Revisiting Three Intellectual Pillars of Monetary Policy

Claudio Borio

The Great Financial Crisis has triggered much soul-searching within the economic profession and the policymaking community. The crisis shattered the notion that price stability would guarantee macroeconomic stability: financial markets are not self-equilibrating, at least at a price that society can afford. And it showed that prudential frameworks focused on individual institutions viewed on a stand-alone basis were inadequate: a more systemic perspective was needed to avoid missing the forest for the trees. Hence, the welcome trend of putting in place macroprudential frameworks. But has this soul-searching gone far enough?

I shall argue that it has not. More specifically, I would like to revisit and question three deeply held beliefs that underpin current monetary policy received wisdom. The first belief is that it is appropriate to define equilibrium (or natural) rates as those consistent with output at potential and with stable prices (inflation) in any given period—the so-called Wicksellian natural rate. The second is that it is appropriate to think of money (monetary policy) as neutral—that is, as having no impact on real outcomes over medium- to long-term horizons relevant for policy: 10–20 years or so, if not longer. The third is that it is appropriate to set policy on

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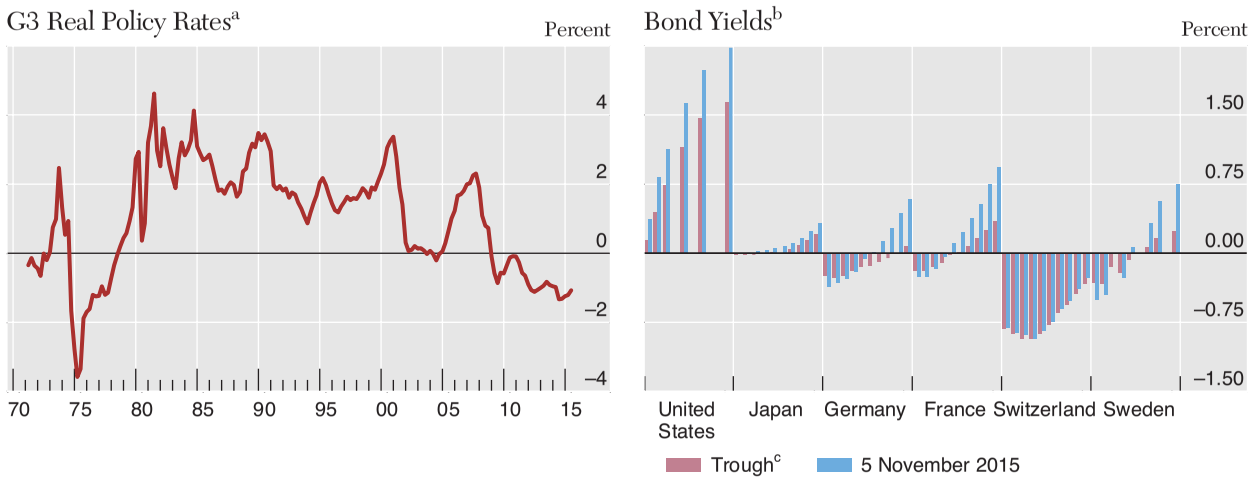
the presumption that deflations are always very costly, sometimes even to regard them as a kind of red line that, once crossed, heralds the abyss.

From these considerations, I shall draw two conclusions. First, I shall argue that the received interpretation of the well-known trend decline in real interest rates—as embodied, for example, in the "saving glut" (Bernanke 2005) and "secular stagnation" (Summers 2014) hypotheses—is not fully satisfactory. Instead, I shall provide a different/complementary interpretation that stresses the decline is, at least in part, a disequilibrium phenomenon that is inconsistent with lasting financial, macroeconomic, and monetary stability. Second, I shall suggest that we need to make adjustments to current monetary policy frameworks in order to have monetary policy play a more active role in preventing systemic financial instability and, hence, in containing its huge macroeconomic costs. This would call for a more symmetrical policy during financial booms and busts—financial cycles. It would mean leaning more deliberately against financial booms and easing less aggressively and, above all, persistently during financial busts.

Equilibrium (Natural) Rates Revisited

Interest rates, short and long, in nominal and inflation-adjusted (real) terms, have been exceptionally low for an unusually long time, regardless of benchmarks. In both nominal and real terms, policy rates are even lower than at the peak of the Great Financial Crisis. In real terms, they have now been negative for even longer than during the Great Inflation of the 1970s (Figure 1, left-hand panel). Turning next to long-term rates, it is well known that in real terms they have followed a long-term downward trend—a point to which I will return. But between December 2014 and end-May 2015, on average no less than around $2 trillion worth of long-term sovereign debt, much of it issued by euro area sovereigns, was trading at *negative* yields. At their trough, French, German, and Swiss sovereign yields were negative out to a respective 5, 9, and 15 years (Figure 1, right-hand panel). While they have ticked up since then, such negative nominal rates are unprecedented. And all this has been happening even as global growth has not been far away from historical averages, so that the wedge between growth and interest rates has been unusually broad.

FIGURE 1
Interest Rates Have Been Exceptionally and Persistently Low



[a]Nominal policy rate less consumer price inflation excluding food and energy. Weighted averages for the euro area (Germany), Japan, and the United States based on rolling GDP and PPP exchange rates. [b]Yield per maturity; for each country, the bars represent the maturities from 1 year to 10 years. [c]For the United States, January 30, 2015; for Japan, January 19, 2015; for Germany, April 20, 2015; for France, April 15, 2015; for Switzerland, October 27, 2015; for Sweden, April 17, 2015.

Sources: Bloomberg; national data.

How should we think of these market rates and of their relationship to equilibrium ones? Both the received perspective and the one offered here agree that market interest rates are determined by a combination of central banks' and market participants' actions. Central banks set the nominal short-term rate and, for a given outstanding stock, they influence the nominal long-term rate through their signals of future policy rates and their asset purchases. Market participants, in turn, adjust their portfolios based on their expectations of central bank policy, their views about the other factors driving long-term rates, their attitude toward risk, and various balance sheet constraints. Given nominal interest rates, actual inflation determines ex post real rates and expected inflation determines ex ante real rates. So far, so good.

But how can we tell whether market rates are at their equilibrium level from a macroeconomic perspective—that is, consistent with sustainable good economic performance? The answer is that if they stay at the wrong level for long enough, something "bad" will happen, leading to an eventual correction. It is in this sense that many economists say that the influence of central banks on short-term real rates is only transitory.

But what is that something "bad"? Here the two perspectives differ. In the received perspective, it is the behavior of inflation that provides the key signal. If there is excess capacity, inflation will fall; if there is overheating, it will rise. This corresponds to what is often also called the Wicksellian natural rate—that is, the rate that equates aggregate demand and supply at full employment (or, equivalently, the rate that prevails when actual output equals potential output).

The perspective developed here suggests that this view is too narrow. Another possible key signal is the build-up of financial imbalances, which typically take the form of strong increases in credit, asset prices, and risk-taking. Historically, these have been the main cause of episodes of systemic financial crises with huge economic costs. Think, for instance, of Japan and the Nordic countries in the late 1980s, Asia in the mid-1990s, and the United States ahead of the Great Financial Crisis or, going back in time, ahead of the Great Depression (see Eichengreen and Mitchener 2003).

The reasoning is straightforward. Acknowledge, as indeed some of the proponents of the received view have, that low interest rates are a factor in fueling financial booms and busts. After all, intuitively, it is hard to argue that they are not, given that monetary policy operates

by influencing credit expansion, asset prices and risk-taking. Acknowledge further that financial booms and busts cause huge and lasting economic damage—in fact, no one denies this, given the large amount of empirical evidence. Then it follows that if we think of an equilibrium rate more broadly as one consistent with sustainable good economic performance, rates cannot be at their equilibrium level if they are inconsistent with financial stability.

This is partly an issue of the time frame envisaged for the disequilibria to cause damage. In the received view, it is relatively short, as the focus is on output deviations from potential at business cycle frequencies. In the view proposed here, it is longer, as the focus is on the potentially larger output fluctuations at financial cycle frequencies. As traditionally measured, the duration of the business cycle is up to eight years; by contrast, the duration of financial cycles since the early 1980s has been 16–20 years (continuous and dashed lines, respectively, in Figure 2) (Drehmann, Borio, and Tsatsaronis 2012).[1]

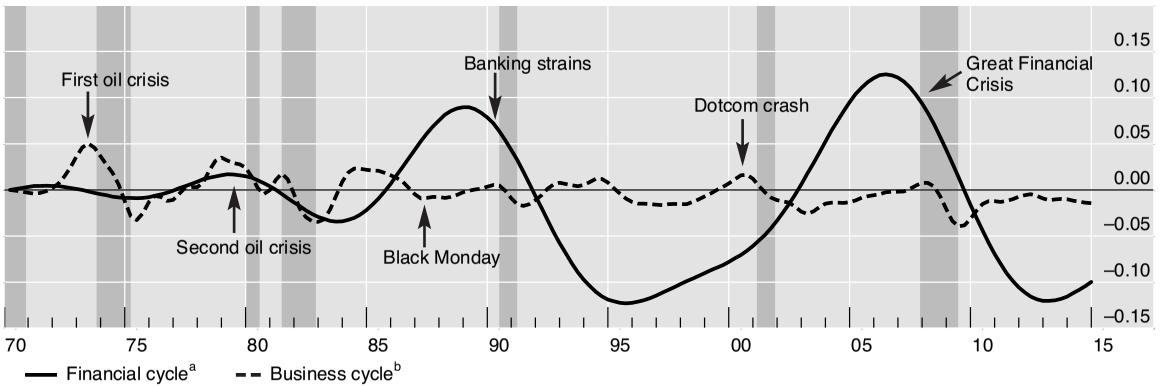
It is not uncommon to hear supporters of the "saving glut" and "secular stagnation" hypotheses say that the equilibrium or natural rate is very low, even negative, and that this rate generates financial instability.[2] Seen from this angle, such a statement is somewhat misleading. It is more a reflection of the incompleteness of the analytical frameworks used to define and measure the natural rate concept—frameworks that do not incorporate financial instability—than a reflection of an inherent tension between natural rates and financial stability. There is a need to go beyond the full employment-inflation paradigm to fully characterize economic equilibrium.

What I have said applies just as much to the short-term rate, which the central bank sets, as to long-term rates. For there is no guarantee that the combination of central banks' and market participants' decisions will guide long-term rates toward equilibrium. Just like any other asset price, long-term rates may be misaligned for very long periods, except that their misalignments have more pervasive effects.

[1]For a novel empirical analysis that digs deeper into the dynamics of financial cycles and assigns a key role to interest rates, see Drehmann and Juselius (2015). The analysis does a remarkably good job of tracing, out of sample, the behavior of U.S. output around the Great Recession.

[2]For an in-depth analysis along these lines, see Bean et al. (2015). In contrast to others, however, these authors do see monetary policy playing a role in leaning against financial imbalances in order to limit the risk of financial instability.

FIGURE 2
Financial and Business Cycles in the United States



[a]The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices; Q1 1970 = 0. [b]The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years; Q1 1970 = 0.

Source: Drehmann, Borio, and Tsatsaronis (2012), updated.

Importantly, the point about how to think of equilibrium rates is not purely semantic. It has first-order implications for monetary policy, since we all agree that the central bank's task is precisely to set the policy rate so as to track the natural or equilibrium rate. I will come back to this point.

Monetary Neutrality Revisited

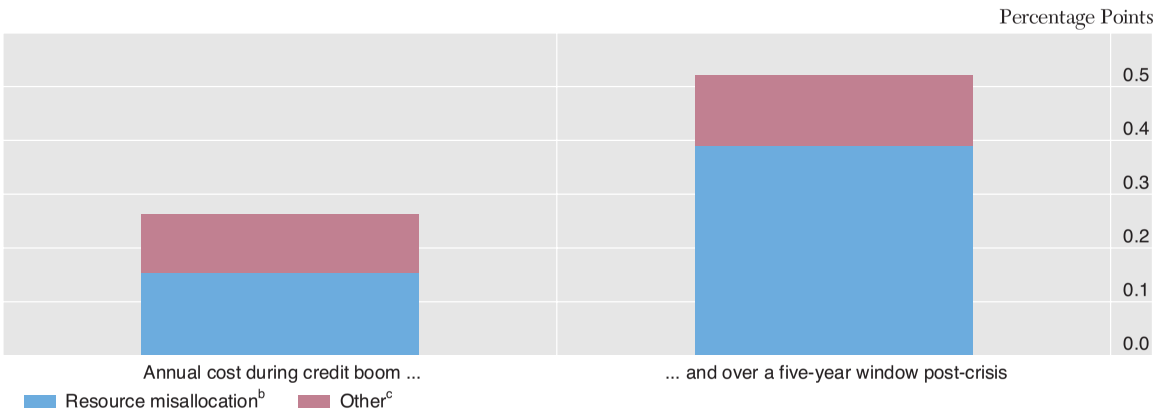
Let me now turn to the second pillar of received wisdom: the notion of money (monetary policy) neutrality. The previous analysis already suggests that this notion is problematic. The reason is that there is a large body of evidence indicating that the costs of financial (banking) crises are very long-lasting, if not permanent: growth may return to its pre-crisis long-term trend, but output remains below its pre-crisis long-term trend (BCBS 2010, Ball 2014).[3] Thus, as long as one acknowledges that monetary policy can fuel financial booms and their subsequent bust, it is logically dubious to argue that it is neutral.

More recent evidence uncovered by BIS research confirms this point and sheds further light on it. It does so by investigating the mechanisms through which financial booms and busts cause so much lasting damage. The work shifts attention from the demand side of the equation, which is where the literature has gone (e.g., Reinhart and Reinhart 2010, Drehmann and Juselius 2015, Rogoff 2015), to the supply side, which is just as important (e.g., Cecchetti and Kharroubi 2015). It is well known that financial busts weaken demand as the interplay of asset prices falls and overindebtedness causes havoc in balance sheets. But what about the neglected nexus between financial booms and busts, resource misallocations, and productivity?

By examining 21 advanced economies over the period 1969–2013, our research produces three findings (Borio et al. 2015b). First, financial booms tend to undermine productivity growth as they occur (Figure 3). For a typical credit boom, just over a quarter of a percentage point per year is a kind of lower bound. Second, a good chunk of this, almost 60 percent, reflects the shift of factors of production (labor) to lower productivity growth sectors. Think, in particular, of

[3]The studies reviewed in BCBS (2010) that allow for the possibility of permanent effects point to a loss equivalent to some 6 percent of GDP on average. Reviewing the experience with the recent crisis, Ball (2014) estimates a permanent decline in potential output of over 8 percent among OECD countries.

FIGURE 3
Financial Booms Sap Productivity by Misallocating Resources[a]



[a]Estimates calculated over the period 1969–2013 for 21 advanced economies. [b]Annual impact on productivity growth of labor shifts into less productive sectors during the credit boom, as measured over the period shown. [c]Annual impact in the absence of reallocations during the boom.
Source: Based on Borio et al. (2015b).

shifts into a temporarily bloated construction sector. The rest is the impact on productivity that is common across sectors, such as the shared component of aggregate capital accumulation and total factor productivity. Third, the impact of the misallocations that occur *during a boom* is much larger if a crisis follows. The average loss per year in the five years after a crisis is more than twice that during a boom, around half a percentage point per year. Taking, say, a five-year boom and five post-crisis years together, the cumulative impact would amount to a loss of some 4 percentage points. Put differently, for the period 2008–13, we are talking about a loss of some 0.5 percentage points per year for the advanced countries that saw booms and crises. This is roughly equal to their actual average productivity growth during the same window. Now, the point is not to take these figures at face value, but to note that these factors are material and should receive much more attention. The length of the periods and orders of magnitude involved are definitely large enough to cast doubt on the notion of monetary policy neutrality.

In addition to the implication for the notion of neutrality, the role of misallocations highlights three further points. First, it is worth broadening the mechanisms behind "hysteresis" to include those that work through resource misallocations linked to financial booms and busts. The allocation of credit, over and above its overall amount, deserves much greater attention.

Second, the well-known limitations of expansionary monetary policy in tackling busts appear in a new light. It is not just that agents wish to deleverage and the transmission through banks is broken; easy monetary policy cannot undo the resource misallocations.[4] For instance, it cannot, and should not, bring back to life idle cranes when there is oversupply of buildings. In other words, not all output gaps are born equal, amenable to the same remedies. During financial busts, after the financial system has been stabilized (crisis management), removing the obstacles that hold back growth is key. This means first and foremost facilitating balance sheet repair and implementing structural reforms (Borio, Vale, and van Peter 2010; Borio 2014a; BIS 2014, 2015).

[4]For these reasons, post-financial boom recessions are best regarded as "balance sheet recessions." The term was probably coined by Koo (2003). While the spirit is similar, in BIS work we have embedded it in a somewhat different analysis, which does not imply the same policy conclusions, especially with regard to fiscal policy (e.g., Borio 2014a; BIS 2014, 2015).

Finally, there is a need for macro models to go beyond the "one good" standard benchmark. To be sure, a number of models do, and the time-honored distinction between tradables and nontradables is the best known example. But the workhorse models that underlie policy are, in effect, one-good models. Unless we overcome this drawback, there is a risk of throwing out the baby with the bathwater.

The Costs of Deflation Revisited

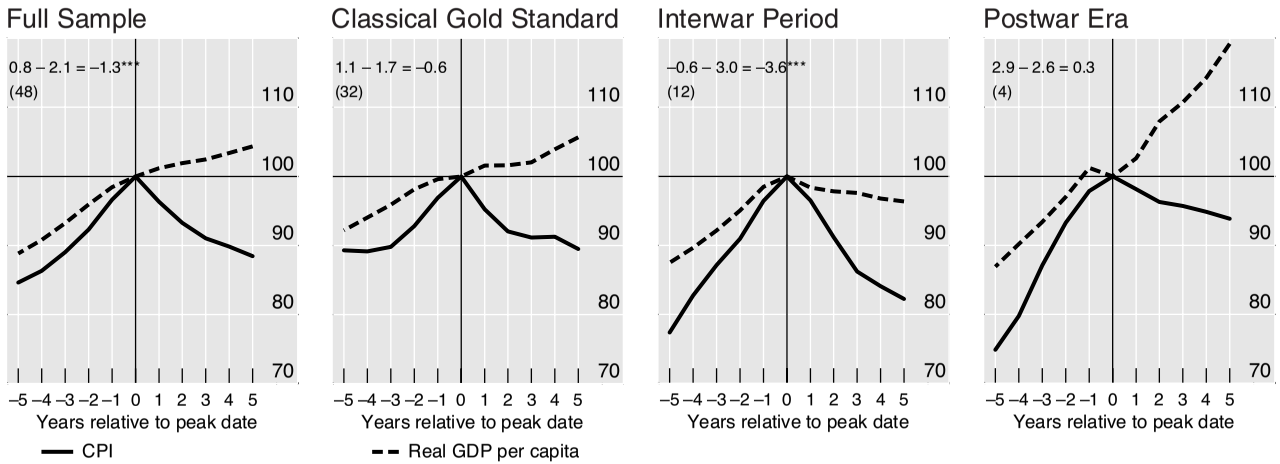
Let me now turn to the third notion I wish to question: what might be called the deflation "bogeyman" (Rajan 2015). Is deflation always and everywhere very costly for output? This is indeed the premise that seems to have underlain monetary policy for quite some time now.

In fact, if one looks at the evidence carefully, the notion does not seem to hold water. Empirical work, some of it carried out at the BIS, had already reached this conclusion pre-crisis, leading to the distinction between "good" and "bad" deflations (e.g., Bordo and Redish 2004, Borio and Filardo 2004, Atkeson and Kehoe 2004, Bordo and Filardo 2005). A more comprehensive and systematic study we carried out this year has confirmed and extended this conclusion (Borio et al. 2015a).

What did we do? We used a newly constructed data set that spans more than 140 years (1870–2013), covers up to 38 economies, and includes equity and house prices as well as debt, although still not for all countries in all periods. We then apply a variety of statistical techniques to examine across monetary regimes the link between deflation and (per capita) output growth and the relative impact of deflation and asset price declines. We consider both transitory and, even more importantly, persistent deflations.

We reach three basic conclusions. First, before controlling for the behavior of asset prices, we find only a weak association between deflation and growth; the Great Depression is the main exception (Figure 4). Second, we find a stronger link with asset price declines, and controlling for them further weakens the link between deflations and growth. In fact, the link disappears even in the Great Depression (Figure 5). Finally, we find no evidence of a damaging interplay between deflation and debt (Fisher's "debt deflation"; Fisher 1933). By contrast, we do find evidence of a damaging interplay between

FIGURE 4
Output Cost of Persistent Goods and Services Price Deflations[a]
(Thirty-Eight Economies,[b] 1870–2013, Variable Peak[c] Year = 100)

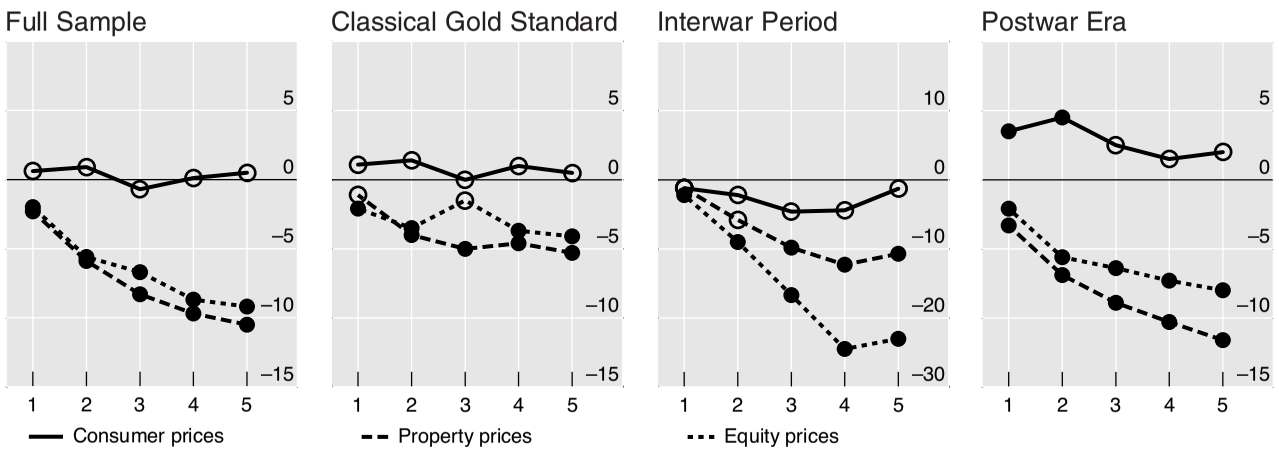


Notes: The numbers in the graph indicate five-year averages of post- and pre-price peak growth in real GDP per capita (in percent) and the difference between the two periods (in percentage points); */**/*** denotes mean equality rejection with significance at the 10, 5, and 1 percent level. In parentheses is the number of peaks that are included in the calculations. The data included cover the peaks, with complete five-year trajectories not affected by observations from 1914–18 and 1939–45. For Spain, the Civil War observations are also excluded (1936–39).

[a]Simple average of the series of CPI and real GDP per capita readings five years before and after each peak for each economy, rebased with the peaks equal to 100 (denoted as year 0). [b]As listed in Borio et al. (2015a: Table 1). [c]Includes only persistent deflations in the price of goods and services (consumer prices) identified as periods following price peaks associated with a turning point in the five-year moving average and peak levels exceeding price index levels in the preceding and subsequent five years.

Source: Borio et al. (2015a).

FIGURE 5
Change in Per Capita Output Growth after Price Peaks[a]
(In Percentage Points[b])



Notes: The approach underlying the estimated effects shown in the graph is described in Borio et al. (2015a); a circle indicates an insignificant coefficient, and a filled circle indicates that a coefficient is significant at least at the 10 percent level. Estimated effects are conditional on sample means (country fixed effects) and on the effects of the respective other price peaks (e.g., the estimated change in h-period growth after CPI peaks is conditional on the estimated change after property and equity price peaks). For the respective country samples, see Borio et al. (2015a).

[a]The graph shows the estimated difference between h-period per capita output growth after and before price peak. [b]The estimated regression coefficients are multiplied by 100 in order to obtain the effect in percentage points.

Source: Borio et al. (2015a).

private sector debt and property (house) prices, especially in the postwar period.

Some might argue that the recent Japanese experience contradicts this, but in fact it does not. The key is to adjust for demographics (growth per working age population), which cloud analyses based on headline growth figures and which are clearly exogenous. On this basis, Japan did very badly in the 1990s, when deflation had not yet set in but asset prices were collapsing following the outsize financial boom in the 1980s. And it did comparatively well in the 2000s, once the banking system got fixed and deflation set in, raising real interest rates as policy rates got stuck at the zero lower bound. While, on a per capita basis, average growth was roughly similar at some 0.8–0.9 percent in 1991–2000 and 2000–13, it rose from 1.0 percent to 1.6 percent on a per working age population basis. A comparison with the United States is quite telling. Between 2000 and 2013, cumulative growth per working age population exceeded 20 percent in Japan, compared with roughly 11 percent in the United States. This picture does not change if one excludes the Great Financial Crisis. Japan lost one decade, in the 1990s, not two.

How should we interpret these results? To my mind, they are consistent with the distinction between supply-driven and demand-driven deflations: the former depress prices while boosting output (i.e., they may be regarded as "good"); the latter coincide with both price declines and weak output (and, hence, may be regarded as "bad").[5] The results are also consistent with the different size and nature of the falls in the price level and asset prices: the former are typically smaller and essentially redistributional; the latter are typically much larger and are normally perceived as nondistributional.

From this viewpoint, there are grounds to believe that a sizable chunk of the secular disinflationary forces since the 1990s have been of the good variety. They may well reflect the globalization of the real economy and, possibly, technological innovation. The integration of China and former communist countries into the global economy has surely been critical. It has made labor and goods markets much more contestable, eroding producers' pricing power and labor's bargaining power as well as reducing the risk of upward wage-price spirals. BIS research has found evidence to that effect. It has uncovered a larger

[5]George Selgin was an early proponent of the distinction between "good" and "bad" deflation (see Selgin 1988, 1997).

role played by global factors at the expense of domestic ones in driving both wages and prices (Borio and Filardo 2007, BIS 2014).[6]

This analysis hints at some broader policy conclusions. It suggests that it may be worth rebalancing the policy focus, away from exclusive attention to deflation threats and toward financial cycle threats.

Reinterpreting the Long-Term Decline in Real Interest Rates

Consider next the implications of the analysis for how to interpret the long-term decline in real interest rates (Figure 6). The analysis helps provide a complementary interpretation to the received one. It suggests that the decline is not just an equilibrium phenomenon but, in part, a disequilibrium one.

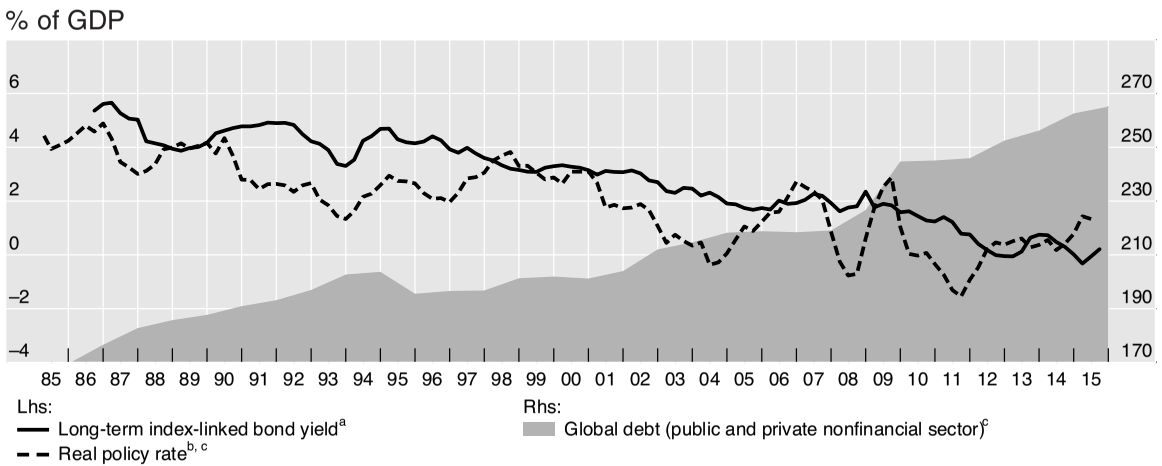
In the received view, central banks and market participants have been pushing short- and long-term real interest rates toward their equilibrium, Wicksellian level. In turn, this natural rate is determined by deep exogenous forces, such as technology, demographics, and income distribution. A common narrative is that these have led to a structural, or at least long-lasting, deficiency in aggregate demand.

In the view offered here, the long-term decline reflects, in part, asymmetrical monetary policy over successive financial and business cycles. Global disinflationary forces, in the wake of the globalization of the real economy and technological innovations, have kept a lid on inflation. Monetary policy has failed to lean against unsustainable financial booms. The booms and, in particular, subsequent busts have caused long-term economic damage. Policy has responded very aggressively and, above all, persistently to the bust, sowing the seeds of the next problem. Over time, this has imparted a downward bias to interest rates and an upward one to debt, as indicated by the steady rise in total debt-to-GDP ratios (Figure 6).

This can contribute to a kind of "debt trap" (Borio and Disyatat 2014, BIS 2014). Over time, policy runs out of ammunition. And it becomes harder to raise rates without causing economic damage, owing to large debts and the distortions generated in the real economy. It is as if the whole economic system adjusted to such low rates

[6]That said, there is no consensus on this point. While some empirical studies have reached similar conclusions (e.g., Bianchi and Civelli 2013, Ciccarelli and Mojon 2010, Eickmeier and Moll 2009), others have not (e.g., Ihrig et al. 2010 and Martínez-García and Wynne 2012).

FIGURE 6
Interest Rates Sink as Debt Soars



[a]From 1998, simple average of France, the United Kingdom, and the United States; otherwise, only the United Kingdom. [b]Nominal policy rate less consumer price inflation. [c]Aggregate based on weighted averages for G7 economies plus China based on rolling GDP and PPP exchange rates. 2015 figure is based on Q1 or Q2 data.

Sources: IMF, *World Economic Outlook*; OECD, *Economic Outlook*; national data; BIS calculations.

and became less tolerant of higher ones, at least without some transitional pain. This process gives rise to a new, insidious form of "time inconsistency," whereby policy steps may appear reasonable when taken in isolation but, as a sequence, lead policy astray.

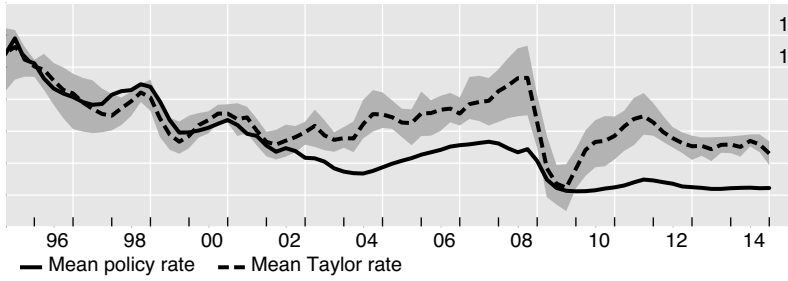
The bottom line is that, over sufficiently long horizons, low interest rates become to some extent self-validating. Too low rates in the past are one reason—not the only reason—for such low rates today. In other words, policy rates are not simply passively reflecting some deep exogenous forces; they are also helping to shape the economic environment policymakers take as given ("exogenous") when tomorrow becomes today.

Here the international monetary and financial system plays a key role (Borio 2014b, BIS 2015), because successive crises need not occur in the same country, although sometimes they have. Low rates in countries that are fighting a financial bust may induce problems elsewhere. Policymakers in the struggling economies try very hard to stimulate demand but get little traction through domestic channels, for the reasons mentioned before. As a result, exchange rate depreciation becomes the key transmission mechanism. This induces unwelcome exchange rate appreciation in countries that may also be in a bust or at different points in their financial cycle. Appreciation pressure is resisted by keeping interest rates lower than otherwise and/or by intervening in the exchange rate market (Rajan 2014). Thus, easing begets easing.[7]

This helps explain a couple of developments taking place before our very eyes. It is a reason why policy rates appear unusually low for the world as a whole regardless of benchmarks. Figure 7 illustrates this point with the help of a range of Taylor rules (e.g., Hofmann and Bogdanova 2012). And it is also a reason why for quite some time now we have been seeing signs of the build-up of dangerous financial imbalances in countries less affected by the crisis, especially emerging market economies (EMEs) (including very large ones), but also in some advanced economies less affected by the crisis (BIS 2014, 2015). Commodity exporters have been very prominent here, in the

[7]Quite apart from policy responses to spillovers, there are several mechanisms through which the international monetary and financial system can amplify financial booms and busts, including the outsize reach of international currencies and the ebbs and flows of global liquidity. For a fuller discussion, see Borio (2014b) and BIS (2015). For specific aspects, see also Borio and Disyatat (2011); Shin (2012, 2013); Rey (2013); and McCauley, McGuire, and Sushko (2015).

FIGURE 7
Unusually Accommodative Global Monetary Conditions[a]
(In Percent)



Notes: The Taylor rates are calculated as $i = r^* + \pi^* + 1.5(\pi - \pi^*) + 0.5y$, where π is a measure of inflation, y is a measure of the output gap, π^* is the inflation target, and r^* is the long-run real interest rate, here proxied by real trend output growth. The graph shows the mean and the range of the Taylor rates of different inflation/output gap combinations, obtained by combining four measures of inflation (headline, core, GDP deflator, and consensus headline forecasts) with four measures of the output gap (obtained using Hodrick-Prescott (HP) filter, segmented linear trend and unobserved components techniques, and IMF estimates). π^* is set equal to the official inflation target/objective, and otherwise to the sample average or trend inflation estimated through a standard HP filter. See Hofmann and Bogdanova (2012).

[a]Weighted averages based on 2005 PPP weights. "Global" comprises all economies listed here. Advanced economies: Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States. Emerging market economies: Argentina, Brazil, Chile, China, Chinese Taipei, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Singapore, South Africa, and Thailand.

Sources: IMF, *International Financial Statistics* and *World Economic Outlook*; Bloomberg; CEIC; Consensus Economics; Datastream; national data; BIS calculations.

wake of the exceptionally strong commodity price booms. Recently, these financial booms have matured and begun to turn. If serious financial strains did materialize, spillbacks to the rest of the world could spread weakness across the globe: the heft of EMEs has greatly increased over the last couple of decades, from around one third to almost half of world GDP.

Adjusting Monetary Policy Frameworks

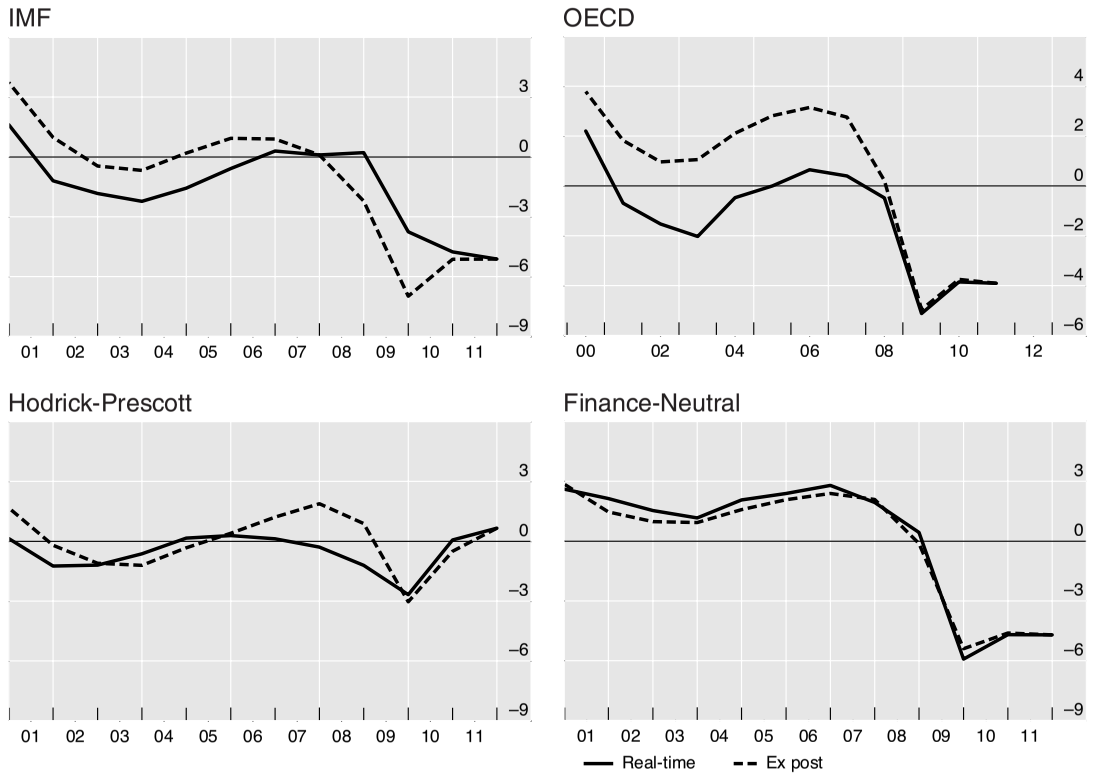
This analysis suggests that it would be important to adjust monetary policy frameworks to take financial booms and busts systematically into account (Borio 2014c, BIS 2014, 2015).

This amounts to putting in place more symmetrical policies across financial booms and busts. It means leaning more deliberately against financial booms even if near-term inflation stays low and stable or may be below numerical objectives, and easing less aggressively and, above all, persistently during financial busts, recognizing the limitations of monetary policy following the crisis management phase. Taken together, these adjustments should help reduce the risk of a persistent easing bias that can lead to a progressive loss of policy room for maneuver over time and entrench instability and chronic weakness in the global economy.

Three common objections have been leveled against such adjustments. While they are well founded, I believe none of them is a showstopper.[8] The first is that it is hard to identify financial imbalances as they develop. This is true, but a whole apparatus is now in place to do precisely that in the context of macroprudential frameworks. There is a certain tension, to say the least, in arguing that macroprudential policies should be actively used while highlighting measurement difficulties for monetary policy. Moreover, it is not sufficiently acknowledged that traditional monetary policy benchmarks are also very hard to measure: think of output gaps, nonaccelerating inflation rates of unemployment (NAIRUs), and natural interest rates, just to name a few. This is precisely why the behavior of inflation ends up being the real deciding factor when measuring them—the practice that proved so dangerous pre-crisis. In fact, BIS research has found that financial cycle information—credit and property price growth—can assist in obtaining a better measure of potential output in real time (Figure 8), helping to overcome the deficiencies of traditional approaches (see, e.g., Borio, Disyatat, and Juselius 2013). Our failure to recognize the limitations of traditional monetary yardsticks is probably more a reflection of our familiarity with them than of their inherent properties. Familiarity breeds complacency.

[8]For a recent analysis that reviews the literature and reaches more skeptical conclusions about the role of monetary policy, see IMF (2015). See also G30 (2015) for a less skeptical view.

FIGURE 8
U.S. Output Gaps: Ex Post and Real-Time Estimates
(In Percent)



Notes: For each time t, the "real-time" estimates are based only on the sample up to that point in time. The "ex post" estimates are based on the full sample.
Source: Borio, Disyatat, and Juselius (2013).

The second objection is that it is better to rely on macroprudential policy and leave monetary policy to focus on inflation—a sort of "separation principle." To my mind, this would be too imprudent (Borio 2014d). Even where they have been activated vigorously, macroprudential measures have not prevented the emergence of the usual signs of financial imbalances, such as in EMEs. And as a means of reining in financial booms, as opposed to building resilience, macroprudential tools operate in a similar way to monetary policy: they restrain credit expansion, asset price increases, and risk-taking (e.g., Borio and Zhu 2012, Bruno and Shin 2014). To be sure, they can be more targeted. And they can help relieve pressure on currency appreciation, which may in turn fuel risk-taking where foreign currency borrowing is widespread (Borio, McCauley, and McGuire 2011; Bruno and Shin 2014; Bruno, Shim, and Shin 2015). Even so, there is a certain tension in pressing on the accelerator and brake at the same time, such as when loosening monetary policy while seeking to offset its impact on financial instability through macroprudential measures.

The third objection is that the proposed adjustments are not consistent with inflation objectives. They require too much tolerance for persistent deviations of inflation from targets. This, in turn, could undermine credibility to secure price stability. No doubt, the adjustments pose serious communication challenges: they should not be underestimated.

Still, two responses are possible. For one, it is not clear that central banks have exploited all the flexibility that current frameworks allow. Even when numerical targets are in place, the frameworks often make it explicit that the permitted persistence of deviations depends on factors driving inflation away from targets. The reluctance to use the flexibility available reflects perceived tradeoffs and hence costs and benefits. These could change if, for instance, views about the effectiveness of macroprudential tools and the costs of deflation evolved, possibly under the force of events. Time will tell.

In addition, if mandates are seen as overly constraining the room for maneuver, revisiting them should not be taboo. After all, mandates are a means to an end. That said, the analytical lens through which one perceives how the economy works matters more than mandates. It is easy to see how adding an explicit financial stability objective could sometimes make matters worse. For instance, even if inflation is rising briskly, it could be taken as a reason not to tighten

policy in order to avoid short-term damage to a weak banking system: such a response would be myopic. Given where we are, the priority is to use the existing room for maneuver to the full; revisiting mandates should be a last resort.

Conclusion

There are good reasons to question three deeply held beliefs underpinning monetary policy received wisdom. First, defining equilibrium (or natural) rates purely in terms of the equality of actual and potential output and price stability in any given period is too narrow an approach. An equilibrium rate should also be consistent with *sustainable* financial and macroeconomic stability—two sides of the same coin. Here, I highlighted the role of financial booms and busts, or financial cycles.

Second, money (monetary policy) is not neutral over medium- to long-term horizons relevant for policy—that is, 10–20 years or so, if not longer. This is precisely because it contributes to financial booms and busts, which give rise to long-lasting, if not permanent, economic costs. Here I highlighted the neglected impact of resource misallocations on productivity growth.

Finally, deflations are not always costly in terms of output. The evidence indicates that the link comes largely from the Great Depression and, even then, it disappears if one controls for asset price declines. Here I highlighted the costs of declining asset prices, especially property prices, and the distinction between supply-driven and demand-driven deflations.

From this, I drew two conclusions. First, the long-term decline in *real* interest rates since at least the 1990s may well be, in part, a disequilibrium phenomenon, not consistent with lasting financial, macroeconomic, and monetary stability. Here I highlighted the asymmetrical monetary policy response to financial booms and busts, which induces an easing bias over time.

Second, there is a need to adjust monetary policy frameworks to take financial booms and busts systematically into account. This, in turn, would avoid that easing bias and the risk of a debt trap. Here I highlighted that it is imprudent to rely exclusively on macroprudential measures to constrain the build-up of financial imbalances. Macroprudential policy must be part of the answer, but it cannot be the whole answer.

I am, of course, fully aware that questioning deep-seated beliefs is a risky business. I do not pretend to have all the answers. But I do believe it is essential to explore these beliefs critically and to have a proper debate. The stakes for the economic profession and the global economy are simply too high. And, as Mark Twain once famously said: "It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so."

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