LONG TERM SUSTAINABILITY AND THE EURO

How to rethink the Maastricht criteria?

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Introduction

The euro is the grandest project in the economic history of Europe. An instrument and an underlying set of institutions, whose success or shortcomings are fundamental to determining the progress of an entire continent. The euro is thus Europe's great common cause, and only honest assessments, well-intentioned debate and ongoing innovation can shape it into an instrument that can meet the economic, social and geopolitical challenges of the 21st century in the long term as well.

The euro is a subject we must talk about! 2019 has been the year of the 20th anniversary of the introduction of the euro. Two decades are a sufficiently long period to in terpret in economic history terms and to arrive at a deeper understanding and assessment of the lessons from the use of the single currency. In the early 1990s, surrounded by the euphoria over the collapse of the Berlin Wall and the dismantling of the Iron Curtain, the architects of the Maastricht Treaty, which permanently sealed the decision to establish the euro area, held the belief that the single currency could become the next step in European integration. An evolutionary jump that deepens integration among the participating economies and, at the same time, repositions Europe within the global space.

Although the number of countries using the euro has risen from the initial 11 to 19 in the past 20 years, there remains much cause for debate due to the region's results in terms of progress, competitiveness and cohesion. The facts indicate that the euro area is still lagging behind in the global competition of economic regions. The weight of the European countries using the euro has fallen within the global economy. The 11 founding countries achieved an average annual GDP growth of 1.5 per cent in the last 20 years, less than the over 2 per cent figure achieved by the

United States of America, which is at a similar level of development, or the 2 per cent figure in the United Kingdom, which has had to grapple with the consequences of Brexit in the meantime. Meanwhile, China is growing dynamically, approximating or even surpassing the economic results on the two sides of the Atlantic. Beyond the developments in the real economy, attempts to pose a major challenge to the US dollar in its global leading role have failed even in the case of financial transactions. In a crisis environment, moreover, the euro area has been characterised by deepening rifts, escalating debates and worsening damage to the real economy rather than cohesion. It is especially urgent to understand the reasons for the latter at a time when greater turbulence could return to the world economy.

We must talk about the euro in our country, Hungary as well. It is in our joint interest to be active participants of the debates about the euro. The Hungarian economy is interconnected with the euro area in countless ways. Hungary's convergence and sustainable growth in the next few years will be possible only if the euro area functions successfully. Besides, as a member of the European Union, Hungary has made a commitment to introduce the euro in the future. In this respect, it cannot be emphasised too often that the introduction of the euro is not an endpoint for this country but a key milestone on the long road towards convergence. The most important question for Hungary (and all other Central Eastern European countries still facing the introduction of the euro) is therefore under what conditions and with what timing they should introduce the European single currency so that our region can continue on its path of economic convergence after it joins the euro area.

The last two decades offer significant lessons in this respect. Created in the early 1990s, the Maastricht criteria were, by themselves, unable to guarantee either stable growth in the euro area or the economic convergence of the less advanced economies that joined subsequently. There is almost complete agreement about the

fact that a complete reconsideration of the Maastricht criteria is required. We have to create version 2.0 of the Maastricht criteria together. Two years from now, in 2022, we will celebrate 30 years of the Maastricht Treaty. By that date, it would be important to arrive at a set of joining criteria through productive technical discussions with the current members and the future accession countries that could genuinely serve as the foundations for Europe's success in the next 20 to 30 years. Just emerging from a regime change, Central and Eastern Europe was a mere spectator to the developments in Maastricht in the early 1990s. If we are to create a strong Europe that builds on dialogue and internal cohesion, it is important to give the countries of this region the opportunity to explain their position regarding a decision as momentous for our shared future as the introduction of the euro. And that is the very purpose of this book.

It would be hard to find a better time in which to launch a technical dialogue. The European Union has entered a new political cycle. With new players, signalling the chance for renewed politics in Europe. Christine Lagarde, the new Governor of the European Central Bank and Ursula von der Leyen, the new President of the European Commission are both reformers committed to European integration. This is a perfect moment for directing attention to the issues marginalised within economic policy so far, to the recommendations held suppressed and to the debates on public policy. Successful renewal and the creation of appropriate new strategies, a more efficient institutional model and sets of criteria are our shared tasks and our common cause. We must do everything for the advancement of Europe and the success of future generations.

György Matolcsy, Csaba Kandrács, Márton Nagy, Mihály Patai

Key statements

Europe celebrated the 20th anniversary of the introduction of the euro in 2019. On the occasion of this anniversary, the issues defining the future of the single European currency shifted into the focus of attention both within and outside the euro area. Reviewing the experiences of the past two decades – the second ten years after the global crisis in particular –, there is widespread consensus that the euro is far from being a concluded project. Further profound reforms are needed. These reforms must, in part, ensure the development of the institutional framework behind the single European currency, while we must also again prepare for the successful future expansion of the euro area. The solutions for these issues must be put in place by the 19 member states currently forming the euro area, while the new accession criteria – that are more efficient than those preceding them – must be set up as part of a discussion between current members and countries facing accession. The analyses of this collection of studies wish to contribute to the latter.

The key statements of the analyses are as follows:

- *In the past 20 years, compliance with the original Maastricht – nominal – criteria in itself was able to ensure neither the stable operation of the euro area, nor the sustainable convergence of less-developed member states, and thereby the deepening integration. The macro-economic assumptions underlying budget-related criteria were ill-founded even at the start, while the permanent change of the world economic environment following the global crisis made compliance with these criteria impossible, and even counter-productive during recession. It is no coincidence that it is the criterion for government debt that has been violated by member states to the greatest extent and for the lengthiest periods.*

- *Swift convergence was seen in respect of the criteria pertaining to long-term interest rates and inflation, however, in the first decade*

of the euro this process greatly contributed to creating internal imbalances characterising the euro area – exaggerated increase in private debt, diverging current account positions –, which upon the eruption of the financial crisis of 2007/2009 resulted in the prolonged poor performance of the euro area.

- *The deepening real economic integration and the convergence between levels of development, which the introduction of the euro was expected to generate, failed to realise in the whole of the euro area. Less than half of member countries that introduced the euro, countries that were at a level of development falling short of that of core countries, were able to permanently increase their relative prosperity within the euro area, while on an average of the first two decades we have observed permanent divergence in multiple cases. It is important to stress that despite the deficiencies of the Maastricht criteria, the development path of the various countries was primarily defined by the quality of the economic policy pursued in this period. At the same time, it is also perceptible that compliance with the original criteria in itself is not sufficient to assess euro maturity.*

- *Despite the increase of the number of countries using the euro, as a result of decelerating growth, the global economic weight of the euro area has continuously decreased compared to the start of the millennium. In contrast with the moderate convergence in levels of development, the link between the business climate cycles of the various member states has grown tighter.*

- *The reshaped global economic environment and the new megatrends of the 21st century also have substantial impact on the benefits and costs of the use of the single currency. Certain benefits have dropped or are decreasing as we speak (e.g. the drop in country risk premium, transaction costs), while the abandoning of independent monetary policy and the broadly-interpreted economic policy leeway in a crisis environment could lead to deviations greater than previously estimated.*

- *The cost/benefit balance of accession will also be greatly influenced by the recently started reform of the euro area's institutional system. There has been considerable progress in numerous critical areas – e.g. the monitoring of macro-economic imbalances, the setting up of a crisis management fund, the preparation of the bank and capital market union – over the past decade, however, the reform is progressing slowly. The outlines of the setting up of the single budget – which has been considered one of the most sensitive deficiencies of the euro area since the beginning and one which, if needed, may have appropriate intervention potential regarding financial stability and cyclical stabilization issues – still cannot be seen or perceived. Its lack shifts particular attention in the accession process to reaching adequate real economy maturity and the necessity of establishing independent fiscal space.*

- *In the case of Central Eastern European member states of lower development, which are currently converging, the introduction of the euro would require setting up a system of criteria, the fulfilment of which would concurrently ensure the sustainability of the development path of the acceding country and the retention of the stability of the euro area.*

- *This requires the rethinking of the Maastricht criteria. A new set of criteria must be put in place, one that is able to assess real economic maturity and the capacity to adapt, the harmonisation of financial cycles and economic policy leeway even under sustainable nominal – interest and inflation – convergence conditions. Based on accession experiences observed to date, particular attention should be dedicated to the following areas:*

    - *the risks stemming from the over-swinging of the financial cycle should be minimised. This can be helped along if three criteria are met: firstly, accomplishing appropriate real economy convergence could moderate the potential inflation surplus arising from economic convergence, hindering the exaggerated drop of real interest rates; secondly the appropriate level of financial*

deepening mitigates the risk of sudden credit bubbles forming in the future; and thirdly, arising system-level risks can be managed with an efficient regulatory toolkit.

- *Maintaining and improving competitiveness is of crucial importance in economic convergence. Entry to the euro area should be scheduled for a time when the economy is already characterised by a strong position of competitiveness, while the channels shaping the future competitiveness and capacity to adapt of the economy are already operating effectively. The state of labour and commodity markets has a priority role in the latter.*

- *In the absence of independent monetary policy, the role of fiscal leeway takes on increased importance in a recession environment. The lack of a fiscal union (or a eurozone-level institution with financial and cyclical stabilization potential that is equivalent in terms of effects) means that countercyclical fiscal policy can be ensured only under conditions deviating from the original Maastricht fiscal criteria, conditions that in certain areas are even stricter.*

1
From birth to the present – the first twenty years of the Euro

The Maastricht criteria – conditions and assumptions

Balázs H. Váradi – Olivér Nagy – Zoltán Szalai

Signed in 1992, the Maastricht Treaty signalled a new phase for European integration and, within its framework, it laid the foundations for the introduction of the euro and the creation of a monetary union. Besides some political objectives, the centralisation of monetary policy was a natural consequence of the experience of economic policy in that period. The introduction of the single currency was the outcome of decades of attempts and adjustments to fix exchange rates, combined with the institutional ideas prevalent in economic thought at the time. The creation of the monetary union was underpinned by the fact that fixed exchange rates had come to be seen mostly positively in the 1980's, as the reduction of exchange rate volatility across currencies boosted exports between countries. The uncertainties surrounding exchange rates also convinced the decision-makers that no form of coordination would eliminate exchange rate risk completely as long as there remained separate national currencies.

The Maastricht convergence criteria were formulated in the early 1990's with the objective of ensuring that only countries capable of functioning within an economic policy framework aimed at monetary stability could join the monetary union. The introduction of the convergence criteria was preceded by intense professional debates, since economists were highly divided regarding the selection of appropriate conditions. Some questioned the need for stipulating any criteria at all, while others argued that the introduction of the single currency would not, by itself, guarantee monetary stability. The empirical studies into the real economy indicators of the countries considered as optimal currency

areas versus the EU Member States did not, ultimately, find differences substantive enough to shatter the theoretical foundations of the euro. It remains a problem, however, that the approved criteria formulate targets only in terms of nominal variables and thus do not measure real economic convergence directly nor guarantee financial stability. Economic policy-makers wanted to set the boundaries for fiscal policy along sustainability and stabilisation considerations. Yet the failure of the budget deficit criterion to take the initial deficit figure into account causes difficulties, as does the fact that few had recognised the lasting impact of fiscal policy in boosting demand and thus no central fiscal policy instrument was created to smooth the economic cycles throughout the currency area. The sustainability of government debt was also a key consideration in defining the convergence criteria. It is problematic, however, that the government debt rule is inconsistent with the deficit rule and therefore the two rules cannot be properly applied together in practice. After all, a deficit of 3 per cent can stabilise government debt at the required level of 60 per cent only when nominal GDP grows by 5 per cent, i.e. the criteria are unable to take into account the changes in the macroeconomic environment.

The Maastricht Treaty signalled a new phase for European integration and, within its framework, it laid the foundations for the introduction of the euro and the creation of a monetary union. The Maastricht Treaty (the *Treaty on European Union*) was signed by the countries of the European Economic Community in February 1992. With the pursuit of integration on the continent is rooted further in the past, the Treaty inaugurated a new phase of European cooperation and laid the foundations for the introduction of the single currency. On 1 January 1999 the European Economic and Monetary Union (*EMU*) entered the third and last phase of the integration efforts of European countries as the countries of the Community fixed the nominal exchange rates of their national currencies against the euro and handed over the institution of sovereign monetary policy to a supranational organisation.

Besides some political objectives, the introduction of the euro and the centralisation of monetary policy were natural consequences of the experience of economic policy in that period. Although the introduction of the euro and the convergence criteria necessary for its introduction have been the target of much criticism over recent decades, the economic theory and the economic policy experience of the age must be taken into consideration in any assessment of the frameworks created and the critical comments made. Admittedly, there had been significant political motivations underlying the creation of the European single currency (Lámfalussy et al. 2014), but it would not be wise to analyse its economic rationale through that lens alone. The introduction of the single currency was the outcome of decades of attempts and adjustments to fix exchange rates, combined with the institutional ideas prevalent in economic thought at the time. In order to understand the institutional and economic frameworks behind the euro and the single currency, this experience and doctrine must be examined.

The institutional structure of the Economic and Monetary Union was designed in line with the prevailing economic

theory of the age, neoclassical economics. The mainstream thought of the period is also referred to as the Brussels-Frankfurt-Washington (*BFW*) Consensus (Fitoussi és Saraceno, 2004). This unofficial name refers to the fact that this was a version of the doctrine applied to developing countries by the IMF and the World Bank, reformulated for advanced economies. The main principle of this doctrine is governance through markets: wherever possible, market mechanisms should be allowed the greatest possible freedom to operate, since markets are more flexible than the state and they can adequately regulate themselves without state intervention. Where the market does not emerge spontaneously, it should be created to the extent possible; where previously competitive markets become less competitive, the desired conditions should be reinstated. The doctrine admits that it is impossible to create efficient markets in certain areas, but it expects the extent and the frequency of government intervention to be minimal. It follows therefore that this doctrine confines the role of the state mostly to mitigating market failure and sees the fundamental operation and growth trends of the economy as shaped by the decisions of market players.

Economic thinking identified the overcoming of competitiveness issues as an opportunity for higher potential growth. The deepening of European monetary integration entailed the creation of a common market, because a continent-wide market would force all countries to compete. Underlying the efforts to encourage the competition of European corporates was the conviction that the economic potential of the continent could not be utilised otherwise, and it could not remain competitive against economies such as the United States or Japan. The progress of integration was held back by certain uncertainties surrounding the diverging macroeconomic frameworks, such as exchange rate risk and regulatory risk, which significantly constrained the free movement of capital (Hu et al. 1997).

Fixing the exchange rates came to be seen in a positive light in Europe in the 1980's. The 1979 launch of the European Monetary System (*EMS*) and the parity grid of floating exchange rate bands for the countries of the Community (Chart 1-1) may be considered as the forerunners of the single currency. The objective of this system was the joint mitigation of the exchange rate volatility of the currencies, which incentivised the growth of exports among the countries through a reduction of exchange rate fluctuations (Arize 1996, Hu et al. 1997). After all, some currency devaluations before the introduction of that system had reached an extent where they annulled the entire annual profit of production companies.

It became clear that exchange rate movements depended not only on the economic fundamentals but also on speculative capital flows. It has been one of the most important lessons drawn from the operations of the EMS that global capital flows were able to create tension among European currencies even in the absence of fundamental causes. Although academic literature tends to emphasise that, in a floating exchange rate regime, the movement of exchange rates is mostly dependent on macro fundamentals (Obstfeld et al. 1985) and monetary policy has a greater scope (Shafer et al. 1983), practice has in fact shown that such a regime is characterised primarily by increased volatility due to speculative capital flows (De Grauwe 2000) and the resulting capital controls (Gros 1996). As a typical example, if cyclical reasons drove capital flows to Europe, given market sizes, this ended up mostly on the market of the Deutsche Mark. This resulted in an upward pressure on its exchange rate against the other European currencies, without any fundamental reasons at all (De Grauwe 2000). Countries also used exchange rates to improve their relative price or cost competitiveness, accepting the resulting inflationary effects. This was disruptive for the countries that were more committed to price stability and held price or cost competitiveness under control, which in turn generated tensions among the members of the Economic Community.

Chart 1-1: Countries participating in the European Monetary System and the year of their accession
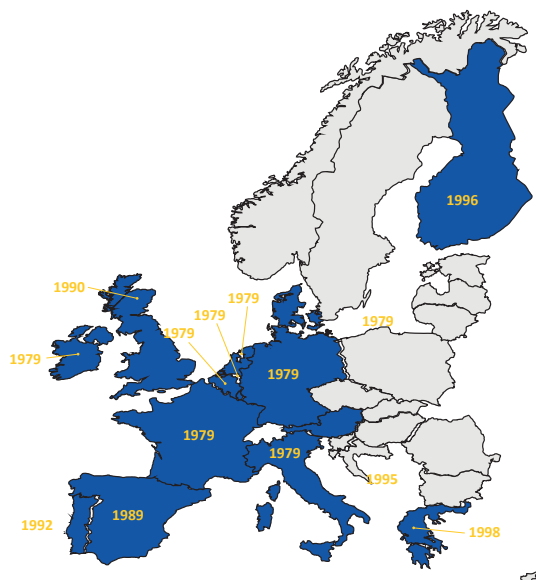
Source: own edit.

The EMS crisis convinced politicians of the need to introduce the single currency. The European currency crisis of 1992–93 and the exits that threatened with the complete collapse of the exchange rate system served as another warning for economic policy decision-makers about the adverse side effects of volatile exchange rates. Devaluation and the uncertainties surrounding exchange rates convinced the decision-makers that exchange rate risk could not be eliminated through coordination in any shape or form as long as independent national currencies existed (Magyar Nemzeti Bank 2011). The decision was therefore ultimately made to create the conditions for introducing the single currency.

The deepening of integration had to be aligned with a framework acceptable to all. The creation of monetary union demanded eliminating or minimising the risks inherent in the single currency. To this end, the correct degree of integration had to be determined in the various macroeconomic areas, one that

was sufficiently effective for the purpose yet acceptable to the individual nations as well. The EMU is a specific form of integration, after all; the nations within it retain a significant degree of sovereignty. Creating it involved devising the future operating frameworks as well as the transitional criteria of its creation. Of the latter, the most important ones were the convergence criteria, stipulated as the preconditions for joining.

The objective of the Maastricht criteria is to guarantee the monetary stability of the European Union. The Maastricht convergence criteria were formulated in the early 1990's with the objective of ensuring that only countries proven to be capable of functioning within an economic policy framework aimed at monetary stability could join the monetary union. This was necessary because the instability of any country within the monetary union could jeopardise the stability of other countries and potentially the EMU as a whole. At the same time, some of their earlier monetary policy instruments would no longer be at the countries' disposal at all, such as an independent monetary policy or a flexible exchange rate, or only within tight constraints, such as fiscal policy. These would be brought under joint control (monetary policy would be centralised, while fiscal policy would be tightly controlled with the threat of sanctions) in order to achieve macroeconomic convergence and monetary stability throughout the continent.

The introduction of the convergence criteria was preceded by intense professional debates. Economists were divided regarding the choice of appropriate convergence criteria and the timing determined by them. Some questioned the need for transition and even for stipulating any criteria at all. They argued that the introduction of the euro would bring about a change of such magnitude in the behaviour of private agents as well as states that this by itself would force countries to adjust appropriately. For this very reason, it would be impossible to draw conclusions from the conduct before the introduction of the euro for the be-

haviour expected thereafter. Described with the adjective 'mone-tarist'[1] in the terminology of the time, this attitude characterised primarily the position of the French partner (Gros and Thyge-sen 1998). The counter-arguments to these considerations were proposed mainly by the negotiating delegation of Germany, also supported by the smaller core countries, which had previously pegged their currencies to the Deutsche Mark. According to the position labelled as 'economists', the introduction of the single currency would not, by itself, guarantee that countries which had not acted in the interests of monetary stability would modify their behaviour to do so now. If, for example, such countries have a significantly higher rate of inflation and their fiscal revenues and expenditures are adjusted to that, then the introduction of the single currency will not change interest rates, wages and prices, causing considerable difficulties for both the country in question and the Community as a whole.

The academic debates on the euro were based mostly on the optimal currency area (*OCA*) theory. On the one hand, some argued for taking real economic convergence into account given that the economic structures of individual Member States were too different and they would be impacted differently by external as well as internal shocks, and a centralised monetary policy and tightly controlled fiscal and other national policies would not be able to respond optimally (Eichengreen 1991, Bayoumi and Eichengreen 1997, Frieden 1998). By contrast, a number of economists showed that the real economic differences among European countries were not significantly greater than in other monetary regions already in operation, especially the United States (Trichet 2011). A further argument suggested that the conditions for an optimal currency area may emerge more easily and endogenously, once the single currency is already in operation. Without it, convergence would be slower and imperfect.

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[1] This designation is unrelated to Milton Friedman's monetarist macroeconomic theory; the identical names are coincidental. Friedman was ultimately skeptical about the viability of the single currency.

Table 1-1: The change of ULC in each Member State in the proportion of the average change of ULC in the euro area and the US (1998-2010)

Countries (Euro area)	1998 – 2010	States (USA)	1998 - 2010
AT	-10.04	Alaska	18.51
BE	-5.18	Arizona	-5.63
FI	-4.43	California	-9.44
FR	-2.78	Kentucky	12.41
EL	20.46	Idaho	-11.65
NL	-1.71	Louisiana	19.98
IE	0.43	Michigan	5.13
LU	14.04	Nevada	-3.69
DE	-15.15	Ohio	3.99
IT	5.53	Oregon	-19.45
PT	1.87	South Dakota	-12.23
ES	6.66	Wyoming	2.26
Average	0.81		0.02
Standard Deviation	9.46		12.05

Note: ULC stands for unit labor cost. The average ULC for the euro area is the unweighted arithmetic average of the member states. Due to data access issues, we are approximating the ULC of the USA with the compensation of non-agricultural sectors as of GDP.

Source: ECB, BLS, Central Bank of Hungary (2011).

The empirical studies into the real economy indicators of the countries considered as optimal currency areas versus the EU Member States did not find differences substantive enough to shatter the theoretical foundations of the euro. In his comparison of 12 European countries with the United States, the United Kingdom, Canada, the Federal Republic of Germany and Switzerland, Delors concluded that the differences among the twelve European countries in terms of development status were indeed greater than in the other regions examined but that they were not significant (Delors 1989). Examining the data

from the decade preceding the crisis reveals lower divergence in the changes of unit labour costs of the founding members of the euro area than those of the US states (Table 1-1), whereas OCA literature suggests that the very opposite should be the case (Trichet 2011).

It remains a problem that the approved Maastricht criteria formulate targets only in terms of nominal variables.[2] It follows from the nature of the convergence criteria as created that they do not measure real economy convergence directly, nor do they guarantee financial stability. At best, they capture these factors indirectly, through compliance with nominal variables. This is due to the fact that it was impossible to set clear, quantified values for the real economy variables emphasised in the optimal currency area theory that would have been indisputably suitable as a basis for selecting the countries able to coexist within a monetary union. The OCA theory does not tackle monetary stability or even nominal variables, because the optimal currency area theory is a real theory. Since economic policy-makers wished to establish an area of 'monetary stability' and not merely an 'optimal currency area' through the creation of the EMU, they believed that setting nominal criteria was the appropriate means for achieving their objective.

Fiscal policy was given basically a stabilising role because markets were seen as effective. Most of the debates centred on fiscal policy requirements and opportunities. Since the economic approach underlying the convergence criteria considers the macroeconomy basically stable, any shock would be merely temporary and the role of government policy should be confined to smoothing such shocks. An undisciplined fiscal policy may therefore cause prices, wages and the current account deficit to rise, and this could be incentivised in a monetary union where the resulting adverse side effects are spread throughout

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[2]   Price stability, sound and sustainable public finances, exchange rate stability, convergence of interest rates on long-term assets.

but the advantages are enjoyed mainly by the domestic economic agents. The role of convergence criteria is to help ensure that any country participating in monetary union should be able to adapt to, and maintain, an environment of low inflation.

The Maastricht criteria therefore formulate a number of convergence rules to ensure sound and sustainable public finances. Economic policy-makers wanted to set the boundaries for fiscal policy along sustainability and stability considerations. The first rule concerns the sustainability of budgets, stating that the budget deficit measured as a percentage of GDP must not exceed 3 per cent. The budget deficit of public finances may exceed that reference value in warranted cases, provided that these are caused by temporary and exceptional impacts, such as a fall in real GDP by more than 0.75 per cent.[3] Although the formulation of the rule may appear arbitrary at first sight, Buti et al. have showed that budget deficit increases at or above 3 per cent are rare even in a crisis (Chart 1-2). It is therefore not entirely unwarranted to stipulate a rule disallowing budgetary easing in excess of 3 per cent (Buti and Sapir 1998).

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[3] The temporary and exceptional excesses were quantified in the Stability and Growth Pact in 1997.

Chart 1-2: Changes in the budgets of the key European countries
and of the EU-10 between 1971 and 1990
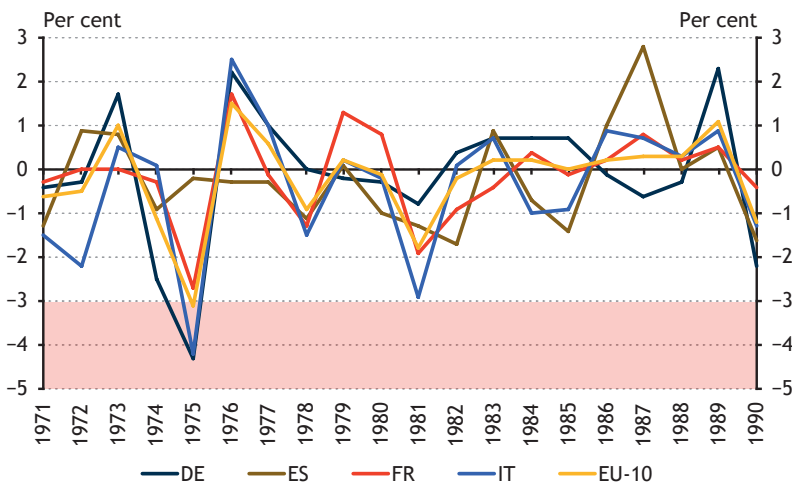
Note: *The EU-10 are a group of countries in the European Union that met the*
criteria for introducing the euro in 1998.
Source: *European Commission (1998).*

**The budget deficit criterion disregards the initial value of the defi-
cit.** It should also be noted that most European countries do not
run a balanced budget but operate typically at a deficit of around
2 per cent (Chart 1-3), and therefore the required 3 per cent thres-
hold, examined from the aspect demand stimulation, may demand
excessively restrictive fiscal policy from certain Member States. All
things considered, the efficiency of the deficit rule prior to a poten-
tial debt crisis can be evidenced empirically, as the countries were
able to maintain their government debts stable with appropriate fis-
cal discipline before the adoption of the Stability and Growth Pact.

**In the past, Member States tended to view the budget deficit
limit as a target rather than a constraint.** Since a breach of the
deficit rule triggers the excessive deficit procedure, countries tar-
geted their deficits at 3 per cent in order to take advantage of the
permitted headroom; this tended to be the case regardless the
cyclical position of the economy.

Chart 1-3: Developments in the budget balance-to-GDP ratio in the countries of the European Economic Community
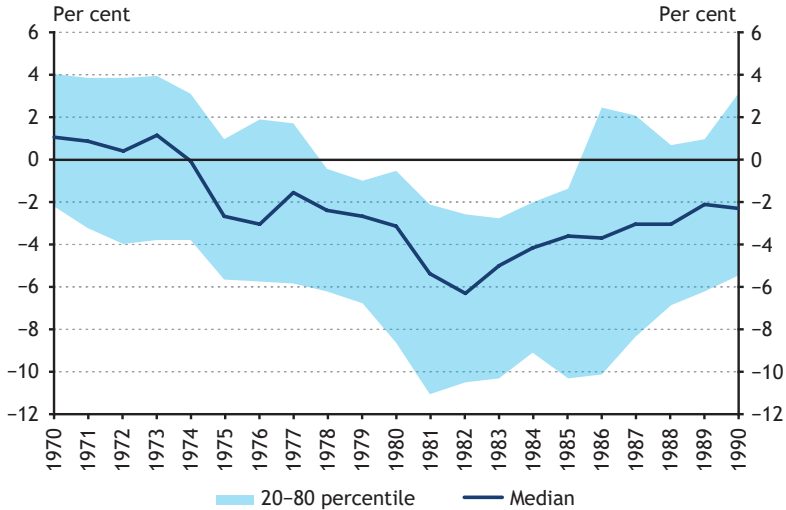
Source: European Commission (1998).

Few recognised the lasting impact of fiscal policy in boosting demand. It was considered as a sufficient condition for monetary and price stability for price and wage setting private agents to behave in alignment with price stability, for fiscal policy to support price stability and for the financial system to function in compliance with prudential requirements. However, the academic literature of the time demonstrated that stable monetary unions always functioned with a strongly centralised fiscal policy rather than imposing deficit rules on Member States. Godley (1992), Goodhart (1992) and Kregel (1999) went even further when they asserted that fiscal centralisation was more important for monetary stability and the viability of integration, and ascribed much lower importance to the real economic convergence that was the focus of theoretical OCA literature.

The sustainability of government debt was another key consideration in defining the convergence criteria. The government debt benchmark criterion sets the cap on gross government debt relative to GDP at 60 per cent. If the government

debt of a country exceeds the 60 per cent benchmark, then the average annual reduction of the debt must exceed one twentieth of the part of the outstanding debt exceeding the 60 per cent mark over a 3-year period[4]. Although the rationale for the 60 per cent rule can also be disputed[5], there were a number of non-macroeconomic arguments for this reference value at the time of its formulation. Firstly, it was worth considering that around half of all the Member States had a debt of 60 per cent or less (Chart 1-4), so that this figure seemed to be an acceptable compromise for all the countries. Furthermore, as Thygesen says, the reference value appeared valid from a coverage perspective as well because, prior to the introduction of the Maastricht criteria, the public assets of Member States also accounted for 60 per cent of GDP on average, so market players rightfully believed that they could see a kind of coverage behind the debt (Thygesen 2002).

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[4] The Stability and Growth Pact (1997) stated that the debt level above 60 per cent should decline with a satisfactory pace towards a level below each year. Satisfactory pace has been quantified in the Fiscal Stability Treaty (2012).
[5] During the academic debates, questions were repeatedly raised about the introduction of the debt rule alongside the 3-per cent deficit rule. The debt rule is necessary because there are numerous items besides the budget that are only captured in the debt figure and, furthermore, because the proportion of such items is higher in the new accession countries than in the founding countries.

Chart 1-4: Developments in government debt-to-GDP ratio in the countries of the European Economic Community

Per cent
Per cent

20–80 percentile ——Median
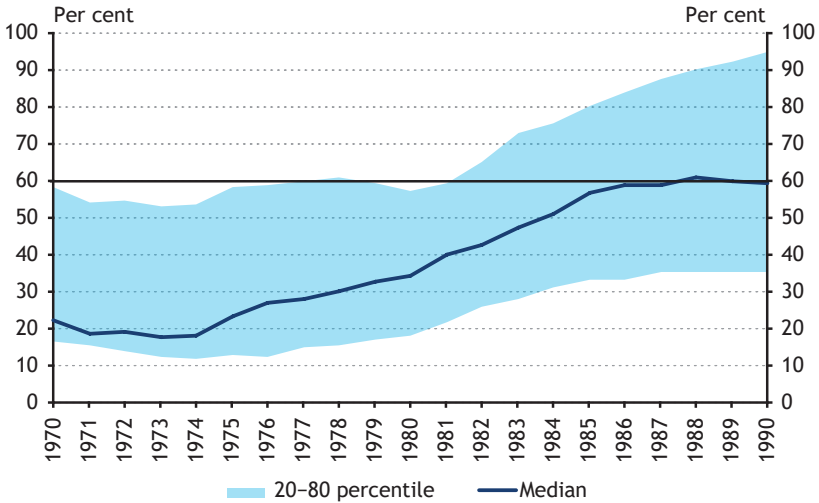
Source: European Commission (1998).

The purpose of the debt rule is to ensure the sustainability of the government debt of Member States. Regarding the choice of the debt rule benchmark, it should be noted that most countries held lower debts before the introduction of the Stability and Growth Pact in 1997 and that they wished to leave themselves room for manoeuvre for the eventuality of crises. In the period preceding 2006, Greece was one of those that failed to satisfy the criterion, yet several countries preceded the Greeks in seeking a loan from the European Commission and the IMF. In the period following the crisis, a significant divergence in debt figures can be observed among the countries of the euro area.

It is problematic, however, that the government debt rule is consistent with the deficit rule only in a special case and therefore the two rules cannot be properly applied together in practice. The greatest problem with the government debt and deficit rules is that a 3-per cent deficit (if considered not as a limit but as an expected value) will stabilise government debt at the required level of 60 per cent only when nominal GDP grows by 5 per cent

(Chart 1-5). However, since the introduction of the Maastricht criteria the growth dynamic of the member countries has slowed substantively and inflation also stabilised at low levels. The criteria remaining unchanged means that the rules on deficit and government debt disregard the changes in fundamental trends. In the period between 1998 and 2017, the average nominal growth of the euro area was 3.1 per cent, which can stabilise government debt at around 100 per cent of GDP if the deficit rule is observed. Given the growth trends of the past 10 years, a deficit of approximately 1.1 per cent would stabilise debt at 60 per cent. Examining from the perspective of demand stimulation an overly strict fiscal policy is unable to stimulate the economy to the necessary extent and, moreover, could endogenously result in shrinking the actual and potential output.

Chart 1-5: Deficit-debt convergence values at different nominal GDP growth rates
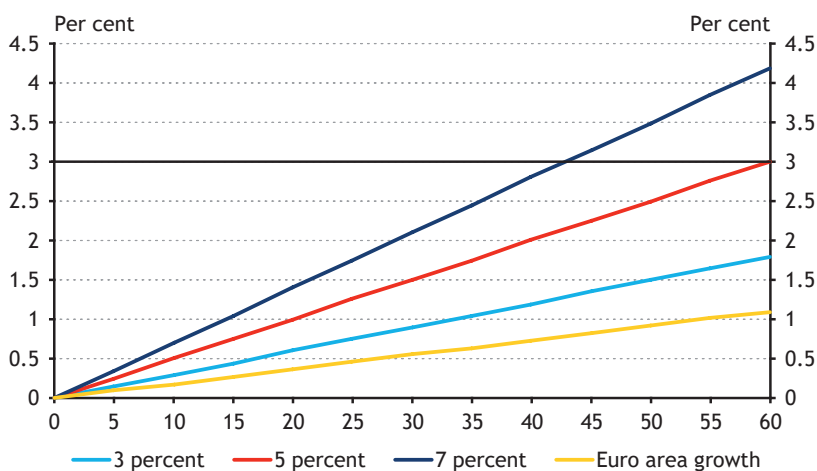
Note: The euro area growth figure is the unweighted mathematical average of nominal GDP growth in the years 2009 to 2018. The government debt (horizontal axis) and budget deficit (vertical axis) values are percentages of GDP.
Source: IMF WEO, based on Pasinetti (1998).

The definition of the Maastricht convergence criterion on inflation, like other criteria, reflected the prevailing economic policy consensus of the nineties. The Maastricht Treaty let the ECB determine the exact numeric value of the inflation target for the functioning monetary union. It provides only a relative requirement for the entry into the euro area at the time of formation and for the countries subsequently entering the euro: the arithmetic average of the values of the three lowest inflation countries should not exceed one and a half percentage points over the average of the twelve months preceding the examination. This definition ensures that the inflation rate of the entering countries differs only in a certain extent from that of the other countries that does not pose significant problems after entering the single monetary policy. The inflation criterion, calculated from the average of the three countries with the lowest inflation, ensures that convergence is as close as practically possible to price stability, while at the same time reducing the risk that an individual country's outlier inflation becomes the reference value. The one and a half per cent difference above this average can be justified by the fact that, after analysing the data of many monetary unions, that this one and a half per cent was the average inflation difference among regions (Canadian provinces, US Member States, Spanish regions), although there were higher (Dutch, UK) and smaller (German Länders) examples as well. Similar differences have been found in real exchange rate changes among countries with fix exchange rates (Buti and Sapir 1998, pp.190). At the start of the monetary union, and in particular, in the context of convergence of the less-developed countries that joined later, there was much debate about the problem of systematically higher inflation during the catching-up period. Although there was a consensus about the existence of this systematically higher inflation, its rate, due to the pace and the term of convergence, was not considered to be so severe to undermine the entrance of catching-up counties or their stability in the monetary union if these counties implemented a credible

economic policy thus, it was not considered to be necessary to treat these countries differently or to change the inflation criterion (Buti and Sapir 1998, pp.204).

The entry criterion for long-term government bond interest rates requires that the average of the long-term interest rates of the three countries with the lowest inflation is no more than 2 per cent above the average interest rate of the aspiring country in the twelve months preceding the examination. Due to the definition, the criterion is primarily intended to measure the market perception of sustainability of the already achieved price stability. As central banks typically leave the shaping of long-term interest rate to the markets, these rates reflect the expectations of market participants, among which inflation expectations are considered to play an important role. Since larger difference allowed to have above the average of the long-term interest rates than in the case of the inflation criterion, this presumably implies the recognition that, apart from inflation expectations, other factors also influence interest rate differences. These include exchange rate expectations (interest rate parity) that are still relevant before entry, perceptions of fiscal sustainability (credit risk premium), differences in monetary policy transmission mechanisms, and even technical factors such as government securities infrastructure, market liquidity (liquidity premium). The convergence of long-term government bond interest rates is also remarkable because it plays a significant role in monetary transmission: the ultimate impact of short-term yields on the real economy, which is strongly influenced by the central bank, is determined by how the financial system translates these interest rates into their lending activity that affects saving and investment decisions. Risk-free long-term returns play a key role in pricing credit products. Substantial differences in long-term risk-free interest rates would mean that the single monetary policy would have a different impact on the real economies of different countries.

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1.2

Performance of the euro area in light of the Maastricht criteria and beyond

Anna Boldizsár — Zoltán Bögöthy — Balázs Kóczián —
Géza Rippel — Bence Siket

While the inflation rate criterion was largely met by the Member States at the time the euro was launched, the rate of non-compliance steadily increased afterwards. Since the mid-2000, the criterion was successfully met by an increasing number of Member States. At the same time, the global financial crisis of 2008-2009 brought to surface the structural problems, thus increasing the rate of non-compliance once again. In the last ten years, there has been a fluctuating downward trend in terms of non-compliance.

The criterion for long-term interest rates had been successfully fulfilled by all Member States by the end of 2010. As in the case of inflation, following the global financial crisis, long-term yields were spread within a wider band and, therefore the rate of non-compliance increased. After the economic recovery, as both the reference value and standard deviation started to decline, long-term yields began to converge and, currently, all euro area Member States have successfully met the long-term interest rate criterion.

Experience gained during the period since the introduction of the euro has shown that the Maastricht budgetary criteria have, for all practical purposes, failed to provide the fiscal stability and the room for manoeuvre required for the single currency. It should be noted that Member States joined the euro at different points in their economic cycle, which is a particularly important factor in terms of fiscal room for manoeuvre, in particular as far as the government debt ratio is concerned. It does matter whether compliance with the accession criteria was achieved during an economic boom or a period of recession. Throughout most of the

pre-accession period, those Member States that subsequently managed to successfully join the euro area had achieved a close-to-balance fiscal position, while less successful countries typically had not met the relevant deficit criterion or had met it for a short period only. Most countries have failed to meet the criteria even following their accession to the euro area.

The external balance indicators suggest that the differences between the countries adopting the euro continued to grow before the global financial crisis; in other words, euro area countries were veering away rather than converging toward each other. The standard deviation of current account balances of euro area countries rose continuously and significantly between the mid-90s and the outbreak of the global financial crisis. The dynamics of net external debt also exhibited sharp differences across these countries. Their FDI inflows moved within a narrow range before the 2000s but after the strengthening of globalisation and the integration of the financial system following the establishment of the Monetary Union they started to show greater fluctuations. As regards external balance indicators, the disparities observed among euro area countries after the adoption of the euro are also demonstrated by diverging current account balances and the growing differences between net external debt, which may reflect the vastly different financial savings of households.

The Maastricht criteria failed to take into account real economy (labour mobility, productivity) and capital movement-related (current account balances, savings rates) considerations. On the whole, the simultaneous convergence of nominal interest rates and the divergence of inflation rates prior to the global financial crisis resulted in lower real interest rates in periphery countries compared to core countries, thus sowing the seeds of the subsequent debt crisis of the former group of countries.

While the adoption of the single currency held out the promise of macroeconomic stability and real economic convergence, experience gained during the past few decades has revealed that the introduction of the euro has been no guarantee for real convergence. The growth experiences of euro area economies vary across individual country groups

and periods; the success of the countries achieving faster convergence can primarily be attributed to country-specific factors. Moreover, the growth of intra euro area trade was stimulated by the monetary union to a lesser degree than originally expected. Labour market processes have shown significant divergence in the past two decades, due in part to the different flexibility and structure of the labour markets and the differences in fiscal policies and a low labour mobility within the euro area in addition to the impact of the global economic crisis of 2008/2009. Labour mobility in the euro area is still lower than the rate of migration in the United States. The recent mild increase in mobility is primarily associated with recently joining countries and workers with a college degree.

The role of the euro area in the global economy has, on the whole, declined in recent decades. By 2018, the region's share in global GDP (at purchasing power parity) dropped below 12 per cent from 16 per cent in 1999. In addition to a slow recovery from the global economic crisis of 2008/2009, structural factors also contributed to this decline. Boasting an outstanding performance throughout its history, Europe is falling increasingly behind in terms of innovation, with a particularly prominent lag in terms of the growth in intangible investments and productivity. The turnover of the euro declined slightly in global foreign exchange markets, but its role in the composition of international foreign exchange reserves increased. However, the US dollar's dominance in international trade continues.

1.2.1 Performance of the euro area in light of the Maastricht criteria

Table 1-2: Convergence criteria for joining the eurozone

Criterion	Description
Price stability	The inflation rate may not exceed the average inflation rate of the 3 best-performing Member States by more than 1.5 percentage points.
Sound and sustainable public finances	The fiscal deficit may not exceed 3% of GDP.
	Government debt may not exceed 60% of GDP. Where government debt exceeds 60 per cent of GDP, the country concerned must reduce the debt ratio continuously and significantly.
Exchange rate stability	Member States wishing to join must participate in the exchange rate mechanism (ERM II) for at least two years without their currencies deviating significantly from the mid-rate applied in ERM II, or without depreciating their currency's mid-rate against the euro during the same period.
Long-term interest rates	The long-term interest rate may be no more than 2 percentage points above the rate of the 3 best-performing Member States in terms of price stability.

Source: European Commission.

Already at the start, one fifth of the Member States failed to meet the criteria formulated and approved by 12 Member States, which only strengthened scepticism towards the success of the euro area. According to De Grauwe (2009), the Maastricht convergence criteria were political instruments, not economically vital measures. The European governmental ambitions of the 1990s accelerated the introduction of the monetary union as soon as possible. As the introduction date of 1999 approached, it became increasingly obvious that numerous countries would be unable to meet the previously accepted entrance criteria.

Alexandre Lamfalussy thought similarly; in his opinion, the single currency was merely a "political mechanism". Those listing the counterarguments pointed out that the concept of sustainable convergence had never been defined. Afxentiou (2000) emphasised that the Maastricht criteria had very little to do with convergence proper. According to his definition, convergence "is a process which unifies technological and non-rival domains, preparing institutionally and structurally less developed countries to catch up with those at the forefront". At the same time, the Maastricht criteria prescribe convergence mainly in the areas of price and fiscal stability. It was also a criticism by De Grauwe (2009) and Paleta (2012) that compliance with the entrance criteria prior to entry is no guarantee of convergence afterwards. Temperton (1998) stressed that the convergence of the founders was achieved in a period characterised by low global inflation and low European aggregate demand; in other words, at a time when none of the countries recorded actual output above its potential level. In the following chapter we discuss each Maastricht convergence criterion to assess the extent to which the criteria referred to above was met successfully upon entry and thereafter. We will also examine the consequences of the convergence or divergence observed in each criterion in different regions of the euro area.

The Maastricht fiscal criteria and lessons learned from the experiences of Member States

Of the Maastricht convergence criteria, two criteria affect the budget: those related to government deficit and the government debt ratio. Based on the deficit criterion, the government deficit of the EU Member State wishing to join the euro area may not exceed 3 per cent of gross domestic product in the current year. Moreover, according to the debt-related requirement the debt-to-GDP ratio of the candidate country may not exceed 60 per cent, and if this cannot be achieved, the debt ratio must be reduced at a satisfactory pace.

**Experiences gained since the introduction of the euro demonst-
rate that the Maastricht fiscal criteria are practically unable to
ensure either the fiscal stability or the economic policy leeway
necessary for a single currency regime.** The fiscal rules enshri-
ned in the 1993 Maastricht Treaty are only a formally sufficient
condition for joining the euro area, but do not demonstrate whet-
her the candidate country is mature enough for the entry. Mem-
ber States of the euro area show remarkable differences in res-
pect of how they achieved compliance with the Maastricht fiscal
criteria upon entry and thereafter.

**Member States whose entry was deemed successful on retros-
pect achieved a near-equilibrium fiscal balance for the most
part in the period preceding their accession, while unsuccess-
ful countries typically did not comply with the relevant deficit
criterion or their compliance proved to be short-lived.** Western
and Northern European countries had already boasted govern-
ment deficits below the Maastricht criteria for the most part of
the years preceding the adoption of the euro, while the average
fiscal deficit of Mediterranean countries met the 3 per cent Ma-
astricht deficit target only for a few years preceding their acces-
sion (upon entering the common exchange rate regime), and the
deficit exceeded the criterion in several Mediterranean countries
afterwards (Chart 1-6). Public finances in the Central and Eas-
tern European countries were able to meet the requirements by
the time of accession to the euro area.

**It is important to stress that Member States accessed the euro
area at different points of their economic cycles, which played
a very important role in terms of the room available for fiscal
manoeuvring.** The time of the euro adoption is particularly im-
portant from the perspective of the cyclical position of European
and global economy in the relevant period. The single currency
was introduced in Western European countries at a time of fa-
vourable global economic activity when, thanks to the automatic
fiscal stabilisers, fiscal deficits declined. While most Mediterrane-

an Member States were able to comply with the 3 per cent deficit target by the time of the euro adoption and even afterwards, due to country-specific factors and their high outstanding debts they were hit harder by the global economic crisis. Central and Eastern European Member States entered the euro area between 2007 and 2015, which coincided with the outbreak of the global economic crisis in the case of Slovakia and Slovenia and with the period of recovery in the case of the Baltic States. At the same time, CEE countries recovered from the recession typically amid low debt ratios ranging between 30 and 40 percentage points, with occasional deficit increases.

Chart 1-6: Average ESA deficit of euro area Member States in the years preceding and following the entry to the euro area
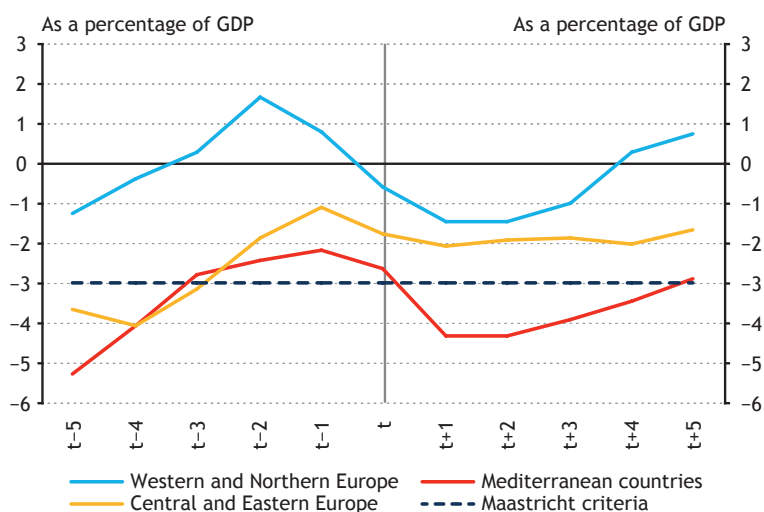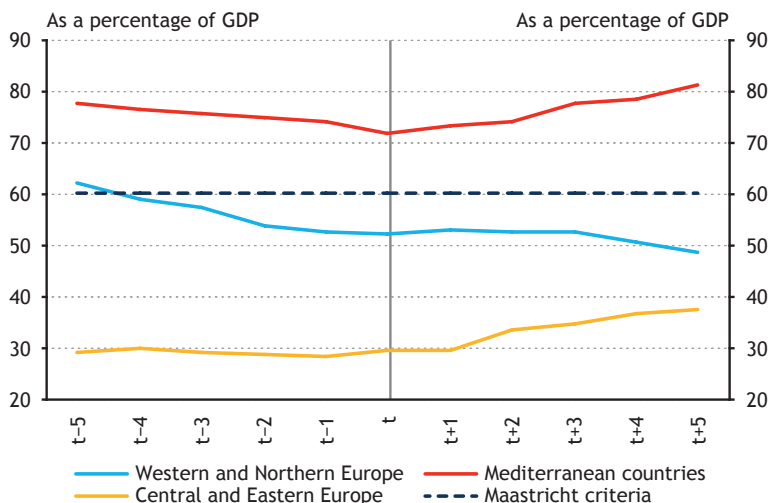

Note: the country group of Western and Northern Europe comprises Belgium, Germany, Ireland, France, Luxembourg, the Netherlands, Austria and Finland; Mediterranean countries consist of Greece, Spain, Italy, Cyprus, Malta and Portugal, while Estonia, Latvia, Lithuania, Slovenia and Slovakia make up Central and Eastern European countries.
Source: European Commission.

The government debt ratio has a greater impact on the economic policy leeway than the deficit. By the time of their accession

to the euro area, Western and Northern European Member States pushed their debt ratios below 60 per cent on average, while the average debt-to-GDP ratio of Mediterranean countries ranged between 70 and 80 per cent. Joining the euro area at a later date, Central and Eastern European Member States entered the monetary union with debt levels below 50 per cent (Chart 1-7). The sovereign debt crisis showed that the examination of the sustainability of the debt-to-GDP ratio should also be extended to the assessment of the level of development of the relevant Member State.

Chart 1-7: Average debt ratio of euro area Member States in the years preceding and following the entry to the euro area


Note: the country group of Western and Northern Europe comprises Belgium, Germany, Ireland, France, Luxembourg, the Netherlands, Austria and Finland; Mediterranean countries consist of Greece, Spain, Italy, Cyprus, Malta and Portugal, while Estonia, Latvia, Lithuania, Slovenia and Slovakia make up Central and Eastern European countries.
Source: European Commission.

Most countries failed to meet the criteria even after their accession to the euro area. Since the introduction of the euro in its physical form (2002), it has never been observed that more than

half of the Member States could keep their debt ratio under 60 per cent. The number of countries achieving such a ratio ranged only between 30 and 45 per cent during this period (Chart 1-8). In the period of economic boom euro area Member States typically achieved the deficit criterion, but during the period of crisis management most Member States recorded a deficit level in excess of 3 per cent of GDP.

Chart 1-8: Share of Member States with a government deficit above 3 per cent and a debt ratio above 60 per cent of GDP in the euro area
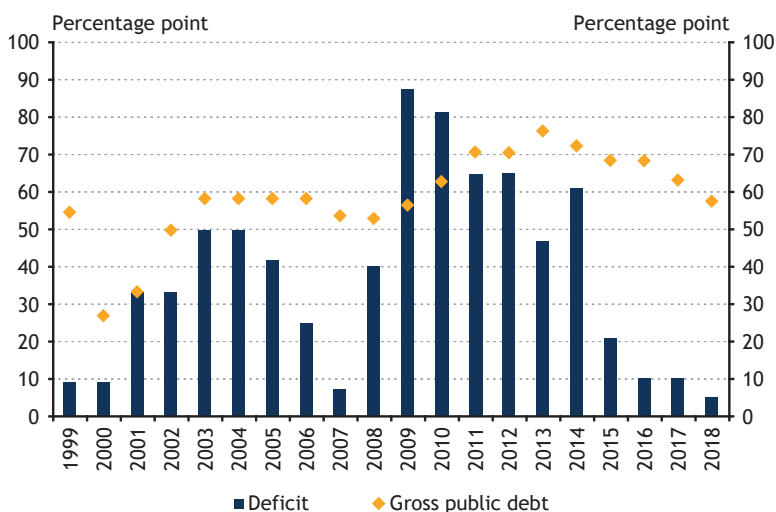
Source: Eurostat.

The Maastricht criteria do not provide sufficient fiscal space and stability, and do not allow for idiosyncratic factors. The lack of independent Member State monetary policies and community budget transfers calls for substantial fiscal leeway in euro area Member States. However, the budgetary conditions determined by the criteria for the application/admission to the euro area are insufficient for this. The fiscal conditions for entry to the euro area need to ensure a stable fiscal position through lower government deficit and reduced public debt. At the same time, they need to have sufficient flexibility and consideration

for country-specific factors in order to support the availability of sufficient fiscal space to stabilise the economy without jeopardising the sustainability of public finances in the event of asymmetric shocks.

Inflation criterion

The calculation of the inflation indicator also sparked significant criticism. The inflation reference criterion is calculated from the arithmetic mean of the three European Union Member States with the lowest inflation. Because the reference criterion covers the entire European Union, convergence to the inflation of the euro area is not ensured. Due to the nature of the calculation method, the reference group may also include countries with negligible economic weight that are exposed to asymmetric shocks compared to the euro area. Proximity to the criterion also means that the given country is among the "best performers" with respect to inflation. However, as Japanese and euro area experiences have demonstrated in recent years, an overly low level of inflation is not always adequate either. All of the above reconfirms that the countries closest to the European Central Bank's 2 per cent inflation target should be considered the reference (Jonas, 2004).

Chart 1-9: Share of non-compliance with the inflation criterion and reference value for the inflation criterion across existing members of the euro area (January 1999-October 2019)
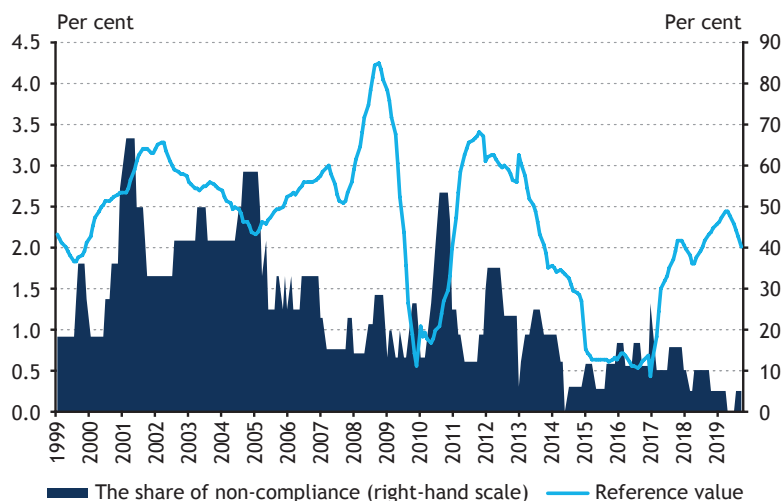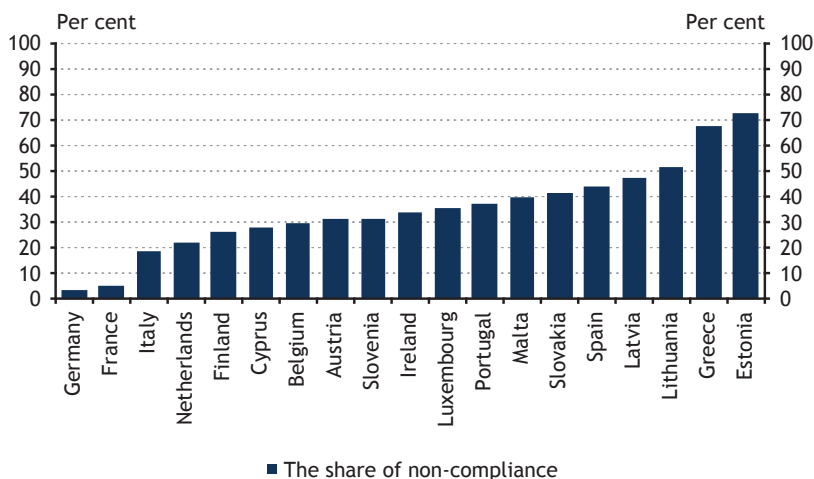

Note: In accordance with the standards of the European Commission, owing to volatile trends, Lithuania was excluded from the analysis in 2014, Ireland in 2011 and 2012, Greece in 2013, 2014 and 2015 and Cyprus in 2014, 2015 and 2016. Source: Eurostat, own calculation and editing.

By the Millennium, the convergence of inflation rates was largely accomplished, and upon the launch of the euro area only 18 per cent of the Member States (Portugal and Italy) failed to comply with the inflation criterion required for entry (Chart 1-9). However, after the launch of the euro area, the inflation paths started to diverge: while – with a few exceptions – the inflation rates of core countries resided under the reference value, the values of periphery countries continuously exceeded the threshold. The growing divergence was also evidenced by the rate of non-compliance: by 2001 the indicator grew to 67 per cent from the initial, nearly 20 per cent level. In the pre-crisis period the convergence of inflation rates resumed, but the crisis brought to the surface the structural differences of the economies and accordingly, the rate of non-compliance began to grow once again. The sharp fall in the reference value and the parallel

increase in non-compliance also pinpointed the methodological deficiencies of the criterion. In 2009 the reference value departed from the ECB's inflation target initially by plus and subsequently by minus 1.5 percentage points. With minor or major fluctuations, the inflation rates show convergence once again from the 2010s. Looking at the period as a whole, we find significant fluctuations both in non-compliance and reference values. Over the last twenty years, we witnessed some months when all euro area Member States fulfilled the inflation criterion, while in some other cases almost 70 per cent of the members failed to comply.

Chart 1-10: Share of non-compliance with the inflation criterion across existing euro area Member States (January 1999-October 2019)

Note: In accordance with the standards of the European Commission, owing to volatile trends, Lithuania was excluded from the analysis in 2014, Ireland in 2011 and 2012, Greece in 2013, 2014 and 2015 and Cyprus in 2014, 2015 and 2016. Source: Eurostat, own calculation and editing.

Looking at the share of non-compliance in each country reveals significant heterogeneity (Chart 1-10). While Germany failed to meet the criterion in 4 per cent of the cases, Spain and Greece exceeded the reference value in 44 and 67 per cent of the cases, respectively. It is also evident that new entrants have remarkab-

ly high non-compliance rates. Although Estonia and Lithuania fulfilled the convergence criterion upon entry, their inflation rates were above the reference value in more than half of the cases overall. This leads us to conclude that the 12-month compliance period does not guarantee sustainable compliance later on.

Long-term interest rate criterion

Examining the standard deviation of long-term yields, for the most part (apart from some volatility), a continuous covariance can be observed up until the global financial crisis (Chart 1-11). This was also reflected in terms of compliance with the criteria: until the end of 2010, each country had fulfilled the criterion on long-term yields. **However, as a result of the change in risk perception, long-term yields moved within a broader range following the crisis.**

Chart 1-11: Share of non-compliance with the long-term interest rate criterion, reference value and standard deviations of long-term interest rates in current Member States of the euro area (January 1999-September 2019)
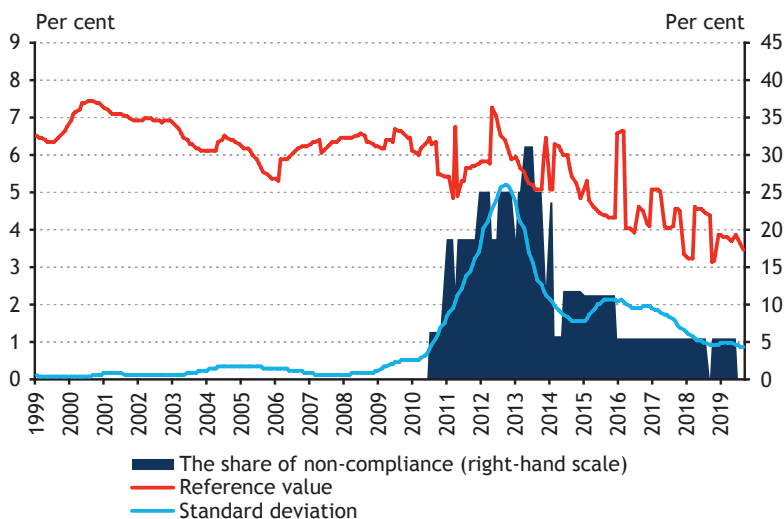
Note: Based on the justification of the European Commission, Ireland was excluded from the reference calculation in 2012. Ireland faced extremely high nominal interests during the period, and the indicator became practically meaningless from an economic perspective. Although no convergence report was prepared

between April 2010 and March 2012 to rely on, in 2010 and 2011 we also removed
Greece from the reference calculation for similar reasons.
Source: Eurostat, own calculation and editing

With the ebbing of risk appetite, investors started to sell the long-term government bonds of periphery countries, which drove the yields up on the securities concerned. Capital flew to safer instruments, and the yields on core country securities decreased in response. As a net result, core country yields shifted upwards while periphery yields moved downwards from the average, prompting a prominent surge in yield spreads. With the rise in yield differentials non-compliance with the criterion also increased, and by the end of 2013 the indicator rose to 30 per cent. With the decline in the reference value and moderating standard deviations, long yields began to converge once again after the recovery. By July 2019 the conditions seen in 2010 returned, and all Member States of the euro area fulfilled the long-term interest rate convergence criterion.

The consequences of converging interest rates and different inflation rates

As discussed above, there were different developments in yields and inflation rates in the Member States of the euro area. The pre-crisis co-movement of nominal interests coupled with the divergence observed in inflation rates precipitated, overall, a lower level of real interest rates in periphery countries than in core countries (Chart 1-12).

As a result of low real interest rates, the European banking sector started to provide cheap financing to the private and public sectors of periphery countries. The subdued real interest rate reduced propensity to save among domestic (resident) participants significantly. Consequently, core countries became the creditors of the periphery, which was reflected in diverging current account balances. The problem was exacerbated further by the fact that most of the funds flew to the real estate sector, which

boosted the house price bubble on the one hand, and reduced productive investment on the other hand, thereby restraining the medium and long-term productivity of periphery economies. **Core and periphery real interest rates embarked on completely different paths during the crisis, and covariance was replaced by divergence.**

Chart 1-12: Real interest rates in the core and periphery countries of the euro area (January 1999-September 2019)
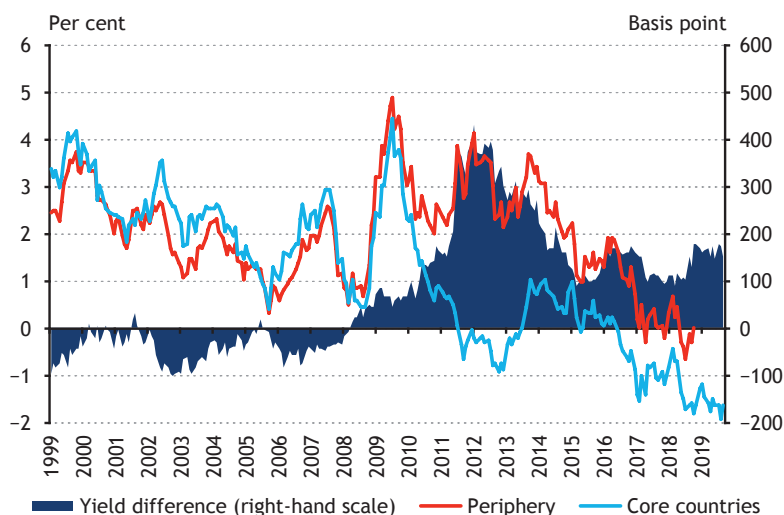
Note: The real interest rate is the difference between the 10-year government bond yield and the inflation rate of the current month Core countries comprise Belgium, Finland, France, Germany, Luxembourg and the Netherlands, while Portugal, Italy, Greece and Spain make up the periphery.
Source: Eurostat, own calculation and editing.

While core countries had cheap access to funds amid low inflation, periphery countries faced – also amid moderate inflation – high nominal interest rates. Owing to low inflation and high risk premium, the real interest rate of periphery countries stood at a higher level at end-2011 than in 1999, upon the launch of the euro area. There were periods in 2011 when the yield differential between the periphery and the core exceeded 400 basis points. The high cost of finance increased the indebtedness of periphery

countries even further at the expense of competitiveness and labour productivity. Yet another new phase commenced in 2015, with a practically continuous, nearly 200 basis-point difference between the real interest rates. On the whole, the Maastricht criteria did not ensure full convergence across the Member States; only partial convergence was achieved.

The Maastricht criteria disregarded real economic (labour mobility, productivity) and capital flow (current account balances, saving rates) aspects. Although the convergence of nominal interest rates had been achieved by the crisis, with respect to other balance indicators the separation of Member States, especially the groups of periphery and core countries, had begun. The crisis of the euro area underpinned that although the criteria were capable of facilitating partial convergence in times of peace, additional real economic and capital flow criteria and indicators need to be introduced to ensure full convergence across the in the euro area.
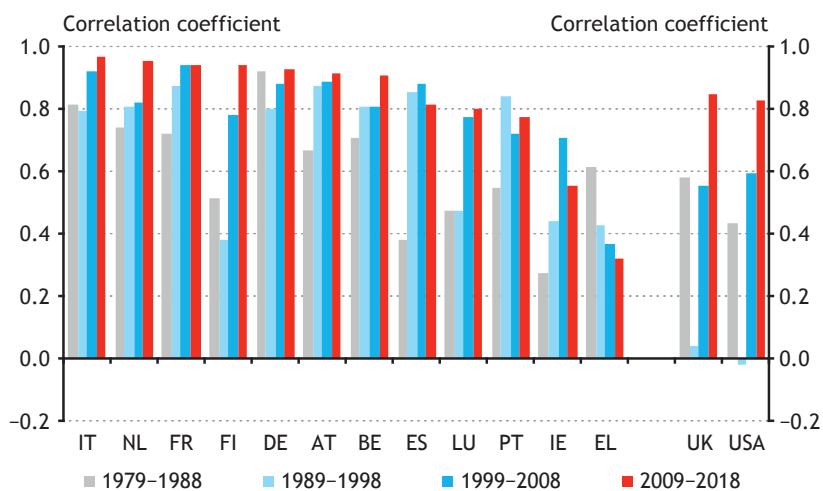
1.2.2 Real convergence in the euro area

The European Economic and Monetary Union promised, in addition to prosperity, **macroeconomic stability** and **real economic convergence.** Through the stabilisation of the exchange rate and the reduction of transaction costs, the single currency was intended to stimulate capital mobility and trade within the euro area which, in theory, would also foster real economic convergence across the Member States. In the pre-crisis period economic policy-makers typically expected **monetary policy to be capable of stabilising inflation and hence, real economic developments as well,** whereby the common monetary policy can effectively manage economic cycles, while idiosyncratic effects can be smoothed by rule-based fiscal policies. **Harmonised business cycles** represent an important factor in a currency area as indeed, this harmonisation may

ensure that it is the common effects sustained by the countries that are decisive rather than country-specific impacts.

According to Franks et al. (2018), the **business cycles of euro area countries have become increasingly synchronised** in recent decades, but the authors also observed that the amplitude of those cycles diverged, overall, after the crisis. **The business cycles of the founder states had exhibited a strong co-movement even in the decades preceding the introduction of the single currency,** which strengthened further in the period between 1999 and the crisis. After 2008, the harmonisation increased further and characterised a broad range of the countries. The closer relationship between the GDP changes of Member States also points to the synchronised nature of the economic cycles. **In the past few decades** there was **increasing co-movement between** the quarter-on-quarter **GDP changes** observed in the twelve Member States first to introduce the euro (Chart 1-13). Cross-country correlation relative to the euro area GDP improved significantly in the case of France, Finland, Italy and the Netherlands after the adoption of the euro, while – owing to the accumulation of macro-level imbalances and unsuccessful crisis management – Greek GDP remained on a persistently worse growth past in the past period. **It should be noted that, besides the common monetary policy, broadening globalisation also contributed to the harmonisation of the business cycles,** as evidenced by the fact that **correlation between the GDP changes in the euro area, the United Kingdom and the USA increased significantly in the period under review.**

Chart 1-13: Correlations with GDP growth in the euro area

Correlation coefficient   Correlation coefficient

IT   NL   FR   FI   DE   AT   BE   ES   LU   PT   IE   EL   UK   USA

■ 1979–1988   ■ 1989–1998   ■ 1999–2008   ■ 2009–2018

Note: Based on quarter-on-quarter changes.
Source: MNB calculation based on OECD.

The business cycles became more synchronised in the Moneta-ry Union, but **the adoption of the euro is no guarantee in itself for real economic convergence.** The crisis demonstrated that the **economic consequences of the common impacts sustained by the euro area may vary from country to country** depending on economic structure, indebtedness, the global integration of the fi-nancial system, the phase of the balance cycle and the automatic fiscal stabilisers. Individual fiscal policies have a greater role in heterogeneous economies, while the power of the common mo-netary policy transmission weakens. The macroeconomic stabili-sation instruments may operate efficiently under harmonised cy-cles despite the **persisting disparities between Member States in terms of income (level of development).** As a result of the single currency, capital flows – in theory – to emerging countries, but income disparities may persist over the longer term if the capital is concentrated in low-productivity sectors. Advanced human and physical infrastructure and innovation boost the ability to attract capital and hence, facilitate the growth in per capita GDP.

The convergence of economic development is key to economic integration and an important factor in terms of the cohesion of the monetary union. **The Maastricht criteria primarily formulated nominal and fiscal conditions** for candidate countries, and were subject to broad criticism upon their introduction (Emerson et al., 1992; Bini-Smaghi et al., 2013). **At the same time, the Maastricht criteria ignored numerous real economic factors relevant to the evolution and operation of an optimal currency area.** In the following we will examine developments in per capita GDP at purchasing power parity (PPP), economic structure, external trade, the labour market and labour productivity in euro area countries, with special regard to the assessment of the convergence process.

The **growth experiences** of euro area economies **vary across countries and groups of countries (Tables 1-3).** PPP GDP per capita ranged between USD 29,000 and 46,000 in the countries that adopted the single currency upon its launch in 1999; Portugal's level of development was close to 70 per cent of the German value, while the corresponding value of the Netherlands was around 110 per cent. For the most part, the **relative level of development increased until the crisis** in Member States introducing the euro in 1999 and 2001 (Greece), while **Italy, Portugal and France exhibited economic divergence** (Chart 1-14, left-hand panel). Despite the broad-based convergence, **only two countries managed to accumulate a considerable amount of additional growth benefit** in the first decade of the common currency. In the case of Ireland, however, accelerated convergence started as early as the first half of the 1990s, whereas the convergence of Greece proved to be unsustainable after the accession and entailed the accumulation of severe vulnerabilities. **In the decade following the crisis, only Ireland succeeded in raising the relative development level** – partly as a result of statistical effects –, while GDP per capita relative to Germany decreased in most Member States. **In the first two decades of the adoption of the euro, Ireland has been the only country to accumulate surplus growth.**

Table 1-3: Average annual GDP growth in euro area countries

|	1980-1999	2000-2019*	Difference
Ireland	5.1	5.6	0.5
Lithuania***	4.9	5.2	0.3
Estonia***	5.5	5.0	-0.5
Latvia***	5.2	4.9	-0.3
Slovakia**	4.8	4.4	-0.4
Luxemburg	4.7	3.5	-1.1
Slovenia***	4.1	3.0	-1.1
Spain	2.7	2.2	-0.5
Finland	2.7	2.1	-0.5
Austria	2.4	1.9	-0.4
Belgium	2.2	1.9	-0.3
Netherlands	2.7	1.8	-0.8
Germany	2.1	1.8	-0.3
France	2.2	1.6	-0.5
Portugal	3.1	1.0	-2.1
Italy	2.0	0.7	-1.3
Greece	1.4	0.6	-0.8

Note: Based on quarterly data. Not including Cyprus and Malta. *Not including 2009. **Data available since 1994. ***Data available since 1996.
Source: OECD.

The experiences of countries joining the euro area later on are also mixed. Since the accession, relative development has increased, overall, in Malta, Slovakia, Estonia, Latvia and Lithuania, while the relative indicator has deteriorated in Slovenia and Cyprus (Chart 1-14, right-hand panel). It should be noted that, similar to Ireland, accounting effects also contributed to per capita GDP growth in Malta. For the time being, **Slovakia**'s entry and its continued real convergence can be considered a **successful**

example of euro adoption, to which a flexible labour market and sufficient fiscal space also contributed. The fast per capita GDP growth observed in the **Baltic States,** however, is misleading: the significant increase in the per capita indicators of Estonia, Latvia and Lithuania can be attributed to a **sharp overall population decline in recent decades.**

### Chart 1-14: Per capita GDP growth relative to Germany
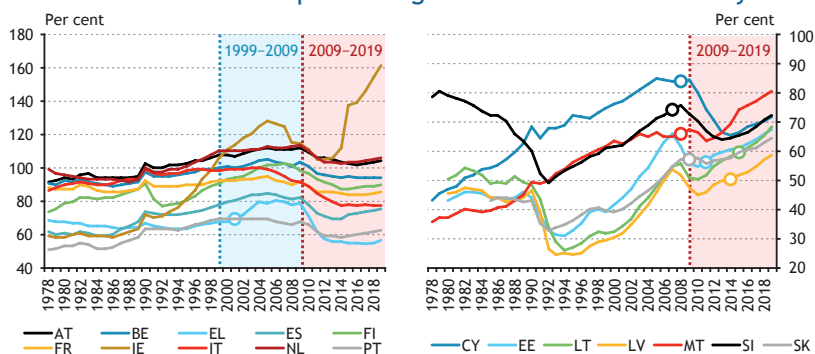
Note: The adoption of the euro is indicated by circles in the case of countries joining the euro area after 1999. Calculated at purchasing power parity.
Source: MNB calculation based on WDI, Maddison and AMECO.

The disparities observed in the time series of relative development is also evident in the standard deviation of GDP per capita across euro area Member States, the increase (decrease) of which points to convergence (divergence). **The standard deviation of the economic development** of countries joining upon the launch of the euro area (excluding Luxembourg) **was fairly low between 1975 and 1999, but increased significantly in the past two decades** (Chart 1-15). New members with lower GDP per capita compared to the founders significantly raised the standard deviation of the development levels of Member States.

Chart 1-15: Standard deviation of GDP per capita in euro area Member States
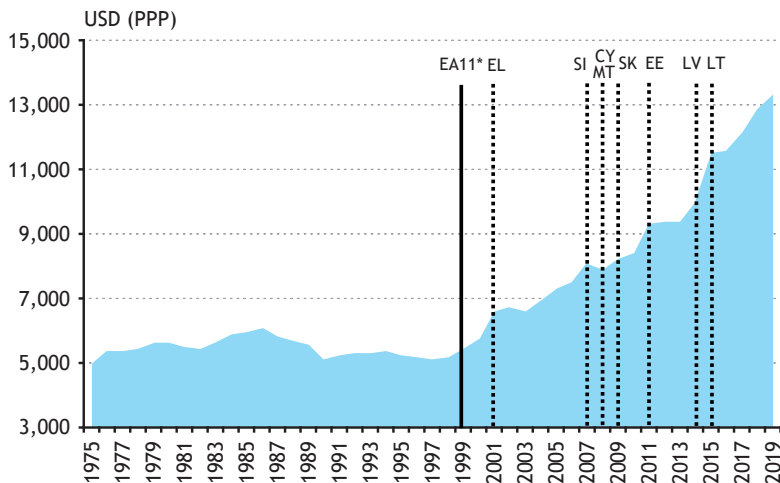
Note: Calculated at purchasing power parity. *Excluding Luxembourg.

Source: MNB calculation based on WDI, Maddison and AMECO.

Box 1-1: Winners and losers of the adoption of the euro

Twenty years have passed since the introduction of the single currency, yet **there is still much controversy among economists and economic politicians concerning the macro-economic impacts of the euro.** A recently published empirical study (Gasparotti & Külas, 2019) by the German think tank Center for European Policy looked at which countries have benefited from joining the euro area. The authors simulated alternative growth scenarios for Germany, the Netherlands, Greece, Spain, Belgium, Portugal, France and Italy during the period 1999-2017, comparing those scenarios with reality.

Their analysis has clearly identified the winners and losers of the adoption of the euro: **Germany and the Netherlands have benefited enormously from the single currency, whereas France and Italy have made a huge loss on having adopted the euro**. The importance of the issue is attested by the fact

that their findings have had considerable repercussions both among the public and in academic circles, and they even sparked a response from the French finance ministry.

The first twenty years of the single currency can be seen is two entirely different decades, the first of which was typically a success story, whereas the second mostly proved to be a failure**. The euro performed well in times of economic prosperity** whereas, according to the authors, the competitive devaluation of the currency, an important tool of crisis management, would become unavailable during troubled times. The resulting weakened competitiveness and asymmetric responses to unexpected economic shocks have brought about slower economic growth, increased unemployment and lower tax revenues in various euro area members. **The euro area was shaken by the global financial crisis of 2008 and the euro crisis in 2011 and 2012**. 5 of the 17 euro countries depended on bailout packages and bilateral credit agreements.

In addition to the harmonisation of the cycles, the **structure of the economies is another determinant** of the operation of the single currency area and the convergence process. The structure of European economies has shifted in recent decades. In general, the significance of market services has increased, while the weight of industry and agriculture declined (Chart 1-16).

Germany has been the only one among the major euro area countries where the share of industry in the overall economy has remained high, still exceeding 25 per cent of the gross added value.

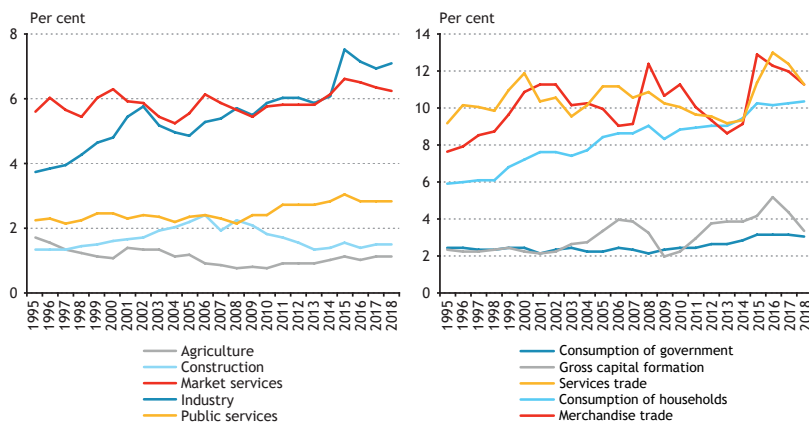Chart 1-16: Breakdown of the GDP in terms of production (left-hand panel) and consumption (right-hand panel)
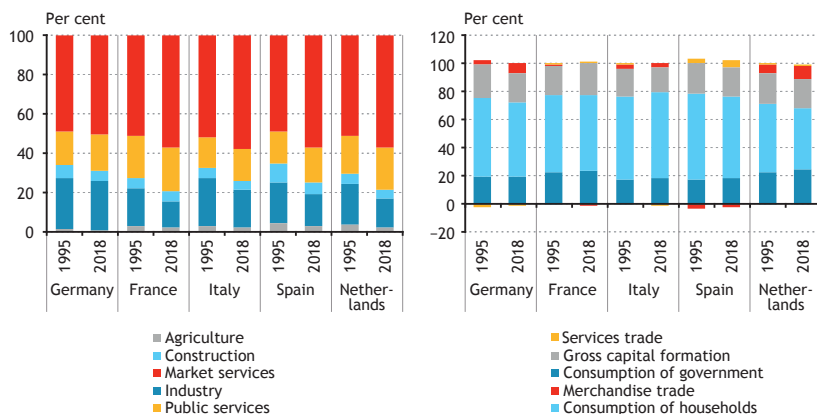
Note: In the production view, the weight of each industry within the added value.

Source: Eurostat.

The economic structure of countries entering the euro area later was different at the time of the accession – and has been different ever since –, which is mainly reflected in the **greater significance of industry and construction and the smaller weight of market services.** Across the euro area countries, it is the share of industry and market services in value added that makes up the greatest difference, and the standard deviation of the significance of industry in individual Member States has also increased in recent decades (Chart 1-17, left-hand panel). Differences in expenditure side items are even more prominent, primarily as a result of the different weight of external trade and household consumption (Chart 1-17, right-hand panel). **Because of the different economic structures, the common impacts sustained by the euro area may affect individual economies differently –** the monetary policy stance may be too loose for some states and too tight for others.

Chart 1-17: Standard deviation of the weight of production and expenditure side items in euro area Member States

Per cent

Per cent

- Agriculture
- Construction
- Market services
- Industry
- Public services

- Consumption of government
- Gross capital formation
- Services trade
- Consumption of households
- Merchandise trade

Note: On the production side, weight of the sectors in value added.
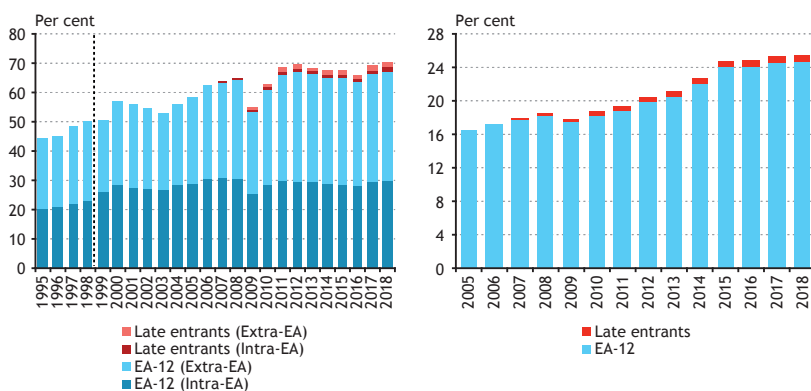*Source: MNB calculation based on Eurostat.*

The external trade of European countries increased in the past decades; both exports and imports grew by more than 6 per cent on average annually between the 1960s and the introduction of the euro. **Policymakers and economists envisaged an additional dynamic increase in trade** within the single currency area (Rose, 1999). Based on the experiences of the past two decades, however, the results are contradictory: **the extent to which the monetary union stimulated the growth of external trade was below expectations** (Glick and Rose, 2015; Gunnella et al., 2015). The impact of the monetary union on trade is uncertain due to such factors as the **broadening of globalisation, geopolitical events and the establishment and continuous enlargement of the European Union itself. According to Campbell and Chentsov's (2017) estimate, trade is driven primarily by the broadening of European integration, while the introduction of the euro has no robust effect in itself.**

Despite the continuous enlargement of the euro area, between 1999 and 2018 **intra-EA trade in goods** (sum of exports and imports)

rose only by less than 5 percentage points as a percentage of GDP, while **extra-EA trade grew by almost 15 percentage points** in the same period (Chart 1-18, left-hand panel). **Germany has an extremely prominent role** in trade, accounting for almost 32 per cent of total euro area goods exports and 27 per cent of goods imports in 2018. This translates to 4.5 per cent of the contribution of **subsequently joined countries** to trade in goods (exports + imports); i.e. nearly two times their share in GDP. Less than half of the trade in this region is exchanged within the euro area. Between 2005 and 2018, **services trade** rose to 25.5 per cent from 16.5 per cent of GDP (Chart 1-18, right-hand panel). In addition to Germany – which, similar to trade in goods, has the greatest weight –, France and the Netherlands, **Ireland** plays a prominent role in the external trade in services, accounting for nearly 12 per cent of the euro area's services exports and imports in 2018. **Subsequently joined countries** have a smaller weight than seen in the case of trade in goods; the contribution of the countries adopting the euro after 2006 to the services trade was less than 3 per cent in 2018.

Chart 1-18: GDP-proportionate intra-EA and extra-EA trade in goods (left-hand panel) and services (right-hand panel)


Note: Sum of exports and imports.

Source: MNB calculation based on UNCTAD and WDI.

With the free movement of labour, the European Union **promised the tighter integration of labour markets,** and the introduction of the single currency and the harmonisation of business cycles were intended to strengthen this integration. Among the founders, after Luxemburg, Austria and the Netherlands recorded the lowest (4.2 per cent) and Spain the highest (13.6 per cent) unemployment rate in 1999. **During the past twenty years, the unemployment rate in Member States has varied broadly**, typically exceeding the figures observed in the US and Japan (Chart 1-19).

Chart 1-19: Unemployment rates in the euro area, the US and Japan
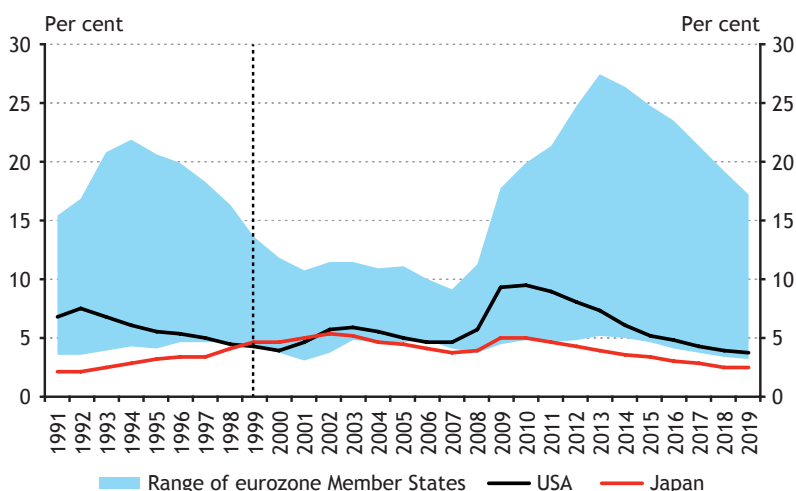
Note: *Not including Luxemburg.
Source: AMECO, IMF.

In the period between the adoption of the euro and 2007, unemployment rates converged, overall – the standard deviation of the rates observed in Member States moderated. Labour markets were hit by the global economic crisis in different states: the Greek unemployment rate surged above 27 per cent, while the German and Austrian rates remained relatively low. Pointing to significant divergence among euro area Member States, **the standard deviation of unemployment rates (and their changes) increased considerably between 2007 and 2013.**

Despite the resumed convergence of the rates in recent years, **there were still significant disparities between the Member States in 2018** (Chart 1-20). The unemployment rate is under 4 per cent in Germany, the Netherlands and Malta, while it is still above 10 per cent in Greece, Spain and Italy. It points to the lack of labour market convergence that **in 2018 the standard deviation of unemployment rates in the euro area was around four times the value recorded in the individual states of the USA.** In the past two decades, **unemployment rates diverged, overall, compared to the year of the euro introduction** which, apart from the impact of the crisis, can be attributed to differences in the flexibility and structure of labour markets, different fiscal policies, and low labour mobility within the euro area (Estrada et al., 2013).

Chart 1-20: Standard deviation of the unemployment rates of euro area Member States
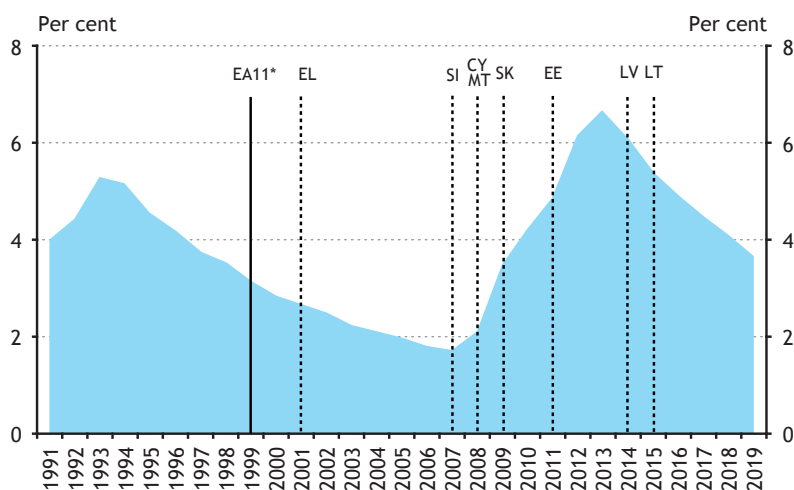
Note: *excluding Luxembourg.
Source: MNB calculation based on AMECO.

Labour market disparities and inflexibility go hand in hand with **low labour mobility** within the euro area. With the free movement of labour and the abolishment of border controls, the European integration promised the strengthening of mobi-

lity. Under a common monetary policy labour force migration supports the management of adverse economic effects (Mundell, 1961). Euro area **labour mobility still lags behind the migration observed within the USA** (Basso et al., 2018). The population rate of euro area citizens residing in a different country in the European Union ranged between 1.5 and 3 per cent, while in the USA out-of-state-born Americans made up 4–7 per cent of the 15–64 age group in the past almost two decades (Chart 1-21, left-hand panel). While **mobility is low** and practically constant over time **in the 12 countries that introduced the single currency early on,** labour force migration is higher in countries that joined the euro area later – the migration-to-population ratio of movers from these countries has approached 8 per cent in recent years. Therefore, as also supported by the analysis of Dao et al. (2013), **the increase in** the euro area's **labour mobility can be primarily attributed to new entrants.** The authors found that **mobility is considerably higher in the case of Visegrad countries** than in the case of the EU-15.

Chart 1-21: Population rate of euro area citizens residing in other EU Member States by country group (left-hand panel) and education (right-hand panel)
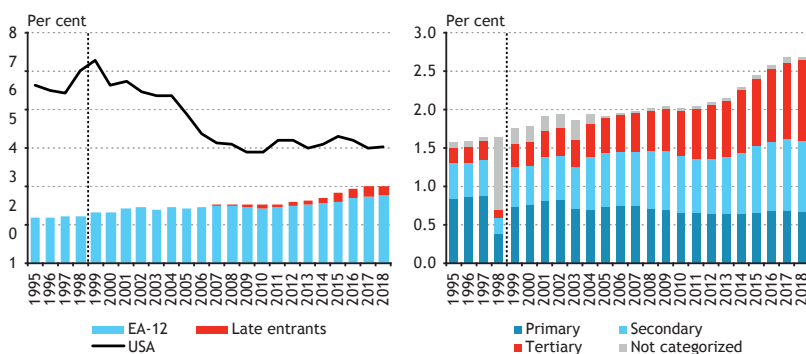
Note: Among ages 15-64. For the USA, mobility of American citizens between states and counties.
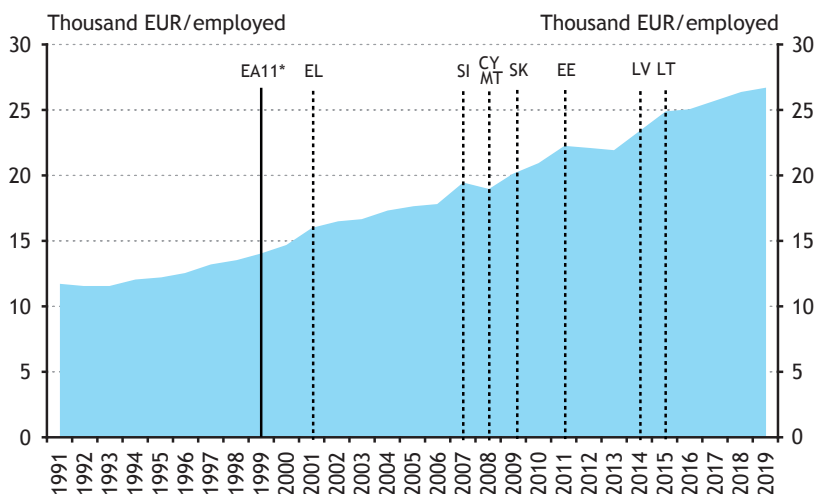
Source: MNB calculation based on Eurostat and the American Community Survey.

The **most popular destinations** of intra-EU labour mobility are **Germany, the United Kingdom, Italy, France and Spain.** These countries received 74 per cent of the mobility flow in 2017. In the same year, Romanian, Polish, Portuguese, Italian and Bulgarian citizens accounted for nearly half of the mobility (Fries-Tersch et al., 2018). As regards mobility by education level, the **population rate of low-educated movers remained essentially constant in the past two decades among euro area citizens residing in another EU Member State, while the ratio of movers with medium and high education increased** (Chart 1-21, right-hand panel). In the past few years, nearly 1 per cent of the euro area population with tertiary education lived in other EU Member States; more than a tenth of the movers came from new entrants of the euro area. **The low level of labour mobility hindered the convergence of euro area labour markets overall** (Arpaia et al., 2016). The harmonisation of monetary policies and the adoption of the single currency did not give rise to an increase in mobility; it is primarily **employment and income prospects and their cross-country differences** that should be seen as the driving force behind migration (Quitzau et al., 2014).

As is the case with GDP per capita and the unemployment rate, there was **no convergence in euro area countries in labour productivity** either. The standard deviation of GDP per person employed increased continuously after the introduction of the single currency (Chart 1-22). Diaz del Hoyo et al. (2017) found that the **misallocation of production factors** and **structural problems** both contributed to the divergence in productivity among the 12 early euro adopters. Between 1999 and the outbreak of the crisis **capital flows were typicalyly channelled towards low-productivity sectors** such as the Spanish and Irish construction industry and low-productivity services in Portugal. In addition to the misallocation problem, productivity in Spain and Italy lagged behind other Member States in all major economic sectors, which was caused by the

limited use of technological innovations, insufficient investment in human capital and the lack of the application of modern business models.

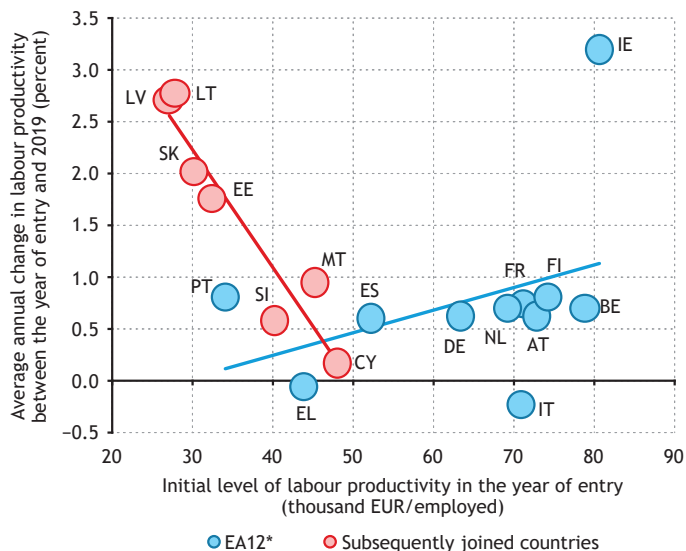Chart 1-22: Standard deviation of labour productivity in euro area Member States

Note: Based on GDP per person employed. *Excluding Luxembourg.
Source: MNB calculation based on AMECO.

The convergence of labour productivity failed to materialise among the founder countries; productivity growth in countries with lower initial productivity levels upon entry was restrained in the past decades. At the same time, **convergence can be observed among later entrants** (Chart 1-23). Entering the euro area with the lowest GDP per person employed, the **productivity of Baltic States and Slovakia has expanded dynamically** in recent years. Foreign direct investment inflows contributed to productivity growth in Slovakia, and continued to support buoyant growth even after the outbreak of the crisis.

Chart 1-23: Initial labour productivity levels and changes in productivity by country group

Note: Based on GDP per person employed. *Excluding Luxembourg.

Source: MNB calculation based on AMECO.

1.2.3 Capital flow and finances in the euro area

The assessment of external balance positions before the euro adoption is of key significance. In addition to the previously discussed indicators, before the introduction of the euro there may be a need to introduce additional indicators designed to analyse the external balance position as indeed, convergence observed in these indicators may indicate whether an economy is prepared for the adoption of the euro. If, however, a country's indicators deviate – or even depart – from those observed in the majority of euro area countries, this might be an indication that the country concerned is not yet prepared for the adoption of the euro. This is because by adopting a common monetary policy, the countries introducing the euro give up an important adjustment channel

of the external balance and presumably, different monetary poli-
cy decisions would be optimal for the countries mentioned abo-
ve compared to the rest of euro area Member States and hence,
the expected common monetary policy. It also demonstrates the
significance of the new, broader assessment of convergence that
in 2011 the European Parliament adopted the "Six-Pack" (see the
Box below for a more detailed discussion of the Six-Pack measu-
res), in the framework of which the previous Maastricht criteria
were supplemented with numerous indicators – also described
in this study – that were designed to allow for the annual review
of macroeconomic imbalances potentially arising in individual
countries. Under the Stability and Growth Pact, in addition to
macroeconomic imbalances the legislative package also includes
medium-term fiscal targets (MTOs – medium-term objectives)
that are also intended to support economic stability.

Box 1-2: The EU's Economic Governance Package - "Six-Pack"

The experiences of the crisis highlighted the need for a
closer coordination of Member State economic policies in
the European Union and for the establishment of "economic
governance". With that in mind, in 2011 the European
Parliament adopted the "Six-Pack", a legislative package
consisting of six measures designed to prevent the emergence
of macroeconomic imbalances and facilitate public finance
sustainability across the Member States. The rules are aimed
at the establishment of the consistency of policy advice, the
possibility of setting up an expenditure benchmark linked to
the medium-term budgetary objective and the extension of
country surveillance to those with current account surpluses.
Moreover, the package expanded the possibility of opening
excessive deficit procedures, introducing a new surveillance
mechanism and procedures for the reduction of macro-
economic imbalances and introducing graduated financial
sanctions. The rules of the package broadly cover all EU
Member States in general, but certain elements (such as some

rules on the imposition of sanctions) are only applicable to the euro area.[6] In addition, the thresholds applicable to real effective exchange rates and nominal unit labour costs during the assessment of macroeconomic imbalances differ for euro area and non-euro-area Member States.

Developments in the current account balance may point a country's reliance on external funds. If a country operates with persistent, substantial current account deficits, its spending exceeds its available income, which could only be made sustainable with investment activity that supports future net exports. Therefore, external funding plays a persistent role in financing consumption and investment in excess of what is permitted by internal funds. In the case of excessive inflows, this leads to a rise in external debt indicators which, through the surge in non-residents' incomes, may deteriorate the current account balance further and lead to a persistent deficit.

The standard deviation of the current account balances of euro area countries rose – doubled or tripled – continuously between the mid-90s and the outbreak of the crisis; in other words, there was no convergence either before or after the establishment of the currency union in terms of external balance. This indicates that although euro area economies form a monetary union, their net lending values departed from each other. If this had taken place in a situation where the current account balances of all euro area countries have a surplus or are close to equilibrium while the surplus increases in some of the countries, this would have been an indication of minor tensions only. This, however, was not the case in the euro area. From the adoption of the euro, the current account deficit rose in some countries of the currency area – typically in periphery countries –, while other states – typically the core countries – accumulated persis-

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6   European Parliament (2014): Review of the 'six-pack' and 'two-pack'. At a glance. PLENARY – 5 December 2014 http://www.europarl.europa.eu/EPRS/ EPRS-AaG-542182-Review-six-pack-two-pack-FINAL.pdf

tently high surpluses. As a result, the borrowing of some euro area Member States was financed by other countries; therefore, the persistent flow of funds between the economies raised the debt of some countries while boosting the assets of core countries. After the crisis, however, the disparities building up between the countries moderated and from substantial deficits, the current account balances of periphery countries shifted towards near-zero balances.

Chart 1-24: Current account balances in the euro area
(as a percentage of GDP)
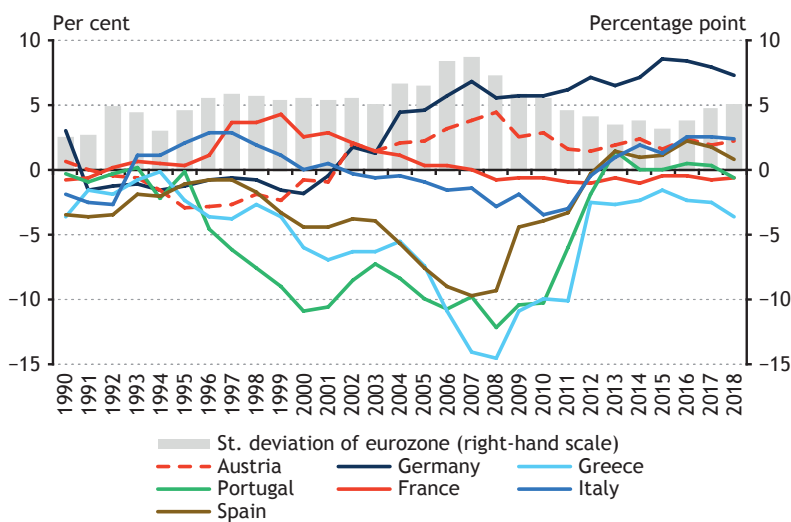
Note: Regarding the calculation of standard deviation the composition of the euro area varies by time. Prior to 1999, it contains data of the 1999 founder countries.
Source: IMF, own calculation.

The inflow of external funds does not necessarily point to an economy's imbalance in itself; the structure of the inflows should also be examined for a reliable assessment. Non-debt liabilities are viewed more positively than debt-liabilities because the former have no maturity and no payment obligation attached and as such, they imply lesser risk (e.g. interest rate or rollover risk) for the receiving country. Moreover, foreign direct

investment primarily provides funding for projects that improve the industrial production capacity of a country. Accordingly, FDI inflows support the convergence of emerging economies; in addition, besides enhancing the industrial capacities directly, new technologies arriving in the economy may improve the performance of the recipient further and may facilitate further improvements in economic performance. Therefore, current account deficits resulting from increased FDI inflows are generally viewed less negatively.

Preceding the adoption of the euro, net FDI inflows typically hovered around zero in euro area countries before, starting from the 2000s, this narrow range broadened to both directions as a result of higher fluctuations. In line with the increasing globalisation, from the 2000s accelerating and increasingly free capital flows triggered higher fluctuations in the net FDI inflows of euro area countries. In addition to globally present processes (such as technological progress, the revolution of information and communication technologies), the introduction of the single currency also contributed to this process in the euro area. Indeed, with the elimination of the exchange rate risk, the abolition of border controls (an important factor in investment decisions previously) and the simplification of cross-border fusions and acquisitions, the integration of the financial system stimulated both intra-EA and extra-EA capital flows. This also broadened the range in which net FDI flows fluctuated. Although with higher fluctuations compared to the low levels observed in the 90s, the standard deviation of net FDI inflows increased only slightly, which means that, albeit moderately, the direction of FDI flows in euro area countries tended to diverge from, rather than converge to, each other. At the same time, this was also reflected in the FDI transactions of the core countries and accordingly, there is no significant difference between the core countries and the rest of the euro area with respect to this indicator.

Chart 1-25: Net FDI inflows in the euro area
(as a percentage of GDP)
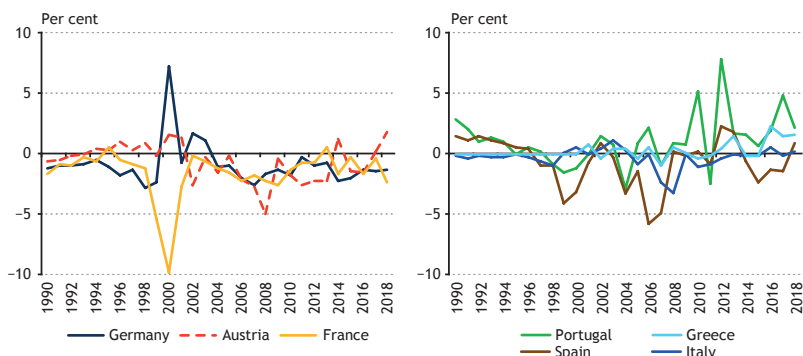
Source: UNCTAD.

The part of the current account balance that is not financed from FDI may manifest itself in rising gross external debt, and it may be an indication of an unsustainable economic structure if the dynamics of a country's gross external debt deviate from the majority of its peers. The dynamics of external debt indicate the extent to which a country's economic growth can be financed from domestic funds and the extent of its reliance on foreign loans. Through this information, it assists in assessing the sustainability of the economy's growth path and quantifying the potential refinancing risk faced by an economy in the event of money and capital market turbulences during a crisis. This has been underpinned both by the 2008 economic crisis and the subsequent sovereign debt crisis. Since then, the indicators quantifying external indebtedness have been given special attention by European decision-makers, as well as international organisations and credit rating agencies. In addition, in line with the increase in external debt – and risks –, the risk spreads of indebted countries typically also increase, which translates to more expensive funding for economic participants. Through higher costs of capital, more expensive funding reduces the quantity of projects that yield a return and thus, it ultimately restrains economic growth.

Before the outbreak of the crisis, there was divergence in the net external debt of euro area countries, but after the crisis this trend reversed. After the adoption of the euro, as a result of the yield convergence less competitive and less developed economies of the euro area also faced lower costs of funds. Through the expansion of imports fuelled by increased demand, this led to greater indebtedness, which was financed from external funds. This increased disparities within the euro area with regard to external debt indicators, which were brought to an end by the surfacing of imbalance problems during the crisis and the subsequent sovereign debt crisis. This process can also be captured by changes in the standard deviation of net external debts: growing differences started to moderate after the sovereign debt crisis with the adjustment of countries struggling with balance problems. The external debt indicators of euro area countries have converged somewhat since the crisis, but they still show significant divergence compared to the period close to the euro adoption.

Chart 1-26: Net external debt in the euro area
(as a percentage of GDP)

Per cent   Percentage pointt
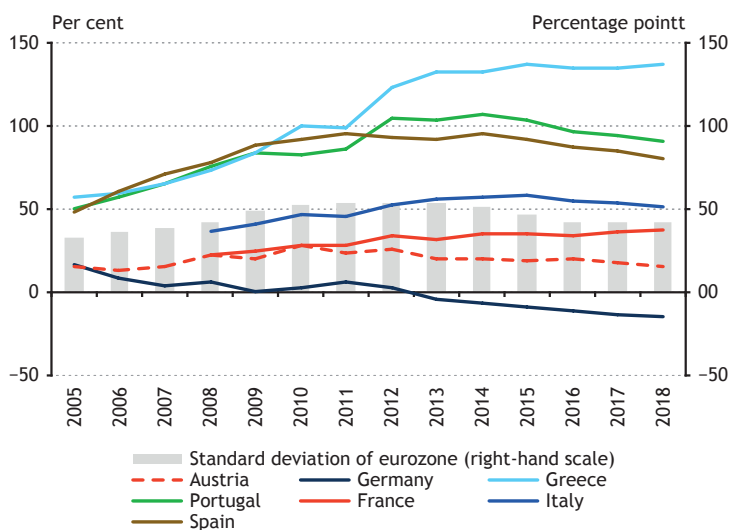

Note: Regarding the calculation of standard deviation the euro area varies by time.
Prior to 1999, it contains data of the 1999 founder countries, excluded Luxemburg,
Malta, Cyprus and Ireland. The data source is incomplete prior to 2005.
Source: Eurostat, own calculation.

**The net financial saving of the household sector also provides
information about the net lending position of an economy.
Variations in this value may even arise from the lack of an in-
dependent monetary policy.** Indeed, the net financial saving of
the population may be influenced by the domestic yield level,
which in turn is ultimately shaped by the common monetary po-
licy instrument defined by the ECB within the euro area. This is
because in an economy requiring a higher natural rate of inte-
rest this may lead to the acceleration of household indebtedness,
the effect of which may be boosted further in the euro area by
the free movement of capital and the use of a single currency.
Through rising imports, the higher consumption of households
deteriorates the external balance, which must be financed – due
to insufficient household savings – by non-residents.

Based on the data of the euro area, disparities also increased in household savings before the crisis. This was reflected in a persistent, albeit slow, rise in the standard deviation. It was also a signal of growing disparities between the countries that, while the net savings of households were persistently positive in the core countries, the rest of the countries exhibited significant dispersion. Before the crisis, the transaction of household savings took a negative value in Greece and Spain (as well as the Netherlands and Finland) in a number of years. This may indicate that the introduction of the common monetary policy in these countries led to lower interest levels than would have been warranted and, through the expansion in borrowing, to the decline in households' net financial savings, thereby contributing to the abovementioned divergence of external balance indicators significantly. At the same time, the decline in financial savings may also be influenced by a country's population pyramid, and it is conceivable that savings contracted also as a result of the diverging demographical developments of the countries listed above, or the returns realised on the yields achieved – boosting the portfolios through revaluation – on households' financial instruments.

Chart 1-27: Net household savings in the euro area
(as a percentage of GDP)
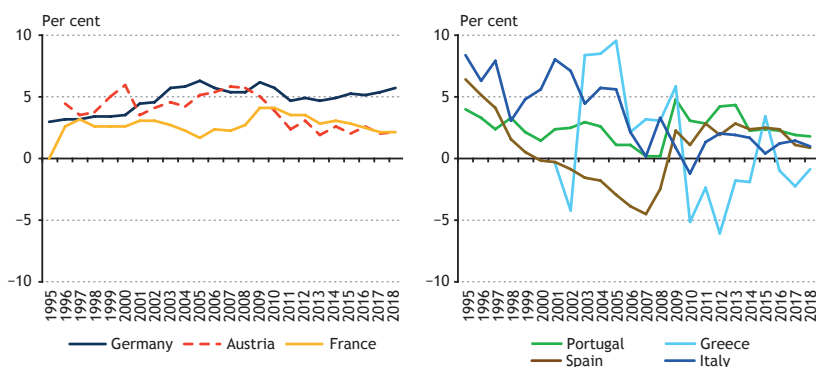
Source: Eurostat.

1.2.4 The role of the euro area in the global economy

After the introduction of the single currency, the **economic per-formance of the USA and the euro area took a similar path up until the global crisis;** every year between 1999 and 2008, GDP grew by 2.3–2.4 per cent on average in both economic regions. However, there were **considerable differences in their recovery from the crisis:** while US GDP surpassed the value recorded in 2007 from as early as 2011, it was only from 2014 that the euro area's economic performance exceeded its pre-crisis level for a sustained period (Chart 1-28, left-hand panel). The lag is even more striking in the case of the first 12 countries adopting the euro. **The deep and protracted crisis can be attributed both to the imbalances built up in the previous period and to the divergence between Member States** (Gros, 2015; De Grauwe, 2015). During the decade preceding the crisis, Mediterranean countries (and Ireland) had accumulated substantial deficits on their current accounts, while the GDP-proportionate balance of the rest of the economies had a surplus. At the outburst of the crisis, Portugal and Greece were characterised by twin deficit, which rendered their crisis management difficult. The mechanisms of the common monetary policy proved to be inadequate to manage the diverging economic processes; therefore, the crisis was more prolonged in European countries than in the USA. As a net result of the above, between 1999 and 2019 **the USA accumulated additional economic growth benefit of almost 15 percentage points overall, relative to Europe** and more than 20 percentage points relative to the EA-12.

Chart 1-28: Economic performance of the USA and the euro area (left-hand panel) and their share in global GDP (right-hand panel)
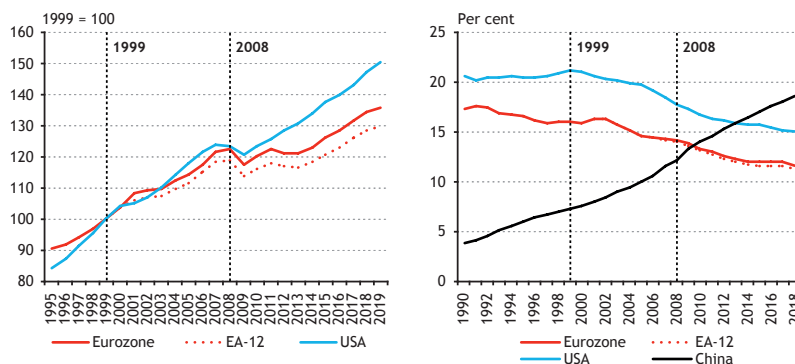

Note: Share in global economy weighted at purchasing power parity.

Source: WDI, Eurostat, AMECO.

At the time of the euro adoption, the euro area accounted for 16 per cent of global GDP (at purchasing power parity), whereas in slightly less than two decades its **contribution to global economic performance dropped to 11.6 per cen**t despite the accession of new Member States (Chart 1-28, right-hand panel). In parallel with the growing significance of China and emerging countries, the weight of developed economies has typically declined in recent decades. Besides cyclical reasons (protracted crisis), the downward shift in the euro area's economic significance was also linked to **structural factors.** The basis for economic growth sustainable over the long term is increased production, for which the **application of innovation and advanced technological achievements** is indispensable. In the area of **gross domestic expenditure on research and development** Member States of the European Union **lag significantly behind** such innovative economies as the USA, Japan or South Korea (Chart 1-29, left-hand panel). In 2015 EU Member States spent **only 2 per cent of GDP** on R&D, even less than the Chinese value in the past few years.

Chart 1-29: R&D expenditures as a percentage of GDP (left-hand panel) and distribution of the R&D expenditures of the top 250 companies by sector (right-hand panel)
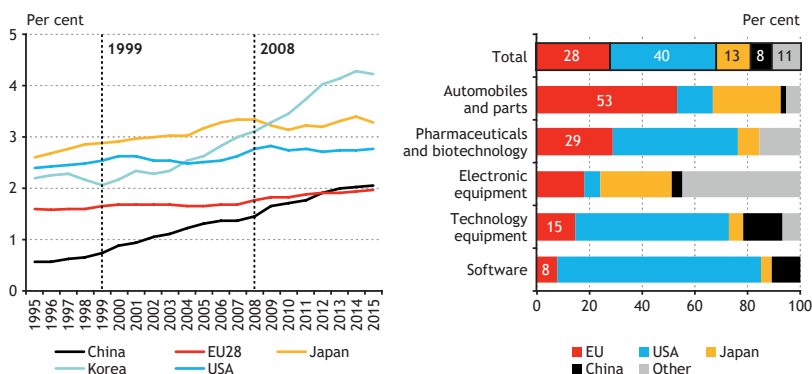

Note: *in 2017-2018.

Source: OECD, MNB based on Bughin et al. (2019).

Having boasted a remarkable performance in innovation in the course of history, increasingly, the "old continent" has been falling behind in research and development in recent decades. **Europe's lag in the area of intangible assets is remarkable.** As regards R&D spending, **only 28 per cen**t of the research and development expenditures of the top 250 companies **can be linked to European firms** (Chart 1-29, right-hand panel). **R&D firms in the EU are concentrated in the vehicle industry,** while technological equipment make up 15 and software only 8 per cent of global expenditures (Bughin et al., 2019). It is **indispensable to stimulate innovation** and apply modern technological and business innovations **to improve the competitiveness and productivity of** Europe and **the euro area.** Otherwise, the effects of demographical constraints and automation on the labour markets may undermine economic growth.

Entrepreneurial culture and **company structure** are also important determinants in the future of the euro area's global significance. In the past two decades or so, **the number of US and EU large corporations both decreased among the top 500 largest**

firms, whereas the weight of Chinese enterprises increased consi-derably (Chart 1-30, left-hand panel). As regards the number of small enterprises and self-employees, there is no significant diffe-rence between the regions. In the age of accelerated technologi-cal progress, however, besides the number of enterprises other indicators are also worth examining. In the Schumpeterian sense, "creative destruction" spurs innovation among entrepreneurs; therefore, the evolution of entrepreneurial culture can be captu-red by the number of **unicorns, venture capital investments and billion dollar entrepreneurs per capita.** All European countries lag behind the USA (and East Asia) in the former (Henrekson and Sanandaji, 2017). In 2018, **less than 8 per cent of venture ca-pital investments were concentrated in Europe,** compared to 89 per cent in the USA (Chart 1-30, right-hand panel). The distribu-tion of unicorn enterprises shows a similar picture: In 2019, only 12 per cent of privately owned startups with a value above USD 1 billion were European. The digital revolution brought to life **"platform economies"** – digital companies typically operating in a network environment, connecting producers with customers in new, non-traditional ways (Kenney and Zysman, 2016). **In 2018, 7 firms of the world's top 10 enterprises operated on a platform basis.** Based on market capitalisation, two thirds of the 60 largest platform-based companies operate in the USA, 30 per cent in Asia and only a **small fraction in Europe.**

Chart 1-30: Fortune Global 500 companies (left-hand panel), and the distribution of venture capital investments and unicorns (right-hand panel)
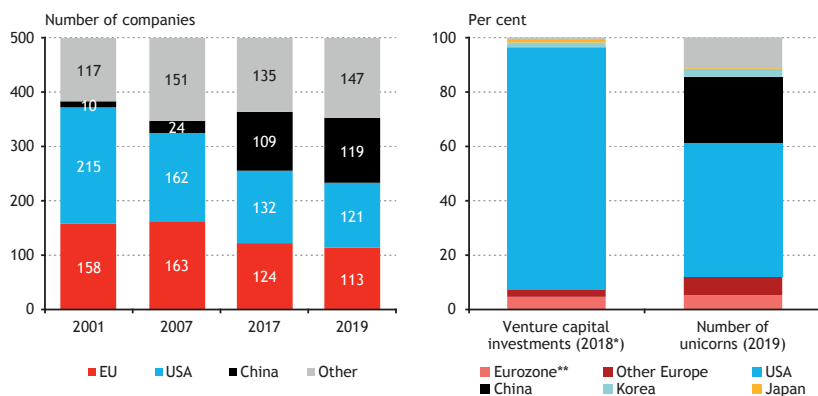
*Note: *Based on 2017 data in the case of Japan. **Excluding Cyprus and Malta. Source: MNB based on Fortune, OECD and CB Insights.*

The turnover of the euro declined slightly in global foreign exchange markets. According to the BIS Triennial Survey, the role of the euro has marginally declined since the 2001 publication of the first survey after the introduction of the euro. Although the BIS survey may be somewhat biased – as it examines only the general turnover of the month of April –, it is still one of the most expansive, regularly prepared global survey, which is followed by a broad range of market participants. While in 2001 the euro still accounted for 19 per cent of the global foreign exchange market turnover, by 2019 this value dropped to 16 per cent. The Japanese yen lost some of its FX market share to a similar degree; it fell to 8 per cent from 12 per cent, whereas the US dollar exhibited only a marginal decline in turnover (from 45 per cent to 44 per cent). The turnover of the Chinese yuan rose slightly, and the yuan now accounts for 2 per cent of the turnover compared to its previously negligible role. Moreover, other smaller currencies have also gained some importance, comprising 14 per cent of the turnover today compared to the previous 10 per cent (Chart 1-31, left-hand panel). Thus the marginal decline in the role of the euro

in global FX market turnover may have resulted from the increased turnover of emerging currencies. The rise in the turnover of emerging currencies reflects non-resident investors' increased interest in emerging financial instruments (e.g.: bonds denominated in the local currency), but the turnover of these currencies was also boosted by the activities of hedge funds and the rise of algorithmic trading. At the same time, the turnover of the EUR/USD currency pair better captures the extent of the contraction in turnover: while in 2001 the turnover of this currency pair still accounted for 30 per cent of global turnover, by now this value dropped to 24 per cent.

As opposed to the decline in foreign exchange turnover, the role of the euro increased in the composition of the international foreign exchange reserves. At the same time, the share of the euro in international foreign exchange reserves increased. In 1999 only 18 per cent of the foreign exchange reserves were held in euro, but by now, this value rose to 20 per cent. The role of the dollar fell sharply (to 62 per cent from 71 per cent), while the share of the Chinese yuan is now 2 per cent, whereas it was not even a part of the FX reserves 20 years ago (Chart 1-31, right-hand panel). The increase in the euro's share and the decline in the dollar's share could be mainly attributed to the diversification of the reserve portfolios. In addition, some emerging countries with substantial reserves needed to release a portion of their FX reserves amid the financial market turbulences of recent years, which was presumably carried out by the reduction of dollar assets.

Chart 1-31: Evolution of the euro's role in global FX market turnover (left-hand panel) vs. in the international foreign exchange reserves (right-hand panel)
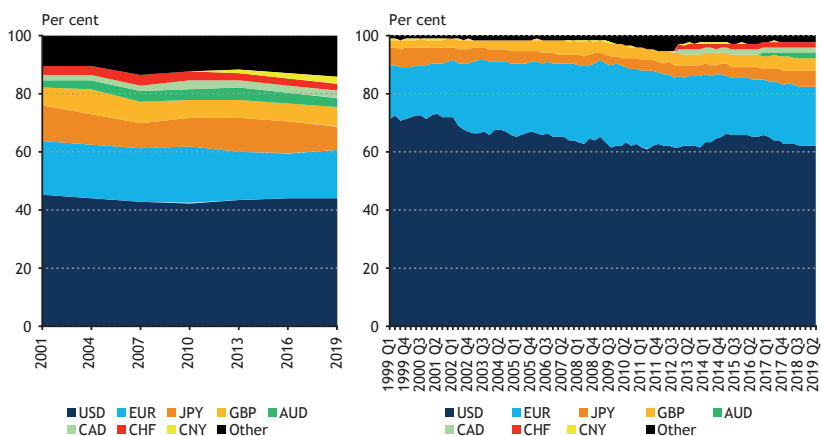
Source: BIS, IMF.

Bonds denominated in euro also represent a stable share in the issue of foreign currency bonds, but the dollar still dominates in global trade. The share of euro-denominated debt in the issue of new foreign currency debt still remains above 20 per cent. Although by 2013 the share of euro-denominated debt fell to less than a half from its 2007 peak, it has edged up in recent years once again, mainly as a result of the contraction in USD-denominated debts. The latter can be explained mainly by the strengthening of the dollar and rising dollar interest rates, which prompted emerging countries to restrain the issue of dollar-denominated debt. In global trade, however, the dollar has retained its dominant role as outside of Europe trade settlements are typically conducted in dollars. For the most part, this is because of the traditional use of dollar settlements in global commodity trade (e.g.: energy market). The euro is used in 30 per cent of trade settlements, and this rate has remained stable in recent years.

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2
Lessons from the Global Financial Crisis of 2007-2009

2.1

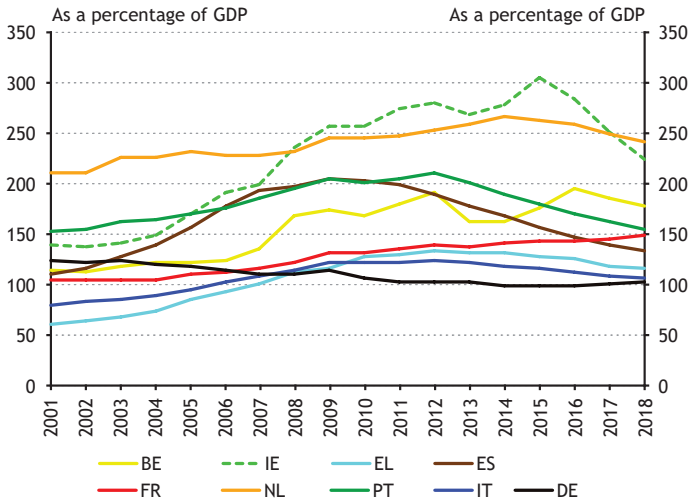# The shortcomings of the Maastricht Criteria

Flóra Balázs — Kristóf Lehmann — Zoltán Szalai

Until the outbreak of the 2008 crisis, European decision-makers had believed that the fiscal rules introduced by the Maastricht Treaty upon its entry into force in 1993 would be sufficient safeguards for macroeconomic equilibrium across the euro area. However, the crisis revealed the shortcomings of the criteria and fiscal rules and demonstrated that it was possible for significant imbalances to develop in spite of fiscal discipline rules being in place. European leaders wrongly attributed the crisis to the differences in competitiveness between the core countries and the countries of the periphery, even though this is not supported by export performance. The problem with fiscal criteria is that they disregard the processes that occur in the private sector. As real interest rates fell as a result of accession to the euro area, private indebtedness rose to high levels especially in the countries of the periphery, which led to overheating and significant imbalances in many cases. Crisis management was also hampered by the lack of shared fiscal capacities in the euro area for offsetting the impacts of negative shocks; as a result, the task of fiscal stimulus fell to individual nations, which was significantly constrained by their obligation to adhere to the fiscal criteria. A key factor contributing to the protracted crisis period in the euro area was the fact that suddenly both the private and the public sectors had become net savers and, as a result, neither sector was able to generate the aggregate demand necessary for a quick recovery. The unfavourable impact of the imbalances on the euro area economy emerging after the financial crisis was exacerbated further by the slow and inappropriate crisis management of European decision-makers. Due to the lack of government interference the euro area was saved from protracted economic contraction and the collapse of the bond markets of some periphery countries by the European Central Bank's quick interventions, interest rate cuts and other unconventional measures.

The global financial crisis of 2008 accentuated the weaknesses of the set of rules underpinning the European Economic and Monetary Union. Right from the beginning, the European Economic and Monetary Union had sought to achieve its two objectives of monetary stability and fiscal sustainability, and the EMU institutional frameworks had been developed accordingly, relying on a monetary policy aimed at price stability and fiscal rules enforcing fiscal sustainability.

The outbreak of the global financial crisis revealed that it was possible for significant imbalances to accumulate in the economy in spite of the established operational frameworks and that the institutional solutions developed for managing them were inadequate. With the fiscal rules based on the Maastricht criteria intended to contain public indebtedness only, through the application of a variety of sanctions, decision-makers were overly focused on fiscal sustainability and failed to pay sufficient attention to the processes occurring in the private sector. Whereas any breach of Maastricht rules would invoke significant sanctions, private sector indebtedness rose steeply in most euro area member states in the period leading up to the crisis (Chart 2-1). The fast growth of indebtedness in the private sector was also fuelled by interest rate convergence after accession, as it encouraged both corporates and households to take on debt (Nagy – Virág, 2017).

Chart 2-1: Private sector debt as a percentage of GDP in individual euro area member states (2001-2018)

As a percentage of GDP   As a percentage of GDP

Legend: BE, IE, EL, ES, FR, NL, PT, IT, DE

Source: Eurostat.

The fiscal rules based on the Maastricht criteria also disregarded the question of external equilibrium, which is a key determinant of the sustainability of growth, while significant and permanent current account imbalances developed among different euro area member states in the meantime.

Recognising the operational shortcomings of the institutions, European decision-makers created under the control of the European Commission a monitoring, preventative and corrective Early Warning System (EWS) called the Macroeconomic Imbalance Procedure (MIP); its purpose is to highlight any macroeconomic imbalances as they accumulate (Csortos – Szalai, 2013). Under the MIP, the European Commission examines 14 indicators relating to external imbalances and competitiveness, as well as domestic imbalances and employment. The Procedure supplements the Maastricht convergence criteria in the field of preventing and managing the imbalances originating from the non-financial and financial private sectors when either competitiveness issues or an excessive growth in internal dem-

and trigger processes threatening with unsustainability; it is additional to the coordination procedures aimed at fiscal stability.[7]

## 2.1.1 A traditional 'competitiveness crisis' or a modern banking crisis?

The general narrative following the 2008 crisis held that lax fiscal spending and a lack of wage discipline on the periphery of the euro area (Ireland, Greece, Portugal, Italy, the three Baltic countries: Estonia, Latvia and Lithuania, and Slovenia) had led to the significant current account imbalances that emerged in the euro area and, through rising labour costs per unit of added value, to deteriorating competitiveness. Some analysts pointed out the significant differences in wage competitiveness that had evolved between specific groups of countries, especially between Germany and the rest of the countries in the euro area. A superficial look at diagrams showing the divergences in wage costs per unit of product could confirm the false impression that the countries of the periphery were the sole causes of the emergence of differences in wage competitiveness, since they show Germany's competitiveness remaining stable and that of the other countries deteriorating by comparison consistently, albeit to varying degrees. Yet a more thorough analysis reveals that, if compared to the other countries, Germany exhibits a pattern that is conspicuously different from

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[7] The empirical performance of the indicators has been examined by Csortos-Szalai (2013), Erhart et al. (2018), Domokos et al. (2017). Overall, the indicators would not have provided good advance predictions for all the countries regarding the recent crisis. There are systemic differences between older member states and recently joined countries in terms of the forecasting ability of the indicators. It is a necessary warning, one that is also emphasised by the Commission that elaborated the indicators, that they should not be applied mechanistically; instead, specific, in-depth analyses are required in each case because crises never repeat themselves in exactly the same way.

the widely accepted wage norm[8]. In other words, Germany is 'excessively competitive', so much so that if a majority of countries followed its example, this would lead to massive deceleration, a rising debt ratio and significant tensions.

Chart 2-2: Cumulative deviations of unit labour costs from the ECB's inflation target (1999-2016)
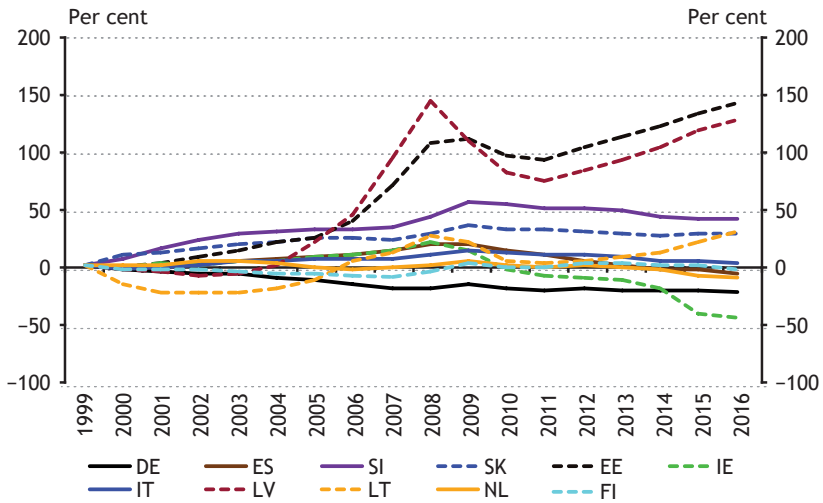
Source: Eurostat and European Commission Quarterly Report on Price and Cost Competitiveness.

This means that wage costs rose in accordance with the ECB's inflation target in the countries close to the zero level. While **most competitiveness comparisons** based on unit cost of labour consider **Germany** as the benchmark for the rest of the EMU members, the diagram shows that approach to be wrong. While it is only the trends in relative competitiveness that matter in measuring cost competitiveness, i.e. countries need to be able

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[8] Wage norm is defined as an evolution of wages that does not generate inflation; in practice, it is determined as the sum of the productivity growth rate and the rate of price inflation captured in the central bank's inflation target. Wage increase rates above that level generate above-target inflation, whereas rates below generate below-target inflation. Inflation is of course shaped by other factors as well; the wage norm captures only the condition for price stability on the wage side.

to compete with Germany too, but this in itself cannot serve as an ideal benchmark for macroeconomic outcomes. Remaining lastingly and significantly below the ECB inflation target, which quantifies price stability, German unit labour costs exercised a persistent and intense deflationary pressure on the euro area as a whole. If all the countries had competed on such a basis, the monetary union would have entered deflation, with all its detrimental consequences. The wage competitiveness differences emerging before the crisis were only partly attributable to the countries most frequently mentioned when speaking of deteriorating competitiveness: since the euro area is intended as an area of monetary stability, **price stability must also be interpreted symmetrically** and negative deviations should not be possible even on the grounds of competitiveness. Otherwise the **suboptimal growth becomes entrenched and deflation-related financial fragility intensifies.**

Another reason why wage competitiveness is not always decisive for the assessment of the sustainability of a macroeconomic course is the fact that the economies of less advanced countries undergo faster structural changes on the path to convergence. Their economic structures change: the weight of the extractive industries declines, while that of service sectors in the widest sense of the term grows; manufacturing industries grow initially but then the increase in their weight slowly stops and even reverts.[9] There are significant **labour flows** taking place during this process: labour will flow to industries with higher productivity, largely due to the higher wages achievable there. The process involves an increase in the sophistication and the quality of export products, which are produced in more complex in-plant and company-to-company cooperation arrangements, with the number of countries able to manufacture and export them decreasing. Products of this kind and, by extension, the labour producing them is valued higher by the customer, which is reflected

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[9] For further details see MNB (2016).

in higher selling and export prices. The rise in the wage cost per unit of product **does not imply a fall in competitiveness in these cases**,[10] as profitability does not need to shrink even at higher product prices; in fact, profitability can improve, as long as wage costs rise at a slower pace than the price of the product.

Finally, unit labour cost (ULC) as measured at the macroeconomic level is not entirely analogous with the labour costs as interpreted regarding corporates. Whereas wages are merely a cost for a company and the decrease in wage cost per unit of product will not reduce demand for its products, ULC at the macroeconomic level in fact represents the change in the wage share, which is, in turn, directly linked to aggregate demand.[11] The MNB's Report on Growth for 2017[12] explains in its first chapter how the subdivision of national income into profits and wages impacts on macroeconomic performance. The interconnection is not linear, however. Wages are a cost but also constitute a part of aggregate demand. Accordingly, it is not inevitable for a rise in the wage share to reduce profitability: although it may rise at the expense of the profit share, this may be offset by a better use of capacities on the demand side, resulting in higher profits. The theory does not allow us to decide which effect will dominate at precisely what share ratios; all we know is that there is indeed such a point somewhere. In any case, a **ratio derived from experience** may serve as guidance for practical purposes. Still, it is important to note that, unlike in a microeconomic approach, **excessively low wage costs may have downsides too**. It is therefore not enough to focus on **percentage changes** when interpreting

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[10] Benkovskis and Wörz (2015) estimate that Hungary's usual price competitiveness more or less stagnated in the period from 2000 to 2012 but, adjusted for quality improvements and favourable changes in taste achieved by the markets, an improvement of 30 per cent can in fact be identified. While this is lower than the values measured for Poland, Romania and the Czech Republic, it is higher than for the three Baltic countries or Bulgaria.

[11] Felipe and Kumar (2011).

[12] MNB (2012).

the unit labour cost as a **wage competitiveness** indicator; it is also important to consider what **initial level** (what wage share) it started from.[13] If central banks respond one-sidedly only to the deterioration of wage competitiveness, i.e. rises in unit labour cost, but fail to prevent its 'improvement', i.e. falls in unit labour cost, they are implicitly contributing to the decrease in the wage share, which can lead to a number of macroeconomic problems on the long term.[14] For example, the growth rate may decelerate, as higher percentages of profit incomes are placed in savings, weakening the growth in aggregate demand. Whereas if wage earners offset a weak wage rise through constant borrowing to maintain a higher level of consumption and household (property) investment, then the risk of financial fragility in the economy and the emergence of a financial crisis would increase.[15]

Chart 2-3: Changes in real effective exchange rates based on unit labour cost (1999-2016)
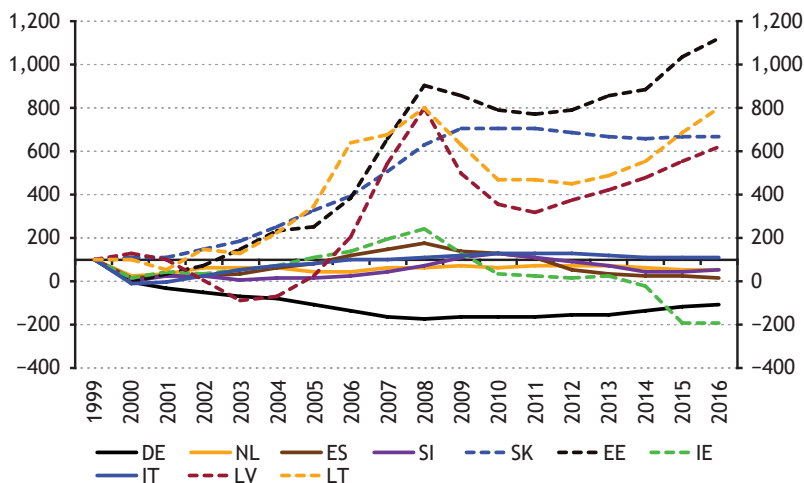
Source: European Commission Quarterly Report on Price and Cost Competitiveness.

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[13] On the macroeconomic significance of the wage share, see MNB (2017), Chapter 1.

[14] Mason (2017).

[15] For further details see MNB (2017) Chapter 1.

The interpretation of changes in wage competitiveness is made more difficult by the fact that the evolution of these indicators is not independent of the changes in aggregate demand, in lending and in international capital flows. Therefore even if an empirical link can be identified between the external equilibrium and the competitiveness indicator, **causality** could easily be traced back to a third factor, such as **capital flows and lending**, with competitiveness merely a consequence.[16] Summarising our findings regarding competitiveness, we note that **wage competitiveness problems have not played a decisive role in the current crisis**. After all, contrary to the suggestions of the narrative emphasising the deterioration in competitiveness, in the years leading up the crisis the export performance of the countries of the periphery was barely behind that of Germany, which is seen as spearheading competitiveness and even as excessively 'competitive'[17] (Chart 2-4).

Chart 2-4: Export volume index for euro area member states (1999-2017)
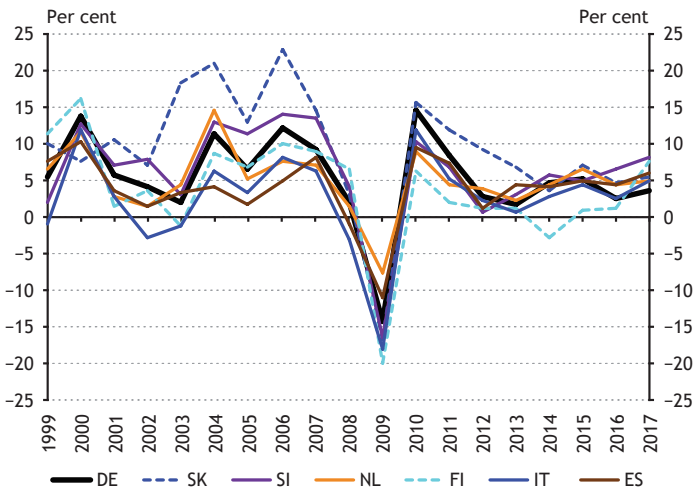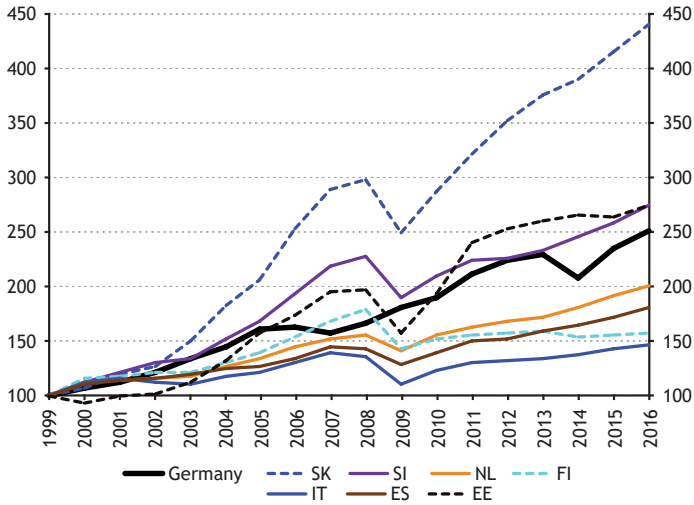

Source: OECD.

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[16] See for example Lane and McQuade (2013) and Wyplosz (2013).
[17] According to the new imbalance indicator, Germany has had an excessive export surplus for years and has been repeatedly asked to make appropriate adjustments. In spite of the requests, Germany has not adopted a decision to do so.

The lasting current account imbalances were attributable much more to the differences in import demand (Chart 2-5). **The primary cause for the emergence of imbalances was not a deterioration in export competitiveness** (excessive wage outflows, weak product quality compared to competitors) **but excessive indebtedness and consumption in the private sector.**

The exports of the selected euro area countries before the crisis demonstrate a significant degree of co-movement regardless of their current accounts and whether they were a core country or a country of the periphery. Exports were shaped mainly by global trends; the diverging cost competitiveness figures appear to cause no significant variations in this respect. It is also striking that **the exports of the countries assumed to have entered a crisis due to deteriorating competitiveness follow especially the same trends**, both before and after the crisis, **as Germany, the 'world champion exporter', and the Netherlands, which reports even higher export surpluses from time to time**. Also, the countries that achieved a significant overhaul of their current accounts after the crisis by replacing a markedly excessive deficit with a solid surplus demonstrate export trends similar to the core countries where wage competitiveness has not changed drastically, nor has there been a change in the sign of the current account chart.

Chart 2-5: Import volume index for euro area member states (1999=100) (1999-2016)

Source: OECD.

In contrast to the shared trends in exports, current accounts diverged in the different groups of countries, as shown in Chart 2-6. This also supports the hypothesis that **the significant current account deficits before the crisis had been caused in those countries primarily by the fast increase in imports**, whereas the post-crisis adjustment was not due to improvements in competitiveness but a deceleration of imports resulting from falling internal demand caused by deleveraging in the private sector and within fiscal policy.

Chart 2-6: Current account balances in individual euro area member states (1999-2019)

As a percentage of GDP   As a percentage of GDP
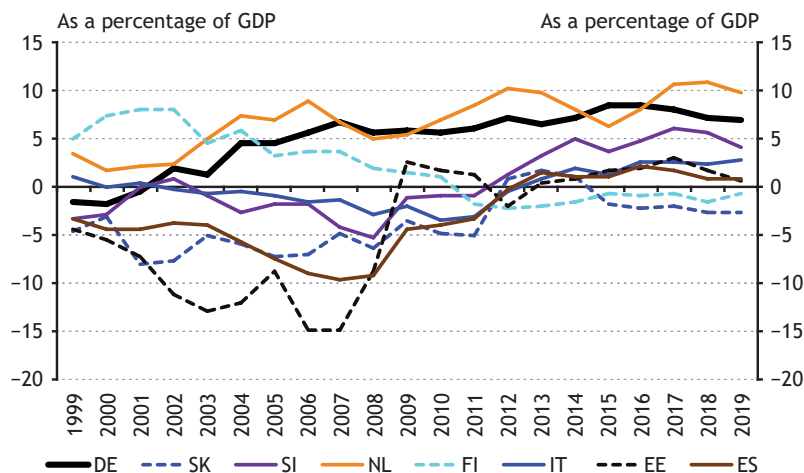
Source: IMF WEO.

In a further proof for the above argument, there is co-movement in opposite directions among individual euro area member states in terms of current account balances and lending trends, which suggests that current account deficits tended to be a result of rising imports driven by strong growth in internal demand, rather than a lack of fiscal discipline on the part of governments.

Expectations for fast convergence in incomes, unnecessarily lax fiscal policies (e.g. Greece) and falling interest rates upon accession to the euro area and the resulting ease of access to loans may have been the factors boosting internal demand. As a result, import demand related to consumption and household investments grew. **There was no need for a hike in consumer loans directly for imports to grow.** To give an example: in a lending boom in a non-tradeable sector (real estate), households had more income left for the consumption of imported goods following the purchase of a property, because mortgages were cheaper than before. Furthermore,

the deepening of global value chains resulted in increases in the import of intermediate products. In sectors experiencing a lending boom (for example the construction industry), the wage bill started to increase significantly (due to higher average wages and increasing headcounts, with immigrants representing millions within the latter), and this generated a second-round increase in incomes in other sectors, further increasing internal demand and therefore imports.

Chart 2-7: Average changes in domestic demand and current account balances (2000-2006)
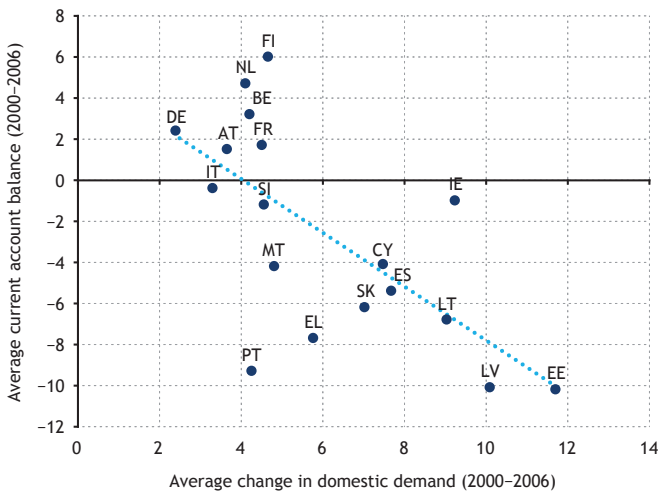
Source: AMECO, OECD.

The econometric analyses into the matter have come to similar results.[18] Communale and Hessel (2014) looked at whether the current-account divergences within the euro area were caused by the differences in competitiveness or the changes in the financial cycles. To answer this question, they used panel error-correction estimation to examine the changes in imports, exports and foreign trade balance as a function of domestic

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[18]   Of the wide and expanding literature, see: Altomonte et al. (2013), Communale and Hessel (2014) Communale (2015a), Gaulier and Vincent (2012), Wyplosz (2013) and partly Unger (2015) and the literature referred to there.

demand at the frequency of the financial cycle. They found that while **the effect of price competitiveness could indeed be demonstrated, the changes in internal demand exerted a much stronger influence on foreign trade trends**. They conclude from this result that the message for economic policy-makers is that it is more important to focus on changes in borrowing and on macroprudential policy, in contrast to the current practice of emphasising competitiveness and structural reforms.

Altomonte et al. (2013) demonstrated that cost competitiveness indicators do not, by themselves, offer reliable information about the changes in competitiveness. In order to examine competitiveness in a reliable manner, corporate-level information needs to be included. As an example, they mention that rising unit costs combined with R&D expenditures result in significant improvements in product quality, which may be reflected in the selling prices. **Thus a 'deterioration' in cost competitiveness does not necessarily imply a deterioration in competitiveness or a trade deficit.** Also, if such an emerging country anticipates fast growth and therefore its consumer lending increases at a fast pace, the composite result of these factors may be a trade deficit even if this is not justified by competitiveness trends; this can result in the wrong economic policy recommendations being proposed.

Gaulier and Vincent (2012) examined whether changes in the current account balance are attributable to competitiveness or to demand shocks in the euro area. They found that **the changes in the current account are interconnected with unit labour costs and imports** but identified no links with exports. Rather than being the cause for the current account deficit, weaker cost competitiveness was an outcome of a demand shock caused by price increases in sectors not competing with foreign trade: in-depth sectoral analyses reveal the sectors where cost competitiveness weakened. The export sectors of

most deficit countries appear able to satisfy rising export demands if the surplus countries symmetrically reduce their exports and increase their imports through developing a much more balanced domestic demand.

2.1.2 A crisis of crisis management

Academic literature used to hold the view that member states had sufficient fiscal headroom for managing asymmetric economic shocks in the euro area even if they comply with the debt rules. If such fiscal leeway proves insufficient due to the suboptimal functioning of the automatic stabilisers or excessive cyclical fluctuations, then a flexible labour market (wage flexibility, mobility of labour) will be necessary for further adaptation. After all, monetary policy is elevated to Community level upon accession to the euro area and currency devaluation is no longer possible; the only route open to adjustment is internal devaluation. It was a generally held view, however, that integration into the euro area would guarantee long-term economic progress for the countries that join it. According to the endogeneity hypothesis of optimum currency areas (Frankel – Rose, 1998), the introduction of the single currency results in a convergence of economic structures to an extent that an optimal currency area arises, which reduces the costs of joining. De Grauwe and Mongelli (2005) offer an overview of the matter and conclude on that basis that the endogeneity hypothesis may hold on the basis of the information available before the crisis. By contrast, experience shows that the endogenous harmonisation of the business cycles failed to occur, with signs of divergence more prevalent within the euro area (Holinski et al., 2012, Enders et al., 2013).

After the outbreak of the crisis, the European decision-makers who saw the current account imbalances of the member states incorrectly identified the reason for the

crisis in competitiveness issues; yet we have demonstrated in the above section how, rather than differences in export performance, the problem was attributable mainly to the overheating resulting from the accelerated capital flows among the member states, which impacted the countries of the periphery first and foremost.

Even though the economies of both the US and the Eurozone went through a severe contraction after the outbreak of the crisis, output in the US reached its pre-crisis level in 2010, while the eurozone could reach it only in 2014. As a result of the inappropriate crisis management the gap between the cumulative growth rate of the two economies widened even further in the years following the crisis.

Chart 2-8: Volume index of the cumulative real GDP growth for the United States and the Eurozone (2007=100) (2007-2018)
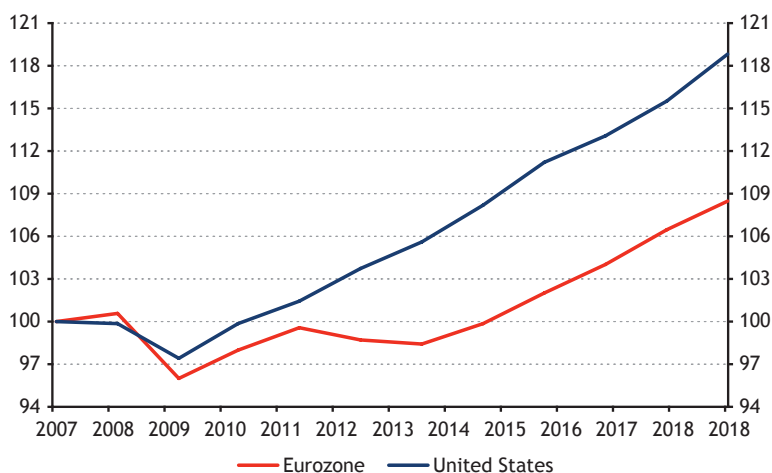
Source: Bloomberg.

European decision-makers sought to manage these problems, incorrectly attributed to reasons of competitiveness, by using internal devaluation, because individual member states had ceded their independent monetary policies upon joining the euro area, which removed the option of externally devaluing national currencies. Internal devaluation is much harder and more painful than external devaluation, further deepening a crisis in the event of recession.

After the outbreak of the 2008 crisis, euro area countries were also constrained by the Maastricht criteria of fiscal discipline and the fiscal rules built upon those criteria; this further deepened the crisis as the public sector joined the private sector in being unable to stimulate the economy through boosting aggregate demand.

During the crisis, real GDP constricted significantly as a result of internal devaluation and as fiscal rules based on the Maastricht criteria prevented fiscal easing. Given the fact that the general government debt ratio is calculated as a ratio of government debt to GDP, **fiscal tightening achieved the very opposite result: rather than shrinking, the debt ratio started to rise quickly**, growing by as much as 50 percentage points in some countries[19] (Chart 2-9).

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[19] According to the ECB (2015) median public debt rose by 22 percentage points in the years following the financial crisis. 4-6 percentage points of the increase was a result of the financials support that was given to the banking sector. In case of Spain and Ireland the increase in debt was due to the costs of bank bailouts.

Chart 2-9: Government debt as a percentage of GDP in individual
euro area member states (2005-2018)

As a percentage of GDP   As a percentage of GDP
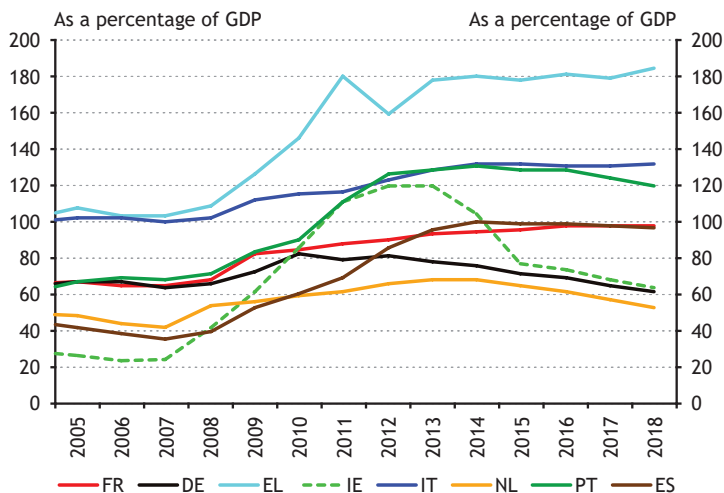
Source: IMF WEO.

In return for the financial aid provided to the countries in financial trouble during the crisis years, further adjustment measures based on incorrect conclusions were imposed, which worsened the situation through the additional contraction of GDP and created a vicious circle. The insistence on the fiscal rules based on the Maastricht criteria thus resulted in the debt ratio stabilising at a high level, which was considerably aggravated by a delay in recovery due to the regular fiscal adjustments.

2.1.3 The absence of a fiscal backstop

Fast and efficient crisis management in the euro area was hampered by the limited role of the central budget (which representing approximately 1.2 per cent of GDP, whereas the budgets of the nations are high). Such a budget structure does not allow the central budget to respond to cycles; that task is left to national governments. By contrast, the central budget plays a much greater role in the United States. If one or more

states are hit by an asymmetric negative shock, the central budget will automatically smooth that shock by collecting less in taxes and paying into the central budget. Also, as eligibility increases, these member states receive more temporary income support, for instance in the form of unemployment benefits. The central budget is able to fulfil its smoothing role as other regions have been free from such a negative shock or in fact received a positive shock so that they now pay more in taxes and receive less in disbursements due to lower eligibility. American federal states are thus subject to strict budget rules; their budgets must always balance. Naturally, this would be impossible without the smoothing impact of the central budget in the event of a significant negative shock. When some or most USA states are subject to a negative shock, one subset of the states will be unable to offer smoothing to the other subset. In such a case, the central budget exercises its smoothing role by allowing deficits to arise or increase. **An equivalent of this within the institutional frameworks of the euro area would have been for national fiscal policies to conduct easing in a coordinated manner, essentially simulating a central fiscal easing.** This was in fact done in the immediate aftermath of the crisis, under coordination within the framework of the G-20 but, interestingly, **once the threat of immediate collapse was avoided, the fiscal rules were reinstated too quickly, assuming that to be the means for stabilising the economies.**[20] This was a big mistake, because it resulted in a second recession of the euro area, one for which there had been no external reasons at all. A fear of 'markets' and the wish to avoid cross-contamination among countries was stronger than the desire to maintain optimally loose fiscal conditions. In this respect, a comparison with the United States clearly demonstrates the extent of the error.

The management of the crisis after its outbreak in 2008 suffered from the absence of an institution acting as market

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[20] For further details see MNB (2014) Chapter 1.

maker of last resort on the market of government securities within the euro area. This is conventionally the role of the central bank of a nation. But the euro area had been created with the assumption that the stability of the new currency would be ensured **by forbidding that central banks buy government securities and only allowing secondary-market transactions for monetary policy operations**. This shortcoming originates from a peculiarity of the euro area, namely that it is a monetary union where national fiscal policies enjoy a high degree of independence: they are not integrated, only closely coordinated. This was intended as a means to strengthen fiscal discipline, as otherwise the undisciplined countries would have an advantage over the disciplined ones; moreover, if too many countries behaved without discipline, the stability of the entire area could be jeopardised. Overall, **all considerations revolved around fiscal 'discipline', and it was not envisaged that government securities markets could require stabilising even if fiscal discipline was satisfactory** (for example if the stabilisation of the banking system required fiscal commitments that could weaken market confidence in the ability to maintain fiscal stability). If **a common central bank does not serve the same stabilising function** as a national central bank does on the government securities market in the national economy, **the state in question will be in the same situation as if it had issued debt in a foreign currency.**

This, however, was an elective modus operandi at a certain stage of the crisis, not necessarily predetermined behaviour. This is proven by the fact that when monetary integration was genuinely at risk, the ECB's promise of an intervention was sufficient to lift the panic on the market. The permanent stabilisation fund was created during the crisis in recognition of this fact. Yet it does not inspire confidence that this function was not assigned to the common central bank and that it was **created with limited powers to intervene**; after all, it is the very **ability to intervene without constraint that is to be demonstrated** in the event of

panic. Clearly, the decision-makers continue to believe that the greater threat is the very opposite, i.e. the absence of a cap on intervention powers.[21]

Another role of the stabilisation fund could be the recapitalisation and reorganisation of banks registered in a member state. This is the role of the national budget within an individual state, but in an integration such as the EMU, where the banking sector is integrated and a bank's activities may span numerous countries, it may not necessarily be appropriate. There are plans to prevent in the future, on the side of the budgets as well as the banks, the kind of cross-contamination of national budgets and banks that hugely distorted the monetary and financial conditions of individual countries during the crisis. On the fiscal policy side, the joint fiscal capacity removes from national budgets the fiscal costs of reorganising banks. We will discuss the emerging new institutional frameworks in greater detail later.

In the absence of a joint fiscal capacity, the EFSF (European Financial Stability Facility) and, complementing it, the EFSM (European Financial Stabilisation Mechanism) for EU Member States not in the euro area were created after the outbreak of the crisis.[22] The EFSF was set up in May 2010 and was originally intended as a temporary, transitional arrangement. The Facility was set a lifecycle of 3 years and the objective of ensuring the stability of the European financial system through financial support to the individual Member States. The **Facility is tasked with granting temporary loans to distressed member states in need of such loans** and, if necessary, to intervene on the bond markets of the individual member states. It is also responsible for capitalising financial institutions, when necessary. **The Facility was**

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[21] In other words, they consider moral risk to be a greater threat than market panic and see moral irresponsibility as an undesirable market income in the environment of uncertainty that is an unavoidable concomitant of risk taking in market economies.

[22] European Parliament (2019a) and (2019b).

available to member states unable to obtain financing from the market at an acceptable rate of interest. Its effectiveness was reduced by the fact that the guarantors of EFSF loans included member states that struggled with financing difficulties themselves. The EFSF was therefore exposed to the risk that bond market operators might be critical of guarantees offered by countries that faced financing problems themselves.

The creation of the permanent crisis management mechanism of the ESM (European Stability Mechanism) became possible only after the amendment of the Treaty on the Functioning of the European Union, which established the legal basis for helping the financially distressed member states. The ESM is a crisis mechanism **intended to ensure that financial stability is retained and debts remain sustainable**. Like the EFSF, the ESM may disburse loans to individual member states, buy government securities on the primary and secondary markets, and grant loans to capitalise distressed financial institutions. The ESM has EUR 80 billion paid-in capital, in addition to which the **member states have made a commitment up to EUR 700 billion; this may be considered as the full lending capacity of the Facility**. Such a capacity is insufficient to finance either the kind of necessary interventions already used in Europe during this crisis or interventions at the magnitude observed in the United States. The stock of government securities and the size of the banking sector are unlikely to reduce appreciably in the future, and a limited availability of funds would therefore lead to delays in the event of a new major financial crisis, since it would be time-consuming to raise the necessary funds.

2.1.4 What can we learn from the changes in financial positions?

In developing the fiscal convergence criteria and the Stability and Growth Pact, which fine-tuned and supplemented the details of their implementation, the main objective of fiscal coordination was ensuring sustainability; however, this was translated to practical day-to-day economic policy and area-wide coordination only in a somewhat ad hoc manner.[23] We have attributed this to the fact that the theory was unable to offer pertinent guidance to the economic policy-makers. Albeit to an insufficient extent (with too small fiscal sensitivity parameters and a small fiscal multiplicator) and measuring the cyclical position imperfectly (treating potential output as exogenous, stipulating a nearly zero deficit across the cyclical average as a fiscal policy target), the fiscal frameworks take into consideration the economic cycle and its impact on the deficit; the problem is that they completely disregard the positions of the other sectors of the economy. **Yet an optimal fiscal deficit figure should also reflect the changes in the positions of other sectors**, otherwise the enforcement of the rule would have significant and unnecessary social costs.

Some economists had criticised the absence of a sectoral approach even in the debates prior to the creation of monetary union.[24] The fundamental idea is that economic sector positions must, by necessity, be mutually compatible. Elementary market transactions change the positions of two operators simultaneously, which must be considered consistently as they impact both their behaviours. Furthermore, the portfolios of assets as well as liabilities accumulated from past transactions (and other changes such as revaluations) also matter in the case of every operator. Accordingly, **a sector cannot have a surplus without**

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[23] See Section 1.1 on the internal correlations of quantified fiscal convergence indicators.

[24] Stock-Flow-Consistent model

another sector having a deficit,[25] and **an economic sector can have a zero position only if the total position of all other sectors is zero**. In the simplest version of the SFC models, three sectors are differentiated[26]: non-banking private sector (i.e. households plus firms), government and rest of the world. (The more sophisticated models cover more sectors, including the banking industry, and they separate households from firms, but this makes the models exponentially more complicated.)

In most advanced economies, the private sector tends to be a net saver on the macro level, with savings exceeding investments (S>I). While the budget balance (T-G) and the export-import balance (X-M) do not demonstrate such a regularity, their net balance constitutes the balance of the private sector, which is the mirror image of the balance of the government sector: S-I = (G–T) + (X-M). This shows that **if the domestic private sector is a net saver, either the government or the rest of the world must be running a deficit.** If the rest of the world is unwilling to do so, then only the government's deficit can offer the domestic private sector the opportunity to save. If the budget runs a positive balance, the household sector is able to save only against the rest of the world. If the rest of the world also aims for a minimal deficit, then domestic demand will need to rely increasingly on private sector indebtedness for its growth; we have witnessed, however, that this is a financially fragile situation. Based on this approach, we can state that **budgets typically operate with a deficit and provide in this way the means for the private sector to save and thus ensure financial stability.** Accordingly, fiscal policy runs a deficit by default; this is the normal condition of modern economies. **A budget surplus or equilibrium can be optimal only in exceptional cases**, for example if the private sector is excessively

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[25] This requirement is often forgotten in the modern macroeconomic theories that are not a manifestation of behaviourist models. Agent-based models, which have acquired popularity recently, wish to remedy this shortcoming. Kregel and Parenteau use Godley's stock-flow consistent models.

[26] Kregel (2015) and Parenteau (2010).

indebted, causing overheating, or if excessive surplus in foreign trade generates domestic overheating. These, however, are not typical situations and rarely last long, because they are unsustainable due either to financial stability reasons or the reactions of the partner countries.

Chart 2-10: Possible financial equilibriums in a sectoral approach
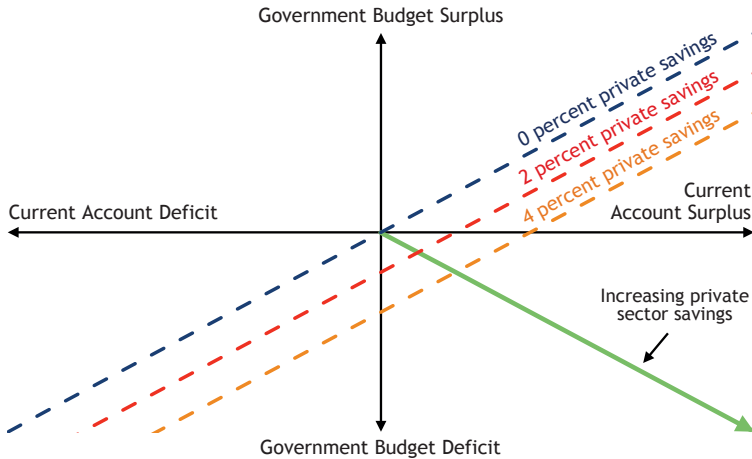
Note: the diagram shows the possible combinations of the positions of the external sector and the fiscal sector given the private sector positions marked with a dotted line. At the origin, all sectors are in equilibrium. A surplus in the private sector demands that the joint position of the other two sectors be a deficit. For example, a foreign trade surplus of two per cent and a budget deficit of two per cent will allow private savings of 4 per cent. If the rest of the world permits a two-per cent current account (export) surplus but the budget remains at zero, then the private sector surplus cannot exceed two per cent. The fiscal rules of the euro area fail to take this correlation into account.
Source: Kregel (2015).

Chart 2-11: Sector balances in the euro area (2002-2019)
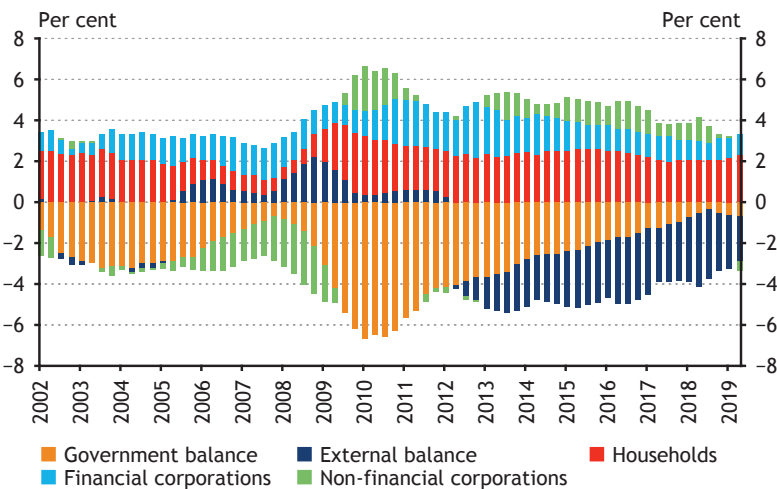
Almost all the countries were forced to make adjustments due to their increased indebtedness and fiscal deficits driven by the financial crisis, even as the private sectors are increasingly net savers as a result of deleveraging. As a result, **the aggregate demand required for growth can come only from the rest of the world**, but growth there is also weak, as overseas sectors are also trying to reduce their debts accumulated before the crisis.

It is therefore doubtful whether growth at a sufficient rate is possible in the euro area. The aggressive further boosting of net exports demands constraints on wages and investments to such a degree that it hinders domestic growth even more. In this case, without an increase in fiscal deficits, all permitted measures will actually hamper growth. This phenomenon, called the paradox of thrift by Keynes, could result in stagnation and the disintegration of the euro area. Applying this framework of analysis to the current situation, Chart 2-11 shows that indebtedness in the rest of the world is practically the only significant source for growth in domestic demand in the euro area today.

The current fiscal rules are shown by a sectoral analysis and from the viewpoint of stimulating demand as being excessively restrictive, entrenching weak internal demand and making the euro area exposed to growth rates in the global economy on the long term. A consequence of entrenched slow growth is a permanently weak potential growth rate. Following the latest literature on fiscal consolidation, it is increasingly widely recognised that the estimates of potential growth are highly distorted and that the potential growth rate is path-dependent. The long-term growth potential of the economy is highly dependent on the path it had travelled before. If **growth is consistently slow**, estimation procedures will start to consider this slow growth rate as the maximum achievable without a risk of inflation, even if it results not from external reasons but institutionalised economic governance. The literature has identified a number of channels through which this mechanism operates, such as the damaging impact of long-term unemployment on employability and attitudes, weak investment and R&D activity etc. **If the fiscal rules are predicated on weak, distorted potential growth estimates, then even weak growth will be seen as overheating and tighter fiscal policies will be prescribed. And this will further weaken the potential for growth.**[27] In the current crisis, all the institutions have adjusted their growth forecasts frequently and in a negative direction, and proceeded to consider these as guidance in their assessment of fiscal orientation and in their recommendations. It is not a coincidence that a debate has arisen concerning the review of these estimates. The Commission's experts admit that the estimates are not perfect but do not consider the alternatives they have looked at any more reliable than the current one, adding that the fiscal recommendations do not follow as closely the conclusions otherwise derivable from the potential estimates as is assumed by the critics.[28] Radical changes cannot therefore be expected in this respect at any time in the near future.

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[27] See empirical work by Fatas and Summers (2017), and Hemberger (2018) on the permanent negative impacts of fiscal consolidations on growth.
[28] Buti et al (2019).

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2.2

What's next for the euro area: directions of institutional development

Ábel Bagdy – Krisztina Füstös – Zoltán Szalai

The dilemma as to how successful a monetary union can be without a fiscal union arose from the very first day when the idea of the euro came up. Although the euro was introduced in 1999, the doubts are still there. These doubts were strengthened by the economic crisis, as a result of which several new measures were taken, new institutions and new mechanisms were established. One of these was the establishment Macroeconomic imbalance procedure which functions as an early warning system: it examines the risks threatening macroeconomic stability based on 14 indicators and 25 supplementary indicators. In 2010 the European Stability Mechanism (ESM) (formerly the European Financial Stability Facility – EFSF) was established as a permanent crisis management institution, with a total lending capacity of EUR 700 billion. The establishment of the micro- and macroprudential supervision, i.e. the European System of Financial Supervision, was a major step forward, as a result of which several new organisations, such as the European Banking Authority or the European Systemic Risk Board were also established. The most significant step taken toward a real monetary union was the creation of a central fund for countries using euro, in the summer of 2019. It is clear already now that the size of this will be minimal during the next seven-year budget. Major steps were also taken in the area of the banking union, and thus to date the following elements have been created: the Single Rulebook, which aims to provide a single set of harmonised prudential rules; the Single Resolution Mechanism, the purpose of which is to ensure the orderly resolution of failing banks with minimum impact on the real economy and the public finances of the member states; and the Single Supervisory Mechanism, which defines which banks are deemed significant for the entirety of the financial system of the monetary union and centralise

the supervision of those. The last element of the banking union would be the European deposit insurance scheme, which – however– has not yet come into being due the resistance of several countries. The leaders of the European Union regarded the capital markets union as one of the key elements of the further strengthening of the EU's competitiveness and resilience, though only modest progress has been made in the last few years. On the whole, it can be stated that the objective to preserve national fiscal independence and reduce the single fiscal capacity to a minimum degree can be perceived in the operation of each of the new institutions. The main obstacle to developing the optimal institutional framework is the fear of the individual countries that it would result in additional unilateral income reallocation to their detriment and in favour of the less disciplined countries.

2.2.1 Macroeconomic imbalance procedure

The economic crisis of 2008 made it clear that the macroeconomic imbalances developing in a country (e.g. major current account deficit, property market bubble) may have unfavourable effect on the economic stability of other countries. Due to this, in 2011, the European Commission decided to introduce a **macroeconomic imbalance procedure (MIP)**[29], which may be suitable to identify, prevent and manage macroeconomic imbalances affecting the member states. MIP functions as an early warning system, which assesses the member states' macroeconomic stability risks based on 14 indicators (Chart 2-12) and 25 supplementary indicators. The results are captured in a scoreboard, which includes internal imbalance indicators (indebtedness of the public and private sector, changes in the real estate market, unemployment, etc.), external imbalance indicators (current account balance, net international investment position, etc.) and employment indica-

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[29] Regulation (EU) No 1176/2011 of the European Parliament and of the Council.

tors. When the threshold belonging to the individual indicators in the scoreboard are exceeded, more in-depth analysis of the respective country may be justified. At the same time, it is important that the Commission should always examine the changes in a context, also considering other economic and financial indicators. If MIP identifies at any country excessive imbalance, the European Council may oblige the respective country – within the framework of the **excessive imbalance procedure** – to elaborate and implement an action plan. If the country struggling with imbalances fails to comply with this or complies only partially, sanctions (including fines) may be imposed on it.[30]

Chart 2-12: Macroeconomic imbalance procedure – indicators

External imbalances and competitiveness	Internal imbalances	Labour market indicators
Current account balance	House price index	Activity rate
Net international investment position	Private sector credit flow, consolidated	Long-term unemployment rate
Real effective exchange rate	Privat sector debt, consolidated	Youth unemployment rate
Export market shares	General government gross debt	
Nominal unit labour cost index	Unemployment rate	
	Total financial sector liabilities, non-consolidated	

Source: Csortos - Szalai (2013), Eurostat (2019).

This procedure supplements the Maastricht convergence criteria with a view to preventing and managing the imbalances originating from the **non-financial and financial private sector**. In addition, it predicts current account deficit, as well as both potential trends (of competitiveness origin or stemming from excessive growth in internal demand, threatening with unsustainability) that may potentially give rise to the deterioration thereof, and **supplements** the coordination procedures aimed at **fiscal** stability. The

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[30] European Commission (2019).

subsequent application of the new indicators to the latest crisis showed that they would have been suitable to give timely, proper signals to a limited degree. Certain combinations of the indicators would perform better in this area and forecast capacities also vary by groups of countries. It is a further problem that the indicators are overly empirical, i.e. they do not fit into an articulated macroeconomic analytical framework. The consequence of this is that there is no guarantee for a timely, reliable warning, if a new crisis follows a pattern differing from the previous ones. Thus it is not possible to apply the indicators mechanically, and it must be always preceded by more in-depth analysis.[31]

2.2.2 Micro and macro prudence, and stability reforms

In 2010, under the pressure of the crisis, the **European Financial Stability Facility (EFSF)** was established with a view to addressing the crisis of the euro area. Two years later, based on the EFSF, the **European Stability Mechanism (ESM)** was established as a permanent crisis management institution, with a total lending capacity of EUR 700 billion. The funds from this stabilisation fund helped recapitalise, for example, the banking sector of Spain, and later, during the crisis in Cyprus, also several billions of euro was disbursed.

The **European System of Financial Supervision (ESFS)** – a multi-layered supervisory framework of micro- and macro-prudential authorities, cooperating with the authorities of the member states – was established with a view to managing systemic risks.

The European Semester – the single framework for the planning of European economic policies – supports the better harmonisation of the economic policies, but in fact, the truly significant debate is

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[31] Csortos-Szalai (2013) and (2014) Domonkos et al. (2018) and Erhart (2009).

still about the strengthening of the fiscal leg of the Economic and Monetary Union. Although there were a number of initiatives with regard to this topic, **to date only active discourses took place instead of specific steps**. It is worth mentioning the **Five Presidents' Report** of 2015[32] (European Commission, European Council, European Parliament, Eurogroup and ECB), and the June 2018 agreement between Angela Merkel and Emmanuel Macron, known as the **Meseberg Declaration**[33], in which they planned to create a single, euro area-level budget from the start of the next seven-year budget cycle, i.e. from 2021. (The American Empire vs the European Dream, a book by György Matolcsy published recently, provides a detailed description of the problems with the creation of fiscal union).

Finally, the European Commission published the **Budgetary Instrument for Convergence and Competitiveness** (BICC) in summer 2019[34]. The purpose of the draft is to create a **central fiscal fund for the countries using euro**, which would enhance the member states' resilience and competitiveness, and – by supporting structural reforms – foster the convergence of the economies. However, during the debates of the past months at the level of Eurogroup, the emphasis was primarily on the support of structural reforms, and there was no consensus on the creation of a genuine cyclical stabilisation instrument, which was proposed by France, but it would be also supported by the former and current President of ECB, i.e. Mario Draghi and Christine Lagarde, respectively.

For the time being, **no agreement has been reached on the exact size of the single budget** of the euro area, but it appears to be likely that – despite Emmanuel Macron's ambitious plans (which were about several per cent of the euro area's GDP) – it **may only be a negligible, for the size of the euro area**, **amount, i.e. merely EUR 15-20 billion** in 7 years.

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[32] European Commission (2015a).

[33] Meseberg Declaration (2018).

[34] European Commission (2019a).

The **single budget could be financed from the EU's multiannual financial framework** (MFF), with the option for the individual member states to supplement it. The exact amount will form part of the negotiations related to the full EU budget. There is also a debate whether the BICC should have **independent revenues**; however, according to the current status this appears to be unlikely. The creation of the euro area budget within the EU's multiannual financial framework may increase the risk for the EU member states outside the euro area that they would lose some of the funding.

During the negotiations, under the pressure of the net contributors, primarily the North European countries, Mário Centeno – the President of Eurogroup – declared[35] that the **euro area member states will get back at least 70 per cent of their contributions** from the BICC.

2.2.3 Banking Union

As a result of the European integration, more and more banking groups – strong in their home country – extended their field of operations to other member states, in the wake of which giant banks, present in several EU countries, came into being. Due to this, **the idea creating the banking union has already come up when framing the Maastricht Treaty**, but the partial or full surrender of the national supervisory bodies ran into political difficulties, as member states were primarily worried about their national sovereignty. As a result of the crisis, member states recognised the fact that in addition to the already achieved financial market integration, **it would be expedient to standardise banks' operational framework as well.** The key justification for creating the banking union is the weakening of bank-sovereign adverse feedback mechanism. Furthermore, in the absence of a uniform operating framework, it could happen that when the
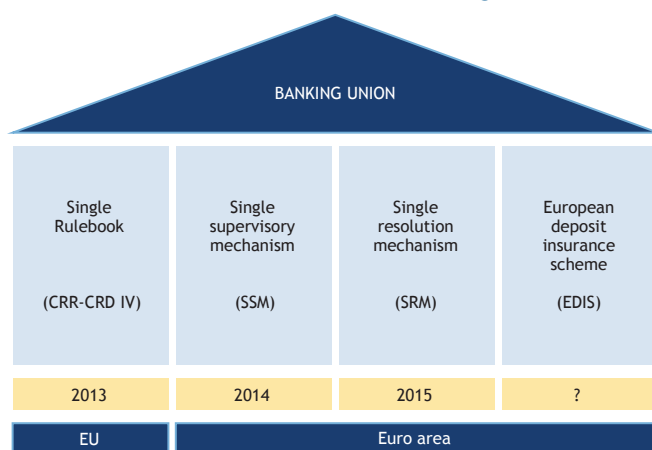
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[35] Sam Fleming, Mehreen Khan (2019)

activity of a bank – registered in the home country – pursued in the host country would call for intervention, the home country would fail to take measures or would do so only with delay as its own national economy would not be directly impacted.

One condition of the Banking Union is that the member states participating in it should uniformly apply the EU regulations applicable to banking. **The regulations related to capital requirements were adopted as the first pillar of the Banking Union** (Capital Requirements Regulation (CRR); Capital Requirements Directive (CRD)), which cover all institutions settled in the European Union, irrespective of whether their registered office is within or outside the euro area. The **Single Supervisory Mechanism (SSM), which appeared as the second pillar**, transfers the supervision of the key banking actors settled in the participating member state to the competence of the European Central Bank (ECB). The SSM's scope of authority at present only covers the euro area member states, but any member state may decide to join. Membership in SSM is accompanied by joining the **Single Resolution Mechanism (SRM)**, which facilitates access to the funds of the European Resolution Fund. The fourth pillar, related to the **European Deposit Insurance Scheme** (EDIS), is under approval at present.

Chart 2-13: Pillars of the Banking Union

BANKING UNION

Single Rulebook	Single supervisory mechanism	Single resolution mechanism	European deposit insurance scheme
(CRR-CRD IV)	(SSM)	(SRM)	(EDIS)
2013	2014	2015	?
EU	Euro area		

Source: European Commission (2019b).

Single Rulebook

The Single Rulebook **codifies the harmonised prudential regulations, which the institutions must comply with across the EU.** The need for creating it was justified by the fact that the EU regulation, formerly based primarily on directives, left room for the different implementation of the laws at national level. However, this led to different interpretation of the laws and thereby to legal uncertainty, which have put the institutions pursuing cross-border activity into unequal situation. The purpose of the Single Rulebook is to eliminate these differences and to contribute to the development of **a more resilient, transparent and efficient banking system.**[36] The most important role of the Single Rulebook is that it stipulates the capital requirements applicable to banks (CRR, CRD IV), provides higher protection to deposit holders and regulates the measures aimed at the prevention and management of the bankruptcy of banks.[37]

Single Supervisory Mechanism (SSM)

In the area of supervision, it is primarily the competences and responsibilities that need to be clarified, which is hindered by relatively few obstacles. The relevant EU institutions in cooperation with each other[38], define **the banks that are of material size from the perspective of the monetary union's financial**

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[36] EBA (2019).

[37] Council of the European Union (2019).

[38] Following the Great Financial Crisis on the basis of the guidelines of the Financial Stability Board (FSB) operating besides of the BIS, the Basel Committee on Banking Supervision worked out the methodology for the determination of the group of Globally Systematically Important Banks (G-SIB) of which several are Europeans. In the European Union, based on this methodology, the group of systematically important bank at the level of EU (EU-SIB) and the eurozone (EZ-SIB) have been decided by the national supervisory authorities with agreement with the European Banking Authority (EBA) and the ECB. Other non-bank financial institutions can also qualify as systematically important (O-SIB) and the respective authorities could prescribe stricter prudential requirements for them. See Adam et al. (2019).

system as a whole and carrying systemic risk. The supervision of these was centralised in the ECB's SSM function, while the control of the other banks remains in national competence. The supervisory colleges were established, with dedicated competences. According to the accepted principle, branches and subsidiaries are supervised by the financial supervisory authority of the home country and host country, respectively, while the other affected states have right to express opinion. However, for the banks pursuing cross-border activity it gives rise to anxiety that their subsidiaries must also comply with the national rules of the host country. (Due to this some of the banks transformed their foreign subsidiaries into branches; e.g. Deutsche Bank in 2016 performed such transformation in its Dutch subsidiaries.[39])

Single Resolution Mechanism (SRM)

The centre of the **new shared function is the Single Resolution Fund (SRF) and the decision-making body connected to it, i.e. the Single Resolution Board (SRB)**. The purpose of SRB is **to ensure the resolution of failing banks in an orderly manner,** with minimum adverse impact on the real economy and the public finances of the member states[40]. The single resolution fund is built gradually, in eight years (between 2016 and 2023) and the funds are contributed to by the banks in instalments. The **targeted amount is EUR 60 billion** (it is expected to be 1 per cent of the covered deposits in 2023). Of this, almost EUR 33 billion[41] has been paid in by summer 2019. The reason for creating the resolution fund is that formerly no single resolution framework existed in the member states, and the bailout of banks by the government generates major costs even for the national budgets, and in certain cases its impact on the sovereign risk may also represent systemic financial risks. Many detai-

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[39] European Banking Supervision (2016).

[40] Single Resolution Board (2019a).

[41] Single Resolution Board (2019b).

led rules apply to the drawdown of resources from the fund, such as, for example, if the bank's owners and subordinated bond-holders have already lost their receivables at least up to 8 per cent – or 20 per cent, as the case may be – of the bank's liabilities. The contributed amount will be divided into national facilities until 2023, i.e. the end of the build-up period, and first these may be drawn down. If a country's own facility proves to be insufficient, then drawing can be made from the facility of another country. During the years, until the completion of the build-up in 2023, the utilisation ratio of the countries' own facility will gradually decline (initially it will be 100 per cent, in the second year 60 per cent, and so on), and from 2024 only the shared fund will be used.[42] Then the division into the national facilities will be terminated. **For the period lasting until the completion of the build-up of the fund, the states conclude a loan agreement with the Resolution Fund,** which ensures the constant availability of the national facility. Should there be a need for an extremely large disbursement, it would require the availability of a backstop. Most of the recommendations propose the ESM (or if it is transformed, the future European Monetary Fund (EMF)) to serve as such backstop, but no decision has been made on this yet.

European Deposit Insurance Scheme (EDIS)

At present, the deposit insurance schemes operate within the competence of the member states, whereas the related minimum rules are regulated at EU level. One of these rules is the level of deposit protection, the minimum amount of which at present is EUR 100,000. The introduction of the EU deposit insurance scheme can be achieved gradually, since the build-up of the insurance fund would also take several years. **The size of the fund would be 0.8 per cent of the total covered deposits, which – based on the 2011 data – would be roughly EUR 43 bil-**

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[42] Single Resolution Board (2019c).

lion. According to the analyses, a fund of this size would already cover the payments incurred during the 2008 crisis or even in a larger crisis than that.[43]

Of the areas affecting the banking union, **the most heated debates are about the deposit insurance.** According to the original concept, the deposit insurance union would be a precondition for the banking union, because certain core countries feared that through that they would once again make a commitment to yet another potential permanent transfer. If a bank, pursuing particularly poor lending activity, loses its capital, and – in accordance with the new banking union principles aimed at the involvement of the private sector – it also used its **other funds that may be involved in the bankruptcy procedure** (bank bonds, subordinated loans and capital, etc.), and there is still unsatisfied liability, it potentially means that it needs to resort to the deposits to satisfy the claims. Since in practice the states often do not undertake this – particularly not in the case of small deposit holders – , usually drawing should be made on the deposit insurance fund, established previously on a mandatory basis. However, if that is not sufficient either, it may be necessary to resort to central budgetary funds. Due to this, the German negotiator prescribed as the precondition for any further agreement that (particularly the Italian) banks must cleanse their portfolio from the old non-performing loans before any deposit union can be contemplated.

The proposal of Minister of Finance, Olaf Scholz, made in November 2019 represents a shift in the German position, according to which – albeit still subject to strict conditions – **Germany once again may be ready** to participate **in the single European deposit insurance scheme.** The conditions named by Scholz include the tightening of the capital requirements of sovereign exposures, limiting and discouraging banks from the purchase of domestic government securities, the elaboration of action plans for the

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[43] ECB (2019).

reduction of non-performing loans in the banks' balance sheets, and the harmonisation of the insolvency regulations at EU level.[44]

2.2.4 Capital Markets Union (CMU)

The leaders of the European Union regarded the capital markets union as one of the key elements of the further strengthening of the EU's competitiveness and resilience. In 2015, the European Commission adopted an action plan on the topic, containing thirty specific points of action.[45]

One of the objectives of the capital market union is to foster the free flow of capital within Europe. The strategy aimed at the fostering of the capital market integration differs from that applied to the banking union. In this area, they wish to achieve the integration much more gradually, as a result of many small steps, building it up from below, without creating additional centralised institutions.

The Commission would like to divert corporations from banks to the capital market for the purpose of fund raising. According to the Commission's expectations, with this they **expand the range of potential investments,** both for the retail and institutional investors. Furthermore**, the creation of the integrated money and capital markets would also lead to risk sharing through the expansion of the sources of finance.** These opinions are corroborated by the fact that 88 per cent of the new loans to enterprises in 2018 came from banks[46], and this ratio is higher than it was in the first years of the decade. The European Commission formulated additional requirements in its action plan, as a result of which "it wishes to mobilise capital within Europe, connect funding sources more effectively to investment

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[44] Olaf Scholz (2019).

[45] European Commission (2015b).

[46] AFME (2019).

projects across the EU, make the financial system more stable and finally deepen financial integration and increase competition".[47] One of the key macroeconomic arguments is the expected role of the capital markets, such as providing "private insurance" against the income shocks affecting certain countries, through geographically diversified investments or against the assumed financial shocks with firmer resilience than that of banks.

2.2.5 Evaluation comments related to the institutional developments

The decisions already taken with a view to making the economic governance of the Economic and Monetary Union more efficient, and the future plans known to date **contain such elements** that help **recognise the risks of crises** similar to those already experienced, and **take preventive measures**, or – if those prove to be insufficient – facilitate the **management** of the imbalances and financial instabilities with **less delay and social loss** compared to the crisis management in the past. At the same time, the fundamental dilemma – stressing the monetary union since its establishment – can be still tracked in the institutional frameworks being developed. **The root of this tension is that the single currency is used as its own by a region that has not clear-cut fiscal authority, but is rather built on the coordination of national fiscal policies.** However, the crisis showed that this ambition is based on the inaccurate interpretation of the modern fiat financial system, since the stability of the modern financial system ultimately depends on the government's taxation capacity.[48]

In the creation of the monetary union and also in the latest reforms, the currency approach – **built on the analogy of commodity (gold) money** – was enforced, according to which monetary

[47] European Commission (2015b); p. 4.
[48] Kregel (1999)., MNB (2011); p. 18.

stability is ensured by a **policy aimed at price stability**, and most of all by a trustworthy **central bank** that places price stability before everything else. Thus it is assumed that if the independent central bank successfully achieves price stability, it will be equally successful in ensuring the stability of the financial system, in the same way as in the gold standard system by ensuring the gold parity of the currency and preventing the outflow of cash in excess of the reserve holdings. Supplemented with appropriate prudential regulation and passive, "disciplined" fiscal policy, it is possible to ensure monetary and macroeconomic stability. The post-crisis measures and the institutional changes reflect this mentality. However, in light of the crisis, the constraints of this approach became visible. Namely, the **latest crisis occurred under price stability,** when seemingly the **prudential rules** were also appropriate (although today their severe shortcomings, such as the absence of macroprudential approach, are already known), and the **fiscal sustainability** (with some minor exceptions) **was also satisfied.** Essentially, the financial or banking crisis highlighted the fact that the policy aimed at price stability is not sufficient for the macroeconomic stability. Namely, in a liberalised financial regime instabilities may develop even under price stability. The prevention of these – if the prudential regulations are unsuitable for keeping the systemic risks of the financial crises at a tolerable level or if the crisis occurs at the tolerable risk level – calls for a much more active fiscal policy both at area and national level. It was exactly this that the neo-Figurealist theory of money, ignored since the creation of the monetary union, warned about: the ultimate stability of the modern financial system is represented by the state and its taxation capacity. In addition to the central bank commercial banks are able to generate money endogenously, and the central bank, as governmental institution, supports this activity.

The European policymakers recognised this at least partially, and now they **institutionalise** the crisis management mechanisms created during the crisis **ad hoc** (which earlier fell into the

background) as steady instruments. However, the method of this institutionalisation is **still influenced by the previous mentality, which reduces their efficiency and may also serve as a source of future tensions.** The objective to preserve national fiscal independence and reduce the single fiscal capacity to the smallest possible degree can be perceived in the operation of each of the new institutions. The primary obstacle to the development of the optimal institutional framework is the unjustified fear of certain countries of what they refer to as the "transfer union" , which is linked primarily to Germany, but the countries of the New Hanseatic League also mostly share this view[49]. They are afraid that if they permit, for example, higher budget deficit or government debt, or they develop a single deposit insurance scheme or agree to the joint issuance of bonds, they undertake financial obligation over which they have no full control. The potential payment obligations will depend on the conduct of the counterparty countries. The erroneous interpretation of the present crisis seemingly justifies these fears, since they attribute it – said or unsaid – primarily to the undisciplined wage developments, deteriorating competitiveness and excessive fiscal spending. This explains all those integrated brakes, guarantees and conditions that are present in all new institutions: deposit insurance, banking union, ESM, etc.

The fear is unjustified, because it is **based on the misinterpretation of** the budget's **cyclical stabilisation function**. **The cyclical fiscal stabilisation does not necessitate permanent financial transfer between countries.** What is needed instead is that when due to the inadequate demand of the private sector the economy is unable to reach the limit of its capacities, the government makes up for missing demand by budget deficit. Within the present institutional framework this stabilising function lies with the national economies, since the vast majority of the fiscal revenues and expenditures are concentrated there. The **small size of the area's**

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[49]   Alliance including northern member states: A group within the EU, comprising Ireland, the Netherlands, Sweden, Denmark, Finland and the three Baltic states.

budget **facilitates no material stabilisation function** for the time being, even together with augmented amount contributed by the states. In addition, it is a problem that most of the countries have no intention as yet to vest the euro area's single fiscal capacity with this function. Despite the repeated demand of French President Emmanuel Macron, Mario Draghi former and Christine Lagarde current Presidents of ECB, this decision still has not been made. Naturally, this does not preclude that in the absence of institutional changes **fiscal stimulus, even covering the entire euro area,** is achieved, if necessary, **through coordinated fiscal easing.** If the **new approach** of the fiscal policy **gained ground** among the majority of the European policymakers, then – executed either in a coordinated or in a centralised manner – pursuing optimal fiscal policy, the area could **set on a higher growth path** in a lasting and sustainable manner, getting closer to the competitors.

As we have seen it, the **ESM** may be suitable to fulfil the ultimate **market maker** (essentially lender of last resort) function credibly on the **government securities market** in one or several countries of a size not approximating the aggregate GDP of the area. It may similarly be suitable for the provision of additional funding, necessary for the management of **bank crises.** However, this instrument as well may only be applied subject to compliance with strict conditions. In addition, since it is still an intergovernmental mechanism and is not part of the European governmental institutional system, each member state still has right of veto. In a typical crisis situation these conditions may limit the efficiency of the mechanism, since the degree of efficiency of the mechanism has an **upper bound**, while the application is **time-consuming due to its conditional nature** and uncertain due to the potential **veto of the countries.** In addition, public accountability is also missing.[50] Nevertheless, comparing it with the latest crisis management, it is a great advantage that – despite all constraints – it exists at all, and thereby the costs of crisis management can be mitigated.

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[50] Vallée et al. (2019).

The latest proposal[51] of Germany, specified as a condition for the **banking union and the single** deposit insurance reflects a similar approach. When it is prescribed that over a certain ratio banks must not hold the government securities of their own state, they want to force banks institutionally to do something that they would never do on their own: to treat their home currency as if it was a foreign currency. Namely, it is a long-time risk management convention that the government securities of a state issued in the home currency is free of risks.[52] The Economic and Monetary Union has no intention to declare this, which, however, increasingly contradicts to the practice of modern finances also in the sense that **there is rising demand for risk-free securities,** as a fundamental bank and capital market risk management tool. The scarcity of this and the fragmented market thereof increases the competitive disadvantage of the European financial sector.

As we have seen it, institutional developments include the deepening of **capital market integration**. Of the integration of the capital markets, segmented due to several reasons[53], policymakers expect that as an alternative form of financing it can make Europe's financial sector, excessively relying on banks, and particularly the financing of dynamic and innovative firms more diversified. Upon the realisation of this, monetary policy transmission could also be expanded by a new channel. It is usually mentioned as an additional advantage that, particularly compared to the USA with its integrated capital market, it could provide a new mechanism for the adjustment to country-specific shocks, which, moreover, would be provided automatically by the private sector.
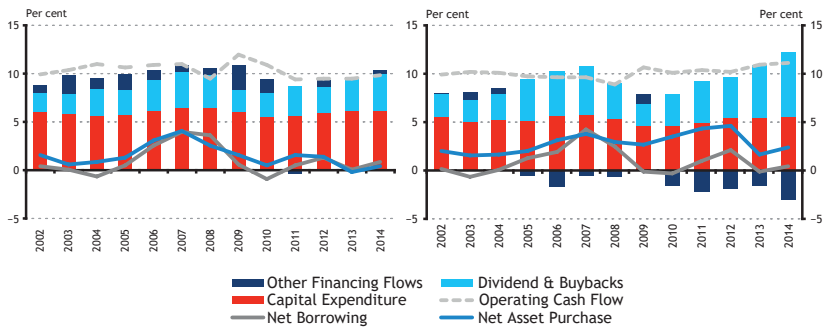
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[51] Scholz (2019).

[52] More precisely, it is free of credit risk, since a state is always solvent in its own currency. Nevertheless, it still has market (interest) risk and the real yield is not guaranteed either, with the exception of the inflation-indexed bonds, most of which guarantee this as well.

[53] Buch (2019).

Chart 2-14: Industrial corporations in Europe (left panel) and in the USA (right panel): expenditures and revenues as a percentage of net sales

Legend:
- Other Financing Flows
- Capital Expenditure
- Net Borrowing
- Dividend & Buybacks
- Operating Cash Flow
- Net Asset Purchase

Source: OECD (2015) and MNB (2015).

However, this issue carries the risk that policymakers are **guided by excessive optimism.** Although in the USA or in the United Kingdom the corporate equity and bond markets are indeed larger, the role of these in investment financing is not as great as it usually thought to be. The primary source of finance for large corporations is retained earnings and own funds. The OECD report presents that large corporations, which implement roughly 80 per cent of the investments in Europe and in the USA, hold their external funds in liquid investments (Chart 2-14).[54] Other studies point out that in Germany smaller savings banks provide much more reliable and cheaper funding for the financing of small enterprises than the capital markets.[55] **Mazzucato** et al.[56] point out how in recent years the capital market institutions have withdrawn from the financing of the truly risky and innovative researches and those were **undertaken by the states** in an increasing ratio, while they **focus only on less risky development phases,** being closer to the marketing phase (Chart 2-15). Furthermore, bank and capital market financing are not neces-

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[54] OECD (2015), p. 46. MNB (2015), pp. 24-25, Szalai (2016).

[55] A brief summary is provided by Hassan (2014).

[56] Mazzucato (2011), Mazzucato and Perez (2014), Mazzucato and Wray (2015).

sarily alternatives, but very often supplement each other: banks often provide capital markets with refinancing or background financing, and provide liquidity on the repo markets. The weight of the bank or capital market financing often reflects the different financial literacy backgrounds and regulatory environment, rather than being determined on the basis of a universal rationality. It appears to be more important that at its latest summit in December 2019, the EU decided on providing higher amount of funds for the financing of sustainable innovations, where it has a lag compared to China and the USA.

Chart 2-15: Source of funding for basic research in the USA, in 2008
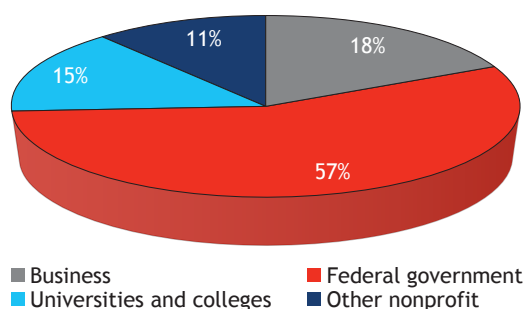
Source: Mazzucato (2011), p. 40.

Capital market integration represents a special problem from a macro financial approach. In the USA and in the United Kingdom during the crisis, but even earlier, especially in the USA, without officially declaring it, **the stabilisation of the markets has become the duty of Fed,** similarly to the lender of last resort function in the banking sector. Due to the smaller size of the capital markets, this dilemma has not come up for the time being with similar weight in Europe. However, if the efforts of the policymakers succeed and the weight of the capital markets increases, then – similarly to the banking union – the capital market union will also raise complicated questions, which for the time being is difficult to cope with even in the area of the banking union. During the crisis, **similarly to the banking activities,**

capital market activities also became disintegrated and compared to the former integration a step back was made. Namely, the formerly single currency area unexpectedly confronted investors with the realistic risk of disintegration (redenomination), which exacerbated the crisis and for the prevention of which the existing institutional system was not prepared. Instead of providing private market insurance and mitigating the individual risk of individual investors by providing geographically diversified investment opportunity in the form of portfolio insurance, the capital market integration intensified the instabilities.

These issues have not yet emerged in the debates related to the capital market integration, which are often dominated by abstract arguments, not justifiable on an empirical basis. How should we evaluate an argument according to which the capital markets, contrary to the banks, are much more resistant to financial instabilities?[57] It is seemingly convincing if we consider that the banks of certain European countries hold too large volume of substandard receivables, which curb their lending activity. However, in a more thorough comparison we should not ignore the fact that in the **USA** – the epicentre of the present **crisis** – the **financial system was rather securitised**, and the crisis spread from there to the rest of the world. In addition, it should not be ignored either that it was not the capital markets that managed the crisis on their own, but rather t**he Fed extended to them as well the lender of last resort function, initially reserved for the "more vulnerable" banking sector.** In addition, the Fed massively intervened in the market of substandard securities, taking them over from the issuers and ultimate investors (TARP – troubled asset relief programme). Finally, the **US fiscal policy – with its budget deficit substantially exceeding the European one** – contributed to

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[57]   It is a frequent argument for the higher weight of capital market funding that the present crisis was deeper in Europe than in the USA, because financing too much relies on the banking sector. The larger role of the capital markets would have mitigated the impact of the crisis, since "two engines" could have worked instead of one. The arguments for and against the higher weight of the capital markets are summarised by Allen and Pástor (2019), p. 8.

the stabilisation of the financial markets efficiently, albeit indirectly, while in Europe, partly due to the economic slowdown occurring during the inadequate crisis management, masses of formerly performing bank loans became substandard. **Accordingly, it is difficult to expect of the capital market union to substitute the proper institutions of macroeconomic stabilisation in full.**

The development of the area-level mechanisms of macroeconomic stabilisation is still to come. The fear of the bond markets, bond market contagion of the periphery countries and the permanent transfer obligations, characterising the first years of the crisis management, proved to be irrational. Although the individual countries of the area surrendered their monetary sovereignty, together they have substantial sovereignty at global level. We saw an unintended proof of this after the announcement made by Mario Draghi in 2012.

Chart 2-16: Government bond yield spreads over the German bond yields (percentage points)
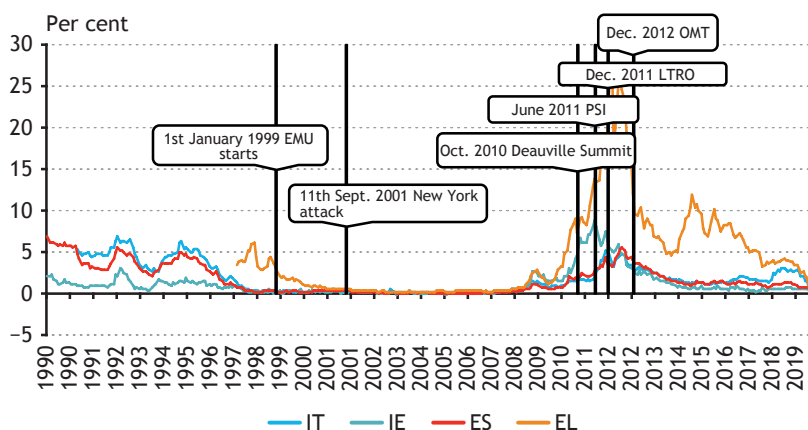
Source: Bloomberg.

It will be recalled that the **government securities risk spreads,** which almost fully disappeared before the Greek sovereign crisis, **suddenly soared** in the periphery countries and in the second half of 2010 they reached the level recorded before the

creation of the monetary union, and then continued to rise. Only the announcement of Mario Draghi in 2012 turned the process threatening with the collapse of the euro area, when simultaneously with announcing the **Outright Monetary Transactions ("OMT")** he also committed to using all instruments available to the ECB to keep the monetary union together.[58] The announcement of Draghi practically reversed the panic caused by the joint declaration of prime ministers in Deauville in October 2010, according to which each country had to cope with the crisis on its own and due to the private sector involvement (PSI) in the costs of crisis management private investors will also incur losses.[59]

The **market panic** that followed the fast reversal aimed at the fiscal adjustment was a **paradox** result, since the **intention** of the policymakers was **to regain market confidence.** Both the markets and the governments – fearing each other's behaviour – tried to decode from each other's conduct whether solidarity between the countries was still strong enough to ensure that all government securities can be deemed risk-free and no "redenomination" (fall-out from the monetary union, and repeated introduction of own currency) will take place either.[60]

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[58] "But there is another message I want to tell you. Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough." Draghi (2012).

[59] See, for example, Heise (2013), Malika and Castelletti-Font (2017).

[60] This situation reminds us of the graphic example of Paul A. Samuelson, the creator of modern macroeconomics. When the economic policy tries to gather the correct policy from the markets' behaviour, it is like when the monkey reacts to its own reflection in the mirror, unaware that it is seeing its own reflection. In the same way, governments got scared by the markets' behaviour and accordingly, they tried to save their own country from the contagion erroneously. Finally, the core countries gained a lot from the panic of the markets by the fact that large volumes of savings flowed to them from the periphery countries even on low or even negative interest. The fears that capital would flow out from the euro area also proved to be unsubstantiated. Samuelson (1994), p. 231.

Since 2012 additional proofs emerged that the **countries of the euro area are not vulnerable to the "markets",** what's more at present an increasing part of the government securities pay negative interest. It is clear **that nothing hinders the policymakers in pursuing an economic policy that serves the welfare of European citizens, full employment and capacity utilisation in a sustainable manner,** while keeping the monetary union together and solidarity **do not necessitate transfers that would exceed the current ones.**

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3
Country experiences

3.1
Balance of the benefits and costs of introducing the euro before and since the 2008-2009 crisis

József Kelemen – Gábor Dániel Soós – Gergő Török – Árpád Vadkerti

The global financial crisis and the euro area (debt) crisis, as well as the lessons learnt from the management of those, changed the balance of the benefits and costs of the euro adoption. As a result of surrendering the independent currency, the transaction costs resulting from the fact that the national currency must be converted into euro and vice versa, will cease to exist. However, owing to the more and more advanced banking systems, they considerable decreased, and presumably the Fintech revolution will reduce them further. The ceasing of the exchange rate volatility as a result of the pegging would have had major positive effect on Hungary due to the formerly high foreign currency exposure. At the same time, the shift toward self-financing materially decreased the exposure of Hungary, the continuation of which further reduces the positive economic effects stemming from the pegging.

The use of the single currency makes trading more efficient and more convenient, and thus the external trade of the respective national economy with the countries of the area increases. One or two decades ago this was a general opinion; however, this effect is no longer so evident. The experiences of the past period mostly consider the deepening of the integration to be the result of the easing trade barriers. Since Hungary already has substantial and strong external trade relations with countries using euro, joining the euro area would have smaller additional effects, also made questionable by several factors of uncertainty (protectionism, technological progress).

The founder euro area members experienced major convergence of yields, while in the countries that joined later, spreads declined materially during the three years of the convergence preceding accession. The

global financial crisis and the sovereign debt crisis, which developed in 2010, led to a major increase in the yields of the periphery countries, deemed riskier. Thus, contrary to the expectations, the euro area was less suitable for enhancing the crisis resistance of the member states. In parallel with this, certain country-specific factors came into the limelight, which are no longer compensated by the euro area membership alone.

The long-term inflation effect of the adoption of euro may arise from the combination of convergence and the absence of independent monetary policy. For the less developed countries economic convergence results in higher inflation than that recorded in the developed countries. According to the previous theories, in a friction-free economy (i.e. the prices and real wages are flexible), the adoption of the euro does not give rise to higher inflation and thereby to lower than necessary real interest rates, through the real economy adjustments, in the longer run. At the same time, the experiences of the southern states showed that overly low real interest rates may persist in the long run, leading to severe imbalances. This appreciated the importance of the real economy convergence preceding the adoption of the euro, since the adequate maturity level reduces the probability of the development of imbalances.

During the crisis and the subsequent recovery, the role of the independent monetary policy appreciated. Due to this, one of the most important questions when contemplating the introduction of euro is the surrender of independent monetary policy. On the one hand, the fact that the single monetary policy strengthens the cycles when there are asymmetric business cycles, is a consideration often arising in connection with the monetary policy of the monetary union. On the other hand, excessively low real interest rates may cause the economy to overheat. Moreover, the latter may also give rise to real economy imbalances and blowing of economic bubbles. Following the financial crisis, the sets of the central banks' monetary instruments have undergone a transformation, and due to the appreciation of the importance of unconventional instruments, the assessment of the efficiency of ECB's unconventional instruments on the Hungarian economy – as a new aspect – also became necessary. When assessing the latter, the development level of the Hungarian financial

*markets is a key issue, which materially influences the efficiency of the
monetary policy transmission of the unconventional instruments.*

3.1.1 Real economy impacts of the euro

**There is no clear consensus in the literature of economic theo-
ry in respect of the advantages and disadvantages of the intro-
duction of euro.** Prior to the global financial crisis, the issue was
examined in an analytical framework relying on the real model of
optimum currency areas, deemed traditional. Following the outb-
reak of the crisis and in the Economic and Monetary Union (EMU)
the focus of public policy and economic disputes was on the cri-
tical stage of crisis management. This turned the attention on the
importance of financial cycles, and also on the shortcomings of the
monetary union's institutional system. An increasingly larger part
of the theoretical literature deals with the efficiency and potential
development directions of Economic and Monetary Union 's insti-
tutional system, also factoring in the lessons learnt from the crisis.
The empirical literature strives to identify the effects and to re-es-
timate the previous results, relying on econometric and structural
macro models. Naturally, all this also influenced the analysis of
the benefits and costs of the euro introduction, which today shows
a changed, but more balanced picture.

Fading of the real theory of accession
Prior to the outbreak of the global financial crisis, the mainst-
ream economic approaches identified the following key benefits
of accession to the monetary union:

- external trade generation impact;

- benefits arising from the yield convergence, i.e. the dec-
  rease in transaction costs and nominal interest rates, as
  well as the elimination of the exchange rate risk;

- and the decrease in sovereign and credit risks, and the
  lower funding costs resulting from that.

Meanwhile they regarded as the potential costs of the accession, and the risks resulting from those the following:

- asymmetric shocks;

- surrender of independent monetary policy;

- additional inflation mostly attributable to the Balassa-Samuelson effect;

- credit booms developing as a result of the low real interests;

- and the large-scale and volatile capital flows.

The basis of the conclusions, costs and benefits described above in most of the analyses is the Optimal Currency Area (OCA) theory described by Mundell (1961). According to the theory, the optimal currency area covers the geographical area of use of one or several currencies, *irreversibly* pegged to each other. The theory determines several optimality conditions, such as the mobility of the labour force and the factors of production, the total wage and price flexibility, the mobility of capital, economic openness, probability of asymmetric shocks, etc. Thus the conditions specified by the theory are *real conditions*, since **Mundell assumed that monetary policy has no impact on long-term real economy trends. All this means that if there are no rigidities (i.e. the prices and real wages are flexible), the free movement of labour force is ensured and sufficient fiscal centralisation is enforced, the surrender of the exchange rate is not accompanied by excessive costs, reducing the role thereof in the management of shocks.** Namely, according to the theory, the regions or countries participating in the pegged exchange rate regime are able to manage the asymmetric shocks affecting them even without adjustment through the exchange rate or in the absence of independent monetary policy.

Within the framework of Optimal Currency Area , the advantages of the single currency include the strengthening competit-

ion resulting from the abolished exchange rate volatility, increasing trade and capital flows among the countries. The main cost of joining the euro area may be the surrender of independent monetary policy, which may make its effect felt in the event of an asymmetric shock hitting the country: this is attributable to the fact that the common monetary authority reacts to it in proportion to the economic weight of the respective country within the area. At the same time, according to the real theory, the high degree of financial integration and the as small as possible nominal rigidities facilitate the management of such shocks. **Thus, the exchange rate and financial integration, appear as adjustment channels, and the functioning of these as a channel of contagion is not assumed, although – as it was also highlighted, among other things, by the global financial crisis – the exchange rate and financial markets may also move in a manner that cannot be justified by the economic fundamentals,** which is caused by the irrational conduct of market participants. This similarly applies to the financial integration as well: in addition to its advantages, it is not only the intermediary of external shocks, but it may also be a source of endogenous asset price bubbles.

The literature believed that there is sufficient fiscal room for manoeuvre for the member states to manage the asymmetric economic shocks within the euro area, even upon complying with the debt rules. If due to the inadequate functioning of the automatic fiscal stabilisers or to the excessively large cyclical deviation the fiscal room for manoeuvre proves to be insufficient, additional adjustment calls for a flexible labour market (wage flexibility, labour mobility), as the only alternative channel. By accessing the euro area, the monetary policy already rises to community level, and the exchange rate can no longer be devalued, and thus the only way to adjust is through internal devaluation. At the same time, it was a common opinion that euro area integration is able to ensure long-term economic development for the acceding country. According to the **endogeneity hypothesis** of the optimal currency areas (Frankel – Rose, 1998), as a result of introducing the

single currency the economic structures come closer to each other to such a degree that it creates the optimal currency area, and this also reduces the costs of accession. De Greuwe – Mongelli (2005) provide an overview of the issue based on which they come to the conclusion that the endogeneity hypothesis may exist based on the pre-crisis information.

A potential advantage of the euro area membership is the strengthening external trade integration and competition resulting from the termination of exchange rate volatility. The costs affecting external trade may decrease due to the termination of exchange rate volatility. However, in practice, the degree of external trade integration is influenced not only by the degree of exchange rate risk, but also – among other things – by the depth of the already existing relations and the position in the global value chains. As it is highlighted by the IMF (2015) paper, recent researches no longer link the positive impacts on external trade to the introduction of the single currency. **Certain analyses show that the external trade generating impacts may be related to the previous stage of European integration – to the EU membership – since the member states about to access facilitate trade between them by adjusting (terminating) the customs and non-customs commercial rules to the EU standards.**

In nominal terms, the advantages of joining the euro area, may primarily stem from the yield convergence. In parallel with the strengthening of the yield convergence, in addition to the decline in transaction costs additional advantages may also be asserted, following from the decline in real interests and the decrease in sovereign risk premiums due to the diminishing exposure to financial contagion. At the same time, not only the country risk premiums may converge to the euro area level, but in parallel with that the sovereign credit ratings may also improve. In addition, in parallel with the rising confidence resulting from the accession, credit spreads may also decline, which ultimately may lead to a decrease in corporations' funding costs.

According to the paper of the European Commission (2006), the introduction of euro may be accompanied by several changes of key importance from the perspective of the acceding country. From the perspective of the nominal convergence, we can observe – among other things – a decrease in the risk premium and loan supply constraints. **Accession to the euro area may lead to persistently lower real interest rates in the acceding countries due to the uniform euro area monetary policy and the excess inflation stemming from the real economy convergence. The decrease in real interest rates may cause faster outflow of credits, rising investment activity and (increasing) current account deficit through the strengthening of domestic absorption (Langedijk – Roeger, 2007), i.e. the economy may set on a faster convergence path. At the same time the decrease in real interest rates accompanying the yield convergence may also give rise to risks. The sudden decline in real interest rates – and to a level lower than observed in the neighbouring countries – most often leads to the overheating of the economy.** According to the results of Samarina et al., 2017, in addition to the real economy effects, it may also lead to the division of the total and the mortgage market credit cycle. This process results in the build-up of risks jeopardising the stability of the financial system, which typically appears through the deterioration of the banks' portfolio quality.

The IMF (2015) paper points out that the advantages stemming from the yield convergence and related to the improvement in investor sentiment and credit rating, decreased in the period after the global financial crisis. The fading of the advantages took place around 2010, which suggests that is was attributable to the changed investor sentiment related to the euro area membership resulting from the euro area debt crisis, rather than to the financial crisis. The importance of the change in investor sentiment is also confirmed by the results of Bhatt et al. (2017). When decomposing the bond market yields into global, EMU- and country-specific factors, they find that after the outbreak of the global financial crisis the reason for the yield divergence observed in

the European bond markets was the changed perceived risks related to the debt of the individual countries, despite the euro area membership.

One implicit advantage of surrendering the independent currency may stem from the contagion channel nature of the independent exchange rate; at the same time, this may also be the source of idiosyncratic shocks. This was also highlighted, among others, by the global financial crisis. Exchange rates and financial markets may also move in a manner that cannot be justified by the economic fundamentals, which is caused by the irrational behaviour of the market participants (Corsetti, 2008). This similarly applies to financial integration as well: in addition to its advantages, it is not only the intermediary of external shocks, but it may also be source of endogenous asset price bubbles, which somewhat reduces its advantages. This reduces the costs of surrendering the independent exchange rate and monetary policy. Examining the exchange rate data of developed countries, Farrant and Peersman (2006) come to the conclusion that it is the source rather than the absorber of shocks.

However, accession to the euro area may also entail disadvantages for the acceding country. Such disadvantages may include that in certain cases the **accession may be regarded as an asymmetric shock**. The competition, strengthening due to the termination of exchange rate volatility, may trigger efficiency adjustment coercion in the countries, adjusting without independent monetary policy, in the sectors affected by external trade. According to Frankel – Rose (1997), the deepening integration makes the structure of the economy more symmetric, since an increasing ratio of the external trade flows involve trade within the sector. Krugman – Venables (1995) are of different opinion; according to them, higher integration points to specialisation through the rising returns to scale, i.e. it strengthens the asymmetry. **If an economy joins the currency area earlier than it would be optimal, the inflationary pressure will be larger than in the euro**

area member states, since the real economy convergence also results in the convergence of the price level. In the emerging economies the real exchange rate appreciates, which manifests itself either in excess inflation or in the appreciation of the nominal exchange rate. In Hungary, Romania and Poland the main channel of real appreciation was the excess inflation attributable to the Balassa-Samuelson effect (Bauer, 2015). Brůha – Podpiera (2007) present that the countries joining the euro area may experience persistent excess inflation.

3.1.2 Transaction costs of external trade

According to the general approach, joining a single currency area is useful both for the respective country and for the area. It is useful for the national economy, because it is able to integrate in a larger, and thereby more stable, economic environment better, and the processes involving trade may become substantially simpler. Thus, in general, such accession has favourable impacts on the national economies. On the other hand, it is useful from the currency area's perspective, because thereby the total integration of the area deepens, it becomes larger and represents a kind of centre of attraction for additional countries. Thus, the expansion of the currency area is essentially good for both parties. On the other hand, when examining the trends in more detail in the current environment, we may come to the conclusion that the issue should be approached more prudently.

When accessing a currency area, special attention should be paid to examining the consequences the macroeconomic change may have on the respective national economy through the external trade as a result of the accession and the channels through which the benefits and costs are enforced. On the one hand, it is a question what kind of positive economic effects the decrease in the transaction and administration costs may have. On the other hand, it is also questionable whether as a result of the accession

any force appears that generates trade surplus. Thirdly, the direction of the changes in the structure of exports is also a question. Finally, consideration should be also given to the exchange rate fluctuation, playing a role in all of the above factors.

The answers to these questions today are no longer self-explanatory. On the one hand, in the short run the cancelled transaction costs may stimulate economic growth, if the resources freed in this way are used for productive activity (e.g. investment, wage increase, etc.). The deepening of external trade is also not evident, if the acceding country has already been strongly integrated with the respective currency area. When examining the structure of exports, in certain cases and circumstances, it may as well have adverse effect on the newly acceding country's export activity, if due to the ceasing own currency, as the case may be, certain sectors suffer price-based competitive disadvantage. In the following, we examine the aforementioned questions in more detail.

Decrease in transaction costs may continue in parallel with technological progress

As a result of surrendering the independent currency the transaction costs burdening corporations (and ultimately the households as well) – simply resulting from the fact that the national currency must be converted into euro and vice versa – will cease to exist. During the conversion, banks and other financial intermediaries charge fees. These costs usually appear in the form of the exchange rate spreads on the buy and sell rate, and as commission for those performing the conversion, which thus generate extra cost for the corporations. In addition, it also generates additional costs that due to trading in foreign currency it is necessary to hedge the risk. Let us think, for example, of the price setting due to the exchange rate volatility. It is difficult to quantify the aforementioned costs (particularly those resulting from administration); at macroeconomic level, it is possible along estimation

procedures. If as a result of the termination of the transaction costs, the company uses the resources thus freed for productive activity, GDP essentially may increase by this freed amount. Naturally, this may only be an upper estimate, since the banking sector loses part of the profit. At the same time, resources may be also freed in the banking sector, which thus may be used for other activities.

The European Commission[61] also examined the transaction costs and estimated the potential average savings in the EMU countries at 0.4 per cent of GDP. It should be noted that the estimation was performed in 1990, i.e. almost thirty years ago. **Since then these costs may have substantially declined owing to the more and more advanced and wide-spread banking systems.** Relying on the calculation based on the foreign currency turnover, Csajbók-Csermely (2001) estimated the conversion costs in Hungary at 0.1-0.2 per cent of GDP. In the absence of detailed foreign currency data, Borowski (2003) concluded that the financial costs of conversion in Poland amount to 0.14 per cent of GDP, based on the current account and FDI flow data. The Slovak central bank examined the dilemmas of the introduction of euro in 2006 and found that based on the foreign currency turnover and spreads, the effect of foreign exchange trading amounts to 0.3 per cent of GDP, while that of the total transaction costs is 0.36 per cent. Lacina et al. (2007) examined the degree of transaction costs on the Czech data, and estimated them at 0.28 per cent of GDP. According to De Grauwe (2012), in Europe the weight of transaction costs as a percentage of GDP is 0.25-0.5 per cent on average.

The Fintech revolution observed in recent years will presumably reduce the costs related to currency exchange and financial transactions further in the years ahead. As a result of the new services and the competition between the service providers, certain economic agents will have access to an increasing number of faster and cheaper cross-border payment solutions. As a result of this they may save major costs compared to the traditional

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[61] See European Commission (1990).

banking services, and thus the technological progress, in certain respects, circumvents and substitutes financial integration.

On the whole, according to the current estimates, the conversion and administration costs do not exceed 0.15 per cent of GDP. It is difficult to judge in what form and how much of these terminated costs may be transferred to productive activity. Thus, prudently we may state that the contribution of the termination of the transactions costs to economic growth may not exceed 0.15 per cent of GDP.

3.1.3 Deepening of external trade and change in the structure of exports

When an economy joins a currency area, it is intuitive to think that the exploitation of the benefits of the single currency will also result in closer partnership in external trade. In reality this should be imagined that the use of the single currency makes trading more efficient and more convenient, and thus the external trade activity of the respective national economy with the countries of the area increases. One or two decades ago this was a general and widely accepted opinion; however, in the current situation this effect is no longer so evident. In the past period, in parallel with the globalisation, external trade activity significantly rose, and Hungary's integration with the euro area has substantially increased (before, and then) after joining the EU. Further, strong deepening – merely as a result of introducing the single currency – is neither definite, nor evident. Let us examine the factors that influence these processes.

The general deceleration of world trade also curbs the integration processes

Further, major deepening of exports is also hindered by the fact that the deceleration of world trade became a general phenomenon in the past 10 years. The link between world trade and global economic performance has weakened since the crisis.

Between 1980 and 2007, the growth in global economic performance resulted in an almost twice as high increase in world trade, but since the crisis it entailed a more moderate rise. Apart from the middle and the end of the 1970s, in the half-century that preceded the last crisis, world trade always rose at a higher rate than the GDP of the countries. **At the same time, in the past decade world trade significantly decelerated, equally contributed to by cyclical and structural factors.** Although the temporary decline in demands, caused by the global economic crisis, had negative impact on external trade in the recovery phase, after the wear-off of the cyclical effects the dynamics of world trade may lag behind of its pre-crisis average also on a longer horizon.

In the short run, the cyclical effects reduce the import intensity of global economy. In parallel with the declining economic performance, resulting from the crisis, the role of investments fell into the background in the advanced economies. Investments have high import content, and thus this phenomenon entailed the deceleration of external trade. In China, the restructuring of the economy may result in the lasting deceleration of investments and economic growth. In addition, Chinese policymakers also made efforts to reduce the high import content of investments gradually.

In addition to these short-term impacts, the slowdown of world trade may be also attributable to structural factors, prevailing in the longer run as well, such as the determinant geopolitical events of the past decades (e.g. China's joining the WTO, the reintegration process of the Central and Eastern European countries following their political transition), and the protectionist trade policies, in addition to the broadening of global value chains reaching their limits.

Thus, in such a world market environment it is not at all obvious that the introduction of euro is able to generate material additional impact on the performance of the export sector through the external trade channels. On the one hand, from the

1990s the degree of Hungary's integration with the euro area materially increased, thus it has strong external trade relations at present a well. Barriers to trade were also reduced by joining the Schengen Area. On the other hand, as a general phenomenon, the deceleration of the world trade, discussed above, may also reduce further deepening.

Risks stemming from volatility and vulnerability

Hungary's joining the euro area may result in a more significant advantage than the termination of the exchange rate volatility. This was relevant in previous periods, when the forint showed greater volatility, particularly if these effects resulted from the soar of the risk premium, which thus – apart from the negative impacts caused by the increased volatility – had unfavourable impact on the Hungarian economy also through the costs of finance.

However, this phenomenon strongly declined in recent years. Hungary's debt-type indicators decreased materially and gradually; within those the substantial fall in external debt should be emphasised, which fundamentally reduced the vulnerability of the Hungarian economy. From domestic demand side, as a result of the conversion of foreign currency loans – which used to be a major risk factor – stability improved further. Thus, owing to the stable Hungarian economic environment and declining vulnerability, the macroeconomic situation results in a more predictable and stable situation also from the perspective of corporate strategies.

Accordingly, accession to the euro area may undoubtedly reduce risks further, but at the same time, the Hungarian economy is currently on a path as a result of which it is much less exposed to the potential external effects than prior to the 2010s.

Box 3-1: Empirical results for the euro's trade stimulation effect

Researches, using a large volume of data, dealt with the assessment of the euro's trade stimulation effect, relying on the gravity models[62]. For the analysis of the current issue, they use the extended version of the basic model. The essence of the basic model is based on Newton's law of gravity, known from physics, according to which any particle of matter in the universe attracts any other with a force varying directly as the product of the masses and inversely as the square of the distance between them. On the model of this, the simple equation of the external trade's gravity model is as follows:

$$F_{i,j} = G \cdot \frac{M_i^{\beta_1} M_j^{\beta_2}}{D_{i,j}^{\beta_3}},$$

where $F_{i,j}$ is the trade from country i[th] to country j[th], M is the income level of the respective country, i.e. practically its GDP, while D is the distance between the two countries, and G is the constant member. In the case of more specific issues, additional independent variables are added in addition to those already mentioned, such as, for example, the barriers to trade between the two countries, the population of the economies and various dummy variables. **For example, it is captured by such dummy variable whether or not the two countries use a single currency, and thereby it becomes identifiable whether the use of such single currency contributes significantly positively to the trade between the two countries.** The paper of Davis (2017), related specifically to the euro area, essentially examined whether or not accession to the euro area significantly increases the volume of exports and imports. The model's goodness of fit is pretty high: the variables explain almost 90 per cent from the fluctuation of the dependant variable. On the whole, the signs of

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[62] For more details on the gravity models see, e.g.: Yotov et al (2016).

the parameters correspond to the expected theoretical value. At the same time, **the euro area membership did not result in a significantly positive impact, in statistical terms, on the total external trade turnover**. Pantelidou (2014) and Nähle (2015) find no clearly positive impact either. The gravity model estimate of Gómez – Tamarit (2011), based on panel data (for roughly 26 countries, between 1967 and 2008) identified significant, but small positive impact. In summary, the various estimates typically find small positive relation, but in most of the cases those are not significant in statistical terms.

The changes in the structure of exports are influenced by the competitiveness of the countries

From the perspective of accession, it is not only the entire volume of exports or imports that matters, but also the structure. The export structure may be examined from two sides. Namely, on the basis of territory and on the basis of product structure. On the basis of territory, in order to assess our current export intensity compared to the respective groups of countries. On the other hand, the product structure deserves attention, because **an economy is impacted by accession to the currency area depending on to what degree the given country has an export (and import) product structure for which the price-competitiveness advantage is important.** In addition, a more concentrated export structure raises the risk that impulses affecting the individual sectors may have negative impact on the whole-economy performance. The level of the Hungarian economy's integration has continuously increased already before the accession to EU. In parallel with this, the volume of external trade also rose to the EU member states that use euro. Accordingly, in the past years/ decades trade increased, for which as a result of the accession to the EU and then to the Schengen Area the barrier to trade were significantly eased, thereby contributing to the development and maintenance of more efficient economic relations. Since **the ext-**

ernal trade relations are already significant and strong with the countries using euro, accession to the currency area would have smaller additional effect. This is simply because **the barriers to trade between the euro area and the Hungarian economy are already minimal as result of the European institutional system.**

3.1.4 Benefits of yield convergence

In the set of requirements applicable to the accession to the euro area, the reduction of the differences between the interest rates burdening the long-term government debt has an outstanding role. The convergence expected in long-term yields would provide the possibility for the persistence of the other convergence criteria, and in addition, for the acceding countries, deemed more risky, the decline in the financing costs of the government debt may represent an advantage.

Until the establishment of the currency area in 1999, major convergence of the yields was observed at the founder euro area members; by the time of the establishment, the yields became fully even with the yield of the 10-year German government bond. During that period, the fiscal policy normalised and government debts declined, which – through the decreasing risks – reduced the cost of government debt financing. Spreads fluctuated in a narrow band up until the deepening of the global economic crisis in autumn 2008. The crisis, and the management of that, which varied by countries, led to the major broadening of the yield differential band of the 10-year government bonds. In the years of the financial crisis, the yields of the low-risk countries materially declined compared to the pre-crisis level, following the decline in the lower, short-term yields. However, the yields of the countries of higher risk remained close to the pre-crisis levels.

The sovereign debt crisis, which developed in 2010, led to a major increase in the yields of the periphery countries, de-

emed riskier. Contrary to the expectations, the euro area was less suitable for enhancing the crisis resistance of the former member states and of those that joined during the years of the crisis. Moreover, the appearing structural problems deepened the consequences of the crisis further in many countries. Due to the fear of contagion within the currency area and to the increasing economic uncertainty, the formerly existing risk premium disappeared in the euro area member states. **The yield differentials declined upon the lapse of the sovereign debt crisis. The interest rate spread for the riskier issuers within the currency area once again declined, although – contrary to the pre-crisis period – it still remained material.**

Does euro area membership foster the convergence of yields?

The direct comparison of the government bond yields is not an appropriate approach to examine the impact of accession to the euro area on the yield spreads, since these are affected by a number of idiosyncratic factors (e.g. the cyclical deviations of economies) and also by the global investor sentiment. One option is to examine credit ratings, as those are affected by these factors to a lesser degree and thus, they capture the more general impacts on yield, valid for a longer term; the other option is to identify these idiosyncratic factors directly and eliminate them from the yields.

The paper of Wiegand (2017) examines the advantages stemming from the euro area membership based on the credit ratings.[63] Based on the paper, the advantage, stemming from the euro area membership and reducing the country risk, was considerable before the crisis, but it disappeared as a result of the crisis. The regulatory and institutional reforms launched after the global economic crisis helped partially restore the confidence in euro,

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[63] Wiegand, J. (2017): The Re-Emerging Privilege of Euro Area Membership, IMF Working Paper, WP/17/162.

and thus membership is once again accompanied by a moderate decrease in country risk.

It is also possible to approach the impact of accession to the euro area on bond spreads by examining the spreads of the new members: however, due to the few new members, only a small number of observations are available, and thus conclusions should be treated prudently. **In the three years preceding the accession to the euro area, spreads declined on average by roughly 100 basis points. However, after the accession, the level recorded at the time of the accession was maintained without any further decline.** Based on this, compliance with the strict criteria of joining the euro area have already improved the perception of the country's debt before. **Accordingly, for the government bond yields, the advantages of joining the euro area primarily appeared in the convergence period preceding the accession.**

3.1.5 Does accession generate excess inflation differential

The **introduction of the single currency** may have not only real economy impacts, but may also affect prices expressed in the new currency, i.e. **inflation**. The inflation caused by the introduction of euro may represent a risk for the success of adopting the single currency. **The higher or rising inflation after the introduction of euro under a monetary policy stance defined for the entire area results in overly low real interest environment and the appreciation of real exchange rates.** This is also supported by the experiences of the South European countries, i.e. Italy, Spain, Portugal, Greece and Slovenia.[64] Accordingly, it is a relevant question how

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[64]   See Sections 8.1 and 8.3. In addition to the South European countries, the Baltic states also faced similar problems despite the fact that at the time of the development of the pre-crisis credit bubble they have not yet adopted the euro. At the same time, the three Baltic states are exceptions in terms of the adoption of euro, since they pursued pegged exchange rate policy since their

the adoption of the single currency influences prices, and how the potential inflation effects generated by the adoption can be mitigated. The relevance of the question is also supported by the fact that in most of the countries that have adopted euro, the majority of the households were concerned about the inflationary consequence of adopting the single currency.

Sources of inflation differential

The introduction of euro may influence inflation in two ways. The impacts appearing directly at the time of the introduction, during the changeover from the old currency to the euro may be regarded as short-term, temporary inflationary effect. These may occur due to several reasons:

- The **rounding** of the prices expressed in the previous currency **after the conversion** into euro, during which companies round the new price, expressed in euro to a more favourable price, from marketing perspective, and mostly upwards (Eife, 2006).[65]

- Changeover to euro also generates costs for the companies – **menu cost** – which they charge to the consumers (Folkertsma, 2001).

- Prices may also rise as a result of the **"rational inattention" of consumers in connection with the conversion**. In this case, after adopting the euro, customers convert the new prices to the prices in the old currency applying the rule of thumb, and companies may exploit this for their own benefit (Ehrmann, 2006).

- The day of the changeover facilitates **synchronised repricing**. During the conversion, all companies can – without

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independence, which after joining the EU represented for them an economic environment similar to the adoption of the euro (see Section 8.2).

[65] According to the marketing psychology, prices ending on 9, such as EUR 1.99, appear to be more attractive for the customers.

additional costs – change their prices, which in this way result in a larger price change at aggregate level than when only part of the companies changed the prices (Folkertsma, 2001). Synchronised repricing also provides the opportunity to **divert the economic agents toward the higher equilibrium price** if there are several of those (Adriani et al., 2003).

In the short run, the inflation effects resulting from the immediate repricing may also influence the long-term price developments. If the population regards the temporarily larger prices rise resulting from the introduction of the euro as a permanent trend, it **may also appear in the inflation expectations**. If the single monetary policy fails to address the higher inflation expectations resulting from this, it may lead to permanently higher inflation.

The other, long-term inflation effect of the adoption of euro may arise from the combination of convergence and the absence of independent monetary policy. Based on the data observed in the past few decades, the price level is higher in the more developed countries and economic convergence for the less developed ones results in higher inflation than in the developed countries (Penn effect). One source of the higher inflation in the emerging country is Balassa-Samuelson effect, formulated by Balassa (1964) and Samuelson (1964). According to this, economic growth and convergence mostly originate from productivity growth, which primarily affects the industrial sector producing for the world market, while the productivity of services producing mostly for the domestic market does not increase to such a large degree. Since as a result of the labour movement between the two sectors should not substantially differ, the wages rising in the service sector in parallel with the industrial sector – in the absence of productivity growth of adequate degree – necessitate the raising of prices. Thus in the emerging countries that face faster productivity growth the price of services rises faster

than in the developed countries, which results in inflation diffe-rential. According to the calculations of Bauer (2015) the infla-tion differential rate is 0.5-1 percentage point for each additional economic growth of one percentage point. Thus the country, the growth of which exceeds that of the developed countries by 1 percentage point annually, faces higher inflation by 0.5-1 per-centage point on average. After joining the euro area, the single monetary policy is unable to manage this higher inflation, and thus in the emerging country lower than ideal real interest en-vironment may develop, which may result in the overheating of the economy and through that in even higher inflation.

According to the estimates of Eurostat, the immediate inflation effect from the adoption of euro did not exceed 0.3 percentage point in any of the countries. In the countries that introduced the euro at different times – and in substantially different eco-nomic situation – almost identical repricing was observed, and thus the cyclical position of the respective country presumably had no material impact on the immediate inflation effect of the adoption of the euro. According to the results, companies inde-ed capitalised on the opportunities offered by repricing, but the impact of this on total inflation was only temporary and modera-te. On the other hand, the inflation perceived by households rose for several months after adopting the euro (Chart 3-1). However, this rise was not reflected in the inflation expectations, and thus although **households perceived material inflation effects in re-lation to the introduction of the euro, they regarded this as a temporary effect**. Based on this, the **impact of the immediate repricing** implemented in connection with the adoption of the euro **presumably did not pass through to the inflation proces-ses** and did not influence prices in the longer run.

Chart 3-1: Short-term inflation effect of the adoption of the euro,
estimated by Eurostat
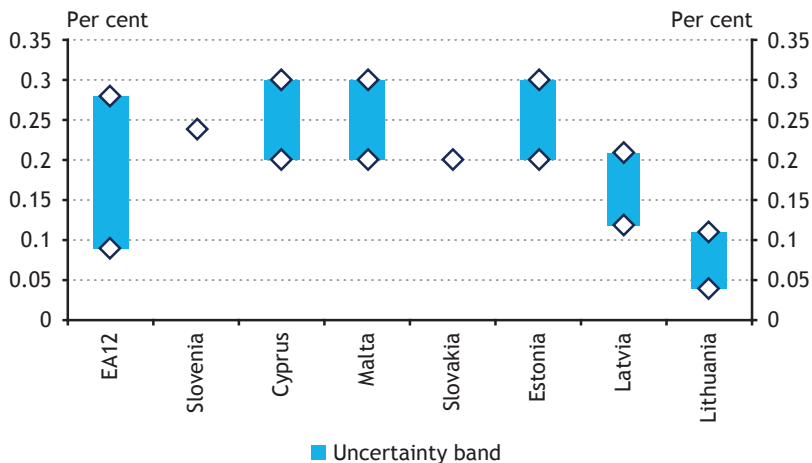
*Source: Eurostat (2002, 2007, 2008, 2009, 2011, 2014, 2015).*

**As a result of introducing the euro, prices rose in the short run
particularly at services.** Major price increase was observed in
restaurant services; in several countries – e.g. in Slovenia – this
single service accounted for almost half of the price rise. In ad-
dition, the prices of seasonal products also significantly rose in
January 2002; however, a large part of this may have been attri-
butable to the unfavourable weather conditions (ECB, 2002). Ho-
wever, Eife (2006) notes that in the case of products the prices of
which change often – such as, for example, seasonal food – it is
difficult for consumers to develop a reference price, which pro-
vides the opportunity for companies to raise the price of these
products to a greater degree during the changeover to euro. **Ba-
sed on this, major effect may be attributed to the adoption of
the euro also in the case of food, but this cannot be separated
unambiguously from other factors that influence the prices.**

**The long-term inflation effects of the adoption of euro, resul-
ting from the Balassa-Samuelson effect and from the poten-
tial overheating of the economy, may be analysed primarily
through the services price inflation.** This is due to the fact that

both the Balassa-Samuelson effect and the demand inflation resulting from the overheating of the economy primarily appear in the prices of these products. The potential acceleration of inflation as a result of adopting the euro can be better detected in this product range due to the fact that the changes in market services inflation are not influenced or much less influenced by external economic effects (international inflationary environment, oil and commodity prices).

Looking at the euro area as a whole in general, in the 18 countries that introduced euro, services price inflation moderately declined on the whole after adopting the euro. However, there are major differences between the individual countries; inflation developments after the introduction of the euro vary in a wide band. This is due to the fact that the euro was adopted in the various countries at different times and in different economic situation. The post-accession inflation developments may be also influenced by the real economy convergence, since convergence is the source of inflation differential. If this convergence decelerates after accession, it may also influence inflation. When eliminating this effect, it can be established that after accession the **rate of inflation necessary for one unit of convergence rose and the line** – of positive slope between the growth and excess inflation compared to the reference countries – **illustrating the Penn effect, became steeper** (Chart 3-2). This indicates that **after joining the euro area, as a result terminating the independent monetary policy, the acceding countries were not able to offset the inflation differential resulting from convergence** and the decline in inflation after accession is partially explained by the slowdown of convergence. In the absence of the latter, inflation would have increased after accession.

Chart 3-2: Penn effect in the euro countries before and after
accession

○ Before euro adoption   ○ After euro adoption
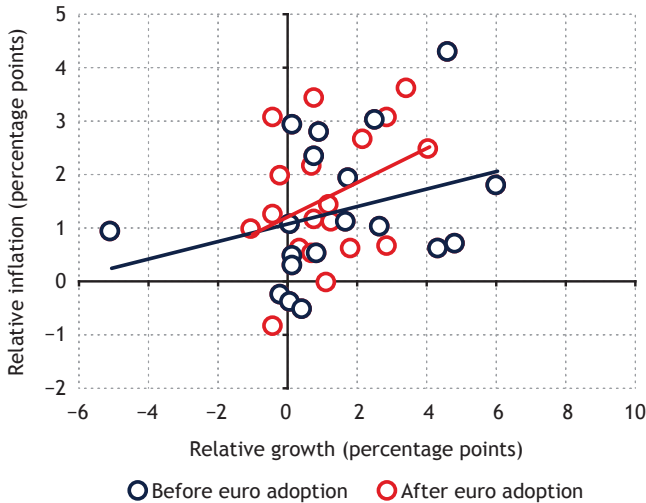
Note: the chart shows the average of the growth and services price inflation of 17
euro countries 3 years before and after accession compared to the core countries;
Ireland is not included due to lack of data. Euro area core countries: Germany,
France, Benelux states and Austria.

Source: MNB calculation based on Eurostat data.

**However, in addition to the general analysis of the euro area it is
also worth reviewing the experiences of certain groups of count-
ries, showing similarities, since these are able to highlight the
long-term inflation effects of the adoption of euro from different
aspects.** No acceleration in the services price inflation was obser-
ved after the introduction of the single currency **in the countries
that adopted euro in 2002**. **After the wear-off of the temporary,
short-term effects, inflation declined in several periphery count-
ries, e.g. in Ireland and Greece.** This is attributable, in addition to
the already mentioned slowdown of convergence, to the fact that
these countries also adopted, together with the single currency,
a monetary policy that was more credible than the previous one,
which contributed in these countries to disinflation through the
declining inflation expectations. **At the same time, the level of
inflation exceeded the price developments of the core countries**

even under the declining expectations. This resulted, in addition to the converging interest rates, in an excessively low real interest environment and led to the development of imbalances serving as a source of the real economy divergence observed during the crisis (see Section 3.2). Namely, **although the single currency caused no inflation differential in these countries, it did not prevent that the introduction of the euro in the South European countries had negative consequences on the whole**. This is due to the fact that these countries **failed to address those structural problems** – wage dynamics exceeding, overspending budget – **before accession, which served as the source of the excessively large inflation differences compared to the core countries**.

Adequate economic development helps manage inflation effects

On the whole, it can be established that the introduction of euro may result in rising inflation in the country that introduces the single currency both in the short and the long term. In the short run the faster rise in prices may be caused by the repricing implemented during the conversion, while in the longer run by the inflation differential resulting from the economic convergence and unmanageable in the absence of independent monetary policy, as well as by the potential overheating of the economy. Although at the level of the entire euro area, following the introduction of the single currency and the wear-off of the impacts of the immediate repricing, inflation on the whole moderately decreased, this is primarily attributable to the decelerating convergence, while the degree of the inflation differential related to convergence rose. In those countries where convergence continued, the inflation accompanying the convergence rose compared to the period before accession. The experiences of the individual euro countries also prove that the two factors appearing in the longer run may be present in inflation also independently of each other – e.g. see Slovenia and Slovakia – after the adoption of the euro, but the two factors may also reinforce each other's

effect (Baltic states). The case of the South European states demonstrates that the development of imbalances is not necessarily conditional upon the increase in inflation as result of adopting the euro. It is sufficient for this if the new members join the euro area with overly high inflation differential, which does not decrease even after accession due to the structural differences. At the same time, both the short- and long-term inflation effects can be managed, if the country adopting the euro is well-prepared. The price rises implemented during the conversion can be prevented by the dual display of prices and by the households becoming more aware with the assistance of the media.

The inflation stemming from the difference in the level of development may be reduced, if **the economic lag of the country newly adopting the euro is moderate compared to the countries already being the members of the euro area**. In this case a lower surplus growth is also sufficient for the continuation of convergence, which reduces the excess inflation arising from the convergence. Whereas, the remedy for the inflation arising from the overheating of the economy is the prevention of the overheating, which may be ensured by **anchored inflation expectations and proper macroprudential policy**.

In whose favour do the scales tip?
It is clear from the considerations described above that the favourable perception that preceded the global financial crisis and the debt crisis of the euro area has faded away, while several new criteria were added to the analytical framework. On the one hand, it became clear that the adoption of the euro alone provides no guarantee for the convergence of the countries and for the harmonisation of the economic cycles. Moreover, due to the experiences of the past decade, the importance of the financial cycle also appreciated. Namely, in the absence of these the risk of the development of real economy imbalances and the blowing of financial bubbles has also material impact on the economies' long-term performance. On the other hand, membership in the euro area alone

is not a solution for the country-specific vulnerabilities, and thus the pre-accession preparation, as well as the real economy and financial convergence gain increasing importance.

Table 3-1: Assessment of the aspects of introducing the euro and future prospects

	Before the global crisis	After the global crisis	Future outlook
Conversion costs and administrative expenditures	approximately 0.4 per cent of GDP	approximately 0.15 per cent of GDP	going forward, Fintech revolution may reduce it further
Currency pegging	significant positive impact due to high FX exposure	shift towards self-financing reduces its economic importance	continued decrease in external exposures reduces positive effects further
Increasingly integrated foreign trade	regarded as a result of introducing the euro	the result of preparations for accession to the European Union (e.g. removal of tariffs)	uncertainty (protectionism, technological changes)
Yield convergence	Member States' relative spreads decreased significantly	significant divergence of individual countries' yields due to the European debt crisis	emphasis shifting to country-specific factors
Long-term effects of inflation	mitigated by flexible price and wage adjustment	persistently low real interest rates lead to imbalances	achieving an appropriate level of development reduces the risk of imbalances emerging

Source: MNB compilation.

3.1.6 Consequences of surrendering the independent monetary policy

The most often mentioned cost of adopting the euro is the surrender of independent monetary policy and the raising of the monetary policy decisions to Community level. The pre-crisis mainstream opinion was that the long-term effect of monetary policy is neutral. At the same time, the lessons learnt from the crisis showed that the economy's ability to grow in the long run is sensitive to the short-term change in demand conditions. Without

using the euro, Hungary's economy is influenced by the monetary policy of both the Magyar Nemzeti Bank and the European Central Bank. When pondering over the timing of adopting the euro, it is important to understand what the Hungarian economic policy will lose by surrendering the independent monetary policy, or in other words, to what extent the single monetary policy is able to fill the vacuum thus developing.

On the one hand, the fact that the single monetary policy strengthens the cycle everywhere when there are asymmetric business cycles, is a consideration often arising in connection with the monetary policy of the monetary union. Since the single interest policy deals with the average of the area, it is not tight enough where tightening is required and not accommodative enough where easing would be justified. **The business cycles of Hungary and the core of the euro area are pretty much harmonised** (MNB, 2011, p. 41.; IMF, 2015). Accordingly, the aforementioned procyclical monetary policy would presumably represent a problem for Hungary to a lesser degree. However, for a country being at an insufficient economic development level this may generate severe real economy imbalances and financial bubbles. On the other hand, the absence of independent monetary policy and exchange rate channel complicates the management of asymmetric shocks, the detrimental effects of which were also highlighted by the financial crisis. This may as well result in a deeper, protracted recovery from the crisis.

In contrast, during the crisis and in the years after, the countries operating under a more flexible monetary regime showed more favourable growth. Those operating in a flexible monetary policy regime achieved faster and steadier growth both in the large economies and the northern countries. The example of the small, open economies shows that the more flexible monetary policy framework – with properly targeted measure – resulted in major additional economic growth in Hungary. Based on the comparisons we may assume that the independent monetary policy – particularly in a recession en-

vironment – is still able to achieve higher growth stimulus than the monetary policy decisions taken at community level.

The monetary conditions may ease as a result of the accession, but not significantly. At present the euro area base rate is 0 per cent, i.e. lower by 0.9 percentage point than the Hungarian base rate. But then again, after the accession, the optimal Hungarian base rate would be also somewhat lower than its present level. Namely, on the one hand the exchange rate risk premium would be terminated, and on the other hand the exchange rate channel would lose significance. **The experiences of the Mediterranean countries highlighted the fact that an overly accommodative single monetary policy may result in rising inflation, low real interest and debt overhang.** However, it should be noted that owing to the MNB's unconventional measures, short-term yields fell close to zero in Hungary as well, and thus it would not represent a material difference. In addition, the processes may be somewhat softened by the fact that there may still be differences in market yields between the individual countries. For example, the Hungarian government securities' yield may remain higher than the German one, due to the higher credit risk and liquidity risk spread.

As a result of the measures taken to recover from the financial crisis, the central banks' set of monetary policy instruments was restructured and materially reformed. Central banks tried to mitigate the unfavourable effects of the crisis by major interest rate cuts and to prevent money market freezes by their liquidity providing instruments. The pre-crisis decline in inflation resulted in the parallel fall in nominal interest rates, and thus after the crisis the central banks bumped into the lower limit of nominal interest rates. Central banks tried to achieve the necessary, additional easing of the monetary stance by new, unconventional instruments (Karácsony et al., 2019.). Due to this, in addition to the main policy instrument, it is equally important – if not more important – to take into consideration the **differences between Hungary and the euro area in the area of unconventional mo-**

netary policy measures. Due to the appreciation of the importance of the unconventional instruments, in the following we examine this in detail.

Efficiency of the unconventional monetary policy in small economies

To this end, we examine the efficiency of the ECB's and the MNB's unconventional programmes, and also assess how likely it is that the ECB's programmes would have the desired impacts on the operation of the Hungarian economy and the financial markets. During the analysis we take the current situation as the starting point, i.e. we do not examine to what degree Hungary would have faced other types of challenges under a euro area membership lasting for a while.

The ECB's unconventional measures proved to be efficient in easing the borrowing conditions, but they were realised in a less targeted manner. Lending rates for enterprises materially declined, outstanding borrowing rose in the less vulnerable euro area member states, while in the vulnerable states the contraction of outstanding borrowing decelerated. At the same time, some of the results suggest that the programmes were less effective in the smaller member states and stimulated retail lending instead of corporate lending. According to most of the studies, the ECB's unconventional monetary policy reduced the fragmentation of the market within the euro area, but its impact on the emerging markets is not straightforward. The unconventional monetary policy of the Magyar Nemzeti Bank proved to be efficient. Both the Self-Financing Programme and the Funding for Growth Scheme eased monetary conditions in a targeted manner. In addition, the MNB's credit schemes stimulated lending to SMEs, thereby also increasing investment directly. The ECB's existing unconventional instruments were elaborated not for the development level of the Hungarian financial system, as those are dominated by schemes that influence the size of the central bank balance sheet.

Unconventional policy and maturity of the capital market

Without using the euro, Hungary's economy is shaped by two types of unconventional monetary policy: namely, the unconventional policy of the MNB and of the European Central Bank. However, after joining the euro area, only the ECB's unconventional policy would be relevant. The ECB's unconventional monetary policy has varying effect on the individual groups of countries within the euro area. In the euro area countries resembling Hungary the most (Slovakia, Slovenia, Estonia) substantial positive impact on real GDP can be observed (in 1 year about 0.2-0.5 per cent on a balance sheet total shock of one standard deviation). However, the inflationary effect is more balanced among the individual countries (in 1 year about 0.1-0.25 per cent price level effect; Boeckx et al., 2017a). At the same time, presumably not all of the ECB's unconventional policies would be efficient in Hungary.

The existing unconventional ECB instruments were elaborated not for the Hungarian financial system's level of development. Considering the ECB's present unconventional instruments, primarily the comprehensive asset purchase programme would count as a novelty in Hungary. Several of the instruments would be able to exert their impact in Hungary only to a limited degree due to the insufficient maturity of the sub-markets. The market of covered bonds and asset-backed securities in Hungary is still under development, and thus the purchase of such assets cannot achieve the further easing of the monetary conditions. Taken together, it can be stated that large companies are less liquidity-constrained, and banks' lending capacity is adequate, while the capital market needs to be developed. The MNB initiated or plans in the near future to deepen and enhance the Hungarian financial system in several areas, which fosters the development of the financial sub-markets that for the time being are less developed in Hungary.

On the whole, it can be stated that the ECB's present set of monetary policy instruments is dominated by instruments that

influence the size of the central bank balance sheet. The asset purchase programmes provide the counterparty banks with liquid assets and in the longer run they also beat down the yields on longer-maturity bonds. The comparison of the euro area and Hungarian achievements may attempt to answer to what degree it would have been different if during the financial crisis Hungary had to rely solely on the ECB's instruments and what kind of instrument would have been missing from the set of monetary policy instruments that proved to be efficient under the Hungarian economic conditions. In view of the aforementioned criteria, we highlight two of the potential areas. The first one is the **central bank instruments supporting corporate lending**, where there is a major difference between the MNB's and the ECB's approach. The second one is the **reduction of long-term yields with the use of unconventional instruments**, where the central bank of the euro area and of Hungary also opted for different solution. Such difference is that while the ECB wished to achieve the desirable results by increasing the size of the central bank balance sheet, the MNB intended to do so by the restructuring of the balance sheet.

Credit stimulus: general lending policy or lending policy focusing on the small and medium-sized enterprises

Lending is key to the financing of corporations both in the euro area and in Hungary. Sound lending activity also impacts – through the operation of corporations – the economy's investment, production and employment processes, as well as the efficient functioning of the monetary policy. Accordingly, if the central bank is unable to influence lending conditions efficiently, it complicates the softening of macroeconomic fluctuations to the desirable degree.

The efficiency of the monetary policy upon addressing a credit shock depends on the synchronisation level and type of the shock (supply or demand). Table 3-2 provides an overview of the different types of credit shocks and the options to address them. **In the relation of the euro area and Hungary, synchronised shocks may be relevant.** This is justified by the harmonised business cy-

cles, the Hungarian banking sector, a substantial part of which is owned by Western European banks, and the similarity of the lending processes after 2008. It is worth managing synchronised shocks by a single policy; however, it is difficult to separate credit supply and credit demand: both in the euro area and in Hungary, long-term credit supply and credit demand decreased together during the crisis, and then both of them started to rise. It can be established that it is easier to manage credit supply shocks than credit demand shocks. Furthermore, during downside shocks the room for fiscal manoeuvre is restrained by the Maastricht deficit criterion of 3 per cent as a percentage of GDP.

Table 3-2: Different types of credit shocks and the management of those

Synchronised		Idiosyncratic	
Credit supply	Credit demand	Credit supply	Credit demand
Monetary policy			
· Manageable with common policy (conventional or (targeted) non-conventional)	· Partly manageable with common policy (signalling, conventional and/ or non-conventional)	· Manageable with independent policy (conventional or (targeted) non-conventional), not with common policy	· Partly manageable with independent policy (signalling, conventional and/ or non-conventional), not with common policy
Fiscal policy			
· Coordinated policy necessary, · 3 per cent deficit limit	· Manageable with coordinated policy (e.g. income stabilisation), · 3 per cent deficit limit	· Manageable with independent policy; · 3 per cent deficit limit	· Manageable with independent policy (e.g. income stabilisation), · 3 per cent deficit limit
Regulation			
· Manageable with common rules	· No impact	· Manageable with independent rules	· No impact
'Private insurance'			
· Not applicable	· Not applicable	· Functions if financial markets are integrated	· Financial integration could even have a negative impact (if credit demand is high)

Note: synchronised shocks impact the currency area member states identically, while the idiosyncratic ones affect only one country. "Private insurance" means the private sector's diversification of risk, which may help manage idiosyncratic shocks in integrated financial markets.
Source: MNB.

The European Central Bank's unconventional measures proved to be efficient in easing the borrowing conditions, but they were realised in a less targeted manner. The ECB commenced the second phase of its targeted longer-term refinancing operation (TLTRO-II) in mid-2016, where it provides the counterparty commercial banks with funding for a tenor of 4 years, at the most, with favourable conditions. Altogether four operations were implemented. Here the incentive was that the drawdown of the preferential funding was conditional upon increasing the outstanding lending to the private sector. No other expectation was prescribed.

In autumn 2017 and later on in several steps, the ECB's credit stimulus objective was once again supported by extended central bank asset purchases (covered bond, asset-backed securities, government securities, corporate bond). According to the lending surveys of the European Central Bank, both the targeted liquidity provision and the central bank's asset purchases improved banks' liquidity position and the market funding conditions, while the first also had favourable impact on banks' profitability (ECB, 2017b, 2017c). All this appeared in the easing of lending conditions in corporate (and partially in retail) loans. 60 per cent of the respondent banks reported that the funds obtained through TLTRO had contributed to their lending activity, while this was less typical at asset purchases.

According to the ECB's analysis, TLTRO (together with the ECB's other measures) **efficiently helped lower key interest rates pass through to the lending conditions.** Due to the shortness of the time since the introduction of the scheme, the number of empirical analyses is limited. At the same time, it can be established that

lending rates for enterprises substantially decreased, and to a larger degree in the countries that previously had higher interest rate level, and thus the differences between the countries also decreased (ECB, 2017a). The composite interest rate on corporate loans between mid-2016 (the launch of TLTRO-II) and September 2017 declined in the vulnerable members (Ireland, Spain, Italy, Cyprus, Slovenia, Greece and Portugal) by 20-80 basis points, and in the euro area as a whole by 20 basis points. The ECB's measures may have made major contribution to the decline. The programme supported the growth in outstanding borrowing in the less vulnerable euro area member states, while in the vulnerable states the contraction of outstanding borrowing decelerated. Other analyses also confirm that the ECB's aforementioned unconventional measures successfully stimulated lending in the euro area by reducing interest rate on loans and increasing the volume of credits (Altavilla et al., 2016; Boeckx et al., 2017b).

The ECB has no targeted programme for stimulating lending to SMEs (and investments) despite the fact that small and medium-sized enterprises play a major role also in the euro area economy. More than half of the euro area added value is produced by SMEs, and in certain sectors (e.g. construction and service sector) this exceeds even 80 per cent(IMF, 2016). However, TLTRO-II is not an SME-focused central bank programme. Based on the analyses performed on French data, the previous liquidity providing programme (LTRO) also had positive impact on credit supply, but this mostly appeared at the large corporations (Andrade et al., 2015). The impact of the asset purchases (PSPP) was directed not on the SME sector either: although based on the responses of Slovak banks participating in the lending survey, the funds were used for increasing retail and corporate credit supply, according to the analysis, the asset purchases may have impacted retail lending to a larger degree (Lojschova, 2017). It is also questionable to what degree the banks of the smaller member states participated in the ECB's programmes. For example, Latvian banks typically did not participate in the TLTRO tenders,

citing their liquidity position and collateral-related constraints. In addition, they also believed that the asset purchases had no major effect on their lending activity either.[66]

The credit schemes of the Magyar Nemzeti Bank stimulate lending to SMEs in a targeted manner. In the Funding for Growth Scheme (FGS), the central bank provided credit institutions with refinancing forint loans at an interest rate of 0 per cent, which they could use for lending under an interest margin of maximum 2.5 per cent. Commercial banks were permitted to use the FGS funds only for corporate lending, and thus the funds flowed to and lending improved in the segment that was determinant also in terms of employment and was exposed to the largest risks during the crisis. As a result of the targeted credit programme, more than 37,000 enterprises had access to funding until the end of 2016 in a total amount of roughly HUF 2,600 billion. The outstanding borrowing of SMEs as a percentage of GDP in Hungary roughly corresponds to the EU average, but falls short of the Slovak or Slovenian indicator.

At the same time, FGS was able to respond to the challenges of the lending activity more flexibly. At the ECB's programmes the drawdown was connected to 4 operations with quarterly frequency. By contrast, FGS was characterised by longer commitment period and continuous drawdowns. In the later stage of the scheme foreign currency funding at favourable terms also became available to SMEs with natural hedge. Compared to the ECB's instrument, it represented a higher volume also as a percentage of GDP, as the facility amount amounted to 8.7 per cent of GDP (Bodnár et al., 2017). In addition to its credit stimulus effect, FGS also had major impact on economic growth, and under the substantial weight of investment loans, it increased investments directly as well (Endrész et al, 2015). Since the FGS fulfilled its mission, the MNB strives to reinstate lending on market basis in Hungary through the Market-based Lending Scheme.

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[66] https://www.bank.lv/en/publications-r/euro-area-bank-lending-survey

Purchase of government securities: declining yields and decreasing vulnerability

According to most of the studies, the European Central Bank's unconventional monetary policy reduced market fragmentation within the euro area, i.e. narrowed the gap between the yield on the periphery and core countries' government securities. The previous measures (SMP, LTRO) also materially reduced the yields on long-term government securities, as a result of reducing aversion to risk, and decreasing bank and sovereign credit risk (Fratzscher et al., 2014; Szczerbowicz, 2015). The purchase of government securities (PSPP) took place in a relatively calm period and within limits, and thus its expected effect was smaller. Bond yields decreased to a larger degree in those euro area countries, where the yield level was higher. The cumulative yield decrease in the periphery and core countries amounted to 45-85 and roughly 5-25 basis points, respectively (Urbschat and Watzka, 2017).

The effect of the ECB's unconventional monetary policy on the Central and Eastern European (and generally on the emerging) economies is not straightforward (similarly to the unconventional measures of the Federal Reserve). Several results show that the ECB's unconventional programmes had global pass-through effects, which made their positive effect felt also in the EU states outside the euro area. However, the strength of this is questionable. According to Falagiarda et al. (2015), the strong economic and financial integration of the euro area and the CEE region supports the pass-through effects of the ECB programmes, which appeared particularly at the sovereign bond yields. When examining the individual measures separately, the pass-through effect of particularly the Securities Markets Programme (SMP) proved to be strong in several countries of the region. However other results imply that yields decreased only moderately and that it was rather the bank's equities that increased (Fratzscher et al., 2014). If Hungary was the member of the euro area, Hungarian government securities could be purchased under the

ECB's asset purchase programme in proportion to the capital key (1.3798 per cent). The impacts in Hungary may be reduced by the fact that although in the programme the ECB purchases not only government securities (e.g. agency, regional or multilateral development bank bonds), in Hungary essentially only central government bonds are available. These are mostly owned by banks, and thus the asset purchase may theoretically hinder bank' liquidity management, although liquidity management through securities is negligible.

With its unconventional measures, the Magyar Nemzeti Bank reduced Hungary's external exposure and vulnerability, and it also materially contributed to reducing long-term yields. The **Self-financing Programme**, launched in spring 2014, encouraged credit institutions to purchase securities issued in Hungary. As a result of the programme, gross external debt and the foreign currency ratio of the government debt both decreased substantially. On the other hand, Csávás and Kollarik (2016) demonstrated that the decline in the long-term government securities' yields was partly also attributable to the Self-financing Programme. Through the central bank interest rate swap instrument and the decreasing risks, the programme contributed to the decrease in government securities yields, directly and indirectly, respectively. Based on these, the Self-Financing Programme certainly reduced the observed yield by 30-60 basis points, but the total effect may have been as high as 75-90 basis points. Within the euro area, the concept of self-financing would lose significance, since the government's euro debt would cease to exist, the MNB would have no loss (or it would have only a small loss), and external debt would also appear in a different context (within the euro area the constraint for the build-up of the central bank's TARGET2 balances may be represented by the banks' securities eligible as collateral for central bank operations, and the euro is the reserve currency and in connection with this the foreign exchange reserves of the euro system is minimal).

Outlook

The unconventional central bank schemes in the euro area would probably not be able to exert their full effect until such time as the convergence of the Hungarian economy is completed and as long as the maturity of our capital market lags behind that of the Western European one. In the convergence period, the single monetary policy targeting the average of the monetary union is not necessarily appropriate for Hungary. The reduction of the monetary conditions through the purchase of government securities within the area is a more realistic option. However, the development of the Hungarian capital market may be contributed to the most efficiently by the independent monetary policy, for example, by announcing such securities purchase schemes, the conditions of which foster market building. In the area of stimulating lending activity, mainly the absence of a targeted euro area SME credit scheme should be emphasised. On the other hand, it is questionable that at the time of future accession what kind of unconventional instruments the ECB will have.

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The experiences of the new accession countries: the pros and cons

Katalin Kis – Kálmán Árpád Marincsák

New accession countries have had a mixed experience regarding the success of the introduction of the euro. In the Mediterranean countries, the economic consequences of euro area accession may be regarded as negative because their convergence to the core countries was interrupted and divergence took place instead of the expected convergence. Beyond certain economic policy measures, the reasons for this lay in the persistently high negative real interest rates, which resulted in imbalances and rising indebtedness. **In the Baltic states, the introduction of the euro** may be regarded as **mostly positive**. Accession to the euro area initially entailed major real economic costs but, on the longer term, convergence was achieved with the euro area. **The introduction of the euro may be regarded as positive in Slovakia**, where economic policy measures enabled the country to prepare for minimising the risks associated with the euro and these conditions were maintained after the introduction as well. By contrast, **Slovenia's experience is mostly negative**: once it stopped monitoring and managing the potential risks of the euro following its introduction, it developed imbalances similar to those in the Southern European countries. Experience shows that monitoring these processes should remain a high priority after introduction as well.

3.2.1 The case of Mediterranean Countries

In the following chapter, we show through the example of the Mediterranean countries the reasons why the introduction of the euro can cause growth problems rather than convergence

on the medium term (Chart 3-3). After accession, nominal interest rates decreased quickly to the same level throughout the euro area and therefore ceased to reflect the actual risks on individual countries. Besides the levelling of interest rates, a general decreasing trend was also observed in all the countries. In addition to the generally available ample liquidity, this was due to the fact that the creation of the currency union ended exchange rate risk, which led to the illusion that country-specific risks had ceased to exist. Yet inflation rate varied across the euro area and real interest rates, determining consumption and investment decision, were therefore lower in the Mediterranean countries having higher rates of inflation. This contributed to irresponsible overspending and excessive external debt in the countries of Southern European and, overall, a forced and unsustainable convergence as money market adjustment failed to deliver genuine, real economic convergence. The problems were further aggravated by the fact that the significant decreases in interest rates almost eliminated any liquidity constraints in these Mediterranean countries and therefore led to higher indebtedness.

Chart 3-3: Real GDP per capita in Southern European countries
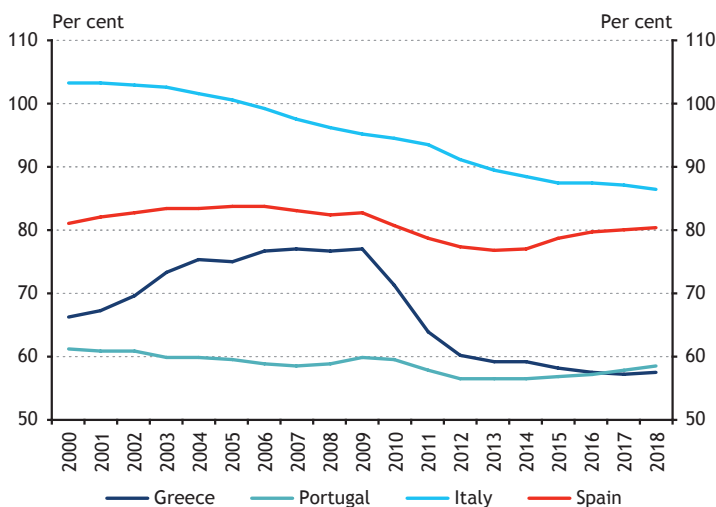
Note: Eurozone = 100.

Source: Eurostat.

Furthermore, by relinquishing their own currencies, these countries no longer had the **opportunity to adjust their nominal exchange rates**, which contributed to real appreciation and **declining competitiveness in their economies**. It is important to note that, besides the single currency, certain **unique economic policy steps also led to the divergence of these countries**. Excessively loose fiscal policies and lending conditions, a fragile economic structure, structural issues and the financial crisis all contributed to the fact that **the introduction of the euro in the Mediterranean countries has so far failed to deliver on the hopes pinned on convergence.** Beyond the **structural problems** shared by these Mediterranean countries, it is worth noting in greater detail what **other individual characteristics** and issues led to a lack of success in the convergence of the Southern countries. This chapter presents the cases of Spain, Italy and Portugal, and finally Greece.

3.2.2 Spain

The Spanish economy showed a positive picture from the second half of the 1990's. Real GDP grew by around 4 per cent towards the end of the decade, faster than the average real GDP growth in the euro area. This favourable growth took place against a backdrop of a rise in the employment rate and a high but dynamically falling unemployment rate. The rate of inflation also exhibited a decreasing trend, even as it continued to exceed the euro area average (IMF, 2000).

In the years before accession, Spain's high unemployment rate had been aggravated by a bureaucratic framework encouraging lower levels of activity. Before the 2000's, unemployment rate in Spain repeatedly exceeded 20 per cent. There were several contributing factors. Firstly, the labour market was dominated by fixed-term employment arrangements instead of permanent contracts, due to the high costs of dismissal. As a result, it was

costly for workers to find a new job when their contracts ended; this represented considerable economic and social costs (IMF, 1999). Secondly, regulatory economic incentives also encouraged lower levels of activity among workers. One of the main reasons was the fact that the marginal tax burden was much lower for a household with one active earner than for a household with one active earner and one unemployed person (IMF, 2000). This significant difference probably encouraged exits from the labour market.

The housing market cycle starting in 1996 resulted in a significant increase in home building in Spain, initially benefiting both the private and the public sectors. The number of new homes rose from 300,000 a year in 1996 to over 500,000 in 2000 and as many as 860,000 in 2006 (Akin et al., 2014). This market boom was underpinned by an **interest rate** that was **low** for the Spanish economy and **also supported by the government**, since the construction boom created more than 8 million jobs, twenty per cent of which were in the construction industry and nearly half were in industries with low productivity and low qualification requirements (Romero et al., 2012). **The unemployment rate fell below 5 per cent** and there was a **significant growth in investments**. As this had a **positive impact on economic growth**, the housing market cycle enjoyed the support of successive governments, since the high tax revenues generated by higher economic growth also **improved the fiscal situation**. This process also benefited the population, as it **contributed to falling unemployment and rising wages**, and therefore most participants had an interest in sustaining the upward phase of the cycle. A tourism boom in the years after accession also underpinned the growth of the Spanish economy (López — Rodríguez, 2011).

The property market bubble grew as foreign buyers joined the domestic buyers, and banks obtained funding from abroad as well in order to finance property purchasing and

construction transactions. The private sector rather than the public sector was thus the root cause for the problems that Spain experienced later. Besides the domestic players, the demand side of the housing market was also driven by foreign homebuyers appearing in ever increasing numbers. This resulted in a substantive **growth in demand on the housing market, which increased the value of investments**. Spanish banks were unable to finance from domestic sources all the loans they granted and **were forced to rely on foreign sources of funding (Chart 3-4). The rise in Spain's external debt is therefore attributable to processes in the private sector,** while the Spanish government tried to counterbalance the loose borrowing terms with a tighter fiscal policy (IMF, 2000). As regards its budget balance, Spain managed to reduce its spending after accession but its revenues remained more or less unchanged as a percentage of GDP; the **general government primary balance was therefore a consistent surplus between the time of accession and the crisis** (IMF, 2009b).

Chart 3-4: Evolution of Spain's net external debt as a percentage of GDP
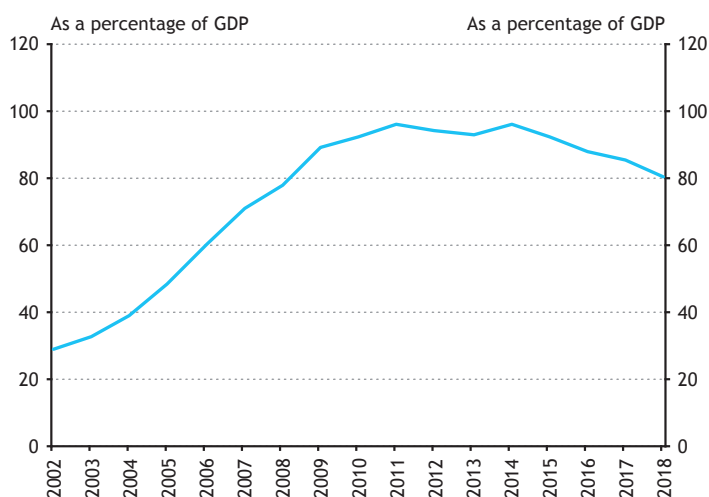
Source: Eurostat.

Household indebtedness was further boosted by the fact that lending thresholds were even looser in Spain than in other countries of the euro area. Beyond the factors listed above, indebtedness in the private sector was boosted further by the fact that Spanish households tended to borrow at variable rates of interest. A relatively lower interest rate was **coupled with the accumulation of substantial interest rate risk in household balances.** The fast expansion in lending volumes was underpinned by loose lending conditions and regulations (Akin et al, 2014 and Gros, 2011).

A banking system reliant on external sources and a collapse in demand following the crisis caused the property market bubble to burst and resulted in private sector problems that also sent tremors through the public sector. In the years before the financial crisis, the Spanish economy grew through **reliance mostly on uncompetitive sectors** (construction industry, tourism) and was highly dependent on external inflows. Debt in the private sector rose substantively and therefore when the external inflows stopped during the financial crisis and external demand contracted significantly in both the construction industry and tourism, it was initially the private sector that felt the serious consequences. **As unemployment rose, an increasing proportion of loans became non-performing. In consequence, Spanish banks** saw their **losses** on assets increase. In the absence of alternative sources of recapitalisation, the **central budget had** to come to the aid of the banking operators **at the expense of government debt**. The example of Spain clearly demonstrates that, **in contrast to the Maastricht criteria, a monitoring of public finance trends only is inadequate, because private sector indebtedness can easily impinge upon the public sector.**

3.2.3 Italy

Unlike the other Mediterranean countries, **Italy had been on a moderate course of growth already before the crisis of 2007-2008.** Already in the 1970's and 1980's, the country was characterised by high inflation and a significant government deficit, with high government spending substantively increasing the government debt to GDP ratio. The currency crisis of 1992 had a deep impact on the Italian economy, making compliance with the Maastricht criteria adopted in the same year even more of a challenge.

The main reasons for the structural problems of the Italian economy include its labour-intensive and low-technology industries with a dominance of small and medium-size businesses, the decades of inflation, regional dualism and problems on the labour market. The unproductive operation of its SME's is one of the reasons why the country has lost much of its competitiveness over recent decades. These small firms are often below the smallest sizes for corporate productivity, which limits their opportunities, for instance in innovation, thus jeopardising the country's ability to remain competitive in a technologicalyly oriented global economy. Its extremely high rate of inflation (up to 20 per cent a year) exerted permanent upward pressure on wages and labour costs, weakening Italy's competitiveness even further. A meaningful decrease started only in the 1980's, thanks to a strict monetary policy and the nominal anchor of the European Monetary System. The regional duality within the country also proved to be an obstacle to growth, as aiding the convergence of the Southern part of the country with the North tied up resources. Anomalies on the labour market were also significant constraints on the economy and included, for example, significant unemployment and an employee protection regime that was generous to certain groups but practically non-existent elsewhere (Cencig, 2012).

Declining competitiveness, government debt in excess of 100 per cent of GDP, which greatly limited the freedom of decision-making, and the commitments made in the Maastricht Treaty forced Italy to carry out reforms. One step was the **adoption of a number of labour market measures**, holding wages back to prevent a wage-price spiral, **all of which were intended to create a much more flexible labour market**. Although this indeed happened, the results are ambivalent as several forms of atypical employment (temporary and part-time jobs) became available (Fana et al., 2015), putting the employer in a better bargaining position even as some of the existing constraints continued to apply to full-time employment. Overall, this led to an increase in the weight of atypical employment and a deterioration in the relative bargaining position of employees, which is likely to have resulted in lower employee motivation and therefore **falling productivity**. As a result, a more flexible labour market was achieved with some costs: **the wage share decreased and inequality grew, resulting in lower aggregate demand**. Besides, **a strict fiscal policy was followed** in order to reduce **government debt**, which therefore **decreased** from 109 per cent to 100 per cent of GDP in the period between 2000 and 2007 (Chart 3-5). However, **the fall in interest expenditures in an environment of low interest rates also played an important role besides the government's measures** (Cencig, 2012).

Chart 3-5: Evolution of government debt as a percentage of GDP in Southern European countries
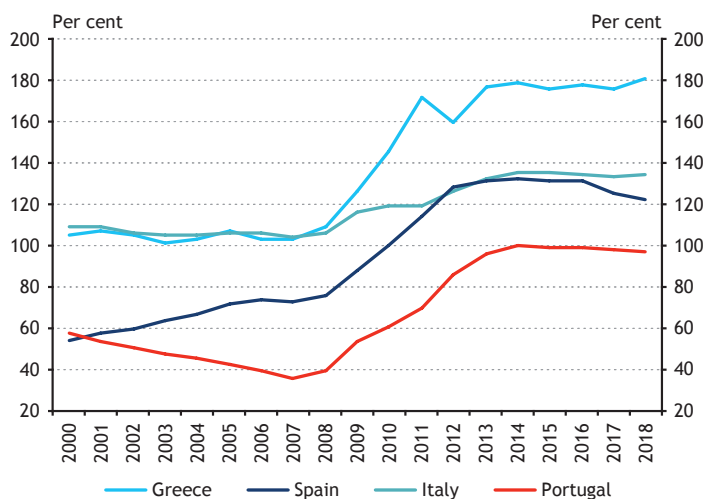
Source: Eurostat.

Political uncertainty is likely to have contributed to the economic problems. With the repeated recurrence of political problems, the **demand for a smaller state emerged within society, leading to the fast privatisation of state-owned companies and a liberalisation of markets**. Even these measures tended to have **mostly negative consequences**: implemented in an incomplete manner, liberalisation created monopolistic markets, with private capital unable to replace the indiscriminately privatised state firms; this resulted in the overall decline of Italian industry (Tridico, 2012). Also, as China entered the international markets, it became a significant competitor to the Italian economy, and the share of Italian industry decreased further as a result. **Political uncertainty** has been extremely high in Italy for decades, with a total of 27 governments in power between 1980 and 2016. Political instability has had a negative impact on economic growth through a number of channels: **firstly, corporates are less likely to invest in an uncertain environment and, secondly, foreign investors also prefer stable government** due to the risk of a

new government changing property rights and the regulatory environment (Alesina et al., 1996). The World Bank puts Italy well below the core euro area countries in terms of a number of governance quality indicators since the 1990's to this day.

The global financial crisis placed an already structurally weak economy into an even more difficult situation. Italy is **highly reliant on exports and the unproductive small and medium-size business sector dominating its economy**, and this makes it especially sensitive in the time of global recessions. **This was exacerbated by the fall in household consumption** resulting from higher unemployment and stricter lending conditions (it is worth noting, however, that no credit or property market bubble had developed in Italy before the crisis). Of all the Mediterranean countries, Italy reported the lowest rate of domestic private lending as a proportion of GDP in 2008. But the Italian banking system had accumulated a high-risk portfolio[67], where a high proportion of non-performing loans after the crisis impaired their profitability and the stability of the financial system; its impacts are felt to this day. **The ability to grow the economy through fiscal stimulus was constrained by a high government debt** of 100 per cent. As a result, **the measures adopted**, which focused on supporting the SME sector, **failed to achieve significant improvements even as they increased an already high government debt even further** (IMF, 2010).

Overall, the Italian economy faced numerous structural problems even before the introduction of the euro and was on a course of more modest growth already before the crisis. Faced with historically low labour market activity rates, segmentation, regional dualism, unstable governments and weak performance in terms of the transition from education to work, Italy encountered

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[67] According to the IMF's Financial Soundness indicators, risk-weighted regulatory tier 1 capital stood at 6.9 per cent in the Italian banking system in 2008, and the proportion of non-performing loans grew from 6.3 per cent to 18.1 per cent from the outbreak of the crisis to 2015.

further economic problems arising from the crisis: relatively high corporate profits versus low wages and consumption levels, stagnating productivity and innovation all contributed to social inequality (Tridico, 2012). The high government debt imposes an important constraint on government measures and thus prolongs the period of recovery. The stability of the financial system is also threatened by the low profitability and high non-performing loan portfolios within the Italian banking system.

3.2.4 Portugal

In the second half of the 1990's, i.e. in the years leading up to the introduction of the euro, **Portugal achieved outstanding results in the real economy and in fiscal as well as monetary policy.** Its GDP per capita rose at a faster pace than the EU average, its budget deficit fell from 7.7 per cent to 2.7 per cent between 1993 and 1999, and it met by the deadline all the criteria imposed by the Maastricht Treaty. However, these **results were attributable primarily to the cyclical boom experienced throughout Europe** in the second half of the 1990's. **The substantive and fast decline in nominal interest rates was not matched by the rate of inflation**, and thus **real interest rates decreased significantly;** combined with **financial liberalisation** and the resulting easier access to loans, this resulted in an **excessive growth of** domestic demand and therefore **private sector debt**.

During the cyclical boom, unemployment fell considerably, there was practically full employment; however, the main underlying reason was the overly regulated labour market. This high employment and labour force participation was achieved against a backdrop of extremely low labour mobility. The main reason for this was **strong employee protection**: layoffs were strictly regulated, with several notification obligations, mandatory severance pay and steps to help employees' return to the labour market. The high layoff costs **had a negative impact on**

productivity in the economy through a number of channels. Firstly, they curtailed new job creation and, secondly, they reduced total-factor productivity (IMF, 2002). **As a result of low unemployment, wages grew dynamically, more steeply even than the EU average and much faster than the productivity growth rate**. At the same time, consistently **decreasing competitiveness** resulted in a shift of towards nontradable goods and services within economic activities. This in turn led to a **rise in demand for tradable goods and therefore rising imports, and ultimately a growth in the current account deficit and external debt**. Still, the economic boom concealed these issues: as a result of GDP growth and low interest rates, **not even a more restrictive fiscal policy was necessary in order to comply with the Maastricht deficit criterion.**

The dynamic growth of the Portuguese economy was halted when the Europe-wide cyclical boom subsided: in the member states that joined the euro area later, GDP growth fell from 2.8 per cent in the second half of the 1990's to 1.1 per cent on average in the period between 2001 and 2007. Meanwhile, loose fiscal policies and decreasing tax revenues caused gradual **rises in government debt; in the absence of sufficient domestic sources of funding, this drove up the country's external debt. Portugal was also badly affected** by the loss of much of its key export product markets **due to its weak competitiveness** and the **advances made by emerging countries,** while its services sector, formerly competitive due to its low labour costs, lost ground once the even cheaper Eastern European countries joined the EU in 2004. In the meantime, the government was unsuccessful in its efforts to reduce the government deficit, which rose by 5 percentage points between 1995 and 2005, and amounted to 10.1 per cent in 2009 (IMF, 2006; Park, 2015).

Overall, we conclude that Portugal did not have the real economic conditions necessary for a successful adoption of the euro. Its accession to the currency union **heated its economy in additi-**

on to its cyclical boom through the excessively optimistic income expectations, which resulted in unrealistic wage growth, an overestimation of potential output and rising indebtedness. If demand growth entails excessive borrowing, fiscal policy must adopt restrictive measures to create reserves and smooth the financial cycle; yet this was not done due to the excessively optimistic outlook (Abreu, 2006). **The failure was therefore partly attributable to the fact that the single currency was introduced during cyclical boom, in an overheated economy.**

3.2.5 Greece

Although Greece's economic performance improved in the second half of the 1990's compared to the earlier part of that decade, **the IMF (2001) highlighted certain existing structural shortcomings already at the time.** Average GDP growth in Greece remained below the euro area average in the period between 1991 and 1995 but exceeded that average by 0.8 percentage points between 1996 and 2000. This growth was achieved against a consistently decreasing inflation index and a rising unemployment rate (IMF, 2001).

In Greece, the cause for divergence was serious long-term overspending by governments. According to certain studies, the government had spent beyond what was sustainable on the long term from as early as the 1980's. Well before the outbreak of the financial crisis and before accession to the euro area, studies were written about how **unsustainable Greek government debt** was. According to a study examining the changes in government debt between 1959 and 1995, government balance was unsustainable on the long term already in 1979 (Makrydakis et al., 1997). The situation was further aggravated by the fact that successive Greek governments intensified public spending from the 1980's onwards, which also involved the expansion of the public sector (Lyrintzis, 2011).

Already in the 1990's, a persistently loose fiscal policy drove government debt above 80 per cent of GDP. This excessively loose fiscal policy contributed to the fast increase in government debt already after the country's accession to the EU in 1980; debt grew from its earlier levels of 25 per cent to over 80 per cent by 1990. **Fiscal policy relied on growing debt to finance the rising living standards of Greek households. The situation was aggravated by the distribution of EU funds, spent** mostly **on financing infrastructural investments**, and by the **impact of agricultural subsidies in boosting incomes** (Kouretas – Vlamis, 2010).

In order to meet the Maastricht criteria, the deficit was temporarily reduced, albeit with the help of certain statistical loopholes; however, this did not prove lasting. In order to meet government deficit criterion stipulated as a condition for the introduction of the euro, the Greek government **had to implement considerable restrictions**. At the time, **the Greek government only implemented these measures temporarily and partially**, with government deficit shown in earlier statistics to have fallen to below 2 per cent of GDP by 1999. This reduction was **achieved partly by measures that reduced the deficit statistics yet did not represent a genuine change in fiscal policy.** Although the statistics of the time showed Greece to be compliant with the Maastricht criteria when it introduced the euro, **we now know that Greek government deficit amounted to nearly 6 per cent of GDP in 1999, i.e. almost twice as much as the criterion for the introduction of the euro**. Furthermore, in spite of some temporary adjustments in the budget balances between 1995 and 2000, the deficit figure then started to rise again.

The budget failed to return to equilibrium even after accession to the euro area. Between 2000 and 2004, Greek government revenues shrank by around 5 percentage points (from 43 to 38 per cent); under expenditures, social costs rose by 3 per cent of GDP and public sector wage costs also rose at a fast rate (IMF,

2009a). As a result, the general government primary balance switched from a surplus of nearly 4 per cent of GDP in the early 2000's to a deficit of more than 2 per cent by 2004. In the early 2000's, the expenditure of holding the 2004 Olympics also added to public spending. **It became clear then that Greek public finances were unsustainable on the long term:** government debt rose to 107 per cent of GDP from 102 per cent in 2003. In order to reduce it, **significant cutbacks were introduced in the public sector in 2005.**

The considerable wage growth described above had eroded much of the competitiveness of the Greek economy. This dynamic wage growth led to the **appreciation of the real exchange rate**, **resulting in a substantive deterioration of competitiveness. This was reflected in the high current account deficit and the increasing external indebtedness of the economy.**

Greek economic growth was highly reliant on tourism and shipping, which depend on foreign demand, and as foreign trade and tourism shrank after the crisis, this fact further deepened Greece's problems. Like Spain, Greece was also greatly reliant for its growth on industries significantly dependent on external demand. Tourism had been one of the industries driving growth in Greece but it shrank after the crisis as consumption fell in many countries. Another such industry was transportation, especially sea shipping, which had achieved significant growth before the crisis, also resulting in a contraction of the weight of other services, such as financial and ancillary services (Bennett et. al., 2008). Greek firms with a stake in shipping were badly affected by the decline in international trade after the outbreak of the crisis.

While much of the government debt was financed from external sources, the changes in risk ratings in the wake of the financial crisis made it impossible for the Greek government to finance its expiring debts, which ultimately forced it to seek financial help from international organisations. Much of gover-

nment debt was financed from external sources. As risk ratings changed following the crisis, foreign investors were less willing to finance the renewal of Greek government debt, and therefore Greece was forced in 2010 to seek help from international organisations. However, this entailed serious consequences for public sector spending, which in turn resulted in wide-ranging effects for the real economy.

3.2.6 Lessons learnt

After the introduction of the euro, nominal interest rates in the Mediterranean countries soon started to converge with the rates in the core countries. Inflation did not follow similar trends, however, and its higher rates **led to permanently negative real interest rates**. This contributed to **irresponsible overspending in the Southern European countries, excessive external debt** and, overall, an **unsustainable convergence** as money market adjustment failed to deliver genuine, real economic convergence. **The euro area lacked the mechanisms for channelling the diverging macroeconomic processes of member states towards convergence.** While the economic indicators of the core countries tended to improve over the past decades, **deteriorating competitiveness led to serious imbalances and rising external debt in the countries of the Mediterranean**. Since the members of the monetary union **no longer had recourse to devaluing their currencies, they needed to rely on adjustment measures in order to recover external equilibrium and comply with the Maastricht criteria; this inevitably resulted in a rise in unemployment.** The post-crisis **adjustment** therefore entailed great **sacrifices in employment and growth**, which **also resulted in social tensions** (De Grauwe, 2015). **Although steps were taken to increase the** (export and labour market) **flexibility of the economies, the euro area still failed to satisfy the conditions of an optimal currency area, so that the imbalances have survived to this day, in spite of the economic downturn.** Several economists main-

tain that the surplus countries should have compensated for the missing aggregate demand of the deficit countries through fiscal incentives, which would have reduced the existing external imbalances as well (Wolf, 2014, De Grauwe, 2015). Besides, the excessive lending and the bad portfolios encouraged by negative real interest rates led to rising instability in the banking system. This highlights the importance of a macroprudential toolkit in addition to the need for country-level optimal nominal interest rates.

The crisis has highlighted that external and internal economic equilibrium is an important condition for the success of accession to the monetary union. Although it was widely assumed after the introduction of the single currency that current account problems would, to an extent, resolve by themselves, this illusion was shattered after the crisis (Gros, 2015). The experience of the Mediterranean countries shows that **euro area accession does not resolve structural problems and may in fact worsen them. The convergence of yields towards a low level led to a lending boom, which resulted in further rises in external indebtedness.** We have seen that individual economic policy steps also contributed to the emergence of the crisis. The examples of Greece, Italy and Portugal all show that inappropriate fiscal and competitiveness policies can contribute to the rise of imbalances and, on the longer term, to divergence from the euro area as a whole. By contrast, fiscal policy in Spain had sought to offset the imbalances emerging in the private sector, and therefore it has been the only Mediterranean country achieving convergence since the crisis. Overall, **the new accession countries must pay special attention to ensuring that they remain on a sustainable and balanced path of growth even after accession to the euro area.** This requires fiscal discipline and a macroprudential policy ensuring that it remains possible to finance external debt.

3.2.7 The case of the Baltic states

As regards the three Northern countries that were the most recent to introduce the single currency (Estonia joined the euro area in 2011, Latvia in 2014 and Lithuania in 2015)**, it is harder to assess the success of the introduction of the euro than is the case with the Southern European countries**. Unlike the latter, these countries offer only a few years of observed data regarding what consequences the introduction of the euro may have. **A notable shared characteristic of these three states** is their pegging of their currencies to the euro, which Estonia and Lithuania did back in 2002 and Latvia in 2005, and the fact that all of them had **followed a monetary policy of fixed exchange rates even before**, practically since they became independent. Accordingly, these countries had relinquished their independent monetary policies and the possibility of external adjustment through the exchange rate in the event of a crisis or a deterioration in competitiveness **more than two decades before the introduction of the euro** (Marer, 2015).[68] **Both before and during the global financial crisis, this created conditions for the three countries almost equivalent to being members of the euro area.** These countries therefore **met the convergence criteria for the introduction of the euro and faced the crisis already operating in an economic environment similar to those of the euro area member states.** It is therefore important to analyse the experiences of these three countries in the crisis, as this will help us understand the level of their 'euro maturity'.

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[68] Accordingly, the introduction of the euro did not represent a change of the magnitude seen in the Southern European countries examined above or in Slovenia and Slovakia, which will be the subject of the next section and where accession to the euro area also entailed relinquishing their independent monetary policies. In this sense, the Baltic states adopted only the advantages of the euro when they introduced the single currency; they had already borne its main disadvantage in the period preceding its introduction.

Thanks to their fixed exchange rate regimes, the need to comply with the Maastricht exchange rate criterion was not an obstacle for them when it came to actually introducing the euro. Nevertheless, at the time of their accession to the European Union in the early 2000's, their fixed exchange rate regime and highly liberalised money and capital markets **resulted in** significant (mainly speculative financial) **capital inflows, a considerable surge in lending and overheating in the economy**. In all three countries, foreign financial investments approximately doubled between 2004 and 2007, and nominal interest rates noticeably fell. Such **fast convergence resulted in an environment of extremely low real interest rates** (even lower than in Southern Europe) **against a backdrop of relatively high inflation** (Chart 3-6). **This led to the biggest property bubble anywhere in Europe**, as property prices more than trebled in Latvia and more than doubled in Lithuania and Estonia in the period between 2003 and 2007 (European Commission, 2010).

Chart 3-6: Evolution of real interest rates in Baltic countries
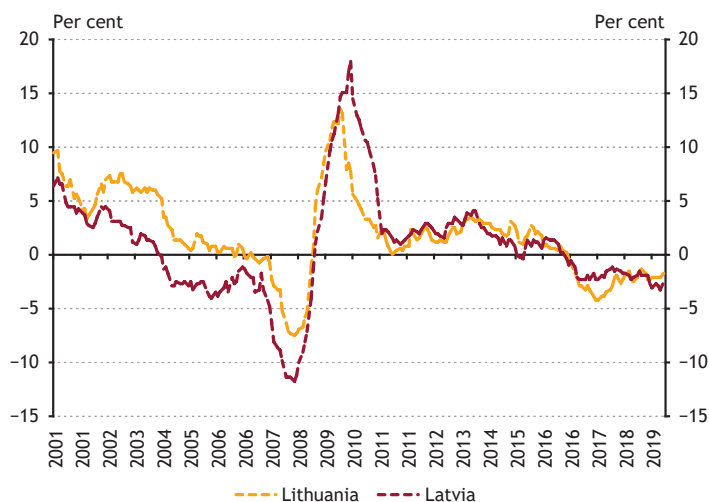
Note: The real interest rate is calculated as the difference between the long-term interest rate in the Maastricht convergence criteria and the Harmonized Index of Consumer Prices (HICP). There is no published interest rate data for Estonia. Source: MNB calculations based on Eurostat data.

The lending boom and the inflow of foreign capital ended with the emergence of the financial turbulences immediately preceding the crisis (Chart 3-7). With the rise in risk avoidance, foreign capital left the country and interest rates on loans rose steeply. Combined with the bursting of the property bubble, this resulted in these **three countries facing the biggest downturn within the European Union when the crisis broke out**; in 2009, GDP in all three countries fell by over 14 per cent, while the average recession across the EU stood at 4.4 per cent.

Chart 3-7: Current account balances in the Baltic states, as a percentage of GDP
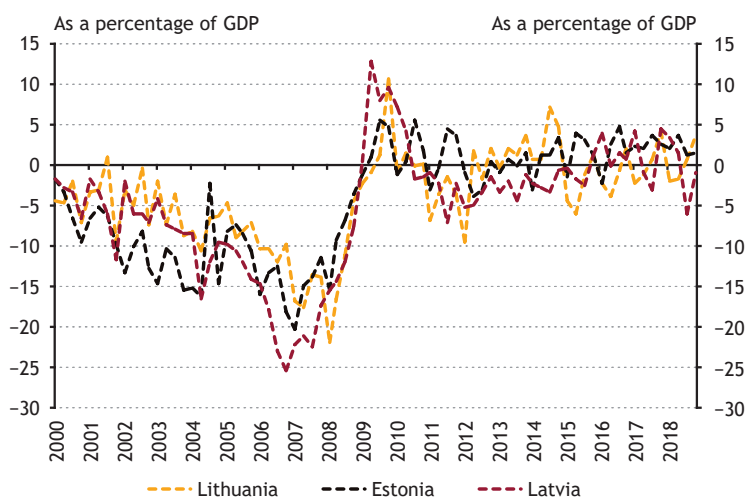
Source: Eurostat.

In their crisis management, all three Baltic states opted for internal devaluation to manage the imbalances that emerged before the crisis. One reason is that, besides giving up on their earlier monetary policies predicated on a fixed exchange rate, the devaluation of their currencies would have delayed the introduction of the euro, which all three countries had set as an urgent target. An economic counterargument to the devaluation of the currencies was that, in all three countries, **most loans were currency loans denominated in euros**, and thus

devaluation would have significantly driven up the debts of households as well as corporates (Kattel–Raudla, 2012). **Once the option of currency devaluation was excluded, only internal devaluation offered a chance** for all three countries to return the equilibrium, lost before the crisis, between productivity and wages, thus improving the international competitiveness of these countries.

The process of internal devaluation took place in the period from 2008 to 2010 in all three countries, through the reduction of nominal wages. In Latvia, wages fell slightly in the private sector (wage adjustments were particularly significant in the public sector), whereas wage reduction was more balanced between the private and the public sectors in the other countries (Chart 3-8). Considering the different branches of the national economy, wages fell in all industries, albeit not at all equally. Wages fell most steeply in the market services sector, especially the financial sector, and the construction industry, with less significant falls in wages in the manufacturing industries (Masso–Krillo, 2011).

Chart 3-8: Changes in nominal wages in the period of internal devaluation (2008-2010)
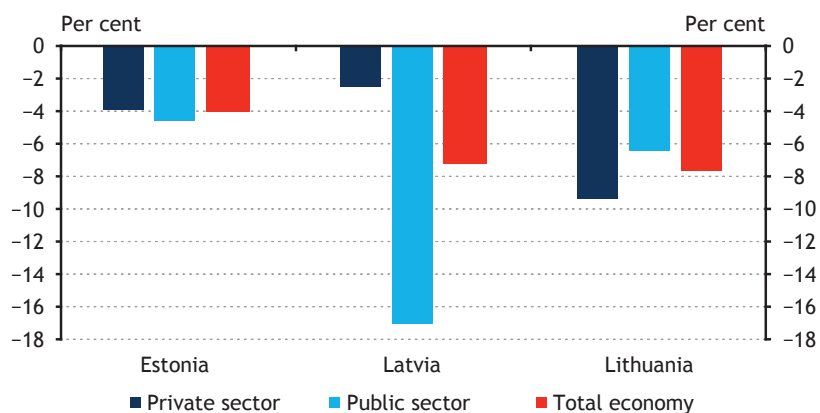
Source: National statistical offices.

Although nominal wages are, in general, characterised by downward rigidity, the wage cuts in the 2008 crisis were not unheard of in the history of the three countries. Of all the countries impacted by the Russian financial crisis of 1999, almost only the Baltic states recorded a reduction in wages. The substantive decrease in nominal wages, also affecting the private sector, and the **ensuing internal devaluation were made possible by the extremely flexible and liberalised labour markets of the three countries.** Collective agreements covering fewer people, weaker trade unions, wage cuts that could be implemented without mutual agreements in some cases, and flexible wage regimes (e.g. remuneration regimes based on personal or corporate performance) allowed companies to reduce the wages of their employees (Masso–Krillo, 2011). **As wages fell more than productivity, the real exchange rates of the three countries devalued, which improved their competitiveness and allowed for a faster recovery from the crisis.**

The adjustment of wages during the crisis alleviated but did not entirely eliminate the need for quantitative adjustment, so that the economic downturn was coupled with a significant rise in unemployment rate in all three Baltic states. High two-directional labour mobility significantly reduced the social costs of the above and therefore helped economic recovery (European Commission, 2013, 2014). When the crisis broke out, emigration accelerated, but a large part of those who went abroad for work then returned home after the recovery. However, net emigration remained high even after recovery of the economy.

In addition to cutting wages, the Baltic states employed fiscal austerity measures as a second component of internal devaluation. Although all three countries had followed prudent fiscal policies and had low government debts before the crisis, **the increasingly risk-avoidant behaviours during the crisis meant that practically none of the countries were able to ac-**

cess credit. This forced them to carry out fiscal adjustments and Latvia even had to take out an IMF loan in late 2008. **All three countries carried out significant fiscal adjustments between 2008 and 2010**, around two thirds by cutting costs and one third by boosting revenues (Kattel–Raudla, 2012). In parallel with the other component of internal adjustments, i.e. the reduction of wages, the cost cutting measures involved mainly a **significant wage cut for public sector employees, but the impact on social costs** (pensions, health and unemployment benefits) **was also significant**. The changes implemented in order to raise revenues applied to a wide range of tax types. All three countries raised sales and excise taxes and reduced eligibility grounds for reclaiming income taxes.

Although the three countries carried out fiscal adjustments of nearly equivalent degrees, the initial impacts of their tightening varied. Estonia was characterised by a quickly improving budget balance and faster economic recovery. The divergent impacts are attributable to the timings of the measures (Estonia had started consolidation earlier, already in early 2008), the higher reserves accumulated by the Estonian government before the crisis and the resulting greater room for manoeuvre, as well as the structure of its banking system, which meant that bank consolidation represented a smaller burden for Estonia (Kattel–Raudla, 2012). **Overall, thanks to their adjustment measures all three countries managed, even if not at the same speed,** to reduce their deficits to below the Maastricht criterion of 3 per cent of GDP by 2012 at the latest. It is worth noting that Estonia's deficit never exceeded the 3-per cent criterion, even in the hardest year of the crisis. **Their temporarily higher deficits resulted in growing government debt in all three countries**, **but their pre-crisis prudent fiscal policies still put them among the best within the Union** (in 2018, Estonia, Lithuania and Latvia reported consolidated government debts of 8.4, 34.1 and 36.4 per cent of GDP, respectively).

While internal factors were key to satisfying the exchange rate and fiscal criteria (especially the monetary policy stances adopted and the fiscal adjustments implemented during the crisis), **global factors** over which the Baltic states had no control **played the central role when it came to meeting the price stability criteria**. The three countries were characterised by high inflation before the crisis (10 to 15 per cent in 2008), which rose considerably after their accession to the EU in 2004. **This environment of high inflation arose from unsustainable and overheated growth. The crisis restrained the price dynamics significantly** in all three countries, in line with a collapse in internal demand. Internal devaluation also exacerbated the effects of the crisis, reducing the rate of inflation through the demand-reducing effects of lower wages and fiscal adjustments. At the time of the last convergence report (European Commission, 2010), the disinflationary impacts of stabilisation were still strongly felt in Estonia, with the rate of inflation examined against the criterion still negative.

In line with economic recovery, inflation rose in all three countries and it even surpassed the convergence criterion in Estonia after it joined the euro area. The acceleration in the rate of inflation ended when inflation falling due to the sovereign debt crisis in the euro area was **imported**; then, from 2014 onwards, **all three countries recorded their inflation rates declining to around 0 per cent as global oil prices fell.** It was already in this environment of moderate global inflation that Lithuania and Latvia introduced the single currency, so that we can conclude that, in the case of the three Baltic states, **compliance with the inflation criterion was predicated primarily on external shocks and not the restructuring of the economy** (European Commission, 2013, 2014).

Overall, therefore, we may conclude that the three Baltic states were able to meet the Maastricht convergence criteria thanks to their adherence to fixed exchange rate policies, their restri-

ctive fiscal policies during the crisis and a disinflation signifi-cantly shaped by certain global factors. The lessons from the crisis, and therein especially the example of Southern European countries, have proven that it is not only the nominal criteria that matter for euro maturity: **an appropriate level of real conver-gence is also essential**. **As regards economic convergence, these three countries had achieved fast convergence before the crisis**; the relative prosperity of all three states, as measured against the euro area, rose from 16–19 per cent in the early 2000's to more than 30 per cent by 2007. Nevertheless, **some of this fast conver-gence originated from unsustainable growth**, so that the trend stalled temporarily once the crisis started. **Still, a period of cri-sis management helped the economy to recover and, although at a slower pace, the process of convergence then continued** (Chart 3-9). Estonia introduced the single currency at a relative prosperity level of 42 per cent of the founding members, Latvia at 39 per cent, and Lithuania at 40 per cent.

Chart 3-9: Convergence in the Baltic states
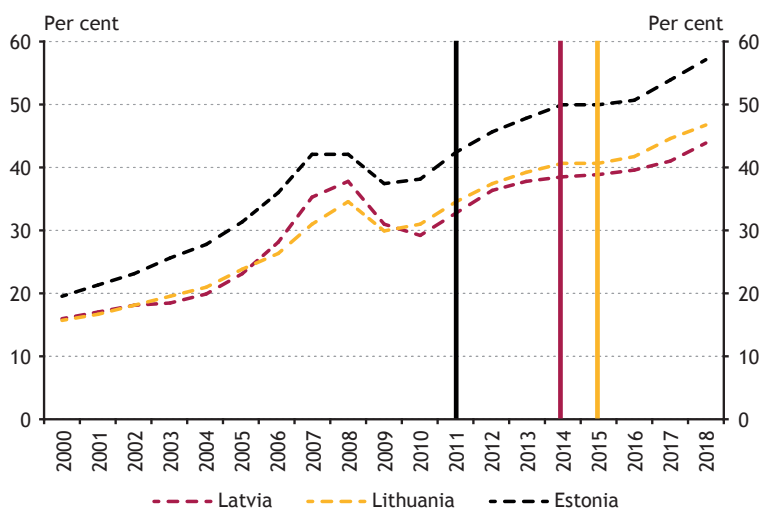
Note: As a percentage of GDP per capita in the 12-member euro area. Vertical lines indicate the year when the country of a given color joined the euro area. Source: MNB calculations based on Eurostat data.

As regards the harmonisation of economic cycles, the three Baltic states exhibited very low or insignificant comovement with the Union at the time of their accession. This meant that the three Baltic states had the least synchronized economic cycles out of all the countries that joined in 2004.[69] This moderate comovement was attributable mainly to the **lower intra-industry trade** of the three countries with the Union **and their tighter economic relationships with the Scandinavian countries, which are less correlated with the EU** (Darvas–Szapáry, 2004). Although harmonisation increased after accession as the trade relationships were deepened, the three Baltic states continue to have the least synchronized economic cycles with the EU core countries.

Only a few years have passed since the introduction of the euro from which to draw conclusions regarding all the three countries, therefore any assessment of the success of the accession of the Baltic states **is limited primarily to the assessments immediately following accession and an overview of the risks associated with joining.** According to Eurobarometer surveys, the overwhelming majority of the populations of the three countries consider the transition to the euro to have been unproblematic, even though the conversion of prices expressed in the former currencies to euros was not necessarily always fair according to the respondents interviewed on this matter. In all three countries, over half of the respondents interviewed about their views on the introduction of the euro considered it a significant risk **that inflation might rise as a result of the introduction of the single currency**; the European Commission (2013, 2014a) also considered this as the highest risk related to the introduction of the euro. **This is due to the fact that inflation in the three countries is extremely sensitive to energy price changes due to the structure of their economies**. It evidences the real risk of accelerating inflation that inflation in Estonia rose significantly after its accession

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[69] See for example: Darvas–Szapáry (2004), Fidrmuc–Korhonen (2006), Stanisic (2013).

in 2011; the rate fell to below the Maastricht threshold only in 2014, once global oil prices had fallen. At the same time, over the last year the three Baltic states had the highest rate of inflation within the euro area besides the Netherlands and Slovakia.

Accelerating inflation can have an impact on wages too, which may then result in worsening competitiveness. This process is demonstrated in how Estonia's effective real exchange rate started to appreciate quickly after euro area accession, having depreciated in the wake of the crisis. Fast real appreciation after accession is also seen in Latvia and Lithuania. Similarly to the other Central Eastern European countries, the Baltic states are also faced with the **challenge of the prevailing demographic trends** (aging and declining populations), which is exacerbated by the migration of working-age populations to other parts of the EU. The latter **may make the labour market tighter and therefore accelerate the rise in wages, thus increasing the divergence between productivity and wages**. Besides inflation and the demographic trends, there is a risk inherent in the **relatively low synchronization of the economic cycles** of the Baltic states, which entails the risk of asymmetric shocks as well.

Overall, we conclude that the brevity of the period under review is not the sole reason why the success of the introduction of the euro in the Baltic states cannot be judged unambiguously. This is due to the fact that the **risks arising** in connection with euro introduction **overshadow the euro maturity of the three countries**, even as we must emphasise that these risks are not directly related to the euro, given the existence of fixed exchange rate regimes there in the past. At the same time, the introduction of the euro should be regarded as positive rather than negative in the Baltic countries. The three countries demonstrated during the crisis their **ability to rely on internal devaluation to restore the imbalances that emerged before the crisis even without recourse to their own monetary policies; nevertheless, this entailed social costs as well on the short run**. Compared to the

EU average, real wages returned to their pre-crisis levels only in 2015, which may be a **factor contributing to the sustained high level of net emigration**. All this demonstrates that it is expedient for new entrants to the euro area **to avoid the need for internal devaluation and therefore to manage proactively the risks associated with accession.** It was also an important factor that the **euro traditionally enjoys greater support in the population** of the Baltic states than on average across the Union, so that the social impacts of the internal adjustments were more limited than in the Southern states. Internal devaluation therefore generated much less social tension than in the Mediterranean countries. In addition, due to the internal adjustment, convergence towards the euro area resumed relatively soon after the introduction of the single currency.

3.2.8 Lessons from the introduction of the euro in Slovakia and Slovenia

Slovenia and Slovakia are our only immediate neighbours that have already introduced the single currency; the former in 2007 and the latter in 2009. The experiences of these two countries regarding accession and the subsequent period could offer countless lessons for an introduction of the euro in Hungary, given the fact that, **of all the countries using the euro, these two are the most similar to our country in terms of their economic structures.** Another reason why it is important to analyse the examples of these two countries is because **Slovakia's case can show how the single currency can be successfully introduced through a focus on minimising the risks of accession** (asymmetric shocks, wages diverging from productivity, an overheated economy). This is the opposite of the example of the Baltic states seen above, where the solution was found in flexibility and the ability of the three countries to adapt quickly, which, however, entailed significant social costs on the short term. In contrast to Slovakia, **the**

case of Slovenia exemplifies the importance of maintaining the accession efforts focused on minimising risk not only before but also after accession; without this, the problems originally hoped to be avoided may resurface.

Slovakia and Slovenia are similar in that they satisfied the Maastricht criteria before their introduction of the euro thanks to the fact that these two countries **developed economic structures and economic policies enabling not only compliance with the criteria but even the long-term mitigation of the risks of the single currency**. It is an important difference between the two countries, however, that while **Slovakia managed to maintain** such a regime **after the introduction of the euro**, **this disintegrated in Slovenia,** which therefore faced problems similar to those of the Southern European states once the financial crisis broke out.

Of all the Maastricht criteria, driving down inflation represented the greatest challenge for both countries. Both Slovenia and Slovakia were characterised by high rates of inflation in the early 2000's. In order to introduce the euro as soon as possible, Slovenia managed to reduce its rate of inflation by 6 percentage points by the year preceding accession from 9 per cent in 2000 and thus met the Maastricht inflation criterion by the end of 2005 (Chart 3-10). **The dynamic and persistent fall in inflation was attributable to** the cooperation between the government and the Bank of Slovenia and their **coordinated economic policies** (European Commission, 2006). This included a **centralised regime of tripartite wage agreements** covering both the private and the public sectors. This, in addition to reducing inflation expectations, **ensured that wage and productivity growth were aligned**, which stabilised the country's cost competitiveness. All this contributed to the fact that the country was **able to reduce the rate of inflation through fast real economic convergence,** without sacrificing growth.

Chart 3-10: Evolution of inflation in East-Central European countries
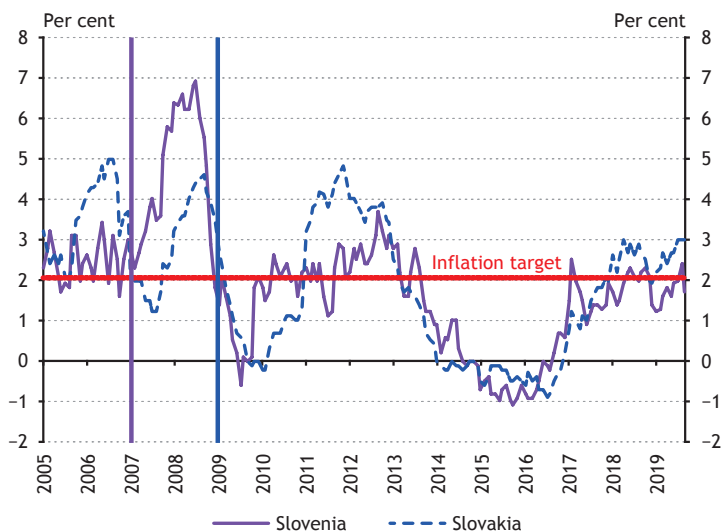
Note: *Vertical lines indicate the year when the country of a given color joined the euro area. The horizontal line represents the ECB's inflation target.*
Source: *Eurostat.*

Just like Slovenia, Slovakia has had to overcome volatile and high inflation in order to satisfy the Maastricht criteria. In the early 2000's the country was still characterised by inflation at rates in excess of 10 per cent ; it was able to reduce it to 3.5 per cent in 2002, but inflation again went up temporarily in the next two years. **The variability of inflation** and its **high rate** in several years was **largely attributable to the effects of government measures** (changes in regulated prices and indirect taxes). According to the calculations of the National Bank of Slovakia, four fifths of the inflation in the early 2000's were caused by this factor, but the **underlying fundamental processes adjusted for these were no longer significantly higher than in Western Europe** (National Bank of Slovakia, 2003). Although the government measures exerted only temporary impacts on the price dynamics, the country applied a monetary policy of austerity in order to anchor the inflation expectations. This was the purpose of the new

monetary policy direction effective from the end of 2004, which encouraged expectations for decreasing inflation by setting an inflation target and tolerating the appreciation of the Slovak koruna (European Commission, 2008). **In addition to the declining expectations, fast growth based on working capital inflows and exchange rate appreciation pass-through also contributed to disinflation.**

As regards the fiscal criteria, Slovenia had followed a prudent and disciplined fiscal policy already before its EU accession. With the exception of just two years, 2001 and 2002, its deficit had been below 3 per cent ever since the mid-90's, and its government debt remained below 30 per cent. The country did not need a significant change in fiscal direction to be able to introduce the euro. In spite of its low deficit and government debt, Slovenia's economic policy was criticised after the crisis on the grounds that, with its cyclical position also taken into account, its fiscal policy had been too loose in the years before the crisis, which limited the government's room for manoeuvre during the subsequent recession (Verbič et al., 2013).

It was a challenge for our Northern neighbour to meet the inflation target and it also needed more significant fiscal reforms to achieve the deficit target. By introducing fiscal discipline and implementing continual reforms between 1999 and 2004, the country both achieved a deficit of less than 3 per cent and created an attractive environment for the foreign working capital underlying its fast economic growth.

As regards the exchange rate criteria, Slovenia achieved exchange rate stability through cooperative currency market interventions by the central and the commercial banks from 2001 onwards. As a result, the Slovenian tolar exchange rate gradually depreciated until June 2004. Thereafter, the exchange rate target set by the central bank played its role as anchor successfully, so that there was **no need for exchange rate adjustments and direct interventions by the central bank** over and above the

central bank's intervention signalling accession to the ERM-II mechanism, which represented an ante-room to the euro, and the initial change of regime.

Slovakia was not able to satisfy the exchange rate criteria smoothly. Since **disinflation** in the country **was achieved through capital inflows and the resulting appreciation of the Slovak koruna**, even though the country joined the ERM-II regime in November 2005, **the central bank was forced to revalue the koruna/euro exchange rate central parity due to the appreciation pressure** in early 2007. This revaluation postponed the possibility for euro area accession by two years. Nevertheless, this did not represent a substantive delay compared to the original plans; the strategy for the introduction of the euro drawn up by the Slovak government and central bank in 2003 had foreseen a planned introduction for the period between 2008 and 2010 (National Bank of Slovakia, 2003).

As regards GDP convergence, Slovenia was in the second best position behind Cyprus of the countries joining the EU in 2004. Upon accession to the Union, the country's relative prosperity compared to the 12 original member states was higher than 54 per cent, rising to over 60 per cent by the time of introducing the single currency. This meant that, **at the time of adopting the single currency, its economy lagged behind to the same or smaller extent than the Southern European countries in 2000.**[70] By contrast, Slovakia's relative prosperity at the time of its EU accession in 2004 was only quarter of that of the euro area founding members. Nevertheless, thanks to fast convergence in the country, this rate rose to 41 per cent by the time it introduced the euro in 2009, even though its convergence temporarily stalled as a result of the crisis (Chart 3-11).

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[70] In 2000, Portugal's GDP per capita stood at 61 per cent of the EU-12 average. The relevant figures were 81 per cent in Spain and 66 per cent for Greece.

Slovenia had an advantage over Slovakia both in terms of its convergence and the fact that its business cycles were more closely correlated with those of the euro area. At the time of accession, Slovenia's economy was the most harmonised with the euro area among all the new accession countries. Its level of harmonisation has remained practically unchanged since its accession to the euro area and continues to be the highest in the Central Eastern European region. Slovakia exhibited a lower degree of harmonisation in the early 2000's (Darvas–Szapáry, 2004), but this has increased considerably over the past decade.

Chart 3-11: Convergence of East-Central European countries to eurozone
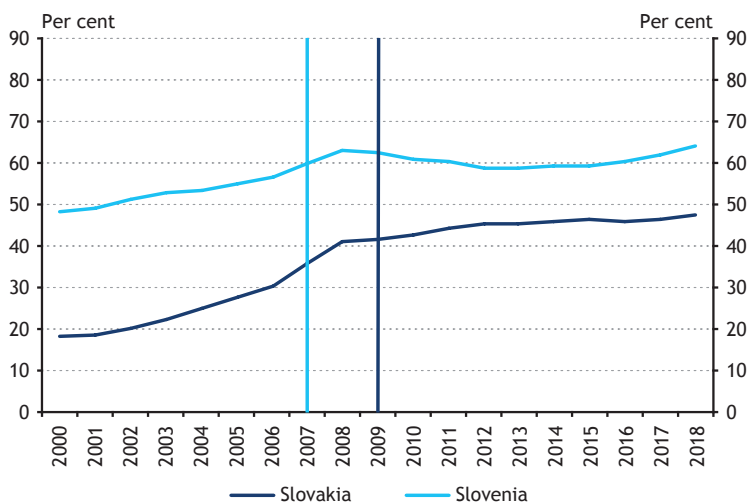
Note: As a percentage of GDP per capita in the 12-member euro area. Vertical lines indicate the year when the country of a given color joined the euro area. Source: Eurostat.

Overall, we may conclude regarding compliance with the convergence criteria that Slovenia was able to meet the nominal criteria more smoothly, and was also better positioned than Slovakia in terms of real economic prosperity. All this implies that the former had an advantage in terms of euro maturity. Yet the experience following the introduction of the euro and the

responses to the crisis show that Slovakia's introduction of the euro has been much more successful than Slovenia's, in spite of the initial advantages of the latter. Whereas the former exhibited fast recovery after the crisis and real convergence after a temporary downturn, Slovenia was subject to the sort of prolonged crisis and lasting halt to convergence that also characterised the euro countries of the Mediterranean.

The reasons for the differences between the two countries is to be found in the economic processes following the introduction of the euro. The example of Slovenia and the Southern European countries **is a good demonstration of why it is important to maintain a stable environment of low inflation after accession to the euro area.** In Slovenia, **inflation rates started to rise** already in the year of its accession, and its impacts were aggravated by **the dissolution of the regime of tripartite wage agreements, which had played a key role before**. Rising inflation combined with a post-accession environment of low interest rates drove **real interest rates** towards 0 per cent and then, in 2008, **into negative territory, overheating the economy.** Borrowing rose significantly and, as seen in the example of Spain, this **led to the emergence of a credit bubble.** Besides the fact that the country therefore **suffered a greater downturn during the crisis**, all this caused inflation to accelerate and the **wage dynamics to intensify**. This weakened the correspondence between productivity and wage growth rates, which in turn **reduced the country's competitiveness** as its effective real exchange rate against the euro area appreciated between 2008 and 2010 (Chart 3-12).

Chart 3-12: Productivity, wages and unemployment in Slovenia
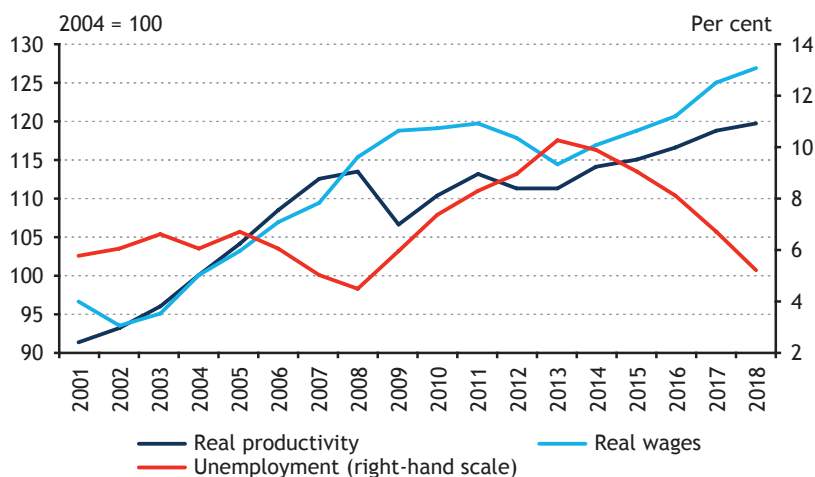
Source: MNB calculations based on Eurostat data.

In addition to the appreciation of the real exchange rate, another obstacle to post-crisis adjustments lay in the country's labour market being rigid in comparison with the rest of the Union and the fact that wage adjustments did not allow a return to the pre-crisis levels of competitiveness. The slow adjustment of the labour market is also demonstrated in the changes in the unemployment rate, which consistently rose between 2008 and 2013 and was not yet recovered to the pre-crisis unemployment levels even in 2016.

The situation in the Slovenian banking system also played a role in this slow recovery. Excessive lending before the crisis meant that **in 2012 Slovenia's banking system had the fourth largest non-performing loan portfolio** in the euro area.[71] However, this both hampered lending and therefore economic growth and **put the central budget in a difficult situation** because of the **high degree of state ownership in the country's banking sector**,

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[71]   15.2 per cent of total loans. The only countries with higher rates of non-performing loans were Ireland (25 per cent), Greece (23.3 per cent) and Cyprus (18.4 per cent). Source: IMF Financial Soundness Indicators.

where several banks had to resort to a state aid package in 2013. As a result, the budget deficit temporarily rose above 14 per cent of GDP in 2013, and government debt reached more than 80 per cent of GDP by 2015.

In consequence, Slovenia's fast convergence to the euro area, which had characterised the country before the introduction of the euro, stopped in 2008, and its per-capita GDP measured at purchasing power parity relative to the euro area was lower in 2015 than before the crisis. Thus **in Slovenia, convergence did not accelerate after the introduction of the single currency as expected, and the euro did not deliver on the hopes placed on it.**

Slovakia's experiences with the introduction of the euro are very different from the pattern seen in Slovenia. Inflation did not accelerate when Slovakia introduced the euro, although this was **attributable in part to the fact** that it did so at the time of the crisis, so that **the recession also curtailed the rate of price growth**. This is also demonstrated by the fact that once the recovery happened, inflation rose to 4.1 per cent in 2011; however, almost a third of this increase is attributable to the general sales tax rate rising from 19 to 20 per cent. Even in 2012, inflation stood above the Maastricht criterion (Slovakia's inflation rate was 3.7 per cent, as opposed to the 3.1 per cent criterion for the year); however, **its inflation once more stabilised at a low level in the following year thanks to a global environment of low inflation**.

In Slovakia, the temporarily high inflation was not coupled with the kind of economic overheating seen in Slovenia, partly due to the emergence of increasingly **risk-avoidant behaviours** on the international money market against a backdrop of an unfolding European sovereign debt crisis (Fidrmuc et al., 2013). However, having temporarily fallen during the crisis, the total loan stock of the national economy increased substantively, as a result of a rise in household indebtedness as a percentage of GDP to one and a half times of its 2009 levels. While this **level of indebtedness does not classify as high in an EU-wide comparison, the upward trend may**

represent a risk, since the Union is currently experiencing the opposite trend of deleveraging the excessively high debts accumulated before the crisis. **In the absence of appropriate macroprudential regulations, an excessive rise in household borrowing could lead to a credit bubble and therefore**, given the divergence from the EU-wide trend, **to the emergence of an asymmetric shock**.

Reforms introduced in the 2000's significantly increased the flexibility of the labour market in Slovakia. Among other things, these measures improved for employers the conditions of hiring staff, with the costs involved also decreasing. As a result of the above factors, productivity and real wages in Slovakia were in alignment before the crisis. Thanks to the country's labour market reforms and its accession to the EU, its FDI inflows rose significantly (Jurajda – Mathernová, 2004). **In contrast to Slovenia's experience, Slovakia managed to maintain the equilibrium between wages and productivity after the crisis**, even though Slovakia **had not operated a centralised wage agreement regime like Slovenia's before the introduction of the euro**. **Wages and productivity remained in alignment thanks to the sustained dynamism of productivity in Slovakia** in spite of the crisis and the related temporary drying-up of working capital inflows (Chart 3-13). Whereas productivity in Slovenia returned to its pre-crisis levels after nearly 6 years, Slovakia's productivity continued its fast growth following a temporary downturn in 2009. **As a result, Slovakia's economy was able to increase its competitiveness even without an independent monetary policy during the years of the crisis, which accelerated its recovery**.[72] A concomitant of recovery based on productivity growth was the continued high levels of unemployment in Slovakia, where the unemployment ratio is still above the regional average (Fidrmuc et al., 2013).

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[72] It is important to note, however, that some commentators on the introduction of the euro and the competitiveness of Slovakia note that the country was placed in an unfavourable situation through introducing the euro at an overly strong exchange rate (Fidrmuc et al., 2013) and that the further appreciation associated with its accession worsened the situation of Slovakian corporates directly in parallel with the outbreak of the crisis (Lalinsky, 2010).

Chart 3-13: Productivity, wages and unemployment in Slovakia
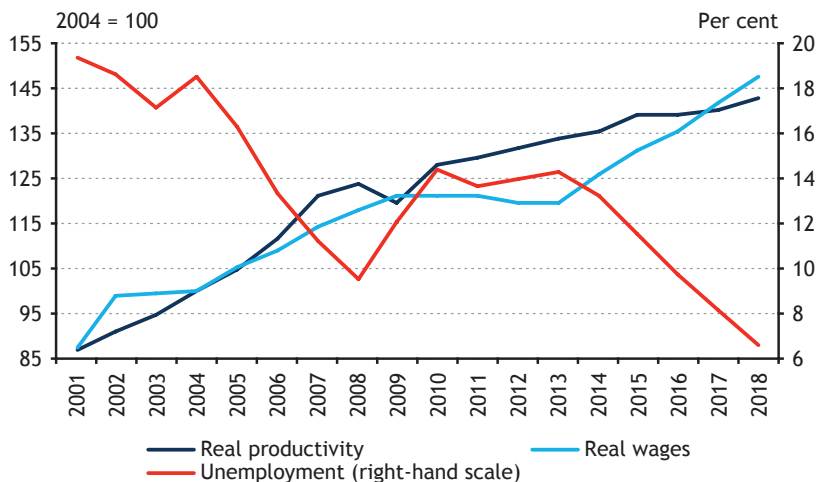
Source: Eurostat.

Regarding Slovakia's success in its accession to the euro area, we may conclude that although the country's convergence slowed to some extent as a result of the crisis, it nevertheless continued unabated even with (or in fact thanks to) the adoption of the single currency. Žúdel–Melioris (2016) also give a positive assessment of the introduction of the single currency, to which they attribute a GDP boost of around 10 per cent up to 2011. Nevertheless, they add that, because of the crisis, it would have been significantly more advantageous for the country if it had introduced the euro only in 2010.

We may therefore draw the overall conclusion regarding the accession of these two countries to the euro area that the main difference is attributable to the different paths they followed after introducing the single currency. Although both countries geared their economic policies towards meeting the Maastricht criteria and, at the same time, **minimising the risks associated with the euro, Slovenia failed to follow that path once it had**

adopted the single currency. Slovenia was therefore subject to the same overheating that characterised the Southern European and the Baltic economies, but failed to restore the resulting imbalances as quickly after the outbreak of the crisis as the Baltic states did. As a result, Slovenia **incurred the highest costs when introducing the euro, even though its euro maturity at the time of accession was the highest of all the new members.** This evidences that **it is important to monitor closely and manage the potential risks of the euro both before and after its introduction.**

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4
Successful euro area – the criteria needed for accession in the 21st century

4.1
Maastricht 2.0

Dávid Berta – Norbert Csorba –
Judit Baranyai Csutiné – Bálint Dancsik – Gábor P. Kiss –
Laura Komlóssy – Stefan Krakovsky – Alexandr Maxim Palicz –
Szabolcs Pásztor – Gábor Dániel Soós

The previous chapters have made it clear that the main direction of the euro area's evolution would be to complete the institutional structure through the complete integration of the fiscal and capital markets. However, it also appears to be impossible in the short to medium term. Therefore, candidate countries should also meet real economic criteria in order to ensure the successful adoption of the euro. When considering the above criteria, it is of particular importance to evaluate the adequate level of real economic development, since the closer an economy is to the level of the euro area, the lower its inflation surplus resulting from convergence. Generally speaking, when the country's level of development has reached around ninety per cent, the inflation surplus resulting from catching up becomes negligible. In those cases, the common monetary policy will result in a similar level of real interest and monetary orientation. Apart from real economic development, the appropriate harmonisation of business cycles and financial cycles is another factor of outstanding importance. The high correlation between financial cycles may also facilitate a mutually beneficial integration. The high level of synchronisation may guarantee that the financial systems of the candidate country and the euro area should respond similarly to economic shocks.

A further real economic criterion is the level of harmonisation of the productivity and competitiveness of economic operators. The SME sector in emerging economies is less competitive than that of more industrialised Western European economies. Therefore, maintaining and supporting financing is of key importance for independent monetary

policy where the SME sector, which is mostly in domestic ownership, is vulnerable and its productivity is low. It is thus important that the SME sector should be sufficiently competitive and productive at the time of joining the euro area in order to ensure that no significant credit constraints emerge even along the downhill part of the credit cycle, which in turn poses a smaller challenge for independent monetary policy. Moreover, international experience has shown that lower productivity in the SME sector compared to large companies generally entails higher inflation. In addition to the above, a diversified national export portfolio and high added value play an important part in competitiveness. Looking at EU economies, they are characterised by significant corporate duality, which can be identified as a high gap in productivity between SMEs and large companies.

The adequate depth of the financial system is another important aspect to consider prior to a country's accession to the monetary union, as it can help prevent dependency on foreign capital due to the increased capital flow and ensure that such increased capital flows should not result in excess lending and pro-cyclical economic processes. Another aspect that should not be overlooked is the cyclical position at which such depth is reached by the country's banking system. Banking sectors struggling with imbalances are on an unsustainable path in the long run, and their compliance with the conditions for their integration into the monetary union is only an appearance. Besides quantitative issues, the domestic financial institution system must be competitive by European standards; in other words, products and services should be broadly available to economic participants at suitable prices and suitable costs.

In order to ensure that meeting the system of conditions of the euro adoption does not result in social damage, adequate timing of the achievement of fiscal parameters should be ensured. It requires a criterion concerning the situation of the labour market, i.e. the achievement and maintenance of full employment. In other words, a country should join the euro area at a time its has plenty of room for fiscal manoeuvring, the deficit and the debt ratio are both low and there is no cyclical unemployment. In that case, the counter-cyclical policy and the room for fis-

cal manoeuvring required in the euro area both point in the direction of a balanced budget. The 2008 crisis underpinned that besides fiscal sustainability, preserving financial stability and putting in place policies in support of the maintenance of banks' resilience and the orderly resolution of potential bank crises are key to the sustainable operation of the euro area. Euro area candidate countries, therefore, must put in place macro- and microprudential policy instruments that are capable of supporting convergence to the euro area and minimising the risk of asymmetric shocks, and must have adequate resolution tools available. The exercise of these powers in an efficiently functioning institutional model supports the preservation of financial stability and efficient crisis management.

Based on historic experiences, it has become necessary to modify the fiscal requirements of the Maastricht criteria, by which two different alternatives should be considered. In the spirit of preserving but updating the deficit and debt ratios constituting the basis of the existing fiscal framework, it should be considered to bring the long-term structural deficit of public finances close to zero in Member States with higher government debt and close to 1–2 per cent of GDP in countries with more sustainable public finances. Moreover, the targeted debt ratio level should be lowered to 50 per cent of GDP. As an alternative, the criteria system might be recast in such a way that a desired debt target – which may vary across the Member States – provides the long-term anchor of fiscal policy. The path leading to the debt target, in turn, should be ensured by an expenditure rule derived from the discretionary items controlled by the budget and adjusted by tax measures. This proposition is consistent with the proposal of the European Fiscal Board for a major overhaul of the European fiscal framework.

4.1.1 Introduction

At present, the euro area is not an optimal currency area. The euro area strives to achieve monetary stability; therefore, the Maastricht Treaty imposed mainly nominal conditions for euro area accession as opposed to the real criteria of the optimal currency area theory. The Maastricht criteria do not define in detail the extent to which economic structures must converge to one another in order to ensure optimal common monetary policy across the euro area. Based on the experiences of the past two decades, compliance with the nominal Maastricht criteria does not guarantee in itself the euro area's suitability for an optimal currency area.

The original criteria system needs to be revised. The analyses presented in the previous chapters pointed out that the existing criteria do not guarantee sustainable convergence either to new entrants or to the existing members of the euro area. The Maastricht criteria did not ensure full convergence across the Member States; only partial convergence was achieved. The Maastricht criteria disregarded real economic (labour mobility, productivity) and capital flow (current account balances, saving rates) aspects. The crisis of the euro area demonstrated that the criteria were capable of facilitating partial convergence among the Member States in times of peace, but due to structural disparities, they were unable to prevent divergence during a recession.

Although the conditions of inflation and interest rate convergence were mostly met both before and after the accession, there were different developments in yields and inflation rates in the Member States of the euro area. The pre-crisis interest rate convergence and inflation rate divergence divided the real interest rates, overall. As a result, current account balances also reflected divergence. In addition, the risk of the emergence of asset price bubbles increased in periphery countries and the rate of efficient investment decreased, which also contributed to the deceleration in productivity.

Compliance with the original fiscal criteria proved to be problematic: according to the criterion, it is only under the assumption of nominal GDP growth of 5 per cent that the deficit target of 3 per cent is consistent with the 60 per cent government debt target. Where nominal growth is persistently below 5 per cent due to the deceleration in real growth and/or inflation, a continuously tighter budget is needed, otherwise the government debt ratio rises significantly above the criterion value. In most euro area countries the latter situation took hold. (Nagy-Virág, 2017)

It is a deficiency of the current rules that they discourage counter-cyclical fiscal policies, both individually or on a euro area level. Another severe deficiency of the criteria is the fact that beyond government debt, they disregard private debt developments. Excessive or, as the case may be, irresponsible private sector indebtedness may lead to significant problems in the banking sector, especially in the case of shocks to the economy. Finally, no criterion was defined with a view to assessing the external balance position, a key determinant of the sustainability of growth: there is no comprehensive mechanism in place that would correct or nudge imbalances to a sustainable range.

Considering the shortcomings presented earlier the chapter proposes the establishment of a set of criteria that can be defined as a combination of three elements. These elements are retaining some of the original conditions, modifying some and formulating new criteria. As far as the price stability criterion is concerned, a continuously low inflation environment poses a problem, which may even result in a negative rate of inflation in the reference countries. Inflation should not be too high or too low when a country wants to join the euro area. It is therefore appropriate to compare the rate of price increase in candidate countries with the inflation rate of the three Member States with the lowest positive inflation rates. Similarly, in the case of the yield criterion, the target should be set in relation to the long-term returns in the three Member States with the lowest positive inflation rates. The role

of fiscal policy is becoming more important in case of joining to a currency area: room for fiscal maneuver might provide sufficient flexibility in times of crisis and external asymmetric shocks. According to MNB country-specific factors such as debt ratios of member states and their cyclical positions need to be considered when establishing budgetary criteria. Deficit target linked to the level of government debt and the use of a structural balance will ensure a sufficient room for maneuver and allow for countercyclical intervention in case of necessity. As far as exchange rate stability is concerned, the current 2-year rule should be replaced by a 3 to 5-year ERM II membership at the original Maastricht conditions. In addition to the original Maastricht criteria, new criteria are worth considering. New criteria need to be formulated which ensure that the development path of a pre-accession country can remain unbroken within the euro area. The new criteria should include economic development, labour market situation, synchronization of business and financial cycles, competitiveness, financial sector and countercyclical fiscal policies. These points are worth examining together and conditionally. In this section we propose the application of possible new criteria.

A new, broad-based criteria system should be set up in addition to the revision of existing indicators. Based on convergence experiences, the definition of the optimal time and conditions of entry is a key aspect, which requires the consideration of new criteria in addition to the existing Maastricht criteria. A set of new criteria needs to be formulated, which would ensure that – if they are fulfilled – the candidate country's growth path will remain unbroken even after the accession. The new criteria must extend to a country's level of economic development, labour market conditions, synchronisation between business and financial cycles, competitiveness, the financial sector and countercyclical fiscal policies. These aspects should be assessed in combination and conditionally. In this chapter we present a proposal for the application of a number of possible new criteria.

4.1.2 Sufficient development phase

Criterion summary: GDP per capita and wage levels should reach at least 90 per cent of the corresponding values in the euro area.

Justification: The closer an economy is to the level of development of the euro area, the smaller is the inflation surplus resulting from convergence. At a development level of around 90 per cent, the inflation surplus stemming from the convergence becomes negligible; consequently, the common monetary policy yields similar real interest rates and monetary policy stance.

In a monetary union, where the primary mandate of the central bank is to achieve and maintain price stability, the importance of inflation differentials between member states is paramount. Real economic development and convergence are linked to the inflation path in that the convergence process is accompanied by appreciation of real exchange rates. This phenomenon is referred to as the "Penn effect", and although its causes (such as the Balassa–Samuelson effect and the strength thereof) are debated by economists, its presence is still statistically identifiable in developed and medium developed economies. When a country joins the euro area at a relatively low level of development, then only the inflation channel of real appreciation can be effective. Higher inflation results in a lower real interest rate compared to the rest of the euro area which, in turn, leads to differences in the monetary policy stance and to the build-up of potential macroeconomic risks.

It is important to examine the experience of the euro area in terms of how country-specific inflation surpluses have evolved as a function of development level (Chart 4-1). Special attention should be paid to those countries outside of the euro area that have operated a currency board arrangement (such as Bulgaria or the Baltic States)**, since** a fixed exchange rate has similar inflationary effects as joining the euro area. Based on international experiences, at a development level of around 90 per cent, the inflation surplus stemming from convergence becomes negli-

gible; consequently, the common monetary policy yields similar real interest rates and monetary policy stances. In parallel with the convergence of the real economy, wage convergence must also be pursued in line with welfare considerations.

Chart 4-1: Correlation between level of development and inflation surplus
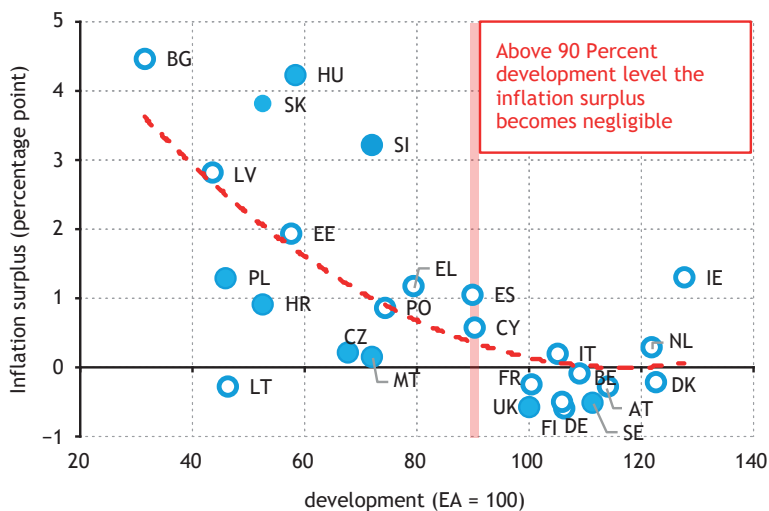
Note: Level of development is based on (PPP) GDP per capita. Inflation surplus is a deviation from euro area inflation. Values are averaged over 2000-2007. Blank circles indicate countries using the euro or pegging their currencies to the euro. Source: MNB calculation based on WDI data.

Real economic convergence is crucially important for another reason as well. As will be discussed later on, the harmonisation of economic cycles is indispensable for a common monetary union. **Real economic convergence also entails the harmonisation of the business cycles** (Chart 4-2). Especially since the common monetary conditions obtained after the euro area entry can only work optimally if the cyclical positions of the participating economies are similar or exhibit the closest possible co-movement. Therefore, real economic convergence also supports this co-movement and hence, contributes to the effectiveness of the common monetary policy.

Chart 4-2: Relationship between level of development and the synchronisation of business cycles
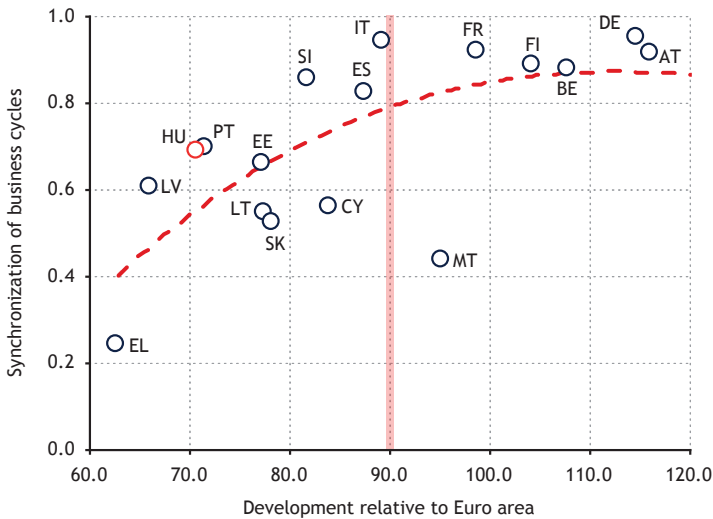
Note: Correlations with the EA12.

Source: MNB calculation based on Eurostat data.

4.1.3 Harmonisation of business and financial cycles

Criterion summary: Synchronised business and financial cycles.

Justification: The common monetary policy can only achieve optimal effectiveness if the cyclical positions of the participating economies are similar or if there is a stronger synergy. A high degree of financial cycles' synchronisation may guarantee that the candidate country and the euro area react similarly to economic shocks in terms of the financial system, as economic and policy changes exert a different effect in the various phases of the cycle.

Apart from the original Maastricht criteria, the synchronisation of business cycles plays an important role in the assessment of the benefits stemming from the common currency area. In an

economy periods of boom are followed by periods of downturn from time to time. The performance of the economies may be accompanied by shorter or longer periods of booms and recessions, with fluctuations that follow each other for periods of almost 8-10 years. The co-movement (synchronisation) of these business cycles over time is an important factor for the country concerned and for the euro area as a whole. To a large degree, the benefits of a currency area depend on the similar economic characteristics of the participating countries. When the business and financial cycles are harmonised, the cost of the countercyclical monetary policy can be minimised. According to the OCA (optimal currency area) theory, a single currency can be maintained for several countries if the region is largely integrated economically.

In our case, the synchronisation of economic cycles basically means how closely the short and medium-term fluctuations of the candidate economy are linked to the cycles of the currency union. The harmonisation of inflation is one of the original Maastricht criteria; thus an economy wishing to join the currency union must also comply with this criterion. At the same time, the correlation between inflation and the cyclical position of the economy has decreased significantly in recent decades (Chart 4-3). As a result, inflation provides less and less information about the cyclical position of a given economy. That is why it is particularly important to pay specific attention to the cyclical position and thus obtain a broader and more accurate snapshot of economic processes.

Chart 4-3: Changes in the slope of the Phillips curve
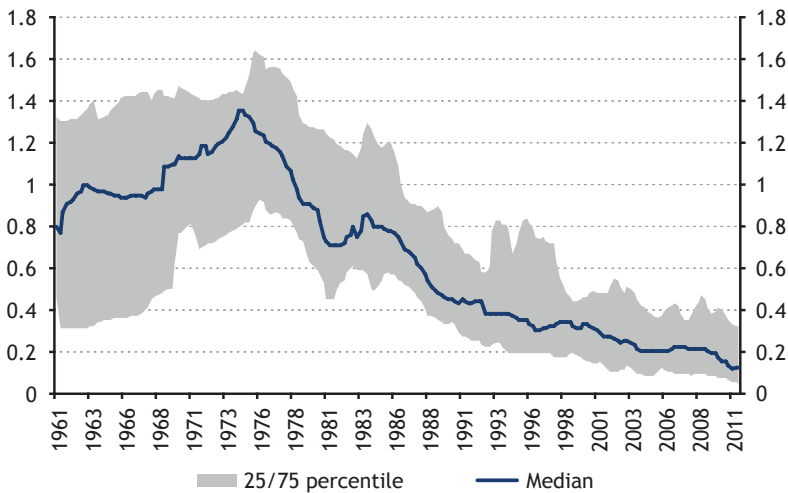
Note: The slope of the Phillips curve captures the relationship between the real economy and inflation.
Source: IMF (2013).

The simplest way to grasp business cycles is through the output gap. The importance of business harmonisation can be illustrated with the following simple example. Suppose that the output gap of the candidate country is negative (that is, in this case, the value of current output is below potential output; i.e. the real economy has a disinflationary impact), while the output gap of the currency area is positive. All else being equal, in such a case, the monetary conditions in the currency area are relatively tighter than in a country with a negative output gap. In this scenario, if the country under review were to enter the currency area, the common monetary conditions of the single currency area would also be applicable to it, which would further open the gap in the country of entry. If, however, the real economic cycles are fully harmonised, this effect will not take hold, and entering the single currency area will be ideal in this regard. In other words, the common monetary conditions obtained after the euro area entry can only

achieve optimal effectiveness if the cyclical positions of the participating economies are similar or exhibit the closest possible co-movement.

How to measure business cyclical harmonisation

In the following we will examine the covariance observed in the past two decades between the output gaps of CEE countries and those of the EA12.[73] **Essentially, the relationship between the cyclical positions is significantly positive for all countries; in terms of the strength of covariance, Hungary resides in the first third of the countries under review** (Chart 4-4). In addition, we found that the correlation co-movements are simultaneous in respect of quarterly data, and the highest values are observed for lag 1.[74]

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[73] At present, we examine the issue on a purely statistical basis, with the least amount of theoretical restrictions integrated into the analytical framework. In other words, we derive the output gap with an HP filter in a quarterly time profile for data of the past twenty-some years. For the purposes of our analysis we used seasonally adjusted GDP data.

[74] Besides traditional correlation analyses, we should mention another type of indicator that reflects qualitative co-movements fairly well: the Cycle Synchronisation Index based on Gogas (2013). This indicator measures the per cent age of reviewed quarters at which two cyclical positions (e.g. the output gaps of the euro area and Hungary) had the same algebraic sign during the review period. In this analysis, with a CSI index of 60–65 per cent Hungary is in the middle of the ranking overall. This means that in the past two decades, the cyclical position of the Hungarian economy had the same sign as that of the euro area's economy for almost two thirds of the period under review.

Chart 4-4: Correlations between the euro area's output gap and the output gap of the given country under various quarterly lags
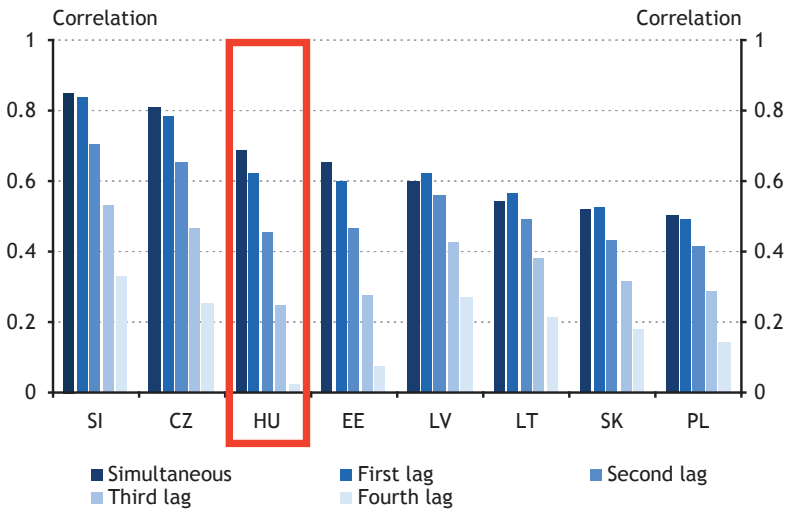
Source: MNB calculation based on Eurostat data.

As the output gap applied above is a non-observable variable, its quantification requires an estimate. In order to reduce this estimation uncertainty, it is also worth examining the co-movement of unemployment rates. The labour market has key importance in the macroeconomic system of markets. The unemployment rate is an economic indicator, which reflects – in a concise form – the degree of oversupply in the labour market; i.e. the cyclical position of the economy. The co-movement between the unemployment rates is not as strong as in the case of estimated output gaps (Chart 4-5). Given the uncertainty surrounding the estimation of output gaps, both indicators should be taken into account for an optimal scheduling of the adoption of the euro.

Chart 4-5: Correlation between unemployment rates
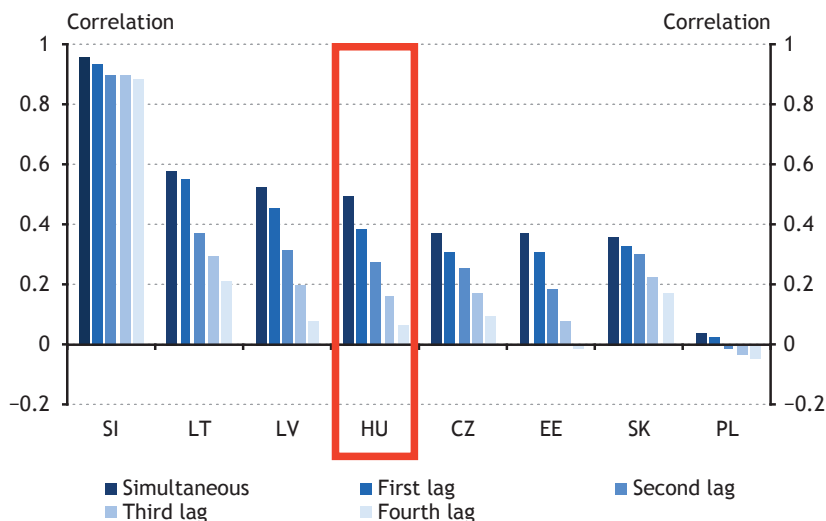
Source: MNB calculation based on Eurostat data.

There is still no consensus on the precise definition of the financial cycle. In Borio's (2014) definition, the financial cycle denotes the self-reinforcing interactions between the perceptions of value and risk, and risk taking and financing constraints. These interactions may amplify economic fluctuations and possibly lead to serious financial distress and distortions in the sectorial structure of the economy (economic dislocation). This analytical definition is closely related to the concept of the financial system's "procyclicality" (Borio et al. 2001, Danielsson et al. 2004, Kashyap and Stein 2004, Brunnermeier et al. 2009, Adrian and Shin 2010). Financial cycles can be approximated by way of composite indicators, but also by way of simple indicators such as the credit-to-GDP gap (Dell'Arricia et al. 2012) or real estate price developments (IMF 2003).

The degree of financial cycles' synchronisation is especially important for the monetary union, as economic and policy changes exert a different effect in the various phases of the cycle.

The divergence between core and periphery euro area countries is a good example: Gopinath et al. (2015) and Garcia-Santana et al. (2016) both found that the misallocation of resources and the resulting poor productivity growth were caused by the lack of synchronisation between the financial cycles. Consequently, the benefits of euro area accession may only be guaranteed by a high degree of financial cycles' synchronisation (the correlation coefficient is at least 0.7), which may ensure that the candidate country and the euro area react similarly to economic shocks from the perspective of the financial system. Based on the credit-to-GDP gaps published by the European Systemic Risk Board (ESRB) in early 2019, Hungary has the highest degree of financial synchronisation with in the periphery countries, but it moves less in tandem with the most developed core countries of the euro area. Although the correlation coefficient between Hungary and the core countries of the euro area was above 0.7 in the previous year, there was no further convergence, and the synchronisation between the financial cycles fluctuates around 0.7 (Chart 4-6).

Chart 4-6: Credit-to-GDP gap in Hungary and the euro area calculated by the ESRB and long-term correlation between the financial cycles
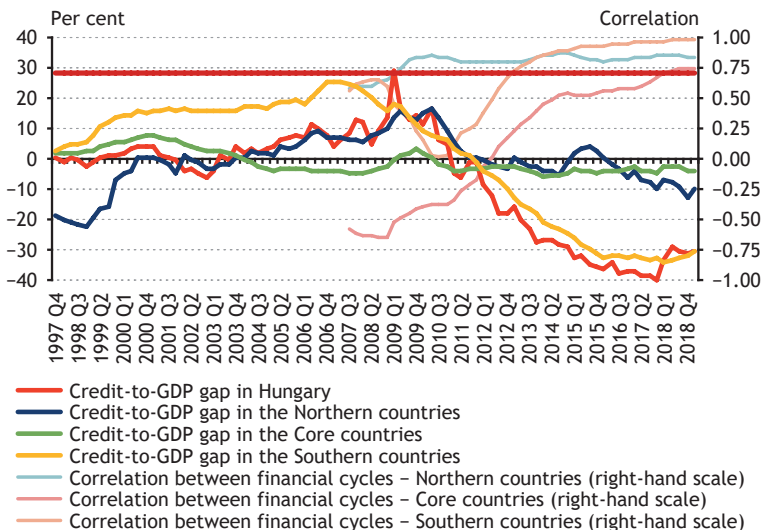
Source: ESRB Risk Dashboard.

4.1.4 Productivity and competitiveness conditions

Criteria summary: The labour productivity of SMEs must be higher than 50 per cent of that of large corporations. A generally broad product spectrum and exports structure with high value-added products.

Justification: The SME sector in emerging economies is not as competitive as in developed Western European economies. Therefore, maintaining and supporting funding is a crucial task for an independent monetary policy, as it is a vulnerable, low-productivity, predominantly domestic-owned SME sector. It is therefore important to ensure that the SME sector is sufficiently competitive and productive when entering the eurozone so that no significant credit crunch is expected even in the downturn in the credit cycle, and it would thus be a smaller task for independent monetary policy. In addition, international experience has shown that lower productivity of SMEs compared to large corporations entails higher inflation on average. Thus, increasing the productivity of the SME sector is also important for joining the euro area, as it will allow a smaller inflation differential. Moreover, it boosts competitiveness if a country's exports portfolio is as diversified as possible (a sufficiently broad spectrum of products and as many export partners as possible) with high value-added products. In times of crisis, this results in a smaller real economy sacrifice due to greater product coverage.

Sufficiently speedy convergence is an important aspect of euro area accession. Productivity basically means how effectively a company can convert its inputs into a final output. There are several metrics available to measure this. One of the most widely used metrics that quantifies value added per employee captures labour productivity.[75] Another important criterion besides productivity is competitiveness. A national economy is competitive

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[75]   In addition to the most frequently cited value added per employee, the so-called total factor productivity as well as value added per hour worked are other indicators.

if it optimally utilises its resources to achieve the highest possible level of welfare that is still sustainable. Improving productivity and increasing competitiveness play a decisive role in convergence. An economy's level of competitiveness and the trend it exhibits are important aspects of the accession. Accession to the currency area also means that the country concerned relinquishes its own national currency, which in practice means that the common monetary policy becomes applicable to the national economy instead of its own, independent monetary policy. In such a situation, it is important that the economy is sufficiently competitive as there are fewer independent instruments available to stimulate economic growth. Therefore, the economy should be competitive upon the entry, and this competitiveness should also be preserved after the accession.

One of the macroeconomic prerequisites for joining the single currency area is that the member state is relatively close to the euro area in terms of development. In order to achieve this, improving the country's productivity looking forward is indispensable. Experience has shown that high-income status can be achieved **primarily through increasing productivity**. Agenor and Canuto (2012) pointed out that the primary source of productivity improvement is a shift towards high-value production and services and domestic innovation as opposed to the imitation of foreign technology. Diversification towards higher value-added sectors can not only bolsters productivity but may also support competitiveness and resilience to external impacts.

An independent monetary policy can play an important role in maintaining and strengthening the access to finance and financing of the SME sector, i.e. this channel of monetary transmission. In many cases, credit cycles have caused credit crunch in the SME sector, resulting in delays in development and investment. In this case, the intervention of independent monetary policy with targeted policies is very important in order to reduce the social loss of the downward sloping credit cycle. This

was the case, for example, in Hungary before 2013, when there was an immense need for independent monetary policy steps, such as the Funding for Growth Scheme[76]. In mid-2013, the Magyar Nemzeti Bank launched the **Funding for Growth Scheme** to mitigate the long-standing market turmoil in SME lending, strengthen financial stability and reduce the country's external vulnerability through its independence. The program has made a significant contribution to lifting SMEs' funding constraints and thereby to economic growth. It would not have been possible for a common monetary policy. Thus, SMEs need to be at an appropriate stage of development when entering the single currency area. This appropriate level of development can be measured by their productivity. Naturally, if the SME sector is competitive and productive, companies will also be less exposed to credit crunch.

The economies of the EU are characterised by significant corporate duality, which is also reflected in the substantial productivity differences between SMEs and large corporations. The positive relationship between level of development and price levels is described by the Penn effect.[77] As an explanation for the Penn effect, the Balassa-Samuelson effect derives real appreciation primarily from the productivity gap between the internationally tradable goods (industrial) sector and the services sector. In contrast, productivity in services has been increasing at an accelerated rate in the recent past; the premises of the 1960s no longer hold in the new wave of globalisation. The strong duality observed in the corporate sector of the EU economy is primarily related to enterprise size rather than industry characteristics (Chart 4-7). The employment weight of small and medium-sized companies is considerable, but their productivity lags significantly behind large corporations.

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[76] For more detail, see, for example, MNB (2017).

[77] For more detail, see, for example, Pancaro, C. (2010).

Chart 4-7: Productivity of SMEs vs. large corporations

Relative to large enterprises   Relative to large enterprises

■ Micro enterprises   ○ Small enterprises   ▬ Medium-size enterprises
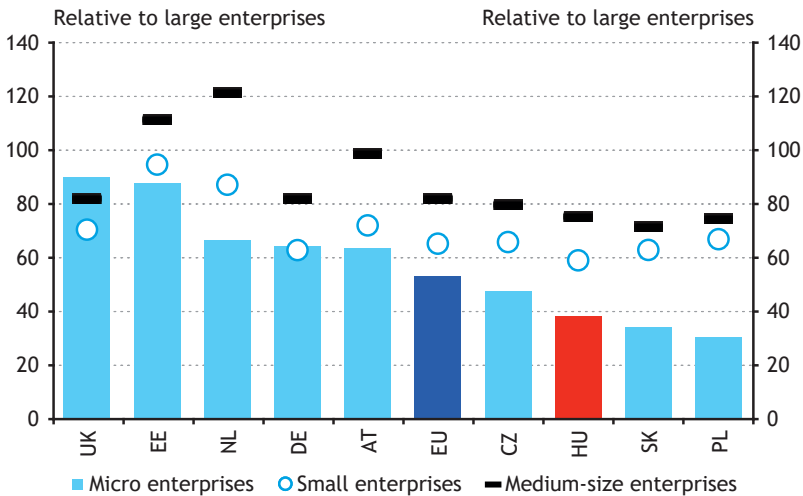
Source: Eurostat.

From the perspective of euro area accession, expanding the productivity of the SME sector is also important, as it will allow a smaller inflation differential. As demonstrated by Chart 4-8, the lower productivity of SMEs compared to large corporations results in higher inflation on average. One of the most essential nominal criteria for joining the common currency area is the proximity of inflation rates. It is inevitable for an emerging economy to have inflation surplus relative to the more developed countries that serve as a convergence target. Accession is ideal (in this regard) if this inflation surplus is as minimal as possible. If the productivity of the SME sector improves, the inflation surplus, generated by the wage increases in this sector, is not as high as it would have been without the productivity improvements. This is because, along with general growth and rising wages, the pressure to increase prices will be smaller in this sector if their productivity is closer to that of large corporations, as they can cover higher costs from the greater productivity.

Chart 4-8: Relationship between the productivity of SMEs and the inflation surplus of the national economy
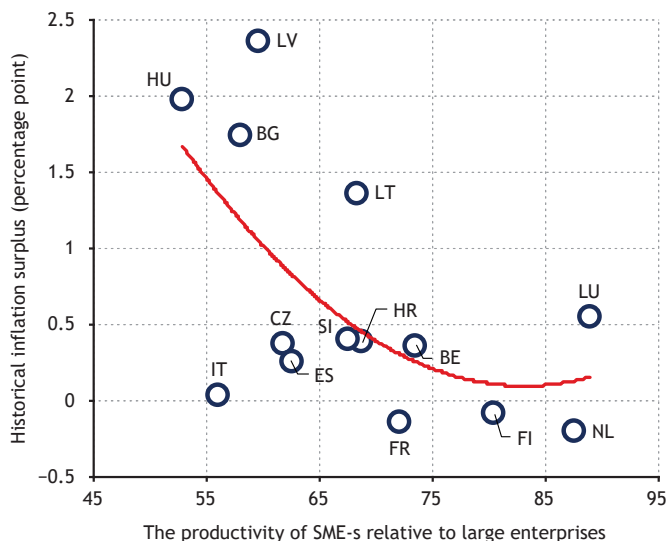
Note: *Inflation surplus is the average inflation surplus of the countries relative to the euro area in the past 15 years.*
Source: *Eurostat, MNB calculation.*

In summary, the improved productivity of the SME sector, and potentially its entry to the export market, could help not only to improve overall productivity but also to support a sustainable growth path. Moreover, at the ideal time of the accession, since the inflation surplus with respect to the euro area economies would be smaller, it ultimately contributes to a more stable and solid macroeconomic environment.

Export structure position
The level of the Hungarian economy's integration had increased continuously even before the accession to the EU.[78] At the same time, the volume of foreign trade also rose in relation to EU

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[78] It should be noted that it has decreased somewhat in recent years.

Member States using the euro. Since the foreign trade relations are already significant and strong with the countries using the euro (Chart 4-9), accession to the currency area in this case would have less additional effect. Quite simply, because of the European institutional system, trade barriers between the euro area and the Hungarian economy are already minimal.

Chart 4-9: Distribution of Hungarian export sales

Direction of export	Ratio (%)
EU	80.4
Eurozone	57.9
Non-Eurozone EU	22.4
Outside of the EU	19.6
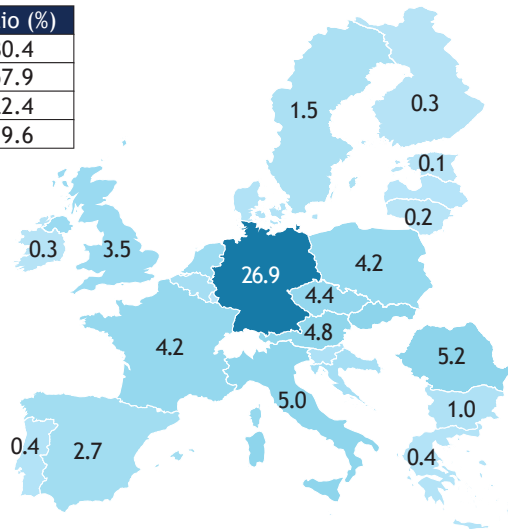
Note: Based on 2018 values in EUR.

Source: MNB calculation based on Eurostat data.

Besides volume, the structure of export is also important. The export structure can be examined from two sides: based on region and product structure. Based on region, it is interesting to analyse this issue, mainly in terms of spillover effects of idiosyncratic country shocks. On the other hand, the product structure deserves attention because an economy is affected by the accession to the currency area in function of the extent to which the given country's export (and import) product structure relies on the price-competitiveness advantage (Chart 4-10). In addition, a more concentrated export structure carries the risk that impulses in some sectors may exert a negative impact on overall national

economic performance. In the following we examine the export structure of the Hungarian economy following the two approaches described above.

The product structure of an economy is also a factor that may provide some guidance about the expected export performance once the national currency is relinquished. When a national economy joins a currency area, it essentially gives up its own national currency, and all advantages associated with it. Overall, for a given country to enter the common currency area, it is more advantageous to have a broader export product portfolio and a wider range of destinations. In this case, the diversity of the product spectrum mitigates the magnitude of potential external market effects.

Chart 4-10: Decomposition of Hungarian exports (left panel) and imports (right panel) by product structure

Export

2.0
6.7
4.4
53.9
32.8

Import

2.2
5.0
9.5
47.2
36.1

☐ Food, drinks and tobacco   ☐ Raw materials
☐ Energy   ■ Processed products
■ Machines and transport equipment
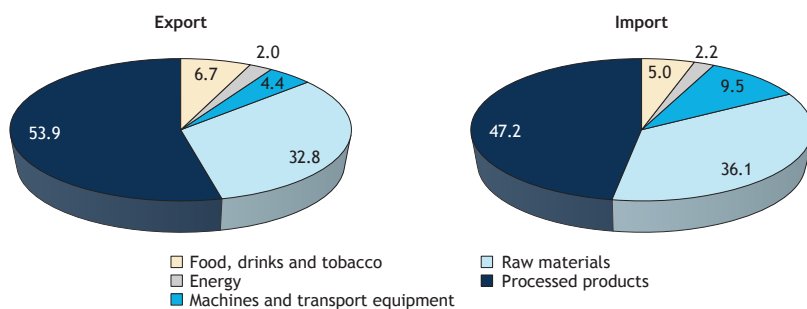
Note: Based on 2018 data.

Source: MNB calculation based on Eurostat data.

4.1.5 Labour market criterion

Criterion summary: The economy should be close to full employment.

Justification: In order to prevent the criteria system of the euro adoption from giving rise to social damage, compliance with fiscal parameters needs to be scheduled appropriately. To this end, there is a need for a labour market criterion that is aimed at the attainment and maintenance of full employment. Accordingly, accession to the euro area with ample fiscal space and a low deficit and debt ratio level should take place when the government has completed its countercyclical task and eliminated cyclical unemployment. In this case, both the countercyclical policy and the fiscal space required in the currency area point to a balanced budget.

Accession to the euro area requires room for manoeuvre in fiscal policies. This latitude must build up in a preferential phase of the economic cycle. It is therefore important that the economy is characterised by full employment at the time of entry, when low deficit and moderate government debt are considered optimal. Although full employment, as a concept of economics, is easy to understand, its practical use and precise quantification are all the more difficult. In particular, it is difficult to estimate a specific numerical value across a wide range of countries. This value also depends on national characteristics and institutional differences. It is therefore important for the euro area that a given national economy should, as far as possible, approach close to full employment within its own set of conditions.[79]

The unemployment rate would be a sensible solution for the measurement of full employment, but it is not enough in itself.

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[79] One possible economic estimate for full employment is to calculate an equilibrium unemployment rate based on inflation aspects. There is a wide range of estimates for this, which also point out that its value may change over time. Estimates vary significantly across countries and can be quantified within a country with a relatively wide range of uncertainty. Examples of such studies include, but are not limited to, Andrei et al. (2016), Botrić (2012), Jump & Stockhammer (2018), Kajuth (2010), Marjanovic et al. (2015), OECD Economic Outlook 2013 and Rusticelli (2014).

The unemployment rate should be examined in conjunction with other labour market indicators: it is also worth considering the activity rate in the analysis. A lower unemployment rate and a higher activity rate are the key to achieving full employment. According to our calculations for Hungary, with an unemployment rate of around 4 per cent (or below), an activity rate of more than 65 per cent can be considered close to full employment.[80]

We have examined unemployment rates in countries that are currently members of the EU but have not joined the euro area as yet, although their accession is expected. Unemployment rates are historically low and declining in all countries, while activity rates are rising (Chart 4-11). At present, these countries are close to meeting these requirements of the criteria system.

Chart 4-11: Unemployment rate (left panel) vs. labour force participation rate (right panel) in euro area candidate countries
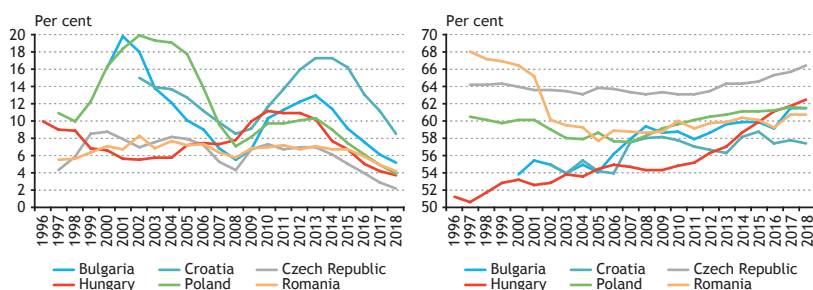
Note: EU Member States which are currently not members of the euro area, but their accession is expected.
Source: Eurostat.

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[80]   The 65 per cent criterion refers to the 15-74 age group. For the 15-64 age group, the Hungarian-specific criterion is 75 per cent.

4.1.6 Developed, stable and competitive financial sector

Criterion summary: a stable and competitive banking sector that is capable of ensuring a balanced financial deepening

Justification: The depth and economic integrity of the financial system are important criteria to comply with before the accession to the monetary union. At the same time, financial depth should also be examined in its cyclical position. Banking sectors struggling with balance sheet imbalances or departing from the economic fundamentals are on an unsustainable path in the long run, and their compliance with the conditions for being mature enough to join the monetary union is only an appearance. Beyond quantitative factors, the competitiveness of the domestic financial institution system – in comparison with the services of European, even non-bank participants – is of crucial importance.

It is particularly important to assess the cyclical position at which the indicators capturing the depth of the financial system[81] take their current values. The depth of the financial sector denotes the size of the financial sector relative to the economy and its role in financing the real economy. It compares the size of a country's banks, financial institutions and financial markets to the performance of the economy. The deepening of the financial sector indicates the improving level, increasing volume and a broader set of financial services. If the credit/GDP ratio reaches 90 per cent of the euro area average but only at cost of significant imbalances, the country is not yet ready to join the monetary union. Empirical evidence shows that, while financial deepening may have a beneficial effect on economic growth and a country's level of develop-

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[81] Such as private sector debt-to-GDP.

ment[82] overall, the cyclical "proliferation" of the financial system may exert a severe negative impact on economic stability. Bank crises, for one, play an important role in this: they are typically preceded by a persistent, positive deviation of lending from its trend (Borio 2014), and they can divert economic output from its original path for years (Valencia and Laeven, 2012). Even regardless of bank crises, however, it can be stated that beyond a certain level, the deepening of finance no longer has any significant positive effect: according to Berkes et al. (2012), this threshold is estimated at 100 per cent of GDP.

Imbalances stemming from lending exhibit numerous symptoms, and the presence of these symptoms must be pinpointed before a potential accession to the monetary union. If a country can achieve compliance with the accession criteria only at a price of cyclical swings, even in the short term, the unsustainable nature of the economic path may give rise to frictions between the country concerned and the economies of the monetary union. Based on historical evidence, the assessment of the cyclical position should focus on the following main symptoms of imbalance:

- the credit gap (i.e. the deviation of private sector debt-to-GDP from the trend) should not reside persistently and significantly in the positive range.

- there should be no signs of overvaluation (asset price bubbles) in the asset markets of the candidate country.

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[82]   The deepening of the financial system and broader access to financial services play an important role even beyond boosting general economic development. Mehrotra and Yetman (2015) highlight the monetary and stability aspects of financial inclusion. Firstly, as a result of financial deepening changes in the central bank base rate affect – through banking products – more customers directly; secondly, the greater diversification of the loan portfolio and the growth in deposits exert a positive impact from a stability standpoint. In view of the above it gives reason for concern that financial depth in Hungary falls short of the EU average not only in terms of the loan portfolio, but also in terms of those with banking products.

- banks' balance sheet structure should reflect a healthy financing structure – financial institutions should not rely excessively on short-term, non-resident money market resources, and the banking sector's loan-to-deposit ratio and leverage ratio should not be overly high.

- there should be no substantial uncovered foreign currency exposures on the assets side of the banking sector and on the liabilities side of the private sector.

It is an important consideration that, in addition to the banking sector, the economy must have a sufficiently deep capital market to be able to mitigate the adverse consequences of the cyclical fluctuations of the banking system. In the case of excessively bank-oriented economies, the procyclicality of financial institutions may give rise to a credit crunch during a bust, which renders the financing of economic participants impossible – especially in the segment of micro, small and medium-sized enterprises.

If the difference between the competitiveness of the domestic and non-resident financial institution systems is excessively high, the domestic financial system may fall behind in the competition – a worrisome development also from a stability standpoint. Although initially the "loss" against non-resident banks is more likely to arise primarily among financially aware customers and large corporations (with a relatively easy access to foreign financing even at present), with the increasingly global appearance of FinTech firms nearly all private sector participants might sign up with a non-resident service provider. On the one hand, this may increase Hungarian customers' vulnerability from the viewpoint of a consumer protection – especially in the case of FinTech firms, which are controlled by different regulations – and on the other hand, the repercussions of economic shocks may exert a far more severe impact through non-resident participants. The introduction of the single currency makes cross-border

bank switching of economic participants easier whereby the processes described above accelerate, and the associated risks may amplify.

In order to avoid the rearrangement that entails risks over the long term, there is a need to strengthen the competitiveness of the credit institutions in candidate countries. With the aim of introducing a more complex evaluation of banking sector competitiveness, in 2017 the MNB developed a Banking Sector Competitiveness Index[83] for ranking banking sectors along multiple dimensions at the European level. The ranking evaluates individual banking sectors on the basis of two main criteria: according to the qualitative, quantitative and pricing attributes of corporate and household financing on the one hand, and according to the capital attracting capacity of individual sectors on the other hand. Within these two categories, the index values are calculated by using numerous – almost 60 – indicators along various dimensions. The financing side captures the competitiveness of sectors along the dimensions of access, quality and price-setting, while the capital attraction sub-index integrates stability, profitability, operating environment, growth potentials and efficiency. Based on the acquired values in the index, we may conclude that regarding the topics under review, there are significant differences among the countries of the European Union. The disparities identified in competitiveness can be captured in the heterogeneous levels of operating expenses, net interest incomes and access to the services alike.

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[83] See the Financing branch of the MNB's Banking Sector Competitiveness Index, in particular, the scores achieved in the pillars of price-setting, quality and access (MNB 2019).

Chart 4-12: Net interest income and operating expenses as a ratio of total assets (2018)
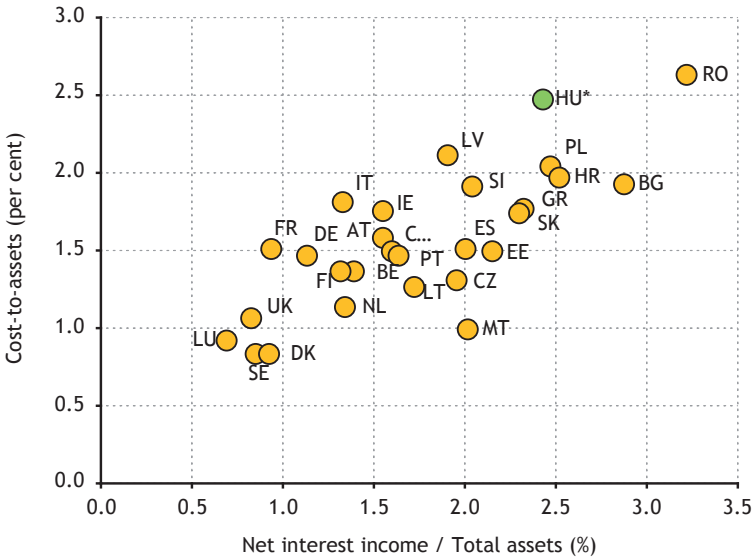
Note: HU* denotes as a ratio of total assets the net interest income and opera-
ting expenses adjusted for the effect of foreign subsidiaries, and the bank and
transaction levy.
Source: ECB CBD.

4.1.7 The depth of the financial sector

*Criterion summary: The convergence of the financial sector's depth
should reach at least 90 per cent of the corresponding value of the euro
area.*

*Justification: The sufficient depth of the financial sector may help pre-
vent increased capital flows from giving rise to reliance on foreign capi-
tal, and that the acceleration of capital flows does not lead to excessive
credit expansion and procyclical economic processes.*

**The deepening of the financial sector indicates the impro-
ving level, increasing volume and broader alternatives of
financial services.** Based on the findings of various interna-

tional studies, financial deepening plays a significant role in the support of economic growth (Rajan and Zingales, 2003, Obstfeld, 1994, King and Levine, 1993, Levine and Zervos, 1998), the reduction of systemic risks and the maintenance of financial stability (Acemoglu and Zilibotti, 1997), as well as the mitigation of poverty and inequalities (Li et al., 1998, Milanovic, 2005, Clarke et al., 2006, Beck et al., 2007). With the intensification of global money market volatility, deeper financial sectors – thanks to the more favourable structure and stronger defence mechanism of the money market – contribute to cushioning the negative effects arising from the volatility and preventing the deepening of the crisis (Acemoglu and Zilibotti, 1997).

The empirical literature proposes numerous indicators for capturing the depth of the financial sector. The general assessment of financial depth can be best captured by the relative size of the financial intermediary sector compared to the economy, which can be measured, for example, by the ratio of the banking sector's liquid liabilities (M2, M3) to GDP (Goldsmith, 1969, Mckinnon, 1973) and similarly, the banking sector assets-to-GDP ratio may also provide a more comprehensive view (World Bank, 2005). Besides the size of the financial system relative to the economy, it may also be useful to monitor the sectorial breakdown of the banking sector's intermediary role. Private credit by deposit-taking banks to GDP gives a more detailed and focused view of the role of bank loans in the financing of the economy (Beck et al., 1999, Mérő, 2003).

The establishment of the monetary union accelerated capital flows between Member States, which was accompanied by the intensification of financial integration.[84] Upon the entry to the euro area, the financial system of the candidate country must be sufficiently developed ("deep") to ensure that the implementation of the affiliation is mutually advantageous.

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[84] Ingram, 1973, Lane, 2006, Fornaro, 2019.

The sufficient depth of the financial sector may help prevent increased capital flows from giving rise to reliance on foreign capital, and may ensure that the acceleration of capital flows does not lead to excessive credit expansion and procyclical economic processes (Dell'Arricia et al. 2012). It is indispensable for this that the depth of the candidate country's financial system is at least close to the trend observed in the euro area; i.e. that it reaches at least 90 per cent of the euro area average. The private sector credit-to-GDP ratio that captures financial depth falls significantly behind the euro area average in the case of Member States outside of the euro area, but significant heterogeneity can be observed even within the euro area. This ratio is around 85 per cent on average[85] in euro area Member States, while the average of non-euro area member CEE countries is 46 per cent. Nevertheless, in the case of Hungary there is a need for the further deepening of the financial sector compared to both the euro area and the CEE average.

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[85] Corporate loans amounted to 36 per cent of GDP on average, while household loans reached 49 per cent of GDP.

Chart 4-13: Private sector debt to the credit institution sector as a percentage of annual GDP (2019 Q3)

Significantly below the EA average
Below the EA average
Above the EA average
Significantly above the EA average
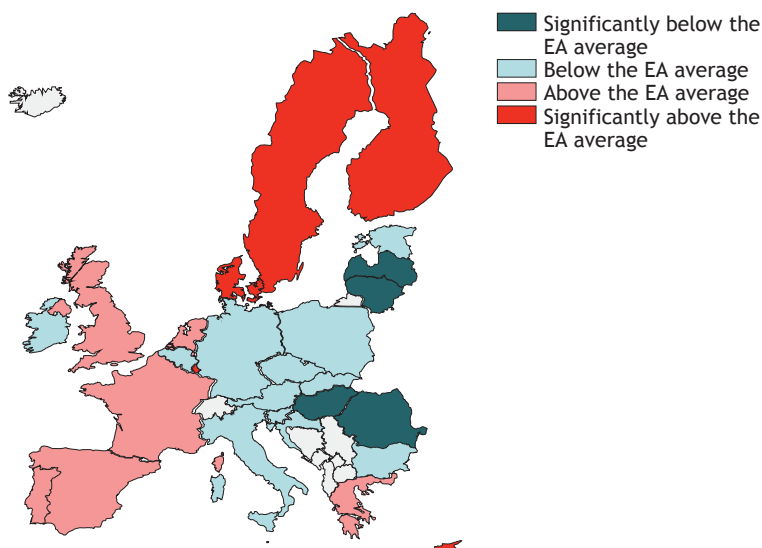
Note: In the euro area, private sector debt to credit institutions amounts to 85 per cent of GDP on average. The Chart presents 4 categories compared to the average: the upper threshold for category 1 is 42.5 per cent, for category 2 it is 85 per cent, for category 3 it is 123 per cent, while category 4 includes countries where private sector debt exceeds 123 per cent of GDP.
Source: ECB.

4.1.8 Available and effective countercyclical policy instruments

Criterion summary: Euro area candidate countries must put in place macro- and microprudential policy instruments and resolution tools that are capable of supporting convergence to the euro area and minimising the risk of asymmetric shocks.

Justification: By increasing shock resilience, policies supporting the maintenance of financial stability contribute to preserving the fiscal space and support the effectiveness of the common monetary policy. Moreover, they facilitate the convergence of the business and financial cycles of Member States.

Macroprudential policy has a key role in mitigating the po-tentially arising risks in the financial system and in strengthe-ning the shock resilience of Member States. Countercyclical policy instruments mean all policies that support the preserva-tion of financial stability, the maintenance of banks' resilience and the orderly resolution of potential bank crises; moreover, they mitigate the risk of asymmetric shocks. The systemic fi-nancial risks accumulated after the euro adoption in the core countries of the euro area and realised during the crisis (In't Veld et al., 2012, Diaz Sanchez and Varoudakis, 2014, Sinn and Valentinyi, 2013) highlighted the importance of a Member State level macroprudential policy (Bielecki et al., 2019). In pre-crisis years, the financing costs of the periphery countries of the euro area sharply decreased. This was accompanied by substantial foreign capital inflows, which gave rise to asset price bubbles. The risks realised during the crisis led to a severe creditor and real economic crisis. As a result of these processes, periphery countries of the euro area faced a more devastating financial crisis than their core country peers, which called attention to the key importance of maintaining financial stability within the euro area and to the significance of proactive macroprudential policy interventions.

In the event of asymmetric shocks sustained by the Mem-ber States, the common euro area monetary policy is unable to provide an adequate response to each Member State. As opposed to the common euro area monetary policy, macrop-rudential policy interventions may be capable of reducing the build-up of systemic risks to financial stability in Member Sta-tes, mitigating the already accumulated risks, and supporting post-crisis recovery (Quint and Rabanal, 2014, Rubio, 2014). Therefore, in order to offset potential asymmetric shocks, it is key to preserve national control over the macroprudential poli-cy within the euro area and to operate the institutional systems of Member States efficiently.

Measuring the effects and evaluating the effectiveness of macroprudential policy tools still pose a challenge to regulatory authorities (ESRB 2019). An effective macroprudential policy is suitable for the management of properly assessed risks. In consideration of macroprudential measures and risk developments, the potential effects of future shock events can be assessed and the effects can be controlled by using the appropriate macroprudential tools. The costs and benefits of the measures should also be taken into account in the analyses. Restraining economic growth through subdued lending can be such a cost; however, a well-functioning macroprudential tool only restrains the borrowing or lending of economic participants exposed to excessive risks, whereby it mitigates the downturn in growth even during a shock event (Adrian et al., 2019, Fukker and Varga, 2020). The best-suited tool for this analysis is the novel Growth-at-Risk model, which empirically measures the effect of financial conditions or systemic risk indicators and macroprudential policies on the distribution of future economic growth. Similar analyses can be performed with macroprudential bank stress tests that are capable of simulating the relationship between bank lending and the real economy relying on structural correlations.

Supporting and supplementing macroprudential regulation, microprudential policies also play a key role in the maintenance of financial stability. The objective of microprudential supervision is to mitigate the idiosyncratic risks of individual institutions and to prevent their excessive risk-taking. In contrast with the systemic approach of macroprudential policies, microprudential policies improve the shock resilience to exogenous risks of individual institutions. Occasionally, systemic macroprudential requirements may exert a less targeted impact with respect to the management of individual banks' risks, while microprudential policies may even reduce the moral hazards arising at the level of individual banks. To benefit the most from the complementarities of micro- and macroprudential policies, to minimise the frictions that may arise between them and to

ensure the efficient use of policy instruments it is essential that there is constructive cooperation and information sharing between micro- and macro-level supervision (ECB, 2014). Although following the accession to the euro area the ECB is granted significant powers in respect of bank supervision, the conduct of supervisory procedures and the surveillance of medium-sized and small banks remain within the competence of national authorities. For this reason, having an appropriate microprudential policy framework in place is essential for the accession.

Of the measures designed to reduce the probability of default of systemically important banks and to mitigate the consequences of potential defaults, a properly functioning resolution framework is of crucial importance. This framework should allow authorities to resolve any bank in an orderly manner without severe systemic disruption and without exposing taxpayers to excessive loss (FSB, 2014). Therefore, during the resolution they preserve the institution's functions that are vital to the financial market or to the real economy, and ensure that the losses are absorbed by the shareholders and creditors of the defaulted company in such a manner as if they themselves had become insolvent.

Effective resolution regimes are designed to provide appropriate incentives for banks' responsible risk acceptance, thereby mitigating the effects of potential systemic risks. By reducing potential contagion effects, the orderly resolution of institutions and the maintenance of critical functions also improve the stability of the financial system directly. Consequently, resolution procedures mitigate the economy's potential downturn and increase the leeway of fiscal policy, whereby they also reduce the risk of potential asymmetric shocks. Since national authorities continue to carry out important tasks in relation to the resolution of banks even after the accession, the existence of an effective national framework should be a prerequisite for accession also in the area of resolution.

National institutional systems intended to preserve financial stability in Europe

The concentration of various powers in a single institution allows for harnessing the synergies between the policies and facilitates more efficient coordination and uniform communication between the areas (Osinski et al., 2013, IMF, 2011). The free flow of information between the areas significantly improves their efficiency, both in the phase of risk analysis and identification and of assessment and follow-up. Moreover, coordination between the areas also becomes far more efficient, which contributes to the optimal allocation of supervisory and regulatory tools. Bank crisis management is an area that specifically requires micro- and macroprudential competences simultaneously. On the one hand, the solvency, liquidity and operating activities must be clearly understood and on the other hand, the extent to which insolvency would jeopardise the stability of the financial system as a whole must be assessed. Consequently, the resolution of potentially insolvent banks can be performed most efficiently by the integrated authority (Calvo et al., 2018). The utility of such a model is increased further by unified, consistent and credible communication and external control: clear, unified messages can be conveyed to the market and to the general public, while the institution ensures more transparent and more efficient operations thanks to its clearly defined scope of responsibilities. Finally, as a result of the concentration of powers in a single institution, the enforcement of national interests at various international forums may become more effective. Accordingly, in relation to the euro area accession it is important to consider the suitability of the institutional system of the policies that are designed to ensure the stability of the financial system.

After the 2008 global crisis, the supervisory framework was reviewed and strengthened in numerous countries. In this context, the countries concerned reconsidered the role of the financial supervisory authority responsible for microprudential policy in the regulatory system, as well as cooperation with the

macroprudential authority responsible for the management of systemic risks affecting the financial system as a whole. There are significant differences in international practice as to which authorities exercise microprudential, macroprudential and re-solution powers (Chart 4-14). It can be stated in general that a single authority – usually the central bank – exercises all three powers in more than half of the EU Member States. It is also a widespread practice that a single institution is responsible for microprudential supervision and the resolution function, while a different authority is vested with macroprudential powers. In some cases, micro- and macroprudential regulation is concentra-ted in a single institution, while it is only in Poland where each of the three powers is exercised by a separate authority.

Chart 4-14: Microprudential, macroprudential and resolution powers in European Union Member States (December 2019)
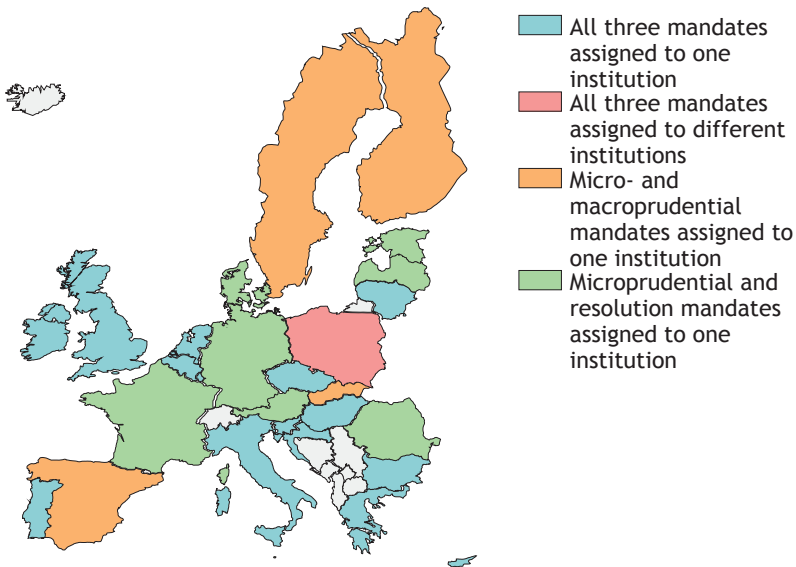
Source: national authorities, ESRB, EBA.

4.1.9 Proposal for the modification of the Maastricht fiscal criteria

Criterion summary: The structural balance dependent on government debt should range between 0 and – 2 per cent of GDP and the debt target should be 50 per cent.

Justification: Within a currency area, with the loss of independent monetary policy and in the lack of substantive community budget transfers, the role of fiscal policy gains additional significance. In the event of asymmetric shocks it is important to have sufficient fiscal space to stabilise the economy without jeopardising the sustainability of public finances. Therefore, there is a need for lower deficit and government debt targets than prescribed by the existing criteria, and country-specific factors (debt ratio) and the cyclical fluctuation of the economy should be given more consideration.

Parametric change based on the current system
The fiscal criteria of euro area entry must ensure a stable fiscal position, sufficient flexibility, and the consideration of country-specific factors. According to our proposal, instead of the uniform 3 per cent value the government deficit criterion should be defined in function of the debt ratio. For Member States with a higher debt level – and thus, less sustainable public finances – the deficit target should be a near-equilibrium balance, while for those with a lower debt level a more lenient deficit target might be sufficient. The entry criterion for government debt may be reduced from the current 60 per cent level to 50 per cent, which is also warranted – in addition to the need for sufficient fiscal space – by the debt rule of the Fundamental Law of Hungary. Under the existing regulation, for countries with higher debt moving toward the target at the appropriate pace may be sufficient, but in this case, the deficit criterion is stricter.

Table 4-1: Proposed deficit targets under different government debt levels

Government debt ratio	< 50%	50–90%	90% <
Proposed structural deficit criterion	2%	1%	0%

The economy stabilising capacity of fiscal policy is determined by the fiscal space. Fiscal space is defined as the availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government's financial position (Heller, 2005). Fiscal policy is capable of wielding a countercyclical effect both in a recession and in a boom period. Sufficient fiscal space becomes especially important in times of crisis; in such cases, on the part of the budget there may be a need to conduct a demand stimulating, deficit increasing fiscal policy. Thus, the fiscal space can be interpreted as a factor pointing to a deficit increase, and the space available can be utilised either by decreasing the incomes of public accounts or by increasing expenditures. On the other hand, appropriate fiscal rules also ensure that the deficit decreases in a favourable economic environment, whereby they once again guarantee sufficient room for manoeuvre for the future.

Within a currency area, with the loss of independent monetary policy and in the lack of substantive community budget transfers, the role of fiscal policy gains additional significance. One of the most important objectives of economic policy is to smooth economic fluctuations; however, since monetary policy is elevated to the level of the community in a currency area, it is unable to influence the economic path of each Member State in a targeted way. If the economic cycles of Member States are synchronised, the common monetary policy may be capable of playing a stabiliser role, but in the case of diverging economic cycles, fiscal steps may become necessary. It is therefore important to have sufficient fiscal space in the event of asymmetric shocks in order

to stabilise the economy without jeopardising the sustainability of public finances. However, the budgetary conditions determined by the admission criteria to the euro area are insufficient for this; a higher degree of equilibrium and hence, a lower deficit and a lower debt level are needed.

Based on past experiences, countries in a more balanced fiscal position proved to be more successful later on; therefore, it is expedient to introduce stricter rules than the existing ones. Member States that can be considered successful after the adoption of the euro typically had more stable public finances, and in response to the absence of an independent monetary policy they created sufficient fiscal space to counteract the challenges they faced. Although the deficit criterion proposed by us is tighter than the currently applied 3 per cent, in the case of countries with medium and low debt levels it is lower than the medium-term budgetary objective (MTO) currently prescribed for euro area Member States.

The Maastricht entry rules have been inflexible so far in that they did not take into account the significance of cyclical fluctuations of the economy. The existing entry criteria pertained to the ESA balance, which is strongly influenced by the cyclical position of the economy. Therefore, we suggest that the new criterion refer to the structural balance, i.e. an indicator that excludes the cyclical effect of the economy and the idiosyncratic factors emerging in the given year.

The entry rules were too lenient with respect to the debt level even though it is an important factor of the leeway; therefore, in our opinion high debt levels must be offset by lower deficits. The fiscal space is determined by the budget deficit and government debt together, but in the medium term, debt plays a more important role. The existing criteria prescribed for candidates countries a uniform 3 per cent government deficit figure irrespective of the debt ratio. Our proposal for the modification of the Maastricht convergence criteria takes

into account the level of government debt as a country-specific factor. A debt ratio above 90 per cent – which is considered high – necessitates a balanced budget, while in the case of a lower debt ratio in the range of 50–90 per cent of GDP the annual deficit target would be 1 per cent. As regards debt levels below 50 per cent, a deficit of 2 per cent would be permitted. As a result, the budget deficit may partly replenish the leeway lost on the debt side.

Besides the creation of fiscal space, the persistent decline in interest rates also calls for the reduction of the deficit target. In the early 2000s, the interest burden on the debts of EU Member States was substantially higher, which warranted a relatively strict primary balance in order to comply with the 3 per cent deficit threshold. Between 2000 and 2018, however, the interest expenditures of EU Member States decreased by 1.1 percentage points of GDP, even though the average debt level rose by around 20 percentage points in the meantime across the EU. Assuming unchanged debt levels, the implied interest burden would have decreased even more, by 1.7 per cent of GDP, which – under the existing Maastricht deficit criterion – allows for a considerably looser primary balance (Chart 4-15); consequently, the moderation in the interest expenditures of the budget points to a revision of the deficit target.

Chart 4-15: Primary balance levels required for the attainment of the 3 per cent deficit target in EU Member States in 2000 and 2018, and the average value of country groups formed on the basis of debt levels in the same years

As a percentage of GDP

Debt rate below 50 percent

Debt rate between 50 and 90 percent

Debt rate above 90 percent

Estonia, Luxembourg, Sweden, Denmark, Bulgaria, Latvia, Czechia, Lithuania, Romania, Slovakia, Poland, Malta, Finland, Germany, Netherlands, Austria, Ireland, Slovenia, Croatia, UK, Hungary, France, Belgium, Cyprus, Spain, Greece, Portugal, Italy

Expected primary balance in 2018
Average expected primary balance in 2018
Expected primary balance in 2000
Average expected primary balance in 2000

Source: European Commission, MNB.

Numerous fiscal rules must be changed after the euro area accession, and a number of new rules must be adopted as well; therefore, the entry criteria should be approximated to the rules that come into force after the accession. The Stability and Growth Pact defines the medium-term budgetary objective (MTO) of euro area members at maximum –1 per cent of GDP. Entering into effect in 2013, the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG) tightened this value even further to –0.5 per cent of GDP if the debt ratio exceeds 60 per cent. While Hungary is among the signatories of the TSCG, the fiscal compact of the Treaty was not ratified by Hungary. With the introduction of the euro the fiscal compact, as well, would become binding; derogation from the compact is permitted to euro area Member States only in exceptional cases.

Alternative fiscal framework: from stock indicators to the expenditure benchmark

Fiscal rules are primarily required to improve the sustainability of debt in such a way that allows the budget to fulfil its stabilising function simultaneously at the level of the national economies. The switch between these dual tasks should be properly managed by the set of rules. This is a challenge in itself, but sometimes it is even coupled with the objective to improve the quality of the budget as well. The fiscal framework of the European Union envisages increasingly complex solutions to resolve these tasks. In spite – or perhaps because – of this, the mechanism described above does not work properly and is therefore subject to considerable criticism.

The analysis published in August 2019 by the European Fiscal Board is an apt summary of this criticism. Excessive reliance on unobservable indicators – such as potential growth – is a source of unnecessary complexity in the functioning of the rules. As these are often revised ex post; it may be discovered subsequently that a fiscal policy that had been intended to be countercyclical originally was in fact procyclical. Excessive focus on annual variables instead of long-term indicators is another problem. The European Fiscal Board also found that the flexibility afforded to the Commission and to the Council does not function properly in the application of the rules; decision-making takes a long time, which may result in a procyclical, rather than countercyclical, fiscal policy.

Various proposals have been made in recent years for the simplification and improved operation of the framework. A common element of the proposals is a new focus on the significant role of debt and the net expenditure rule.

The debt ratio is a fundamental indicator of the sustainability of the budget. In order to prevent sustainability considerations from clashing with the stabilising function, similarly to the existing regulation, there is a need for an opt-out clause, so that the emergen-

ce of procyclical fiscal policies can be avoided in times of economic downturns. However, discretional fiscal easing – the effects of which go beyond the operation of automatic fiscal stabilisers – does not reverse automatically like automatic stabilisers. Easing measures should be phased out in parallel with the gradual recovery of economic growth following the trough of the crisis; moreover, accumulated debts should be deleveraged. Unfortunately, failure to achieve the latter – as happens all too often – gives rise to the so-called "ratchet effect", when only the deficit is restored after a crisis, while accumulated debt remains on the balance sheets. It is for the avoidance of this scenario that we propose the debt ratio to be the ultimate anchor in the new fiscal criteria.

It must be decided which specific level of the debt ratio should be identified as a ceiling for those with lower debt ratios and as a target for those with higher debt ratios. There is also a need to define the permitted pace of the downward shift, how to support its achievement by a rule, and what kind of a deceleration mechanism can be activated in case of an increase in the debt ratio. All this is related to the definition of the debt ratio, which raises two kinds of problems. The first question to decide is whether gross government debt is a suitable stock indicator, or should we consider the use of another alternative of gross government debt? The simplest and most transparent alternative of gross government debt is debt less deposits (i.e. net debt), which excludes the bias stemming from liquidity fluctuations.[86] Secondly, the numerator of the debt ratio includes actual GDP rather than potential output; in other words, at high debt levels, the cyclical swings of the economy may give rise to bias in annual debt ratio developments.

The extremely diverse debt ratios of EU Member States may call for the definition of country-specific targets/ceilings (European

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[86] If other liabilities and receivables were also taken into account, debt reduction deriving from proceeds of privatisation could be stripped out, but the evaluation of such stocks is so uncertain that this does not offer a realistic alternative.

Fiscal Board, 2019). In our opinion, in case of a perceivable debt reduction these country-specific values could be reviewed in the medium term.

Diverging debt ratios would not only necessitate the review of targets, but also the country-specific definition of debt reduction paths (European Fiscal Board, 2019). For the purposes of designating and backtesting the debt reduction path, difficulties may arise from the abovementioned bias, i.e. that the debt ratio includes actual GDP instead of potential GDP. In our opinion, it would be a viable alternative to define the debt ratio with a smoothed version (ten-year average) of potential output in the future, similar to the expenditure rule currently applied in the European Union. Another alternative would involve the introduction of ranges on both sides of the country-specific debt target/ceiling, and the consequences will be linked to the breach of these ranges (depending on the direction of the breach).

The best tool for the achievement of the debt target is the rule on expenditures adjusted for tax measures (hereinafter: net expenditure benchmark). According to the recommendation of the European Fiscal Board (2019), besides the debt rule, this benchmark should replace the remaining elements of the complex framework. This has been proposed by many policymakers both at the national and at the EU level already.[87] This indicator is already included in the EU framework; in addition to the estimated effect of the tax measure, it also adjusts for interests (primary expenditure), unemployment benefits, expenditures financed from EU funds and certain one-off items. With the exception of the latter items, these adjustments are intended to separate factors that are within the discretionary decision-making competence of budgetary planning from those that are typically determined by other processes (interest, EU funds, economic cycle, and any fluctuations in tax revenues that cannot be attributed to the cycle or to any measure). Consequently, changes in the thus defined

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[87]   Ódor, L.– P. Kiss, G., 2011, Ódor, L. – P. Kiss G., 2014.

indicator are a fairly good indication of the decisions and responsibility of fiscal policy.

The net expenditure benchmark would permit adjusted expenditures to grow at a maximum rate consistent with the smoothed version (ten-year average) of potential GDP. The expenditure rule would enable automatic fiscal stabilisers to operate undisturbed once the debt target has been achieved. In order to ensure the implementation of additional discretional measures in the event of a recession, there is a need to integrate further reserves and room for manoeuvre.

The integration of reserves may be essential because revisions of potential GDP represent high-risk elements of the rule. It could be discovered that net expenditures had grown at a faster rate than justified for many years, and the retrospective adjustment of this cumulated wedge may necessitate substantial expenditure cuts or tax increases. In the opinion of the European Fiscal Board (2019), the ten-year average is less sensitive to revisions; in reality, however, almost the entire period – including the average – may move in tandem with the revision. The solution could be the application of an adjusted ten-year average, where this value could be adjusted for the average of historic revisions. Accordingly, the annual growth in net expenditures would become more subdued, and the allocation of this reserve could minimise the cumulated retrospective adjustment.

Table 4-2 shows Maastricht 2.0, i.e. the proposed and extended set of criteria. The price stability and interest rate convergence criteria in the table differs from Maastricht 1.0 to the extent that the reference countries may only include Member States with positive inflation. New targets have been set for price stability requirements and fiscal criteria. The other criteria have been proposed by the MNB as they do not appear in Maastricht 1.0.

Table 4-2: The amended and extended set of criteria (Maastricht 2.0)

Criterion	Target value
I. Nominal anchors	
Price stability[1]	The unweighted arithmetic mean of the three EU member states with the lowest positive HICP inflation rate +1.5 percentage points at most.
Interest rate convergence[2]	The unweighted arithmetic mean of the three EU member states with the lowest positive HICP inflation rate +2.0 percentage points at most.
Exchange rate stability	3-5 years[3]
II. Adequate phase of convergence	
Real economic convergence[4] (per capita GDP (PPS))	> 90%
Wage convergence[4] (average wages (PPS))	> 90%
Convergence in the depth of the financial sector[4,5]	> 90%
III. Synchronized business and financial cycles between Hungary and the euro area	
Synchronized business cycles[6]	> 0.7
Synchronized financial cycles[7]	> 0.7
IV. Competitive corporate sector, labour market and products	
Labour productivity of SMEs[8]	> 50%
Labour market	Close to full employment
Export structure, product variety	Diversification, high added-value products
V. Developed, stable and competitive financial sector	
MNB Banking System Competitiveness Index (BSCI)[9]	Competitive banking sector
VI. Effecvie, counter-cyclical economic policy space	
Long-term structural deficit	A maximum of 0%, 1% or 2% based on the government debt ratio
Public debt-to-GDP	< 50% or sufficiently decreasing
Prudential policies	Appropriate set of instruments

[1] Average value of the year-on-year harmonized consumer price index in the last year.
[2] Average 10-year government bond yield in the last year.
[3] Applicant countries should not have devalued the central rate of their euro pegged currency during the previous 3-5 years, and for the same period the currency stability shall be deemed to have been stable without "severe tensions". As a third requirement, participation in the exchange-rate mechanism for 3-5 consecutive years is expected.
[4] In comparison to the euro area average.
[5] Credit-to-GDP ratio.
[6] Output gap correlation compared to eurozone.
[7] Credit-to-GDP correlation since Hungary's accession in 2004.
[8] Gross value added per capita in comparison to non-SMEs.
[9] In accordance with its financial stability mandate, the MNB has developed its own Banking Sector Competitiveness Index (BSCI). Based on the indicator, the areas most in need of improvement are access to bank loans, corporate confidence and the average APRC spread on loans to households.

Source: Eurostat, MNB.

4.2
Hungary's euro maturity in light of Maastricht 1.0 and 2.0

*Dávid Berta – Balázs Kóczián – Laura Komlóssy –
Szabolcs Pásztor*

Since its accession to the EU, the Hungarian economy has displayed a variable rate of convergence. The Maastricht criteria determine the current level of euro maturity in five, time-varying indicators based on which, Hungary's euro maturity shows a mixed picture. Amid a balanced rate of convergence, the Hungarian economy fails to comply with the price stability and exchange rate stability criteria, but it has achieved interest rate convergence. Thanks to a disciplined fiscal policy, the government deficit criterion has been met, but the shedding of previously accumulated government debt is a time-consuming process. On the whole, Hungary has not yet matured to adopt the euro, but on the basis of previous chapters, even the full compliance with the original Maastricht criteria would not be sufficient to assess the preparedness for a possible entry into the euro area.

The MNB has defined a set of criteria which reflects the criteria for optimal accession better than the original Maastricht Treaty. The modified and expanded criteria are summarized as the Maastricht 2.0 criteria. Modification implies changing the original rules, while under the expansion, new euro maturity requirements are introduced in five additional areas, namely achieving a proper phase of convergence, synchronised business and financial cycles, various competitiveness indicators, a developed financial sector, and available and effective countercyclical policies. Once again, Hungary complies with only a part of the Maastricht 2.0 criteria. This reconfirms that Hungary is not yet ready for the adoption of the euro, and at the same time designates the possible development directions for the Hungarian economy.

4.2.1 Maastricht 1.0

With respect to the inflation criterion, Hungary fails to comply with the Maastricht Treaty partly because of the low inflation environment, and partly because of the excess inflation stemming from real convergence. The objective of the inflation criterion is to preserve price stability in the euro area. In accordance with the Balassa-Samuelson effect, converging countries usually have excess inflation, which explains the asymmetric nature of the criterion. Based on the criterion, inflation in candidate countries may not exceed by more than 1.5 percentage points – as measured by the harmonised index of consumer prices – the average price increase recorded in the previous year in the three EU Member States with the lowest inflation rates and accordingly, only countries with suitably low inflation rates can enter the euro area. In the period under review (November 2018 – October 2019) the three lowest average inflation rates were recorded in Portugal (0.38 per cent), Greece (0.53 per cent) and Cyprus (0.67 per cent). The unweighted arithmetic mean of the indicators is 0.52 per cent, which – due to the current low inflation environment – is far below the European Central Bank's inflation target. The criterion threshold is therefore 2.02 per cent which, despite the permitted 1.5 percentage point excess inflation, is just above the ECB's target. Hungary's inflation rate was 3.29 per cent in the same period, more than 1 percentage point above the threshold. Evidently, however, if price increases were at a pace around the ECB's target in the three EU Member States recording the "most disciplined" inflation, Hungary would meet the inflation criterion. In parallel with economic convergence, Hungarian inflation has been residing within the central bank tolerance band for nearly the past three years, which had been determined taking into account excess inflation stemming from convergence. By and large, Hungarian inflation is consistent with the fundamentals of convergence, but in the current low inflation environment Hungary does not meet the criterion required for EU accession.

Hungary has been characterised by low yields in recent years, in compliance with the interest rate convergence prescribed in the Maastricht Treaty. The objective of the long-term yield criterion is to keep the deviation of intra-EA government bond yields at low levels. After the yield convergence following the adoption of the euro, yields displayed significant divergence in the euro area during the sovereign debt crisis. This was primarily caused by the sharp rise in the yields of Greece, Portugal, Ireland, Spain and Cyprus. In the period between October 2018 and September 2019, benchmark countries for the Maastricht yield criterion happened to be Portugal (1.07 per cent), Greece (3.24 per cent) and Cyprus (1.45 per cent) – the EU Member States recording the lowest inflation rate. The unweighted arithmetic mean of the yields is 1.92 per cent, while the permitted yield differential is 2.0 percentage points in the positive direction, bringing the value of the criterion to 3.92 per cent. 10-year Hungarian government bond yield remained low in the past few years and stood at 2.8 per cent in the review period. Therefore, Hungary complies with the Maastricht yield criterion.

Government deficit was low in 2018 and is expected to remain at low levels in the coming years as well; consequently, Hungary also complies with the budget criterion. The objective of the criterion is to ensure a prudent fiscal policy, one that also helps contain the growth of government debt. According to the Maastricht deficit criterion, budget deficit may not exceed 3 per cent of GDP at current prices in the previous, and the following two years. Hungary's budget deficit was above 3 per cent of GDP for the first seven years following its 2004 EU accession. As a result, Hungary was already subject to the excessive deficit procedure in 2004, which lasted until June 2013. In 2018, budget deficit amounted to 2.3 per cent. According to forecasts by the MNB and other organisations, deficit will continue to decrease on the medium run, which means that Hungary has been complying with the criterion since 2013.

Public debt is declining. By 2022, it is projected to reach the Maastricht criterion threshold of 60 per cent. The objective of the government debt criterion is to prevent an excessive build-up of debt, which allows for financing the government at favourable conditions and reduces interest expenses. In accordance with the debt criterion, gross government debt in the previous year may not exceed 60 per cent of GDP at market prices and if it does, it must at least be "sufficiently diminished and must be approaching the reference value at a satisfactory pace". Approaching the reference value "at a satisfactory pace" is quantified by the 1/20 debt rule, requiring the states in breach of 60 per cent to deliver – either for the backward- or forward-looking 3-year period[88] – an annual debt-to-GDP ratio reduction of at least 5 per cent (i.e. 1/20th) of the part of the benchmark value in excess of the 60 per cent limit. In accordance with the debt rule laid down in the Fundamental Law, Hungary's debt may not exceed 50 per cent of GDP and in addition, it may not increase until the 50 per cent limit is reached. In 2018, government debt amounted to 70.2 per cent of GDP. According to the MNB's forecast, on an annual basis between 2019 and 2021 the debt ratio may decrease by 2.6 percentage points on average. As a result of the dynamic reduction, the 60 per cent Maastricht criterion may be formally achieved by 2022.

Regarding exchange rate stability, Hungary does not fulfill the Maastricht criterion. In February 2008, Hungary transitioned to a floating exchange rate regime from its previous exchange rate band regime. Moreover, since Hungary is not a member of ERM, the exchange rate criterion is not satisfied.

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[88]   The 3-year backward- or forward-looking period designates the previous three years or the previous and the next two years, respectively.

Table 4-3: Fulfilment of the Maastricht criteria (Maastricht 1.0)

Criterion	Target value	Hungary	Source	Is the criterion fulfilled?
Price stability[1]	< 2.0%[2]	3.3%	Eurostat	No
Long-term interest rates[3]	< 3.9%[4]	2.8%	Eurostat	Yes
Disciplined fiscal policy[5]	< 3%	2.3%[6,7]	MNB	Yes
Sustainable public finances	< 60%	70.2%[6,8]	MNB	Decreases dynamically[9], may be formally met by 2022
Exchange rate stability	2 years[10]	Floating exchange rate	MNB	No

[1] Average value of the year-on-year harmonized consumer price index between November 2018 and October 2019.

[2] The three EU member states with the lowest HICP inflation rates in the period under review are Portugal (0.38 per cent), Greece (0.53 per cent) and Cyprus (0.67 per cent), the unweighted arithmetic mean of which is 0.5 per cent. The HICP of applicant member states shall not exceed this by more than 1.5 percentage points.

[3] Average 10-year government bond yield between October 2018 and September 2019.

[4] Average yields of the three EU member states with the lowest HICP inflation rates in the period under review are Portugal (1.07 per cent), Greece (3.24 per cent) and Cyprus (1.45 per cent), the unweighted arithmetic mean of which is 1.9 per cent. The average yield of applicant member states shall not exceed this by more than 2.0 percentage points.

[5] Deficit according to the ESA balance.

[6] 2018 data.

[7] According to the MNB's forecast presented in the December 2019 Inflation Report, in 2019 and 2020 the deficit will amount to 1.7–1.8 per cent and 0.4–1.2 per cent, respectively.

[8] According to the MNB's forecast presented in the December 2019 Inflation Report, between 2020 and 2022 government debt may decrease by 2.6 percentage points annually.

[9] According to the MNB's forecast presented in the December 2019 Inflation Report, by 2022 government debt will drop below 60 per cent, i.e. it will formally comply with the criterion.

[10] Applicant countries should not have devalued the central rate of their euro pegged currency during the previous two years, and for the same period the currency stability shall be deemed to have been stable without "severe tensions". As a third requirement, participation in the exchange-rate mechanism for two consecutive years is expected.

Source: Eurostat, MNB.

4.2.2 Maastricht 2.0

Among nominal anchors, price stability and interest rate convergence criteria have not changed from Maastricht 1.0 – as inflation was positive in all Member States during the period under review –, whereas the exchange rate stability target has changed on the basis of the MNB's proposal. Therefore, Hungary still fails to meet the price stability and exchange rate stability criteria, although it continues to fulfil the interest rate convergence criterion. In the rest of the chapter, we present Hungary's compliance with the new criteria proposed by the MNB.

Despite the convergence, GDP per capita at purchasing power parity and the average wage are far below the target value determined at 90 per cent of the euro area average. Based on Eurostat data, Hungary's per capita GDP at purchasing power parity amounted to 66 per cent of the euro area average. As regards wage convergence, this ratio is 60 per cent; therefore, there is even more room for convergence to the euro area in the case of wages.

Correlation between Hungary and the euro area is satisfactory regarding real economic cycles. Between output gaps measured as a percentage of potential GDP, there has been strong correlation between Hungary and the euro area since Hungary's accession to the euro area. Simultaneous correlation coefficient is around 0.7, placing Hungary in the first third among the countries of the Central and Eastern European region in the strength of the correlation.

The correlation of financial cycles with euro area Member States is sufficiently strong. Hungary has the highest correlation with periphery countries, but there is still a leeway compared to the most developed, core countries of the euro area. Although correlation coefficient between Hungary and core countries of the euro area was above 0.7 in the previous year, there was no further convergence, thus synchronisation between the financial cycles fluctuates around 0.7.

Despite the convergence, labour productivity of small and medium-sized enterprises falls short of that of large corporations, it is primarily among microenterprises where there is room for improvement. Gross value added by SMEs amounted to HUF 11,000 billion, while the corresponding value of non-SME enterprises was HUF 13,000 billion in 2018. The number of employees was 2 million and 1.1 million, respectively, bringing gross value added per capita to HUF 5.5 million and 12 million, respectively. Accordingly, the labour productivity ratio of SMEs is slightly below the required 50 per cent level. It can also be observed that efficiency as measured by labour productivity increases in parallel with company size. Therefore, microenterprises – whose productivity falls short of the SME average by nearly 30 per cent – need to be developed primarily.

The low level of the unemployment rate is consistent with the country-specific criterion defined by the MNB, but further improvement is needed in terms of labour market activity. Numerous measures have been adopted in Hungary in the recent years in support of the labour market, the most important of which is the reduction of the taxes on labour, which contributed significantly to improving the labour force participation rate. As a result of favourable economic developments and the measures adopted, the unemployment rate dropped below 4 per cent in 2018. Unemployment, therefore, is sufficiently low, but the participation rate is still below the 65 per cent threshold specified for Hungary.

The competitiveness of the Hungarian banking sector can only be considered average, thus the financial sector needs further structural developments. Due to the importance of allocating funds efficiently, the banking sector's level of development plays a crucial role in a country's competitiveness. Financial depth in Hungary falls short of the EU average not only in terms of the volume of the loan portfolio, but also in terms of economic actors having any banking products. At present, the size of the bond market and the equity market's level of development both fall far behind that of the euro area. However, operating, risk and other costs hinder the reduction of interest rate spreads.

Sectorial diversification of exports is roughly consistent with the level observed in euro area countries. Export sector concentration is an important criterion also from the aspects of growth and vulnerability. Firstly, a suitably diversified export structure facilitates convergence, and secondly, potential shocks affect only a smaller portion of exports and thus they do not necessitate currency devaluations in support of the export sector as a whole. The concentration of Hungarian exports – also in consideration of a more detailed breakdown of machinery sectors – is largely consistent with the level observed in euro area countries, which may support the introduction of the single currency.

The low domestic value added of Hungarian exports indicates Hungary's developmental lag, based on which euro adoption is not yet justified. However, the extent to which domestic market participants generate value in the export production of certain countries vs. the value generated by imports may be indicative of the domestic economy's level of development. Based on the latest relevant OECD databases, Hungary is a relative laggard in the European ranking and although countries following Hungary are euro area Member States, there are numerous countries with higher domestic value added than Hungary that have not yet introduced the euro either.

Budgetary developments in Hungary only partly comply with the proposed criteria. Structural fiscal deficit exceeds the threshold included in our suggestions that is applicable to Hungary, however, gross public debt, despite its level being higher than 50 per cent of GDP, is decreasing at a satisfactory pace.

In respect of the identification and management of systemic risks in the financial sector, Hungary exhibits an outstanding activity both by EU and regional standards, thereby supporting the country's shock resilience and convergence to euro area Member States.

As a result of the Act on the Magyar Nemzeti Bank[89] entering into

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[89] http://njt.hu/njtlink.php?njtcp=ee9eg0ed3em4er5ei0dx3cj4cy1bm4dw7eh4dv1eb-4dw1cj8bx1cc8bz5ca8cc1ce6bm9en8dv7eh8dw3dx8cj1by4bd

force in 2013, the MNB was expanded both in terms of its powers and organisation. With the integration of supervisory powers and the exercise of resolution-related administrative duties and macroprudential powers, the central bank was vested with a broad range of competences.

- **A new, independent element emerged in central bank decision-making: the active and proactive use of macroprudential policy.** In respect of Hungary, the calibration of macroprudential tools is proactive, primarily aimed at risk prevention. As a result, the severity of negative shocks is expected to be limited, and the potential downward effect also supports the maintenance of a healthy growth path, i.e. it reduces the overheatedness of the economy.

- **The organisational structure of the MNB's Supervision has been transformed in recent years; new supervisory methodologies, procedures, indicators, supervisory instruments and analytical frameworks have been introduced.** The essentially audit-oriented approach in place before 2013 was replaced by a supervisory approach that puts continuous surveillance in the foreground, which is an improvement both in terms of quality and the level of security.

- It also strengthened financial stability that **Hungary was among the first countries to adopt the European Union's framework** that was designed in 2014 on the basis of global standards and **aimed at the resolution of credit institutions and investment firms.** In this context, the MNB draws up a resolution plan for each institution with a view to getting prepared for the maintenance of the critical functions of institutions that are insolvent or likely to become insolvent while minimising the costs borne by clients and taxpayers. In addition, in November 2018 the MNB published its methodology on prescribing the minimum requirement pertaining to regulatory capital and to liabilities eligible for write-down or conversion (MREL).

Table 4-4: Fulfilment of the criteria proposed by the MNB (Maastricht 2.0)

Criterion	Target value	Hungary	Source	Is the criterion fulfilled?
I. Nominal anchors				
Price stability[1]	< 2.0%[2]	3.3%	Eurostat	No
Long-term interest rates[3]	< 3.9%[4]	2.8%	Eurostat	Yes
Exchange rate stability	3-5 years[5]	Floating exchange rate	MNB	No
II. Adequate phase of convergence				
Real economic convergence[6] (per capita GDP (PPS))	> 90%	66%[7]	Eurostat	No
Wage convergence[6] (average wage (PPS))	> 90%	60%[8]	European Commission	No
Convergence in the depth of the financial sector[6,9]	> 90%	39%[7]	World Bank, MNB	No
III. Synchronized business and financial cycles between Hungary and the euro area				
Synchronized business cycles[10]	> 0.7	approx. 0.7	Eurostat	Yes
Synchronized financial cycles[11]	> 0.7	approx. 0.7	World Bank	Yes
IV. Competitive corporate sector, labor market and products				
SME labor productivity ratio[12]	> 50%	46%[7]	KSH**	No
Country-specific unemployment rate*	< 4%	3.7%[7]	KSH	Yes
Country-specific participation rate*	>65% (>75%)	62.5% (71.9%)[7]	KSH	No
Export structure, product variety	Diversification, high added-value products	Further diversification and an increase in domestic added value are necessary	OECD	No
V. Developed, stable and competitive financial sector				
MNB Banking System Competitiveness Index[13] (BSCI)	Competitive banking sector	Further steps are required that promote competitiveness	MNB	No
VI. Effective counter-cyclical economic policy space				
Long-term structural deficit	A maximum of 0%, 1% or 2% based on government debt	> 1%	IMF[14]	No
Public debt-to-GDP	< 50% or sufficiently decreasing	70.2%[2]	MNB	Yes
Prudential policies	Appropriate set of instruments	Available	MNB[15]	Yes

*Note:***KSH: Hungarian Central Statistical Office.*

[1] Average value of the year-on-year harmonized consumer price index between November 2018 and October 2019.

[2] The three EU member states with the lowest positive HICP inflation rates in the period under review are Portugal (0.38 per cent), Greece (0.53 per cent) and Cyprus (0.67 per cent), the unweighted arithmetic mean of which is 0.5 per cent. The HICP of applicant member states shall not exceed this by more than 1.5 percentage points.

[3] Average 10-year government bond yield between October 2018 and September 2019.

[4] Average yields of the three EU member states with the lowest positive HICP inflation rates in the period under review are Portugal (1.07 per cent), Greece (3.24 per cent) and Cyprus (1.45 per cent), the unweighted arithmetic mean of which is 1.9 per cent. The average yield of applicant member states shall not exceed this by more than 2.0 percentage points.

[5] Applicant countries should not have devalued the central rate of their euro pegged currency during the previous 3-5 years, and for the same period the currency stability shall be deemed to have been stable without "severe tensions". As a third requirement, participation in the exchange-rate mechanism for 3-5 consecutive years is expected.

[6] In comparison to the euro area average.

[7] 2018 data.

[8] 2017 data.

[9] Credit-to-GDP ratio.

[10] Output gap correlation to eurozone.

[11] Credit-to-GDP correlation since Hungary's accession in 2004.

[12] Gross value added per capita in comparison to non-SMEs.

[13] In accordance with its financial stability mandate, the MNB has developed its own Banking Sector Competitiveness Index (BSCI). Based on the indicator, the areas most in need of improvement are access to bank loans, corporate confidence and the average APRC spread on loans to households.

[14] According to the IMF Article IV country report.

[15] The MNB's Macroprudential Report (2018).

*The target value refers to the 15-74 age group for Hungary. For comparison, values regarding the 15-64 age group are written in brackets.

Source: Eurostat, European Commission, OECD, The World Bank, KSH, MNB.

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The book was inspired by the fact that the euro so the single currency, one of the biggest and most complex projects of Europe's economic history, entered the 20th year of its "life" in 2019. As far as the future is concerned, there seems to be consensus that the most important task may be to further develop the institutional framework of the euro area and to set up new "Maastricht criteria" that would allow for more successful accession processes than experienced so far. In the case of the latter, it is important for a consensus that Central and Eastern European countries still outside the euro area have a chance to be heard in the matter.

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