogoff 2019b) while Trump's conduct is depicted by Baker as "rail[ing]" against Powell in "frequent tweeted tirades" (Baker 2019). This can be exemplified by the following excerpts from the president's Twitter communications: "The only problem our economy has is the Fed" (24 Dec. 2018); "Jay Powell and the Federal Reserve Fail Again. No 'guts,' no sense, no vision!" (18 Sept. 2019); "…the naïveté of Jay Powell and the Federal Reserve…A once in a lifetime opportunity that we are missing because of 'Boneheads'." (11. Sept. 2019); "My only question is, who is our bigger enemy, Jay Powell or Chairman Xi?" (23 Aug. 2019) or "we have a Fed problem. They don't have a clue!" (30 Aug. 2019) (Trump 2020). Not only is his choice of vocabulary and rhetoric telling, but also the frequency of these tweets: As of 24 January 2020, Trump has tweeted 100 times about the Fed and their policies since Powell's appointment in 2018 (Cheung 2020). Strikingly, a recent NBER paper using high-frequency identification[25] found that Trump's tweets (and their volume) are perceived by the markets as severe threats to the central bank's autonomy; market participants regard this erosion as significant and persistent. Hence, there is market-based evidence which underlines Trump's degrading influence on monetary policy (Bianchi, Kind, and Kung 2019). This uncovers a horrendous new reality for the Federal Reserve.

[25] The authors took a timestamp whenever Trump tweeted critically about the Federal Reserve and analyzed the subsequent market reactions in regard to the expected federal funds rate. They studied a window of 10 minutes before and 20 minutes after the tweet was published. The authors found significant drops in the expected federal funds rate immediately after Trump's critical tweets.

Not only through tweeting, but also by breaking with general practice (Balls, Howat, and Stansbury 2018, 9) – Trump decided not to offer Janet Yellen a second term in 2018 – Trump has signaled that he plans on maintaining his upper hand over the bank. More than a year after Powell's appointment, Trump implied that Powell was indebted to him, as prior to his appointment as chairman, "nobody [had] ever heard of [Powell] before and now, I made him" (Salama and Timiraos 2019). This suggestive remark reveals Trump's lack of recognition of the Fed's (and its chairman's) operational independence. Trump's dissatisfaction with the Fed seemingly culminated when he looked into the possibility of removing Powell from office in 2019. According to the *Washington Post*, this represented an "almost unprecedented attack on America's central bank" (Long 2019a).

Further, the February 2020 Senate hearings of Judy Shelton gave public prominence to the Fed board nominee and showed – once again – Trump's eagerness to reshape the Federal Reserve to suit his own agenda. In the event Shelton gets confirmed, Trump will have appointed six out of the seven central bank board members. But, most notably, Shelton stands out as a publicly controversial figure[26], is considered to be a close ally to President Trump, especially regarding quickly cutting interest rates (Long 2019b), and has openly questioned the need for central bank independence altogether[27]. Rattner regards Shelton as an "unqualified ideologue" and assesses that her nomination represents Trump's ongoing ambition of politicizing the Federal Reserve (Rattner 2020). As it will become obvious in further examples of this chapter, appointing loyal individuals to important central bank positions has become a popular tactic among politicians. Clearly, this has drastic implications for the autonomy of the central bank, especially when board appointees doubt the need for monetary independence themselves.

In itself, Trump's initial nomination of Jerome Powell represents a novelty as for the first time in recent history, a lawyer and not a technocratic economist was appointed as chairman of the Federal Reserve system – for some, a hint towards a central bank which is less and less based on independent and rigorous economic principles.

[26] Among others, Shelton has suggested the return to the gold standard, she u-turned on her position on low interest rates, compared the Federal Reserve's operations to central planning or has doubted the validity of U.S. government statistics (Long 2020).
[27] Shelton argued that she does not "see any reference to independence in the legislation that has defined the role of the Federal Reserve" and that she was in favor of "a more coordinated relationship with both Congress and the President" (Davies 2020).

The Euro Area

In the aftermath of the European sovereign debt crisis, the ECB and especially Mario Draghi were faced with intense criticism from politicians, most notably from Germany. Wolfgang Schäuble, a conservative politician and then-German finance minister, once implied that the rise of the Euro-sceptic party AfD had been fueled by the ECB's easy monetary policy – a position he later retracted. Further, the ECB has been politically accused of expropriating people's savings (Jones 2016). Intense German criticism even led to Draghi feeling obliged to clarify that the ECB pursues "price stability for the whole of the eurozone, not only for Germany…We obey the law, not the politicians" (Draghi 2016). Similarly to Trump's tweets, heavy political criticism of the ECB poses the danger of market insecurity and of a potential loss of central bank credibility. If markets perceive that German political pressure truly impacted the ECB's decisions and prevented the ECB from using all instruments at its disposal, it would significantly undermine the central bank's autonomy altogether. Although Draghi strongly underlined the ECB's independence, he acknowledged that at any point where the ECB's credibility is questioned, monetary policies take longer to achieve their intended objectives (Draghi 2016).

The 2019 appointment of Christine Lagarde as ECB president seemed to be part of a larger political negotiation between France and Germany; President Macron apparently blindsided Chancellor Merkel in the negotiations (Marsh and Bartz 2020), and in turn, Germany ended up selecting the EU Commissioner, i.e. Ms. von der Leyen. Firstly, this symbolizes the increased political significance of the central bank, and secondly, highlights the influence of powerful national politicians on ECB staffing. In parallel with the nomination of Powell, Lagarde's selection was an unprecedented novelty for the ECB: Just like her American counterpart, Lagarde is the central bank's first president without a technocratic, economic background; instead, she is a trained lawyer who rose to prominence in various French political administrations. During her political career, she was French minister of commerce (2006-2007), of agriculture (2007) and of the economy, finance and industry (2007-2011) before being appointed as managing director of the IMF. Not being an academic economist and having been a career politician, some argue she lacks the required expertise for the job[28], that she will take a more political or Keynesian

[28] Jim Reid of Deutsche Bank argued that Lagarde carries a "credibility risk" due to her inexperience, and UBS's Häfele notified investors that Lagarde was the first ECB president without any monetary experience, which didn't make Europe a more "attractive place to invest" in (Reid 2019). Finkenzeller et al. argue that although Lagarde has undoubtfully accumulated economic knowhow during her career, she depends on the counselling of ECB experts during severe crises (Finkenzeller et al. 2019).

approach to monetary policy, or even that her background will lead to her favoring France and other southern European countries when it comes to crucial monetary decisions (Finkenzeller et al. 2019). Finkenzeller et al. gloomily expect that under Lagarde's reign, the "politicization of the Euro will accelerate" (2019). Further, Lagarde has announced that she will increase talk about the environment and gender equality (Balzli 2019), which is, per se, beyond the classical monetary mandate and will arguable push the ECB closer to political spheres.

Hungary

In Hungary, Victor Orbán appointed György Matolcsy as governor of the Hungarian central bank (MNB) in 2013. Matolcsy's predecessor, governor Andras Simor, did not yield to Orbán's wishes to flood the market with cheap credit, which made him unpopular among the political executive. In 2013, Hungary was Europe's most heavily indebted country and Orbán needed a boost for his reelection 2014. Since his first election in 2010, Orbán has systemically tried to fill public positions with loyal officials of his populist party, the Fidesz. Although he tried to curb the Hungarian central bank's independence, he failed to gain control over the monetary authority, partly due to pressure from the European Union and the ECB. The end of Simor's six-year tenure in 2013, however, made it possible for Orbán to (finally) exercise more control over the central bank. By nominating Matolcsy, a former minister in his administration, Orbán selected one of his "closest allies" (Than and Peto 2013). Before having been appointed, Matolcsy himself wrote that "the central bank's leadership will be the number one strategic partner of the government" (Than and Peto 2013). After Matolcsy took office, monetary policy in Hungary reached "unprecedented looseness" and the ECB publicly issued a warning that the central bank's independence was at risk (Feher 2014). In 2019, the ECB continues to monitor the MNB over doubts of its autonomy due to unconventional policies – e.g. buying a majority stake in the Budapest Stock Exchange or the launch of an artwork acquisition program – which may not comply with the central bank's mandate or are not compatible with monetary financing prohibitions (Koranyi and Szakacs 2019).

Japan

Analogue to developments in Hungary, Prime Minister Shinzo Abe used his power to appoint the governor of the Bank of Japan to install a loyal official, Haruhiko Kuroda, to pursue ultra-loose monetary policies; these policies represent an essential pillar of his so-called *Abenomics*[29] reforms, meant to fight Japan's sustained deflation of the 'lost decades' since the 1990s. Under Abe's new appointment, the BoJ has been accused of being "simply another arm" of Abe and his administration (Baker 2019). Kuroda was a proponent of further monetary easing policies; by suggesting to not only purchase government bonds but also to purchase corporate bonds and stocks (Sekiguchi 2013), he favors a stronger trespassing of the BoJ into the fiscal realm. To further advance his rigorous *Abenomics* reforms, which remain far from reaching the goals they were designed for, Abe has nominated another dovish economist to the board of the BoJ in early 2020 (Harding 2020). As Abe's party also controlled the Diet, Japan's bicameral legislature, Abe was more or less free to choose whomever he prefers to the board of governors. The Japanese Prime Minister was known for communicating with financial markets via his appointments of BoJ governors (*The Japan Times* 2020), thus, abusing the BoJ for political power plays.

India

In India, Raghuram Rajan has been praised as central bank chief for his stellar record of keeping inflation in check and improving India's economic stability. With Rajan spearheading the Reserve Bank of India (RBI), India managed to stand out among other emerging economies by signaling that it was a mature economy where monetary policy was rule-guided, based on expertise, and not politically motivated (Gopinath 2016). After disagreements with Modi and heavy criticism of the central bank leader in a Trumpian style (Kapur 2016), Rajan was not offered a second term in 2016, which was badly received by the markets and put the central bank's independence into question. These doubts were further enforced in 2018 by the resignation of Rajan's successor, Patel, and later by the departure of the deputy governor following clashes with the government over using central bank reserves to boost economic growth (Harper 2019). Over these clashes, Viral Acharya, the departed deputy governor, stressed that governments that disregard a central bank's independence "ignite economic fire and come to rue the day they undermined an important regulatory institution" (Nag and Sircar 2019). A new monetary committee put in place after Patel's departure then transferred around INR 1.7 trillion (US$ 24 billion) from its dividend income to the Indian government, strikingly underlying the doubts over the RBI's political

[29] Abenomics refers to a vast set of economic programs initiated by former Japanese Prime Minister Shinzo Abe. Generally, the set encompasses three broad pillars: easier monetary policy (through the central bank), fiscal stimuli (by the government) and structural reforms.

independence (Desai 2019). Patel's successor, Shaktikanta Das, is a retired former finance minister whose appointment details the Indian government refused to disclose (*The Economic Times* 2019), which is not helping the case of the RBI's waning independence. MIT's Nobel laureate Banerjee criticized Das' appointment as it raises doubts over the reserve bank's governance and its credibility (*The Financial Express* 2018).

Turkey

In mid-2019, Turkey was suffering from the weakness of its currency and high interest rates – back then at staggering 24%. High levels of (public) debt, massively conditioned by Erdogan's signature infrastructure projects and political uncertainty, led to investors pulling their money out of Turkey, which, in turn, caused the lira to plummet against the dollar and led to soaring prices in imported goods. In a move to curb the lira's further devaluation and to stabilize inflation, the Turkish central bank increased lending rates through a 'backdoor' operation: it suspended lending at its benchmark rate (the above-mentioned 24%) such that banks were forced to borrow at the higher overnight rate (25.5%). Some argue that this 'backdoor' approach was chosen so that the central bank does not have to publicly contradict President Erdogan, who is a notorious opponent of raising interest rates (Pitel 2019).

This situation climaxed in July 2019, when Erdogan fired the president of the central bank after the central bank's refusal to heed Erdogan's demand of a rate cut of 300 basis points (Coskun 2019). Consequentially, the *New York Times* titled that "Turkey's Leader Trades Credibility for Growth"; the central bank's and Turkey's international reputation was severely damaged for the sake of short-term economic growth (Goodman 2019).

The United Kingdom

The Bank of England's operational independence is, as described previously, a relatively modern development following the decision of a newly elected Labour government to grant its autonomy only in 1997. This young autonomy, however, has been undermined in recent years by political attempts to popularize a policy called *People's Quantitative Easing* (PQE), notably popularized by Jeremy Corbyn, then-leader of the Labour Party. In essence, Corbyn's idea encompasses the setup of a National Investment Bank (NIB), which funds its operations through issuing bonds; these bonds are then bought up by the central bank through the creation of new money. This bears, undoubtedly, two main risks: Firstly, it blurs the line between fiscal and monetary policy. Secondly, it removes the government from fiscal discipline; policymakers are tempted to finance ‘pet-projects’ without the need to borrow money (Yates 2015). Both risks are key reasons why central banks have been granted independence in the first place: to establish a clear distinction between monetary and fiscal responsibilities, to avoid conflicts of interest and to insulate politicians from the temptation of offsetting fiscal debt by monetary financing. As Wren-Lewis noted, Corbyn’s PQE is based on the principle of helicopter money, where it is within the power of the central bank to distribute money directly to the people (Wren-Lewis 2015). Although this would be circumvented by the establishment of the NIB, tying public investment this closely to the central bank increases the interdependence of fiscal and monetary institutions and, thus, endangers the central bank’s autonomy[30].

In 2016, in various well-known public appearances and numerous literary contributions, Adair Turner[31] fiercely supported the concept of helicopter money – not Corbyn’s approach, but the ‘original’. Turner argues that in technical terms, the effectiveness of helicopter money is “indisputable”; appropriate amounts of this monetary impulse will potentially provide a “useful stimulus” to either output or inflation (Turner 2016). The implication for central banks would arguably be of high significance: Rogoff predicts that the day any central bank starts intense helicopter money programs, “is the day it loses any semblance of independence” (Rogoff 2019a).

Furthermore, previous BoE governor, Mark Carney, has experienced heavy political backlash, especially from Brexiteers, after he publicly stated that Brexit would push Britain into recession. Based on the argument that this assessment was beyond Carney’s mandate, calls for his resignation grew louder (*BBC* 2016). However, not only Carney’s public Brexit statement aroused anger among conservatives, but also low policy rates and the central bank’s quantitative easing policies. Criticism reached such levels that the *Guardian* noted that criticizing the central bank governor “became the new Tory sport” – Mark Carney faced the most persistent pressure in the BoE’s recent history (Farrell 2016). This is underlined by Bernard Jenkin’s[32] statement (“I very much hope [Carney] will avoid doing anything which could suggest [Carney] or the Bank have disregarded parliament’s

[30] PQE is arguable a valid instrument for other perfectly legitimate reasons (not adding to national debt; moving from private speculative investments to more long-term sustainable investments; debt monetization is directly linked to sustainable investments; etc.). However, in the realm of monetary independence, PQE needs to be seen as a threat to central bank autonomy.

[31] Adair Turner is a member of the House of Lords and is the former chairman of the Financial Services Authority.

[32] Sir Bernard Jenkin is a British Conservative politician. He has been Member of Parliament since 1992.

wishes”), Nigel Lawson’s[33] accusation (“he’s behaved disgracefully…It is appalling and I think the sooner he stands down from the governorship, the better”) and David Davies’[34] tweet (“Theresa May has got every right to tell you how to do your job!”) (Farrell 2016). Disregarding the central bank’s independence and the failure of upholding its credibility lies at the heart of each of these statements.

ii. Findings

All these incidents described above occurred between 2013 and 2020, which underlines the topicality of political meddling in monetary policy. To emphasize the magnitude of these cases, the accumulated nominal GDP of these countries adds up to US$ 48.7 trillion (in current US$), which represents about 55% of 2019 world GDP (World Bank 2020b).

Although the Chinese central bank, the largest central bank by assets[35] (Yardeni 2020), enjoys a high degree of independence “by Chinese standards” (Chiu and Lewis 2006, 203), it is still under the leadership of the State Council and, thus, does not claim to be independent. This is why it is not being considered in detail by this paper. However, including China, all major economies are currently or have recently experienced a more or less severe political extortion of influence over monetary policy.

To a large extent it has been in the US, the UK and Europe – all highly developed economies with arguably the world’s most influential central banks – where political sentiment and rhetoric towards central banks and their leaders has reached new dimensions. Publicly discrediting monetary officials by calling them “boneheads”, describing their actions as “disgraceful” and “appalling” as well as using them as scapegoats for national policy shortcomings (Schäuble’s accusation) has utterly changed the public discourse on monetary institutions. However, not only are the choice of vocabulary and the public prominence striking, but also the multitude of direct clashes between monetary executives and political actors (India, Turkey, Hungary) is remarkable. Along with the seemingly new norm of staffing monetary boards with loyal officials (US, Hungary, India, Japan) and supporting policy innovations like PQE and helicopter money (England), central banking

[33] Nigel Lawson is a British Conservative politician and holds the title of Lord. He was a Member of Parliament until 1992 and served as Chancellor of the Exchequer and Financial Secretary to the Treasury, among others.
[34] David Davies is a British Conservative politician. He has served as Member of Parliament since 2005 and supported the pro-Brexit lobby group ‘Leave means Leave’.
[35] As of January 2020, the People’s Bank of China held total assets worth US$ 5.4 trillion (Yardeni 2020).

experiences a new reality of political interference (see table 1). Joachim Fels, managing director of PIMCO, concluded that "the heyday of central bank independence now lies behind us" (Davies 2020).

Country/ Region	***Central Bank***	***Type of Political Interference***
United States	Federal Reserve	▪ Aggressive political rhetoric ▪ Political power plays ▪ Staffing central bank board with loyal personnel ▪ (Non-economist as central bank chair)
European Union	ECB	▪ Aggressive political rhetoric ▪ Central bank as political scapegoat ▪ Non-monetary objectives (environment, gender equality) ▪ (Non-economist as central bank president)
Hungary	MNB	▪ Installing a close political ally as central bank governor ▪ Potential monetary financing
Japan	BoJ	▪ Installing a close political ally as central bank governor ▪ Central bank as key component of political recovery program ▪ Political power plays
India	RBI	▪ Aggressive political rhetoric ▪ Opaque selection of central bank governor ▪ Clashes over the utilization of central bank reserves
Turkey	TCMB	▪ Political dismissal of central bank president ▪ Central bank appears to operate according to political wishes
United Kingdom	BoE	▪ Aggressive political rhetoric ▪ Suggestions of monetary financing

Table 1: Findings – Political Interference in High-Profile Cases

The harsh political rhetoric coincides with globally low numbers of public trust in central banks. In a recent poll among twelve countries worldwide[36], the OMFIF[37] found that the

[36] These include Malaysia, India, Russia, South Africa, Brazil, Great Britain, France, Germany, Italy, Canada, the United States and Japan.
[37] The OMFIF (Official Monetary and Financial Institutions Forum) is a London-based independent think tank covering monetary and economic policy as well as public investment.

weighted average net trust[38] in central banks was just around 16%, while net trust in Japan, the U.S. and Germany plummeted below 10% (Patel and Ortlieb 2020, 7). Roth and Jonung found that distrusting the ECB was at a height in 2014 among Europeans (net distrust of ca. -20%), while trust and distrust cancelled out in 2019 – representing a current net trust of 0% (Roth and Jonung 2019).

These developments are worrisome, at least to many technocratic economists. As mentioned in the previous chapter, central bank credibility and reputation are key factors to successful monetary policy and, hence, a stable national economy. Regardless of national macroeconomic preferences (e.g. Monetarism vs. Keynesianism), the importance of a credible and functioning central bank is largely undisputed. This is additionally supported by a recent ECB working paper, which analyzed the sentiment towards central banks among a representative sample from the Netherlands. The authors found that stronger trust in a central bank significantly reduces inflation uncertainty and lowers inflation expectations (Christelis et al. 2020, 24).

Apart from the trend of political interference in monetary policy, a counter-moving tendency of increased trespassing of monetary institutions into fiscal policy also defines the current climate. This is what has been covered in section *a* of this chapter as well as in the Japan and United Kingdom cases: central banks have continuously engaged in quantitative easing (QE) policies or high-ranking officials have suggested unorthodox methods like helicopter money. The quasi-fiscality of recent central bank policies as well as the accumulation of additional supervisory powers (e.g. the ECB's SSM[39]) bear the danger of politicians' eagerness to participate more actively in central bank policy. Some central bankers feel uncomfortable with being burdened with this much responsibility; Goodhart even argues that with these new competencies, central bankers appear "both over-powerful and incompetent" and risk becoming scapegoats for governments' failures. Even more drastically, Goodhart believes that as soon as inflation reemerges, politicians will "almost certainly" stop central bankers from a rate increase (Marsh 2020).

[38] Net trust is defined as the delta between 'trustworthy' and 'untrustworthy' responses to the question 'Do you think [your central bank] is trustworthy or untrustworthy?'. Survey conducted by Ipsos MORI (Patel and Ortlieb 2020, 7).
[39] In 2014, the European Council adopted the Single Supervisory Mechanism (SSM) which equipped the ECB with the responsibility of supervising the European banking sector (the direct supervisor for the largest banks, indirect supervisor for smaller institutions).

In addition to the policy developments since 2008 – which do not contribute to strengthening the implicitness of central bank independence – the examples of direct political interference shown in this section define the recent shake-up of central banks' *de-facto* independence. Low levels of public trust harm the banks' credibility and overburdening responsibilities such as QE and financial supervision may serve as justifications for increased political interference. Hence, the 'current climate' of monetary autonomy represents a new reality where central banks see themselves confronted with heightened levels of political scrutiny and intervention.

Following this analysis, the succeeding chapter (IV) will focus on the institutional setup of central banks by examining whether the negative *de facto* trend is also observable in *de jure* central banking frameworks. Further, it is shown whether today's central bank independence is still relevant in terms of its economic performance.

IV. 'De-Jure' Central Bank Independence: Status Quo & Relevance

a. The De-Jure Status of Independence: Introducing the GMT Index

The previous chapter tried to capture the rather unquantifiable erosion of *de facto* central bank independence of the past years – the 'current climate'. The evidence of these multiple high-profile cases is unambiguous and clearly reveals a declining trend of political and public recognition of monetary autonomy in economically significant countries. Contrary to the previous chapter, this section attempts to find evidence if the *de facto* trend has also manifested into central bank legislations. Due to the public availability and tangibility of central bank acts, *de jure* independence has the benefit of being quantifiable and comparable to previously gathered historical scores of autonomy. However, it is important to note, as pointed out before, that *de facto* and *de jure* independence are not always congruent: While a decline in *de facto* independence may be a short-lived phenomenon which largely depends on individual actors, an erosion of legal independence is usually significantly more persistent. Hence, intuitively, a decline in *de jure* independence needs to be regarded as a much more severe invasion into a central bank's autonomy than changes in *de facto* values. Undeniably, however, *de facto* erosions may pave the way to more persistent changes in central bank legislations. Conclusively, it can be argued that legal independence forms a much more solid ground for analysis than *de facto* data for two main reasons: Firstly, it is much less volatile and secondly, it is much easier to objectively quantify.

The possible divergence of actual and legal central bank independence is illustrated by the case of Argentina. As will be seen later, the Argentinian central bank received a relatively high GMT score of 0.63 in this paper's update (which is significantly above average for the country sample considered), and even a 0.75 score in Arnone et al.'s analysis (2007, 45)[40]. However, plenty of economic turmoil and political interference into monetary policy have led to very unstable central bank governance structures (61 governors in the past 75 years) and a weak central bank credibility in the market. Furthermore, in 2010, a major controversy undermined the central bank's autonomy: After then-central bank governor Redrado refused to finance US$ 6.5 billion of government debt with central bank reserves, former president Christina Fernández de Kirchner dismissed Redrado by

[40] Normalized GMT scores range from 0 to 1. In Arnone et al.'s GMT index of 2003 the Argentinian central bank received 12 out of 16 points, which results in a normalized score of 0.75.

presidential decree. After Redrado questioned the legitimacy of the decree – Congress was legally obliged to approve any dismissal of that kind – the president ordered the police to stop Redrado from entering the central bank. Consequentially, investors began to joke that the central bank was effectively controlled by the Kirchners (Webber 2010). Despite this, market sentiment or unconventional presidential emergency decrees are not reflected within the GMT index or any other *de jure* analysis. Consequentially, above-average independence scores of 0.63 (2020) and 0.75 (2003) may seem misleading. Thus, whenever assessing GMT scores, one needs to be aware that the scores may not always encompass the full picture.

Although it is much easier to quantify than *de facto* independence, *de jure* scores are also, to a certain degree, liable to subjectivity: in some cases, the interpretation of legal paragraphs remains the responsibility of the individual reader. While this paper's GMT update is coherent in itself, its comparison to historical scores always underlies a certain degree of inconsistency due to authors' divergent subjective assessments.

Motivation to Update the GMT Index in 2020

Since the original conceptualization of the GMT index in 1991, Arnone et al. have completed an extensive update in 2007 (based on data from 2003). Surprisingly, as of the beginning of 2020, no ample update of the GMT index was available since Arnone et al.'s 2007 publication. Not only the vast temporal gap between this paper and Arnone's work, but also the substantial economic developments since the early 2000s motivate this paper to take a refreshed look at the GMT index today.

The underlying principle for the update is threefold: Firstly, the 2020 update shall serve as an analysis of the current state of central bank independence; secondly, it attempts to visualize trends and developments of monetary independence by comparing current scores to the pre-crisis values of 2003 and the original scores of 1991; and thirdly, it analyzes the current economic relevance of monetary autonomy by taking a look at its impact on inflation rates, inflation volatility and GDP per capita.

The GMT Methodology

To assess whether the past years' declining *de facto* trends have been accompanied by a depression of *de jure* independence, this paper updated the GMT index by collecting the current legal frameworks of 32 international central banks (see selection criteria in table 2).

Thus, the update includes all recent amendments of central bank legislations as, for example, the newly gained supervisory powers of the ECB and many other banks[41].

Alongside the GMT measure, the CWN index[42] is another commonly used indicator which covers similar monetary variables to measure central bank independence. However, Balls et al. found that the GMT index produced more reliable results in the 2000s as it depicted actual central bank independence more accurately than the CWN measure (Balls, Howat, and Stansbury 2018, 73). Further, the GMT index separates its scores into political and economic independence, which serves as a very convenient feature for further analyses of the data. For these two reasons, the following analysis is based on the GMT methodology.

As briefly mentioned in chapter II, the GMT index was established by Grilli, Masciandaro and Tabellini in 1991. In their seminal paper they examined how certain national institutions shape policy making and affect a country's debt and inflation levels. With their research they tried to understand and explain the extreme divergence of certain macroeconomic indicators within OECD economies. To assess the current state of central banking in each country, the authors developed an index to rank monetary institutions by their level of independence. By then regressing central bank independence scores against inflation rates, the authors found a significant negative correlation between the two indicators.

Their evaluation of central bank autonomy is based on two categories, political and economic independence, in which a central bank can score a maximum of 8 points each. Here, the political category should be understood as meaning administrative independence from the political authority; that is, how much interference the government is allowed in the 'politics' of the bank. This has to be clarified to avoid confusion regarding the idea of politicization of central banks, which can apply to both the economic and political category of the index, as will be further discussed in the results. The more points a central bank receives, the more autonomous it is; the maximal achievable score equals 16 points. See table 2 for the specific criteria as well as for the attribution of points. Dividing a central bank's nominal score by 16 yields the standardized GMT score which ranges from zero to one.

[41] Please see Appendix B and C for the detailed update of the GMT index.

[42] The index introduced by Cukierman, Webb and Neyapti in 1992 is based on sixteen criteria which are grouped into four categories: Chief executive officer (length of term, appointment, other positions), policy formulation (responsibility, rules, government involvement), central bank objectives (price stability) and lending to the government (terms, limit, interest rates) (Cukierman, Webb, and Neyapti 1992, 358-59).

	Criteria	Points if criterion is true
Political Independence	1. Governor not appointed by the government.	1
	2. Governor appointed for more than 5 years.	1
	3. All the board not appointed by government.	1
	4. Board appointed for more than 5 years.	1
	5. No mandatory participation of government representative in the board.	1
	6. No government approval of monetary policy formulation is required.	1
	7. Statutory requirements that central bank pursues monetary stability is among its goals.	1
	8. Legal provisions that strengthen the central bank's position in conflicts with the government are present.	1
Economic Independence	9. No automatic procedure for government to obtain direct credit from central bank.	1
	10. When available, credit extended to government at market interest rates.	1
	11. Credit extended is temporary	1
	12. Credit extended is for limited amount.	1
	13. Central bank does not participate in primary market for public debt.	1
	14. Central bank is responsible for setting the policy rate.	1
	15. Central bank has no responsibility to oversee banking sector (two points) or shares responsibility with other institutions (one point).	2 or 1
	Maximum points	**Σ 16**

Table 2: GMT Criteria (see Arnone et al. 2007)

The update of the index necessitates the analysis of the legal acts of all relevant central banks to evaluate which GMT criteria are satisfied by each bank. For this paper, specifically, it encompassed the analysis of 32 central bank legislations (see the selection criteria below).

Selected Sample for this Paper's GMT Update

The selected input for this paper's GMT update comprises central bank legislations from the most powerful economies of the world. The selection was based on nominal GDP (2018) in U.S. dollar and included countries from all World Bank regions, namely North America, Latin America, Europe, North Africa, Sub-Saharan Africa, the Middle East, East-

Asia & Pacific as well as South Asia. To reduce the sample to a manageable size, this paper picked the top five countries from larger geographical regions and the top three countries from smaller regions[43]. The Euro zone was added as an additional area. This approach yielded a sample size of 32 observations.

This selection was chosen based on three rationales: Firstly, it was important to include the world's most influential central banks to ensure that most major developments were covered. Secondly, by analyzing central banks of significant prominence, the availability of the necessary legal resources was guaranteed in most cases. And thirdly, it was intended to ensure a geographically balanced assessment of global central banking independence.

[43] The size (number of countries per region) of World Bank regions differs significantly; e.g., the Sub-Saharan region encompasses a total of 48 countries while the region South Asia only totals 8 countries.

b. Results of the 2020 GMT Update

The results of this paper's GMT update are displayed in table 3 below, where 'political' illustrates the *political independence* scores (GMT criteria 1-8), 'economic' the *economic independence* scores (GMT criteria 9-15) and 'total '20' the overall independence of each country's central bank in 2020. The last row (*AVG*) depicts the average independence scores per category. (The full analysis is attached in Appendix B-D).

Scores of the 2020 GMT Update

A-Z by country

Country	Political	Economic	Total '20
Algeria	1.00	0.50	**0.75**
Angola	0.38	0.38	**0.38**
Argentina	0.75	0.50	**0.63**
Australia	0.13	0.88	**0.50**
Bangladesh	0.00	0.38	**0.19**
Brazil	0.50	0.75	**0.63**
Canada	0.38	0.88	**0.63**
Chile	0.38	0.88	**0.63**
China	0.38	0.75	**0.56**
Colombia	0.13	0.88	**0.50**
Egypt	0.25	0.50	**0.38**
Ethiopia	0.38	0.25	**0.31**
Euro area	1.00	0.75	**0.88**
India	0.38	0.31	**0.34**
Indonesia	0.63	0.63	**0.63**
Israel	0.38	0.63	**0.50**
Japan	0.13	0.75	**0.44**
Kenya	0.13	0.75	**0.44**
Korea, Rep.	0.25	0.50	**0.38**
Mexico	0.63	0.75	**0.69**
Morocco	0.50	0.63	**0.56**
Nigeria	0.38	0.50	**0.44**
Pakistan	0.50	0.50	**0.50**
Poland	0.63	0.38	**0.50**
Russia	0.25	0.50	**0.38**
Saudi Arabia	0.25	0.75	**0.50**
South Africa	0.13	0.38	**0.25**
Switzerland	0.75	0.75	**0.75**
Turkey	0.38	0.88	**0.63**
UAE	0.38	0.50	**0.44**
UK	0.38	0.50	**0.44**
United States	0.63	0.88	**0.75**
AVG	*0.41*	*0.62*	*0.51*

Ascending by GMT score

Country	Political	Economic	Total '20
Bangladesh	0.00	0.38	**0.19**
South Africa	0.13	0.38	**0.25**
Ethiopia	0.38	0.25	**0.31**
India	0.38	0.31	**0.34**
Angola	0.38	0.38	**0.38**
Egypt	0.25	0.50	**0.38**
Korea, Rep.	0.25	0.50	**0.38**
Russia	0.25	0.50	**0.38**
Japan	0.13	0.75	**0.44**
Kenya	0.13	0.75	**0.44**
Nigeria	0.38	0.50	**0.44**
UAE	0.38	0.50	**0.44**
UK	0.38	0.50	**0.44**
Australia	0.13	0.88	**0.50**
Colombia	0.13	0.88	**0.50**
Israel	0.38	0.63	**0.50**
Pakistan	0.50	0.50	**0.50**
Poland	0.63	0.38	**0.50**
Saudi Arabia	0.25	0.75	**0.50**
China	0.38	0.75	**0.56**
Morocco	0.50	0.63	**0.56**
Argentina	0.75	0.50	**0.63**
Brazil	0.50	0.75	**0.63**
Canada	0.38	0.88	**0.63**
Chile	0.38	0.88	**0.63**
Indonesia	0.63	0.63	**0.63**
Turkey	0.38	0.88	**0.63**
Mexico	0.63	0.75	**0.69**
Algeria	1.00	0.50	**0.75**
Switzerland	0.75	0.75	**0.75**
United States	0.63	0.88	**0.75**
Euro area	1.00	0.75	**0.88**
AVG	*0.41*	*0.62*	*0.51*

Table 3: Results of the 2020 GMT Update

Unsurprisingly, the ECB, the Federal Reserve and the Swiss National Bank emerged among the most independent central banks of 2020, scoring 0.88 and 0.75 points respectively. The ECB stands out with a perfect political independence score, which is only else achieved by Algeria, and only lost points in the economic category due to its newly gained supervisory responsibilities (criterion 15). The Bangladesh Bank finishes last by only achieving an independence level of 0.19 points – its political independence is non-existent and economic autonomy values are significantly below average. As expected, a largely bell-shaped distribution prevails as only one central bank scores higher than 0.75 and, respectively, only one bank falls below the 0.25 threshold. 23 out of the 32 banks analyzed fall within the mid-ranged corridor of 0.38 to 0.63 – that is 72% of central banks (see figure 6).

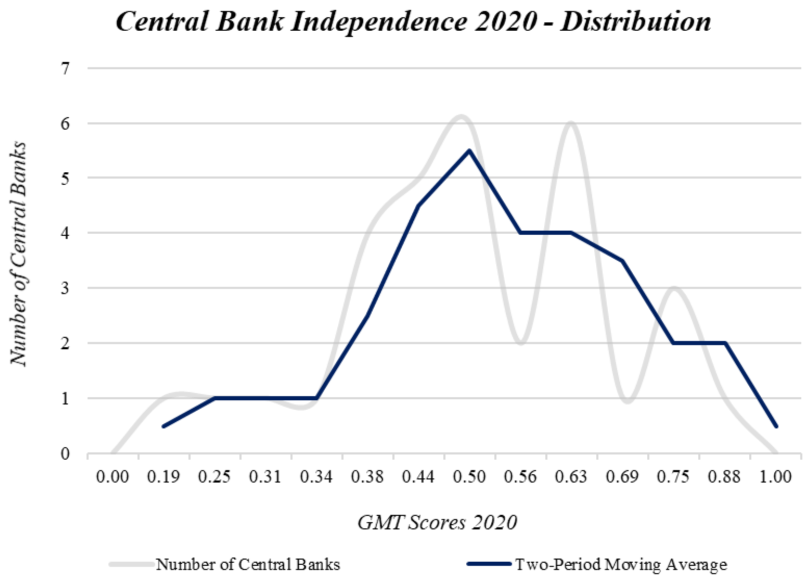

Figure 6: Distribution of 2020 GMT Scores

Strikingly, the Bank of England and the Bank of Japan, both institutions which have substantially shaped central banking during the past decades, fall below the average and only achieve scores of 0.44. While the BoJ falls short in the political category and exceeds in the economic sphere, the BoE undercuts average independence levels in both categories. Multiple factors contribute to the BoE's low scores: among others, the right of a government representative to attend and speak at any monetary committee meeting, the

Treasury's reserve powers[44], the bank's Ways and Means facility[45] as well as the bank's newly gained prudential supervision responsibilities[46]. The BoJ's poor political score is attributed to the government's strong involvement in appointing senior central bank officials, its participation in the policy board and its veto-right regarding monetary policy decisions.

With Mexico, Chile, Brazil and Argentina, Latin American central banks are well represented in the top half of the table, significantly exceeding the average independence score of 0.51. One intuitive explanation for this noticeable result might trace back to Latin America's strong historical background in neoliberal economics. Chile and Argentina[47] were especially involved in radical economic policy shifts towards free market economies, but also most other Latin American countries adopted, at least to some degree, the Washington Consensus[48] throughout the end of the 20th century.

Overall, the total average score of 0.51 suggests that as of 2020 the world's most influential central banks enjoy a moderate level of independence where, on average, the banks roughly satisfy half of the GMT criteria. Considering both academic economic literature's praise for central bank independence (e.g. it being a 'free lunch') as well as empirical proof of the late 20th century underlining its effectiveness, the actual implementation of central bank independence in 2020 remains rather underwhelming.

Strikingly, most central banks hold larger degrees of economic independence than political independence; only six banks, or 19% of the sample, achieve higher political than economic scores. This suggests that there is a stronger consensus among the sample economies towards economic independence compared to political independence.

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44 According to the Bank of England Act, the Treasury "may by order give the Bank directions with respect to monetary policy if they are satisfied that the directions are required in the public interest and by extreme economic circumstances" (Art. 19) (Bank of England 2019).

45 The Ways & Means facility (W&M) is a pre-existing overdraft account of the government at the central bank; i.e. the facility "enables sterling cash advances from the bank to the government" (Bank of England 2020b). Recently, the W&M has been expanded as a reaction to the Coronavirus pandemic and its economic implications.

46 As a result of the Financial Services Act of 2012 the BoE received additional prudential supervision powers. Effectively, the BoE became the UK's main financial regulator on the micro- and macro-level. The 2012 Act also established the independent 'Financial Conduct Authority' which works alongside the BoE.

47 Chile has been used as a "petri dish" by Milton Friedman and the so-called Chicago Boys to implement a wide range of neoliberal and monetarist policies in the 1970s and 80s (Giroux 2015, 449). Similar economic reforms were attempted during the Argentinian Junta.

48 The Washington Consensus emerged in the 1980s as a set of macroeconomic policy recommendation by Washington, D.C. based institutions, namely the IMF, the World Bank and the U.S. Treasury. These recommendations are largely considered neoliberal and were intended to provide a guideline for struggling economies, especially in Latin America. The implications of the Washington Consensus would become essential to the economic history of the global South (Hurt 2020).

The matrix below (figure 7) displays the results visually, where values located in the top-right quarter indicate high levels of political and economic independence and values located in the bottom-left corner depict low levels of monetary autonomy. It is clearly observable that while economic scores fall within a corridor of 0.25 to 0.88 points, the political scores occupy the entire spectrum from zero to one; the lower volatility of economic scores emphasizes the stronger consensus on economic independence throughout the sample. The low number of banks located entirely in the top right quarter (five banks or 16% of the sample) reinforces the moderate nature of global central bank independence. Further, the results seem to be slightly skewed towards the top left quarter, additionally underlining that economic independence is more prevalent than political independence. The dashed lines represent the average scores for political (0.41) and economic independence (0.62), which illustrate that the sample's representative central bank is located in top left rectangle.

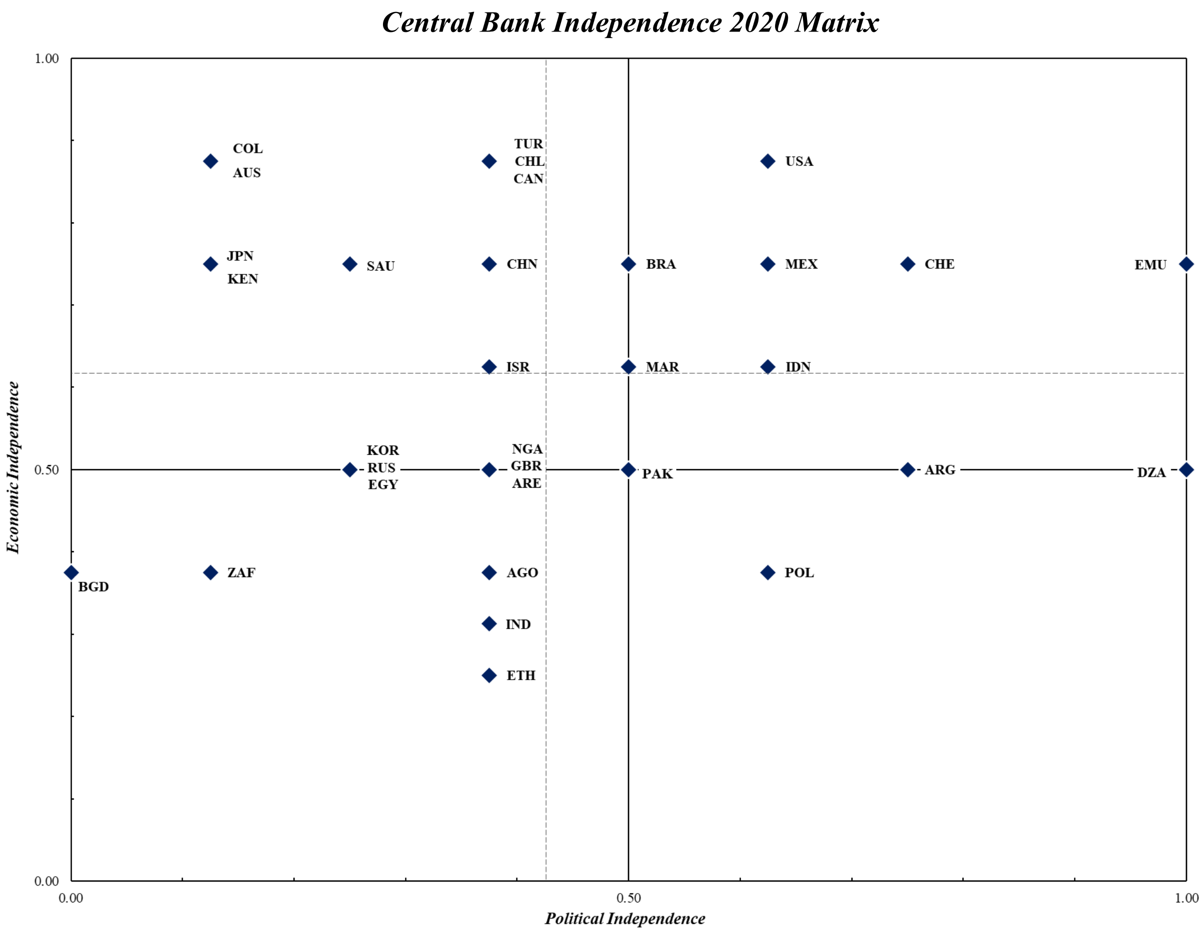


Figure 7: Results of the 2020 GMT Update

c. *Trends in Central Bank Independence*

By comparing the 2020 GMT results to the findings of Arnone et al.'s IMF working paper from 2007 (which used data from 2003), it is possible to visualize a trend in central bank autonomy: Any delta between this paper's update and Arnone et al.'s scores reveals a *de jure* increase or decrease of central bank independence[49]. The result of this comparison is displayed in figure 8 below. All observations below the identity line ($y = x$) represent a loss in independence (bottom right triangle), all scores above the line display a gain in autonomy in 2020.

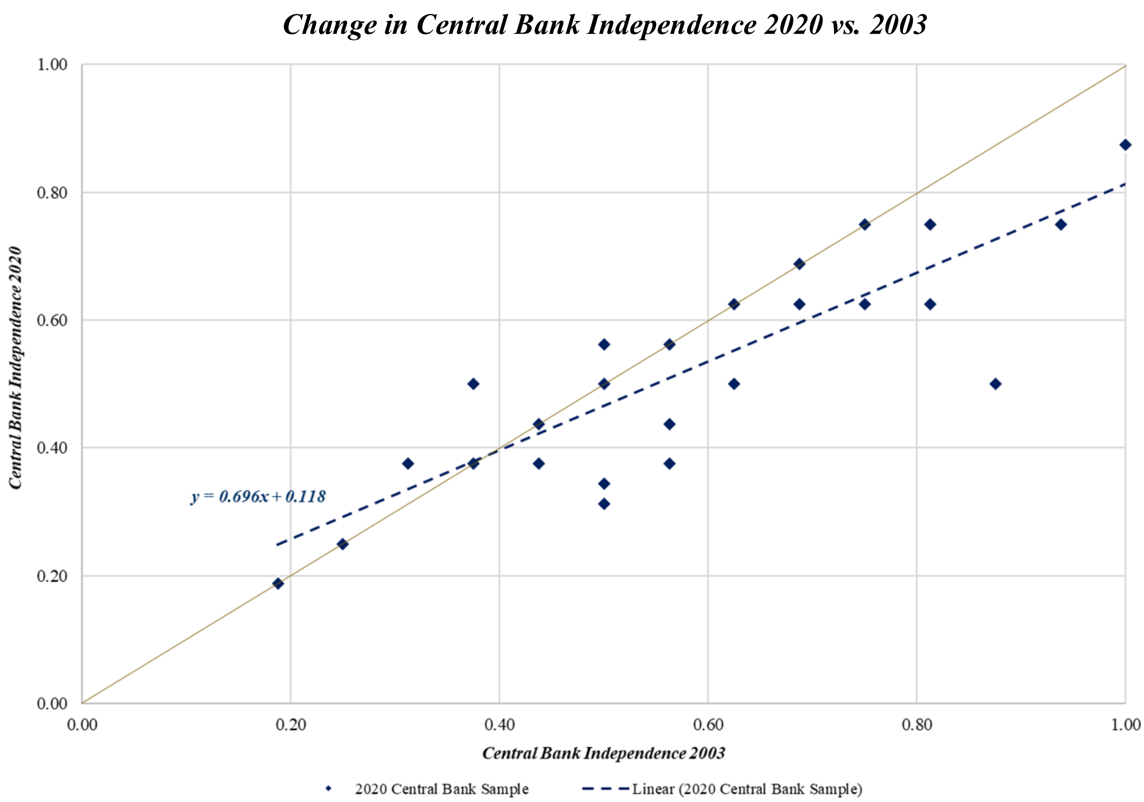


Figure 8: Change in Central Bank Independence (2020 vs. 2003)

Figure 8 clearly reveals that a decline in central bank independence with respect to the 2003 data has occurred. The slope of the fitted values line underlines this decline: the slope coefficient for constant independence values would be one, but the slope of this comparison

[49] Arnone et al.'s scores for the Bank of England have been adapted to ensure their comparability with this paper's update. Their economic independence score for the BoE yielded 8 points, i.e. full economic independence. However, the Ways & Means facility, which grants cash advances to the government, does not specify which interest rates apply or if there is a maximum threshold. This means, in the interpretation of this paper, that criteria 10 and 12 are not applicable to the BoE. As the Ways & Means facility already existed in 2003, consequentially, this paper adapted the 2003 economic independence scores of the BoE to 6 (i.e. a downgrade of two points).

yields a coefficient of only 0.7, implying a significant overall decline in central bank independence of the sample over the past 17 years.

By taking a closer look at the changes in political and economic independence it becomes clear that the overall decline in central bank autonomy is tied solely to negative developments in economic independence levels (figure 9): Positive and negative changes in the political category net out; negative deltas in the economic category clearly outweigh the single observation where economic independence strengthened over time. In both categories, however, the majority of central banks did not experience a change in independence at all.

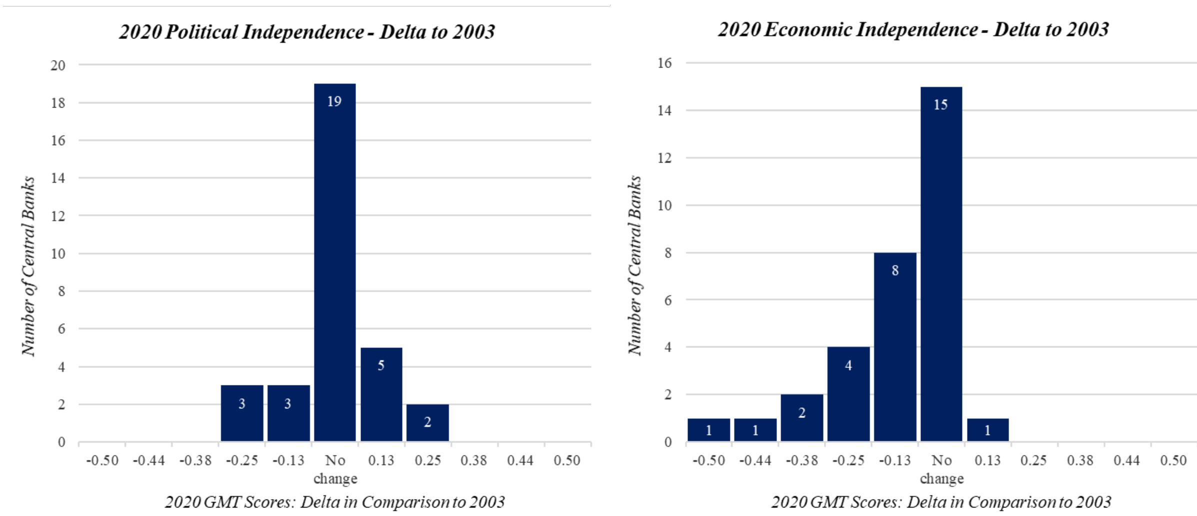


Figure 9: Change in Political and Economic Independence (2020 vs. 2003)

Figure 10 provides a more detailed view on trends in central bank independence as it depicts changes over time for each GMT criterion[50].

Unsurprisingly, the most dramatic decline in independence is noticeable in criterion 15 – the banking supervision principle: Many central banks gained (additional) supervisory powers after regulators' shortfall to anticipate and curb the 2008 financial crisis. Most notably, the ECB added the SSM to its competencies and the BoE gained supervisory responsibilities in 2013 by the establishment of the PRA[51]. These added non-monetary responsibilities are considered a loss of independence as they may open central banks to

[50] The 2003 values represent the work of Arnone et al. (2007) including the adaption for the BoE scores.
[51] The Prudential Regulation Authority (PRA) is a fully owned subsidiary of the Bank of England. It supervises banks, building societies, credit unions, insurers and major investment firms.

increasing political and fiscal intervention for two main reasons: Firstly, the bank could be perceived as an "overmighty citizen" (Tucker 2018b, ix) which – some may argue – would require a counterbalance by more political scrutiny. Secondly, any shortcomings in supervision by the central bank possibly requisite the necessity of fiscally funded bailouts; these potential ramifications also underline the strong imperative for the political and public spheres to secure a say in financial supervision. Hence, gaining supervisory powers has stained central banks' GMT scores on average.

A significant decline in central bank autonomy is further substantiated by banks' increased participation in primary markets for debt (criterion 13), fewer banks' credit provision to the government at market interest rates (criterion 10) and an increased participation of governments in the appointment of board members (criterion 3). Past economic crises have pushed central banks into a more active role by strongly participating in debt markets and by increasingly operating as lenders to governments; this could serve, intuitively, as an explanation of the declining scores of criteria 10 and 13.

Contrarily, the largest gain of independence is apparent when looking at criterion 6: In 2020, by law, fewer banks needed their government's approval for implementing monetary policy than in 2003. This jump in independence is followed by raised GMT scores of criterion 5 (no government participation in the monetary board). These two criteria are arguably among the most powerful singular benchmarks for central bank autonomy as they

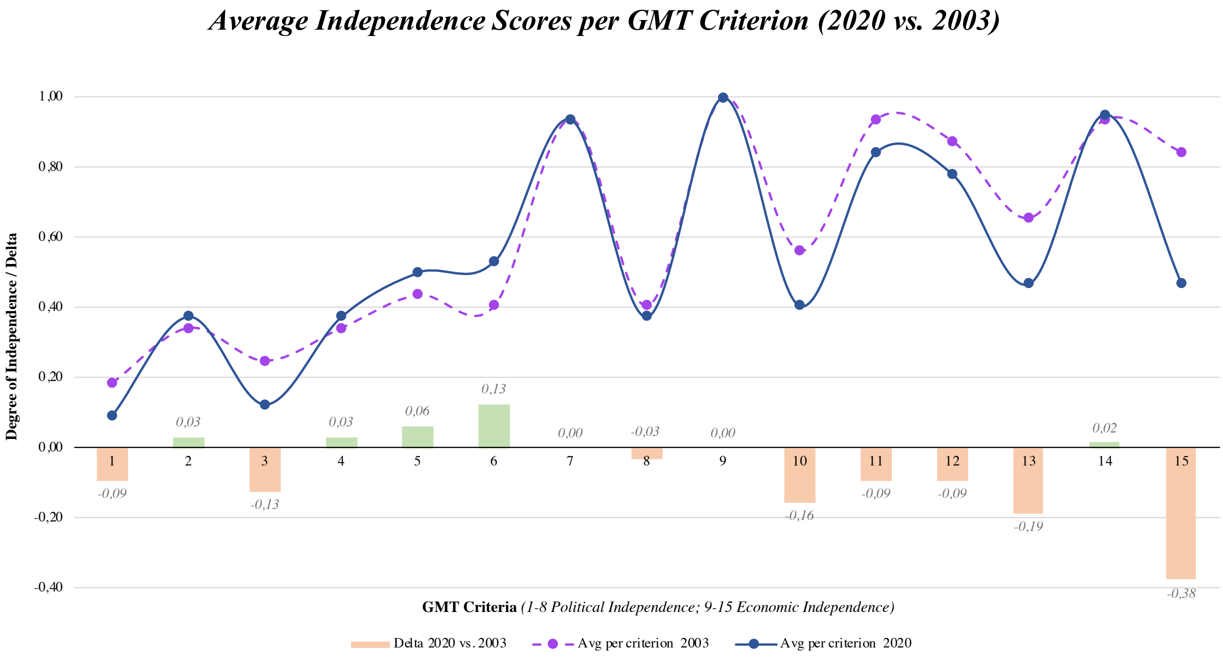
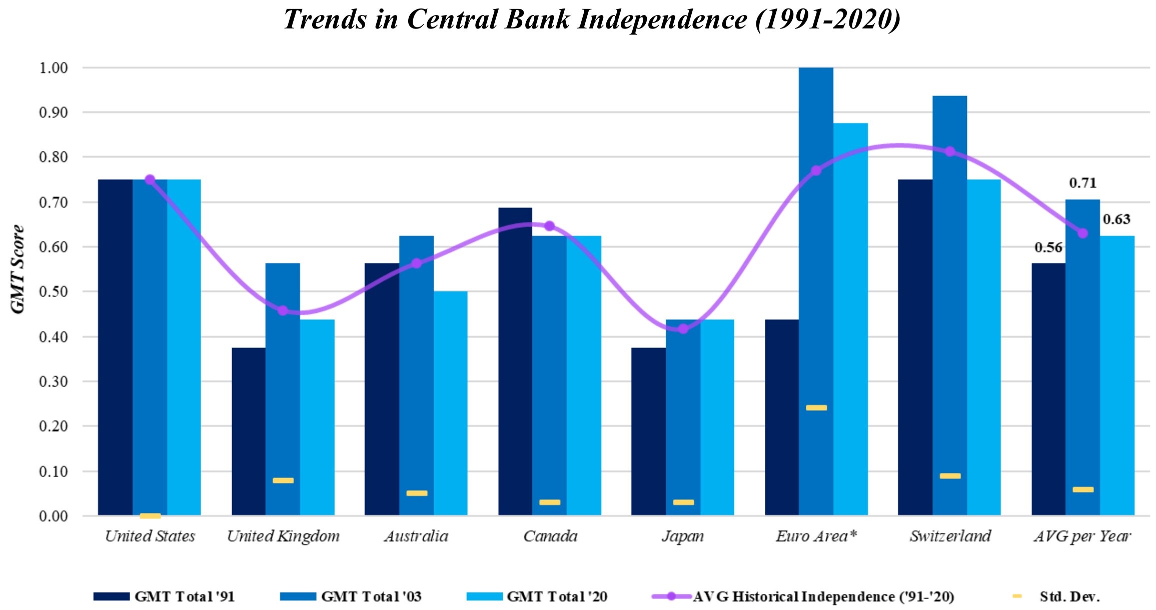


Figure 10: Change in Independence per GMT Criterion

describe governments' most direct opportunities of intervention. Hence, this positive trend lies at the heart of granting central banks more autonomy.

Figure 10, once again, underlines that the aggregate loss in independence is largely based on the negative developments in the economic autonomy category. While the decline in independence is a worrisome development – at least from an economic theory perspective – the GMT gains of criteria 5 and 6 are significant indicators that the overall development is not negative altogether.



*Euro Area: For 1991 the average GMT scores of Austria, Belgium, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain of Grilli et al.'s original research were considered.

Figure 11: Trends in Central Bank Independence, 1991-2020 (Sources: Own Research, Arnone et al. 2007, Grilli et al. 1991)

Figure 11 reveals how the current status of central bank independence, for a selective group of banks, compares not only to 2003, but also to 1991. Unfortunately, as the original research of Grilli et al. was mostly based on European and North American countries, this comparison could not be extended to the entire sample of this paper.

Most notably, the comparison shows that for these seven central banks, on average, the 2020 scores represent a drop in independence levels from 0.71 (2003) to 0.63 (2020). This decline, however, does not plummet below the 1991 scores, which stand at 0.56. Hence, today's monetary independence has weakened compared to 2003 but still remains well above the 1991 levels. Interestingly, none of the central banks considered in figure 11 managed to increase their independence in 2020 compared to 2003.

The standard deviation depicts the changes in independence over these three points in time. While the Federal Reserve has not recorded any change in independence levels over nearly three decades (std. dev. = 0), the Euro Area's central bank(s) have experienced the greatest volatility in monetary autonomy scores with a standard deviation of 0.24; this is especially conditioned by the setup of the ECB and the consequential jump of central bank independence to 1.00 at the turn of the century.

The average historical scores display that, among this sample, the Swiss central bank has been the most independent bank of the past three decades, while the Japanese central bank ranks as the least autonomous.

d. *Today's Economic Relevance of Central Bank Independence*

With the update of the GMT index and its juxtaposition to macroeconomic indicators, this section tries to analyze if central bank autonomy still matters in terms of its economic performance[52]. While chapter II. outlined the theoretical justifications for central bank independence and chapters III. and IV. revealed its erosion (*de facto* and *de jure*), this chapter attempts to delineate if monetary autonomy continues to be justifiable from an empirical perspective. This is done by regressing economic indicators such as inflation, inflation volatility and GDP per capita on the updated central bank independence scores of 2020.

In figure 12[53] (and table 4, resp.), average inflation rates of the past 10 years (2010-2019) are juxtaposed to the 2020 GMT scores. The graph reveals a strong inverse relationship between inflation rates (dependent variable) and central bank autonomy (independent variable). The regression is within the 95% confidence interval and yields a R^2 of 0.19. This significant, negative relationship empirically underlines that countries with

Central Bank Independence and Average Inflation (2010-2019)

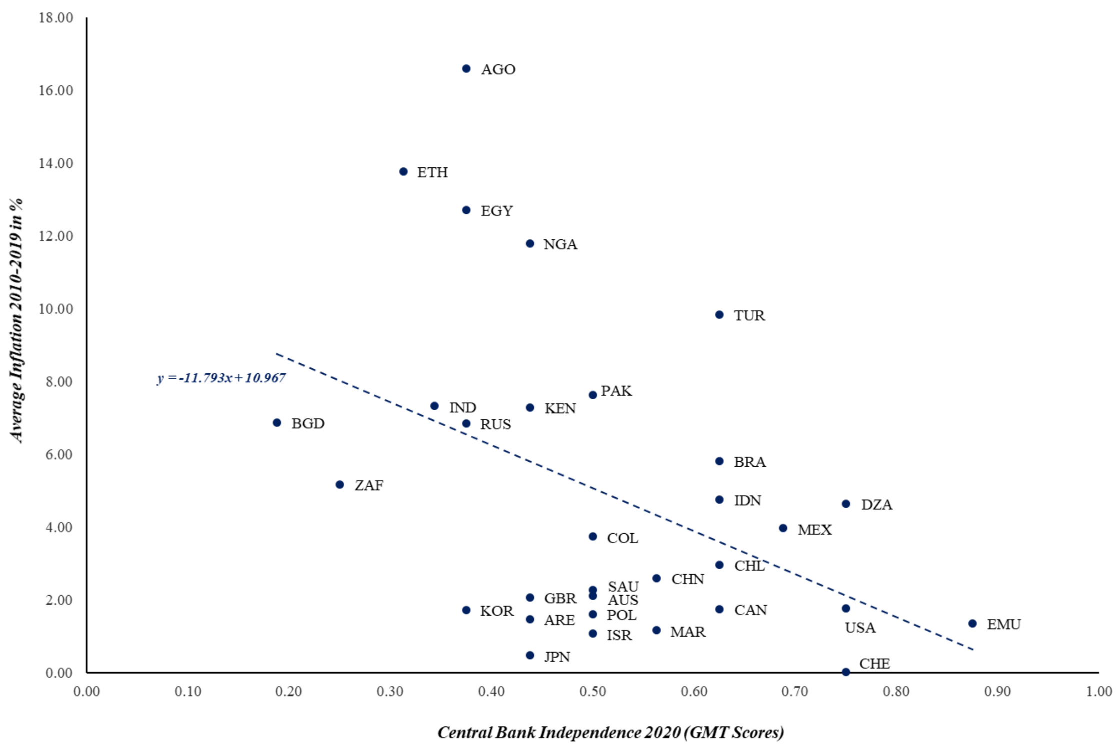


Figure 12: Central Bank Independence and Average Inflation (2010-2019)

[52] For all figures/regressions, the economic indicators are based on World Bank (World Bank 2020c).
[53] For figures 12 and 13 (tables 4 and 5, resp.), Argentina was excluded from the regressions as official inflation rates through World Bank/ IMF data were not available for the majority of years between 2010 and 2019.

a more independent central bank tend to experience lower inflation rates, even in today's era of ultra-low price growth. However, an r^2 of roughly 20% also indicates that monetary autonomy does not seem to be the major driving force accounting for the variance in inflation rates.

	Dependent Variable: **Average Inflation 2010-2019**
Central Bank Independence (GMT Scores)	-11.793** (4.526)
Constant	10.967*** (2.418)
R squared	0.19
Observations	31

*Note: *p<0.1; **p<0.05; ***p<0.01; standard error in parenthesis*

Table 4: Regression Output (Average Inflation 2010-2019)

Figure 13 (and table 5, resp.) additionally depicts that monetary independence not only correlates negatively with inflation rates, but also with their volatility. Theory and evidence (i.e. the *Great Moderation)* suggest that independent central banks cater for stronger macroeconomic stability. To test this hypothesis for the current data, inflation volatility, the dependent variable, is used as a proxy for macroeconomic resilience, while the GMT scores are again used as independent variable.

The results of the inflation volatility regression yield, again, a strong inverse relationship between the dependent and independent variable; the regression is within the 95% confidence interval with an r^2 of 0.17. This outcome represents an up-to-date confirmation that independent central banks effectively contribute to economic stability with respect to inflation volatility.

Both regressions underline that independent central banks continue to excel at their core competence – catering for stable and moderate inflation rates. Unsurprisingly, the coefficient of determination remains relatively low for both analyses as a multiplicity of variables impacts inflation. However, as only one predictor, i.e. monetary independence, is used here, the r^2 and statistical significance underline the respectable impact of autonomous central banking.

Central Bank Independence and Inflation Volatility (2010-2019)

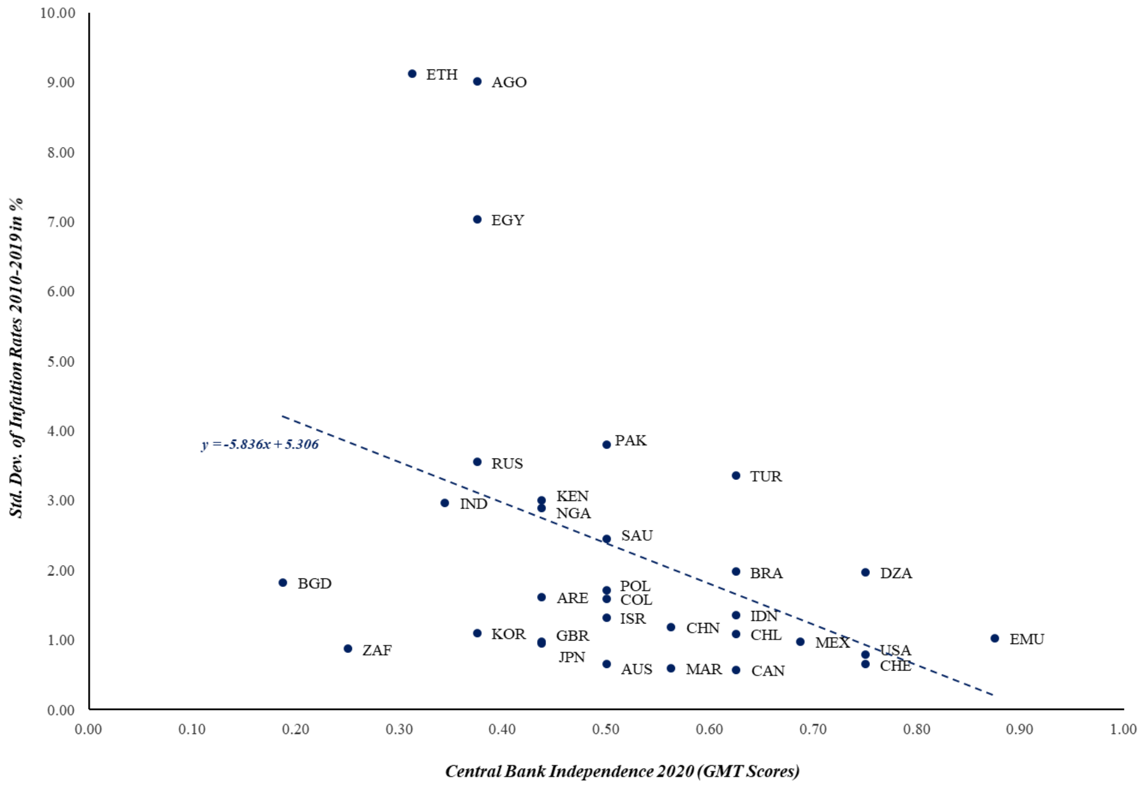


Figure 13: Central Bank Independence and Inflation Volatility (2010-2019)

	Dependent Variable: **Std. Dev. of Inflation 2010-2019**
Central Bank Independence (GMT Scores)	-5.836** (2.405)
Constant	5.306*** (1.285)
R squared	0.169
Observations	31

*Note: *p<0.1; **p<0.05; ***p<0.01; standard error in parenthesis*

Table 5: Regression Output (Inflation Volatility 2010-2019)

Following the results of the regressions, an increase in central bank independence by 10 percentage points, i.e. by 0.1, would be expected to decrease inflation rates by 1.2 percentage points and inflation volatility by 0.6 points.

Beyond inflation, figure 14 (and table 6, resp.) displays an additional measure of the economic tangibility of central bank independence: the relationship between monetary autonomy and GDP per capita in each of the sample's countries (including Argentina). The positive correlation of the regression results suggests that the wealthiest countries, in terms of GDP, are also home to the most independent central banks, where monetary autonomy has a significant, positive impact on GDP levels.

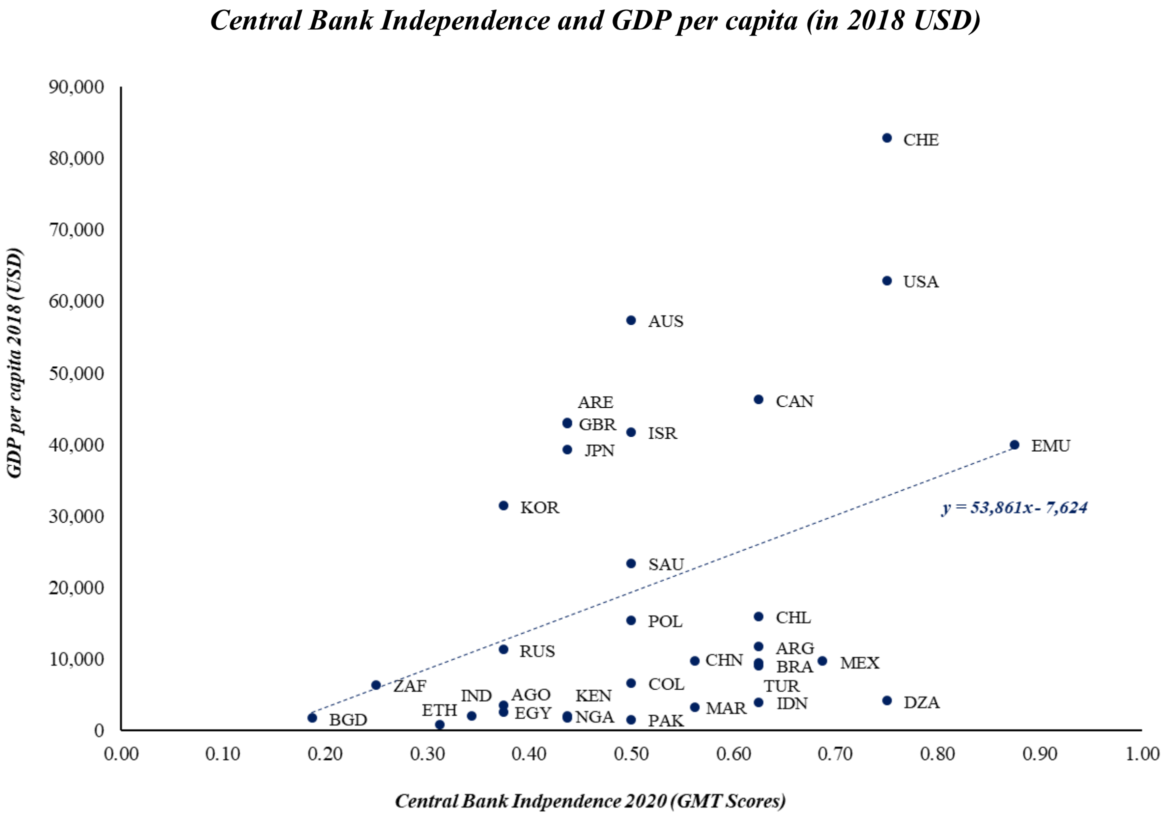


Figure 14: Central Bank Independence and GDP per capita (2018)

	Dependent Variable: **GDP per capita 2018 (USD)**
Central Bank Independence (GMT Scores)	53,861** (23,417)
Constant	-7,624 (12,580)
R squared	0.15
Observations	32

*Note: *p<0.1; **p<0.05; ***p<0.01; standard error in parenthesis*

Table 6: Regression Output (GDP per capita)

It has been argued that independent central banks have sustained a loss in their theoretical justification for two main reasons: Firstly, their primary objective – keeping inflation low – appears to come naturally in the 21st century; inflation has stopped to represent a major scare for politicians, at least in the developed world. Secondly, central banks' primary policy tool – setting the policy rate – has become less effective due to near-zero interest rate levels; and, counterproductively, unconventional policy innovations circumventing the zero lower bound push central banks deeper into fiscal spheres. Both developments do not provide strong arguments for (increasing) monetary independence.

However, this paper's regressions (Tables 4-6) underline that independent central banks do have an economic impact – even in the past decade's unique economic environment. Despite ultra-low interest rates and seemingly stable price growth, monetary independence continues to carry a tangible economic relevance. Furthermore, it seems more likely that a country enjoys higher levels of GDP per capita when its central bank holds higher degrees of monetary independence.

V. Conclusion

Rogoff, Rajan and Davies' concerns regarding the increasing politicization of monetary policy are confirmed by this paper. Overall, qualitative and quantitative analyses have yielded the unambiguous result that central banks are subject to heightened interferences by political actors.

Although the approach of independent monetary policy had seemingly been accepted unilaterally at the turn of the century, this consensus between politicians and economists evidently has weakened during the past decade. This development has been conditioned, to a large extent, by severe economic crises and persistently low inflation rates which have forced central banks into unconventional and quasi-fiscal policy territories. Additionally, several central banks have been endowed with financial supervisory responsibilities, which effectively rendered already mighty institutions even more powerful. The co-occurring rise in fiscal policy stimuli provided politicians with an even stronger incentive to claim a more dominant say in monetary matters.

The *de facto* analysis showed that within the past five years multiple heads of governments have tried to influence monetary policy through aggressive public rhetoric, the appointment of loyal personnel, direct clashes over the utilization of reserves or the suggestion of quasi-monetary financing, among other methods. The world's most influential central banks, including the Fed, the ECB, the BoE and BoJ, were all among those banks which experienced heightened levels of political interference; this further underlines the severity of the politicization.

The *de jure* evaluation of central bank independence confirms the trend of the *de facto* analysis and showcases a significant loss in overall monetary autonomy. Striking, however, is that this loss in independence is fully accountable to larger deficits in economic independence levels, including 'lending to the government' and 'financial supervision'. Although this would require further research, the drop in economic autonomy scores may be conditioned by the magnitude of recent economic crises and the subsequent role of central banks as lenders of last resort (LoLR). Furthermore, the update of the GMT index establishes a moderate level of global monetary independence in 2020, which compares as less independent than central banks were in 2003 and as more independent than the average of 1991[54]. Notably, a stronger consensus on economic independence prevails in comparison to political independence across the sample.

Although central banks have had to endure a severe weakening of their flexibility in setting policy rates (due to near zero interest rates) and are experiencing a waning sense of purpose (due to persistently low inflation rates), their independence does remain economically meaningful. Not only inflation but also inflation volatility correlates negatively with increasing monetary independence scores. Even though independent central banking does not represent the main explanatory variable, it ultimately contributes significantly to lower inflation and increased macroeconomic stability. To a lesser extent, monetary autonomy also considerably contributes to higher GDP per capita performances.

Following, the status quo of independent central banking can be summarized as a policy concept which is in the process of losing its once undisputed status. Independence is weaker than it was before the great financial crisis and monetary and fiscal authorities seem to converge increasingly. Theory and the data underline, however, that many arguments continue to justify and endorse central bank independence in 2020. Yet, as discussed only briefly in this paper, the democratic justification of central bank independence becomes more and more difficult when central banks seemingly take on more prominent roles with every economic crisis.

[54] The latter is only valid for the central banks of Australia, Canada, the Euro Area, Japan, Switzerland, the United Kingdom and the United States.

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Appendix

A. Abstracts

English

Independent central banking has experienced a surge in public and academic attention during the past few years, and even more so during the ongoing Covid-19 crisis. An expanding toolset, heightened prominence and increasingly controversial policies have arguably pushed independent monetary policy towards stronger political intervention. This paper tests the hypothesis of a strengthened politicization of central banks qualitatively – by analyzing recent cases of political meddling – and quantitatively – by updating the GMT index and juxtaposing its results to previous updates from 1991 and 2003. Not only the vast temporal gap between this paper and previous GMT analyses, but also the substantial economic developments since the early 2000s motivate this paper to take a refreshed look at the GMT index today. By regressing independence scores against economic indicators, the macroeconomic impact of monetary independence is demonstrated. This paper finds that in both cases, *de facto* and *de jure*, a loss in central bank independence has occurred while monetary autonomy still prevails to have a significant impact on inflation, inflation volatility and to a lesser extent on GDP per capita.

German

Die Unabhängigkeit von Zentralbanken erlebte in den letzten Jahren einen Anstieg an medialer und akademischer Aufmerksamkeit, verstärkt durch die aktuelle Covid-19 Krise. Stetig wachsende Aufgabenbereiche, eine erhöhte Bekanntheit und zunehmend kontroverse Zentralbank-Maßnahmen stellen die Unabhängigkeit der Geldpolitik zunehmend in Zweifel. Diese Arbeit untersucht die Hypothese einer verstärkten Politisierung der Zentralbanken qualitativ – indem sie die jüngsten Fälle politischer Einmischung analysiert – und quantitativ – indem sie den GMT-Index aktualisiert und die Ergebnisse früheren GMT-Updates aus den Jahren 1991 und 2003 gegenüberstellt. Nicht nur die enorme zeitliche Diskrepanz zwischen dieser Arbeit und frühere GMT-Analysen, sondern auch die erheblichen wirtschaftlichen Entwicklungen seit Anfang der 2000er Jahre motivieren diese Arbeit den GMT-Index heute neu zu bewerten. Durch die Regression der

Unabhängigkeitswerte gegenüber Wirtschaftsindikatoren werden die makroökonomischen Auswirkungen der monetären Unabhängigkeit aufgezeigt. In dieser Arbeit wird festgestellt, dass in beiden Fällen, *de facto* als auch *de jure*, ein Verlust der Unabhängigkeit der Zentralbank eingetreten ist. Gleichzeitig beeinflusst die unabhängige Geldpolitik nach wie vor die Inflation, die Inflationsvolatilität und in geringerem Maße das BIP positiv.

B. GMT: Political Independence Scores – Full Analysis

Passages taken from the respective central bank legislations.

GMT INDEX - Political Independence

Criteria:

1 Governor not appointed by government
2 Governor appointed for >5 years
3 All the board not appointed by government
4 Board appointed for >5 years
5 No mandatory participation of government representative in the board
6 No government approval of monetary policy formulation is required
7 Statutory requirements that central bank pursues monetary stability among its goals
8 Legal provisions that strengthen the central bank's position in conflicts with the government are present

if latest amendment pre 2003 -> data from Arnorne et al. (IMF 2007)
if latest amendment post 2003 -> updated by this analysis
board = committee responsible for monetary policy making
monetary policy formulation = setting policies, not establishing the targets/mandate/guidelines

Validation:
Question is true -> 1 point
Question is false -> 0 points

	satisfaction ratio	*9.38%*	*37.50%*	*12.50%*	*37.50%*	*50.00%*	*53.13%*	*93.75%*	*37.50%*		
	latest Amendment	1	2	3	4	5	6	7	8	*SUM*	*Comments*
	2001	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Brazil		0	1	0	1	1	0	1	0	**4**	
	2012	The Governor, the Deputy Governor and the members of the Board shall be appointed by the Argentine Executive with the Senate's consent	6 years	The Governor, the Deputy Governor and the members of the Board shall be appointed by the Argentine Executive with the Senate's consent	6 years	true	true	The purpose of the Bank is to promote monetary and financial stability…	The Central Bank of the Argentine Republic is a self-administered National Government; In carrying out its functions and powers, the Bank shall neither be subject to any order, indication, or instruction from the National Executive, nor may it undertake any commitment conditioning, restricting or delegating such functions and powers without the express consent of the National Congress; The removal of the members of the Board shall be ordered by the National Executive in the event of misconduct or failure to comply with the duties incumbent on civil servants on the advice of a committee of the National Congress*		
Argentina		0	1	0	1	1	1	1	1	**6**	
	2014	The Federal Executive will appoint the Governor of the Bank, who shall preside over the Board of Governors	6 years no amendment	no amendment (governer, who is appointed by federal executive, appoints board)	8 years no amendment	no amendment	no amendment	no amendment	no amendment		
Mexico		0	1	1	1	0	0	1	1	**5**	

	2016	by president	5 years	The Board shall be composed of five Members to be appointed by the President of the Republic, by	10 years	The Minister of Finance shall have the right to attend the Board meetings, with the right to be heard. The Minister shall be regularly informed in advance and in writing of all Board meetings convened, as well as of the agenda. During any meeting attended, the Minister may suggest to the Board, either orally or in writing, the adoption of specific resolutions, matters that the Board shall deal with at the following meeting. To this end, the Board shall include such proposals on the agenda of such following meeting. At any meeting attended, the Minister shall have the right to suspend the applicability of any decision or resolution passed by the Board for a period not to exceed 15 days*	At any meeting attended, the Minister shall have the right to suspend the applicability of any decision or resolution passed by the Board for a period not to exceed 15 days, counting from the date of such meeting (rendering monetary policy ineffective unless it is approved by government)	The Bank shall have as its purposes to look after the stability of the currency and the normal functioning of internal and external payment systems.	The Central Bank of Chile is an autonomous entity of technical nature, with constitutional status, which has full legal capacity, possesses its own assets and has an indefinite duration.		*loss of independence
Chile		0	0	0	1	0	0	1	1	3	
	2000	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Colombia		0	0	0	0	0	0	1	0	1	
	2020	The Federal Council shall designate the chairperson and the vice-chairperson of the Governing Board	Their term of office shall be six years.	The members of the Governing Board and their deputies shall be appointed by the Federal Council on the recommendation of the Bank Council.*	Their term of office shall be six years.	true	true	The National Bank shall pursue a monetary policy serving the interests of the country as a whole. It shall ensure price stability.	In fulfilling its monetary tasks according to Article 5 paragraphs 1 and 2, the National Bank and the members of the Bank's bodies shall not be permitted to seek or accept instructions either from the Federal Council or from the Federal Assembly or any other body.		* loss of independence
Switzerland		0	1	0	1	1	1	1	1	6	

	2019	Central Bank Homepage: The Governor is appointed for a term of four years by a decree of the President of the Republic. * VS Legislation: The Board shall be composed of the Governor and six members to be elected by the General Assembly -> the latest CB governor has been appointed by Erdogan, thus 0 points*	Homepage: 4 years, VS Legislation: 3 years	**Board:** The Board shall be composed of the Governor and six members to be elected by the General Assembly; **MPC (Legislation):** The Monetary Policy Committee shall, under the chairmanship of the Governor, be composed of Vice Governors, a member to be elected by and from among the Board members and a member to be appointed on the recommendation of the Governor. **MPC (Homepage):** The Monetary Policy Committee is chaired by the Governor and composed of the Deputy Governors, a member to be elected by and from among the Board members and a member to be appointed with the approval of the President of the Republic on the recommendation of the Governor. The Deputy Minister of Treasury and Finance or a unit chief to be designated by the Minister may participate in the meetings without having the right to vote.*	The term of office of Board members shall be three years; Monetary Policy Committee membership of those, whose office as Governor, Vice Governor and Board member comes to an end, shall terminate as well.	The Monetary Policy Committee shall, under the chairmanship of the Governor, be composed of Vice Governors, a member to be elected by and from among the Board members and a member to be appointed on the recommendation of the Governor. The Deputy Minister of Treasury and Finance or a unit chief to be designated by the Minister may participate to the meetings in a non-voting capacity. -> Government representative can participate at any time*	The Bank shall enjoy absolute autonomy in exercising the powers and carrying out the duties granted by this Law under its own responsibility; The Bank shall be exclusively authorized and responsible in the implementation of the monetary policy.	The primary objective of the Bank shall be to maintain price stability.	The Bank shall enjoy absolute autonomy in exercising the powers and carrying out the duties granted by this Law under its own responsibility; The Bank shall be exclusively authorized and responsible in the implementation of the monetary policy.		
Turkey		0	0	0	0	0	1	1	1	**3**	*loss of independence
	2018	The court shall consist of the following directors appointed by Her Majesty— (a) a Governor… **Recruitment process:** The Chancellor [of the exchequer] makes a recommendation to the Prime Minister who writes to Her Majesty the Queen for approval.	Appointment as Governor of the Bank shall be for a period of 8 years*	The Monetary Policy Committee shall consist of...4 members appointed by the Chancellor of the Exchequer.	Appointment as Deputy Governor of the Bank shall be for a period of 5 years.; Appointment as a member of the Committee under section 13(2)(b) or (c) shall be for a period of 3 years	The Monetary Policy Committee shall consist of...4 members appointed by the Chancellor of the Exchequer.; A representative of the Treasury may attend, and speak at, any meeting of the Committee.** --> Government representative can attend & speak at any MPC meeting	The MPC formulates monetary policy independently. *But*: **Treasury's Reserve Powers:** (1) The Treasury, after consultation with the Governor of the Bank, may by order give the Bank directions with respect to monetary policy if they are satisfied that the directions are required in the public interest and by extreme economic circumstances. (2) An order under this section may include such consequential modifications of the provisions of this Part relating to the Monetary Policy Committee as the Treasury think fit. (3) A statutory instrument containing an order under this section shall be laid before Parliament after being made. *And*: A representative of the Treasury may attend, and speak at, any meeting of the Committee (MPC).	An objective of the Bank shall be to protect and enhance the stability of the financial system of the United Kingdom; In relation to monetary policy, the objectives of the Bank of England shall to maintain price stability	In section 4(1) of the Bank of England Act 1946 (power of the Treasury to give directions to the Bank), at the end there is inserted " , except in relation to monetary policy ".		*gain in independence **loss of independence Here: not considering the court of directors, as "(1) The court of directors of the Bank shall manage the Bank's affairs, other than the formulation of monetary policy." --> no monetary powers --> not relevant here
United Kingdom		0	1	0	0	0	0	1	1	**3**	
	2017	The President of NBP shall be appointed and dismissed by the Sejm, at the request of the President of the Republic of Poland*	six years	The Council shall be composed of nine members appointed in equal numbers by the President of the Republic of Poland, the Sejm and the Senate	six years	nine members appointed in equal numbers by the President of the Republic of Poland, the Sejm and the Senate, **from among specialists in the field of finance**	true	The basic objective of the activity of NBP shall be to maintain price stability	no specifications		*loss of independence
Poland		0	1	0	1	1	1	1	0	**5**	

	2018	By Duma at proposal of the president	5 years	appointed by duma at proposal of the bank's chairman with the agreement of the president (Amdmt: 2013)*	5 years	The Minister of Finance of the Russian Federation and the Minister of Economic Development of the Russian Federation or on their instructions one representative of the Ministry of Finance of the Russian Federation and one representative of the Ministry of Economic Development of the Russian Federation shall participate in the Board of Directors' meetings with the right of a consultative vote (Amdmt: 2008)	The Board of Directors shall adopt decisions by a majority of votes of the Board members present at the meeting Article 18. The Board of Directors shall fulfil the following functions: 1) it shall elaborate in collaboration with the Russian Federation Government draft guidelines for the single state monetary policy, draft guidelines for the development of the financial market and guidelines for the single state monetary policy and submit these documents for consideration to the National Financial Board, the Russian Federation President, the Russian Federation Government and the State Duma	The purposes of the Bank of Russia shall be to protect the ruble and ensure its stability	The State Duma shall be entitled to dismiss the Bank of Russia Chairman upon the proposal of the Russian Federation President; no other strengthening provisions*		
Russian Federation		0	0	0	0	0	1	1	0	**2**	*loss of independence
	2020	no amendment appointed by the European Council, acting by a qualified majority (European Commission as executive arm of the EU)	no amendment 8 years	no amendment All members are appointed by the European Council, acting by a qualified majority	no amendment 8 years	no amendment true	no amendment true	no amendment The primary objective of the European System of Central Banks [...] shall be to maintain price stability	no amendment The ECB's independence is laid down in the institutional framework for the single monetary policy		
Euro Area		1	1	1	1	1	1	1	1	**8**	
	2007	The Governor and the Deputy Governors shall be appointed by the Cabinet	5 years	The Members of the Policy Board shall be appointed by the Cabinet	5 years	The Minister of Finance or the Minister of State for Economic and Fiscal Policy may, when necessary, attend and express opinions at Board meetings for monetary control matters or may designate an official of the Ministry of Finance or the Cabinet Office, respectively, to attend and express opinions at such meetings.	The Minister of Finance, or a delegate designated by him/her, and the Minister of State for Economic and Fiscal Policy, or a delegate designated by him/her, may, when attending the Board meetings for monetary control matters, submit proposals concerning monetary control matters, or request that the Board postpone a vote on proposals on monetary control matters	The purpose of the Bank of Japan, or the central bank of Japan, is to issue banknotes and to carry out currency and monetary control	The Bank of Japan's autonomy regarding currency and monetary control shall be respected. But, - Ministers may submit monetary policy proposals and may request postponing votes in board meetings - The Prime Minister and the Minister of Finance may, when they find it especially necessary for the maintenance of stability of the financial system, request the Bank of Japan to conduct the business necessary to maintain stability of the financial system No other strengthening porvisions		
Japan		0	0	0	0	0	0	1	0	**1**	

	2018	The Governor shall be appointed by the President	4 years	The members as prescribed by Clauses 3 through 7 of Paragraph (1) shall be appointed by the President	4 years	The Vice Minister of Strategy and Finance, or the Vice Chairman of the Financial Services Commission may be present and state their opinions at meetings of the Monetary Policy Board. -> Minister can decide to join Monetary Policy Board	Where the Minister of Strategy and Finance considers the decisions taken by the Monetary Policy Board in conflict with the Government's economic policy, he may request the Board to reconsider them. (2) When the Monetary Policy Board takes the same decision as its previous one on a matter requested for reconsideration under the provisions of Paragraph (1) with at least five Members concurring, the final decision shall rest with the President.	contribute to the sound development of the national economy by pursuing price stability through the formulation and implementation of efficient monetary and credit policies	The monetary and credit policies of the Bank of Korea shall be formulated neutrally and executed autonomously and the independence of the Bank of Korea shall be respected		
Korea, Rep.		0	0	0	0	0	0	1	1	**2**	
	2015	The Governor and the Deputy Governor: (a) are to be appointed by the Treasurer	The Governor and the Deputy Governor: (b) shall be appointed for such period, not exceeding 7 years, as the Treasurer determines*	(d) 6 other members, who shall be appointed in writing by the Treasurer in accordance with this section.	(4) A member appointed under paragraph (1)(d) who is not an official: (a) is to be appointed for a period, not exceeding 5 years	The Reserve Bank Board shall consist of: (a) the Governor; (b) the Deputy Governor; (c) the Secretary to the Department of the Treasury; and (d) 6 other members	(2) In the event of a difference of opinion between the Government and one of the Boards (the relevant Board) about whether a policy determined by the relevant Board is directed to the greatest advantage of the people of Australia, the Treasurer and the relevant Board shall endeavour to reach agreement (3) If the Treasurer and the relevant Board are unable to reach agreement, the relevant Board shall forthwith furnish to the Treasurer a statement in relation to the matter in respect of which the difference of opinion has arisen. (4) The Treasurer may then submit a recommendation to the Governor-General, and the Governor-General, acting with the advice of the Federal Executive Council, may, by order, determine the policy to be adopted by the Bank.	The Bank shall contribute to: (a) the stability of the currency of Australia; (b) the maintenance of full employment in Australia; and (c) the economic prosperity and welfare of the people of Australia.	as it question 6: Article 11 RBA Act: (2) In the event of a difference of opinion between the Government and one of the Boards…(3) If the Treasurer and the relevant Board are unable to reach agreement, the relevant Board shall forthwith furnish to the Treasurer a statement in relation to the matter in respect of which the difference of opinion has arisen. (4) The Treasurer may then submit a recommendation to the Governor-General, and the Governor-General, acting with the advice of the Federal Executive Council, may, by order, determine the policy to be adopted by the Bank.(6) The relevant Board shall thereupon ensure that effect is given to the policy determined by the order no other strengthening provisions*		* loss of independence
Australia		0	0	0	0	0	0	1	0	**1**	
	2009	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999		* Act was established in 1999, two amendments since: 2004: no relevant changes 2009: Changes to one article, not relevant
Indonesia		0	0	1	0	1	1	1	1	**5**	

	2019	a Governor and [not more than four] Deputy Governors to be appointed by the Central Government	no longer than 5 years	**Monetary Policy Committee** (introduced 2016) The Central Government may, by notification in the Official Gazette, constitute a Committee to be called the Monetary Policy Committee of the Bank (2) The Monetary Policy Committee shall consist of the following Members, namely: (a) the Governor of the Bank (b) Deputy Governor of the Bank (c) one officer of the Bank to be nominated by the Central Board (d) three persons to be appointed by the Central Government	deputy governor: not longer than 5 years; Director: 4 years; MPC: 4 years	The **Central Board** shall consist of the following Directors, namely: (d) [two Government officials] to be nominated by the Central Government;] However, no government representative in MPC: **Monetary Policy Committee** (2) The Monetary Policy Committee shall consist of the following Members, namely: (a) the Governor of the Bank (b) Deputy Governor of the Bank (c) one officer of the Bank to be nominated by the Central Board (d) three persons to be appointed by the Central Government -> Central board with, MPC with no mandatory gov participation (MPC as policy making body)*	The decision of the Monetary Policy Committee shall be binding on the Bank -> no direct approval of government necessary	Whereas it is expedient to constitute a Reserve Bank for India to regulate the issue of Bank notes and the keeping of reserves with a view to securing monetary stability in [India]	If in the opinion of the [Central Government] the Bank fails to carry out any of the obligations imposed on it by or under this Act [* * *] [the Central Government] may, by notification in the Gazette of India, declare the Central Board to be superseded		
India		0	0	0	0	1	1	1	0	**3**	* gain in independence
	2015	10. (3) the Governor shall be appointed by the President for a term of three years*	3 years	**The Board** shall consist of— c. eight directors, including at least one from each province, who shall be eminent professionals from the fields of economics, finance, banking and accountancy, to be appointed by the Federal Government. **Monetary Policy Committee** (introduced 2015) Shall consist of - (d) three external members, who shall be economist, to be appointed by the Federal Government on recommendation of the Board	external members of MPC: 3 years	**The Board** shall consist of— a. the Governor; b. Secretary, Finance Division, Government of Pakistan **Monetary Policy Committee** (introduced 2015) Shall consist of (a) Governor, or in his absence, a Deputy Governor nominated by him (b) three senior executives of the Bank to be nominated by the Governor (c) three members of the Board, to be nominated by the Board (d) three external members, who shall be economist, to be appointed by the Federal Government on recommendation of the Board -> yes in Board of Directors, no in MPC (MPC as policy making body**	true	a State Bank to regulate the monetary and credit system of Pakistan and to foster its growth in the best national interest with a view to securing monetary stability	46B. (2) The Bank, the members of the Board or the staff of the Bank, shall not take instructions from any other person or entity, including government or quasi-government entities. The autonomy of the Bank shall be respected at all times and no person or entity shall seek to influence the members of the Board and Monetary Policy Committee or the staff of the Bank in the performances of their functions or interfere in the activities of the Bank. (Amendet 1997 and 2015)**		
Pakistan		0	0	0	0	1	1	1	1	**4**	*loss of independence **gain in independence
	2003	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Bangladesh		0	0	0	0	0	0	0	0	**0**	

	1999*	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		*see http://www.sama.gov.sa/en-US/About/Pages/SAMAHistory.aspx no major update since 1999, except: - 2003: The supervision of insurance sector was entrusted to SAMA by virtue of a Royal Decree - 2004: the supervision of the Stock Market was shifted to the Capital Market Authority (CMA) after the issue of a Royal Decree
Saudi Arabia		0	0	0	0	1	0	1	0	**2**	
	2018	The Central Bank shall be managed by a Board of Directors of seven (7) members, including the Chairman, Deputy Chairman and the Governor. Members of the Board of Directors shall be appointed by a federal decree based on recommendation of the Cabinet, and shall serve for a four (4) year term	4 years	Members of the Board of Directors shall be appointed by a federal decree based on recommendation of the Cabinet, and shall serve for a four (4) year term	4 years	A member of the Board of Directors shall satisfy the following conditions 5) Not an active minister or member of the Federal National Council.	Objectives of Monetary Policy 2) The Central Bank shall determine monetary tools and operational means for achievement of monetary policy objectives, including policies relating to management of the exchange rate of the national Currency and money markets in the State. The Central Bank shall be considered a Federal public institution having its own body corporate, and enjoying financial and managerial independence	The Central Bank aims at achieving the following objectives: 1) Maintain stability of the national Currency within the framework of the monetary system. 2) Contribute to the promotion and protection of the stability of the financial system in the State 1) Monetary policy shall be aimed at maintaining soundness and stability of the monetary system in the State	not present		
United Arab Emirates		0	0	0	0	1	1	1	0	**3**	
	2018	The Governor shall be appointed by the President of the State per recommendation of the Government	The Governor shall be appointed to a five-year term and may be reappointed to one term only	(a) The Committee shall be composed of six members, amongst them the Governor, who shall serve as chairperson, the Deputy Governor, a Bank employee appointed by the Governor, and three additional members from amongst the public (c) Members from amongst the public shall be appointed by the Government	Each member of the Committee and the Council from amongst the public shall be appointed for a term in office of four years	(a) The Committee shall be composed of six members, amongst them the Governor, who shall serve as chairperson, the Deputy Governor, a Bank employee appointed by the Governor, and three additional members from amongst the public (b) A member from amongst the public shall be qualified for appointment if he is a resident of Israel, is twenty-five years old or older, and fulfills one of the following: (1) holds a Doctoral Degree in Economics or Business Administration and has at least five years of experience in the monetary, financial, or macroeconomic field; (2) holds a Master's degree in Economics or Business Administration and has at least ten years of experience in the monetary, financial, or macroeconomic field*	The Committee's resolutions shall be passed by a majority of its members participating in the voting; in the event of a tied vote, the chairperson shall have an additional vote.*	The objectives of the Bank are: (1) to maintain price stability as its central goal;	No specific provisions present		*gain in independence
Israel		0	0	0	0	1	1	1	0	**3**	

	2020	The Governor and Deputy Governor shall be appointed by the directors with the approval of the Governor in Council. (Governor in Coucil, the representative of the Queen of England, is here not regarded as a direct actor of the Canadian goivernment)	(3) The Governor and Deputy Governor (a) shall each be appointed for a term of seven years during good behaviour;	9 (1) The Minister, with the approval of the Governor in Council, shall appoint directors to hold office, during good behaviour, subject to removal by the Governor in Council at any time for cause, to replace the directors whose terms of office have expired. The term of a director begins on the day he or she is appointed and ends immediately before March 1 of the year that is three years after the year in which the term of office of the director's predecessor expired.	3 years	In addition to the members of the Board as constituted by subsection (1), the Deputy Minister of Finance or, if he or she is absent or unable to act or the office is vacant, such other officer of the Department of Finance as the Minister may nominate, is a member of the Board but does not have the right to vote.	14 (2) If, notwithstanding the consultations provided for in subsection (1), there should emerge a difference of opinion between the Minister and the Bank concerning the monetary policy to be followed, the Minister may, after consultation with the Governor and with the approval of the Governor in Council, give to the Governor a written directive concerning monetary policy, in specific terms and applicable for a specified period, and the Bank shall comply with that directive.	WHEREAS it is desirable to establish a central bank in Canada to regulate credit and currency in the best interests of the economic life of the nation, to control and protect the external value of the national monetary unit and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment, so far as may be possible within the scope of monetary action, and generally to promote the economic and financial welfare of Canada	not present; Minister can direct the Bank according to 14(2) "Minister's Directive"		
Canada		1	1	0	0	0	0	1	0	**3**	
	2004	The Bank shall have a governor to be appointed by decree of the President of the Republic	for a renewable term of four years	The Bank shall have a board of directors under the chairmanship of the Governor, with the membership of:...four experienced persons, specialized in monetary, financial, banking, legal and economic affairs, to be designated by the President of the Republic for a renewable term of four years	four years	The Bank shall have a board of directors under the chairmanship of the Governor, with the membership of: - The two deputy governors - The Chairman of the General Authority for Financial Supervision. - Representative of Ministry of Finance upon nomination of the Minister. - four experienced persons, specialized in monetary, financial, banking, legal and economic affairs	The Central Bank of Egypt shall be … directly subject to the President of the Republic vs. The Board of Directors of the Bank shall be the authority responsible for the realization of the objectives of the Bank, in addition to formulating and implementing the monetary, credit and banking policies. To these ends, the Board shall be vested with all powers*	The Bank shall work on realizing price stability and banking system soundness, within the context of the general economic policy of the State. The Bank shall be concerned with formulating and implementing the monetary, credit, and banking policies	not present; The Central Bank of Egypt shall be a public legal person, directly subject to the President of the Republic		*gain in independence
Egypt, Arab Rep.		0	0	0	0	0	1	1	0	**2**	
	2010	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Algeria		1	1	1	1	1	1	1	1	**8**	
	2015	13. (1) There shall be a Governor who shall be appointed by the President through a transparent and competitive process and with the approval of the National Assembly.	(2) The Governor shall hold office for a term of four years.	(2) The Committee shall consist of the following members: (d) four other members who have knowledge, experience and expertise in matters relating to finance, banking and fiscal and monetary policy, appointed by the Minister (e) the Permanent Secretary to the Treasury, or his representative, who shall be non-voting member	4 years	Board of Directors and Monetary Policy Committee include Permanent Secretary to the Treasury Section 2(e) of part 4D Monetary Policy Committee and 11 1(c)	(2) Where in exceptional circumstances and after consultation with the Bank, the Minister is of the opinion that the monetary policy adopted by the Bank is inconsistent with the principal object of the Bank, the Minister may, upon resolution by Cabinet, direct the Bank in writing to adopt such monetary policy as the Minister may specify for a period of six months or for such shorter period as the Minister may specify, and the Bank shall, upon receipt of a directive under this section, adopt and implement the monetary policy so directed notwithstanding any other provision of this Act.	**4**. (1) The principal object of the Bank shall be to formulate and implement monetary policy directed to achieving and maintaining stability in the general level of prices.	none		
Kenya		0	0	0	0	0	0	1	0	**1**	

	2007	The Governor and Deputy-Governors shall be persons of recognized financial experience and shall be appointed by the President	five years	**Monetary Policy Council**: (2) The MPC shall consist of - (a) the Governor of the Bank who shall be the Chairman; (b) the four Deputy Governors of the Bank; (c) two members of the Board of Directors of the Bank; (d) three members appointed by the President; and (e) two members appointed by the Governor.	five years or less	**Board of Directors** (2) The Board shall consist of - (a) a Governor who shall be the Chairman; (b) four Deputy Governors; (c) the Permanent Secretary, Federal Ministry of Finance **Monetary Policy Council:** no mandatory government participation -> MPC as policy making board, hence one point	true, the MPC takes decisions by majority vote: "Decisions shall be taken by a vote of all those present at the meeting." -> no government approval*	The principal objects of the Bank shall be to – (a) ensure monetary and price stability;	11. – (1) A person shall not remain a Governor, Deputy Governor or Director of the Bank if he is (f) is removed by the President: (pending support of Senate)		
Nigeria		0	0	0	0	1	1	1	0	**3**	*gain in independence
	2010	The Governor is appointed by the President of the Republic	five years	The members of the Board of Directors are appointed by the Chairman of the Executive Branch under the Governor's proposal	five years	Article 58 (Composition of the Board of Directors) 1. The Board of Directors is made up of the Governor, who presides, two Deputy Governors and four to six Directors. 2. The Deputy Governors are appointed by the President of the Republic on the recommendation of the Governor and shall serve for a period of five years, renewable for equal periods. 3. The Directors, and shall serve for a period of five years, renewable once only for an equal period.*	The resolutions of the Board of Directors are taken by a majority of votes cast by members present, with no abstentions allowed.	e) keep watch over the stability of the national financial system, ensuring, for this purpose, the function of lender of last resort;	2. The Governor, the Vice - Governors and the Directors may be removed by the President of the Republic, respectively, for the occurrence of: b) serious failure in performance of its duties.		
Angola		0	0	0	0	1	1	1	0	**3**	* gain in independence
	2008	no amendment The National Bank shall have: a) Board of Directors; b) Governor and Vice Governor to be appointed by the Government	no amendment	no amendment The Board of Directors shall be composed of seven members. The Governor and the Vice Governor shall be permanent ex-officio members. Governor and Vice Governor to be appointed by the Government; The Chairperson of the Board of Directors and the remaining four members shall be appointed by the Government	no amendment	no amendment	no amendment	no amendment	no amendment		
Ethiopia		0	1	0	1	0	0	1	0	**3**	
	2010	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
South Africa		0	0	0	0	1	0	0	0	**1**	

	2018	by president	to serve as Chairman of the Board for a term of 4 years	The Board of Governors of the Federal Reserve System (hereinafter referred to as the "Board") shall be composed of seven members, to be appointed by the President, by and with the advice and consent of the Senate	appointrf for terms of fourteen years except as hereinafter provided	true neither in Board nor in FOMC	true	shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.	present		
United States		0	0	0	1	1	1	1	1	**5**	
	2019	Article 49 Moroccan Constitution: The Council of Ministers deliberates on the following questions and texts: the appointment, on the proposal of the Head of Government and at the initiative of the minister concerned, to the following civil offices [emplois]: wali of Bank AI-Maghrib	Le Wali de Bank Al-Maghrib est nommé dans les conditions prévues par l'article 49 de la Constitution pour une période de six ans renouvelable une seule fois six years*	*Original:* Le conseil est composé comme suit : ...six membres désignés par le Chef du gouvernement, dont trois sur proposition du Wali de Bank Al-Maghrib *English:* The board is composed as follows: ... six members appointed by the Head of Government, including three on the proposal of Wali de Bank Al-Maghrib	Ces membres sont nommés pour une période de six ans non renouvelable six years*	*Original:* Le conseil est composé comme suit : le Wali de Bank Al-Maghrib, président ; le directeur général de la Banque ; le directeur du Trésor et des finances extérieures au sein du ministère chargé des finances. Celui-ci ne prend pas part aux votes de décisions relatives à la politique monétaire *English*: The board is composed as follows: the Wali of Bank Al-Maghrib, president; the managing director of the Bank; the director of the Treasury and external finance in the ministry responsible for finance. The latter does not take part in votes on decisions relating to monetary policy	Celui-ci ne prend pas part aux votes de décisions relatives à la politique monétaire	L'objectif principal de la Banque est de maintenir la stabilité des prix	none		
Morocco		0	1	0	1	0	1	1	0	**4**	*gain in independence
	2003	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
China		0	1	0	1	0	0	1	0	**3**	

Observations	*AVG Scores*							
32	**0.094**	**0.375**	**0.125**	**0.375**	**0.500**	**0.531**	**0.938**	**0.375**

C. GMT: Economic Independence Scores – Full Analysis

Passages taken from the respective central bank legislations.

GMT INDEX - Economic Independence

Criteria:

1 no automatic procedure for government to obtain direct credit from central bank
2 when available, credit extended to government at market interest rates
3 credit is temporary
4 and for limited amount
5 central bank does not participate in primary market for public debt
6 central bank responsible for setting policy rate
7 central bank has no responsibility to oversee banking sector (two points) or shares responsibility with other institutions (one point)

if latest amendment pre 2003 -> data from Arnorne et al. (IMF 2007)
if latest amendment post 2003 -> updated by this analysis

Validation:
Question is true -> 1 point*
Question is false -> 0 points
*Question 7: max of 2 points

	satisfaction ratio	*100.00%*	*40.63%*	*84.38%*	*78.13%*	*46.88%*	*95.31%*	*46.88%*		
	latest Amendment	1	2	3	4	5	6	7	*SUM*	*Comments*
	2001	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Brazil		1	1	1	1	1	1	0	**6**	
	2012	The Bank may make temporary advances to the National Government in an amount equivalent to up to twelve per cent (12%) of the monetary base -> not automatic	no interest rate specified*	The advances referred to in the preceding paragraph must be reimbursed within twelve (12) months from the date they are made	up to twelve per cent (12%) of the monetary base, It may also grant advances in an amount not exceeding ten per cent (10%) of the cash flows earned by the National Government	Section 22. In its capacity as financial agent of the National Government, the Bank may replace the securities that it has been instructed to issue with book-entry securities, issuing global certificates; Section 24. The Bank shall charge the National Government's account with the fee for domestic and external public debt servicing on its behalf; Section 25. The Bank shall assist the Ministry of Economy and Public Works and Services in the control of all acts related to the placement of governmental borrowings and public debt servicing*	The Bank shall have the following functions and powers...to regulate the amount of money and interest rates	The Central Bank of the Argentine Republic shall supervise all financial and foreign exchange activity through the Superintendence of Financial and Exchange Institutions, which shall report directly to the Governor of the Bank.		
Argentina		1	0	1	1	0	1	0	**4**	*loss in independence
	2014	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	Without prejudice to the powers of supervision considered in article 35 Bis of the present Law, Banco de México will seek to coordinate with the supervisory committees of the financial system, with the intention of carrying out visits to the intermediaries that are programmed yearly jointly with said authorities in accordance with their capacities		
Mexico		1	1	1	1	1	0	1	**6**	
	2016	no amendment No public expenditure or credit of whatsoever nature may be financed with loans granted, directly or indirectly, by the Bank	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment The supervision of compliance with the policies and regulations issued by the Bank shall be made through the appropriate supervisory authorities,		
Chile		1	1	1	1	1	1	1	**7**	
	2000	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Colombia		1	1	1	1	1	1	1	**7**	

	2020	The National Bank may not grant the Confederation loans or overdraft facilities; nor shall it be permitted to buy government bonds from new issues. It may permit intraday account overdrafts against sufficient collateral.	no interest rate specified	intraday	against sufficient collateral. --> implying a limited amount	nor shall it be permitted to buy government bonds from new issues.	yes, SNB policy rate	1 In order to protect the stability of the financial system, the National Bank shall oversee systemically important central counterparties, central securities depositories and payment systems in accordance with Article 22 (systemically important financial market infrastructures) of the Financial Market Infrastructure Act of 19 June 201512 (FMIA). * -> Overseeing the banking sector shared with the FINMA agency		*loss in independence
Switzerland		1	0	1	1	1	1	1	**6**	
	2019	The Bank may not, grant advance and extend credit to the Treasury and to public establishments and institutions, and may not purchase debt instruments issued by the Treasury and public establishments and institutions in the primary market.	no credit	no credit	no credit	The Bank, within the scope of open market operations, may issue liquidity bills whose maturity shall not exceed 91 days, and that shall be tradable in the secondary markets, for its own account and behalf; Open market operations shall be conducted only for monetary policy purposes and shall not be conducted to provide credit to the Treasury, to public establishments and institutions, or to other establishments and institutions; and may not purchase debt instruments issued by the Treasury and public establishments and institutions in the primary market.	yes	The Bank shall be assigned and authorized to make and implement regulations regarding the duties and powers entrusted to it by this Law and legislation, and shall be assigned and authorized to supervise the compliance with these regulations and the accuracy of the information sent to it, with these establishments and institutions subject to the said regulations.; The Bank shall supervise the operations of interbank clearing houses which already exist or which shall be established in the future in places where the branch offices are located* --> shared with Banking Regulation and Supervision Agency		*loss in independence
Turkey		1	1	1	1	1	1	1	**7**	
	2018	The Government has an overdraft facility at the Bank of England; the so-called Ways and Means Facility. Any large sum of credit needs to be negotiated between bank and government. -> not automatic	not specified see recent BoE press release regading advances to the government due to the Covid-crisis* https://www.bankofengland.co.uk/news/2020/april/hmt-and-boe-announce-temporary-extension-to-ways-and-means-facility	advances are temporary The W&M facility is the government's pre-existing overdraft at the Bank. Any drawings will be repaid as soon as possible before the end of the year https://www.bankofengland.co.uk/news/2020/april/hmt-and-boe-announce-temporary-extension-to-ways-and-means-facility	not specified see current BoE press relase regading advances to the government due to the Covid-crisis* https://www.bankofengland.co.uk/news/2020/april/hmt-and-boe-announce-temporary-extension-to-ways-and-means-facility	ture, Treasury issues gilts	true	The Bank of England prudentially regulates and supervises financial services firms through the Prudential Regulation Authority (PRA). Also the Financial Policy Committee is setup under the Bank of Englang Act. 1. *		1. The Financial Services Bill (enacted 01.04.2013) combines macro- and micro-prudential supervisory powers at the BoE. The FPC (Financial Policy Committee) is an official organ of the BoE. The FPC was setup in 2010 as a new committee to monitor the economy of the UK. "The BoE is the resolution authority, with primary responsibility for regulatory intervention and exercise of resolution powers." (See ThomsonReuters, https://uk.practicallaw.thomsonreuters.com/w-008-0211?transitionType=Default&contextData=(sc.Default)&firstPage=true). -> Making the BoE the main responsible supervisor * loss of independence
United Kingdom		1	0	1	0	1	1	0	**4**	

	2017	NBP may be entrusted with the servicing of central government loan drawn in through the issue of securities NBP may act as the financial agent to the Government in concluding and carrying out loan contracts and servicing the country's foreign debt; NBP shall not be liable for the obligations of the State Treasury in this respect. The detailed procedure applicable shall be specified in each case in an agreement between NBP and the Minister of Finance. -> not automatic	NBP may be entrusted with the servicing of central government loan drawn in through the issue of securities NBP may act as the financial agent to the Government in concluding and carrying out loan contracts and servicing the country's foreign debt; NBP shall not be liable for the obligations of the State Treasury in this respect. The detailed procedure applicable shall be specified in each case in an agreement between NBP and the Minister of Finance.* -> detailed procedure case by case	NBP may be entrusted with the servicing of central government loan drawn in through the issue of securities NBP may act as the financial agent to the Government in concluding and carrying out loan contracts and servicing the country's foreign debt; NBP shall not be liable for the obligations of the State Treasury in this respect. The detailed procedure applicable shall be specified in each case in an agreement between NBP and the Minister of Finance.* -> detailed procedure case by case	NBP may be entrusted with the servicing of central government loan drawn in through the issue of securities NBP may act as the financial agent to the Government in concluding and carrying out loan contracts and servicing the country's foreign debt; NBP shall not be liable for the obligations of the State Treasury in this respect. The detailed procedure applicable shall be specified in each case in an agreement between NBP and the Minister of Finance.* -> detailed procedure case by case	The NBP may: 3) organise trading in the securities it issues and securities issued or guaranteed by the Treasury NBP may act as the financial agent to the Government in concluding and carrying out loan contracts and servicing the country's foreign debt NBP may be entrusted with the servicing of central government loan drawn in through the issue of securities* -> does not exclude the purchase of government issued securities in the primary market	the Council shall, in particular...set the NBP interest rates	NBP shall provide support to the Committee for Financial Stability in the fulfilment of responsibilities, as defined by Art. 5 of the Act on Prudential Supervision over the Financial System and Crisis Management in the Financial System of 5 August 2015; Homepage: The Financial Stability Committee is a competent authority responsible for the macroprudential supervision in Poland. The FSC is a collegial body, where four main financial safety net institutions, i.e. Narodowy Bank Polski, the Ministry of Finance, the Financial Supervision Authority and the Bank Guarantee Fund, are represented.	
Poland		1	0	0	0	0	1	1	**3**
	2018	no automatic procedures	The Bank of Russia shall not be entitled to extend loans to the Russian Federation Government to finance the federal budget deficit and buy securities at their primary placement, except for those cases stipulated by the federal budget law. -> "federal budget law" and corresponding passage not identifiable -> assumption: same score as in IMF study of 2003	The Bank of Russia shall not be entitled to extend loans to the Russian Federation Government to finance the federal budget deficit and buy securities at their primary placement, except for those cases stipulated by the federal budget law. -> "federal budget law" and corresponding passage not identifiable -> assumption: same score as in IMF study of 2003	The Bank of Russia shall not be entitled to extend loans to the Russian Federation Government to finance the federal budget deficit and buy securities at their primary placement, except for those cases stipulated by the federal budget law. -> "federal budget law" and corresponding passage not identifiable -> assumption: same score as in IMF study of 2003	The Bank of Russia shall not be entitled to extend loans to the Russian Federation Government to finance the federal budget deficit and buy securities at their primary placement, except for those cases stipulated by the federal budget law. -> "federal budget law" and corresponding passage not identifiable -> assumption: same score as in IMF study of 2003	Article 37. The Bank of Russia may set one or several interest rates on different kinds of operations or pursue an interest rate policy without fixing an interest rate. The Bank of Russia shall use the interest rate policy to influence market interest rates.*	4) it shall exercise supervision and oversight function over the national payment system (Amndmt 2011); The Bank of Russia shall set the rules, binding for credit institutions, for conducting banking operations, requirements for accounting and reporting, compiling and presenting accounting (financial) statements and statistical reports, and also other data required by federal laws. BIS: Bank of Russia as only regulatory authority in Russia	
Russian Federation		1	0	1	0	1	1	0	**4**
	2020	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	Regulatory responsibilities within the SSM (implemented in 2015)*	
Euro Area		1	1	1	1	1	1	0	**6**
	2007	no amendment: no	no amendment not specified	no amendment: The Bank of Japan may conduct the following business with the national government: Making uncollateralized loans for the national government's temporary borrowing	no amendment: The Bank of Japan may conduct the following business with the national government: Making uncollateralized loans within the limit decided by the Diet	no amendment: The Bank of Japan may [engage in] subscribing or underwriting national government securities within the limit decided by the Diet	no amendment: shall be decided by the Board: Determining or altering the basic discount rate and other discount rates	no amendment: no direct supervision	
Japan		1	0	1	1	0	1	2	**6**

*gain in independence

* loss in independence

	2018	The Bank of Korea may render credit to the Government on overdrafts or in other forms, and may directly subscribe to Government bond issues. -> not automatic	(1) The Bank of Korea may render credit to the Government on overdrafts or in other forms, and may directly subscribe to Government bond issues (3) The interest rates and other terms of the credit as provided for in Paragraph (1) shall be determined by the Monetary Policy Board. -> not necessarily market interest rates*	(1) The Bank of Korea may render credit to the Government on overdrafts or in other forms, and may directly subscribe to Government bond issues (3) The interest rates and other terms of the credit as provided for in Paragraph (1) shall be determined by the Monetary Policy Board. -> not necessarily temporary*	The aggregate of all loans and direct subscriptions to Government bonds specified in Paragraph (1) shall not exceed the amount of the indebtedness which, together with any borrowing by the Government from other banking institutions and the public, has been authorized by the National Assembly -> limited	(1) The Bank of Korea may render credit to the Government on overdrafts or in other forms, and may directly subscribe to Government bond issues*	true Bank of Korea base rate	The Bank of Korea also has a mandate for maintaining and enhancing financial system stability. The Monetary Policy Board may, when it has a different view, request the Financial Services Commission to reconsider a financial supervisory decision it has taken if it has a direct bearing on monetary and credit policies.*		* loss in independence
Korea, Rep.		1	0	0	1	0	1	1	**4**	
	2015	not specified in RBA Act -> assumption: no direct credit to Gov (in line with IMF 2003 assessment)	not specified in RBA Act -> assumption: no direct credit to Gov (in line with IMF 2003 assessment)	not specified in RBA Act -> assumption: no direct credit to Gov (in line with IMF 2003 assessment)	not specified in RBA Act -> assumption: no direct credit to Gov (in line with IMF 2003 assessment)	true	true the Reserve Bank Board has power to determine the policy of the Bank in relation to any matter, other than its payments system policy, and to take such action as is necessary to ensure that effect is given by the Bank to the policy so determined	Responsibility for the regulation and supervision of the Australian financial system is vested in four separate agencies: - the Australian Prudential Regulation Authority (APRA); - the Australian Securities and Investments Commission (ASIC); **- the Reserve Bank of Australia** (RBA); - and the Australian Treasury. These four bodies comprise the Council of Financial Regulators (CFR).* https://www.rba.gov.au/fin-stability/reg-framework/overview.html		*loss in independence
Australia		1	1	1	1	1	1	1	**7**	
	2009	no amendment to 1999	no amendment to 1999	no amendment to 1999	no amendment to 1999	**Amendment 2004:** Article 55 (4) Bank Indonesia is prohibited from buying government securities as referred to in paragraph (1) on the primary market for its own account, except in the case of short-term government securities needed by Bank Indonesia for monetary control operations (5) Bank Indonesia may buy government securities on the primary market as part of the provision of the emergency financing facility as referred	no amendment to 1999	no amendment to 1999		* loss in independence
Indonesia		1	1	1	1	0	1	0	**5**	

	2019	The Bank shall be authorized to carry on and transact the several kinds of business hereinafter specified, namely: (5) the making to the [Central Government] [* * *] [and [State Governments]] of advances repayable in each case not later than three months from the date of the making of the advance; -> not automatic	not specified	yes, three months	limit not specified*	the acting as agent for [* * *] the [Central Government] in the transaction of any of the following kinds of business, namely (e) the management of public debt [(f)[* * *] the issue and management of [* * *] bonds and debentures]; 21. (1) The Bank may by agreement with the Government of any 11[***] State 12[* * *] undertake– (a) all its money, remittance, exchange and banking transactions in India, including in particular, the deposit, free of interest, of all its cash balances with the Bank; and (b) the management of the public debt of, and the issue of any new loans by, that State.	The Monetary Policy Committee shall determine the Policy Rate required to achieve the inflation target. -> This limited the role of the RBI in setting interest rates, as the MPC membership is evenly divided between members of the RBI (including the RBI governor) and independent members appointed by the government. However, in the event of a tie, the vote of the RBI governor is decisive* -> only 50% of central bank responsible for policy setting	**Homepage**: The responsibility for ensuring financial stability has entailed the vesting of extensive powers in and operational objectives for the Reserve Bank for regulation and supervision of the financial system and its constituents, the money, debt and foreign exchange segments of the financial markets in India **BIS**: RBI as only supervisory institution in India **Banking Regulation Act** (latest update 2017), e.g. - no company shall carryon banking business in India unless it holds a licence issued in that behalf by the Reserve Bank and any such licence may be issued subject of such conditions as the Reserve Bank **		*loss in independence ** loss in independence (down from 2)
India		1	0	1	0	0	0.5	0	**2.5**	
	2015	the Federal Government borrowing from the Bank shall be such that at the end of each quarter they shall be brought to zero barring the ways and means limit that shall be determined by the Board from time to time -> not automatic	no interest rate specified*	the Federal Government borrowing from the Bank shall be such that at the end of each quarter they shall be brought to zero barring the ways and means limit that shall be determined by the Board from time to time	the Federal Government borrowing from the Bank shall be such that at the end of each quarter they shall be brought to zero barring the ways and means limit that shall be determined by the Board from time to time 9B (2) The Coordination Board shall- (e) consider limits of the Government borrowing as revised from time to time in the meetings to be held before and after passage of the annual budget; (f) review the level of Government borrowing in relation to the predetermined or	The acting as agent to the [Federal Government], any Provincial Government, [***] or any Local Authority in the transaction of any of the following kinds of business, namely: (e) the management of public debt 21. (2) (c) The [Federal Government] and each Provincial Government shall entrust the Bank, on such conditions as may be agreed upon between the Government concerned and the Bank, with the management of the public debt and with the issue of any new loans	The Monetary Policy Committee shall formulate, support and recommend the monetary policy, including, as appropriate, decisions relating to intermediate monetary objectives, key interest rates and the supply of reserves in Pakistan and may make regulations for their implementation -> 7/10 members of MPC are from the central bank	a State Bank to regulate the monetary and credit system of Pakistan		*loss in independence
Pakistan		1	0	1	1	0	1	0	**4**	
	2003	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
Bangladesh		1	0	1	0	0	1	0	**3**	*see http://www.sama.gov.sa/en-US/About/Pages/SAMAHistory.aspx
	1999*	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		no major update since 1999, except: - 2003: The supervision of insurance sector was entrusted to SAMA by virtue of a Royal Decree - 2004: the supervision of the Stock Market was shifted to the Capital Market Authority (CMA) after the issue of a Royal Decree
Saudi Arabia		1	0	1	1	1	1	1	**6**	

	2018	The Central Bank may grant advances or other credit facilities to the Government, at interest rates set in accordance with the terms and conditions of the agreement signed between the Central Bank and the Ministry in this regard, provided such advances and credit facilities are for the purpose of covering a temporary, unforeseen deficit in Government revenues, compared to its expenses.	at interest rates set in accordance with the terms and conditions of the agreement signed between the Central Bank and the Ministry	The Government may not relend or grant such advances to any other party. Granted advances shall at no time exceed ten percent (10%) of the government's average revenues realized in the budgets of the last three (3) years. The Government shall repay these advances within a period not exceeding one (1) year from date of granting thereof.	The Government may not relend or grant such advances to any other party. Granted advances shall at no time exceed ten percent (10%) of the government's average revenues realized in the budgets of the last three (3) years. The Government shall repay these advances within a period not exceeding one (1) year from date of granting thereof.	The Central Bank may, directly or through Primary Dealers, sell and manage securities issued or secured by the Government or governments of emirates members of the Union, in accordance with an agreement with the concerned government	yes, through interest on its Certificates of Deposit (CD) https://de.reuters.com/article/emirates-cenbank-rates-idAFD5N29W01O	Establish policies, and issue regulations relating to prudential supervision, and the standards and guidelines relating to Licensed Financial Activities	
United Arab Emirates		1	0	1	1	0	1	0	**4**
	2018	(a) The Bank shall not provide the Government with a loan to finance its expenditures, including via direct purchase of Government debentures at issuance. (b) The provision of Subsection (a) notwithstanding, the Bank may provide the Government, at its request, with a temporary advance to bridge a gap in the Government's cash flow	not specified	the total temporary advance shall not exceed, at any time, NIS 10 billion, and shall not be extended for more than 150 days per year	the total temporary advance shall not exceed, at any time, NIS 10 billion	The Bank shall not provide the Government with a loan to finance its expenditures, including via direct purchase of Government debentures at issuance	the Committee's decision on the interest rate that is set for the purposes of monetary policy (hereinafter: the Interest Rate) shall be for a specified period of time, at the end of which the Committee shall decide whether to change the Interest Rate or leave it in effect for an additional specified period of time. This provision shall not derogate from the Committee's power to also change the Interest Rate within the period of time specified in a previous decision	(a) The Bank's functions are (7) Supervising and regulating the banking system in accordance with its powers under the banking laws and under any other law	
Israel		1	0	1	1	1	1	0	**5**
	2020	(i) make loans or advances for periods not exceeding six months to the Government of Canada or the government of a province on taking security in readily marketable securities issued or guaranteed by Canada or any province;	not specified	not exceeding six months	(j) make loans to the Government of Canada or the government of any province, but such loans outstanding at any one time shall not, in the case of the Government of Canada, exceed one-third of the estimated revenue of the Government of Canada for its fiscal year, and shall not, in the case of a provincial government, exceed one-fourth of that government's estimated revenue for its fiscal year, and such loans shall be repaid before the end of the first quarter after the end of the fiscal year of the government that has contracted the loan;	true	21 The Bank shall at all times make public the minimum rate at which it is prepared to make loans or advances.	true	
Canada		1	0	1	1	1	1	2	**7**
	2004	The Bank shall extend financing to the government, upon its request, to cover the seasonal deficit on the general budget. The Bank, in agreement with the Ministry of Finance, shall determine the conditions concerning this finance -> not automatic	not specified	The term of the said finance shall be three months renewable for other similar periods. The finance shall be settled in full within twelve months at most from the date of its extension	according to the prevailing monetary and credit situations, provided that the amount of such finance shall not exceed 10% of the average revenues of the general budget in the three previous years	The government may assign the Bank to act on its own behalf, in issuing government bonds and bills.*	The Board of Directors of the Bank shall be the authority responsible for...Determining credit and discount rates and the interest rates on the banking transactions as carried out by the Bank	The Board of Directors of the Bank shall be the authority responsible for...Setting the regulatory and supervisory standards to guarantee the sound financial positions of banks, and their efficient performance, as well as issuing the necessary decisions for their implementation	
Egypt, Arab Rep.		1	0	1	1	0	1	0	**4**

*loss in independence

Economic Independence

	2010	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	La banque d'Algérie assure la surveillance des systèmes de paiement; Les banques et établissements financiers sont tenus, dans les conditions définies par règlement pris par le conseil, de mettre en place un dispositif de contrôle de conformité efficace qui vise à s'assurer : - de la conformité aux lois et règlements ; - du respect des procédures. Le prÈsident de la commission adresse, annuellement, au PrÈsident de la RÈpublique, un rapport de la commission bancaire sur le contrÙle des banques et Ètablissements financiers BIS: only central bank responsible for supervision (https://www.bis.org/regauth.htm)*		
Algeria		1	0	1	1	0	1	0	**4**	*loss in independence
	2015	(1) Subject to the provisions of this section, the Bank may make direct advances to the Government for the purpose of offsetting fluctuations between receipts from the budgeted revenue and payments of the Government.	(2) Each advance made to the Government under this section shall: b) bear interest at market rate;	(2) Each advance made to the Government under this section shall: (a) be secured with negotiable securities issued by the Government which mature not later than twelve months; (c) be made solely for the purpose of providing temporary accommodation to the Government.	(3) The total amount outstanding at any time of advances made under this section shall not exceed five per centum of the gross recurrent revenue of the Government as shown in the Appropriation Accounts for the latest year for which those Accounts have been audited by the Controller and Auditor-General.	(c) as an agent of the Government, administer the public debt including the issuance of, payment of a return on, and redemption of, bonds and other securities of the Government;	There shall be a committee of the Bank, to be known as the Monetary Policy Committee of the Central Bank of Kenya, which shall have the responsibility within the Bank for formulating monetary policy.	One of the Central Bank of Kenya's mandates is to foster the liquidity, solvency and proper functioning of a market-based financial system. This is achieved through the following: Developing appropriate laws, regulations and guidelines that govern the players in the banking sector. (4) The Bank may impose on any institution which fails to maintain the sufficient minimum cash balances required under this section 43. (1) Every specified bank, specified financial institution ... shall furnish to the Bank ... any information and data the Bank may reasonably require for the proper discharge of its functions under this Act. other domestic regulators: Insurance Regulatory Authority, Retirement Benefits Authority, Capital Markets Authority		
Kenya		1	1	1	1	0	1	1	**6**	
	2007	the Bank may grant temporary advances to the Federal Government in respect of temporary deficiency of budget revenue at such rate of interest as the Bank may determine. -> not automatic	determined by the bank	temporary	(2) The total amount of such advances outstanding shall not at any time exceed five per cent of the previous year's actual revenue of the Federal Government.	The Bank shall have power (b) to issue other forms of securities including treasury bills as it may deem necessary for purposes of liquidity management*	The MPC shall have responsibility within the Bank for formulating monetary and credit policy	There is hereby established for the purpose of co-ordination the supervision of financial institutions, a Financial Services Regulation Coordinating Committee (in this Act referred to as ":the Committee")		*loss in independence

Nigeria		1	0	1	1	0	1	0	**4**	
	2010	The National Bank of Angola can open, to the State, a current account credit up to a maximum equivalent to 10% of the amount of current revenue collected in the preceding year -> not automatic	no interest rate specified	The amount referred to above and the interest thereon, shall be settled by 31st December of the respective year, although for this purpose there may be recourse to negotiable and interest bearing government bonds -> "recourse to negotiable and interest bearing government bonds": if deadline is not met, advances are settled through government bonds (?)	up to a maximum equivalent to 10% of the amount of current revenue collected in the preceding year.	The National Bank of Angola can buy, sell, manage and put into circulation, on terms and conditions agreed upon with the State, securities issued or guaranteed by this and market them directly with the public	The National Bank of Angola shall fix and publish its discount, rediscount and lending rates, and may establish differential rates, maximum limits for the various categories of transactions and maturities.	In its dealings with financial institutions domiciled in the country It is incumbent on the National Bank of Angola to: a) supervise them; b) ensure their solvency and liquidity; 1. It is incumbent on the National Bank of Angola, in particular, to ensure oversight of the financial institutions		
Angola		1	0	0	1	0	1	0	**3**	
	2008	The National Bank shall act as a fiscal agent and banker for the Government and...engage in the following transactions: 6/ make advances to the Government -> not automatic	13. Credits and Advances 1/ The amount of advances and credit to be extended by the National Bank to the Government for each fiscal year shall be determined in consultation with the Bank and shall be consistent with the maintenance of price and exchange rate stability. 2/ The National Bank shall not extend direct credit to any person other than the Government, banks and other financial institutions.* -> interest not specified	13. Credits and Advances 1/ The amount of advances and credit to be extended by the National Bank to the Government for each fiscal year shall be determined in consultation with the Bank and shall be consistent with the maintenance of price and exchange rate stability. 2/ The National Bank shall not extend direct credit to any person other than the Government, banks and other financial institutions.* -> time horizon not specified	13. Credits and Advances 1/ The amount of advances and credit to be extended by the National Bank to the Government for each fiscal year shall be determined in consultation with the Bank and shall be consistent with the maintenance of price and exchange rate stability. 2/ The National Bank shall not extend direct credit to any person other than the Government, banks and other financial institutions.* -> amount not specified	The National Bank shall act as a fiscal agent and banker for the Government and...engage in the following transactions: 5/ upon authorization by the Ministry of Finance and Economic Development, manage public debt transactions; manage and sell treasury bills and bond and other securities of the Government;	the National Bank shall have the powers and duties to: 4/ regulate and determine the supply and availability of money and credit as well as the applicable interest rates and other charges	the National Bank shall have the powers and duties to: 7/ license and supervise banks, insurers and other financial institutions		*loss in independence
Ethiopia		1	0	0	0	0	1	0	**2**	
	2010	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment		
South Africa		1	1	0	0	0	1	0	**3**	
	2018	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	The Vice Chairman for Supervision shall develop policy recommendations for the Board regarding supervision and regulation of depository institu-tion holding companies and other financial firms supervised by the Board, and shall oversee the supervision and regulation of such firms. shared responsibility, see BIS https://www.bis.org/regauth.htm		
United States		1	1	1	1	1	1	1	**7**	

	2019	*Original:* La Banque ne peut se porter garante d'engagements contractés par l'Etat, acquérir directement des titres de créance ou des Sukuk qu'il émet ou lui consentir des concours financiers, que sous forme de facilité de caisse visée au 2ème alinéa ci-après. La facilité de caisse est limitée à cinq pour cent (5%) des recettes fiscales réalisées au cours de l'année budgétaire écoulée. La durée totale d'utilisation de cette facilité ne peut excéder 120 jours, consécutifs ou non, au cours d'une année budgétaire. Les montants effectivement utilisés au titre de cette facilité sont rémunérés au taux de base de refinancement des banques auprès de la Banque. English: The Bank can not guarantee commitments contracted by the State, directly acquire debt securities or Sukuk which it issues or grant financial assistance to it, except in the form of a cash facility referred to in the second paragraph below. The cash facility is limited to five percent (5%) of tax revenue generated in the past fiscal year. The total duration of use of this facility cannot exceed 120 days, consecutive or not, during a fiscal year. The amounts actually used under this facility are remunerated at the bank's basic refinancing rate with the Bank.	The amounts actually used under this facility are remunerated at the bank's basic refinancing rate with the Bank.*	The total duration of use of this facility cannot exceed 120 days, consecutive or not, during a fiscal year	The cash facility is limited to five percent (5%) of tax revenue generated in the past fiscal year.	*Original*: La Banque est chargée, dans les conditions fixées par voie réglementaire, des opérations d'émission, de rachat, de conversion et de remboursement des emprunts publics et des effets publics, et de manière générale, du service financier des emprunts émis par l'Etat. A la demande du Gouvernement, elle peut participer aux négociations de prêts et emprunts extérieurs conclus pour le compte de l'Etat. *English:* The Bank is responsible, under the conditions laid down by regulation, for issuing, buying back, converting and repaying public loans and public bills, and in general, for the financial service of loans issued by the State . At the request of the Government, it can participate in negotiations for external loans and borrowings concluded on behalf of the State.	*Original:* le conseil est chargé des missions suivantes: fixe le taux d'intérêt des opérations de la Banque sur le marché monétaire English: the council is responsible for the following missions: sets the interest rate for Bank operations on the money market	*Original:* La Banque s'assure du bon fonctionnement du système bancaire et veille à l'application des dispositions législatives et réglementaires relatives à l'exercice et au contrôle de l'activité des établissements de crédit et organismes assimilés *English:* The Bank ensures the proper functioning of the banking system and ensures the application of legislative and regulatory provisions relating to the exercise and control of the activity of credit institutions and similar bodies** also BIS: Central Bank is sole banking regulator https://www.bis.org/regauth.htm	
Morocco		1	1	1	1	0	1	0	**5**
	2003	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	no amendment	
China		1	1	1	1	1	1	0	**6**

*gain in independence
**loss in independence

Observations	*AVG Scores*						
32	**1.000**	**0.406**	**0.844**	**0.781**	**0.469**	**0.953**	**0.469**

D. GMT 2020 Results

Results of the 2020 GMT Index Update

	CB Independence 2020					CB Independence 2003			Delta
Country	**Political**	*Delta Pol '03*	**Economic**	*Delta Econ '03*	**Total**	**Political**	**Economic***	**Total**	**2020 - 2003**
Brazil	**4**	*0*	**6**	*0*	**10**	**4**	**6**	**10**	0
Mexico	**5**	*0*	**6**	*0*	**11**	**5**	**6**	**11**	0
Argentina	**6**	*0*	**4**	*-2*	**10**	**6**	**6**	**12**	-2
Colombia	**1**	*0*	**7**	*0*	**8**	**1**	**7**	**8**	0
Chile	**3**	*-1*	**7**	*0*	**10**	**4**	**7**	**11**	-1
Russian Federation	**2**	*-2*	**4**	*1*	**6**	**4**	**3**	**7**	-1
Turkey	**3**	*-2*	**7**	*-1*	**10**	**5**	**8**	**13**	-3
Switzerland	**6**	*-1*	**6**	*-2*	**12**	**7**	**8**	**15**	-3
United Kingdom	**3**	*0*	**4**	*-2*	**7**	**3**	**6**	**9**	-2
Poland	**5**	*-2*	**3**	*-4*	**8**	**7**	**7**	**14**	-6
Euro area	**8**	*0*	**6**	*-2*	**14**	**8**	**8**	**16**	-2
China	**3**	*0*	**6**	*0*	**9**	**3**	**6**	**9**	0
Japan	**1**	*0*	**6**	*0*	**7**	**1**	**6**	**7**	0
Korea, Rep.	**2**	*0*	**4**	*-3*	**6**	**2**	**7**	**9**	-3
Australia	**1**	*-1*	**7**	*-1*	**8**	**2**	**8**	**10**	-2
Indonesia	**5**	*0*	**5**	*-1*	**10**	**5**	**6**	**11**	-1
India	**3**	*1*	**2.5**	*-3.5*	**5.5**	**2**	**6**	**8**	-2.5
Pakistan	**4**	*1*	**4**	*-1*	**8**	**3**	**5**	**8**	0
Bangladesh	**0**	*0*	**3**	*0*	**3**	**0**	**3**	**3**	0
Saudi Arabia	**2**	*0*	**6**	*0*	**8**	**2**	**6**	**8**	0
United Arab Emirates	**3**	*0*	**4**	*0*	**7**	**3**	**4**	**7**	0
Israel	**3**	*2*	**5**	*0*	**8**	**1**	**5**	**6**	2
Egypt, Arab Rep.	**2**	*1*	**4**	*-1*	**6**	**1**	**5**	**6**	0
Algeria	**8**	*0*	**4**	*-1*	**12**	**8**	**5**	**13**	-1
Morocco	**4**	*2*	**5**	*-1*	**9**	**2**	**6**	**8**	1
Nigeria	**3**	*1*	**4**	*-1*	**7**	**2**	**5**	**7**	0
South Africa	**1**	*0*	**3**	*0*	**4**	**1**	**3**	**4**	0
Angola	**3**	*1*	**3**	*0*	**6**	**2**	**3**	**5**	1
Kenya	**1**	*0*	**6**	*0*	**7**	**1**	**6**	**7**	0
Ethiopia	**3**	*0*	**2**	*-3*	**5**	**3**	**5**	**8**	-3
United States	**5**	*0*	**7**	*0*	**12**	**5**	**7**	**12**	0
Canada	**3**	*0*	**7**	*0*	**10**	**3**	**7**	**10**	0
		0		*-28.5*		*106*	*186*	**Overall Δ**	-28.5
Avrg Score	*3.31*		*4.92*		*8.23*				
Avrg Satisfaction Ratio	41%		62%		51%				

*reduced 2003 BoE score by 2 to ensure comparability

		Values Normalized				
Country		**Political**	**Economic**	**Total '20**	**Total '03**	**Delta**
Brazil	BRA	0.50	0.75	**0.63**	**0.63**	0.00
Mexico	MEX	0.63	0.75	**0.69**	**0.69**	0.00
Argentina	ARG	0.75	0.50	**0.63**	**0.75**	-0.13
Colombia	COL	0.13	0.88	**0.50**	**0.50**	0.00
Chile	CHL	0.38	0.88	**0.63**	**0.69**	-0.06
Russian Federation	RUS	0.25	0.50	**0.38**	**0.44**	-0.06
Turkey	TUR	0.38	0.88	**0.63**	**0.81**	-0.19
Switzerland	CHE	0.75	0.75	**0.75**	**0.94**	-0.19
United Kingdom	GBR	0.38	0.50	**0.44**	**0.56**	-0.13
Poland	POL	0.63	0.38	**0.50**	**0.88**	-0.38
Euro area	EMU	1.00	0.75	**0.88**	**1.00**	-0.13
China	CHN	0.38	0.75	**0.56**	**0.56**	0.00
Japan	JPN	0.13	0.75	**0.44**	**0.44**	0.00
Korea, Rep.	KOR	0.25	0.50	**0.38**	**0.56**	-0.19
Australia	AUS	0.13	0.88	**0.50**	**0.63**	-0.13
Indonesia	IDN	0.63	0.63	**0.63**	**0.69**	-0.06
India	IND	0.38	0.31	**0.34**	**0.50**	-0.16
Pakistan	PAK	0.50	0.50	**0.50**	**0.50**	0.00
Bangladesh	BGD	0.00	0.38	**0.19**	**0.19**	0.00
Saudi Arabia	SAU	0.25	0.75	**0.50**	**0.50**	0.00
United Arab Emirates	ARE	0.38	0.50	**0.44**	**0.44**	0.00
Israel	ISR	0.38	0.63	**0.50**	**0.38**	0.13
Egypt, Arab Rep.	EGY	0.25	0.50	**0.38**	**0.38**	0.00
Algeria	DZA	1.00	0.50	**0.75**	**0.81**	-0.06
Morocco	MAR	0.50	0.63	**0.56**	**0.50**	0.06
Nigeria	NGA	0.38	0.50	**0.44**	**0.44**	0.00
South Africa	ZAF	0.13	0.38	**0.25**	**0.25**	0.00
Angola	AGO	0.38	0.38	**0.38**	**0.31**	0.06
Kenya	KEN	0.13	0.75	**0.44**	**0.44**	0.00
Ethiopia	ETH	0.38	0.25	**0.31**	**0.50**	-0.19
United States	USA	0.63	0.88	**0.75**	**0.75**	0.00
Canada	CAN	0.38	0.88	**0.63**	**0.63**	0.00
AVG		*0.41*	*0.62*	*0.51*	*0.57*	-1.78
	Standard Deviation	*0.24*	*0.19*			