



Secular stagnation or financial cycle drag?¹

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Taking a *medium-term* perspective, how should we best interpret the current predicament of the global economy? Tackling this question will allow me to do two things. First, to better understand where the global economy might be going and the risks ahead. Second, and more parochially, to outline the main features of the lens we use at the BIS to interpret developments.

I should stress that the question is very ambitious. No one can claim to know *the* answer. Since the Great Financial Crisis (GFC) of 2007–09, the economics profession has been grappling with doubt. While this has not been out of choice, Descartes would surely have approved: gone are the illusory certainties of the Great Moderation; with us are the deeper, sometimes troubling, questions about how the economy really works. Against this backdrop of unsettling “paradigm uncertainty”, the perspective I shall put forward – best regarded as a hypothesis – is intended to contribute to a richer understanding of the complex issues at stake.

Let me label this perspective the “financial cycle drag” hypothesis. We have been developing it at the BIS over many years, going back to at least the early 2000s.² To help fix ideas, this lens has many similarities with Rogoff’s “debt supercycle” hypothesis (Rogoff (2015)).

To sharpen the discussion, I shall contrast this perspective with another one that has gained currency – secular stagnation. Even more narrowly, I shall consider a specific variant of the secular stagnation hypothesis, which is probably the most popular – the one that attributes the comparatively slow post-GFC growth to a structural deficiency in aggregate demand that goes back to well before the crisis (Summers (2014, 2016)).³

The rest of my remarks are organised as follows. I will first summarise, in an intentionally highly stylised way, the key features of the two hypotheses. I will then provide a critique of the secular stagnation hypothesis and argue for the financial cycle drag alternative. Based on this, I will identify the key risks ahead and (very briefly) the policy implications.

¹ I would like to thank Raphael Auer, Piti Disyatat, Dietrich Domanski, Andy Filardo, Jonathan Kearns, Marco Lombardi, Robert McCauley, Phurichai Rungcharoenkitkul, Hyun Song Shin and Fabrizio Zampolli for helpful comments.

² See, for instance, Crockett (2000), Borio et al (2001), Borio and Lowe (2002) and Borio (2007).

³ I will thus have little specific to say about the alternative variant, which stresses a slowdown in productivity growth due to flagging technological innovation (Gordon (2012)). For an elaboration on these different strands of the secular stagnation hypothesis, see Teulings and Baldwin (2014).



I – The two hypotheses at a glance

Boiling down the two hypotheses to their bare essentials is a necessarily stylised treatment. But as long as it is recognised as such, it can help better highlight the main differences without running the risk of being seen as depicting straw men.

The secular stagnation hypothesis can be summarised in three propositions. First, the world has been haunted for a very long time, well before the crisis, by a *structural* aggregate demand deficiency that is likely to persist well into the future and keep growth sluggish. Many factors are typically mentioned in this context, including ageing populations, growing income and wealth inequality, and falling tangible investment owing to technological change. Second, the pre-crisis financial boom (or “bubble”) was the only reason why output reached potential, ie full employment. Third, and more technically, the natural (or equilibrium) real interest rate has been falling steadily and has been negative for some time.⁴ Now, the natural or equilibrium interest rate is typically defined as the rate that would prevail if output was at its potential level and hence inflation was stable. So, in plainer language, given the major structural demand deficiency, real (inflation-adjusted) interest rates must be negative in order to ensure that the economy operates at full employment and to avoid a costly deflationary spiral. Such a spiral would arise because, with nominal interest rates stuck at the zero lower bound, falling prices would raise real interest rates, which would cut spending further, which, in turn, would depress output and employment and hence prices, and so on.

The financial cycle drag hypothesis can also be summarised in three propositions – largely the mirror image of the previous ones. First, the world has been haunted by the inability to restrain financial booms that, once they turn to bust, cause huge and long-lasting economic damage – deep and protracted recessions, weak and drawn-out recoveries, and persistently slower productivity growth. Such outsize financial cycles are best characterised by the joint fluctuations in credit and asset prices, especially property prices, as risk-taking ebbs and flows (Graph 1). And they tend to be much longer than “traditional” business cycles (say, 15–20 years rather than 8–10) (Drehmann et al (2012), Borio (2014a), BIS (2014)).⁵ Second, the pre-crisis boom actually pushed output above potential and undermined productivity. In other words, it was not even required to achieve full employment. Third, the natural or equilibrium real interest rate is positive and considerably higher than the secular stagnation hypothesis would suggest. There are two related reasons for this. Defining and measuring an equilibrium rate without explicitly considering the build-up of financial imbalances is too narrow an approach. In addition, the global demand deficiency has been overestimated while the role of primarily positive, and benign, secular supply side global factors in driving inflation has been underestimated.

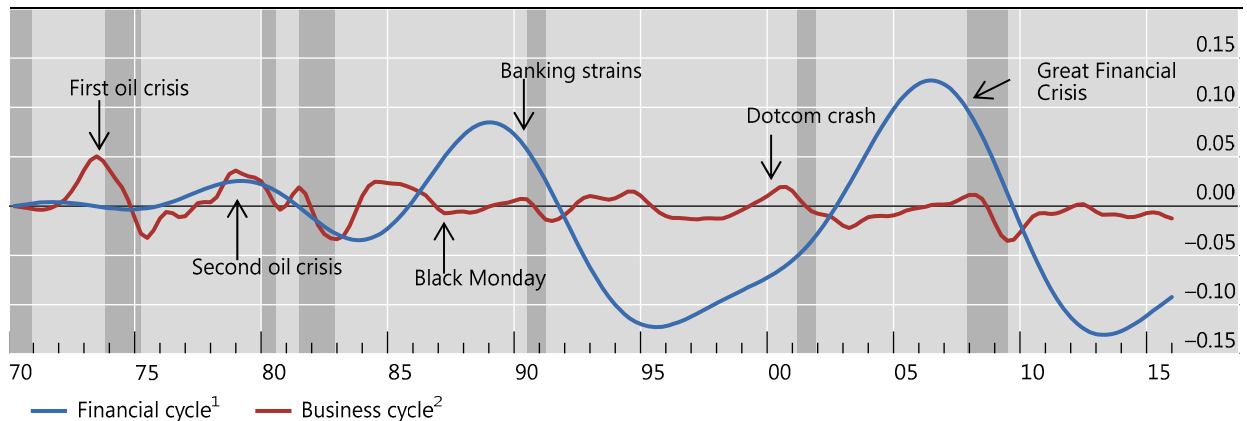
Thus, the two hypotheses have elements in common. They take a longer-term perspective, focusing on the deeper forces behind shorter-term economic fluctuations. They question the presumption that the economy is always self-equilibrating, quickly returning to a pre-existing trend. And they encourage us to question more thoroughly the prevailing analytical paradigms. But their differences are equally apparent – with respect to the balance between financial and real factors as well as between aggregate supply and aggregate demand, to the interpretation of the behaviour of interest rates and inflation, and hence, as we shall see, to the likely future scenarios and policy implications.

⁴ This view, except possibly for the assertion that the natural rate is negative, is part of the received wisdom (eg Bernanke (2005, 2015) and Bean et al (2015)). The common denominator is that it has fallen exclusively because of real (non-monetary) factors.

⁵ By “traditional” business cycle, I mean how economists and policymakers conceive and measure the typical fluctuations in output, as reflected in the specific statistical techniques (eg statistical filters). The notion of the financial cycle has a long historical tradition (see Drehmann et al (2012) for references) and, as noted, was stressed again in BIS work going back at least to the early 2000s. For other empirical evidence on the financial cycle, see eg Claessens et al (2011), Aikman et al (2015), De Bonis and Silvestrini (2014), Schüller et al (2015), Einarsson et al (2016) and Rünstler and Vlekke (2016).

Financial and business cycles in the United States

Graph 1



¹ 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. ² The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years.

The graph compares the financial cycle with traditional measures of the business cycle. The picture would be similar based on other common methodologies (eg turning point (peak/trough) analysis).

Source: Drehmann et al (2012), updated.

II – The secular stagnation hypothesis: a critique and an alternative

In evaluating the merits of the two hypotheses, it is best to proceed in three steps: considering critically the support for the secular stagnation hypothesis, introducing the role of the financial cycle; revisiting in that light the pivotal interpretation of inflation and the natural rate of interest; and finally, bringing the various pieces of the puzzle together, to provide an alternative narrative.

A critique: introducing the role of the financial cycle

What is the evidence in favour of the secular stagnation hypothesis? Fundamentally, three observations. Post-crisis growth has been persistently disappointing and relatively low, well past the turbulence: outcomes have invariably fallen short of forecasts and expectations. Likewise, inflation has been stubbornly low and below targets, despite very ambitious monetary policy measures. And not only have real interest rates continued their long-term decline, well into negative territory, markets have expected them to remain unusually low way out into the future, as indicated by very shallow yield curves – the recent backup notwithstanding – pointing to a future of stagnant growth and inflation; I will come back to this. Some of the structural factors mentioned earlier – demographics, income inequality, the changing nature of investment and so on – are said to help explain this.

While radical in some respects, the hypothesis draws strength from some core elements of well accepted Keynesian theory. Aggregate demand is a well behaved function of the real interest rate: lower real interest rates always boost spending. There is a Phillips curve linking domestic measures of slack (eg output gaps) to inflation: all else equal, when domestic output is below potential, inflation falls; when it is above, inflation rises. And there may be elements of demand influencing supply over the medium term – so-called “hysteresis” effects: persistent demand weakness erodes labour skills and inhibits capital accumulation.

The hypothesis is quite compelling in some respects, but even a cursory look at the facts raises some questions. The hypothesis was originally developed for the United States, a country that posted a



large current account deficit even pre-crisis – hardly a symptom of domestic demand deficiency. True, US growth pre-crisis was not spectacular, but it was not weak either – recall how people hailed the Great Moderation, an era of outstanding performance. Likewise, the world as a whole saw record growth rates and low unemployment rates – again, hardly a symptom of global demand deficiency (Borio and Disyatat (2011)). Finally, recent declines in unemployment rates to historical averages – and, in some cases, such as the United States, close to estimates of full employment – point to supply, rather than demand, constraints on growth.

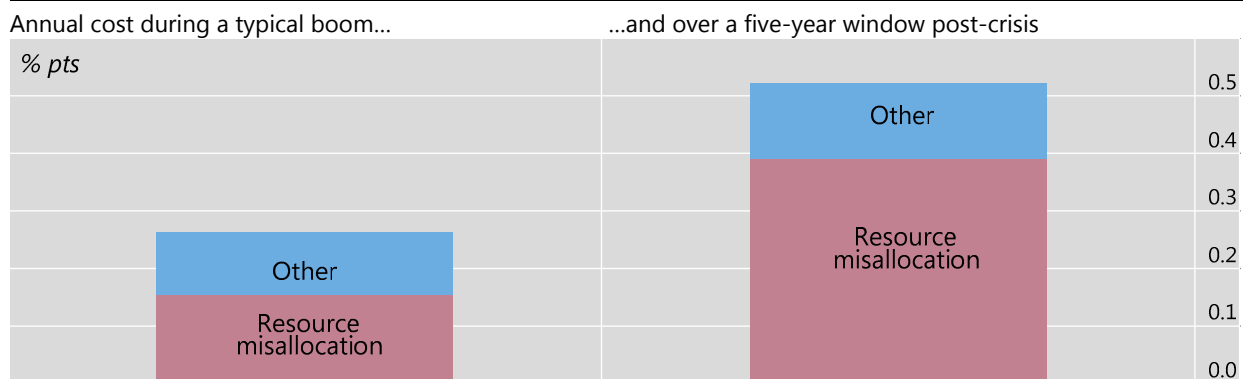
At the same time, a number of specific pieces of evidence support the financial cycle drag hypothesis.

First, there is plenty of evidence that banking crises, which occur during financial busts, cause *very long-lasting* damage to the economy.⁶ They result in permanent output losses, so that output may regain its pre-crisis long-term growth trend but evolves along a lower path. There is also evidence that recoveries are slower and more protracted. And in some cases, growth itself may also be seriously damaged for a long time. If so, given the GFC’s almost unprecedented depth and breadth, the subsequent evolution of output is not that surprising – although it would have been so for forecasters that did not adjust their “models” to take such patterns into account.

Second, BIS research has found evidence that financial (credit) booms tend to undermine productivity growth, further helping to explain the post-crisis weakness (Borio et al (2015a), Graph 2).

Financial booms sap productivity by misallocating resources

Graph 2



Estimates calculated over the period 1969–2013 for 21 advanced economies. Resource misallocation = annual impact on productivity growth of labour shifts into less productive sectors during a five-year credit boom and over the period shown. Other = annual impact in the absence of reallocations during the boom.

Source: Borio et al (2015a).

Drawing on a sample of over 40 countries and over 40 years, the data suggest that this happens mainly as a result of a misallocation of resources towards lower-productivity growth sectors, notably construction, and that the impact of the misallocations that occur *during the boom* is twice as large in the wake of a subsequent banking crisis. The reasons are unclear, but may reflect, at least in part, the fact that overindebtedness and a broken banking system make it harder to reallocate resources away from bloated sectors during the bust. This amounts to a form of supply side, rather than purely demand side, hysteresis.

⁶ See the BCBS (2010) survey and, in particular, Cerra and Saxena (2008) and, more recently, Ball (2014). Blanchard et al (2015) find that other recessions too may have a similar effect. On the costs of credit booms in general, see Reinhart and Reinhart (2010), Jordà et al (2013) and Mian et al (2015); and on the experience of the Great Depression, see Eichengreen and Mitchener (2004).



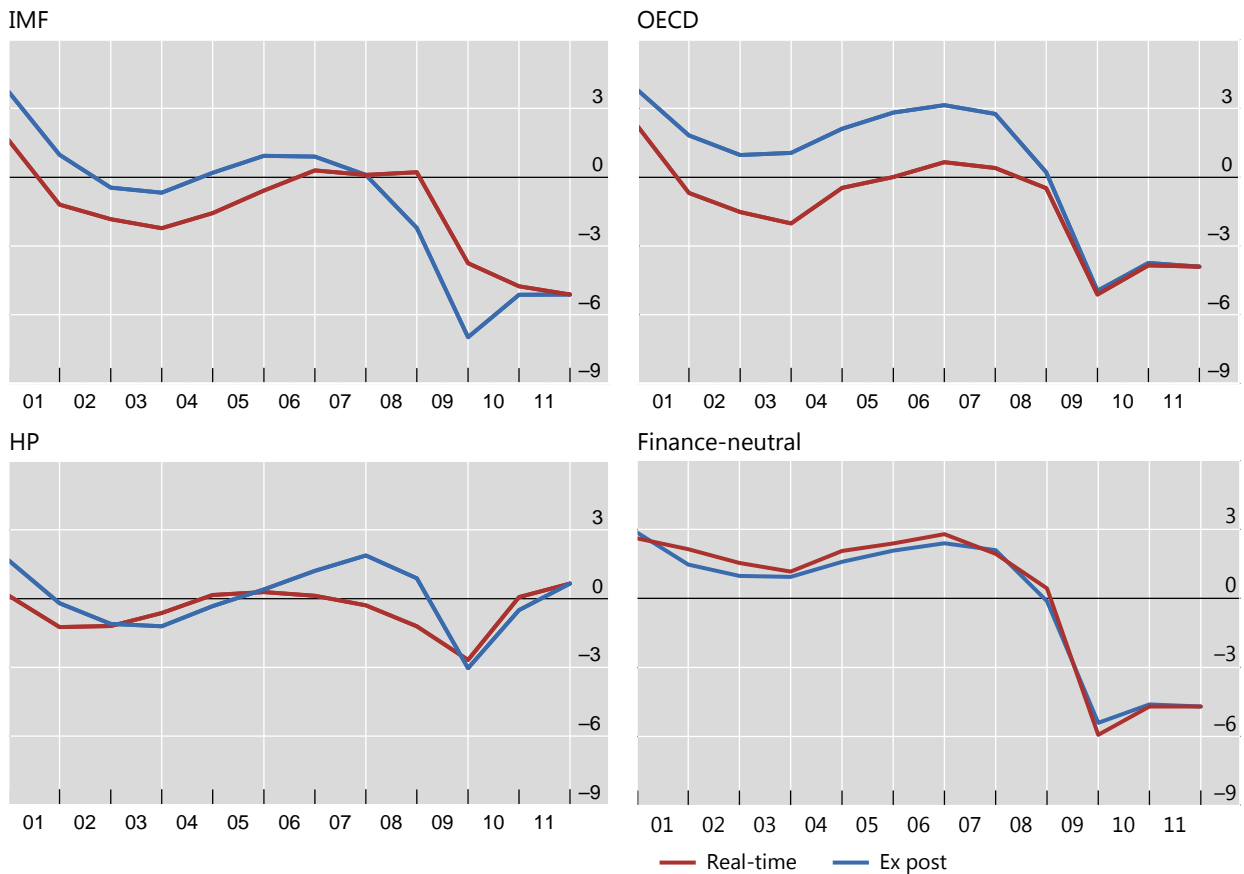
The impact can be sizeable. If taken at face value, the results suggest that, over the period 2008–13, the effect shaved off some 0.5 percentage points per year of productivity growth for those countries that saw a financial boom-bust cycle. This is roughly equal to their actual productivity growth during the same period. The findings could help explain the faster pace of the long-term decline in productivity growth seen in recent years.

Third, measures of output gaps used in policymaking now show that output was indeed above potential pre-crisis. And while traditional approaches have done so only with the benefit of hindsight, in our research, subsequently confirmed by others, we have found that, using proxies for the financial cycle, one could have spotted this as events unfolded, ie in “real time” (Graph 3).⁷ The reason is simple: the symptom of unsustainable expansion was not rising inflation, which stayed low and stable, but the build-up of financial imbalances, in the form of unusually strong and persistent credit growth and property price increases.

US output gaps: full sample and real-time estimates

Graph 3

In per cent



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.

The graph indicates that traditional measures show that output was ahead of potential only ex post, with the benefit of hindsight, while the measure using financial cycle (finance-neutral) proxies does so also in real time.

Source: Borio et al (2016).

⁷ See Borio et al (2014a, 2016) and, for evidence confirming the usefulness of financial cycle proxies, Arseneau and Kiley (2014), Blagrove et al (2015) and Melolinna and Tóth (2016).

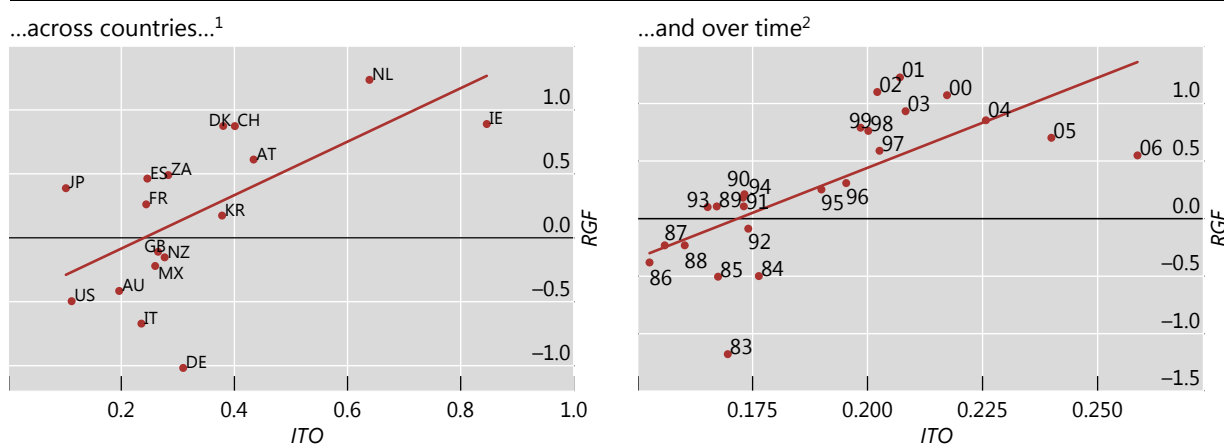
A critique: revisiting inflation and the natural interest rate

What about the stubbornly low inflation and, related to that, the long-term decline in real interest rates, which play such a pivotal role in the secular stagnation hypothesis? Are they not obvious signs of a persistent and costly aggregate demand deficiency? These are perhaps the hardest questions to answer. But, even here, it is possible to provide an explanation that is more consistent with the financial cycle drag hypothesis.

The first point to note is that the link between domestic measures of slack and inflation has been very weak and elusive for a long time now. This well known empirical regularity, already recognised well before the GFC, has been confirmed by experience since then.⁸ By contrast, there is growing evidence that global factors have been gaining importance, including global measures of slack, such as output gaps – although here the evidence does not command the same degree of consensus.⁹ In recent work, we have found that global value chains seem to play a key role here: in a sample of 18 countries, they help explain the relative importance of global and domestic output gaps in influencing inflation, both across countries and over time (Graph 4, from Auer et al (2017)).

Global value chains and the explanatory power of global output gaps...

Graph 4



AT = Austria; AU = Australia; CH = Switzerland; DE = Germany; DK = Denmark; ES = Spain; FR = France; GB = United Kingdom; IE = Ireland; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; NZ = New Zealand; US = United States; ZA = South Africa.

ITO = (exports plus imports of intermediate goods and services)/GDP, as a proxy for the incidence of global value chains in a given country. *RGF* = relative global factor, denoting the difference between the impact of the global output gap and the domestic output gap on domestic inflation. A positive slope indicates that the relative importance of the global output gap (*RGF*) increases with the incidence of global value chains, across countries at a given point in time (left-hand panel) or on average over time (right-hand panel).

¹ For each country, each observation shows the relationship between the average *ITO* and *RGF* for the period 1982–2006. The red fitted line has a slope of 2.09 (significant at the 1% level). Canada (*RGF* = -3.17, *ITO* = 0.40) is not included. ² Each observation shows the cross-country average of *ITO* and *RGF* in a given year (1983–2006). The red fitted line has a slope of 15.6 (significant at the 1% level).

Source: Auer et al (2017).

⁸ See, among others, Stock and Watson (2007), Ball and Mazumder (2011), IMF (2013), Faust and Wright (2013) and Faust and Leeper (2015). For a different view, see Gordon (2013) and Coibion and Gorodnichenko (2015).

⁹ On the role of globalisation in driving inflation, see Borio and Filardo (2007) and BIS (2014). For empirical studies reaching similar conclusions, see eg Bianchi and Civelli (2013), Ciccarelli and Mojon (2010), Eickmeier and Moll (2009) and Pain et al (2008); for others that disagree, see eg Ihrig et al (2010), Martínez-García and Wynne (2012) and Lodge and Mikolajun (2016).



While we do not fully understand the inflation process, to my mind this picture is more consistent with the presence of secular disinflationary pressures possibly linked to the entry of low-cost producers into the world trading system, going back to well before the GFC. Recall, in particular, the role of former communist countries and many emerging market economies that liberalised their markets – countries that, in addition, tended to resist exchange rate appreciation.¹⁰ Arguably, the entry and greater prominence of such producers have weakened the pricing power of firms and, above all, the bargaining power of labour, as markets have become more contestable. During the cost convergence process, this would result in persistent disinflationary winds, especially in advanced economies, where wages are higher. More generally, it would also make the wage-price spirals of the past less likely. This would have helped central banks during the long pre-crisis disinflationary phase, but would have complicated their task post-crisis, as they sought to boost inflation back towards their inflation objectives. Tailwinds become headwinds.

Importantly, disinflation driven by such supply side forces is quite different from that driven by demand weakness. Lower costs boost supply – to fix ideas, they amount to persistent outward shifts in the aggregate supply schedule. This in turn should support, not depress, output. Put differently, depending on the driving forces, there can be “good” and “bad” deflations – a point that has been well recognised in the literature, but has not received the attention it deserves.¹¹

Let me be clear. I am not saying that all the disinflation we have seen is of the “good” variety. Naturally, at any given point in time demand and supply factors may be at work, and their balance will vary across countries and circumstances. Financial busts are clearly associated with demand shortfalls. Nor is it easy to distinguish the balance of the forces at play. What I am saying is that the *secular* role of these supply factors has probably been underestimated. And this has important consequences for how we should interpret stubbornly low inflation and its costs.

In fact, the historical record is broadly consistent with a benign interpretation of deflations. In recent work, we have extended previous research that had examined the link between deflations and output to consideration of asset prices and debt, in a sample of close to 60 countries over 160 years (Borio et al (2015b)). Largely confirming previous studies, we find that there is only a weak link between deflations and output underperformance and that the link that exists largely reflects the experience during the Great Depression. In addition, we find that the statistical link actually disappears even during that episode once one also considers the fall in asset prices. And we find no evidence of a costly interaction between deflation and debt (“Fisherian debt deflation”; Fisher (1933)), although we do find evidence of such an interaction between property prices and debt, as most recently confirmed by the GFC. All this again points to the critical role of financial cycles in causing economic damage.

And so we come to the even trickier interpretation of the factors behind the long-term decline in the real interest rate and the notion that the natural rate is negative. The decline has been evident since the early 1990s, also at the global level, but it has accelerated in crisis-hit countries. This issue would deserve a more extensive discussion. But in the limited space available, let me just note a few points.

Economists agree – or at least *should* agree – about how market interest rates are determined at any given point in time, ie by a combination of central bank and market participants’ actions. Central banks set the short-term nominal interest rate and influence longer-term rates by communicating their policy intentions and purchasing financial assets; in turn, market participants adjust their portfolios based on their expectations of what central banks will do and how the economy will evolve, including growth and

¹⁰ This phenomenon has been greatly boosted by technology, which has allowed the relocation of production to lower-cost countries; see Baldwin (2016).

¹¹ For previous evidence on this, see Atkeson and Kehoe (2004), Bordo and Redish (2004) and Borio and Filardo (2004). For a recent study reaching different conclusions, see Eichengreen et al (2016). See also Rajan (2015), who refers to the “deflation bogeyman”.

inflation. Real (or inflation-adjusted) interest rates are then residually determined by subtracting actual and expected inflation from those nominal rates. The question then is whether the combined action of central banks and market participants need result in interest rates that are consistent with the equilibrium or natural rate.

The problem, of course, is that the equilibrium or natural rate is not observable: it is a purely theoretical construct, just as the natural rate of unemployment or potential output are. Therefore, it must be inferred from the data, *assuming* that a particular “model” of how the economy works is correct (eg Laubach and Williams (2013)). In this sense, there is an inevitable degree of reverse engineering involved.

Now, the standard approach is precisely to work backwards from the definition of the natural rate as that which coincides with full employment and to assume that the traditional Phillips curve linking domestic slack and inflation works. That is, if, say, inflation falls, it is *inferred* that output is below potential *and* that the real interest rate is above the natural rate. At the end of the day, this is a key reason for saying that the natural rate has fallen so much.¹²

But we saw before that this relationship is, in fact, quite weak. Indeed, in further research we have found that when we allow financial cycle proxies to compete with inflation in providing information about the cyclical position of output, and hence also about the natural rate, the data prefer the financial cycle proxies: the results are statistically stronger and the estimate of the natural rate higher (Juselius et al (2016)). This should not be surprising: the logic is similar to that which explains why measures of potential output that rely on financial cycle proxies are more useful to track potential output pre-crisis: the symptoms of unsustainable expansion did not show up in rising inflation but in the build-up of financial imbalances.

Indeed, defining the natural or equilibrium rate without reference to its financial stability implications is arguably too narrow. It has encouraged the view, sometimes put forward by proponents of the secular stagnation hypothesis, that the interest rate could be at its equilibrium value and yet cause damaging financial and macroeconomic instability down the road. I take this not so much as pointing to an inherent tension between financial stability and macroeconomic stability – there cannot be – but as reflecting what is missing in the standard models, ie the incorporation of financial instability in the first place. In models that did so, a more useful definition of the natural interest rate would also call for the financial side of the economy to be on an even keel – in equilibrium – so that financial imbalances do not build up.

All this highlights another danger: it can be misleading to rely on market participants’ expectations as guidance on where the equilibrium interest rate is. This is precisely what one does when arguing that a piece of evidence in favour of the secular stagnation hypothesis is that market participants expect output growth, inflation and interest rates to remain low. After all, long-term rates are just another asset price; and persistent asset price misalignments are a feature of financial instability. So, what grounds do we have for believing that what is true for, say, property or equity prices cannot be true for long-term bond rates too? Indeed, those same markets that until recently appeared to firmly believe in a future of

¹² On some of the difficulties with this approach, see also Taylor and Wieland (2016). A second set of approaches assumes that the trend of the (long-term) rate tracks the natural rate and tries to explain it with reference to structural factors, such as demographics (eg Gagnon et al (2016)), generally not by estimating the link but showing that a calibrated model could reproduce the observed path.



secular stagnation have, following the US presidential election, turned on a dime and seem to have dismissed or forgotten this possibility.¹³

An alternative narrative

Armed with these various elements, it is now possible to provide an alternative narrative. According to the financial cycle drag hypothesis, the current predicament of the global economy reflects to a considerable extent a (series of) financial booms gone wrong and an inadequate, asymmetrical policy response.

Consider, in particular, the GFC and its aftermath – although qualitatively this pattern has been discernible since the 1980s (eg Drehmann et al (2012)). Inherent sources of instability in financial markets and poor risk management combined with a monetary policy focused on near-term price stability as well as inadequate regulation and supervision allowed unsustainable financial booms to develop in several countries, most notably the United States, the United Kingdom, Spain and Ireland. The booms turned to bust and caused major recessions, which spread around the world. The policy response to the recession was less than fully adequate. To be clear: policy was *very* successful in avoiding a major depression as a result of a downward spiral between the financial system and the real economy – ie during the crisis management phase, in which monetary policy in particular played a critical role, in line with its historical lender of last resort function. But the policy mix was less successful in setting the basis for a prompt, balanced, robust and sustainable recovery – ie during the crisis resolution stage. There was too little balance sheet repair and too much reliance on traditional aggregate demand management, especially on monetary policy. Such a response tends to be ineffective when the private sector is overindebted, so that it wishes to retrench rather than spend,¹⁴ and when a broken banking system fails to transmit policy impulses, as empirical evidence suggests.

Over time, the effectiveness of the policy mix diminishes and its side effects increase. This reflects, in particular, the multifaceted impact of persistently ultra-low interest rates (Borio (2014a), BIS (2016)). They tend to weaken the profitability and resilience of financial institutions, by compressing banks' net interest margins and inhibiting their incentive to take losses and repair their balance sheets, and by raising the value of insurance companies' and pension funds' liabilities, thereby also highlighting the need to save more for retirement. They can encourage resource misallocations more generally: everyone looks "sound" when nominal interest rates are effectively zero in nominal terms and negative in real terms. They can promote the wrong forms of risk-taking, hence the dissonance between exuberance in financial markets and sluggish investment, at least in advanced economies: firms prefer to borrow to pay back shares and hand out dividends rather than invest. And they can fuel unsustainable financial booms in other countries in a different cyclical position.¹⁵ They can do so directly: recall the huge post-crisis expansion of dollar credit outside the United States, as just confirmed in the latest issue of the BIS Quarterly Review (BIS

¹³ In a similar vein, Blanchard et al (2017) argue that the low growth post-crisis has partly reflected temporary factors such as agents' pessimism about future growth potential, in turn reflected in long-term yields that are too low compared with true growth prospects.

¹⁴ To be sure, lower interest rates can still sustain expenditures to the extent that they reduce debt service burdens and hence generate resources to repay debt. The point is that agents that realise they have borrowed too much would give priority to balance sheet repair and debt repayment, so that additional income would tend to be saved rather than spent, regardless of any restrictions on the supply of credit (Borio (2014a)). On this, see also Koo (2003), who was the first to use the term "balance sheet recession". While bearing some obvious similarities with his use of the term, the notion of a balance sheet recession here leads to somewhat different policy conclusions; see Borio (2014a) for a further elaboration.

¹⁵ The mechanisms are discussed in detail in eg Borio and Disyatat (2011), Borio (2014b), Shin (2012), Bruno and Shin (2014) and McCauley et al (2015). See also Rey (2013) for the notion of a global financial cycle and Hofmann and Bogdanova (2012), updated in BIS (2016), for evidence that globally policy interest rates are unusually low compared with traditional benchmarks.

(2017)).¹⁶ And they can do so indirectly: as domestic transmission channels weaken, the exchange rate becomes more important by default, but as unwelcome appreciation elsewhere is resisted, policy rates there are kept lower than otherwise: easing begets easing.¹⁷

Note how, all along the way, interest rates tend to decline. This is *partly* the result of a monetary policy that responds asymmetrically to the financial cycle. And over successive business and financial cycles, such a policy can induce a longer-term decline in the real interest rate. As long as inflation does not rise much during booms, partly held back by the tailwinds of globalisation and by central bank credibility, a monetary policy focused on near-term price stability has little incentive to tighten to restrain the build-up of financial imbalances. But then it has every reason to ease aggressively and persistently if the economy weakens and inflation declines further. I will come back to this point in a minute.

III – Risks and policy implications

If the financial drag hypothesis is closer to reality, how could the global economy evolve from here and what risks does it face?

Because the headwinds are temporary rather than permanent, it is clearly possible to delineate a positive scenario. The headwinds abate and the global economy gathers even more steam. Monetary policy is gradually normalised. The expansion becomes entrenched and sustainable. Indeed, as noted, following the US election, this seems to be the new view prevailing on markets: while interest rates still remain low by historical standards despite their substantial backup, all talk about secular stagnation has been brushed aside. To be sure, given the point of departure, the road is bound to be bumpy: it could not be otherwise given the extraordinary and prolonged degree of accommodation post-crisis. But the bumps would be manageable.

What about the risks? It is possible to identify at least three: conjunctural, structural and institutional.

A *conjunctural* risk is that of further episodes of serious financial stress in other parts of the world in the years ahead. A number of countries not affected by the GFC have been exhibiting symptoms of the build-up of financial imbalances that are qualitatively similar to those seen pre-crisis in those subsequently hit by it. Traditional indicators have been flashing amber or red (Table 1). This has been the case in emerging economies, including some of the largest, but also several advanced economies, and not just commodity exporters. In fact, some have been experiencing good growth, low unemployment and technical deflation, notably Sweden and Switzerland. The risk would be all the greater if monetary policy was perceived as having fallen behind the curve and if inflation, for cyclical reasons, were to pick up more than expected. And it would be amplified if policies turned more protectionist, as they appear to have since the crisis, and especially more recently. In this context, following the rapid post-crisis growth of international dollar credit, the risk of possible tensions in dollar funding merits particular attention (eg BIS (2017)).

¹⁶ Between 2009 and the third quarter of 2016, US dollar credit to non-banks outside the United States increased by some 50%, to some \$10.5 trillion, and it roughly doubled to those in emerging market economies alone, to around \$3.6 trillion.

¹⁷ Rajan (2014) refers to this process as “competitive easing”.



Early warning indicators for stress in domestic banking systems¹

Table 1

	Credit-to-GDP gap ²	Property price gap ³	Debt service ratio (DSR) ⁴	DSR if interest rates rise by 250 bp ^{4,5}
Asia ⁶	15.6	5.5	2.0	4.3
Australia	1.3	3.7	1.4	5.3
Brazil	-2.4	-30.9	3.0	4.6
Canada	17.4	11.6	3.6	7.9
Central and eastern Europe ⁷	-12.4	10.4	-0.5	0.9
China	26.3	0.8	5.4	8.8
France	1.6	-9.5	1.1	4.2
Germany	-4.2	15.6	-1.8	0.1
Greece	-16.3	11.8		
India	-4.7		1.4	2.5
Italy	-14.1	-14.2	-0.5	1.5
Japan	3.5	16.3	-2.2	0.5
Korea	2.3	5.4	-0.5	3.1
Mexico	8.9	7.7	0.8	1.5
Netherlands	-18.8	-11.4	0.8	5.6
Nordic countries ⁸	-2.2	3.5	0.1	3.9
Portugal	-41.1	13.8	-1.6	1.6
South Africa	-2.0	-9.1	-0.3	1.1
Spain	-46.8	-15.2	-3.2	-0.4
Switzerland	8.2	7.8	0.0	3.2
Turkey	7.7		5.0	6.7
United Kingdom	-19.5	1.0	-1.2	1.7
United States	-7.8	5.1	-1.4	1.1
Legend	Credit/GDP gap > 10	Property gap > 10	DSR > 6	DSR > 6
	2 ≤ Credit/GDP gap ≤ 10		4 ≤ DSR ≤ 6	4 ≤ DSR ≤ 6

For the credit-to-GDP gap, data up to Q3 2016; for the property price gap, data up to Q3 2016; for the debt service ratio, data up to Q3 2016.

¹ Thresholds for red cells are chosen by minimising false alarms conditional on capturing at least two thirds of the crises over a cumulative three-year horizon. A signal is correct if a crisis occurs in any of the three years ahead. The noise is measured by the wrong predictions outside this horizon. Beige cells for the credit-to-GDP gap are based on guidelines for countercyclical capital buffers under Basel III. Beige cells for the debt service ratio (DSR) are based on critical thresholds if a two-year forecast horizon is used. For a derivation of critical thresholds for credit-to-GDP gaps and property price gaps, see M Drehmann, C Borio and K Tsatsaronis, "Anchoring countercyclical capital buffers: the role of credit aggregates", *International Journal of Central Banking*, vol 7, no 4, 2011, pp 189–240. Country aggregates are simple averages. ² Difference of the credit-to-GDP ratio from its long-run, real-time trend calculated with a one-sided HP filter using a smoothing factor of 400,000, in percentage points. ³ Deviations of real residential property prices from their long-run trend calculated with a one-sided HP filter using a smoothing factor of 400,000, in per cent. ⁴ For the DSR series and methodology, see www.bis.org/statistics/dsr/index.htm. Difference of DSRs for the private non-financial sector from country-specific long-run averages since 1999 or later depending on data availability and when five-year average inflation fell below 10%, in percentage points. Data may differ from those that are published on the BIS website due to data revisions in between updates of the data set. ⁵ Assuming that interest rates increase 2.50 percentage points and that all of the other components of the DSR stay fixed. ⁶ HK, ID, MY, PH, SG and TH; excluding the PH and SG for the DSR and its forecast. ⁷ BG, CZ, EE, HU, LT, LV, PL, RO and RU; excluding CZ and RO for the real property price gap; excluding BG, EE, LT, LV and RO for the DSR and its forecasts. ⁸ FI, NO and SE.

Sources: National data; BIS; BIS calculations.

The *structural* risk is that of entrenching instability in the global economy. Over long horizons, asymmetrical policies across successive financial cycles – failing to constrain their expansion but easing aggressively and persistently during busts, with monetary and, to some extent, fiscal policy – could lead

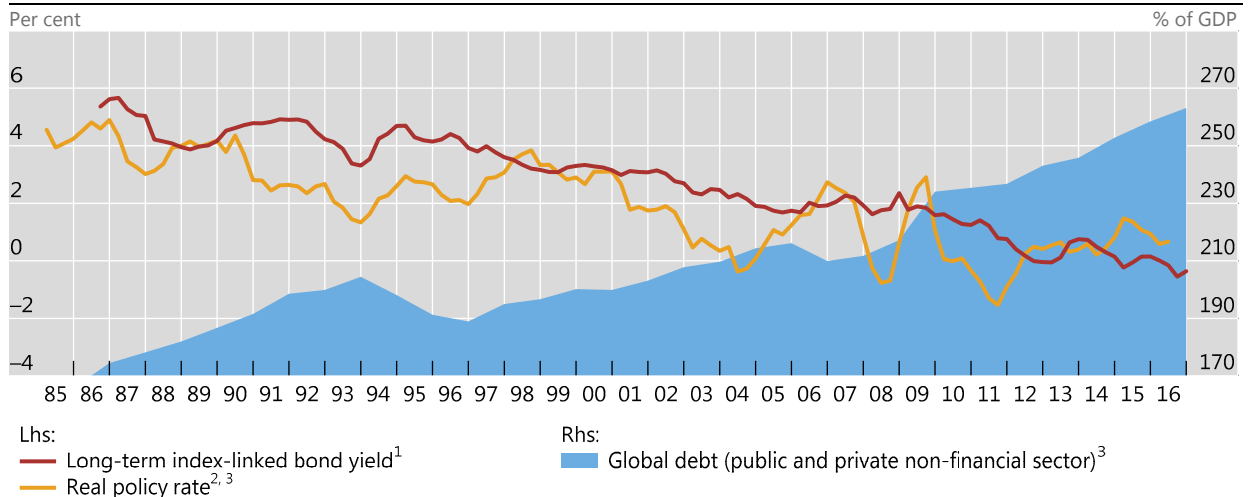


to a sequence of episodes of serious financial stress, a loss of policy ammunition and a debt trap. Such a sequence imparts a downward bias to interest rates and an upward bias to (private and public) debt that at some point makes it hard to raise interest rates without damaging the economy. The accumulation of debt and the distortions in production and investment patterns induced by persistently low interest rates hinder the return of those rates to more normal levels. There are some signs that this may be happening: monetary policy has been hitting its limits; fiscal positions in a number of economies look unsustainable, especially if one considers the burden of ageing populations; and at the global level, debt-to-GDP ratios have kept rising post-crisis (Graph 5).

The *institutional* risk is that, ultimately, the open global economic order could be ruptured. The open trade and financial order has proved remarkably resilient to the GFC. Would it be equally resilient if further crises erupted? The temptation for nation states to withdraw should not be underestimated. And at that point, the temptation to inflate debts away through a mix of inflation, financial repression and autarky could prove irresistible. Even short of episodes of financial distress, there have been ominous signs that the threat of protectionism is on the rise. That is an endgame that we should do the utmost to avoid.

Interest rates sink as debt soars

Graph 5



¹ From 1998, simple average of France, the United Kingdom and the United States; otherwise only the United Kingdom. ² Nominal policy rate less consumer price inflation. ³ Aggregate based on weighted averages for G7 economies plus China based on rolling GDP and PPP exchange rates.

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

What can be done to limit these risks? Let me mention just two steps, discussed at greater length elsewhere (Borio (2014a,c,d), BIS (2015, 2016)). The first is a rebalancing of the policy mix, away from demand management policies, especially monetary policy – which has been overburdened for far too long – towards structural measures that strengthen the economy’s longer-term growth.¹⁸ These are bound to be country-specific, but include, for instance, measures to encourage entrepreneurship, competition and the swift reallocation of the resources so critical for resilience. Fiscal policy can play a role, for instance by supporting balance sheet repair and structural reforms or through targeted spending on infrastructure and human capital formation. But, again, the room for manoeuvre is country-specific and any measures should be consistent with long-term sustainability: fiscal space can be easily overestimated. The second

¹⁸ It is often argued that such measures would depress demand, at least in the short term, and hence possibly make matters worse. But the empirical evidence suggests otherwise for a broad range of measures. See Bouis et al (2012).



step is adjustments to policy frameworks – monetary and fiscal – to address financial booms and busts more systematically, rather than relying exclusively on prudential policy.

Conclusion

I have laid out two quite different perspectives to explain the plight of the global economy. I hope I have convinced you that the financial cycle drag hypothesis does a better job than its secular stagnation counterpart – or that at least I have sowed some doubt in your mind. While, since the US election, market participants appear to have issued their verdict, veering away from the secular stagnation perspective, only time will tell which hypothesis is closer to the truth.

Regardless of the perspective one adopts, however, the future raises huge challenges. The financial cycle drag hypothesis does assert that the headwinds from the financial bust, while very persistent, are temporary. Moreover, one may also be sceptical, as I am, of the technological pessimism expressed by some observers. Even so, it is hard to be that optimistic if one considers the “risky trinity” that is to a significant extent the legacy of the successive financial booms and busts the world has seen: productivity growth that is unusually low, global debt levels that are historically high, and a room for policy manoeuvre that is remarkably narrow.

Extricating ourselves from the current condition will require a rare mix of what Antonio Gramsci once called “pessimism of the intellect and optimism of the will”: pessimism to assess the challenges ruthlessly, and optimism to overcome them. Ensuring that policymakers firmly capture the financial cycle on their radar screen is a prerequisite for a successful response. But implementing the necessary steps to tackle it also requires a longer-term view. Of course, this is by no means a new lesson, and doing so is exceedingly hard. But it is more important than ever.



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