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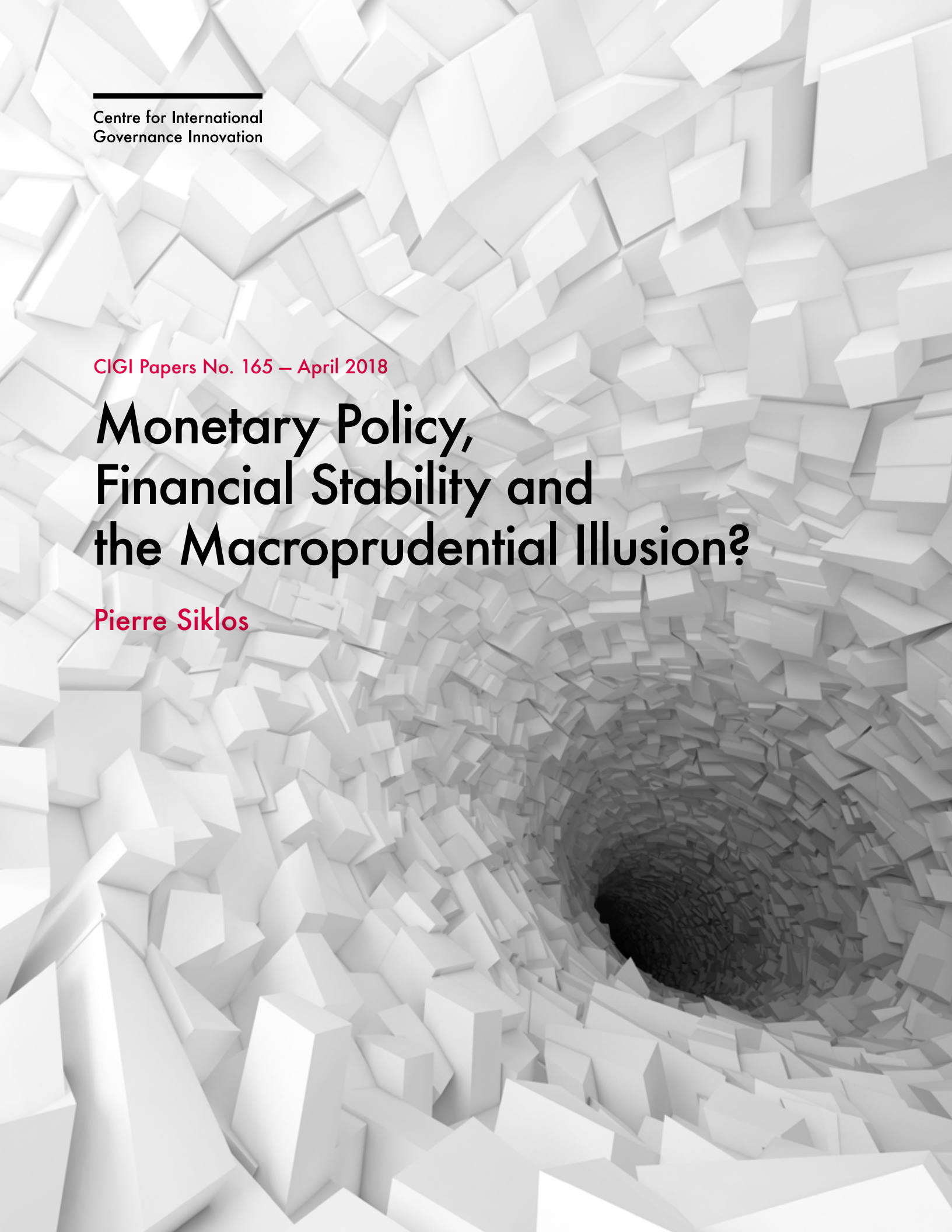

CIGI Papers No. 165 – April 2018

Monetary Policy, Financial Stability and the Macroprudential Illusion?

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About the Author

Pierre Siklos is a CIGI senior fellow. He has held seven visiting researcher positions at central banks in European and Asian countries, including Germany, Hong Kong, Hungary and Japan. Pierre has also held more than 20 visiting fellowships at leading academic institutions, such as the International School of Economic Research in Siena, Italy, Oxford University in the United Kingdom and Princeton University in the United States.

He has a particular interest in central bank independence, the governance models of central banks and the challenges that arise in an interdependent world. To that end, he has compared and contrasted how European models of integration differ from those in Asia. His work in applied time series analysis and monetary policy focuses on inflation and financial markets.

Pierre teaches macroeconomics at Wilfrid Laurier University. He is a former chair of the Bundesbank Foundation of International Monetary Economics at Freie Universität in Berlin, Germany. He is also a research associate at Australian National University's Centre for Macroeconomic Analysis in Canberra and a senior fellow at the Rimini Centre for Economic Analysis in Italy. Pierre serves on the editorial boards of *Economics Research International, Economic Systems* and the *Journal of Economic Research*, and is the former managing editor of the *North American Journal of Economics and Finance*.

Pierre earned his Ph.D. in economics from Carleton University and his M.A. in economics from the University of Western Ontario. He joined CIGI as a senior fellow in 2009 and is fluent in English, French and Hungarian.

About the Global Economy Program

Addressing limitations in the ways nations tackle shared economic challenges, the Global Economy Program at CIGI strives to inform and guide policy debates through world-leading research and sustained stakeholder engagement.

With experts from academia, national agencies, international institutions and the private sector, the Global Economy Program supports research in the following areas: management of severe sovereign debt crises; central banking and international financial regulation; China's role in the global economy; governance and policies of the Bretton Woods institutions; the Group of Twenty; global, plurilateral and regional trade agreements; and financing sustainable development. Each year, the Global Economy Program hosts, co-hosts and participates in many events worldwide, working with trusted international partners, which allows the program to disseminate policy recommendations to an international audience of policy makers.

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Executive Summary

This paper presents some tentative evidence that suggests that central banks, in particular, have yet to convince us that our understanding of the effectiveness of existing macroprudential strategies is sufficiently well advanced to be confident that we have reached a new normal that will ensure that financial crises are a thing of the past.

Monetary policy before the global financial crisis was largely described via a policy rule that linked inflation and real economic developments to an interest rate under the control of a central bank. This paper shows that, in spite of the crisis, a version of the so-called Taylor rule remains a reasonably useful depiction of how the current stance of monetary policy is set. Turning to macroprudential frameworks, which are used to ensure financial system stability, especially since the global financial crisis, much less is known about their effectiveness. Accordingly, this paper considers whether some indicator of financial stability, as well as some institutional characteristics of the country or economy in question, increases the likelihood, as proxied by the value of the macroprudential index developed at CIGI, that one or more instruments will be deployed. The findings turn out to be highly sensitive, for example, to the exclusion of property prices. Indeed, gaps remain in the data that should be useful to gain a better understanding of the effectiveness of macroprudential policies. Therefore, we should be less confident that central banks have an adequate understanding of the transmission mechanism of macroprudential instruments.

Introduction: A Not So NICE Decade Ends

In monetary policy and central banking, the year 2018 marks the start of the second decade since the global financial crisis (GFC) abruptly ended the NICE (non-inflationary continuous expansion) decade that preceded it. NICE is how Mervyn King, former governor of the Bank of England, defined the era of the early 1990s to the early 2000s.[1] The global economy has improved considerably in the past year, and there is now more optimism than in recent memory that an escape from levels of low growth to those that are reminiscent of the pre-GFC era is attainable. Even the International Monetary Fund (IMF), long worried that austerity programs were being introduced too soon after the GFC, has cheered global economic performance over the past year (Celasun, Milesi-Ferretti and Obstfeld 2017).

What then is the state of monetary policy as it relates to the desire to maintain financial system stability? Do policy makers actually have a good understanding of the ingredients required to provide the right mix of monetary policy and financial conditions? As we shall see, arguments too often centre on the tools necessary to provide the right combination of monetary policy and financial stability conditions as opposed to devoting attention to the need to strengthen the institutions charged with these tasks.

Needless to say, along with improvements in economic conditions in 2018, there are warnings that the recovery is temporary and the time for reform is now. This follows the belief that when economic performance is strong the costs to implement structural reforms are lower, while the receptiveness of the public to what could be painful change is higher than when the economy is performing poorly. Many of the delayed reforms are structural in nature, so-called because they involve the regulation of markets for goods and services and their impact on productivity and living standards. In the meantime, policy makers have kept busy over the past 10 years redesigning how the financial system should operate to prevent a return of the GFC. Critical elements in these efforts, which cover a wide scope, have been termed macroprudential.[2] This reflects the view that policy makers and governments were overly focused on microprudential regulation and supervision prior to 2008 at the expense of the macroeconomic consequences of financial instability. As a result,

1 Mervyn King first used the expression in 2003 in his first speech as governor of the Bank of England (King 2003). He returned to the theme in 2008 as the GFC was under way to effectively announce the end of the NICE decade (King 2010).

2 An excellent background of the creation and early spread of macroprudential policy regimes is Barwell (2013). Much of the international financial reform effort is spearheaded by the Financial Stability Board (FSB), an international organization devoted to the promotion of financial system stability.

macroprudential concerns came to the fore. The concept is not new, but one deemed unnecessary when the era of the Great Moderation prevailed.[3] Before the NICE decade ended it would have been uncontroversial to argue that low inflation and steady economic growth could also combine to ensure financial system stability. Models and economic analyses during this era associated calm macroeconomic conditions with best practices in both monetary and fiscal policies. This environment was thought to be conducive to the maintenance of financial system stability. Consequently, monetary policy could focus on keeping inflation low and the economy at potential while financial regulators and supervisors would take care of the rest.

As 2018 begins, however, prominent voices continue to advocate for monetary policy to remain extraordinarily loose to allow the needed structural reforms to be put into place and financed at unheard of low interest rates (see, for example, *The Economist* 2017). Meanwhile, in spite of the economic recovery that has been years in the making and that has been aided by a monetary policy that struggles to tighten lest the recovery is shortened, central bankers fret that inflation remains too low in relation to past economic recoveries. In some economies, such as Canada, the United States and the euro zone, inflation struggles to meet the objectives that central banks are expected to achieve. These views are traded off against the impression that economies are near or at potential and that delaying a tightening of monetary policy would signal a return to the days when the monetary authorities were "behind the curve" and risked excessive inflation rates (see, for example, Yellen 2017).

Central bankers could be accused of giving the impression that monetary policy has lost its potency. A worry is that when the next downturn comes it will be more difficult to implement the aggressive policy easing that might be required.[4] If central bank policy rates remain at or near historic lows, as well as close to their effective lower bound, there is less room to manoeuvre to quickly ease monetary policy conditions. Even if unconventional tools are deployed, such as the purchase of government bonds or private sector assets, the stance of policy may be eased, but such interventions may also send markets a pessimistic signal about the short-term economic outlook. The political environment, potentially hostile to more extraordinary easing in the form of unconventional or unorthodox monetary policies (UMPs), particularly in the United States, may also not be conducive to a return to the policies implemented in the years immediately following the GFC. Political hostility comes from thinking that UMPs favours those who took unnecessary financial risks with unintended but negative economic consequences. The economics of UMPs suggest that while these policies may have softened the blow from the financial crisis, their introduction favours debtors over savers.

The good news is that, in spite of a turbulent decade, monetary policy can still be interpreted broadly and assessed according to the thinking that preceded the GFC. Unfortunately, those who argue that monetary policy ought to remain ultra-loose to allow other reforms to be introduced rely, in part, on the belief that all that is needed is some mix of macroprudential policies to keep future financial instability at bay. As discussed below, we are not only far away from understanding the link between financial stability and macroprudential policy regimes but we ignore, to our peril, the consequences of financial repression that the new regimes have created.[5] What has not yet been fully discussed is how much repression is enough nor whether each country or economy can cherry-pick the amount of repression to impose on their own financial system.

3 The Great Moderation was a period, roughly from the mid-1980s until 2006, when the variability of inflation and real GDP growth were both low and stable.

4 That impression may be exacerbated by difficulties in accurately measuring the amount of economic slack one can observe at any given moment. Two other reasons that are given to persist with ultra-loose monetary policy, according to critics of interest rate normalization, include demographic factors, which reduce the real return necessary to keep the economy at potential, and concerns that higher interest will short-circuit the ongoing economic recovery. Just as recoveries do not die of old age, contrary to some who have made such arguments, the evidence that supports the other two factors mentioned is, as yet, inconclusive (see Siklos 2017 for additional discussion).

5 Financial repression generally refers to regulatory and other non-price means of influencing economic activity in the financial sector.

Macroprudential interventions inevitably produce a form of financial repression. Moreover, even the most ardent supporters of macroprudential forms of intervention are careful to point out that history teaches us that policy makers' response to financial crises are generally insufficient to relegate such events to the dustbin of history. This is the well-known "this time is different" trap (Reinhart and Rogoff 2009). Episodes such as the GFC are, fortunately, exceedingly rare events, but there has yet to be a frank discussion about whether the current response to those bleak days of 2008 and 2009 ought to have translated into believing that a new trade-off, namely ultra-loose policy while artificially maintaining financial system stability, exists, especially when there is little evidence to support the existence of such a trade-off, let alone whether it is sustainable or even desirable in the current economic environment. It is time to ask whether policy makers see financial stability as an end in itself or as a prudential strategy in response to a previous crisis, thereby possibly not adequately preparing the public for the next crisis. More generally, central bankers, in particular, may have framed the promise of macroprudential policies in such a way as to exaggerate their benefits while downplaying the economic risks associated with them.[6]

The Global State of Monetary Policy

Since the GFC, monetary and financial stability policies have become more intertwined. Prior to the GFC, it was thought that changing a central bank policy interest rate was sufficient for monetary policy to achieve low and stable inflation while ensuring that the economy would operate around capacity. Financial stability would then follow. Little thought was given to whether a separate strategy, beyond one that follows from effective financial supervision, was necessary to prevent a financial crisis from happening.

Monetary policy could easily be explained by a simple rule, referred to as a policy rule or the Taylor rule, named after John Taylor, the Stanford economist who first proposed it in the early 1990s. Not surprisingly, central bankers, in particular, became fond of explaining to financial markets and to the public, who expected desirable economic conditions together with low inflation, that the appropriate strategy required calibrating an interest rate, referred to as the central bank's policy rate, based on the two principles that constitute the Taylor rule. They are: differences between a measure of inflation in consumer prices and a target the monetary authority aims for; and the gap between the level of economic activity (for example, GDP in constant purchasing power parity terms) and an estimate of its potential. In principle, of course, this makes it relatively easy to monitor what a central bank does and how far it deviates from what might be considered best practice but, as we now know, it is easy to be deceived by the Taylor rule's simplicity (see, for example, Siklos 2017, chapter 4). It was always emphasized that the rule must be flexibly adhered to. Discretion would be minimized, but not eliminated altogether since there is always some uncertainty about the economic outlook.

The GFC may have shattered our thinking about the connection between macroeconomic stability and financial stability, but policy makers and analysts still like to express their views about the current stance of monetary policy through the prism of a policy rule. The Taylor rule, a lodestar rather than something that ought to be rigidly followed at all times, satisfied a strong desire expressed by many policy makers, underscored by a belief conveyed, for example, in the words of former Bank of Canada Governor Gordon Thiessen (2000, 61), "Simpler and more straightforward approaches have generally turned out to be better…What is needed to get the job done are one clear objective and one simple instrument." Nevertheless, it is precisely because of its appeal that the Taylor-rule way of thinking about monetary policy spread throughout the world, especially at the beginning of the 2000s, and remains, to this day, the approach of choice when it comes to framing our understanding on the appropriate stance of monetary policy.[7]

6 Psychologists, and those who favour a behavioural economics view of how financial markets operate, refer to this form of bias as the affect heuristic. See, for example, Kahneman (2011) and Lo (2017).

7 So much so that the US Congress continues, from time to time, to debate whether the US Federal Reserve (Fed) ought to be accountable for failing to follow such a rule. See Labonte (2017) for a brief overview of the issues.

If we examine data since 2000 for a sample of up to 33 countries, 17 of which are referred to as advanced economies, while the remaining ones are classified as emerging market economies, overall we conclude that the Taylor rule is a useful way to understand how most central banks set their policy rates in response to inflation and real economic developments. That said, the end of the NICE decade has brought about some significant changes in how central banks around the world react to inflation and real economic shocks. When Taylor proposed his rule in 1993, he argued that the Fed balanced its response to inflation and GDP departures from some benchmark (two percent for inflation and potential real GDP for output), since the Fed's dual mandate requires it to balance a desire to achieve price stability while seeking to promote economic growth around the economy's potential (Taylor 1993). Later, Taylor argued that best practice in the area of monetary policy requires the central bank to tighten policy when inflation is too high and loosen it when the reverse is true (Taylor 1999). This condition has come to be known as the Taylor principle.

The principle requires a larger than one-to-one response to an inflation shock, otherwise the real interest rate would not rise. The real interest rate is the effective cost of borrowing or the return from saving after inflation has been taken into account. A rise in the real interest rate penalizes borrowers who would be expected to reduce their borrowing at the same time as savers are prompted to save more. The consequence would be that pressure on inflation would subside, eventually permitting the monetary authority to ease back its policy stance.

In general, however, how the central bank responds to economic shocks also depends on its policy strategy, that is, the extent to which it is committed to a particular inflation objective as opposed to other objectives (for example, real economic performance or exchange rates) that may come into conflict from time to time.

Table 1 summarizes some findings about the Taylor rule for the economies examined. Five broad scenarios are considered. Central to best practice in monetary policy (see Taylor 1999) is how the monetary authorities respond to changes

Table 1: The Global Performance of the Taylor Rule

Coefficients	Explanation	Countries
Both inflation and output gap >= 1	Inflation response consistent with Taylor principle, but response to output gap could be excessive	Denmark
Inflation >= 1; output gap >= 0.5	Consistent with the original Taylor rule specification (1993)	Colombia, Iceland, India, Poland, South Africa, Sweden, Switzerland
Only inflation >= 1	Minimum required to meet the Taylor principle	Canada, Chile, Czech Republic, Hungary, Indonesia, Israel, Mexico, Peru, Philippines, Russia, Thailand, Turkey
Only output gap >= 1	Central bank could react excessively to output but need not ignore inflation altogether	Australia, Brazil, New Zealand, Norway, United Kingdom, United States
Output gap>= 0.5	Only output gap coefficient compatible with original Taylor rule specification (1993)	Hong Kong, euro area

Notes: Based on individual country estimates of: $i_t = c + \beta_g g_t + \beta_{\mathcal{U}} \mathcal{U}_t + \varepsilon_t$ where i_t equals the monetary policy rate, g_t is the output gap, $\mathcal{U}_t$ is the inflation rate and ε_t is the residual term. Data used span the period 2000Q1 to 2016Q4 for 33 countries. Seventeen are advanced (Australia, Canada, Czech Republic, Denmark, euro area, Hong Kong, Iceland, Israel, Japan, Korea, New Zealand, Norway, Singapore, Sweden, Switzerland, the United Kingdom and the United States) and 16 are emerging market economies (Argentina, Brazil, Chile, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Russia, South Africa, Thailand and Turkey). Inflation is the rate of change in headline consumer price index inflation. Output gap is the difference between the (log) level of real GDP and potential real GDP estimated via Hamilton's (2017) filter. Also, see footnote 8.

in inflation. The so-called Taylor principle argues that a one percent rise in inflation ought to prompt the central bank to raise the policy rate by more than one percent since this translates into a higher real cost of borrowing (or real return to lending). In turn, this should reduce aggregate spending thereby leading to a fall in inflation. Hence, the inflation coefficient should be greater than one. A central bank that is simultaneously focused on real economic performance should respond by easing policy when there is economic slack and raise the policy interest rate when economic activity exceeds capacity. Originally, Taylor took a balanced view about the relative importance of changes in inflationary pressure relative to how much economic slack is present when proposing that a central bank follow such a rule. Later, the rule was amended to favour a relatively more aggressive response to changes in inflation over changes in real economic conditions. Accordingly, Table 1 classifies economies based on how strongly they respond to one or both determinants of the Taylor rule.

Focusing on the cases where the central bank follows the Taylor principle, we find that 20 of the 28 economies adhere to it in some fashion. More generally, our results also highlight the flexibility with which the rule and the Taylor principle have been applied. As mentioned above, there is nothing requiring that central banks adhere to the rule at all times. The overall economic environment, both current and anticipated, will also play a role and demand a flexible response. Hence, at times, some central banks will be relatively more responsive to inflationary shocks while others less so.

The economies that placed relatively less emphasis on inflation as opposed to reacting to real economic developments include the advanced economies at the centre of the GFC, namely the United States, the United Kingdom and the euro zone, hardly a surprising result. Also notable is that all the emerging market economies in our dataset had adopted the Taylor principle of best practice in conducting monetary policy. Perhaps this is one reason why these economies remained relatively more resilient throughout the crisis. It should also be noted that their financial systems were less exposed to the kinds of shocks that impacted the advanced economies (see, for example, Siklos 2017, chapter 1).

The only major economy that defies any description according to the Taylor-rule way of characterizing monetary policy is Japan. But this may not come as a total surprise given that Japan has, for more than two decades, been mired in a monetary policy strategy that has kept interest rates near zero and where successive bouts of UMPs have not been able to significantly raise inflation expectations.[8] When all economies in our dataset are examined jointly the picture that emerges is one where, on average, all central banks are seen as responding to inflation according to the Taylor principle. It should also be noted that this result holds if we control for the period since the GFC.

Exercises such as the one summarized above come with notes of caution and could well fail to continue to hold up as economies carry on with their recovery while inflation languishes and policy rates rise more slowly than adherence to a Taylor rule would suggest. Nevertheless, they do suggest that monetary policy can still be described according to some generally accepted principles. As we will now demonstrate, the same is far from true in the case of macroprudential policies.

The Macroprudential Illusion

One of the least publicized aspects of the debate about trading off financial system stability and monetary stability is that the results discussed in the previous section are based on concepts that can, for the most part, be evaluated fairly regularly (i.e., monthly or, more typically, quarterly). In contrast, indicators of financial stability are proving not only more difficult to come by but they often can only be evaluated less regularly.[9] Moreover, whereas the ideas and principles outlined by Taylor are more than two decades old, and widely understood even if there are disagreements about their applicability, there continues to be significant disagreement not only about how to define financial stability but

8 There are three other exceptions to the list of countries in Table 1, namely Korea, Singapore and Malaysia. In Korea's case, the central bank was found to respond to both inflation and output, but fell short of the metrics favoured by Taylor (1993, 1999). Korea was one of the few Asia-Pacific economies hard hit by the GFC. The same is generally true of Singapore and Malaysia, whose central banks are seen as primarily responding to real economic developments and not to inflation.

9 Readers who consult the ongoing dataset being constructed will see this quite clearly.

also what to include in the tool kit of instruments that are labelled macroprudential in nature (see, for example, Lombardi and Siklos 2016).

Consider, for example, the following definitions published by two of the most important central banks in the world, namely the European Central Bank (ECB) and the Fed. The ECB defines financial stability as: "A condition in which the financial system — intermediaries, markets and market infrastructure — can withstand shocks without major disruption in financial intermediation and in the effective allocation of savings to productive investment" (ECB 2014, 5). Turning to the Fed, financial stability reflects, "[s]ystemic risk arising from financial markets and institutions and from the emergence of new products; studying financial market functioning and the interconnectedness of financial institutions and understanding the roles of leverage and maturity transformation" (Siklos 2017, 240).

The ECB's view is about resilience in the face of shocks while the Fed emphasizes the sources of financial risk that can threaten financial stability. The two views need not, of course, be incompatible but they do suggest important differences in the sources of threat to financial stability. Thus, for example, whereas the Fed's definition explicitly mentions systemic risks, the ECB's view makes no mention of this phenomenon.

Is it any wonder then that observers ask whether the repairs to the oversight and regulation of the financial system since 2009 have taught policy makers the right lessons about the risks of jointly managing monetary policy and financial stability? As Gavyn Davies (2017) put it recently: "Central bankers…remain very reluctant to assign any specific role to financial stability in setting interest rates, and macroprudential policy remains largely in the wings."

Nevertheless, if one is to take seriously the ability of macroprudential instruments to suppress the financial markets' predilection to take on too many risks, thereby precipitating a financial crisis, then central banks and policy makers more generally need to be convinced by evidence and not anecdotes. In ongoing work at CIGI, we began by combining two indices that attempt to measure the number of instruments in place, but not the intensity with which these instruments are used. Generally speaking, the indices evaluate the number of instruments aimed at keeping a lid on borrowers' leverage and those regulating the financial position of financial institutions. For the years 2015 and 2016, we merged the index created at the IMF (see Cerutti, Claessens and Laeven 2017) with the index created by Lombardi and Siklos (2016). The greater the number of macroprudential instruments at the disposal of policy makers — these need not only be central banks because other agencies are often also involved (see Lombardi and Siklos 2016) — the higher the value of the index.

Next, we proceeded to ask whether some indicator of financial stability as well as some institutional characteristics of the country or economy in question increases the likelihood, as proxied by the value of the macroprudential index, that one or more instruments will be deployed. As already explained, there is no consensus on what constitutes financial stability other than the "we know it when we see it" principle. Nevertheless, it is fairly clear that financial stability aims to have an influence on asset prices with a view to ensuring overall macroeconomic stability. Accordingly, we created a proxy that statistically combines the amount of credit (as a percent of the size of the economy or GDP), property prices, exchange rates and capital flows, as well as the size of the central bank's balance sheet as a percent of GDP. In the case of macroeconomic stability, we considered the performance of inflation and real economic growth, as well as one year forecasts of these same variables.

The success of a macroprudential regime also depends on institutional capacity to ensure that financial stability is achieved. The following institutional characteristics were collected. They are: the degree to which capital is allowed to flow freely or not across borders, the type of exchange rate regime in place (i.e., fixed, managed or freely floating), the degree to which the central bank is transparent, the monetary policy regime in place (i.e., explicit inflation targeting, dual mandate or some other policy strategy), whether the country or economy in question suffered any banking or fiscal crises in the past and some governance indicators constructed by the World Bank. Finally, because efforts to mitigate a future financial crisis involve a global effort and are not just homegrown attempts to deal with financial risks, a global version of the previously described financial stability indicator was also constructed to represent the mean of the country-specific indicators.

The results of our testing were found to be particularly sensitive to the inclusion of property prices in the financial stability proxy. Unfortunately, we were only able to collect a long enough series for property prices for 20 countries (out of a potential 29 where adequate macroprudential-policy-related data were available). In any event, when we asked what was the likelihood of using a macroprudential instrument, it was found that more domestic and global financial stability, relative to some equilibrium value, reduced the likelihood that such instruments will be deployed. Therefore, financial stability induces complacency, which sets up the system to experience an eventual "Minsky moment."[10] Assuming this result holds in future, this could signal the fact that greater financial stability creates more complacency among policy makers. What if the question is restated to ask: what is the change in the likelihood of deploying macroprudential instruments when domestic or global financial stability rise and when institutions become more effective at dealing with financial stability threats? We conclude that only a strengthening of domestic institutions speeds up the likelihood that macroprudential instruments will be used.

The bottom line, however, is that because we have so little in the way of understanding how effective macroprudential instruments are, and whether some instruments are more effective than others, we are not yet able to provide the kind of straightforward analysis that has been used for decades to describe the impact of changes in the economic environment on the stance of monetary policy. It is also important to highlight the point that our macroprudential indicator simply aggregates the number of available instruments. Just as medications can interact with each other, which lead to warnings about their effectiveness, we have yet to figure out how the potentially large number of macroprudential instruments interact not only with monetary policy actions but with economic activity more generally. Ongoing research at CIGI seeks to address how monetary policy and financial stability interact with each other. Yet, as noted earlier, a narrative that frequently emanates from the lips of central bankers is that they are optimistic about the potential effectiveness of existing macroprudential regimes. The existing data provide too little clarity yet to support such a conclusion.

Where Do We Go from Here?

The evidence above does not support the idea that a macroprudential strategy that delivers financial system stability is a goal that ought to be abandoned. Once policy makers understand that the focus of financial stability concerns reside in financial tail risks, not day-to-day movements in financial asset prices, then utilizing macroprudential instruments is less likely to repress financial behaviour beyond what is necessary to prevent the emergence of a financial crisis. There is now a mountain of evidence (for example, Lo 2017) that financial markets will be prone to excesses because of a variety of biases in human behaviour. There has also been a loss of perspective when policy makers, who rightly decided that regulation and supervision of financial markets needed repair, treated the last GFC as if, potentially, all future crises would be of that magnitude, and they did not consider whether future crises would originate from advanced or emerging market economies or in what form future tail risks might emerge. More importantly, just as pre-GFC policy makers fell into the trap of assuming that financial system stability would follow from price stability, we are now erring on the side of viewing almost all forms of financial instabilities that can be observed as somewhat divorced from the conduct of monetary policy. As a result, some observers believe that interest rate normalization can be delayed to permit improvements elsewhere in the economy without acknowledging the costs of such delays. Certainly, some central bankers have come to the realization that such delays need not be economically innocuous (for example, Yellen 2017).

To be sure, macroprudential instruments will prove vital in the future. However, we need to acknowledge that the conduct of monetary policy cannot ignore the impact from the deployment of such instruments. Any successful

10 Named after the US economist Hyman Minsky, who believed that long periods of calm in financial markets breeds behaviour that would lead to a tipping point when markets suddenly and violently reassess current economic conditions.

macroprudential policy, since it typically involves the work of several public institutions, should not underestimate the importance of the resilience of these institutions to interference or political pressure, whch would weaken the resolve not only to maintain financial system stability but to maintain best practice in the conduct of monetary policy. Finally, greater effort needs to be devoted to measurement and to the development of a consensus of sorts about what it means to achieve financial system stability as well as distinguish between those instruments and policies oriented toward domestic goals, as opposed to ones that are intended to fend off threats from external shocks. Just as the "new normal" in monetary policy involves a recognition that unconventional policy tools must at times be used, putting an end to a world where a single policy instrument prevails, similarly macroprudential policy must go beyond the view that only a portfolio of instruments is needed to deal with financial stability shocks. Ignoring the externalities for monetary policy and the economy more generally is a poor way of designing a policy strategy.

The evidence discussed above suggests that central banks, in particular, have yet to convince us that our understanding of the effectiveness of existing macroprudential strategies is sufficiently well advanced to be confident that we have reached a new normal that will ensure that financial crises are a thing of the past. The level of our understanding of the workings of macroprudential policies remains below that of our understanding of how changes in the stance of monetary policy can influence macroeconomic outcomes. Given that persistently low inflation rates in advanced economies have also raised questions about how the monetary policy transmission process operates, there is a long road ahead before central banks can claim they adequately understand the transmission of macroprudential policies.

Author's Note

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