

Peter Praet: The financial cycle and real convergence in the euro area

Speech by Mr Peter Praet, Member of the Executive Board of the European Central Bank, at the Annual Hyman P. Minsky Conference on the State of the US and World Economies, Washington DC, 10 April 2014.

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Ladies and gentlemen¹

Thank you for inviting me to address this conference. The latest data confirm that the euro area on aggregate is proceeding slowly along the path of economic recovery. Yet, a key issue that faces policymakers today, and that will continue to face them for several years to come, is how to deal with persistent divergence between national economies. Some euro area countries are experiencing steady growth, while in others growth remains anaemic. Some have unemployment rates under 5%, while in others unemployment exceeds 25%.

In the euro area, which is a monetary union but not a formal political union, there are risks if such divergences remain unaddressed. Without fiscal equalisation mechanisms, real economic convergence is important to gradually reduce cross-country income gaps, and this in turn ensures the economic and social cohesion of the single currency. This issue of real convergence is what I would like to focus on in my remarks today – in particular, why the first decade of Economic and Monetary Union (EMU) failed to produce real convergence, and how the euro area can produce a sustainable convergence process going forward.

My main argument is as follows. Economic theory tells us that the introduction of the euro should have led to real convergence as capital flowed towards so-called “catching-up” economies where the marginal product of capital was higher. Yet, while capital growth was indeed higher in catching-up economies, it did not lead to underlying productivity convergence. In my view this was because two structural and institutional conditions were missing.

First, there was an incomplete single market in goods and services, and a general lack of competitive processes in the non-tradable/services sector, which allowed some firms in so-called catching-up economies to extract excessive rents and distort capital allocation. Second, there was an incomplete single market in capital, and lack of common approach to supervision and resolution of banks, which allowed the financial cycle to take hold too strongly in these countries in the upswing, and limited the potential for risk-sharing between jurisdictions in the downswing. This “Minsky” cycle in turn masked the underlying lack of productivity convergence in the pre-crisis period.

The reform process in the euro area today is essentially a process of filling these two lacunae: improving the functioning of national economies through structural reforms; and creating a well supervised, integrated financial market through Banking Union. This should provide the conditions for efficient resource allocation and hence sustainable convergence in the future.

The illusion of convergence before the crisis

In its simplest form, economic convergence can be understood as the process of narrowing income gaps between lower and higher income countries, achieved through faster relative growth in the catching-up economies. According to the standard neoclassical growth model, convergence should be driven by capital flows towards the lower income countries, which

¹ I would like to thank Jonathan Yiangou, Neale Kennedy and Grigor Stoevsky for their contributions to this speech.

have low capital-to-output ratios and hence a higher marginal return on capital. An increase in labour productivity in the catching-up economies would also accelerate convergence, as capital deepening would empower production in those economies and organisational processes would gradually reach the standards of efficiency set by more mature regions.

When EMU was launched, the conditions for economic convergence to proceed according to this model seemed to be present. Nominal interest rates between higher and lower income countries converged rapidly. Capital flowed towards lower productivity economies where the marginal product of capital was higher, supported by the elimination of exchange rate risk within the euro area. For example, from 1999 to 2008 exposures from banks in higher-income economies towards those in the catching-up economies (Spain, Ireland, Greece and Portugal) increased more than fivefold. Facilitated by these flows, capital accumulation accelerated in these countries: from 1999 to 2007 average growth in capital services in catching-up economies ranged from around 5% to almost 9%, compared with a range of 2% to 3.5% in more productive economies.

On the surface, these developments appeared to be contributing to convergence: GDP growth in catching-up economies was generally faster than in higher income economies. Yet, with hindsight we know that there was no underlying convergence in labour productivity. In particular, strong capital accumulation in catching-up economies did not translate into faster total factor productivity (TFP) growth. TFP actually diverged between higher and lower income countries in this period. In fact, there was a positive correlation between the initial level of GDP per capita and average TFP growth rates: the highest TFP growth rates were found in Germany, Austria, Netherlands and Finland. A special case here is Italy, where initial GDP per capita was high but TFP converged downwards the catching-up economies. This seems to be because falling real interest rates eased fiscal constraints and reduced the incentive of governments to focus on structural policies.

In other words, the apparent economic convergence in the pre-crisis period was largely illusory. There was a cyclical convergence in GDP levels, but it was not structurally anchored. This poses two questions that can help inform policy choices in the euro area today: first, why did capital flows not lead to productivity convergence? And second, why did more observers not see through the illusion of convergence prior to the crisis?

Why did real convergence not happen?

Starting with the question of why TFP in particular did not converge, an important explanation seems to be that – contrary to the assumptions of the neo-classical growth model – foreign capital flowing into catching-up economies was allocated to sectors where the marginal product of capital was low and falling. This implied that capital accumulation was not associated with technological change and hence TFP growth. Indeed, in the catching-up economies capital flowed disproportionately into the non-tradable/services sector, which was in general experiencing significant productivity losses.² Specifically, capital accumulation was highest in the construction and real estate sectors, closely followed by retail, transport and leisure. There seem to be two explanations why this happened.

First, in some sectors the falling marginal product of capital was counterbalanced by rising profit margins, meaning that total compensation from investing in these sectors remained high.³ This was principally the result of an incomplete single market and a lack of competition – for example, in network industries such as utilities and telecommunications – which allowed

² See European Commission, 2014, “The drivers of total factor productivity in catching-up economies”, in *Quarterly Report on the Euro Area*, Vol. 13, Issue 1, April 2014.

³ See European Commission, 2013, “Catching-up processes in the euro area”, in *Quarterly Report on the Euro Area*, Vol. 12, Issue 1, March 2013.

incumbent firms to charge excessive rents and distorted price signals. The capturing of rents by firms in these sectors may have affected productivity growth not only by channelling resources away from more productive uses, but also by creating a drag on incentives to become more efficient in other sectors. For example, research has shown that anticompetitive regulations in upstream sectors such as utilities can curb TFP growth in downstream sectors.⁴

Second, specific financial factors also contributed to capital misallocation. In certain sectors in catching-up economies both the marginal product of capital and profitability were relatively low – for example, construction and retail – yet capital formation remained elevated. The explanation for this apparent contradiction seems to have been very loose credit conditions. This meant that, despite low gross remuneration for enterprises in these sectors, net remuneration was kept high by low real borrowing costs. In Ireland, for example, from 2003 to 2008 the average real borrowing costs for households (mortgages) was 1.1%, while for non-financial corporations it was 2.1%. In both cases this averaged 2.8 percentage points below the nominal cost. As a consequence, and facilitated by insufficiently intrusive banking supervision, credit volumes also increased steeply, with loans to households growing on average by 23% per year in the four years before the crisis, and by almost 28% for non-financial corporations. The fact that this credit growth was associated with labour-intensive sectors such as construction, and hence diverted labour towards these sectors, itself contributed to the weak performance of productivity.

Another financial factor that may have influenced capital allocation was the type of cross-border capital flows, which reflected an incomplete single market in capital. According to the ECB's financial integration indicators, by 2008 there was almost complete integration of euro area interbank markets, but retail banking remained largely fragmented and cross-border equity markets were hardly developed at all.⁵ This meant that the cross-border capital flows into catching-up countries were mainly debt-based and intermediated through local, relationship-based banks. Generally speaking, such a financing mode – compared with equity portfolio investment or direct cross-border lending from foreign banks – tends to favour incumbent and local firms, and can make bank lending decisions less sensitive to price signals.⁶ This may have also supported capital misallocation.

In short, capital flows did not lead to real convergence because the catching-up economies lacked the appropriate structural and institutional frameworks to allocate those flows efficiently. In the context of an incomplete single market in goods and services and weak competitive conditions, profit signals became disconnected from underlying productivity and diverted capital from more productive uses. And with an incomplete single market in capital and uneven banking supervision, credit growth became excessive and over-concentrated in low productivity sectors.

Why did more observers not recognise it?

While weak TFP growth was the subject of academic debate before the crisis, this was generally seen as a euro area problem, in particular vis-à-vis the United States.⁷ The general mood among observers was that the catching-up economies were progressing relatively well,

⁴ Bournès et al (2010), "Do product market reforms in upstream sectors curb productivity growth? Panel data evidence for OECD countries", NBER Working Paper 16520, November 2010.

⁵ See *Financial Integration in Europe*, European Central Bank, April 2008.

⁶ For a detailed exposition of this argument see Rajan, R. and L. Zingales (2002), "Banks and markets: the changing character of European finance", in V. Gaspar (ed.), *The Transformation of the European Financial System*, October 2002.

⁷ See for example Havik et al (2008), "The EU-US total factor productivity gap: An industry perspective", DG ECFIN Economic Papers 339, September 2008.

or at least not markedly worse than others. For example, the European Commission's *EMU@10 Report* stated that "three of the four cohesion countries (Spain, Ireland and Greece) have shown a satisfactory development overall, while only the fourth (Portugal) has disappointed."⁸ This leads me to my second question: if this convergence was in fact cyclical rather than structural, why was it not identified earlier?

My tentative answer would be that observers' assessments were influenced by the financial cycle, a theme that has echoed in Hyman Minsky's work.⁹ In retrospect, it seems now that the early years of the euro were the peak of a much longer financial upswing. This led observers to overestimate the sustainability of consumption and investment, and to underestimate the risks of rising private debt levels – and this was true on both sides of the Atlantic. One explanation for this is that, as the upward phase of the financial cycle can be very prolonged – according to estimates by BIS scholars, the typical duration of the financial cycle is around 16 years¹⁰ – perceptions of risk and value adjusted upwards. Historical relationships between asset prices, debt ratios and underlying productivity levels were deemed no longer to hold. Hence, developments that merely reflected the longer financial cycle were falsely believed to be structural.

Another explanation is that observers overestimated future productive capacity due to the effect of the financial cycle on real-time potential growth estimates.¹¹ This in turn could have led firms' and households to bring forward future consumption and investment into the present, based on an overestimation of their lifetime income. One way such misperceptions can arise is if a prolonged credit-driven economic expansion weakens supply constraints and raises estimates of potential output, making growth appear more structural in nature. In Spain, for example, the boom in the construction sector raised both domestic participation rates and immigration levels. The European Commission's latest estimates of potential growth rates are in the range of 3.2% and 4% for the period 2000–2007, driven mainly by the increasing labour contribution (adding around 2 percentage points on average per year). Since 2008, however, the labour contribution has been the largest drag on potential growth, for example, subtracting more than 2 percentage points from the 2013 estimate.

A final explanation is that observers mistook the significance of inflation differentials within the euro area. Excess domestic demand combined with low productivity growth should be reflected in rising prices, and domestic measures of price and wage inflation in the catching-up economies were indeed running considerably higher than the euro area average on a cumulative basis. Average annual inflation differentials in the 2002 to 2008 period were in the range of 0.5 to 1.5 percentage points. However, these developments were not considered especially alarming by some observers as they were interpreted as reinforcing the theory of Balassa-Samuelson equalisation. Some also saw inflation differentials as being more reflective of low inflation in Germany as it went through a phase of wage adjustment. Overall, this may have led to less concern about the lack of real convergence in productivity levels than was warranted.

⁸ European Commission, "EMU@10: Successes and challenges after ten years of Economic and Monetary Union", *European Economy* 2, 2008.

⁹ See for example Minsky, H (1982), "Can 'it' happen again?", *Essays on Instability and Finance*.

¹⁰ Drehmann et al (2012), "Characterising the financial cycle: don't lose sight of the medium term!", BIS Working Papers No 380, June 2012.

¹¹ For a detailed explanation see Borio et al (2013), "Rethinking potential output: Embedding information about the financial cycle", BIS Working Papers No 404, February 2013.

Achieving sustainable convergence

It was only when the financial cycle turned that the unsustainability of economic convergence became apparent. The majority of countries with relatively strong GDP growth rates prior to the crisis also experienced a relatively strong downward adjustment, in some cases undoing much of the welfare gains that were achieved since the launch of the euro. Some might see this as evidence that the assumptions of the neoclassical growth model need to be qualified – that absent credit-driven growth, there is no reason to believe that euro area economies should converge towards similar levels of productivity, or even rates of productivity growth.¹² Indeed, endogenous growth models allow for persistent divergences as some forms of capital exhibit non-diminishing returns.

Yet, I think it is too early to draw such a conclusion. The neo-classical assumptions have not yet been properly tested, simply because capital did not flow where the marginal return would have been highest. What the euro area needs, in my view, is to “re-run” the convergence process, but with the appropriate conditions in place to ensure efficient allocation of resources, and the right framework to make convergence sustainable. Let me explain in more detail what that might entail.

To begin with, catching-up economies have to address the immediate after-effects of the previous misallocation of capital. The pre-crisis inflows into the non-tradable/services sector were associated with real exchange rate appreciation, rising unit labour costs (ULC) and increasing dependence on external financing. When the financial cycle turned, however, capital flows quickly reversed. This reflected the incomplete nature of financial integration prior to the crisis – based largely based on short-term debt – and in turn unwound the channels for potential risk sharing within the euro area. A study on risk sharing published in 2008 had found that “monetary union has facilitated risk sharing, although the level of risk sharing is still much below the level found among U.S. states”.¹³ However, a study using a similar methodology in 2013 found that risk sharing through capital markets had virtually collapsed during the crisis.¹⁴

With external financing drying up, the catching-up economies faced the risk of a “sudden stop”. They therefore had to pursue both fiscal and structural policies aimed at achieving an internal devaluation so as to restore external balance. And they have been rather successful: since 2009 Greece has almost entirely reversed the ULC growth it experienced in the pre-crisis period, while good progress has also been made in Spain, Ireland and to a lesser extent Portugal. All the catching-up economies have also experienced remarkable improvements in their current accounts¹⁵, ranging from an almost 11 percentage points of GDP correction in Spain to a 16 percentage points of GDP improvement in Greece.

However, while internal devaluation may improve the sustainability of the external position, it does not in itself produce sustainable convergence. Indeed, there is a risk that, if unit labour costs (ULC) adjust mainly due to falling wages and the current account closes, policymakers may lack incentives to address the underlying productivity problem. This may in turn imply that similar imbalances reappear in the future: the experience of exchange rate devaluations in the 1990s suggests that adjusting only through relative costs, without lifting productivity,

¹² The most widely used concepts in applied work are those of *β-convergence* (faster productivity growth, exhibited by countries with lower productivity levels) and *σ-convergence* (decreasing cross-country dispersion in productivity levels).

¹³ Demyanyk, Y. et al (2008), “Risk sharing and portfolio allocation in EMU”, DG ECFIN Economic Papers 334, July 2008.

¹⁴ Kalemli-Ozcan, S. et al (2013), “Debt crises and risk sharing: the role of markets versus sovereigns”, CEPR Discussion Paper no. 9541, July 2013.

¹⁵ Including capital transfers (e.g. EU funds).

may not be sustainable. Hence, I see reforms that boost productivity as a cornerstone of a sustainable convergence process – but which reforms?

The importance of reallocation

Raising TFP is chiefly a function of innovation, technology adoption and reallocation. Innovation creates new technologies that improve the efficiency of the production process, adoption helps those technologies to become more widespread, and reallocation helps capital and labour concentrate in firms where they can be employed most efficiently.

Public policy can and should contribute to innovation and technological spillovers by raising the quality of human capital and helping incubate research and development, as well creating a business environment that favours entrepreneurship. However, the benefits in terms of productivity tend to be felt over a longer time horizon. There may also be a lag between technology adoption and TFP growth, as optimising the use of new technologies – in particular information and communication technology – tends to require parallel investment in intangible capital such as management systems and organisational processes.¹⁶ Hence, in the short- to medium-term, perhaps the most effective role that public policy can play in boosting TFP is to strengthen the conditions for reallocation to sectors that are *already* productive. This is particularly the case in the catching-up economies because, as we saw, weak TFP growth there was in part driven by misallocation of capital inflows.

Recent firm-level analysis from the Eurosystem's Competitiveness Network provides two insights that suggest this could be a promising strategy. The first is that the distribution between the most and least productive firms in individual euro area countries is very large and skewed. Far from being normally distributed – with many firms centred around the average performance level – there are a few highly productive firms and many which have low productivity. The second insight, which applies in particular to Spain, is that the ULC developments of firms at the bottom and the top of the productivity distribution are dissimilar. While ULC went up sharply before the crisis for unproductive firms, highly productive firms did not experience significant ULC growth.¹⁷

This implies, first, that there is substantial potential to boost productivity by reallocating resources both across sectors and within sectors towards the most productive firms; and second, that reallocation is not dependent on further ULC adjustment among those firms, as the most productive firms did not experience a significant competitiveness loss. In other words, productivity gains can be realised in the short- to medium-term independent of necessary longer term processes such as improving innovation or adopting new technology – or indeed, completing internal devaluation. Achieving these gains in the euro area today requires reforms that address both *price signals* and *credit allocation* that hinder the pace of reallocation.

In terms of price signals, I have discussed how before the crisis excessive rents in sheltered sectors distorted profit signals and encouraged capital misallocation. Hence, ensuring that capital now flows towards higher TFP firms must involve deepening the single market and strengthening competitive forces in the non-tradable/services sector. Greater competition will also support TFP growth through various static and dynamic channels: a recent empirical

¹⁶ For an explanation of this phenomenon in the US context see Bernanke, B (2005), "Productivity", remarks at the C. Peter McColough Roundtable Series on International Economics, January 2005.

¹⁷ Di Mauro, F. (2014), "Firm-level data: Who said that they are too difficult to use for policy?", VoxEU 11 March 2014.

study of the impact of competition policy on TFP in twelve OECD countries found a positive and significant effect.¹⁸

So far, catching-up economies have made notable reforms of framework conditions that increase competition, for example by strengthening competition authorities, reducing administrative burdens on companies, softening authorisation requirements and ensuring a fair public procurement process. However, progress in reducing excessive rents in sheltered goods and services markets has been less impressive, especially in network industries such as energy, telecommunications and transport. This is partly due to the micro- or sector-specific dimension of the reform needs, which imply confronting vested interests inside a certain sector. Reforms in these sectors are key, not only because they support reallocation, but also because they immediately increase the competitiveness of the tradable sector by reducing often onerous input costs. This could in turn strengthen incentives to raise TFP as the gains would no longer have to be shared with suppliers of intermediate inputs.

Reallocation of capital needs of course to be accompanied by reallocation of labour, and here price signals are also important. For example, there is some evidence that slower ULC adjustment in the non-tradable/services sectors in catching-up economies is discouraging labour from moving to the tradable sector, as wages remain higher in the former. Addressing this distortion across sectors is the rationale for labour market reforms that strengthen the link between wage formation and economic conditions. Reforms in this area are now well-advanced.

However, we must also acknowledge that there may be skill mismatches that prevent reallocation – especially for workers previously employed in low skill sectors such as construction – and these are more challenging to address. At the end of 2012, 18% of workers in the euro area with low education levels were unemployed, compared with only 6% of highly educated workers. This puts a strong onus on active labour market policies and, over the longer term, raising educational attainment.

Fixing the financial sector

Improving price signals in these ways is necessary for reallocation to take place in catching-up economies – but it is not sufficient. For example, in several such countries profit margins in the tradable sector have increased relative to non-tradables in recent years, yet these signals have not triggered meaningfully higher investment. Research by the European Commission suggests that financing constraints are an important factor limiting capital reallocation in this direction.¹⁹ Moreover, there is some evidence that weak bank balance sheets have retarded the process of “churn” between firms that drives resource reallocation. One study found that, in the early phase of the crisis, banks that were lowly capitalised were more likely to maintain credit to less creditworthy borrowers – so-called “ever-greening.”²⁰ This type of behaviour inhibits firm exits and reduces the availability of credit for new entrants.

Addressing these financing constraints has both a short- and a longer-term dimension. The short-term part concerns dealing with the legacy of the previous financial cycle – that is, repairing bank balance sheets and reintegrating the euro area’s financial markets. This is necessary so that capital can once more flow “downhill” from higher income to lower income

¹⁸ Buccirosi et al (2013), “Competition policy and productivity growth: an empirical assessment”, in *The Review of Economics and Statistics*, October 2013, 95(4).

¹⁹ European Commission, *Product Market Review 2013: Financing the Real Economy*, European Economy 8, 2013.

²⁰ Albertazzi, U. and Marchetti, D. J. (2010), “Credit crunch, flight to quality and evergreening: an analysis of bank-firm relationships after Lehman”, Working paper, Banca d’Italia.

countries, and so that banks in those countries are sufficiently capitalised to be able to allocate credit efficiently. The main policy initiative that will support this is the Banking Union project and, as part of that, the ECB's Comprehensive Assessment. Its aim is to dispel doubts about asset quality and levels of capital and provisions, and in doing so to accelerate the process of deleveraging and restructuring in the banking sector that is the inevitable consequence of a major financial crisis.

Over the longer-term, however, it is important that policy-makers also reflect on the *quality* of financial integration in the euro area – that is, the incentive structures in the financial sector that can lead to inefficient credit allocation, and the channels for sharing risk when financial crises do arise. Indeed, one criticism we could perhaps make of Optimal Currency Area theory is that it does not take account of the financial instability that may arise when capital reallocates across regions, both in terms of inflows and outflows. Banking Union goes some way towards redressing this, which is why it is essential for the longer term stability of the euro area.

In terms of improving incentives, the Single Supervisory Mechanism (SSM) should in principle be better placed to prevent credit misallocation as supervision will be decoupled from national economic conditions. The shift towards bail-in ability under the new EU resolution framework should also, over time, increase the quality of scrutiny over allocation decisions by shareholders and creditors. And by removing supervisory barriers to retail banking integration, the SSM should provide the pre-conditions for greater foreign entry into national banking markets, which research suggests could improve capital allocation by increasing the distance between the main shareholders and management of a bank and the vested interests in the country where the bank operates.²¹

These same factors also provide stronger channels for risk-sharing within the euro area. A more integrated retail banking market would imply that losses from local banking crises would be shared across multiple jurisdictions, thus acting as a shock absorber as we see, for example, in the United States. If such losses were still to erode a bank's capital, the new EU resolution framework will ensure, first, that the costs of bank failure fall mainly on the private sector rather than sovereigns, and second, that they are spread evenly across the euro area banking sector rather than concentrated in the affected countries. The relevant innovations here are the minimum requirements for bail-in before sovereign interventions, and the creation of the Single Resolution Fund for all banks that participate in the SSM.

That said, in my view achieving high quality financial integration must also involve deepening capital markets in Europe, both to improve the possibilities for market-based debt and equity financing, and to provide further channels for private risk-sharing. This obviously goes beyond Banking Union and will not be straight-forward, as it concerns multiple aspects of national law. But there are practical ways in which progress could be made. To give just one example, a Securities Law Directive has not been proposed to date, although it was already recommended in the second report by the Giovannini Group more than ten years ago (in 2003).²²

Managing the financial cycle

Facilitating the process of resource reallocation should allow TFP convergence to resume in catching-up economies, while the structural reforms being undertaken in these economies should help ensure that efficient resource allocation lasts. However, there is still one question from the pre-crisis period that I have not addressed: how can we ensure that the

²¹ Giannetti, M., and S. Ongena, 2009. "Financial Integration and Firm Performance: Evidence from Foreign Bank Entry in Emerging Markets." *Review of Finance* 13, 181–223.

²² The Giovannini Group, *Second Report on EU Clearing and Settlement Arrangements*, April 2003.

convergence process is not again disrupted by the financial cycle? One would hope that a better supervised and more diversified financial system will have a smoothing effect on the financial cycle. Yet, some academics argue that such is the force of the financial cycle that it is unavoidable that monetary policy will also have to play a central role in “leaning against the wind”. In the euro area, however, the situation is not quite so clear cut.

The ECB’s two-pillar strategy does make financial imbalances an important element of our policy assessment, even when inflation is low. Specifically, the monetary pillar captures the connection between excess credit and liquidity creation and potential risks to future price developments, including disruptive asset price booms. And our medium-term orientation grants us a sufficiently long policy horizon to account for the financial imbalances in our strategy. In this way, it implicitly incorporates elements of a “leaning against the wind” approach.

To quote the ECB Monthly Bulletin from April 2005: “[our] approach amounts to a cautious policy of ‘leaning against the wind’ of an incipient bubble. The central bank would adopt a somewhat tighter policy stance in the face of an inflating asset market than it would otherwise allow if confronted with a similar macroeconomic outlook under more normal market conditions. It would thus possibly tolerate a certain deviation from its price stability objective in the shorter term in exchange for enhanced prospects of preserving price and economic stability in the future.”^{23, 24}

Yet, were evidence of financial imbalances to reappear, we would have to reflect carefully on whether standard monetary policy would be the right tool to use in response. This is for two reasons. First, there is some uncertainty as to what interest rate path would be required to prick an emerging credit bubble. Some studies find that in a leverage-driven boom profits are very sensitive to even small interest rate changes, implying monetary policy could provide a powerful offset.²⁵ However, other evidence suggests that quite large interest rates movements would be needed to offset the financial cycle, which would in turn create collateral damage for the economy and price stability.²⁶

Second, there is still heterogeneity between the financial cycles of individual countries within the euro area. While it is true that aggregate euro area money and credit growth before the crisis was high, that growth was concentrated in specific regions. In the catching-up economies, growth in credit in the pre-crisis period was 10 percentage points higher than in more productive countries. In such circumstances, it may well be the case that hiking rates at the aggregate level would be too strong a response for regions that are not subject to financial exuberance.

The conclusion I draw from this is that standard monetary policy might be the right response when the financial cycle is rising across sectors and countries. In these circumstances, even

²³ See ECB Monthly Bulletin article on “Asset price bubbles and monetary policy”, April 2005.

²⁴ It should be noted that at the time this article was written, the idea of using monetary policy to prick asset price bubbles was alien to much of the theory and practice of central banking. Indeed, in 2006 former Federal Reserve Governor Don Kohn argued that only if the likelihood and risks of bubbles could be accurately identified would early intervention by central banks be superior to cleaning up after the bust, adding that “for my part, I am dubious that any central banker knows enough about the economy to overcome these hurdles” (see Kohn, D. (2006), “*Monetary policy and asset prices*”, speech at the European Central Bank Colloquium held in honour of Otmar Issing, 16 March 2006). However, that view has now largely changed across the central banking community. In particular, the importance of financial stability for price stability is now self-evident after the crisis, and most central bankers agree that for certain types of financial imbalances monetary policy may be the only tool that is sufficiently broad-based and powerful.

²⁵ See for example Adrian, T. and H.-S. Shin (2010), “The Changing Nature of Financial Intermediation and the Financial Crisis of 2007–09”, Federal Reserve Bank of New York Staff Reports no. 439, March 2010.

²⁶ See for example Bean, C. et al (2011) “Monetary Policy after the Fall”, in *Macroeconomic Challenges: The Decade Ahead*, Federal Reserve Bank of Kansas City.

if there was collateral damage, it could be justified for a period of time to offset the danger of a much larger risk to price, financial and economic stability in the future. When imbalances are regional or sectoral in nature, however, interest rate policy would seem too blunt a tool. We need more surgical instruments, namely an effective macro-prudential policy framework. For example, tools such as loan-to-value ratios or debt-to-income ratios could be used to limit credit misallocation to non-productive sectors, without at the same time harming sectors where capital needs to flow.

Conclusion

Let me conclude.

Real economic convergence supports the cohesion and smooth functioning of monetary union. What I have tried to illustrate today, however, is that there are no shortcuts to achieve it – and least of all by riding the upswing of the financial cycle. As Hyman Minsky demonstrated, what goes up must sadly come down.

One way to begin a more sustainable convergence process, in the near term, is through reallocating resources where they are most productive. But the challenge for euro area countries does not stop there. Raising productivity is a complex process that reaches across the economy and into many different policy domains, be they education, judicial systems or administrative capacity. Yet we have ageing populations across the euro area, so if we desire to GDP per capita in a sustainable manner, we have no choice but to face this challenge head on.

Thank you for your attention.