

GOVERNMENT OF THE REPUBLIC OF CROATIA
CROATIAN NATIONAL BANK

STRATEGY FOR THE ADOPTION OF THE EURO IN CROATIA

PROPOSAL
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STRATEGY FOR THE ADOPTION OF THE EURO IN CROATIA

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Foreword by the Prime Minister



For more than four years Croatia has been part of the European Union and of the single market that brings together around half a billion Europeans. Each of the new EU Member States is expected to adopt the euro once it meets the necessary criteria; this includes Croatia, which committed to it in its Accession Treaty. Croatia would thus become part of the euro area, which today includes 19 Member States and 340 million people, all of which enjoy the considerable benefits of the single currency: from an easy comparison of prices to the absence of exchange rate risk and the related costs.

Both Croatian citizens and the economy will have multiple and permanent benefits from the future adoption of the euro at relatively small, one-off costs. Therefore, it is in Croatia's interest that the Government begins with the preparations for the process of euro adoption. However, to allow this several-year process to unfold in the best possible way and to the benefit of all citizens, the business community and the society as a whole, such an important decision for our country requires careful preparation with clear objectives and tasks. This, of course, includes an expert assessment of the impact, benefits and challenges. This is the purpose of the *Strategy for the Adoption of the Euro in Croatia*, the document which has been prepared jointly by the Government of the Republic of Croatia and the Croatian National Bank.

The adoption of the euro will, for example, lead to lower interest rates, eliminate an important source of vulnerability in the form of currency risk, as well as the costs of currency conversion for traveling purposes, while prices will be compared more easily. The process will also spur investments and international trade, while the euro may provide significant protection in case of macroeconomic disturbances. All this is evident from the analysis presented in the Strategy.

Before euro adoption, a Member State must attain a high level of sustainable convergence, thereby showing that it can function in the monetary union without difficulties. Fulfilment of the criteria for the adoption of the euro is an achievable and realistic goal for Croatia, as confirmed by the recent macroeconomic developments showing significant progress in the reduction of macroeconomic imbalances. Forecasts by relevant institutions as well as the determination of economic policymakers indicate that the positive trends should continue.

However, it should be noted that the target date for euro adoption has not yet been set as a number of factors may influence an assessment of Croatia's readiness for

progress in monetary integration. Among them is the political will in the European Union to further expand the euro area.

As regards the readiness, it can be measured by the attained level of real convergence, particularly in the initial stage of the process, as well as an assessment of the existence of macroeconomic imbalances. The reform efforts taken by the Government will definitely contribute to success in both these areas and consequently to gaining the support of the European partners. All these efforts are aimed at achieving higher potential growth rates and enhancing the competitiveness of the Croatian economy.

The Strategy is focused on the economic effects of the introduction of the single currency. However, monetary integration also has a strong political dimension, which is equally important today, when the future of Europe is being discussed, as it was in the 1980s, when the project of establishing the single currency first began. In this context, euro adoption will certainly enhance Croatia's positioning in European integration processes. It will also be a step forward in Croatia's efforts to join the group of the Member States committed to deeper and stronger integration that provides more opportunities for development and progress. Therefore, I consider the adoption of the euro to be an important strategic goal, which has prompted the Government to continue pursuing a responsible economic policy. This policy will provide for compliance with all criteria for the adoption of the single currency, above all because the implementation of the relevant measures is in our own interest.

I also use this opportunity to announce that a comprehensive information campaign will be launched in the future so that we can make the transition to the new currency as smooth as possible and to be as prepared as possible once the time comes. The publication of this document marks the beginning of the public debate about the process of euro adoption in Croatia, while the presented analysis will provide a solid basis for a high-quality discussion about the effects of the introduction of the single European currency.



Andrej Plenković
Prime Minister of the Government of the Republic of Croatia

Foreword by the Governor



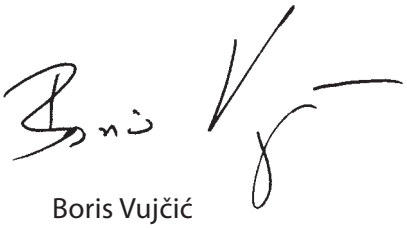
Joining the EU, Croatia decided to adopt the euro. Euro adoption will stimulate economic flows and employment, consequently contributing to a rise in the standard of living of Croatia's citizens. It will, at the same time, mitigate or fully eliminate a series of vulnerabilities arising from specific structural characteristics of Croatia's economy, the most prominent being the high degree of euroisation reflected in the high level of debt expressed in euro. It is, therefore, in Croatia's best interest to start with euro adoption process as soon as possible, as is unequivocally confirmed by an analysis of economic costs and benefits of euro adoption in Croatia that is presented in this document.

However, the euro cannot be adopted overnight. It requires a continued effort in economic and structural policy implementation aimed at strengthening the competitiveness of Croatia's economy and its resilience to shocks. This, of course, assumes the sustained maintenance of macroeconomic and financial stability, which is often taken for granted. It also requires the support of the EU institutions and euro area partners in accepting new members. This will greatly depend on the assessment of the readiness of a candidate country Member State, as well as on the direction of the EU's future development.

Over the past few years Croatia has made great progress in reducing its macroeconomic imbalances and the Excessive Deficit Procedure for Croatia has been abrogated. In the meantime, economic recovery in the euro area has gained momentum, coupled with continuous strengthening of the institutional infrastructure of the Economic and Monetary Union and initiatives for the additional deepening and expansion of integration processes. Therefore, I think that time has come to initiate a comprehensive public discussion on euro adoption in Croatia and to enter into a dialogue with the European institutions. This document was drafted to keep this discussion constructive and effective. It presents an analysis of economic costs and benefits of euro adoption in Croatia in a concise yet detailed and professional manner, explaining the process of euro adoption and discussing the economic policies required for a successful euro adoption and participation in the euro area.

Last but not least, I would like to stress that, at present, it is not possible to predict the dynamics of euro adoption process in Croatia. Although it will largely depend on the success of our own reform efforts and on the strengthening of economic competitiveness, it also remains exposed to other influences. However, it is important to make euro adoption Croatia's strategic objective because the implementation

of economic policies necessary for achieving this objective in itself benefits the economy, irrespective of the actual introduction of the euro. With that focus, the moment of euro adoption will inevitably follow, opening a new chapter in Croatia's modern monetary history, in which the Croatian National Bank will remain committed to safeguarding Croatia's and the euro area's price stability and financial stability.



Boris Vujčić
Governor of the Croatian National Bank

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Main highlights

The benefits of the adoption of the euro in Croatia exceed the costs. While benefits are permanent and relatively considerable, costs are predominantly low and one-off. The adoption of the euro will reduce the risks to financial and macroeconomic stability and positively affect financing conditions, thus accelerating growth and strengthening the economy's resilience. All new EU Member States of comparable size have therefore already introduced the euro.

The adoption of the euro eliminates currency risk for citizens, corporations and the government. It eliminates the possibility of a currency crisis and diminishes the risk of potentially expensive banking and balance-of-payments crises. The new financial architecture of the euro area strengthens protective mechanisms in case of economic disturbances.

Interest rates and transaction costs will decrease. The elimination of the currency risk will favourably affect the country's risk premium, while regulatory costs for banks will substantially reduce, having a positive effect on interest rate levels. In addition, citizens and corporations will save on currency conversion transactions and charges for cross-border payments in euro. The lowering of transaction costs and greater price comparability will spur international trade and tourism.

Investments are expected to be positively affected. Lower interest rates will boost the competitiveness of domestic corporations and provide additional impetus to investments and employment, while the elimination of currency risk will positively affect the confidence of international investors in Croatia and thus contribute to attracting foreign direct investments.

The loss of independent monetary and exchange rate policy will not represent a substantial cost for Croatia. High credit and deposit euroisation and dominance of foreign-owned banks in the domestic banking system have narrowed the room for active use of monetary and exchange rate policy in Croatia. The monetary policy of the European Central Bank will be well suited for the needs of Croatia's economy because Croatia is, both economically and financially, firmly integrated in the euro area. Consequently, its business cycle largely mimics developments in the euro area. Should the business cycle in Croatia start to diverge, the Croatian National Bank will react through its macroprudential policy, while the Government will employ an appropriate fiscal policy.

The adoption of the euro will only negligibly affect prices. Oversight over the process of price recalculation will limit the room for their unjustified increase. Experiences of euro area Member States show that the effect of the adoption of the euro on prices was one-off and very mild in intensity.

Croatia is ready to start the process of euro adoption. Macroeconomic fundamentals provide Croatia with a good foundation for participation in the Exchange Rate Mechanism (ERM II) and for meeting the criteria for the introduction of the euro. Croatia has attained a high level of real and nominal convergence, in the context of new Member States observed at the moment of joining the Exchange Rate Mechanism II. The long-standing price and exchange rate stability and progress of the fiscal adjustment indicate Croatia's readiness to meet the convergence criteria soon after joining the ERM II. The strengthening of reform implementation and prudent fiscal policy are necessary regardless of the introduction of the euro. It strengthens competitiveness and reduces macroeconomic imbalances, i.e. spurs growth and employment, as well as the economy's resilience to disturbances.

Summary

This document analyses the economic costs and benefits of the adoption of the euro, describes the process and presents the activities and policies that need to be undertaken to introduce the euro as the official currency in Croatia. It also describes the economic policy instruments at Croatia's disposal after the adoption of the euro.

Croatia is ready to start the process of euro adoption. The country has reached a relatively high degree of real convergence, it has maintained low inflation and a stable exchange rate for over two decades, while, recently, it has also noticeably improved its budget balance and reduced public debt. Responsible economic policy of the Government of the Republic of Croatia and the Croatian National Bank (CNB) will ensure the continuation of the existing positive trends. As a result, all the conditions for euro adoption might be met in the near future. Croatia will thus fulfil the obligation of introducing the common currency that was undertaken upon accession to the European Union.

Analysis shows that benefits Croatia will reap from the adoption of the euro are considerable and permanent. The adoption of the euro will reduce risks to financial and macroeconomic stability, as well as interest rates and transaction costs. The use of the common currency will contribute to the strengthening of international trade with euro area Member States and facilitate competitiveness of exports, especially tourism. All this should contribute to faster economic and employment growth, increase the volume of investments and strengthen the resilience to financial and economic disturbances.

The benefits from the changeover to the euro in Croatia will be greater than it was the case in other Member States. Due to high indebtedness of Croatia's citizens, corporations and the government in euro, the elimination of the currency risk will reap greater benefits for Croatia than for other Member States that were not euroised to the same extent prior to the adoption of the euro. Euro area Member States accounting for a great share of Croatia's foreign trade and tourism contributes to expected benefits from the adoption of the euro. The fact that all small EU Member States have already introduced the euro speaks in favour of euro adoption. Consequently, Croatia is the smallest Member State still using its own currency.

The greatest benefit of the adoption of the euro is the elimination of the currency risk. Currency risk in Croatia arises from the high indebtedness of all domestic sectors in foreign currencies, predominantly in euros. Total debt in foreign currency, including that indexed to foreign currency, exceeds HRK 500bn (approximately 150% of GDP). More than 90% of that amount is linked to the euro. Under these circumstances, a more pronounced depreciation of the kuna against

the euro would increase indebtedness and the debt repayment burden, having exceptionally negative macroeconomic effects. Although the CNB protects domestic debtors from currency risk through its policy of a stable kuna exchange rate against the euro, the adoption of the euro will eliminate this risk altogether because the entire debt currently linked to the euro will become debt in the domestic currency, thus removing one of the main sources of vulnerability of the economy.

The adoption of the euro will reduce the risk of a banking or balance-of-payments crisis and completely eliminate the risk of a currency crisis. Croatia's banking system is highly capitalised and has considerable kuna and foreign currency liquidity buffers, indicating that there is a low likelihood of a systemic banking crisis. Its resilience will be additionally strengthened with the introduction of the euro because in cases of liquidity disturbances the CNB, as part of the Eurosystem, will be able to lend euros to banks in significant amounts, which is not the case at the moment, because the CNB does not create euros and can only place them pursuant to the previously accumulated foreign currency reserves. This will remove the risk of difficulties in the banking system depleting reserves, leading to disturbances in external payments and to a currency crisis.

The adoption of the euro will lower interest rates. Lower risk premium paid by euro area Member States could positively affect borrowing conditions for all domestic sectors. Given the currently high regulatory costs for banks in Croatia due to the need to mitigate risks arising from high credit and deposit euroisation, the lowering of these costs will provide for a decrease in interest rates.

The adoption of the euro will positively affect investments. More favourable borrowing conditions will improve the competitiveness of domestic corporations, thus opening additional room for investments and employment. At the same time, the elimination of the currency risk will tone down the overall perception of Croatia's risk, thus facilitating investment growth.

The adoption of the euro will eliminate the costs of converting the kuna into euro and vice versa, while charges on cross-borders payments in euro will substantially decrease. Citizens and corporations will save on currency conversion transactions (exchange rate differences and currency exchange fees) since it will no longer be necessary to convert the kuna into euro and vice versa. The elimination of currency conversion costs but also greater transparency and price comparability due to the introduction of the common currency will positively affect foreign trade and Croatia's attractiveness as a tourist destination. In addition, the introduction of the euro will make cross-border payments in euro equal to national payments, which will be beneficial for all involved in international trade.

The adoption of the euro will increase resilience in case of economic disturbances. Croatia will gain access to the European Stability Mechanism, serving to assist countries facing financial difficulties. By its form, possibilities and amounts of financial assistance it is far more generous than the assistance mechanism provided to Member States that have not yet introduced the euro. The recent crisis in the euro area has shown that this common backstop, apart from directly aiding countries under shock, positively contributes to the confidence of financial markets in the Member States of the monetary union.

In contrast to the listed benefits that are long-term, the costs of euro adoption are mostly one-off. Croatia will have to sustain one-off currency changeover costs,

make payments to the capital and reserves of the European Central Bank and the capital of the European Stability Mechanism. As for the impact of euro adoption on inflation, there is a possibility of a slight one-off price increase in price levels, which is in line with the experiences of other euro area Member States. Special government measures promoting fair price recalculation into the new currency will aim to aid this. The risks of excessive capital inflows and increase of macroeconomic imbalances are largely subdued as a result of the suitability of the common monetary policy for Croatia and the EU mechanism for the correction of structural weaknesses and achieving of sustainable economic growth in Member States.

The loss of independent monetary and exchange rate policy will not represent a considerable cost for Croatia. Financial conditions in small and open countries are largely determined by European and global factors, especially by the policies of largest central banks and the oscillations in investor attitudes towards risk. Potentially large and destabilising capital flows limit fully independent monetary policies in small and open economies. This is especially visible in Croatia where the share of foreign ownership in the banking system is high. Namely, banks may borrow from their parents, of which most come from the euro area, which makes interest rates not an efficient instrument of the CNB's monetary policy. In addition, amid high euro indebtedness of domestic sectors, the CNB cannot actively use the foreign exchange rate for the purpose of mitigating macroeconomic shocks because the depreciation of the exchange rate would increase the debt repayment burden and thus act pro-recessionary. In this context, the stability of the kuna exchange rate against the euro is important for preserving financial and overall macroeconomic stability. Further, common monetary policy of the European Central Bank will suit the needs of the Croatian economy because the business cycle in Croatia, as a result of strong economic and financial integration with the euro area, is synchronised with the business cycles of the largest euro area Member States. Should the business cycle in Croatia start to diverge, the CNB will react through its macroprudential policy, while the Government will use its fiscal policy.

The first formal step towards the adoption of the euro is joining the Exchange Rate Mechanism (ERM II). The support of euro area Member States and EU institutions is key in this process. Each Member State must participate in the Exchange Rate Mechanism for at least two years prior to the adoption of the euro, thus reflecting it is capable of functioning under the conditions of a stable exchange rate against the euro. The conditions for joining the mechanism are not defined in a straightforward manner. The support of the euro area Member States and EU institutions depends on their assessment of the economic situation in the candidate country, primarily on the degree of its convergence and macroeconomic stability, and on the political will for further expansion of the monetary union.

The levels of income and prices reached and the history of low inflation and stable exchange rate provide a good starting point for participation in the ERM II. Croatia has a relatively higher level of income and prices than some current euro area Member States had at the moment of joining the Exchange Rate Mechanism II. In addition, Croatia has a continuously low inflation and a stable exchange rate since the mid-1990s and is one of rare countries that implemented measures to counteract the detrimental effects of excessive capital inflows prior to the onset of the global financial crisis. In order to ensure conditions for continued income convergence and a reduction of economic vulnerability, the Government will continue implementing structural reforms and measures aimed at the consolidation of public finances.

Structural reforms are key for attaining higher rates of potential economic growth. Productivity growth is the key precondition for achieving a balanced and sustainable economic growth in the long run. The rates of Croatia's productivity growth are not sufficient to enable rapid convergence towards income levels prevailing in advanced economies of the euro area. In this context, the Government will continue implementing comprehensive measures directed at improving the business environment, alleviating the tax burden and increasing public sector efficiency.

The adoption of the euro depends on nominal convergence criteria that Croatia might meet after joining the ERM II. Croatia's nominal convergence will be rated positively if it manages to preserve price and exchange rate stability, demonstrates discipline in public finances and attains the necessary degree of convergence of long-term interest rates. Among the nominal convergence criteria, the greatest obstacle for Croatia until recently was the criterion of sustainability of public finances, i.e. public debt that exceeds the reference value of 60% of GDP. However, the level of consolidation achieved increases the chances of all criteria being met in the near future. Namely, according to the EU rules, the criterion of sustainability of public finances may be met even if debt exceeds the reference value provided that the debt is decreasing at a satisfactory pace. If public debt continues to decrease at the required pace and indicators for other criteria remain within the acceptable range Croatia could meet all formal criteria for the adoption of the euro shortly after joining the ERM II.

Croatia will make a series of institutional and operating adjustments for participating in the monetary union. The majority of adjustments will start after EU institutions establish that the criteria for the adoption of the euro have been met. As for institutional adjustments, Croatia will have to carry out preparatory activities for accession to the banking union and sign an agreement, undertaking to incorporate strict fiscal rules into its legal framework. Among the operating adjustments, one should stress the procurement or the printing and minting of euro banknotes and coins, supply of banknotes and coins to banks and establishment of control mechanisms that will prevent unjustified rise of consumer prices, as well as legislative alignment so that the euro becomes an official means of payment in Croatia as at the day of conversion.

Fiscal, structural and macroprudential policies will be the main economic policy tools after euro adoption. By pursuing a prudent fiscal policy, the Government will additionally reduce imbalances in public finances, thus increasing the resilience of the economy and also enable its countercyclical effect. By implementing appropriate structural policies, the Government will contribute to the balanced economic growth and prevent the occurrence of adverse macroeconomic imbalances. Croatia will continue to actively use micro- and macroprudential policy instruments, aiming to maintain the financial and overall macroeconomic stability.

Finally, all economic policy measures Croatia undertakes with an aim to meet the criteria for introducing the euro need to be implemented regardless of the adoption of the euro. Economic policy measures directed at reducing fiscal vulnerabilities, increasing competitiveness and mitigating macroeconomic imbalances will increase the resilience of Croatia's economy and reduce its vulnerability to crisis, concurrently boosting growth and employment. Therefore, they should be implemented regardless of the goal of euro adoption.

1 Introduction

The Government of the Republic of Croatia and the Croatian National Bank have jointly prepared this document for the purpose of acquainting the public with the process and the effects of the adoption of the euro as the official currency in Croatia. This document provides an analysis of economic costs and benefits of euro adoption, which may serve as a starting point for public debate and for reaching a consensus on whether Croatia should introduce the euro as soon as possible. In addition, it describes procedures and required adjustments necessary for meeting conditions for the adoption of the common currency and successful participation in the monetary union in the future. This document, although not stating the target date for the introduction of the euro, presents some of the strategic determinants of economic policy in the upcoming period, which will, in addition to the direct contribution to the effort of meeting the criteria for the introduction of the euro, contribute to the creation of conditions for sustainable economic convergence.

The reason for the existence of a common currency in the EU is the wish for closer European integration, which is to a great extent justified by economic interest. Therefore, the adoption of the euro should also be viewed in a broader context, exceeding the economic analysis presented in this document. The current political and economic integration among Member States is not uniform but differs by levels. The majority of Member States opted for a greater degree of integration. For instance, by signing the so-called Schengen Agreement a large number of Member States voluntarily committed to a greater degree of integration in the segment of state border crossing and security. Similarly, most Member States accepted the common currency, while some new members, although committing to accept the euro as their official currency at some future point when they joined the EU, have still not met the criteria for its adoption.[1] The current political situation in the EU and considerations regarding Europe's future indicate a likely scenario under which some Member States will continue to deepen the integration. In this context, Croatia needs to decide whether it is ready to undertake steps to join the majority of Member States that opted for further strengthening of the political and thus economic integration.

1 By joining the European Union, that is, by signing the Treaty Concerning the Accession of the Republic of Croatia to the European Union, Croatia too committed to adopt the euro. Namely, by signing the Accession Treaty Croatia became a party to the Treaty on European Union and to the Treaty on the Functioning of the European Union, as well as to the Treaty establishing the European Atomic Energy Community, becoming subject to the provisions of the EU's Treaties which now apply to Croatia as well. Given that the establishment of an economic and monetary union whose currency is the euro is laid down in the Treaty on European Union of 1992 (Article 3 of the Consolidated version of the Treaty), in the Accession Treaty Croatia undertook to introduce the euro after meeting the prescribed conditions and apply other provisions specific to Member States whose currency is the euro. This applies to all Member States that have joined the EU after signing the Treaty on European Union.

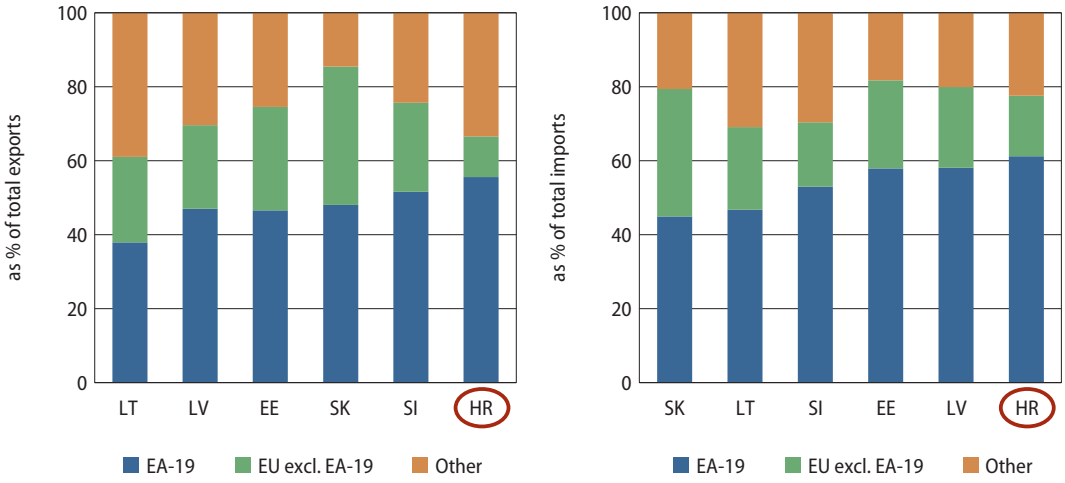
This document is structured as follows: the main characteristics of the optimum currency area theory, as well as estimates of Croatia's standing under its criteria, are described in the second chapter. The recommendation to the authorities of the Republic of Croatia to undertake efforts required for euro adoption is based on the assessment of the economic impact that is founded on the cost-benefit analysis in the third chapter of this document. The fourth chapter describes the process of euro adoption, with special attention given to participation in the European Exchange Rate Mechanism II (ERM II). The fifth chapter goes on to describe the policies and measures that the Government and the CNB need to undertake in order to meet the criteria for the adoption of the euro. This chapter also describes the necessary operating and other adjustments in the context of the adoption of the euro. The possibilities of and main determinants for shaping and implementation of economic policies after Croatia becomes a full member of the European Economic and Monetary Union are described in the sixth chapter. The conclusion justifying the adoption of the euro in Croatia is given at the end.

2 The appropriateness of the euro for Croatia under the optimum currency area theory

The establishment of the Economic and Monetary Union (EMU) is a reflection of the aspiration of Member States towards stronger political integration, but also of their efforts to reap economic benefits. It was thought that the potential of a single market could be fully utilised only by establishing a complete monetary union, primarily by eliminating excessive volatility of exchange rates, decreasing transaction costs and increasing the resilience of the EU economy to external shocks[2]. The idea of the establishing a monetary union in Europe was partially founded on the optimum currency area theory.

The optimum currency area theory defines the framework to be used when assessing the justifiability of joining the monetary union.[3] The criteria to be met by a country in order to benefit from the common monetary policy is a high degree of trade and financial integration with the members of the monetary union and a similar structure of the economy and its diversification. This enables a better

Figure 1 Geographic structure of trade in goods between Croatia and new euro area Member States



Note: The figure shows the average value of share in 2015 and 2016.
Sources: Eurostat and CBS.

2 The motives for the establishment of the EMU were presented in the so-called Delors Report (Committee for the Study of Economic and Monetary Union, 1989).

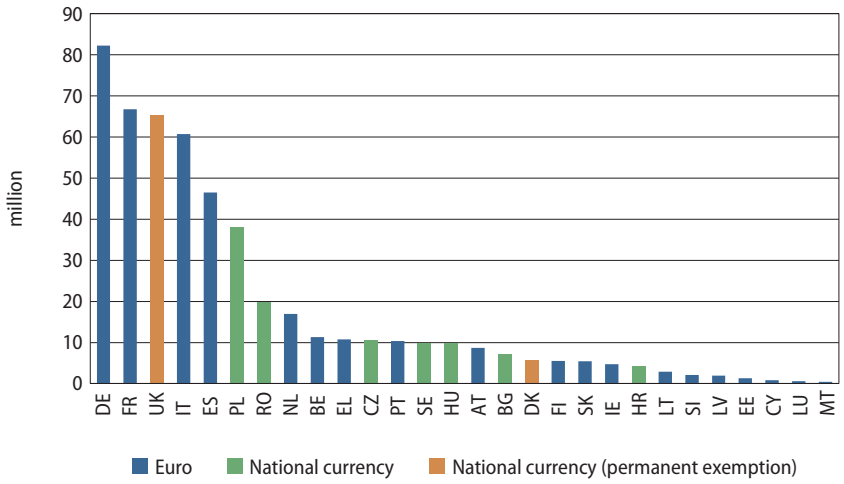
3 A key contribution to the development of the optimum currency area theory came from Mundell (1961), McKinnon (1963) and Kenen (1969).

synchronisation of business cycles and economic shocks between a country and the rest of the monetary union so it is likely that the common monetary policy will appropriately affect the country's economy. In addition, the country also has to have additional mechanisms at its disposal – wage and price flexibility, labour mobility, fiscal and political integration with other Member States – which will enable its adjustment to situations when the common monetary policy will not quite fit, i.e. in cases of asymmetric shocks as compared to the union. If a country meets these criteria, joining the monetary union may be worthwhile. Otherwise, a country should maintain its monetary independence.

High level of trade integration between Croatia and the euro area.[4] According to the optimum currency area theory small open countries benefit from the establishment of a common currency area with their main trading partners.[5] This claim is corroborated by the high degree of openness of the economy as a result of which the changes in the prices of internationally tradable goods, which may also occur due to changes in the exchange rate, are swiftly transferred to domestic prices. In that case the exchange rate policy is inefficient in mitigating macroeconomic shocks, so a country benefits from a stable exchange rate or joining a monetary union with its trade partners. Further, a noticeable trade integration leads to a faster and stronger spill-over of shocks among trading partners so it is more likely that business cycles among partners will be synchronised and accordingly that benefits from a common monetary policy will be mutual. To a large extent Croatia fulfils the trade integration criterion. Trade with the euro area accounts for the bulk of total international trade so in terms of trade Croatia's connections to the euro area are tighter than that of some Central and Eastern European countries that already use the euro, as well as tighter than that of some old euro area Member States, like Ireland, Finland and Greece. At the same time, Croatia is the smallest EU Member State with its own currency (Figure 2).

Croatia is also highly financially integrated in the euro area. Financial integration is important because it enables greater diversification of investments, i.e. investing

Figure 2 EU Member States by population and currency



Source: Eurostat.

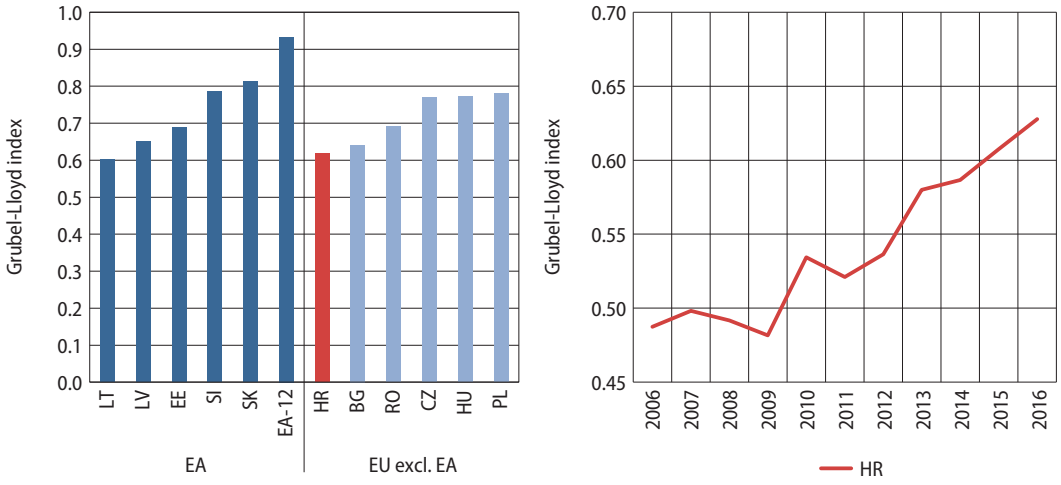
4 For a detailed analysis of the optimum currency area theory for Croatia see Brkić and Šabić (2017).

5 McKinnon (1963).

and borrowing via financial instruments in and from other countries. This ensures that temporary shocks, such as financial crises are overcome more easily.[6] Apart from contributing to the strengthening of similarity of business and financial cycles, this way financial integration may alleviate situations in which countries face asymmetric shocks and do not benefit from a common monetary policy[7]. Although the optimum currency area theory underlines financial integration as a precondition for the stability of a monetary union, financial interconnectedness among euro area Member States can have a destabilising effect if it contributes to the occurrence of macroeconomic imbalances, as was the case in peripheral euro area Member States prior to the outbreak of the global financial crisis. The financial integration of Croatia with the euro area arises primarily from the fact that euro area financial institutions own over three quarters of Croatia's total banking system assets. Apart from financial intermediation, the bulk of foreign direct investments in other segments of the economy also comes from the euro area. In the structure of investments of Croatian residents abroad, investments in euro area countries are also heavily represented, although their importance both in the absolute and the relative amount is much more modest. Finally, the bulk of Croatia's external debt is denominated in euro and is owned by investors from the euro area.

Although Croatia is different from the Member States of the euro area core by its economic structure (similarity, degree of diversification), positive trends have been noticed. In a diversified economy shocks arising in one sector have a limited effect on the overall economy, which decreases the need for special monetary policy and other economic policy measures. Similarity of economic structure of countries within the union implies lower likelihood of asymmetric shocks arising in individual countries. A high share of total revenues from tourism in GDP indicates that Croatia's economy is not sufficiently diversified, especially because this is a sector susceptible to strong external shocks. Croatia also differs from euro area Member States by the structure of its industry. It is dominated by the manufacture of food products,

Figure 3 Intra-sectoral trade of EU countries



Notes: Average values of the Grubel-Lloyd Index in 2015 and 2016, calculated pursuant to data on the trade in goods on the EU market. The value of the index ranges between 0 (only inter-sectoral trade) and 1 (only intra-sectoral trade).
Sources: Eurostat and CNB calculations.

6 Ingram (1962).

7 McKinnon (2001).

non-metallic mineral products, wood products and clothing, while in the euro area high-technology products, such as motor vehicles and machinery and equipment, account for a greater share of total manufacturing. Differences are also present in the intensity of the intra-sectoral trade. In Croatia, its share in total trade of goods is lower than in the euro area (Figure 3, left). However, the degree of intra-sectoral trade started rapidly increasing after Croatia's accession to the EU, especially in the trade of products with higher value added (Figure 3, right).[8] These developments contributed to greater synchronisation of business cycles and the symmetry of shocks between Croatia and the euro area because in case of sector-specific shocks this shock spreads across all countries where this sector is highly represented.

Despite differences in economic structure, Croatia meets the criterion of the synchronisation of business cycles and economic shocks. The synchronisation of business cycles is a precondition for the efficient functioning of the monetary union because then common monetary policy equally benefits all Member States. There is a relatively high degree of business cycle synchronisation between Croatia and the largest euro area Member States. In addition, Croatia and euro area Member States are exposed to similar shocks of the aggregate supply and demand, and the reactions of their economies to these shocks are nearly symmetrical (*see Box 1*). This means that after the introduction of the euro Croatia should not be exposed to asymmetrical shocks that could render common monetary policy inadequate for conditions in Croatia.

Labour mobility between Croatia and the euro area, as one of the ways to adjust to asymmetrical shocks, has been made much easier upon Croatia's EU accession. Considering that within a monetary union a country no longer has independent monetary and exchange rate policies at its disposal to react to shocks, labour mobility is a one of its desirable features. When labour mobility is high monetary union has an easier time adapting to shocks because workers move from areas hit by recession to areas where economic developments are favourable. The higher the mobility, the lower the need for price and wage adjustment, so it is easier to pursue a common monetary policy.[9] On the other hand, when these adjustment mechanisms are limited, a country hit by negative shocks is faced with growing unemployment. In Croatia, labour mobility among its regions is relatively low,[10] while on the other hand there is strong cross-border mobility, especially considering the possibility of employment in other EU Member States.[11] Although the outflow of unemployed workers during recession reduced imbalances in the Croatian labour market to an extent, the emigration of the working-age population might negatively affect Croatia's economy in the long run.[12]

8 See more detail in CNB (2016), Bulletin, No. 226, Box 4 Changes in the dynamics and structure of Croatia's trade in goods following EU accession.

9 Mundell (1961).

10 There are great differences in unemployment rates among different Croatian regions. In 2015, they ranged between the minimum 9.6% in the City of Zagreb and the maximum 35.8% in the County of Virovitica-Podravina, indicating limited labour force mobility within the country.

11 According to the data of the Croatian Bureau of Statistics, more than 30 thousand persons emigrated to developed euro area countries in 2014 and 2015 alone. This figure might be underestimated due to difficulties in registering emigration.

12 If this outflow of workers proves to be of permanent character, Croatia might be faced with the consequences of the loss of human resources, and the deterioration of the already low ratio of active to inactive population would increase risks for the sustainability of the health and pension systems.

The criteria of price and wage flexibility in Croatia are satisfied to a lesser degree. Prices and wages should be flexible in order to be able to mitigate asymmetric macroeconomic shocks within the monetary union.[13] Empirical research shows that during periods of favourable macroeconomic conditions prices in Croatia are relatively inflexible. However, they become much more flexible when operating conditions for corporations deteriorate.[14] Wages recorded similar trends. The share of corporations in Croatia that decreased basic wages in the period from 2010 to 2013 was much higher than the EU average (26% compared to 5%).[15] Wages were also lowered in other countries that recorded a substantial decline in economic activity. However, this was not enough so an important share of the adjustment to unfavourable shocks was carried out through lay-offs. Research has shown that the ability of corporations to adapt to negative shocks by reducing wages largely depends on the institutional environment, above all on the widespread use and centralisation of collective agreements.

The degree of political integration with the euro area increased with Croatia's EU accession, as Croatia has since been actively participating in the European mechanisms for the coordination of economic policies. Political integration stimulates Member States to comply with common rules and coordinate economic policies important for the functioning of the monetary union[16]. As seen from recent history of the euro area, when Member States have a common monetary policy and each of them pursues its own fiscal and structural policy, it can come to a macroeconomic gap which negatively affects the stability of the monetary union. Therefore, new mechanisms of the coordination of economic policies have been set up in the period after the crisis, aiming to ensure greater resilience of the euro area in the future. Croatia has joined these mechanisms upon accession, increasing the degree of connectedness of its economic policies with other Member States. Croatia will have to comply with even stricter fiscal rules that apply to euro area Member States not later than when it introduces the euro.

No Member State meets the fiscal integration criterion, including Croatia. In contrast to political integration, which strengthened in the period after the crisis, the degree of fiscal integration among euro area Member States remained low. Namely, euro area is not a fiscal union and thus there is no system of fiscal transfers, for instance in the form of a common unemployment insurance system, which would help euro area countries facing negative macroeconomic shocks.[17] Under these conditions, no Member State, including Croatia, meets the fiscal integration criterion.

In conclusion, to a large extent Croatia meets the preconditions that provide for the common monetary policy to be suitable for its economy (trade and financial integration, synchronisation of business cycles), while there is still room for the strengthening of mechanisms providing for adjustments under extraordinary shocks (price and wage flexibility, and fiscal integration). Croatia must not met all the criteria under the optimum currency area theory to benefit from the introduction of the euro. Moreover, according to the endogeneity theory of optimum currency

13 Friedman (1953).

14 Krznar (2011), and Pufnik and Kunovac (2012).

15 Kunovac and Pufnik (2015) and Izquierdo et al. (2017).

16 Mintz (1970).

17 The fiscal integration criterion was proposed by Kenen (1969).

areas[18], monetary integration may contribute to the strengthening of links among countries and provide for the mentioned criteria to be met ex-post, regardless of the fact that they were not met ex-ante.[19] It should be noted that the European Economic and Monetary Union itself develops instruments and mechanisms aimed at further strengthening of connectedness and resilience (*see 5.2.1 Rules of the European economic governance framework applicable to the euro area*). In addition to the relatively favourable standing under the criteria of the optimum currency area theory, there are other arguments in favour of euro adoption in Croatia. The most important among them is that the introduction of the euro will eliminate the problem of high euroisation of Croatia's economy, thus eliminating numerous risks and costs currently faced by domestic sectors.

Box 1 The synchronisation of business cycles and economic shocks between Croatia and euro area countries

This box presents the results of the analysis of the synchronisation of business cycles and shocks of supply and demand between Croatia and euro area Member States.[20] Analysis shows that the level of synchronisation and similarity of Croatia's business cycle with the cycle of euro area Member States is relatively high and that symmetric shocks are key to explain domestic economic activity.

Synchronisation of business cycles

The existing literature on the synchronisation of business cycles greatly relies on the calculation of correlations among the cycles of individual countries. However, correlation coefficients are often not the measure that reflects the coherence of business cycles in a satisfactory manner. For instance, business cycles of two countries may be in a same phase during a period under review (in a common recession or expansion) but at the same time have a very low correlation coefficient. On the other hand, the cycles of two countries may be perfectly correlated without their amplitudes being similar. These examples clearly illustrate that it is difficult to assess the synchronisation of cycles based on their correlation, which would be useful to the makers of the common policy in the monetary union.

In order to avoid the problems linked with the use of correlation, the synchronisation of Croatia's cycle and that of euro area Member States have been measured by two measures – *cycle phase synchronisation* and *cycle similarity*. Phase synchronisation measures the *cycle sign synchronisation*, while similarity measures the *synchronisation of cycle amplitudes*. Results show that the relative synchronisation of Croatia's cycle with the cycles of the euro area core was high.

Figure 1 shows the average cycle phase synchronisation between Croatia and peripheral euro area Member States and seven core euro area Member States.[21] At

18 Frankel and Rose (1998, 2000).

19 Mongelli (2008) gives an overview of empirical research studying the endogeneity of the optimum currency area theory.

20 Kotarac, Kunovac and Ravnik (2017).

21 The core of the euro area consists of the following seven countries accounting for 90% of the euro area GDP: Germany, France, Italy, Spain, the Netherlands, Belgium and Austria. The second group (peripheral Member States) is made up of

the beginning of the period under review, the synchronisation of Croatia's cycle was lower than that of peripheral countries. However, it then strongly increased and on the eve of the global financial crisis reached a high level. At the onset of the global crisis the synchronisation of Croatia and the euro area core remained high, partly also amid the exposure to same shocks, and continued to be higher than the average synchronisation of peripheral countries in the remaining period. The synchronisation of Croatia's and the euro area cycle declined in the period between 2011 and 2013, i.e. during the period of public debt crisis in the euro area. At the very end of the sample Croatia's cycle is much more synchronised than that of peripheral Member States whose synchronisation continued to decline.

Figure 2 presents the results of cycle similarity. The said measure confirms the earlier presented findings related to cycle synchronisation. Namely, the similarity between cycle amplitudes of Croatia and the euro area core grew immediately before and during the global recession, but declined slightly afterwards. During the entire period from 2006 to 2017 Croatia's measure of cycle similarity remained higher than the average for other peripheral Member States.

Figure 1 Cycle phase synchronisation

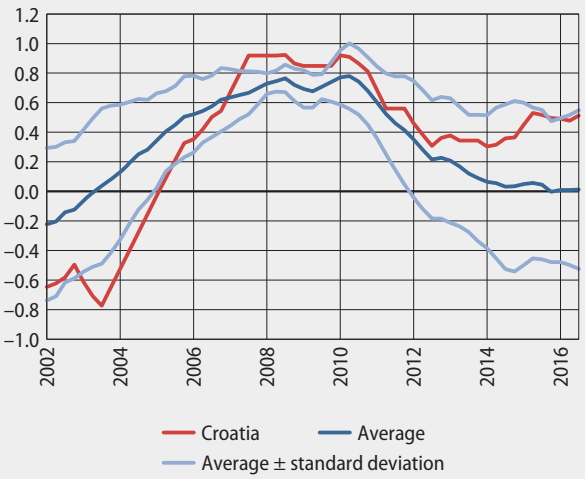
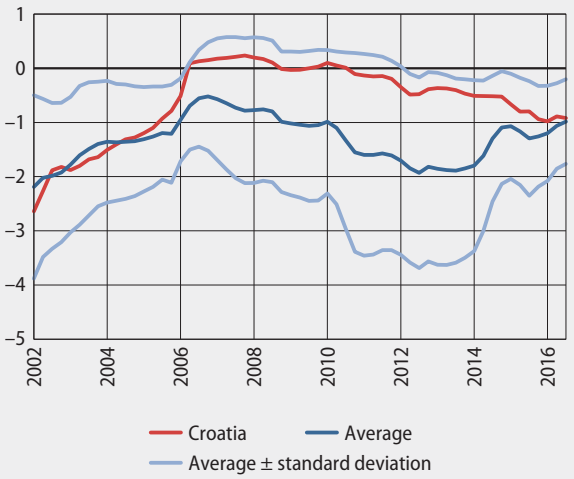


Figure 2 Cycle similarity



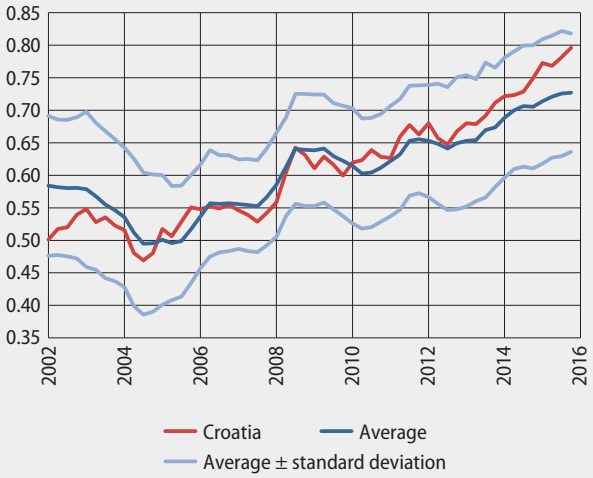
Notes: The red line indicates the weighted average cycle phase synchronisation/similarity for Croatia with the cycles of seven core euro area Member States, with weights accounting for the share of GDP of each of these Member States in the GDP of the euro area. Dark blue lines represent the average synchronisation/similarity of peripheral Member States with core euro area Member States. Light blue lines represent the interval of one standard deviation around the average synchronisation/similarity calculated on the basis of peripheral Member States. Phase synchronisation ranges between –1 (maximum non-synchronisation) and 1 (maximum synchronisation). Similarity ranges between -∞ and 1 (equal cycle amplitudes). The presented measures of cycle phase synchronisation and similarity are calculated as four-year moving averages.
Source: Kotarac, Kunovac and Ravnik (2017).

The importance of symmetric and asymmetric shocks for domestic GDP

In addition to the synchronisation of cycles, the optimum currency area theory underlines the importance of *synchronisation of the shocks of aggregate supply and demand* for a successful monetary policy. An important consequence of joining the monetary union is giving up the ability to absorb *asymmetric, i.e. idiosyncratic economic shocks* by using monetary or exchange rate policies. To what extent the loss of an independent monetary policy will affect the Member States of the monetary

other euro area Member States. Similarity measures and measures of phase synchronisation were calculated for these Member States and the previously mentioned group of the largest euro area Member States. Malta, Luxembourg and Ireland were excluded from analysis due to the unavailability of adequate GDP series.

Figure 3 Contributions of symmetrical shocks to GDP



Notes: The contributions of symmetrical shocks are calculated as a percentage share of symmetrical shocks in the historical decomposition of the domestic GDP. Presented here are four-year moving averages. The dark blue line represents the average share of symmetrical shocks in the GDP of other peripheral Member States. Light blue lines represent the interval of one standard deviation around the average share of symmetrical shocks calculated on the basis of peripheral euro area Member States.
Source: Kotarac, Kunovac and Ravnik (2017).

union depends on the type and level of shocks synchronisation, as well as on how quickly their economies can adjust to shocks.

The importance of symmetrical and asymmetrical shocks to the domestic economic activity is estimated by a vector autoregressive (VAR) model, whose shocks are divided into symmetrical and asymmetrical.[22] Symmetrical shocks equally affect domestic GDP and the GDP of the euro area. On the other hand, asymmetrical shocks are specific to the domestic economy and affect only the domestic GDP, while the euro area GDP remains unaffected.

Figure 3 shows the relative importance of symmetrical shocks for interpreting the movements of domestic GDP. Results show that the decomposition of Croatia's GDP is dominated by symmetrical shocks – the share of symmetrical shocks in GDP for Croatia is mostly similar to the average for euro area peripheral Member States, while in the past six years it has uninterruptedly exceeded the average. At the end of the sample more than 80% of the movements of Croatia's GDP are explained by common, symmetrical shocks.

All results presented in this Box lead to the conclusion that Croatia's and euro area business cycles are largely synchronised and that symmetrical shocks are dominant in interpreting the movements of Croatia's GDP.

22 The model includes the following six variables: the rate of change of the domestic GDP, domestic inflation rate, the rate of change of the real effective exchange rate towards the euro area, the rate of change of the euro area GDP, euro area inflation and the euro area short-term interest rate or the three-month EURIBOR.

3 Cost-benefit analysis of the adoption of the euro in Croatia

Assessment of the economic justification of a country joining the common currency area is usually based on the cost-benefit analysis of its membership. Such analyses have been carried out by almost all euro area Member State prior to the introduction of the euro. The analysis conducted in Croatia is different from similar analyses involving other Member States in two elements. Firstly, the dimension of time encompasses the period after the financial crisis which spurred significant institutional changes in the EMU, especially in the part relating to the coordination of economic policies. Secondly, Croatia's economy is highly euroised, making numerous economic entities subject to currency risk. The elimination of currency risk constitutes the main benefit of the introduction of the euro, while the parallel loss of an independent monetary policy represents a limited cost because the mentioned currency exposure narrows the room for greater use of the monetary policy in Croatia.

3.1 Benefits of euro adoption

3.1.1 Elimination of the currency risk from the economy

The main benefit of the adoption of the euro for Croatia's economy is the elimination of the currency risk related to the kuna exchange rate against the euro to which Croatia's economy is heavily exposed. Currency (or exchange rate) risk is a risk to which all economic entities are subject that have an unmatched currency structure of assets and liabilities, and receipts and expenses, because in case of the change in the exchange rate of the domestic currency the net value of their assets changes. This problem is especially pronounced for economic entities the value of whose liabilities linked to a foreign currency exceeds their foreign currency assets and which do not have receipts in foreign currency. In their case the depreciation of the exchange rate of the domestic currency leads to the relatively stronger increase in debt and increases the burden of repayment. In case of great foreign currency indebtedness of the economy, a pronounced depreciation of the domestic currency negatively affects economic growth.[23] Taking into account the disturbances that would occur in case of a greater depreciation, the Croatian economy benefits from

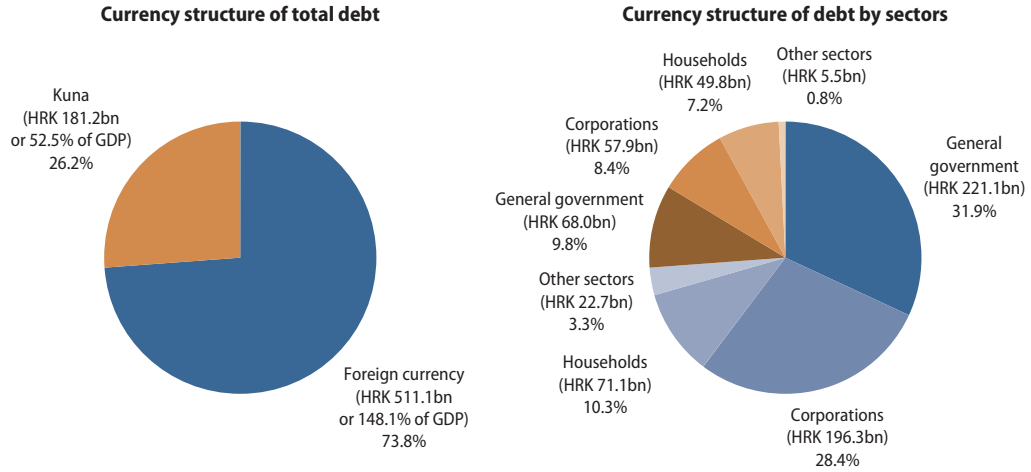
23 Calvo (2002) and Frankel (2010).

the stable exchange rate of the kuna against the euro, which limits the room for greater use of the monetary policy in Croatia. Euroisation increases the cost of borrowing because creditors embed a premium into their interest rates in order to shield themselves from the risk of the exchange rate depreciation diminishing the ability of debtors to regularly repay their liabilities.

All domestic sectors, except banks, have unmatched currency positions of their assets and liabilities and are exposed to currency risk. Corporations, the government, and a share of households, have a much greater amount of liabilities in foreign currency than assets in foreign currency so the weakening of the kuna would affect them negatively. Bank reports on client risk assessment indicate that the share of loans protected from currency risk in the total foreign currency loans to households and corporations is lower than 10%.[24] However, even if the foreign currency debt of domestic sector would be fully covered by foreign currency assets on aggregate level, the depreciation of the exchange rate would negatively affect economic activity. Namely, entities that borrowed in foreign currency most often have no foreign currency assets so the weakening of the exchange rate increases their net debt. As a result of differences in propensity to consume and invest, in the circumstances of the weakening of domestic currency the highly indebted households and corporations will reduce consumption stronger than those households and corporations that have foreign currency assets will increase it.

Total gross foreign currency debt of all domestic sectors, including that indexed to foreign currency, exceeds HRK 500bn, which is roughly equal to Croatia's one and a half annual GDP (Figure 4). All domestic sectors are exposed to currency risk – the government (HRK 220bn of foreign currency debt), corporations (approximately HRK 200bn of foreign currency debt) and households (HRK 71bn of foreign currency debt). More than 90% of foreign currency debt is linked to the euro, which means that stronger depreciation of the kuna against the euro would significantly increase the

Figure 4 Currency and sector structure of Croatia's total debt at the end of 2016



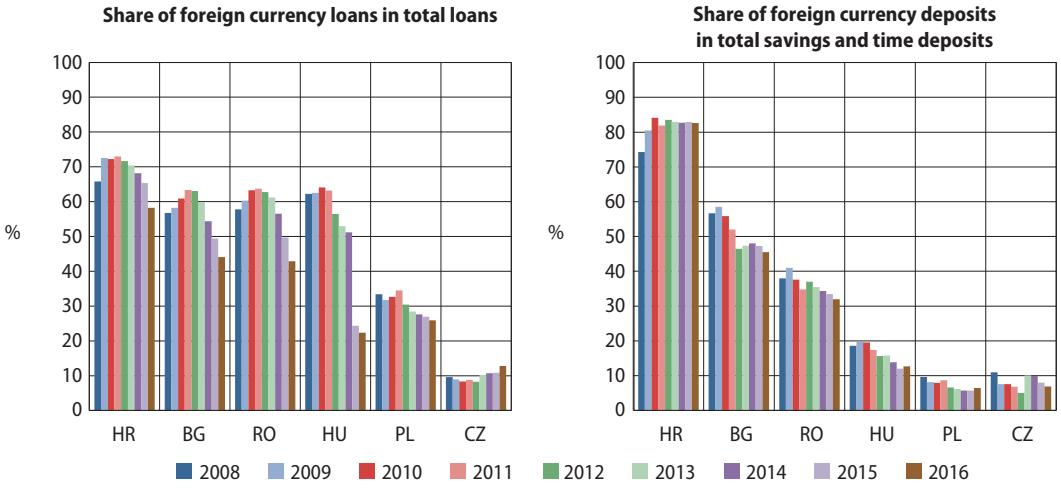
Notes: The debt of domestic sectors, except the debt of the central bank and commercial banks to domestic credit institutions, the CBRD and domestic leasing companies and the rest of the world. Foreign currency debt includes indexed debt.
Sources: CNB and HANFA.

24 Foreign currency position of debtors is not matched if their expected foreign exchange inflow covers less than 80% of their foreign exchange liabilities or liabilities indexed to foreign currency, which they have towards the credit institution and other creditors.

debt repayment burden for domestic borrowers. For example, if the kuna weakened against the euro by 10%, the principal of the total foreign currency debt would instantly increase by over HRK 50bn (15% of GDP), resulting in a noticeable increase of expenses for debt servicing.[25] Such developments would most likely lead to the increase in interest rates on new borrowings, because investors would demand higher premium to compensate for the risk.

High level of gross foreign currency debt is largely a consequence of deeply rooted euroisation. Croatia has the highest share of foreign currency in domestic placements, i.e. the greatest credit euroisation of all EU Member States not participating in the euro area (Figure 5, left). According to the end-2016 data, 68% of domestic banks' placements to the government and 58% of placements to other domestic sectors is linked to foreign currency, predominantly the euro. This bank business policy emerged from the structure of their sources of financing. The share of foreign currency deposits in total savings and time deposits at end-2016 totalled almost 83%, the most among comparable countries (Figure 5, right). The strong propensity of Croatia's citizens to save in foreign currency developed as a form of protection of their savings during periods of high inflation and macroeconomic instability in the past. The growth of foreign currency savings was aided by the availability of foreign currency entering through the tourism sector and through remittances and savings of workers working abroad, as well by the (former) state that allowed for holding of foreign currency deposits. The habit of saving in foreign currency and the lost trust in the domestic currency is hard to change, especially when foreign currency takes on a share of the functions of money[26]. For this reason, deposit euroisation can hardly be reversed.[27] As a result, in the past twenty-five years deposit euroisation in Croatia stayed continuously at high levels of between 70% and

Figure 5 Credit and deposit euroisation in Croatia and comparable countries



Notes: Loans include loans to domestic non-banking sectors excluding the general government. Foreign currency loans (deposits) include loans (deposits) in domestic currency with a currency clause.
Sources: ECB (credit euroisation for all countries except Hungary) and web pages of central banks.

25 For instance, the general government foreign currency debt would increase by HRK 22bn in case of a 10% depreciation of the exchange rate. Taking into consideration that the implicit interest rate on public debt stands at approximately 3.9%, additional annual budget expenses on interest rates would amount to some HRK 850m.

26 The euro has assumed the role of the store of value (savings) in Croatia, and partially the role of the unit of account for expensive and durable goods (real estate property, cars, etc.).

27 Winkelried and Castillo (2010), Rappoport (2009), and Scheiber and Stern (2016).

90%, despite the low inflation rate, stable exchange rate of the kuna against the euro and persistently higher interest rates on kuna deposits in relation to foreign currency deposits. Such currency structure of deposits consequently resulted in the prevalence of loans linked to foreign currency because banks have been striving to match the currency structure of their assets and liabilities.

Banks are indirectly exposed to currency risk despite matched foreign currency positions. Their currency-induced credit risk (CICR) arises from exposure of their debtors to currency risk, i.e. from the fact that the bulk of loans to households and corporations is granted with a currency clause or in foreign currency, while their income is mostly in domestic currency. In case of greater depreciation of the exchange rate, the increase in the debt burden would diminish debtors' ability to regularly service their liabilities towards banks, increasing the share of irrecoverable loans. Based on the assessment of exposure to CICR, as part of bank supervision, the CNB adopts regulatory measures for banks that can constitute additional costs.

The deeply rooted euroisation and the resulting currency risk impose the need for macroprudential measures aimed at safeguarding the system from that risk. Given that the stability of the exchange rate of the kuna against the euro is a precondition for maintaining price and financial stability, the need for maintaining the adequate level of foreign liquidity in the system is also higher. Therefore, the CNB requires banks to maintain minimal foreign currency claims and lays down an array of other regulatory requirements and recommendations aimed at protecting the system from currency risk and raising consumer awareness of currency risk.[28]

This risk will almost fully disappear with the adoption of the euro since the entire debt currently linked to the euro will become domestic currency debt. The elimination of the currency risk will indirectly eliminate the currency-induced credit risk banks are exposed to. In addition, the introduction of the euro and the elimination of the euroisation problem will also eliminate the need for a part of existing macroprudential requirements, thus increasing the efficiency of the banking system.

3.1.2 Reduction of the borrowing costs of domestic sectors

Euro adoption will bring interest rates in Croatia closer to interest rates in the euro area core, increasing the competitiveness of the country's economy. Interest rates on the debt of domestic sectors depend on a series of factors, among which most important are the risk of the borrower, the sovereign risk of the country where the borrower and the bank operate, regulatory expenses, the cost of the source of funds and the margin that banks determine and embed in the interest rates. The introduction of the euro should positively affect the majority of these factors, contributing to the improvement of financing conditions for domestic sectors. However, financing conditions of domestic sectors also depend on developments in international financial markets that will change until the introduction of the euro in Croatia. For this reason, it is impossible to know the interest rate level in Croatia after the introduction of the euro. However, it may be predicted that it will be lower than in case Croatia kept its own currency. Lower interest rates in the economy – amid lower

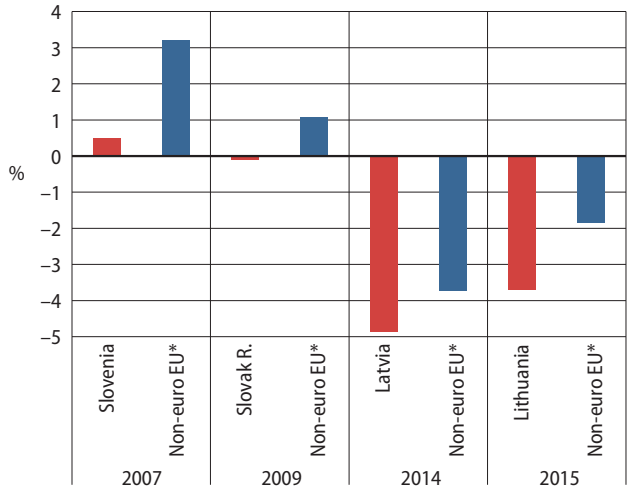
28 Dumičić, Ljubaj and Martinis (2017).

sovereign risk premiums and the lowering of the regulatory costs for banks – will increase the competitiveness of domestic corporations and thus provide additional room for investments and employment.

The adoption of the euro will favourably affect sovereign risk rating. An analysis[29] of the effects of the introduction of the euro on the perception of sovereign risk established that the CDS for euro area Member States is 10% to 35% lower than that of comparable Member States that have not yet joined the euro area.[30] The mentioned euro premium is also reflected in the sovereign risk rating, which is, on average, one notch higher than that of the comparable euro area Member States. The reputational boost of the introduction of the euro in the form of a better credit rating was confirmed in the IMF's research of 2015.[31] The expected positive effect of the introduction of the euro on the credit rating is especially pronounced for countries like Croatia where the high level of credit euroisation poses a significant risk to financial stability.

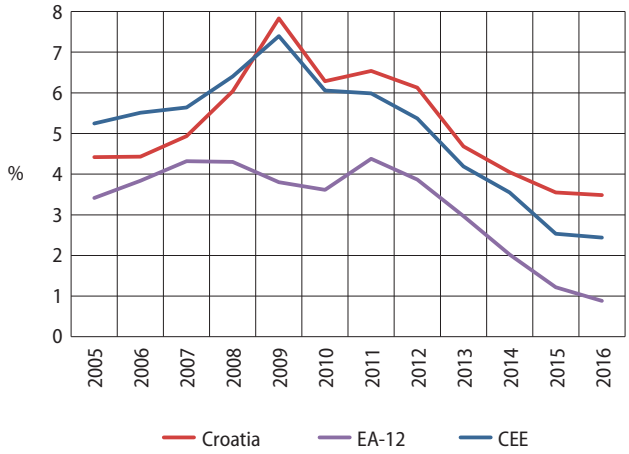
The favourable influence of euro adoption on interest rates is confirmed by the dynamics of yields on long-term government bonds of new euro area members. The yield movements of the 10-year government bond of Slovenia, Slovakia, Latvia and Lithuania have been analysed for this purpose two years after the introduction of the euro in comparison to two years prior to the introduction of the euro. Data indicate that the change in yields for these countries was more favourable than in CEE countries which did not have the euro as a currency in the same period (Figure

Figure 6 Change in yields on 10-year government bonds two years prior and two years after joining the euro area



* Excluding Denmark, Sweden and United Kingdom.
Note: The year in the figure refers to the year in which the country introduced the euro.
Source: ECB.

Figure 7 Yield on 10-year government bonds



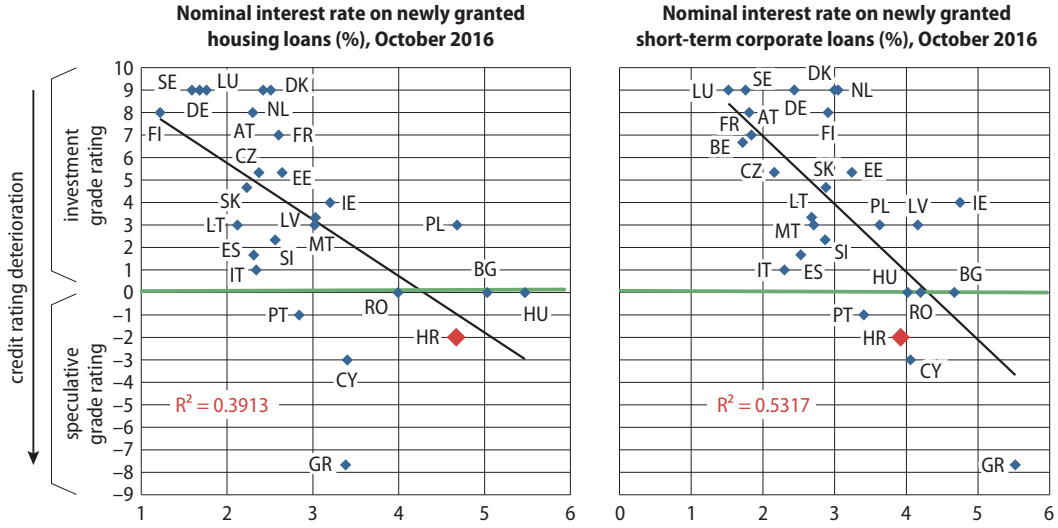
Source: ECB.

29 A simple linear model was used on a sample of 24 EU Member States (due to the lack of data Greece, Cyprus, Malta and Luxembourg were left out) to assess the effect of joining the euro area on two measures of sovereign risk: credit rating and CDS, controlling for the relevant macroeconomic and fiscal indicators and sentiment in the financial market.

30 Kunovac and Pavić (2017).

31 International Monetary Fund (2015).

Figure 8 Interest rates on loans and sovereign credit rating



Notes: A credit rating is the average of numerical values of assessments by three rating agencies (Fitch, Moody's and Standard & Poor's). Numerical values show where a country stands above/below the investment grade (BBB–/Baa3). The grade may have a value ranging from –9 to 9, where –9 represents the lowest speculative grade and 9 the best possible grade. Interest rates for corporations refer to loans to non-financial corporations of up to EUR 1m with maturity of up to 1 year.
Sources: Eurostat and Bloomberg.

6). In addition, at the onset of the global financial crisis in 2008 and 2009, long-term interest rates increased noticeably in Croatia and comparable countries, while in old euro area Member States (EA-12) they did not because membership in the monetary union protected Member States from the first effects of the crisis (Figure 7). The improvement in the perception of sovereign risk might indirectly favourably affect interest rates on bank corporate and household loans, since it is noticeable that they are normally lower in countries with better credit ratings (Figure 8).

The adoption of the euro opens up additional room for reduction of bank interest rates. The CNB's existing monetary policy instruments will be substituted by equivalent ECB instruments, significantly reducing regulatory costs for banks. The reserve requirement rate, currently totalling 12% will be made equal with the ECB rate, which is totalling 1%. However, its coverage will change. The obligation to maintain minimum required foreign currency claims, currently amounting to 17% of total foreign currency liabilities will be repealed (*see 5.3.1 Adjustment of monetary policy instruments*). These changes will reduce regulatory expenses[32] from the estimated 0.45% at the end of 2016 to only 0.01%. As a consequence of the substantial reduction in regulatory expenses faced by banks, interest rates on their loans to the economy might decrease, i.e. near those in the core euro area Member States.

3.1.3 The reduction of the risk of the outbreak of a currency and banking crisis

Own currency in a small and open economy brings along the possibility of currency crises. A currency crisis occurs at the time of pronounced pressure on the exchange rate of the domestic currency, forcing the central bank to sell (reduce)

32 Regulatory expenses are estimated as the weighted difference between the lowest required return on placements and the nominal cost of bank financing sources, allowing for the size of assets that banks are not able to place due to regulatory requirements.

international reserves and increase domestic interest rates in an effort to preserve the stable exchange rate or it would otherwise come to a noticeable weakening (depreciation) of domestic currency. A currency crisis may be triggered by different domestic and external factors, such as fiscal imbalances, difficulties in real and financial sector and shifts in investor sentiment.

The risk of the outbreak of a currency, or a balance-of-payments, crisis is linked to the risk of the outbreak of a banking, i.e. financial, crisis. The outbreak of a currency crisis may trigger a banking crises in cases where the weakening of the domestic currency leads to a significant deterioration in banks' balance sheets. For instance, when there are currency mismatches in their balance sheets or the balance sheets of their clients.[33] A banking crisis may precede a currency crisis if in case of greater withdrawal of foreign currency deposits the banking system cannot ensure a sufficient quantity of foreign currency liquidity.[34] This is especially evident in countries with high degree of deposit euroisation, such as Croatia, where in case of increased outflow of foreign currency deposits banks need liquidity support in foreign currency (euros). The CNB can only create kuna liquidity, while it can provide for liquidity in euro only on the basis of previously accumulated reserves.[35] In case the liquidity withdrawal is so pronounced as to raise concerns that existing reserves of foreign currency liquidity might not be sufficient, increased demand by investors and savers for foreign currency might jeopardise a currency's stability.

The likelihood of costly banking crises breaking out will diminish after the adoption of the euro, while the risk of a currency crisis will disappear altogether. The elimination of the currency risk reduces the vulnerability of the economy *(see 3.1.1 Elimination of the currency risk from the economy*) and eliminates one of potential causes of banking crises. In addition, this diminishes the risk of temporary liquidity disturbances leading to the failure of solvent banks due to insufficient foreign currency liquidity reserves. Namely, the ECB will be able to release euro liquidity to banks in contrast to the CNB whose scope of activity as a lender of last resort is limited. Although the mentioned risks are currently low, given the high capitalisation and ample reserves of kuna and foreign currency liquidity in Croatia's banking system, the introduction of the euro would additionally diminish the risk of banking crises and fully eliminate the risk of a currency crisis breaking out.

3.1.4 Lower transaction costs

The adoption of the euro will eliminate transaction (currency conversion) costs of the conversion of the kuna into the euro and vice versa. These costs arise from the difference between the sale and purchase exchange rates and the fees and commissions of banks and exchange offices when doing the conversion, including the conversion of card transactions from euro to kuna when using payment cards of Croatian issuers in euro area Member States. Transaction costs of domestic sectors (households and corporations) arising from the conversion of kuna into euro and vice versa are estimated at some 0.1 to 0.3% of GDP on an annual level, which

33 This type of currency risk is not present in Croatia only formally, because banks transferred it into credit risk by granting loans indexed to foreign currency.

34 See for example, Velasco (1987), Calvo (1997), Chang and Velasco (2001, Levy Yeyati and Sturzenegger (2001).

35 One portion of this reserves relates to liquid foreign currency assets formed by banks themselves in line with regulatory requirements, while the second portion are net international reserves managed by the CNB.

corresponds to the estimates of other countries that have introduced the euro. This figure represents the savings that domestic non-financial sector could make upon the introduction of the euro. At the same time, however, the revenues of banks and exchange offices from this source will diminish.

Moreover, the adoption of the euro as a national currency in Croatia may lead to the reduction of fees for national and cross-border payments in euro. By joining the EU Croatia became subject to the obligatory equalisation of fees banks are charging clients when executing cross-border payment transactions in euro (payments between banks in Croatia and banks in other EU Member States) with the fees charged for execution of national payment transactions in euro (payments in Croatia).[36] When the euro becomes the legal means of payment in Croatia, fees for national payments in euro should reduce to the level of current fees for national payments in kuna. Consequently, fees for cross-border payments in euro will have to be aligned with fees for national payments in euro which will lower transaction costs for entities involved in international trade with the euro area.

3.1.5 Stimulus to international trade and investments

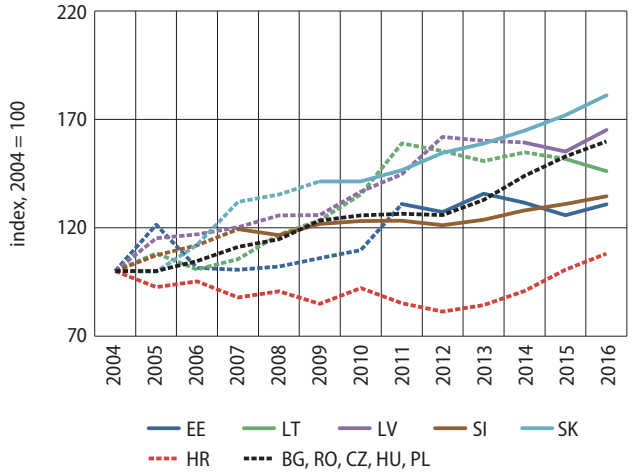
The use of a common currency may support international trade and investments through the strengthening of competitiveness and a reduction of the vulnerability of the domestic economy. Positive impact on international trade comes from the reduction in transaction costs since the costs of currency conversion and hedging against currency risk will be eliminated. Then there is greater transparency and easier price comparability, as well as the elimination of uncertainty linked to exchange rate developments, which contributes to the increase in the competitiveness of exporting companies. A monetary union may contribute to the strengthening of mutual trade also through the rise in the number of exporting companies in the union and the broadening of the range of their export products. Reduction of uncertainties linked to exchange rate movements and of the overall risk for the economy also contributes to attracting foreign direct investments. Further, there is also the positive effect on tourism, especially due to the noticeable volume of cash transactions and the significant influence of the single currency on consumer perception when choosing a tourist destination.

Euro area Member States accounting for a great share of Croatia's foreign trade, foreign investments and tourism contributes to expected benefits from the adoption of the euro in Croatia. Some two thirds of Croatia's trade in goods is with euro area Member States. Slightly over two third of total foreign direct investments in Croatia also comes from euro area Member States. The share in tourist consumption in Croatia is also high, so visitors from countries using the euro account for almost 70% of total tourism revenues and for over 60% of total tourist nights and arrivals of foreign guests.

The adoption of the euro in Croatia might slightly increase trade in goods, but this increase will be relatively weaker than at the occasion of Croatia joining the EU. These expectations are based on the results of empirical research for the

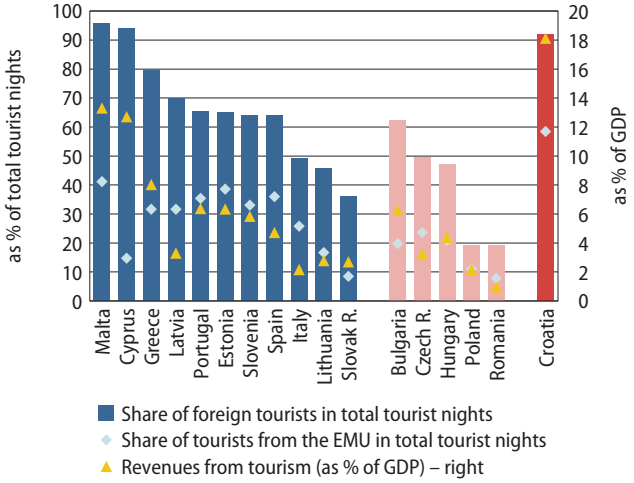
36 Regulation (EC) No 924/2009 of the European Parliament and the Council of 16 September 2009 on cross-border payments in the Community and repealing Regulation (EC) No 2560/2001 (the so-called Price Regulation).

Figure 9 Market share of EU Member States in the market of old euro area Member States



Notes: Dotted lines denote the period before the introduction of the euro. Old Member States are AT, BE, FI, FR, EL, IE, IT, LU, NL, DE, PT and ES.
Sources: Eurostat and CBS.

Figure 10 Tourist sector in selected EU Member States



Source: Eurostat.

euro area[37], which are quite diverse. Even if the positive effects of the introduction of the euro are confirmed, they are small and/or significantly weaker than the effects of joining the EU[38]. As in Croatia, in the new euro area Member States the significant strengthening of exports in goods thus started already with the process of EU accession and trade liberalisation (Figure 9). The assessment of the effects of the euro introduction is made additionally difficult by the fact that these countries joined the monetary union relatively recently and that most of them introduced the euro during or immediately after the financial crisis. In addition, it is possible for the effects of the introduction of the euro to be different for every euro area Member State depending on the economic characteristics of a country, such as its size or degree of trade openness.

The adoption of the euro is also expected to positively affect tourism. The few research papers[39] on this topic mostly point towards a positive link between a common currency and tourism indicators, while a negative link[40] surfaced only for exceptionally price-sensitive markets, where the increase in the prices of services related to tourism after euro adoption eroded competitiveness (*see 3.2.2 Increase in prices due to conversion*). In case of Croatia it is to be expected that due to the size of the tourism sector, its strong orientation towards euro area markets and the room available for quality improvements that could justify a possible price growth, positive effects should prevail. In addition, potential benefits should be viewed in the context of the fact that the majority of the largest tourist destinations that can be considered Croatia's competitors already use the euro and in this sense benefit from the competitive advantage in the European tourist market (Figure 10).

37 An overview of selected research on the influence of the introduction of the euro on trade in goods, foreign investments and tourism, see in Bukovšak, Ćudina and Pavić (2017).

38 Although early empirical research established a great impact of euro adoption on trade, papers that reviewed global trade trends and/or trade integration separately from the effects of the introduction of the euro noticeably moderated the estimated effects, as is the case in De Nardis, De Santis and Vicarelli (2008), Bun and Klaassen (2007), Baldwin et al. (2008) and Jagelka (2013).

39 Gil-Pareja et al. (2007) and Santana-Gallego et al. (2016).

40 Canada (2003).

Common currency might contribute to attracting foreign direct investments by reducing exchange rate uncertainties and other informal barriers to investments. Empirical literature shows that the use of the euro positively affects the flows of direct investments, although, as in the case of trade, there are large differences in the size and importance of estimated effects. The elimination of the exchange rate risk and joining the EU[41] is confirmed as a significant determinant of the inflow of foreign direct investments, while differences in the assessed effects may be explained by different coverage in individual countries and different periods covered by individual research[42]. In addition, foreign direct investments are determined by a series of other factors, such as the conditions in the world's financial markets and in the domestic economy, like for instance, the taxation burden, price of labour and the quality of the work force. In that sense, the comprehensive measures the Government undertakes to improve the business environment will additionally contribute to the strengthening of the confidence of international investors.

3.1.6 Participation in the allocation of the Eurosystem's monetary income

After Croatia introduces the euro, the CNB will gain the right to participate in the annual allocation of the monetary income at Eurosystem level, which should positively affect the CNB's surplus of income over expenditures that is transferred to the state budget. By introducing the euro, the country will waive its right to issue national currency, and thus the right to collect its own seigniorage. Despite this, the monetary income of the central bank may increase after euro adoption because it will gain the right to a share in the total monetary income of the Eurosystem[43].

Positive expectations regarding the effects of participation in the allocation of Eurosystem's monetary income are based on the specific structure of the CNB's balance sheet and significant euroisation of Croatia's economy. Given that foreign exchange interventions are a dominant source of base money creation in Croatia, as much as 99% of the CNB's total assets has to do with international reserves that generate investment yields and thus represent the central banks' main source of income. At the same time, placements to banks account for only 1% of total assets. As a result, no great monetary income is generated on this basis. By joining the euro area the CNB will gain the right to a share in the joint monetary income of the Eurosystem, while at the same time maintaining the bulk of its international reserves in the

41 The negative influence of the exchange rate volatility on FDI is pointed out by Schiavo (2007) and Dinga and Dingova (2011). They also indicated the positive link between membership in the EU and FDI, confirmed in Baldwin et al. (2008) and Darvas et al. (2013).

42 The positive link between the euro and FDI is confirmed by research conducted on a short sample in the first years after its introduction, while later research (sample up to 2008 or even longer) unanimously confirms only the influence of EU membership on FDI. The unstable link between euro adoption and FDI might be explained by the fact that the effect of the introduction of the euro was present mostly in the first years after the creation of the common currency and in old Member States, or by the fact that it depended on the specifics of accession of new EU Member States in 2004. Namely, at the time of their accession to the EU the prevailing opinion was that the euro would be introduced very quickly, which might have spurred investments even prior to the formal introduction of the euro.

43 The size of the Eurosystem's monetary income benefits from the status of the euro as one of the world's most important currencies. Namely, today the euro has a more significant role in the global economy than all the former national currencies of Member States put together. As a result, in addition to the monetary income raised from the use of the euro in euro area Member States, the Eurosystem earns monetary income based on euro banknotes circulating abroad and this income is also allocated to national central banks.

form of an investment portfolio which will continue to generate income *(see 5.3.4 Financial adjustment due to joining the Eurosystem)*. According to the experiences of comparable euro area Member States, it may be expected that the CNB's contribution to the overall joint monetary income will be substantially lower than the amount allocated to it as part of the annual allocation. For instance, for Slovakia, whose share in the allocation is comparable with the share Croatia would have, the net result of the joining up and allocation of the Eurosystem's monetary income in 2015 was positive, totalling EUR 51.6m (EUR 45.1m in 2014). The increase in monetary income after the introduction of the euro should positively affect the CNB's surplus of income over expenditures and thus the amount that the CNB annually contributes to the state budget.

3.1.7 Access to financial assistance mechanisms for euro area

Membership in the monetary union will allow Croatia access to the European Stability Mechanism (ESM) which serves to provide assistance to Member States facing financial difficulties. Member States that have lost access to the financial market may apply for a loan that is conditioned on the implementation of the macroeconomic adjustment programme. The ESM may also provide support by purchasing government bonds in the primary or secondary market and by approving a preventive credit line for Member States facing financial difficulties. The ESM may also approve a recapitalisation loan to a credit institution or recapitalise it directly in order to preserve the stability of the monetary union's financial system.

The ESM's overall lending capacity is EUR 500bn and the funds are raised by issuing securities in financial markets. For the purpose of raising funds the ESM may enter a financial arrangement with euro area Member States, financial institutions or third parties. Given that its issues have the highest credit rating, the ESM borrows under very favourable conditions, which is, with certain corrections embedded in the interest rate at which funds are lent to Member States. Thus far, three euro area Member States received financial assistance from the ESM in the total amount of EUR 79.3bn, under programmes envisaging even greater assistance of as much as EUR 215.3bn.[44]

The ESM serves temporarily as a backstop for the banking union in case of insufficient capacity of the Single Resolution Fund (SRF). Euro area Member States that also participate in the banking union use the ESM as a common backstop in case of strong disturbances in the banking system. Although the implemented reform of banking regulation reduced the need for a fiscal backstop, it remains necessary and the already existing ESM was identified as a logical solution. It can be activated only after all other regulatory possibilities are exhausted, more accurately the division of resolution costs between the owner and the creditors of a credit institution (so-called bail-in) and the covering of resolution costs from the Single Resolution Fund. The ESM serving as an additional protective layer for the SRF is a temporary solution because Member States committed to establish a permanent common fiscal backstop by 2024 when the SRF is expected to reach its full capacity.

44 An assistance programme for Greece is under way, envisaging the overall assistance amount of EUR 86bn, paid out in tranches. Other two programme beneficiaries of the assistance programme backed by the ESM that have successfully completed the programme are Cyprus and Spain. The ESM envisaged EUR 100bn of assistance for Spain but EUR 41.3bn sufficed, while out of the EUR 9bn allocated to Cyprus, EUR 6.3bn were actually paid out.

The added value of joining the ESM is diminished by the fact that Croatia already has access to EU's financial assistance within the framework of the medium term balance-of-payments assistance. The overall capacity of this instrument, also conditioned on the implementation of the macroeconomic adjustment programme, stands at EUR 50bn, and the funds are raised by the European Commission borrowing in the financial market.

3.2 The costs of euro adoption

3.2.1 The loss of an independent monetary policy

With the adoption of the euro as a national currency Croatia will completely lose its independent monetary and exchange rate policy. [45] Instead, together with other national central banks of the Eurosystem, the CNB will participate in the creation of the ECB common monetary policy.[46] Apart from the economic impact of the conversion of the Croatian kuna into euro deliberated in this document, there are other effects such as the loss of the national currency as a symbol of sovereignty and national identity. As for the economic impact, there are, in principle, two major problems that can arise from the loss of an independent monetary policy. The first is that the country can no longer use the exchange rate as a tool to boost the competitiveness of the economy (the so-called real exchange rate channel). The second refers to the possibility that the common monetary policy, determined by the ECB primarily through interest rates, may be inadequate for a county if it is at a different phase of the business cycle than the rest of the euro area (the so-called real interest rate channel).

The main limitations for the monetary and exchange rate policy in small economies arise from their sensitivity to international capital flows, borrowing in foreign currency and the pass-through of exchange rate developments to consumer prices. Under the conditions of liberalised capital accounts, small countries are under the influence of the global financial cycle and are therefore forced to adjust to the policies of the world's key central banks in order to prevent excessive speculative capital flows that could jeopardise their financial stability.[47] This is especially evident in Croatia where the share of foreign ownership in the banking system is high. Namely, foreign-owned banks may borrow directly from their parents, of which the majority is from the euro area, which diminishes the effectiveness of the interest rate channel of the CNB's monetary policy. Further, the majority of small countries can borrow in international markets only in foreign currency so they strive to avoid excessive fluctuation of their currencies, which consequently reduces room for active monetary and exchange rate policy. The stability of the exchange rate

45 Croatia already gave up a share of its monetary sovereignty by joining the EU. There is thus the obligation to consult the ECB prior to changing monetary policy instruments and before major foreign exchange interventions, and monetary financing of the state by the central bank is prohibited. In addition, the government is obligated to consult the ECB prior to any legislative adjustment related to ECB's competence. Therefore, the room to conduct an active monetary policy is narrower since joining the EU than it was in the past.

46 The governor of the CNB as a member of the ECB Governing Council will participate in taking decisions on the monetary policy together with the governors of other central banks of the Eurosystem. The CNB will be included in the creation of preparatory materials on which the decisions of the Governing Council are based.

47 Rey (2015).

in small countries is often key for price stability, given the high share of imported products in the consumer basket.

The loss of an independent monetary policy does not constitute a substantial cost for Croatia because room for active use of monetary and exchange rate policy is greatly limited. The monetary policy in Croatia is based on maintaining the stability of the kuna exchange rate against the euro because such exchange rate policy is necessary to preserve price and financial stability. However, the kuna in not fixed to the euro. The exchange rate is formed on the foreign exchange market depending on the supply of and demand for foreign currency. The CNB steps in when it wants to prevent excessive exchange rate volatility. In the period before the crisis, the CNB mitigated the strengthening of the kuna and in the years after its weakening. Under such an exchange rate regime, the CNB cannot influence the value of the kuna against other foreign currencies (US dollar, pound sterling, Swiss franc, etc.) because their value is set by the relationship between the euro and these currencies in the world's markets. The policy of a relatively stable kuna exchange rate against the euro contributes to price stability because it prevents the transfer of exchange rate developments to the price of imported goods and at the same time constitutes and anchor for inflationary expectations.[48] The stability of the exchange rate also helps preserve the overall macroeconomic and financial stability due to a high degree of euroisation and high degree of debt linked to the euro. A more pronounced depreciation of the kuna would increase the debt repayment burden, which would significantly exceed the possible positive effects of the increase in price competitiveness. As a result, Croatia has a narrow room for an active monetary policy whether it be through the exchange rate or the interest rate channel, so for Croatia the cost of giving up an independent monetary policy is relatively low.

The exchange rate policy by which the CNB mitigated the strengthening of the kuna in the period before the crisis, and by which it mitigated its weakening in the years after the crisis was never crucial for the movement of the overall competitiveness of Croatia's economy. However, the weakening of the exchange rate of the kuna after October 2008 contributed to the improvement of the price competitiveness that would have been more difficult to achieve if the exchange rate of the kuna against the euro in that period had been fully fixed (*see more detail on the exchange rate of the kuna with regard to price competitiveness of the domestic economy in Box 2*). A more significant change in relative prices would be necessary in this case, i.e. weaker domestic inflation, which would be hard to achieve for several reasons. Firstly, CNB research shows that inflation in this period was primarily determined by external factors beyond the CNB's influence.[49] Secondly, this would lead to an even stronger downward pressure on wages and employment, considering that prices are determined by costs, predominantly labour costs. However, it is difficult to precisely identify what would have happened since the competitiveness of an economy does not depend only on the exchange rate but on numerous non-price factors. The mild depreciation realised in the period after October 2008, aided by subdued domestic demand, resulted mostly in the fall of imports, while exports started to grow strongly only after the EU accession in mid-2013, when trading procedures with EU Member States were made much easier and much quicker. In addition, empirical research has not established a strong link between trade developments and indicators of price

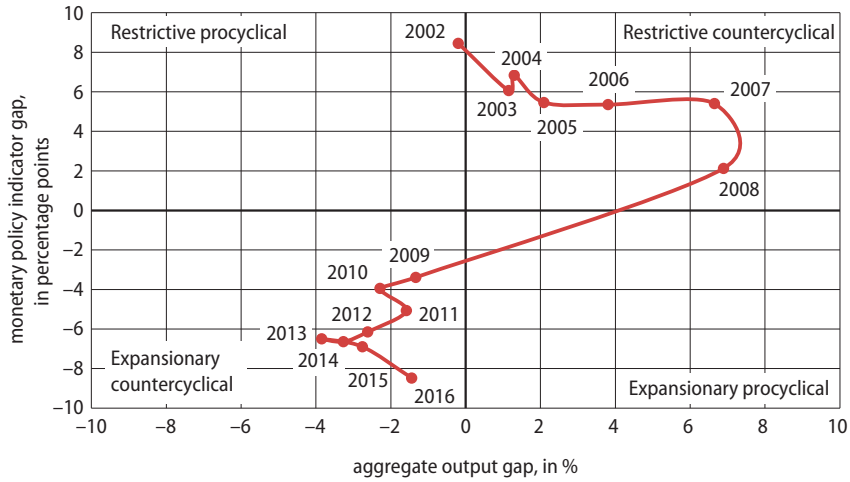
48 See more detail in CNB (2015), Bulletin, No. 216, Box 2 Pass-through of exchange rate changes to prices in Croatia.

49 See in more detail in CNB (2014), Bulletin, No. 209, Box 4 Decomposition of recent inflation rates into domestic and external factors.

and cost competitiveness in EU Member States. Exports are under greater influence of non-price factors, such as company productivity and the quality of export products and services.[50]

In addition to its policy of the stable exchange rate of the kuna against the euro the CNB strives to implement a countercyclical monetary and macroprudential policy. In the period before the crisis monetary policy was restrictive, creating large liquidity reserves in the banking system, while lending expansion was contained (Figure 11). With the onset of the crisis the monetary policy became expansionary by releasing accumulated reserves. After the introduction of the euro, the CNB will lose its monetary policy instruments. However, it will retain a high degree of independence in the area of macroprudential policy (see 6.2 *The role of macroprudential policy in addressing macroeconomic and financial risks*).

Figure 11 Cyclicality of Croatia's monetary policy



Notes: The gap in the monetary policy indicators is the spread to the average value. The monetary policy indicator is the share of credit institutions' assets that is held in total assets of credit institutions for regulatory purposes. The share of credit institutions' assets held for regulatory purposes (reduced by liquidity surplus) includes the calculated kuna reserve requirement, the allocated foreign currency reserve requirement, the marginal reserve requirement, CNB bills and the minimum required foreign currency claims.
Source: CNB calculations.

The risk of membership in the monetary union lies in the fact that the monetary policy need not correspond to the cyclical needs of the economy of a particular Member State. Namely, if the monetary union consists of a larger number of countries, it is very likely that the rates of economic growth and inflation will occasionally differ across countries so the common monetary policy will not be able to meet the needs of all Member States. For instance, if several Member States register more dynamic growth and stronger inflationary pressures than the rest of the union, the common monetary policy from the perspective of these states may be overly expansionary, i.e. may additionally contribute to the overheating of economic activity. Some economists think that the ECB's key interest rate in the first half of 2000s was too low for some euro area Member States that faced strong expansion of domestic demand.[51] It may be assumed that economic expansion and subsequent

50 Christodoulopoulou and Tkačevs (2014), di Mauro and Foster (2008).

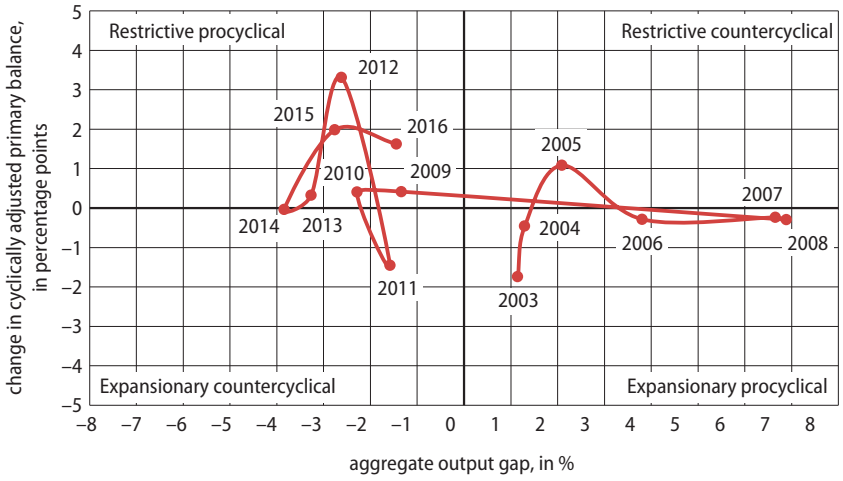
51 Arghyrou (2006), for example, analyses the adequacy of the ECB's monetary policy from the Greek perspective and finds that starting from 2001 the reference interest rate was much lower than the one that would suit the Greek economy considering the phase of the business cycle the economy was in.

recession would have been much weaker were these Member States been able to regulate their own interest rates during the period of strong growth.

The business cycle in Croatia, however, is synchronised with the euro area business cycle so the ECB's common monetary policy should not negatively affect Croatia's economy. The degree of synchronisation between Croatia's business cycle and the business cycles of the euro area core Member States is similar or even better than that of other euro area Member States, whereby there is a noticeable growth trend in the synchronisation of the business cycle over time. The real economic activity in Croatia is predominantly affected by symmetric shocks, i.e. shocks that have a comparable effect on economic activity in Croatia and the euro area (*see Box 1*).

The loss of an independent monetary policy places an even greater stress on the need for an appropriate fiscal policy. Croatia's fiscal policy was thus far mostly procyclical (Figure 12). The period up to the beginning of the global financial crisis was marked by expansionary fiscal policy, while in the period after 2009 its character was mostly restrictive. However, amid the strong fall in economic activity and relatively high borrowing costs, fiscal efforts undertaken to reduce the deficit did not suffice in halting the rapid accumulation of public debt. In order to make up for the loss of independent monetary policy and reduce the oversized public debt, the Government will implement a counter-cyclical fiscal policy (*see 6.1 The importance of prudent fiscal and structural policies)*. The responsible economic policies in Croatia should also be aided by new economic governance procedures at EU level, which stimulate more active implementation of economic policy measures aimed at achieving balanced economic growth in Member States.

Figure 12 Cyclicality of Croatia's fiscal policy

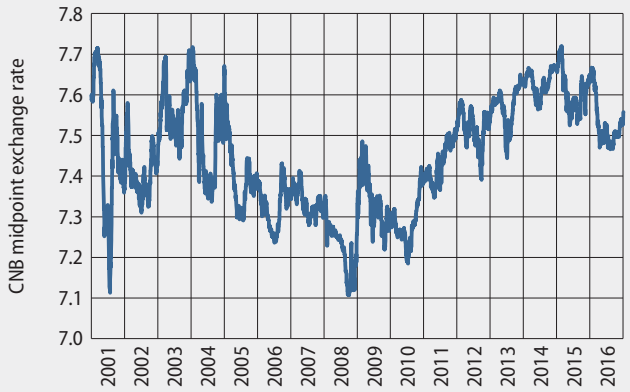


Source: CNB calculations.

Box 2 The exchange rate of the kuna with regard to price competitiveness of the domestic economy

The nominal exchange rate of the kuna against the euro, although relatively stable, is susceptible to a certain degree of volatility. In the period from 2001 to 2016, the nominal exchange rate of the kuna against the euro moved within a very narrow range of –4.6% to +3.7% around the average exchange rate of EUR/HRK 7.45. Such developments are a result of the relationship between supply and demand in the foreign exchange market and are primarily conditioned by economic fundamentals. For instance, the strengthening of the domestic currency in the period of strong growth until 2008 was supported by strong capital inflows, while after the onset of the crisis the exchange rate of the kuna depreciated as a result of the slowdown in capital inflows (Figure 1). However, recently the kuna has again been gaining strength against the euro, which is associated with favourable developments in foreign trade and the inflow from EU funds. When the need arises, the CNB intervenes in the foreign exchange market or applies other monetary policy instruments when it wants to stop excessive exchange rate fluctuations that may have detrimental macroeconomic effects. Namely, due to the specifics of Croatia's economy, the relative stability of the nominal exchange rate of the kuna against the euro is the most important channel for achieving the statutory task of price and financial stability. Accordingly, in the period before the crisis the CNB mitigated the strengthening of the kuna and in the years after its weakening.

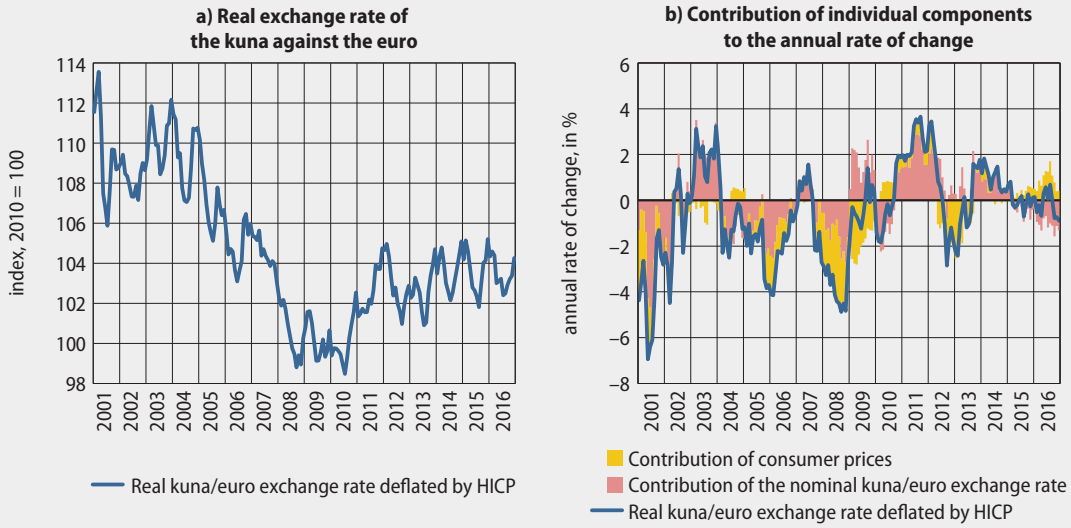
Figure 1 Trends of the nominal daily EUR/HRK exchange rate



Source: CNB.

Croatia's price competitiveness vis-à-vis the euro area improved after the outbreak of the global financial crisis and the depreciation of the kuna against the euro. The change in the real exchange rate of the kuna against the euro, which is an indicator of the price competitiveness of Croatia's economy vis-à-vis the euro area is a result of the change in the nominal exchange rate of the kuna against the euro and/or the difference between the price increase in Croatia and the euro area. Since the outbreak of the global financial crisis at the end of 2008 until December 2016, the real exchange rate of the kuna against the euro weakened by 4.0%, thus improving Croatia's price competitiveness vis-à-vis the euro area (Figure 2). This was almost completely a result of the nominal depreciation of the kuna against the euro, which amounted to 4.7% during the mentioned period, while prices in Croatia moved similarly as in the euro area during the same period. The mild depreciation of the kuna exchange rate against the euro was predominantly a reflection of the slowdown

Figure 2 Real exchange rate of the kuna against the euro deflated by consumer prices and contributions of components

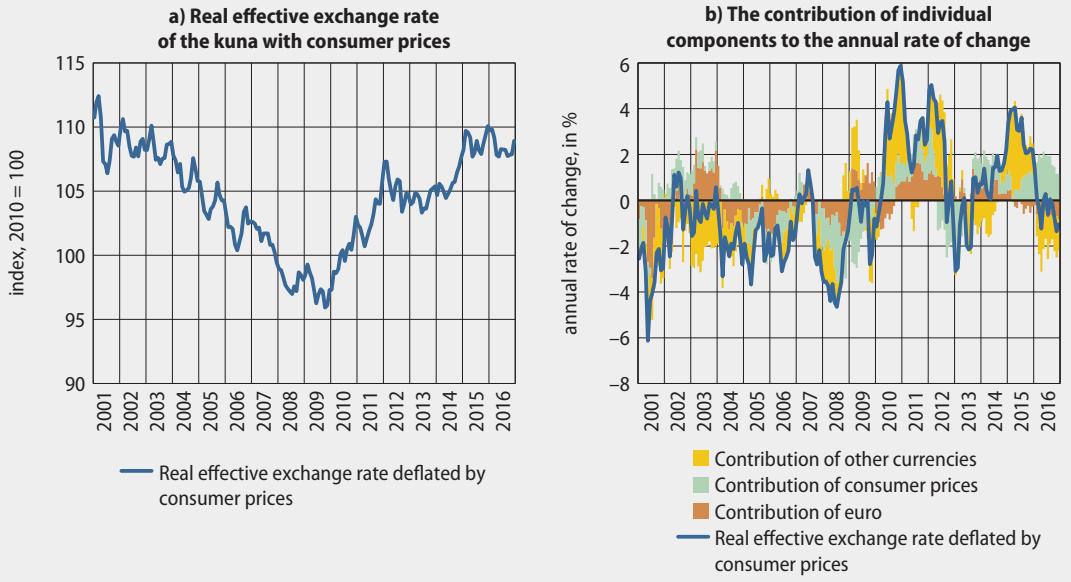


Note: On the left side of the figure the negative slope denotes appreciation, while on the right side the negative value denotes appreciation.
Sources: CBS and Eurostat.

in the inflow of capital, mitigating the loss of price competitiveness accumulated in the pre-crisis period.

The indicators of price competitiveness of Croatia's economy were also subject to cross-currency relations in the global foreign exchange market. Similarly as with the real bilateral exchange rate of the kuna against the euro, the real multilateral (i.e. effective) exchange rate of the kuna deflated by consumer prices[52]

Figure 3 Real effective exchange rate of the kuna deflated by consumer prices and contributions of components



Note: On the left side of the figure the negative slope denotes appreciation, while on the right side the negative value denotes appreciation.
Sources: CBS and Eurostat.

52 The basket for the calculation of the real effective exchange rate of the kuna is made up of 20 partner countries: a) eight Member States of the euro area: Austria, Belgium, France, Germany, Italy, the Netherlands, Slovenia and Spain,

mostly appreciated before the crisis (Figure 3), while after the outbreak of the crisis it depreciated. From the end of 2008 to the end of 2016, the real effective exchange rate of the kuna deflated by consumer prices depreciated by 11%. Broken down by components, the improvement in the total price competitiveness of Croatia's exports was mostly aided by the change in the exchange rate (7.0 percentage points), while the contribution of the relative change in domestic prices vis-à-vis the prices of main trading partners was less pronounced (4.0 percentage points). The contribution of the change in the kuna exchange rate against other currencies was more pronounced in relation to the contribution of the change in the exchange rate of the kuna against the euro (4.3 vis-à-vis 2.7 percentage points). In conclusion, the improvement in the overall price competitiveness of Croatia's exports after the outbreak of the crisis was predominantly aided by the changes in the exchange rate of the kuna against other important currencies, whose changes are outside of the reach of the domestic monetary policy.

3.2.2 Increase in the price level due to conversion

The effect of the conversion of national currencies on the growth of consumer prices is normally very mild. Literature lists several important factors that explain why the conversion of a national currency into the euro may trigger price increases. One of the reasons underlined is the spill-over of conversion costs, which include for instance menu costs and costs of IT services. In addition, in the course of conversion corporations often do not round up prices symmetrically so that their amount in euro reaches a new attractive level but rather round them up to a higher figure.[53] Namely, a significant portion of prices is formed on a so-called attractive level, which includes price rounding so that payment would be practical (not to many coins/banknotes required as change) or price formation ending in figure 9 (so-called psychological prices), that affect the consumers so that they underestimate the cost of purchased products. Prices may also be driven up if the prevailing opinion is that, in order to make it easier, consumers do not use an exact conversion rate to make their recalculation of new prices into the old currency but simplify their calculation. Corporations may use this situation to increase the prices of their products and services, i.e. their profit margins.

Analyses show that the effects of the adoption of the euro on aggregate inflation were relatively weak (0.23 percentage points in new Member States) and temporary (they were most pronounced a month prior to the very beginning of conversion and during the month set for conversion).[54] According to Eurostat's estimates, the effect of conversion of national currencies into euro on the overall harmonised index of consumer prices (HICP) for the euro area as a whole, totalled between 0.09 and 0.28 percentage points in December 2001 and January 2002 (Table 1). Further, the upper threshold of the effect of conversion on the overall HICP in Member States that joined the euro area later on also remained under 0.3

b) five non-euro area EU Member States: the Czech Republic, Hungary, Poland, Sweden and United Kingdom and c) seven non-EU states: Bosnia and Herzegovina, Japan, China, US, Serbia, Switzerland and Turkey.

53 Aucremane and Cornille (2001), and Folkertsma (2002) estimated that under the most pessimistic scenario, in which corporations round up all attractive prices in the national currency to reach a new attractive level in euro, the effect of conversion on the consumer price in Belgium and the Netherlands might amount to 0.7 percentage points. Similar results were seen in the case of Slovakia (National Bank of Slovakia, 2006).

54 See Hüfner and Koske (2008), and Rõõm and Urke (2014).

Table 1 Estimated effect of conversion of national currencies into the euro on the inflation rate

in percentage points

Paper	Country	Period	Estimated effect on total HICP (p.p.)
Old Member States			
Eurostat (2003)	Euro area	12/2001 – 1/2002	0.09 – 0.28
Hüfner and Koske (2008)	Euro area	7/2001 – 7/2002	0.34
Sturm et al. (2009)	Euro area	12/2001 – 1/2002	0.05 – 0.23
Attal-Toubert et al. (2002)	France	12/2001 – 4/2002	0.2
Banco de España (2003)	Spain	12/2001 – 6/2002	0.4
Deutsche Bundesbank (2004)	Germany	1/2002	0.3
Folkertsma et al. (2002)	Netherlands	1/2002	0.2 – 0.4
Mostacci and Sabbatini (2008)	Italy	12/2001 – 12/2002	0.1 – 0.6
National Bank of Belgium (2002)	Belgium	6/2001 – 4/2002	0.2
Santos et al. (2002)	Portugal	1/2002 – 3/2002	0.21
New Member States			
Eurostat (2007)	Slovenia	12/2006 – 1/2007	0.3
Eurostat (2009)	Slovak R.	12/2008 – 2/2009	up to 0.3
Eurostat (2011)	Estonia	12/2010 – 3/2011	0.2 – 0.3
Eurostat (2014)	Latvia	12/2013 – 1/2014	0.12 – 0.21
Eurostat (2015)	Lithuania	12/2014 – 1/2015	0.04 – 0.11
IMAD (2007)	Slovenia	12/2006 – 2 /2007	0.24
Room and Urke (2014)	Estonia	7/2010 – 6/2011	0.0 – 0.5

percentage points, according to Eurostat's estimates. Other research covering euro area as a whole estimated that the effect of conversion ranged from 0.05 to 0.34 percentage points.[55] The effect of conversion differed among countries and was weaker in the countries that laid down the obligation of dual price display (both in national currency and the euro) several months prior and after the date of conversion.

The results of research relating to other countries show that the increase in prices amid conversion was registered in the service sector and with lower number of frequently bought products. In the process of conversion of national currencies into the euro the following rose the most: the prices of services in restaurants and coffee shops, accommodation prices, hairdressing services, different repairs, dry-cleaning services and recreational and sporting services. The prices of goods did not go up significantly due to conversion.[56] Somewhat more pronounced effect of conversion on price growth was registered in relation to goods that are bought more frequently (bakery goods and newspapers) and are at the same time relatively cheap, so that the rounding of their prices to new attractive levels would lead to substantial price spikes. On the other hand, there is a registered tendency for prices of goods of higher value, such as durable goods, to be rounded down, which is attributed to intense competition on these markets and technological advancement.

In accordance with the experiences of other EU Member States, the effect of the conversion of the kuna into the euro on the increase in the overall inflation of

55 Hüfner and Koske (2008), and Sturm (2009).

56 European Central Bank (2002).

Table 2 The estimated effect of the conversion of the kuna into the euro on inflation trends in Croatia

in % or percentage points

	COICOP	Change in prices due to conversion, in %	Share in HICP in 2017, in %	Share in CPI in 2017, in %	Contribution to HICP, in p.p.	Contribution to CPI, in p.p.
09.5	Newspapers, books and stationery	2.066	2.26	1.38	0.05	0.03
12.6	Financial services n.e.c.	1.974	0.56	0.45	0.01	0.01
11.2	Accommodation services	1.752	7.26	0.39	0.13	0.01
03.2	Footwear	1.621	1.56	2.07	0.03	0.03
09.4	Recreational and cultural services	1.520	1.92	2.42	0.03	0.04
09.6	Package holidays	1.453	1.47	0.50	0.02	0.01
11.1	Catering services	1.217	5.46	3.51	0.07	0.04
09.3	Other recreational items and equipment, gardens and pets	1.177	1.40	1.13	0.02	0.01
07.1	Purchase of vehicles	1.010	1.67	1.84	0.02	0.02
12.7	Other services n.e.c.	1.003	0.37	0.55	0.00	0.01
02.1	Alcoholic beverages	0.912	3.31	1.20	0.03	0.01
	Total		**27.2**	**15.4**	**0.39**	**0.21**
	Total (adjusted)*				**0.37**	**0.20**

* Downward adjustment, taking into account the estimated effect of conversion on the decline in certain prices in old Member States.
Sources: Hüfner and Koske (2008), CBS and CNB calculations.

consumer prices in Croatia is expected to be mild.[57] It is estimated that the effect of conversion in Croatia might come up to some 0.20 percentage points (increase in the consumer price index), i.e. some 0.37 percentage points (increase in the harmonised index of consumer prices), in the period of a half a year prior and after the conversion. The estimate used the average of estimated effects of conversion on the growth of prices of individual components of the harmonised index of consumer prices in old euro area Member States[58] and weights these components have on the index of consumer prices in Croatia in 2017 (Table 2). Conversion might have a more pronounced effect on overall inflation measured by the HICP, primarily due to the greater share of accommodation services in that index. The introduction of the euro might have a slightly more pronounced effect on citizens with higher income, given that the share of prices and services whose prices might significantly increase (for instance restaurant services, recreation and culture services) accounts for a relatively greater portion of their consumer basket. On the other hand, conversion into the euro should to a lesser extent contribute to the increase in the price of the basket of goods and services purchased by citizens with lower income, for instance pensioners and unemployed persons (Table 3). In the period just before the introduction of the

Table 3 Estimated effect of conversion of the kuna into the euro on the development of the prices from the consumer basket of individual consumer groups in Croatia

in percentage points

	Contribution to growth in prices
Average household	0.19
Household whose head is:	
Manual worker	0.18
Non-manual worker	0.25
Self-employed	0.21
Unemployed	0.16
Retired	0.16
Inactive (other)	0.17

Note: A calculation based on the data from the Household Budget Survey in 2014.
Sources: Hüfner and Koske (2008), CBS and CNB calculations.

57 See Pufnik (2017).

58 The components related to which prices significantly grew at the time of conversion of national currencies have been taken over from Hüfner and Koske (2008). In Croatia's case they have been adjusted not to encompass administrative prices whenever possible (the component 12.4 Social protection has been left out).

euro, the Government will adopt measures promoting fair price recalculation into the new currency (*see 5.4.1 Measures to prevent the rise in consumer prices due to currency conversion*).

Although the adoption of the euro had a very mild effect on total inflation, majority of citizens of euro area Member States feel that the adoption of the euro caused a significant increase in prices. This is evident from the significant increase in the spread between the inflation level perceived by consumers and actual inflation measured by the official consumer price index in the period after conversion. Stated as one of the reasons why perceived inflation was much higher than the actual inflation in the period after the introduction of the euro in January 2002 is the fact that citizens usually base their perception on the inflation level on the trends in prices of cheaper products they buy more often and it has been shown that the increase in these cheaper prices at the time of conversion was more pronounced. The increase in the spread between perceived and actual inflation after conversion may spur negative attitudes towards the euro. The experiences of Member States that have introduced the euro thus far indicate that consumers considered this increase to be temporary, given that it has not come to the increase in inflationary expectations at the same time.

3.2.3 The risk of excessive capital inflows and accumulation of macroeconomic imbalances

The experiences of peripheral euro area Member States after 2002 suggest that after joining the monetary union a country may be exposed to strong capital inflows and a build-up of internal and external imbalances. In the background of strong capital inflows to peripheral Member States hid the optimism of domestic economic entities and foreign creditors in relation to their real convergence.[59] In addition, the prevailing opinion was that common monetary policy equalised the risks of Member States, which led to neglecting of specific vulnerabilities of individual countries. The establishment of the monetary union also instantly eliminated currency risk premiums and stabilised inflationary expectations in peripheral Member States. In these conditions yields on bonds of peripheral Member States significantly declined, almost to the level of the yields on bonds of core euro area Member States. The reduction of interest rates amid the integration of financial markets and procyclical fiscal policy led to the strong lending expansion and the overheating of domestic demand in peripheral Member States and consequently to the occurrence of substantial macroeconomic imbalances. After the intensification of the global financial crisis in September 2008, capital inflows and domestic demand suddenly declined, triggering deep and long recession in these Member States. Non-euro area countries, including Croatia, also registered strong capital inflows prior to the outbreak of the financial crisis. Ample capital inflows into CEE countries were a reflection of global financial conditions but also domestic factors in the form of liberalisation of financial systems and removal of restrictions on capital transactions in the context of the EU accession process of these countries.

59 Namely, the establishment of the monetary union and the intensification of economic growth in peripheral Member States positively affected the expectations of economic entities regarding the growth of their future income, thus increasing their propensity to consume and borrow. Banks willingly accommodated the increasing demand for loans, raising the capital for financing this lending growth by borrowing abroad.

After the crisis new mechanisms were set up for the coordination of economic policies that should guarantee much greater stability of the monetary union in the future. The occurrence of macroeconomic imbalances in some peripheral Member States may be linked to institutional deficiencies of the EMU. Up to 2012, EU Member States were subject only to rules on budget deficit laid down by the Stability and Growth Pact. However, they were not sufficient to ensure adequate fiscal discipline. Building on the experiences from the global financial crisis, the European Union set up new mechanisms of economic policy coordination. One of them is the Macroeconomic Imbalance Procedure serving for timely detection and elimination of imbalances from the economies of Member States (*see 5.2.1 Rules of the European economic governance framework applicable to the euro area*).

In addition to upgrading the framework for the coordination of EU economic policies, measures were undertaken to reduce risks to financial stability. Banking crises that broke out in several Member States in 2008 and 2009 were connected to strong credit expansion before the crisis. Resolution of failing banks in some countries generated substantial fiscal costs. Disturbances in the banking system negatively affected loan availability and thus the speed of economic recovery. This motivated a reform of banking regulation after the global financial crisis which aimed to increase bank resilience to shocks and reduce the cyclical volatility of credit activity. The European Systemic Risk Board (ESRB) was established to oversee the risks for the overall financial system of the European Union and stimulate competent national authorities to take action aimed at eliminating systemic risks and vulnerabilities (*see 6.2 The role of macroprudential policy in addressing macroeconomic and financial risks*).

The reformed EMU institutional framework, as well as the own experience with inflow of capital in the pre-crisis period should reduce the likelihood of Croatia experiencing the fate of peripheral Member States after the adoption of the euro. The experiences of Member States in which the introduction of the euro spurred excessive borrowing and an increase in macroeconomic vulnerability call for caution. However, the consequent implementation of the European coordination of economic policies will contribute to Member States being active in preventing the accumulation of harmful macroeconomic imbalances. In addition, national banking regulators have at their disposal instruments that may limit excessive lending by banks. In the past, the Croatian National Bank successfully used similar instruments aiming to reduce risks to financial stability. As stressed earlier, intensive capital flows in the 2000s were partially a reflection of temporary factors – rapid integration of financial markets in the euro area, and the liberalisation of financial systems and elimination of restrictions on capital transactions in new Member States – that will not be present in the upcoming period. When all the discussed factors are taken into concern, it is unlikely that Croatia will witness excessive accumulation of macroeconomic imbalances after the introduction of the euro as it was the case in peripheral Member States over the previous decade.

3.2.4 One-off changeover costs

At the time of currency changeover, immediately prior and shortly after the adoption of the euro, there will be some one-off costs. They are related to the procurement, i.e. printing of new euro banknotes and coins, their allocation and the withdrawal of the kuna banknotes and coins, as well as other adjustments in cash

transactions (ATM adjustments). The one-off costs also include the adjustments of IT systems and accounting and reporting systems for business entities, as well as legal adjustments to ensure the continuity of agreements and financial instruments. The costs of information campaigns and employee training, especially for financial institutions, aiming to inform the general public are also one-off and linked to the activities preceding the actual currency changeover.

The experiences of Member States that have introduced the euro may be used to estimate the expected amount of one-off costs in Croatia. It is estimated that the amount of one-off changeover costs for countries that have first introduced the euro as means of payment in 2002 totalled some 0.5% of GDP. There are no *ex post* analyses of these costs for newer euro area members, only estimates and expectations from the period before euro adoption that mostly correspond to the published costs of initial Member States.[60]

As for Croatia, the costs of some of the required activities and adjustments are expected to be lower than in new Member States that introduced the euro. Given the high degree of euroisation of Croatia's economy, as well as the importance of the tourism sector that generates substantial inflow of euro cash, domestic economic entities are well experienced in using the euro. Therefore, the one-off costs of technical adjustments in introducing the euro in Croatia might come in lower than in other countries. Thanks to the fact that a substantial portion of Croatia's financial sector is owned by institutions from the euro area, IT and accounting adjustments should be relatively small given that they can partly use the solutions of their owners. The same goes for companies that are part of foreign corporations already operating in the euro area. On the other hand, given the high share of small and medium-sized enterprises in the economy, the overall one-off costs of adjustment might come in relatively higher than in the Member States where this sector of the economy is not represented as strongly. This will provide an opportunity to domestic companies to offer software solutions and other services associated with the introduction of the euro, thus reducing the net cost of conversion. Croatia has a valuable experience of the currency changeover from the time of the introduction of the Croatian kuna in 1994. This will surely contribute to the entire changeover procedure from the kuna to the euro being efficient and successful. The importance of this specific experience is corroborated by the fact that some of the new EU Member States in some aspects of their practical preparations for the introduction of the euro drew on Croatia's experience.

3.2.5 One-off costs of Croatian National Bank joining the Eurosystem

After joining the Eurosystem, the CNB will have to pay in the remaining portion of the subscribed capital of the ECB, transfer a portion of its international reserves to the ECB and pay in a certain amount as contribution to the ECB's

60 Slovakia expected technical costs of the currency conversion to be lower than in 2002, more accurately to amount to some 0.3% of GDP. These expectations were justified by the fact that such one-off costs are reduced when there is no transition period, when the period of dual circulation is shorter, as well as by the fact that preparations in the retail sector were smaller in scope and cheaper because domestic business entities already participated in trading in euro. All this is characteristic for later adoption of the euro, in contrast to the initial introduction of a new currency. Latvia and Lithuania were more conservative in their expectations, envisaging one-off changeover costs of some 0.8% of GDP and less than 1% of GDP, respectively.

reserves. The amounts of these payment obligations are based on the ECB's capital subscription key that accounts for the share of each national central bank in ECB capital and reflects the share of the Member State in the overall population and GDP of the European Union. The subscription key for the CNB is currently 0.6023%.

While the amount of the share of payments is known, there are also costs whose size varies according to macroeconomic situation and market conditions at the moment of the accession of the central bank to the Eurosystem. Upon Croatia's accession to the EU, the Croatian National Bank became one of the shareholders of the ECB's capital. At that moment, the CNB paid in EUR 2.4m in the ECB's capital, which represents 3.75% of the CNB's share in the subscribed capital of the ECB. When it pays in the remaining portion of the subscribed capital of EUR 62.8m at the moment of the introduction of the euro, the CNB will participate in the ECB's capital with the overall amount of 65.2m. In addition, when joining the Eurosystem the CNB will transfer to the ECB some EUR 350m of international reserves. Last but not least, the CNB is obligated to contribute to the ECB's reserves via a payment to the ECB's revaluation account and reserves. Considering that the balance of the ECB's revaluation account are affected by factors whose trends are hard to predict, such as exchange rate trends and the price of assets in the ECB's balance sheet, it is not possible to determine the exact amount which the CNB will have to pay in under this item. According to the current balance, the overall amount to be paid in by the CNB to the revaluation account and reserves might come in at some EUR 300m[61] (*see 5.3.4 Financial adjustment due to joining the Eurosystem*).

3.2.6 Participation in providing financial assistance to other Member States

While gaining the right to access the instrument of euro area financial assistance on one side, on the other Croatia is obligated to participate in the costs associated with joint assistance to other euro area Member States. The main such cost is the payment of the determined amount to the ESM paid-in capital since after the introduction of the euro a country becomes an ESM shareholder and guarantees that it would pay in the remaining portion of the ESM subscribed capital should the need arise.

The share of a Member State in the ESM capital is determined in accordance with the ECB's capital subscription key. The fact that all Member States are not equally developed is taken into consideration. Therefore, a Member State with GDP below 75% of the EU average has the right to use the possibility of temporary correction of the capital contribution key. The correction is applicable for a period of 12 years after the date of adoption of the euro. Once this period is over, the Member State must pay in the remaining amount up to the full amount of the envisaged subscribed capital.

The cost of participation in the assistance mechanism to euro area Member States, if Croatia joined the euro area in 2016 would have been some EUR 425m. Croatia should pay in that amount, which includes the correction of the capital amount due to the relatively lower income compared to the EU average, from the state budget over several years, more accurately in five instalments of approximately EUR 85m. After the expiry of the transitional period of 12 years, Croatia would no

61 Of that amount, the payment to the revaluation account totals EUR 65.2m, which equals the overall amount to be paid in by the CNB to the ECB capital.

longer be entitled to the corrective factor and would be subject to the payment of the remaining amount up to the total figure of EUR 690m. In addition, all Member States may be called to pay in a higher amount of capital, in accordance with the subscription key and up to the amount of subscribed capital. They also share potential liabilities that might arise from a loan to a Member State in case it is not able to repay it. Namely, losses arising as a result of ESM operations are first covered from the reserve fund in which ESM pays in a share of its profit and then from the paid in capital, and ultimately from the corresponding amount of the unpaid subscribed capital subject to a call to euro area Member States. The share of ESM's subscribed capital guaranteed by Croatia is estimated at some EUR 6.03bn. However, the likelihood of Member States being called to pay in the overall subscribed capital is extremely low. Similar guarantee mechanisms are used by other international financial institutions, like the World Bank and the European Investment Banks, of which Croatia is also a member. Member states normally do not pay in funds for these guarantees. The main purpose of the guarantee is to ensure the highest credit rating which ensures these institutions very favourable conditions of market financing.

3.3 The total cost-benefit assessment of the adoption of the euro

The analysis of economic benefits and costs indicates that the introduction of the euro will have a considerable positive impact on Croatia's economy. Some effects, however, are hard to quantify because they depend on future economic developments. For instance, the elimination of currency risk in a period of economic stability contributes to lower costs of financing, while in the period of instability it prevents the onset of a currency crisis with high costs for the Croatian economy. Due to limitations arising from a high degree of euroisation, the fact that Croatia's economy is small and open and the expectations regarding the adequacy of the common monetary policy, the loss of independent monetary and exchange rate policy does not constitute a substantial cost. While positive effects of the introduction of the euro will be permanent, costs are predominantly one-off (Table 4).

The greatest individual benefit of euro adoption is the elimination of the currency risk arising from the high degree of euroisation and high indebtedness of Croatia's economy. This predominant benefit of the introduction of the euro was not equally present in majority of other Member States of the euro area whose economies were not euroised to such a degree prior to the introduction of the euro, making the benefit for Croatia that much greater. The additional benefit of the introduction of the euro comes from the full elimination of the risk of a currency crisis (in the part related to the weakening of the kuna vis-à-vis the euro) but also the reduction in probability and the cost of banking and the balance-of-payment crisis, given that banks will be given access to ECB's monetary operations. A lower cost of borrowing for all sectors of Croatia's economy, as compared to the scenario under which Croatia would remain outside the euro area, is a benefit deemed moderately important. Lower interest expenses will contribute to investments and employment and the lowering of currency risk to attracting of foreign investments. While the increase in the volume of international trade was in the past underlined as one of the principal reasons for the introduction of the common currency, in Croatia's case this effect should not be significant, especially in comparison with the effect of the

EU accession. Benefits of lower transaction costs and rights of participation in the allocation of the Eurosystem's monetary income have been assessed as relatively low. Finally, access to EU's special financial assistance instruments intended for euro area Member States, apart from direct benefits in case of the need for financial assistance, brings along an indirect benefit of affecting the confidence of international markets. However, given that Croatia already has access to EU's assistance instrument this benefit is assessed as less important.

While most benefits will be permanent, there are one-off financial expenses on the cost side that will materialise upon the adoption of the euro. This goes primarily for financial cost of the changeover, the payment of Croatia's share of funds to the European Central Bank and the European Stability Mechanism and the risk of a mild one-off increase in prices due to the conversion. It is not possible to exactly quantify potential costs connected to the possible excessive capital inflows and the associated occurrence of macroeconomic imbalances or the loss of an independent

Table 4 Overview of the main costs and benefits of the adoption of the euro

Benefits of the adoption of the euro			
	Significance	Effect over time	Description
Elimination of currency risk from the economy	Great	Permanent	Currency risk will be permanently eradicated from the economy, eliminating the negative effect of the exchange rate depreciation on all entities with liabilities in euro. Specifically, the currency of income (wages) will be aligned with the currency in which liabilities are settled, permanently removing the need of citizens and corporations to hedge against exchange rate change. Elimination of currency (exchange rate) risk will permanently increase the resilience of the economy and the investment attractiveness of Croatia and remove the need for special measures used to strengthen the resilience to currency risk.
Reduction of borrowing cost for all domestic sectors	Moderate	Permanent	The level of interest rates in Croatia will approach the level of interest rates in the Member States of euro area's core. Citizens and corporations will have lower costs of financing than in case Croatia remains outside the euro area. Lower interest rates will improve the position of Croatian corporations relative to their euro area competitors and have a positive effect on economic growth, investments and employment.
Elimination of the risk of currency crisis and the reduction of the risk of banking and balance of payments crisis	Moderate	Permanent	By introducing the euro, Croatia will permanently eradicate the risk of currency crisis to which all domestic sectors have been exposed for decades. The access of banks to central bank liquidity sources in euro, which is currently limited by the available stock of foreign exchange reserves, will permanently reduce the risk of banking and balance of payments crisis.
Lower transaction costs	Small	Permanent	The cost of conversion calculated as the difference between the buying and the selling euro/kuna exchange rate will be permanently removed. The difference is estimated to save from 0.1 to 0.3% of GDP for the non-financial sector on an annual basis. The costs of euro payments will be reduced to the level of those in the euro area. By eliminating the costs associated with currency exchange and transactions, Croatia's competitiveness will grow.
Stimulus to international trade and investments	Moderate	Permanent	The use of a common currency permanently contributes to the strengthening of international trade and competitiveness. By becoming a member of the EU, Croatia has already experienced significant positive effects on the exports of goods and services, which will be additionally intensified by the adoption of the euro. The complete disappearance of currency risk will increase Croatia's attractiveness with international investors and thus contribute to the increase of foreign direct investment.
Participation in the allocation of the Eurosystem's monetary income	Small	Permanent	The amount which will be allocated to the CNB as a part of the annual allocation of the Eurosystem's monetary income could be noticeably higher than the contribution of the CNB to the total sum of the monetary income. According to the experiences of peer euro area Member States, the annual amount allocated to the CNB could hover around EUR 40m on average. The CNB will retain most of its international reserves in the form of an investment portfolio on the basis of which it will generate revenues to be paid to the government budget of Croatia.
Access to euro area financial assistance mechanisms	Small	Permanent	Croatia will have full access to the European Stability Mechanism (ESM) – a financial assistance mechanism of the EU intended exclusively for euro area Member States. The ESM provides financial assistance to euro area Member States without imposing direct burden on tax payers. In addition to directly assisting Member States affected by shock, this common rescue mechanism positively contributes to the confidence of financial markets in all Member States which have introduced the common currency. In case of need, Croatia can currently only access the EU's assistance instrument intended for Member States outside the euro area.

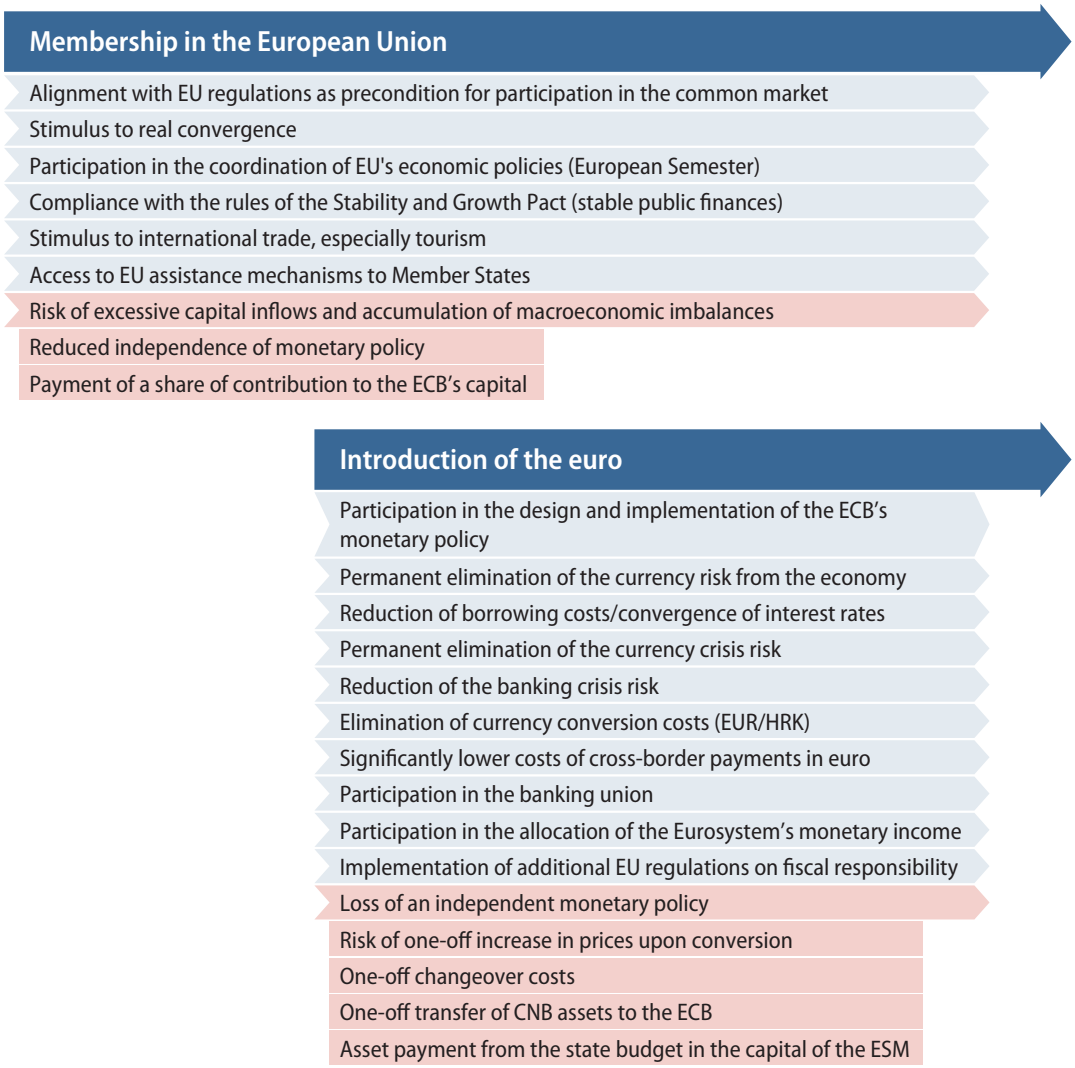
Costs of the adoption of the euro			
	Significance	Effect over time	Description
Loss of independent monetary policy	Small	Permanent	The loss of independent monetary policy represents a small cost as the room for the active use of monetary and exchange rate policy is currently limited due to the high level of euroisation of the Croatian economy and the fact that Croatia is a small and open country with a notable presence of banking groups from the euro area. Moreover, by joining the European union, Croatia accepted to consider exchange rate policy a matter of common interest, and the level of independence of monetary policy has been partly reduced on account of the assumed obligations. Upon introducing the euro, Croatia will acquire a permanent right to directly participate in the creation and implementation of common monetary policy at ECB and Eurosystem level. Common monetary policy should be adequate for Croatia due to the synchronisation of the business cycles of Croatia and the euro area.
Risk of price increase as a result of conversion	Small	One-off	Unjustified price increase (unfair rounding of prices during conversion) will be prevented by applying appropriate mechanisms of conversion process monitoring, whereby one of the main measures used will be the dual display of prices. A one-off 0.2–0.4 percentage point increase in the average level of consumer prices is possible, primarily in the service sector.
Risk of excessive capital inflows and accumulation of macroeconomic imbalances	Small	Permanent	Stronger capital inflows may lead to the accumulation of macroeconomic imbalances after the euro is introduced. However, the CNB's experience in the mitigation of excessive capital inflows, new mechanisms of economic policy coordination in the EU and the expected adequacy of common monetary policy reduce the probability of the occurrence of harmful macroeconomic imbalances.
Changeover costs	Small	One-off	One-off technical costs of changeover relating to adjustments in the payment system, including the production and procurement of euro banknotes and coins and all the costs related to IT adjustments and the printing of documents with amounts indicated in euro could be lower than in other Member States due to the heavy euroisation of the Croatian economy.
Transfer of funds to the European Central Bank	Small	One-off	The CNB will pay the outstanding portion of its share in the capital of the European Central Bank in the amount of around EUR 62.5m. Additionally, the CNB will have to pay up around EUR 300m into ECB buffers and transfer around EUR 350m of its international reserves to the ECB's reserves. Upon paying up the full amount into the capital of the European Central Bank, Croatia will acquire the right to participate in the allocation of the total monetary income of the Eurosystem.
Participation in the provision of financial assistance to other Member States	Moderate	One-off	Croatia will become a shareholder of the European Stability Mechanism, which will enable access to instruments of assistance in case of crisis. This also means that it is obliged to gradually pay an estimated amount of around EUR 690m into ESM capital, of which around EUR 425m will be paid over the first five years. Croatia currently implicitly participates in the provision of financial assistance to EU Member States by contributing to the common EU budget which guarantees for EU instruments of assistance.

Notes: The estimated significance of the costs and benefits of the adoption of the euro is a subjective assessment. The significance of respective costs and benefits has been rated as great, moderate or small.

monetary policy. However, they are deemed low. The loss of an independent monetary policy that at the same time presupposes the participation in the creation of the common monetary policy does not represent a substantial cost for Croatia. This conclusion is based, on one side, on the circumstances in which the monetary policy is run today and which have to do with limitations due to high degree of euroisation and the fact that the Croatian economy is small and open, and, on the other, on the expected adequacy of the common monetary policy for Croatia.

The conducted analysis is focused on the economic costs and benefits of the adoption of the euro in Croatia, but care should also be taken of other effects of joining the monetary union. Apart from non-economic aspects of closer European integration, additional benefits for Croatia come from the implementation of the policies required to meet the criteria for the introduction of the euro, which include the strengthening of competitiveness and macroeconomic stability. These policies benefit Croatia's economy irrespective of the introduction of the euro. Therefore, difficulties faced by the euro area do not diminish the benefits of implementing policies directed at meeting the criteria for euro adoption. The overall effect of Croatia's integration in the Economic and Monetary Union, including both the effects Croatia already achieved by joining the European Union and those that will result from the introduction of the euro, are shown in Figure 13.

Figure 13 Effects of the integration of Croatia in the Economic and Monetary Union



Source: CNB.

4 The process of euro adoption

In addition to the ability of the Member State to meet the prescribed criteria, the adoption of the euro depends on the support of euro area Member States as well. The support is particularly important at the very beginning of the process, when joining the Exchange Rate Mechanism II (ERM II), although there are no official conditions to be met by a Member State to be able to join the ERM II. Upon entering the ERM II, the Member State takes the second step, where rules are strictly defined. The requirements that have to be met by an EU Member State in order to introduce the euro are laid down in the Treaty on the Functioning of the European Union. Before introducing the euro, the Member State has to prove that it has reached a high level of nominal and legal convergence. The assessment of nominal convergence achieved depends on the level of achieved stability of prices and of the exchange rate against the euro, sustainability of public finances and long-term interest rate convergence. Legal convergence is assessed according to whether the country harmonised its legislative framework regulating the activity of the central bank. The progress made towards the monetary union, including the assessment of nominal and legal convergence, is separately assessed by the European Commission and the European Central Bank once in two years at a minimum or at the request of a Member State with derogation[62].

4.1 Participation in the Exchange Rate Mechanism II

Prior to introducing the euro, a Member State must participate in the ERM II for at least two years, during which the exchange rate of the national currency must not fluctuate significantly relative to the euro. However, regardless of their path towards the common currency and the fulfilment of convergence criteria, all EU Member States must strive towards maintaining the stability of the exchange rates of their national currencies. Specifically, each Member State has to treat its exchange rate policy as a matter of common interest to the EU.[63] This, in practice, means that Member States have to prevent any significant deviations of the real exchange rate from the equilibrium rate, as well as avoid excessive fluctuation of the nominal exchange rate so as not to jeopardise the functioning of the single market.

62 Any Member State which does not participate in the third stage of the Economic and Monetary Union, in other words, which has not yet introduced the euro, has the status of a Member State with derogation. All Member States besides Denmark and the United Kingdom, which have permanent opt-outs, are committed to introduce the euro as soon as they fulfil the required criteria.

63 Treaty on European Union, Article 142.

4.1.1 Support for joining the Exchange Rate Mechanism II

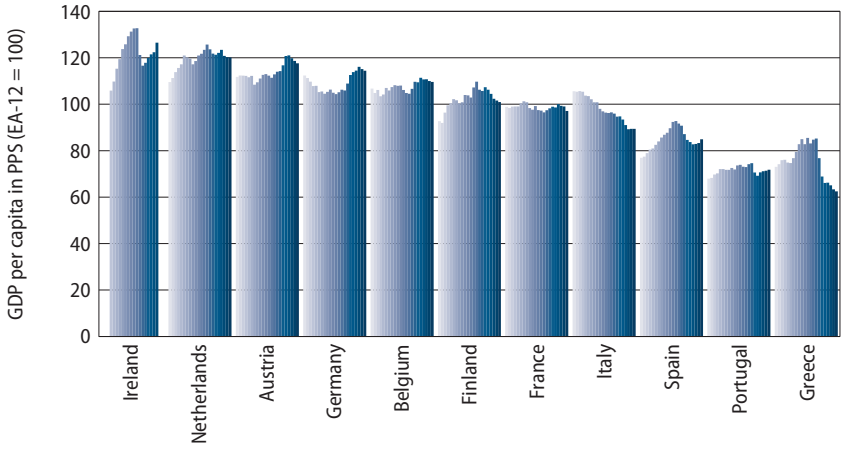
The requirements for joining the ERM II are not defined, but support of other euro area Member States and the EU institutions is needed to participate in it. The support may depend on their assessment of the economic condition of the candidate country, primarily on the level of convergence and macroeconomic stability. The support of other Member States may depend on the political will regarding the further enlargement of the monetary union as well. In case of absence of political will for enlargement, the accession of a candidate to the ERM II may be deferred, slowing down its progress towards the euro adoption.

4.1.1.1 Income convergence (real convergence)

When considering a request to join the Exchange Rate Mechanism II, EU Member States and institutions take into account the level of real convergence reached. The creators of the European Economic and Monetary Union considered that the fulfilment of the nominal convergence criteria would ensure a sufficient degree of economic integration and coherence of business cycles of Member States, thus facilitating the pursuit of a common monetary policy. Differences in real income per capita among Member States were expected to decrease gradually, i.e. real convergence was expected to occur. However, the real convergence achieved was not sustainable. Prior to the onset of the global financial crisis, the economic expansion of peripheral Member States was based on foreign borrowing and a surge in domestic demand, which led to substantial macroeconomic imbalances. Following the beginning of the global financial crisis, peripheral Member States slipped into a deep recession, causing their economies to diverge from those of core euro area Member States (Figure 14). When considering future requests for joining the ERM II, account could be taken of whether the real convergence of candidate Member States is based on sound foundations (increase in productivity and competitiveness).

Croatia's current level of GDP per capita is comparable to the levels of the income of new euro area Member States at the moment they joined the

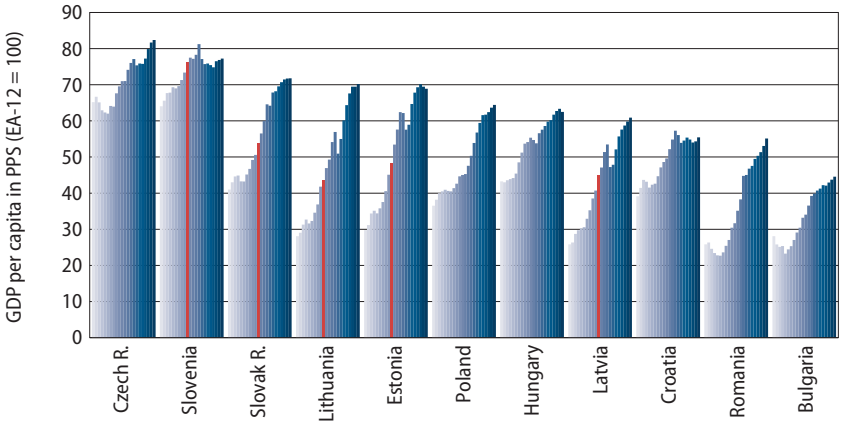
Figure 14 Real convergence of 11 original euro area Member States from 1995 to 2016



Note: Data for Ireland do not include data from 2015, when an unusual surge in GDP was recorded due to the registration of several large foreign companies.
Source: Eurostat.

Exchange Rate Mechanism, leading to the conclusion that real convergence sufficient to allow accession to the ERM II has been reached. In order to compare the level of real convergence reached, the ratio of GDP per capita of selected new EU Member States and the weighted average GDP per capita of 12 original euro area Member States (EA-12) is shown, presented in terms of purchasing power parity. New Member States joined the Exchange Rate Mechanism at various levels of relative income, whereby GDP per capita stood between 43% and 90% of EA-12 average. Lithuania, Latvia and Estonia had the lowest relative levels of income per capita in the year of accession to the ERM II (43.3%, 45% and 48.2% of euro area GDP per capita respectively), while Malta (72.1%), Slovenia (76.3%) and Cyprus (90.1%) had the highest levels of income. To compare, Croatia's GDP per capita stood at 55.4% of EA-12 weighted average in 2016, which is near the same indicator for Slovakia in the year it joined the mechanism (Figure 15).

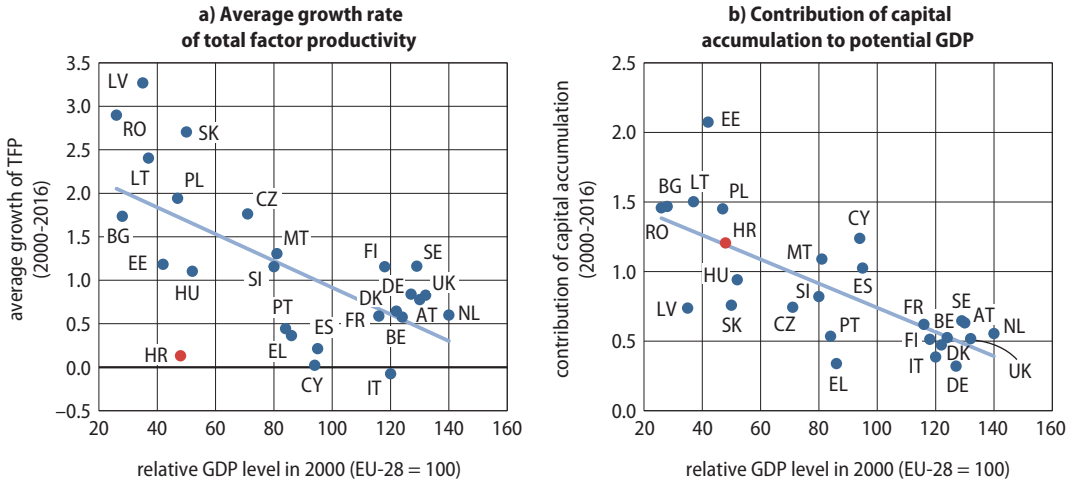
Figure 15 Real convergence of Central and Eastern European countries from 1995 to 2016



Notes: The data for Croatia for the 1995-2000 period are estimated by the CNB. The year in which the Member State joined the Exchange Rate Mechanism II is shown in red.
Sources: Eurostat and CNB calculations.

There is room to accelerate real convergence by implementing structural reforms, having in mind that Croatia lags behind in the developments related to total factor productivity. In the period from 2000 to 2016 Croatia's GDP per capita increased from 47% to 60% of weighted EU-28 average, presented in terms of purchasing power parity. However, the growth was based on capital accumulation, largely in low-productivity sectors such as trade, construction and investment in real estate rather than on an increase in productivity (Figures 16a and 16b). In terms of total factor productivity growth rate, Croatia lags behind Central and Eastern European Member States in the period between 2000 and 2016 and is positioned among countries such as Italy, Spain and Greece, which are characterised by the slowest growth in productivity among euro area Member States (Figure 16a). This points to structural weaknesses of the Croatian economy. The Government prepared a series of measures for increasing productivity (*see 5.1.1 Implementation of economic policy with a view to reducing economic vulnerabilities*). Reforms in the area of business and investment climate and an increase in the efficiency of the public sector should enable growth in productivity and investments in the short and medium term, while reform of education system should affect long-term growth.

Figure 16 Growth in productivity and the contribution of capital accumulation to potential GDP



Sources: Eurostat and CNB calculations.

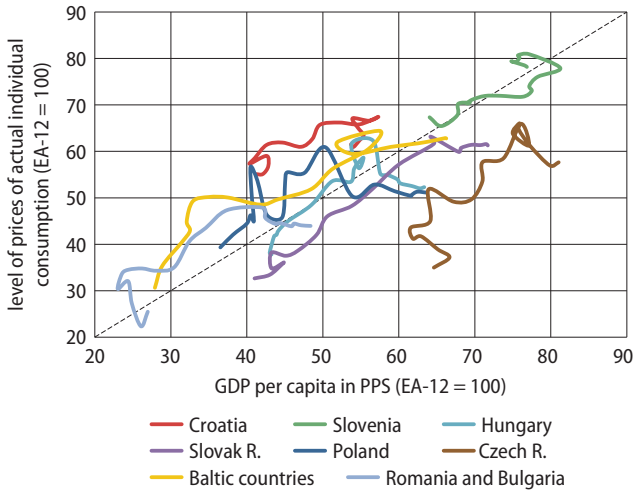
4.1.1.2 Price convergence

The level of prices is significantly determined by the level of economic development, and from a historical viewpoint it has been relatively high in Croatia compared with countries with similar income levels. Countries with lower levels of income usually have relatively lower price levels, and economic growth and development, which reduce differences among countries, affect the increase of the relative price level, i.e. price convergence (Figure 17). Croatia had a relatively high level of prices as early as in 1995 – around 55% of the average of original euro area Member States (EA-12) – while among new EU Member States, only Slovenia had a higher price level (67%). At the same time, Croatia's GDP per capita hovered around 40% of EA-12 average, similarly to Hungary and Slovakia, which had a noticeably lower level of prices than Croatia, around 38% and 33% of EA-12 average respectively. Apart from Slovenia, new Member States joined the ERM II at a relatively low price level, which Croatia surpassed in as early as 1995.

Over the past twenty years, the increase of income per capita has been accompanied by the convergence of price levels, which was more pronounced in countries with lower initial price levels. Price gap decreased the most in the Baltic states, Slovakia and the Czech Republic, and the least in Croatia and Slovenia, due to the high initial price level (Figure 17). In the period from 1995 to 2015, price gap towards the euro area declined by 32 percentage points in the Baltic states, 29 percentage points in Slovakia and 23 percentage points in the Czech Republic. At the same time, the price gap in Slovenia and Croatia dropped significantly less, by 11 and 6 percentage points respectively. When the crisis broke out, real convergence slowed down in the majority of new Member States, and the price gap began to widen. Price divergence following the onset of the crisis was less pronounced in the countries that had introduced the euro or had fixed or managed floating exchange rates than in those with free floating exchange rates.

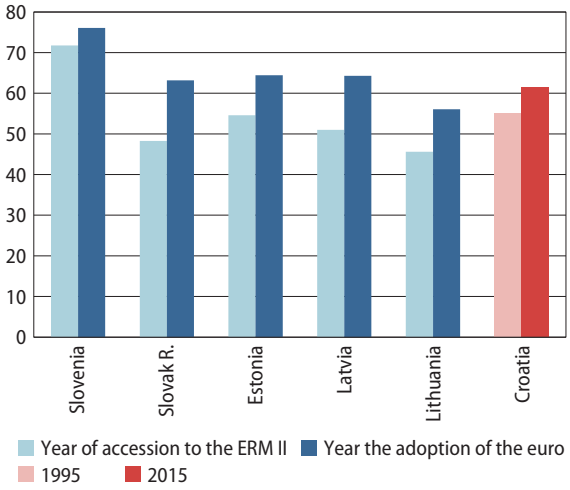
Against the backdrop of real convergence, higher inflation rates in the countries of Central and Eastern Europe (CEE)[64] are frequently associated with the Balassa-Samuelson (BS) effect[65], which was not noticeable in Croatia.[66] Croatia's overall

Figure 17 Convergence in price levels of new EU Member States defined by the level of economic development, 1995-2015



Notes: Data for Croatia for the 1995-1999 period are estimated based on IMF data. Data for Baltic countries are the simple average of Estonia, Lithuania and Latvia. PPS indicates the purchasing power standard.
Sources: Eurostat and IMF.

Figure 18 Price levels in new EU Member States (EA-12 = 100)



Sources: Eurostat and CNB calculations.

consumer price inflation rate was not significantly higher than that of the euro area, and it had one of the lowest average inflation rates among CEE countries.[67] Furthermore, two fundamental assumptions of the BS model are not applicable to Croatia. First, in the 2001-2016 period, the rise in productivity seen in the tradable sector (industry) was not systematically higher than the rise in productivity in the non-tradable sector, where all other activities besides agriculture and public administration are typically classified (Figure 19a).[68] Foreign investments mainly concentrated in the non-tradable sector, which contributed to the rise in productivity in the sector. Second, the rise in real wages was noticeably higher in the tradable sector, while the BS model assumes the equalisation of the rise in wages among sectors owing to labour mobility (Figure 19c). The growth in real wages in the tradable sector was, on average, higher than the rise in productivity (Figure 19b). In contrast to the period prior to the crisis, when prices of non-tradable goods grew faster than the prices of tradable goods, in line with the domestic version of the BS effect, opposite developments were recorded in the period after 2009. There is,

64 New EU Member States which geographically belong to Central and Eastern Europe are the Czech Republic, Hungary, Poland, Slovenia, Slovakia, Bulgaria, Romania, Latvia, Lithuania, Estonia and Croatia.

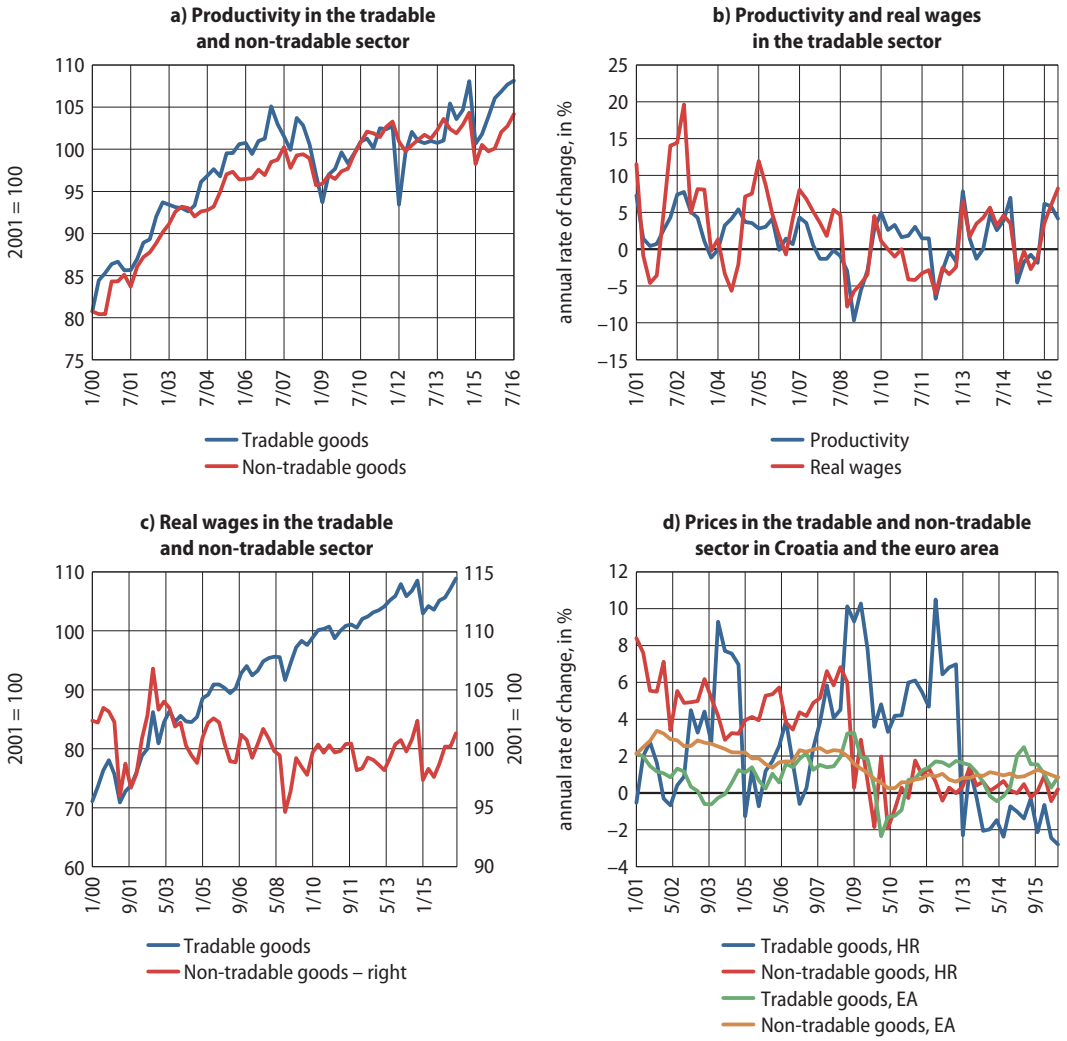
65 According to the domestic version of the BS effect, a faster rise in the productivity of the tradable sector than that of the non-tradable sector leads to the faster rise in the relative prices of non-tradables, and, consequently, to the rise in the overall level of prices, i.e. inflation. According to the international version of the BS effect, a faster rise in the productivity of the tradable sector than that of the non-tradable sector in a country relative to that abroad leads to the faster rise in the relative prices of non-tradable goods and, consequently, the overall level of prices relative to that abroad, i.e. to real exchange rate appreciation.

66 Funda, Lukinić and Ljubaj (2007).

67 In the 1999-2016 period, the average annual overall consumer price inflation rate in Croatia stood at the relatively low 2.4%, which did not deviate significantly from 1.7% in the euro area, while only the Czech Republic (2.1%) and Lithuania (2.3%) had lower inflation than Croatia among new EU Member States.

68 Due to the specific structure of the Croatian economy, the Balassa-Samuelson effect is not entirely relevant for Croatia. Specifically, industry is usually taken into account as the tradable sector when calculating the BS affect, while other sectors are assumed to have a less significant role in exports. This assumption is not as easily applied to Croatia due to the high share of tourism (exports of services) in the GDP.

Figure 19 Productivity, wages and prices

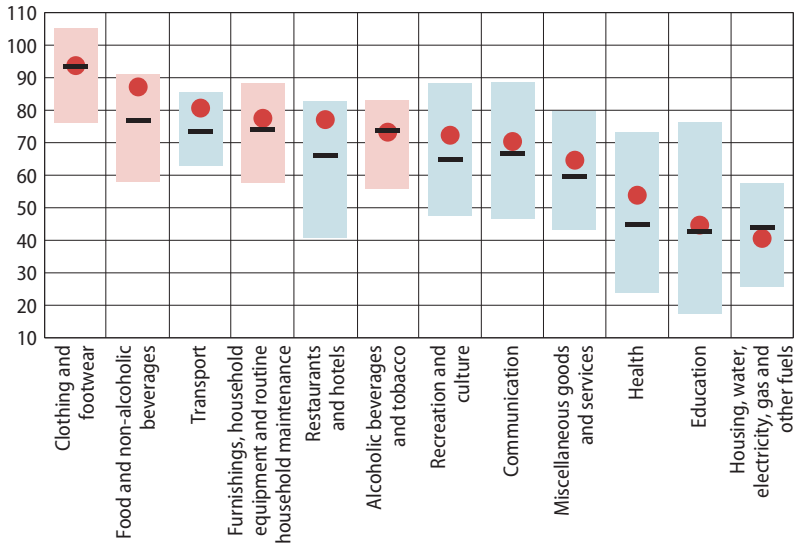


Note: The data on the prices in the tradable sector refer to the deflator for industry, while the data on the prices in the non-tradable sector refer to the average deflator for other activities.
Sources: CBS, Eurostat and CNB calculations.

therefore, no persistent gap between the rise of prices in the non-tradable sector and the rise of prices in the tradable sector which would point to the presence of the Balassa-Samuelson effect (Figure 19d) in Croatia.

The relatively high level of prices and low inflation suggest that the process of price convergence should not have significant effects on the rise of prices in the future. The level of prices in Croatia was higher in 2015 than in most new EU Member States (Figure 20). Prices related to tourism (restaurants and hotels) and prices of food and beverages deviated the most (were higher), in relative terms, than the average of new Member States. Moreover, the level of prices of tradables in Croatia was closer to that of the euro area than the level of prices in the non-tradable sector. Nevertheless, while the price gap in tradable goods between Croatia and the euro area narrowed in the last decade, it widened slightly in the non-tradable sector due to the divergence of these prices following the onset of the crisis. This particularly holds true for the group of goods and services comprising housing costs, water, electricity, gas and other fuels, whose relative level of prices vis-à-vis the euro area is currently the lowest compared with other categories from the consumer basket. This implies that the continuation of the process of price level convergence, in addition to the intensity of real convergence, may depend on other factors as well, such as the liberalisation

Figure 20 Level of prices in the 12 main categories of the consumer basket in Croatia and other CEE countries, 2015 (EA-12=100)



Notes: The red circle indicates Croatia, columns indicate the maximum and the minimum of CEE countries, while the black line indicates the non-weighted average of CEE countries. Red-shaded columns indicate mostly tradable products, while blue-shaded columns indicate mostly non-tradable products.
Sources: Eurostat and CNB calculations.

of the prices of goods and services that are currently partially or fully administrative (gas, electricity, water, housing, etc.).

4.1.1.3 Presence of macroeconomic imbalances

The presence of excessive macroeconomic imbalances in a country that intends to introduce the euro may slow down its progress towards the monetary union. If a Member State is detected as having excessive imbalances within the European Semester as the annual cycle of economic policy coordination, it is unlikely to obtain a positive assessment on the achieved level of sustainable convergence, which also means that other Member States may withhold their support for this country's participation in the ERM II.[69]

Croatia reduced macroeconomic imbalances over the past several years. The Excessive Deficit Procedure for Croatia, opened in 2014, was closed in mid-2017 thanks to strong fiscal consolidation. The Macroeconomic Imbalance Procedure for 2017 revealed that the reference values of macroeconomic imbalance indicators were exceeded in the net international investment position, general government debt and unemployment rate. A year earlier, reference values were exceeded in other indicators as well: the export market share, long-term unemployment rate and youth unemployment rate. The above mentioned decrease in the number and intensity of macroeconomic imbalances in Croatia is primarily a result of economic recovery.

In spite of a decrease of a part of imbalances, in February 2017, the European Commission concluded that they were still excessive in Croatia. Despite progress made with regard to certain imbalances, the European Commission still classifies

69 In its Convergence Report for 2016, the ECB states that a Member State with derogation for which the Excessive Imbalance Procedure had been initiated would probably not be able to receive a positive assessment with regard to the achieved level of sustainable convergence during the assessment of readiness to adopt the euro.

Croatia among the countries with excessive imbalances.[70] As regards the policies through which the aforementioned imbalances can be alleviated, the European Commission emphasised the need for better management of public finances, modernisation of public administration, improvement of business environment and labour market reforms, notably the increase of labour force activity rate.

Croatia needs to implement further measures to mitigate macroeconomic imbalances in order to gain support for joining the Exchange Rate Mechanism. The full removal of deep-rooted macroeconomic imbalances such as the large external and public debt cannot be achieved in the short term, but continuous efforts can be made in order to continue reducing the intensity of imbalances. For that purpose, the Government will continue to pursue prudent fiscal policy and structural reforms (*see 5.1 Implementation of economic policy with a view to reducing economic vulnerabilities*).

4.1.2 Procedures and main features of participation in the ERM II

The ERM II is defined by the Resolution of the European Council on the Establishment of an Exchange Rate Mechanism in the Third Stage of Economic and Monetary Union of 1997.[71] An agreement between the ECB and the national central banks of Member States outside the euro area lays down all operative elements of the Exchange Rate Mechanism.[72] By successfully participating in the ERM II, a country proves that it is able to function in the conditions of a stable exchange rate against the euro. Specifically, while in the ERM II, the exchange rate of a country's currency has to be stable relative to the central parity against the euro, whereby a devaluation of the central parity is not allowed.

Preparations to join the ERM II are initiated by consultations with euro area Member States and EU institutions, as well as with the Eurogroup Working Group, whereby the Member State declares its targets with regard to the participation in the ERM II. If, during the consultations, it gains the support of its EU partners, the Member State may apply for participation in the mechanism, which marks the first step of the official procedure. The second step is the meeting of the Economic and Financial Committee in ERM II configuration[73], where the appropriateness of the macroeconomic framework of the candidate state for participating in ERM II is considered and an adequate central parity and fluctuation margins are discussed. The third step consists of a meeting where the central parity and fluctuation margins are set. The decision on the central parity relative to the euro and fluctuation margins is reached by a common agreement of ministers of euro area Member States, the ECB and the ministers and governors of Member States

70 Several EU Member States, including those that introduced the euro, are faced with excessive macroeconomic imbalances. They are present in France, Italy, Portugal and Cyprus, as well as Bulgaria and Croatia as the only Member States outside the euro area.

71 Resolution of the European Council on the Establishment of an Exchange Rate Mechanism in the Third Stage of Economic and Monetary Union (97/C 236/03).

72 Agreement between the European Central Bank and the national central banks of the Member States outside the euro area laying down the operating procedures for an Exchange Rate Mechanism in stage three of Economic and Monetary Union (2006/C 73/08).

73 The meeting referred to is a meeting of the Economic and Financial Committee dedicated to the application of a Member State for joining ERM II and attended by representatives of the ministries of finance and the central banks of euro area Member States, states whose currencies participate in ERM II, the ECB and the European Commission.

outside the euro area whose currencies participate in the ERM II. The last step in the procedure includes a press release indicating the date of accession to the Exchange Rate Mechanism, central parity, fluctuation margins and arranged commitments related to economic policy. Member States are recommended to hold preparatory consultations and negotiations on joining ERM II in secrecy in order not to affect financial markets.

Negotiations on a Member State's accession to the ERM II are not limited by time. The duration of the process depends on the agreement procedure. Experiences of countries which have thus far joined the ERM II differ considerably. Some countries completed negotiations within several days, others negotiated for several months, and one country did not win support to join the ERM II during informal consultations.

Setting the central parity of the national currency vis-à-vis the euro and fluctuation margins constitutes the central part of negotiations on participating in the Exchange Rate Mechanism. Prior to the beginning of negotiations, the Government and the CNB will determine the target level of the central parity of the national currency against the euro, as well as the targeted fluctuation margins of the exchange rate relative to the central parity. In order to avoid foreign exchange market speculations, the central parity and fluctuation margins will be announced only after Croatia reaches an agreement with other euro area Member States and EU institutions.

When setting the targeted central parity, account will be taken on the effect of the exchange rate on macroeconomic stability. The central parity of the exchange rate may significantly affect macroeconomic developments following the accession to the ERM II. The relevance of the central parity is reflected in the fact that, in most cases, the central parity used during the participation in the mechanism later became the fixed conversion rate according to which the exchange of currency was executed. In order for the targeted nominal exchange rate central parity to be set, it is necessary to determine if the current level of exchange rate of the national currency is aligned with the objective of maintaining macroeconomic stability.

In addition to proposing the central parity, the Government and the CNB will determine the targeted fluctuation margins of the exchange rate before the negotiations on joining the ERM II begin. The standard fluctuation band around the central parity is ±15%; however, a country joining the mechanism can unilaterally commit to maintain the exchange rate within narrower margins.[74] Irrespective of the agreed upon fluctuation band, the nominal exchange rate of the kuna against the euro during the participation in the ERM II will not be allowed to oscillate considerably relative to the central parity. Fluctuation margins are important because, based on such margins, the national central bank and the ECB perform unlimited foreign exchange interventions for which they mutually grant short-term financing.

74 Until now, narrower fluctuation margins (±2.25%) have only been set, based on mutual agreement, in case of Denmark. New Member States whose currencies joined the Exchange Rate Mechanism after 2004 committed to the application of standard fluctuation margins. However, some of them (Estonia, Lithuania, Latvia and Malta) have unilaterally committed to maintain the exchange rates of their currencies within narrower fluctuation bands (without a commitment by the ECB to intervene on narrower margins). This was appropriate bearing in mind that the countries had currency boards arrangements or tightly managed exchange rate regimes. Other countries principally accepted standard fluctuation margins, but, despite that, their exchange rates fluctuated very near the central parity. Slovenia maintained an exchange rate within the band from –0.1% to +0.3%, while the exchange rate of Cyprus was moving within the range from the central parity to +2.1%. The only exception was Slovakia, which revalued its central parity twice during the participation of the Slovak koruna in the ERM II. Such developments had no effect on Slovakia's fulfilment of the exchange rate stability criteria.

4.2 Fulfilment of the nominal convergence criteria

Heads of EU Member States laid down the nominal convergence criteria for joining the monetary union by the Maastricht Treaty. Four criteria were set: price stability, sustainability of public finances comprising two indicators (budget deficit and public debt), exchange rate stability and convergence of long-term interest rates.

4.2.1 Setting the criteria

According to the price stability criterion, the inflation rate in the Member State must not exceed the average of the inflation rates of three best performing EU Member States in terms of price stability increased by 1.5 percentage points. The ability to maintain low inflation is key to the successful participation of a Member State in the monetary union because, in case of persistent high inflation rates, its competitiveness would decline compared with other Member States. However, the main motive behind the inclusion of price stability among nominal convergence criteria was to stimulate Member States to prove their focus on low inflation prior to participating in the creation of common monetary policy.[75] EU rules do not define whether only the lowest positive inflation rates are to be taken into account as best price stability performance or should negative inflation rates also be taken into consideration in case of price decrease. Considering the imprecise definition of the reference value, the European Commission and the European Central Bank have a certain degree of discretion when deciding on which Member States have the best price stability performance, which directly affects the decision on which Member States fulfil that criterion. Moreover, the minimum level of the reference value has not been defined as well; for instance, it could have been set equal to the medium-term inflation target of the European Central Bank, defined as a level lower than, but close to 2%.

According to the criterion of sustainability of public finances, the general government deficit to GDP ratio should not exceed 3%, while the general government debt to GDP ratio has to be lower than 60%, or, if it exceeds that value, it has to be reduced at a satisfactory pace. In other words, in order for a Member State to fulfil the public finances criterion, it must not be the subject of the Excessive Deficit Procedure. The purpose of the excessive deficit and debt criterion derives from the fact that, in case of absence of fiscal transfers within the EMU, the national fiscal policy constitutes a key instrument in maintaining macroeconomic stability. Under the EU's legal framework, a Member State can meet the fiscal criterion even if its debt surpasses 60% of the GDP, provided that the debt is being reduced at a satisfactory pace.[76]

In order to meet the exchange rate stability criterion, a Member State should participate in the Exchange Rate Mechanism II for a minimum of two years, during which there should be no devaluation of the central parity and no significant oscillations of the exchange rate around the central parity. By

75 As indicated by Bukowski (2006), Germany particularly insisted on the inclusion of price stability in the convergence criteria, due to concerns that the future European Central Bank might tolerate elevated inflation under the influence of several Member States that have historically been known to accept relatively high inflation rates.

76 Satisfactory pace is defined as a decrease of the difference between the initial debt level and the reference value of 60% of GDP of 1/20th annually on average over three years.

successfully participating in the ERM II, a country confirms that it is able to function in the conditions of a stable exchange rate against the euro. In order for a country's participation in the ERM II to be assessed as successful, it must maintain the nominal exchange rate of the national currency within the standard fluctuation band of ±15% around the central parity vis-à-vis the euro. States participating in the mechanism should, as a rule, maintain their exchange rates near the central parity despite wide fluctuation margins. In practice, there were cases of certain asymmetries in the treatment of nominal exchange rate deviations relative to the central parity. Exchange rate fluctuation near the upper bound of the range (depreciation) was considered problematic, while the fluctuation near the lower bound (appreciation) was tolerated. Furthermore, during their participation in the ERM II, Member States should not carry out competitive devaluations of the central parity against the euro. If a Member State nevertheless chooses to perform currency devaluation, the course of participation in the mechanism is interrupted and a new two-year period begins. Revaluation of the central parity is allowed in agreement with other euro area Member States, ERM II participants and EU institutions and does not lead to extended duration of the ERM II participation.

The long-term interest rate criterion requires the yield on long-term government bonds issued in the national currency to remain below the reference value equalling the average of yields on bonds of three best performing Member States in terms of price stability increased by 2 percentage points. This criterion has been set because the interest rate paid by the government on public debt reflects how financial markets value its macroeconomic fundamentals and its achieved degree of nominal convergence.

EU institutions assess the sustainability of achieved convergence as well. When assessing convergence criteria, the European Commission and the European Central Bank are not solely focused on the reference period (two years for the exchange rate stability criterion and 12 months for all other criteria), but rather observe the same criteria in the long-term (mostly ten years). They also observe other important factors relevant for the economic integration and convergence. Based on such analysis, a conclusion is reached on whether the convergence is a result of structural progress or temporary cyclical factors.

4.2.2 Croatia's performance according to nominal convergence criteria so far

In the pre-crisis period (until 2008), Croatia mainly fulfilled nominal convergence criteria, with minor cases of exceeded reference values related to price stability and budget deficit criteria. In the period before the onset of the global financial crisis, Croatia reported somewhat higher inflation rates than old EU Member States, which is why it exceeded the reference value for the price stability criterion in certain years (Table 5). Higher inflation rates were primarily a result of a surge in administrative prices in Croatia and the global developments in the prices of food and energy, whose share in the CPI basket for Croatia is higher than in the more developed Member States. In some years, Croatia recorded an excessive budget deficit, and in others, the budget deficit was close to the ceiling of 3% of GDP. This points to the procyclicality of fiscal policy in the pre-crisis period. There was therefore no adequate fiscal space after the onset of the crisis for the fiscal policy to alleviate the recession. Indicators for other nominal convergence criteria

Table 5 Croatia's performance according to convergence criteria reference values so far

	Price stability, inflation, in %	Long-term interest rates, in %	Exchange rate stability, fluctuation range**, in %	Budget deficit, as % of GDP	Public debt, as % of GDP
	Estimated* reference value is stated in brackets	Estimated reference value is stated in brackets	Reference value: ± 15%	Reference value: 3% of GDP	Reference value: 60% of GDP
2005	3.0 (2.5)	4.4 (5.4)	2.9	3.9	41.3
2006	3.3 (2.9)	4.4 (6.2)	2.6	3.4	38.9
2007	2.7 (2.8)	4.9 (6.4)	1.3	2.4	37.7
2008	5.8 (4.1)	6.0 (6.2)	2.2	2.8	39.6
2009	2.2 (1.1)	7.8 (6.0)	2.7	6.0	49.0
2010	1.1 (1.6)	6.3 (7.7)	2.2	6.2	58.3
2011	2.2 (3.1)	6.5 (7.7)	2.4	7.8	65.2
2012	3.4 (3.1)	6.1 (5.1)	1.6	5.3	70.7
2013	2.3 (1.8)	4.7 (6.0)	1.7	5.3	82.2
2014	0.2 (1.3)	4.1 (4.8)	1.6	5.4	86.6
2015	–0.3 (0.8)	3.6 (3.9)	1.3	3.3	86.3
2016	–0.6 (1.0)	3.5 (3.8)	1.7	0.8	83.7

* In line with European Commission practice, Member States in which deflation was significantly stronger than in others were excluded from the calculation of the reference value.
** Fluctuation of the nominal exchange rate of the kuna against the euro relative to the average value over a two-year period.
Sources: Eurostat and CNB.

moved within reference values in the pre-crisis period. General government debt expressed as a percentage of GDP declined until the second half of 2008 against the backdrop of high nominal GDP growth. Long-term interest rates were lower than reference values, reflecting the investors' optimism regarding the strong economic growth in Croatia, even though this cyclical upturn was coupled with accumulation of macroeconomic imbalances. Finally, owing to the managed floating exchange rate regime implemented by the CNB, which is compatible with the ERM II, the exchange rate fluctuated within a very narrow band.

In the period after the crisis, fiscal criteria pose the greatest problem. The long recession which began after the global crisis intensified resulted in a considerable deterioration of the budget balance. The six-year recession with an average annual budget deficit of 6% of GDP led to soaring public debt (Table 5). The rise in public debt was additionally affected by the restructuring of shipyards and the assumption of their debts by the government, as well as by changes in methodology due to which the liabilities of some highly-indebted public enterprises were classified as general government debt.[77] Due to unfavourable fiscal indicators, the Excessive Deficit Procedure was invoked for Croatia in January 2014.[78] Deep recession and an increase in fiscal imbalances in Croatia as well as a general risk aversion of international investors resulted in a significant rise in the yield on the long-term government bond. Against such backdrop, Croatia exceeded the estimated reference value for the long-term interest rate criterion in 2009 and 2012. Still, the easing of the financial crisis in the euro area since mid-2012 and the pursuit of extremely expansionary policies

77 For more details on the effects of changes in methodology, see Bulletin, No. 209 (CNB, 2014).

78 The Excessive Deficit Procedure was invoked both on account of the budget deficit criterion and the public debt criterion. According to the Recommendation of the EU Council, Croatia was obliged to bring the excessive deficit situation to an end by 2016.

of key global central banks had a positive effect on financing conditions, resulting in Croatia meeting the long-term interest rate criterion since 2013. However, since the drop in the yield was primarily a result of favourable global liquidity conditions and very low inflation, interest rates on Croatian public debt may rise again once the global financing conditions tighten and deflationary pressures ease. The Government will therefore continue to implement fiscal consolidation measures to help Croatia gain investors' trust, thus allowing it to borrow under favourable conditions even after the price of capital on global financial markets rises.

The progress achieved in the consolidation of public finances increases the odds for Croatia to fully meet the convergence criteria in the near future. Economic recovery recorded since the end of 2014 and fiscal consolidation measures have contributed to the reduction of budget deficit and the stabilisation of public debt. After a contraction in economic activity which lasted for six consecutive years, Croatia has been continuously recording positive rates of real growth since the last quarter of 2014. The strengthening of economic activity has had a positive effect on fiscal revenues and the budget balance and resulted in an increase in nominal GDP. The recovery of growth and consolidation measures of fiscal policy led to a significant reduction of fiscal imbalances and the fulfilment of the Recommendation with a view to bringing an end to the situation of an excessive government deficit in Croatia, causing the Excessive Deficit Procedure to be abrogated in June 2017. Assuming that the economic recovery continues and provided that the Government persists in the pursuit of fiscal policy in line with fiscal rules, Croatia should meet the criterion of sustainability of public finances in the upcoming period. As explained earlier, this criterion requires the general government debt to be below 60% of GDP, or, if it exceeds that level, the difference between the initial debt level and 60% of GDP has to decline, on average, by 1/20th annually over a period of three years. Considering that the general government debt stood at 86.3% of GDP at end-2015, in the following three years it should go down, on average, by 1.3% of GDP annually in order for the pace of debt reduction to be assessed as satisfactory. In 2016, the general government debt dropped by 2.6 percentage points of GDP, and Government projections assume its downward trend will continue.

4.3 Legal convergence

The alignment of national legislation of the Member State, including the statute of its central bank, with the Treaty on European Union, the Treaty on the Functioning of the European Union and the Statute of the ESCB and of the ECB are a prerequisite for full membership in the Economic and Monetary Union. The assessment of the alignment of legislation refers primarily to the issue of national central bank independence, prohibition of monetary financing and the privileged access of the public sector to financial institutions and the legal integration of national central banks in the Eurosystem.

Central bank independence is a key prerequisite for the successful and credible pursuit of monetary policy, enabling the central bank to achieve its main objective – price stability. Central bank independence comprises several aspects: functional, institutional, personal and financial independence. Functional independence implies a clearly defined central bank objective and independence in

the choice of measures and instruments used to attain it. Institutional independence means that the central bank takes decisions irrespective of the influence of other institutions. Specifically, Article 130 of the Treaty on the Functioning of the European Union (TFEU) prohibits central banks and the members of its decision-making bodies to seek or take instructions from Union institutions and bodies, national governments of Member States or any other body. In the same way, these institutions, governments and bodies as well as central and other government levels of Member States undertook not to seek to influence members of central bank bodies in the performance of their tasks. Furthermore, personal independence refers to the protection of central bank officials from external pressures, precisely defined requirements for the appointment and removal from office of governors and other members of decision-making bodies and the prevention of conflict of interest. Finally, the financial independence of the central bank implies the ability to autonomously manage sufficient financial assets necessary to achieve its objective and carry out its tasks.

In order to assess legal convergence, the implementation of EU rules concerning the prohibition of monetary financing and privileged access of the public sector to financial institutions is assessed as well, along with the legal integration of the national central bank in the Eurosystem. Article 123 of the TFEU prohibits national central banks to allow overdraft facilities or any other type of credit facility to governments and their bodies or EU institutions and bodies or to directly purchase debt instruments from them. Article 124 of the TFEU prohibits any measure not based on the principles of safe and sound operation which would allow the public sector privileged access to financial institutions. Finally, the commitment of legal integration of the national central bank in the Eurosystem is construed as the harmonisation of the national legislation and the statute of the central bank with the Treaties and the Statute of the ESCB and of the ECB in order to ensure that the objectives and tasks of the national central bank are aligned with the objectives and tasks of the ESCB.

During the negotiations and the preparations to join the European Union, Croatia passed the new Act on the Croatian National Bank in 2008[79] and amended the constitutional provision concerning the status and position of the Croatian National Bank in 2010. With these amendments, EU legal standards regarding central bank independence and objectives and monetary financing prohibition were, among other elements, transposed into Croatian legislation. The privileged access of the public sector to financial institutions was prohibited by amending the provisions of several laws. Amendments made to the Act on the Croatian National Bank in 2013[80] further harmonised Croatian legislation with the *acquis*. The aforementioned amendments harmonised the legal framework of the activities of Croatia's central bank with the Treaties and the Statute of the ESCB and of the ECB, meeting the prerequisites for the smooth functioning of the CNB within the ESCB. The Act on the Croatian National Bank also regulates the tasks and competences of the CNB after the introduction of the euro as the official currency in Croatia.

The current legal framework is in line with legal convergence requirements. In the latest convergence reports, published in June 2016, the European Commission[81]

79 Act on the Croatian National Bank (OG 75/2008).

80 Act on the Amendments to the Act on the Croatian National Bank (OG 54/2013).

81 European Commission (2016).

assessed that the legislation in the Republic of Croatia is fully harmonised with the Treaties and the Statute of the ESCB and the ECB, while the European Central Bank considers two minor amendments have to be made to the Act on the Croatian National Bank[82] in order to achieve full legislative alignment.

4.4 Receiving confirmation by EU institutions on the fulfilment of all requirements for the adoption of the euro

The process of euro adoption is finalised by the decisions of the EU Council on the fulfilment of criteria and the irrevocable fixing of the exchange rate. In its convergence report, the European Commission assesses whether all convergence criteria have been met. By fully meeting the convergence criteria, a Member State proves that it is able to achieve and maintain the macroeconomic stability necessary to efficiently function within the monetary union. If the Member State is assessed to have fully met the criteria, the European Commission issues a proposal to the EU Council to abrogate the derogation of the Member State. After consultations with the European Parliament and a discussion in the European Council, the EU Council has to adopt the decision on whether the Member State meets the conditions to introduce the euro by qualified majority voting within six months after the day the proposal is received. If the EU Council decides that the conditions have been met, it will, at the proposal of the European Commission and upon consulting with the ECB, unanimously[83] adopt the decision on the irrevocable fixing of the rate at which the national currency will be exchanged for the euro.

82 The European Central Bank (2016) considers that the Act on the Croatian National Bank should clearly state that EU institutions and bodies and governments of EU Member States should not seek to influence members of the CNB's bodies, and that the power of the CNB Council to decide on the membership of the CNB in international institutions and organisations does not interfere with the ECB's power to decide on the degree of participation of the ESCB in international cooperation.

83 Members of the EU Council from euro area Member States and the Member State introducing the euro participate in the process of adopting the decision.

5 Activities of the Government of the Republic of Croatia and the CNB in the period until the adoption of the euro

The period following the accession to the Exchange Rate Mechanism II will be marked by the preparations for the fastest possible adoption of the euro. The main focus will be placed on the pursuit of an economic policy aimed at reducing economic vulnerabilities and fulfilling the convergence criteria. In addition, preparatory actions necessary to introduce the euro as the national currency will be taken.

5.1 Implementation of economic policy with a view to reducing economic vulnerabilities and meeting convergence criteria

5.1.1 Implementation of economic policy with a view to reducing economic vulnerabilities

Fiscal policy and structural reforms will play a key role in maintaining macroeconomic stability in the upcoming period. Croatia emerged from a six years-long recession in 2015, and, with growing exports of goods, increased personal consumption, high revenues from tourism and the use of EU funds, it is continuously recording positive growth rates. Economic growth based on the aforementioned factors and the increase in investments is expected to continue, further stimulated by infrastructure projects financed by the EU funds. The emphasis of economic policy will be on the sound and responsible implementation of fiscal policy with the aim of balancing the budget and reducing public debt, thereby creating fiscal space for countercyclical action. Such a policy will also enable the fulfilment of convergence criteria relating to public finances. Fiscal policy will support low inflation and offset internal and external shocks with the aim to stabilise the business cycle. In addition, the Government's fiscal and structural policies will seek to stimulate the competitiveness of the economy by additionally reducing the tax and administrative burden of households and corporations. The Government will strengthen the independence of fiscal control and fully harmonise fiscal rules with the Stability and Growth Pact.

The Government is dedicated to achieving long-term sustainability of fiscal policy, as indicated in the Convergence Programme of the Republic of Croatia

for the Period 2017-2020[84]**.** The document unambiguously confirms the aim to reduce public debt and maintain a balanced general government budget. Reform efforts are planned to continue in the 2017-2020 period in order to support fiscal sustainability and strengthen the foundations for economic growth. The Government will be focused on creating a fiscal policy which will be directed at strengthening competitiveness, increasing the efficiency of the public sector and improving the quality of public finance management on both the revenue and the expenditure side of the budget. Special emphasis will be laid on ensuring the conditions for the long-term sustainability of the health care and pension systems.

Acceleration of fiscal consolidation is possible with faster economic growth. In that case, it is important to keep budget expenditures under control and abide by fiscal rules in order to avoid the widening of the structural budget deficit. Any revenues exceeding the planned amount will be used to improve the budget balance and reduce public debt. The Government's priority is to decrease the public debt-to-GDP ratio by more than 10 percentage points by 2020; in the period without negative economic shocks, the Government intends to reduce the public debt at an even faster pace than initially planned.

The public debt management strategy[85] **includes plans to increase new issues in the domestic currency.** Public debt instruments are primarily issued on the domestic markets, but three quarters of their total amount concern liabilities indexed to the euro. By issuing debt in the domestic currency in the upcoming period, the Government seeks to reduce the exposure of public finances to currency risk and facilitate the fulfilment of the long-term interest rate criterion, considering that yields on government bonds issued in the domestic currency are observed when assessing this criterion. Interest rate risk poses no significant problem with regard to public debt as 86% of long-term liabilities have fixed interest rates. Since maturity is taken into account when issuing public debt, the average maturity of public debt in Croatia is over five years, decreasing the risk of its refinancing.

The Government has contributed to the rise in personal consumption and investment by introducing a tax reform in 2017. The reform was focused on reducing the total tax burden and increasing the competitiveness of the economy by simplifying and reducing the cost of tax administration, taking into account social justice. The changes will ensure a stable, sustainable and simple tax system (widening of the tax base, battling shadow economy, abolishing non-competitive tax expenditures). In addition, proposed changes increase the degree of tax payers' legal security.

The Government is implementing structural reforms to boost competitiveness. The reforms are implemented in line with the recommendations of the EU Council issued in the context of the European Semester and are directed at reducing macroeconomic imbalances, achieving sustainable economic growth and creating new jobs. By structural measures described in the National Reform Programme[86], the Government seeks to stimulate growth in the productivity of the economy in order to ensure sustainable real convergence. In the upcoming period, an important element of economic policy will be the wage policy which will ensure the alignment of the rise

84 The Government of the Republic of Croatia (2017a).

85 The Ministry of Finance of the Republic of Croatia (2017).

86 The Government of the Republic of Croatia (2017b).

in wages in the public sector with the productivity growth in the economy. In order to increase the efficiency of civil servants, a new reward and promotion system based on work performance will be introduced.

Rise in labour productivity is stimulated through measures aimed at increasing labour market flexibility. When competitiveness cannot be increased by the exchange rate, it is necessary to ensure labour market flexibility, which implies greater labour force mobility. Unemployment in Croatia is mainly of structural nature, which makes it particularly pronounced in areas with low economic activity, and with a high level of long-term unemployment that stems from the mismatch between the knowledge and skills of unemployed persons and the needs of the labour market. Bearing in mind the gravity and the duration of the recession, a share of unemployment is likely to be of cyclical nature, while the seasonal character of tourism affects oscillations in unemployment over the course of a year. In order to reduce unemployment, in March 2017 the Government adopted a package of nine measures of active employment policy with a focus on, among other things, employment, training and self-employment subsidies, as well as on the education of unemployed persons and training at workplace. Furthermore, in order to increase the efficiency of labour market institutions, primarily of the Croatian Employment Service, work with long-term unemployed persons was improved, new forms of advising were introduced to enhance motivation for employment acceptance, categorisation of long-term unemployed persons was improved in order to direct activities aimed at employment more adequately and education of advisors is continuously carried out. Efforts will also be directed at raising the quality of the adult education system, primarily by introducing new legislation to improve the adult education system in the area of establishing and organising adult education institutions. Measures which address the problem of the misalignment of education programmes with labour market needs are also implemented. Accordingly, it will be possible to abolish programmes that are irrelevant for the labour market in the future, for which there was no legal grounds earlier.

The recent reform of labour legislation contributed to the decrease in labour market rigidity. By passing the new Labour Act in 2014[87], the rigidity of the labour market was reduced, which was considered one of the hurdles to doing business in Croatia. The Act aims to increase employment and internal mobility of workers, enable more flexible business operations and reduce labour costs, stimulate more efficient and faster restructuring of employers and prevent unregistered work. The new legislative framework has amended provisions on the organisation of working hours, supporting the internal flexibility of the employers' organisation of work and stimulating part-time employment and new employment in general, particularly that of young people. Furthermore, the new law helps relieve the burden on labour courts and reduce expenses associated with long-lasting judicial procedures, simplifies and accelerates procedures of collective dismissal of workers to enable employers to adjust to changed market and operating conditions and enables the organisation of strike in case of non-payment of wages immediately after the due date of wage payment passes. The Employment Protection Legislation (EPL) index for Croatia, according to which the labour legislation was previously very rigid, was reduced by the aforementioned reform and is now close to the average of other EU Member

87 Labour Act (OG 93/2014).

States.[88] The fiscal and social sustainability of the pension system will be improved by stimulating the longer participation of workers in the labour market and discouraging early retirement.

Structural policies may provide additional momentum to economic growth. The Government is preparing a comprehensive reform of the education system with the intention of aligning the knowledge and skills of workers with labour market needs. This will contribute to the creation of knowledge society with an emphasis on science and technology.[89] Investment in research and development is relatively low in Croatia (0.85% of GDP compared with an average of 2.03% of GDP in the EU), and the aim is to reach 1.4% of GDP by 2020. Special attention will be given to the continuous improvement of the business environment in Croatia, including legal security, which primarily refers to the implementation of measures to reduce the administrative burden and to the broader application of standard cost model methodology (SCM)[90], the reduction of non-tax levies, consolidation of inspection services, strengthening of the regulation impact assessment system, the systematic improvement of regulation quality by introducing the small and medium-sized enterprises test (SME test)[91] and the simplification and digitalisation of public procurement. Furthermore, the duration of judicial procedures will be reduced and the number of unsolved cases will be decreased by easing the burden on courts; measures aimed at improving the organisation of work, managing judicial bodies and improving professional conduct in the judiciary will also be taken. The Government will reduce its shares in the corporate sector following the Plan for the Management of State-Owned Enterprises.

5.1.2 Making efforts to meet nominal convergence criteria

In the period after joining the Exchange Rate Mechanism II, the Government and the CNB will make efforts to ensure that convergence criteria are met as soon as possible. Monetary and fiscal policies will be pursued in line with EU rules in a manner consistent with the objective of meeting nominal convergence criteria. The Government will be in charge of stabilising public finances, while the CNB will, with the Government's support, be responsible for maintaining price and exchange rate stability. By stabilising public finances and maintaining exchange rate and price stability, conditions will be met to fulfil also the long-term interest rate criterion.

The Government is fully committed to abiding by fiscal rules and reducing public debt. High public debt is currently a significant source of economic vulnerability, and fiscal consolidation increases the odds for Croatia to meet the

88 Key measures that have contributed to the decrease in the aforementioned indicator are: the simplification and acceleration of the dismissal procedure, amendments to the principle of the suspension of period of notice, reduction in the number of categories of workers that are protected from dismissal, changes to the amount of compensation for damages in case of judicial termination of employment and the simplification and acceleration of the collective redundancy process. For more details, see CNB (2014), Bulletin, No. 209, Box 2 Reform of the Labour Act and labour market flexibility in Croatia.

89 STEM (science, technology, engineering, mathematics).

90 Odluka o proširenju primjene Standard Cost Model (SCM) za mjerenje i ciljano smanjenje administrativnog opterećenja gospodarstva (NN, br. 60/2017.) (Decision on the broader application of the Standard Cost Model (SCM) methodology for the measurement and targeted reduction of the administrative burden on the economy (OG 60/2017)).

91 Uredba o provedbi postupka procjene učinaka propisa na malo gospodarstvo (Test malog i srednjeg poduzetništva) (NN, br. 43/2017.) (Regulation on conducting the assessment of regulation impact on small business (SME test) (OG 43/2017)).

public finances sustainability criterion in the near future. Medium-term budget plans confirm the Government's intention to continue with positive trends in the fiscal sphere in the upcoming period.

The CNB will continue to focus on maintaining exchange rate and price stability. After joining the ERM II, the central bank will be in charge of maintaining the exchange rate within the set fluctuation band. Taking into account the compatibility of the current exchange rate regime with ERM II and the historical stability of the kuna, the CNB is expected to maintain the nominal exchange rate of the kuna near the central parity against the euro without much difficulty. The improvement of the current account balance and the decrease of high external debt, which is expected to continue over the following years, will facilitate the maintenance of a stable exchange rate. By pursuing a stable exchange rate policy, the CNB will, as it has until now, safeguard price stability as well.

The Government will contribute to the maintenance of low inflation and a stable exchange rate. After Croatia joins the ERM II, the Government will avoid increasing indirect taxes and administrative prices as such measures directly affect the rise in the overall price level. By implementing a fiscal policy in line with fiscal rules, the Government will contribute to the balanced growth of the Croatian economy. By addressing fiscal imbalances the Government will enhance the country's credibility and permanently ensure favourable access to foreign capital, which will support exchange rate stability and lower the cost of borrowing for the government and other domestic sectors. The consolidation of public finances will increase the odds for meeting the long-term interest rate criterion.

5.2 Application of additional rules and agreements of euro area Member States

In order to improve and strengthen the Economic and Monetary Union, Member States that have introduced the euro intensified their economic integration by raising a part of national competences to a common level. The most significant changes currently concern additional rules and the stronger coordination within the economic governance framework and the establishment of a banking union. Even though they were established in order to complete the Economic and Monetary Union and apply to the euro area, they are open for all EU Member States. Countries that intend to adopt the euro have to join the agreements by the date the euro is introduced at the latest, which implies that preparations have to be made beforehand.

5.2.1 Rules of the European economic governance framework applicable to the euro area

Following the outbreak of the global financial crisis, which jeopardised the functioning of the monetary union itself, EU Member States improved mechanisms of economic policy coordination to ensure greater resilience of the EU economy in the future. The European Semester mechanism was established in order to improve the monitoring of economic developments and encourage responsible economic policies in Member States. The recently introduced

Macroeconomic Imbalance Procedure, constituting a part of the European Semester, helps monitor the development of internal and external imbalances in Member States and motivates national authorities to implement measures to remove the causes of such imbalances (*see 4.1.1.3 Presence of macroeconomic imbalances*).[92] If, during the Procedure, it is established that excessive imbalances exist in a certain Member State, the EU Council issues recommendations to reduce imbalances, and in case the state fails to act according to the recommendations, monetary sanctions may ensue. The coordination of economic policies was additionally strengthened by the amendments to the Stability and Growth Pact, with the public debt criterion being attributed equal attention as the budget deficit criterion, in contrast to earlier arrangements.

In order to improve the architecture of the Economic and Monetary Union, and taking into account that they are already faced with significant macroeconomic interdependence, euro area Member States have agreed on additional procedures and rules. The rules have been laid down in the multilateral Treaty on Stability, Coordination and Governance in the Economic and Monetary Union[93]. The provisions of the Treaty apply to Member States that have introduced the euro, while Member States outside the euro area are allowed to sign it and apply all or a part of the provisions it comprises. Only three EU Member States have not signed the Treaty yet: the Czech Republic, Croatia[94] and the United Kingdom. The Treaty consists of three parts, and signatory Member States outside the euro area may decide which part to apply.

The part of the Treaty entitled Fiscal Compact defines fiscal criteria more strictly than the Stability and Growth Pact. Room for budget deficits was reduced by requiring signatory states to define their medium-term objectives for fiscal deficit at a level up to 1% of GDP for countries with a public debt lower than 60% of GDP or 0.5% of GDP for those with higher debt.[95] National fiscal rules have to be more strictly regulated by national legislation. Financial sanctions in the amount of 0.1% of GDP are envisaged for signatories that do not comply with the recommendations related to the correction of excessive deficit. Better coordination of fiscal policies is planned as well. This primarily refers to consultations with the European Commission with regard to national budget drafts prior to their adoption in order to ensure their alignment with fiscal rules. Mandatory notification of the European Commission on the plans to issue public debt is also required.

The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union also envisages a higher degree of coordination of macroeconomic and structural policies, particularly those with cross-border effects. This primarily refers to the coordination of reforms for the increase in competitiveness, public finances and financial stability. All Member States have committed to put in joint efforts to improve the functioning of the European and Monetary Union and contribute to economic growth through increased convergence and competitiveness.

92 Brkić and Šabić (2014).

93 Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (D/12/2, European Commission, Brussels).

94 Since Croatia was not a member of the EU when the Treaty on Stability, Coordination and Governance in the EMU was signed, it could not sign it along with other Member States.

95 To compare, Croatia's medium-term objective for fiscal deficit is 1.75% of GDP, the highest among EU Member States.

Prior to euro adoption, Croatia will have to sign and ratify the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union in full, and define fiscal rules more strictly. Its provisions enable additional Member States to sign the Treaty without the need for ratification in all signatory Member States.

5.2.2 Accession to the banking union

The European Union adopted common rules and established the banking union in order to prevent potential problems in the balance sheets of banks from negatively affecting public finances and vice versa.[96] The banking union consists of a centralised system of bank supervision (Single Supervisory Mechanism, SSM) and a common system of bank resolution (Single Resolution Mechanism, SRM). A common system of deposit insurance is planned (EDIS) and currently negotiated, but the slow progress in laying down its legal foundations reflects the reluctance of certain Member States to participate in this form of solidary risk sharing. The banking union consists of euro area Member States and is open to Member States that have not introduced the euro yet.[97]

Croatia will become a member of the banking union when it introduces the euro at the latest. Joining the banking union calls for practical preparations for the participation in the single supervisory and resolution mechanisms. In terms of harmonisation with the *acquis* that concerns the banking union and applies to all EU Member States, Croatia has already transposed relevant legal provisions in its national legislation.

By participating in the banking union, Croatia will join the Single Supervisory Mechanism, within which the ECB will assume direct supervision over significant banks in Croatia. The ECB as the supranational supervisory body exercises direct supervision over large, systemically important banks, which implies three most significant banks at a minimum in every Member State of the banking union. Member States, i.e. their national competent authorities for bank supervision, continue to exercise direct supervision over the remaining, less significant banks. While exercising supervision over systemically important banks, the ECB relies on the support of national competent authorities, which are provided with instructions on exercising supervisory activity. The ECB reserves the right to, at any moment, at its own initiative or the initiative of the competent body, directly assume the competence for the supervision of one or several banks in the Member State.

Croatia may join the banking union prior to introducing the euro. Joining the SSM is allowed to Member States whose currency is not the euro if they decide to establish the close cooperation mechanism with the ECB. The close cooperation mechanism is established by a decision of the ECB based on a request that the

96 The banking union was established in response to the crisis faced by the EU's financial sector after 2008 and the market fragmentation which, among other factors, hampered the transmission of ECB monetary policy in the euro area. Although it is still being developed, the banking union serves as a complement to the monetary union. By transitioning from decentralised bank supervision and resolution at Member State level to common rules and mechanisms at euro area level, the total resilience of the financial system is improved and financial stability is strengthened. Full monetary integration will be reached when full mobility of deposits between Member States is achieved within the banking union.

97 No state outside the euro area has joined the banking union yet.

Member State has to submit at least five months before the planned date of joining the SSM. Before submitting its request, the Member State has to adopt national legislation which lay down mandatory cooperation with the ECB in the context of the SSM. This legally binds the national competent authority and the body appointed for managing the deposit insurance system to fully and timely implement the decisions of the ECB pertaining to the areas of its competence.

Furthermore, prior to participating in the banking union, Croatia will have to submit to the ECB all information on the subjects of its supervision that the ECB may demand for the purpose of their comprehensive assessment. The ECB lays great importance on the comprehensive assessment of credit institutions, including the assessment of balance sheets it needs to perform prior to assuming its tasks.[98] In this way, the ECB aims to identify potential problems in the banking sector on time and apply adequate corrective measures, enhance the transparency and quality of available information on the condition of banks and, finally, contribute to an increase of trust in bank safety. Comprehensive assessment is usually performed by inspecting the quality of banks' assets and testing the banks' resilience to shocks. The ECB is expected to require the performance of a comprehensive assessment of banks in Croatia before Croatia joins the SSM; however, this will not be a novelty to banks in Croatia. In 2014, the CNB carried out an assessment of asset quality of significant banks in Croatia in line with the recommendations of the ECB and the European Banking Authority simultaneously with the comprehensive assessment of all significant banks in the euro area.[99]

Croatia applies new EU rules for bank recovery and resolution, and by introducing the euro, the rules and procedures of the Single Resolution Mechanism will apply. The purpose of the new rules is to prevent the state having to bear the cost of bank resolution instead of the banks' owners and creditors. The Single Resolution Fund (SRF) was established at banking union level in order to finance bank resolution costs. Bank contributions are paid to the SRF gradually, over a transitional period until 2024, and its target value amounts to at least 1% of the value of deposits of all banks in the SSM.[100]

By joining the banking union, Croatia will begin paying bank contributions to the SRF. The rules of the banking union require the payment of bank contributions to the SRF to be performed through the agency of a national fund. In line with the Act on the Resolution of Credit Institutions and Investment Firms, Croatia established a national resolution fund managed by the State Agency for Deposit Insurance and Bank Resolution (DAB). All banks in Croatia pay a contribution to the national resolution fund, and the transfer of assets to the European SRF will commence after Croatia enters the banking union.

98 Comprehensive assessment is a regular activity through which the ECB, in cooperation with the Member States, assesses the financial soundness of significant banks in the SSM system on a regular or *ad hoc* basis. The assessment consists of an analysis of their financial indicators, business models and risk management.

99 The ECB carried out its last comprehensive assessment of the condition of significant euro area banks in 2014, by which a significant step was made to the finalisation of the SSM (ECB, 2014). In the same year, the CNB conducted an assessment of asset quality of certain banks in Croatia in line with the recommendations of the ECB and the EBA, confirming a high rate of capital adequacy of the banks included in the assessment and the system as a whole (CNB, 2014).

100 The SRF is estimated to have the value of around EUR 55bn.

5.3 Operational adjustments of the CNB related to joining the Eurosystem

The CNB will use the period prior to the adoption of the euro to prepare for membership in the Eurosystem. In addition to internal adjustments, a part of these adjustments will affect other economic operators in Croatia, primarily through payment operations and the changeover to the euro.

5.3.1 Adjustment of monetary policy instruments

By joining the Eurosystem, monetary policy instruments used by the CNB will cease to apply, and will be replaced by the monetary policy instruments of the Eurosystem.[101] This could lead to an increase in banks' free reserves in Croatia owing to a significant reduction of the reserve requirement and the abolishing of the minimum required amount of foreign currency claims[102]. Furthermore, the availability of central bank liquidity sources will increase, whereby interest rates will be changed and the eligible collateral list extended.

The Eurosystem and the CNB share an essentially similar framework for monetary policy implementation which includes open market operations and standing facilities. Considering there are no significant differences in the use of standing facilities and the types of open market operations and the manner they are conducted, the adjustment will be simple.

The differences between the two systems exist in the part relating to eligible collateral for central bank credit operations. By introducing the euro, the list of eligible collateral for monetary operations in Croatia will be considerably extended: in addition to debt securities of issuers from Croatia, they will also include debt securities and asset-backed securities of issuers from the European Economic Area as well as non-negotiable assets (credit claims, mortgage debt instruments) of debtors from the euro area, to which, depending on a series of other criteria, various corrective factors will apply.

The most significant differences between the Eurosystem and the CNB currently concern the reserve requirement system. The base for the reserve requirement calculation in Croatia is calculated as the average daily amount in one calendar month, while the base for the calculation of minimum reserve requirements in the euro area equals the amount on the last day of the month. The base for reserve requirement calculation is much widely defined in Croatia, and a higher reserve requirement rate is currently applied (12% versus 1% in the euro area). Moreover, Croatia currently applies differentiated reserve requirement calculation depending on the currency of the source of financing and a different manner of settling the obligation, which is a result of a different role of the reserve requirement in the CNB compared with the role of minimum reserves in the Eurosystem. In order to curb potential negative effects of a sudden increase in banking system liquidity stemming from a significant decrease of reserve requirements, the CNB can gradually adjust to the minimum reserve system applied in the Eurosystem prior to joining, or, if necessary, activate macroprudential policy measures.

101 Guideline (EU) 2015/510 of the European Central Bank of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60) (recast).

102 In case of a risk of excessive credit growth caused by excessive liquidity, appropriate instruments will be applied in order to ensure the gradual release of liquidity.

By joining the Eurosystem, the measure of maintaining minimum foreign currency claims will be abolished. However, since foreign currency liabilities and claims of banks in Croatia are mainly in euro, the measure will lose its purpose once the euro becomes the domestic currency.

5.3.2 Adjustments in cash transactions

Adjustments in cash transactions will be the most difficult logistic task related to the adoption of the euro. The national plan for the changeover to the euro will describe the planning and the production of euro banknotes and coins in detail, as well as the frontloading of credit institutions, the sub-frontloading of other institutions with euro banknotes and coins and the withdrawal of kuna coins and banknotes. A part of activities will be laid down in a special law. The experience with using euro cash in Croatia prior to the introduction of the euro will facilitate the changeover to the euro.

The volumes of euro banknotes and coins necessary to exchange kuna for euro have to be planned as early as two years ahead of the actual introduction of the common currency. Planned banknote volumes are borrowed from the Eurosystem, which implies a contractual relationship between the CNB and one of the national central banks of the Eurosystem. Planned initial amounts of coins needed for exchange will have to be commissioned from a mint qualified to produce euro coins. Each Member State that has introduced the euro uses the reverse (national) side of circulation coins in all denominations to present a national design of their own choice.

The frontloading of credit institutions with euro banknotes and coins, which will be conducted by the CNB, is an important activity in the context of introducing the euro. Credit institutions will play a key role in the direct exchange of cash. The entire process of frontloading of credit institutions will be governed by an agreement between credit institutions and the CNB. On the day the euro is introduced, credit institutions will release into circulation the euro banknotes and coins received during frontloading. The ATM network in Croatia will be adjusted to dispense Croatian kuna until the day of the introduction of the euro and to begin dispensing euro on the day it is introduced.

Sub-frontloading refers to the distribution by which credit institutions supply, in advance, third parties (retailers and businesses) with the required volumes of euro banknotes and coins.[103] The supply of the general public with euro coins containing national reverse sides begins a month ahead of the day of euro adoption through a model of selling starter kits. Starter kits contain several euro coins for each denomination, all displaying new national sides.

The entire planning process necessarily involves ensuring adequate capacities for cash storage, both in the CNB vaults and in the vaults of commercial banks. The withdrawal of the kuna will have to be initiated in the period immediately preceding euro adoption by optimising kuna supplies in cash centres and credit

103 OJ L 2017/39, 28.7.2006, Guideline of the European Central Bank of 14 July 2006 on certain preparations for the euro cash changeover and on frontloading and sub-frontloading of euro banknotes and coins outside the euro area (ECB/2006/9), Chapter IV, p. 28.

institutions' vaults. The dual circulation period and the respective periods for the exchange of kuna for euro in credit institutions and the Croatian National Bank will be legally defined. In the period preceding euro adoption it is necessary to contractually arrange the transport, security and the disposal and destruction of withdrawn kuna banknotes and coins. Finally, in the periods preceding and following the introduction of the euro, it is necessary to perform educational activities to raise the awareness of professional cash handlers and the general public regarding the appearance of various denominations and the security features of euro banknotes and coins.

5.3.3 Adjustments in the payment system

As of the date of the adoption of the euro as the national currency in Croatia, all payment transactions performed via payment systems will be made exclusively in euro, and all the funds in the accounts of participants in the system for large value kuna payments will be converted into the euro. The converted euros will be transferred to the accounts of participants in the system for large value euro payments. By introducing the euro as the national currency, payment systems in kuna (the Croatian Large Value Payment System, CLVPS, and the National Clearing System, NCS) will discontinue their operation, while payment systems in euro (TARGET2-HR and EuroNCS) will continue to operate.

By establishing the system for large value payments in euro (TARGET2-HR), which was launched on 1 February 2016, infrastructure requirements for the settlement in euro have been fully met ahead of the adoption of the euro as the national currency in Croatia. The following types of payment transactions are currently executed through the aforementioned payment system: the settlement of final positions of direct participants in the payment system for the small value clearing in euro, a part of monetary operations (maintaining at least 2% of foreign currency reserve requirements by maintaining average daily balances in bank accounts) and other payment transactions between participants. After the introduction of the euro, all other types of payment transactions currently executed in kuna will migrate to the above mentioned payment system, notably all monetary operations and transactions for the purpose of supplying banks with cash.

By establishing the system for retail euro payments (EuroNCS), which was inaugurated on 6 June 2016, infrastructure requirements for the clearing of credit transfers in euro in line with the SEPA scheme rules have been fully met. Following euro adoption, credit transfers currently cleared via the retail kuna payment system will be cleared through this payment system, and direct debit clearing in line with the SEPA scheme rules will be enabled as well.

5.3.4 Financial adjustments due to the accession to the Eurosystem

On the euro adoption date, the CNB will pay up the outstanding amount of ECB's subscribed capital. All national central banks of EU Member States have to subscribe a share of the ECB's capital, whereby Eurosystem central banks pay up the entire amount of their share of ECB's subscribed capital, while the central banks of Member States that do not use the euro pay up only 3.75% of their share of subscribed capital. In accordance with that rule, when Croatia joined the EU, the CNB paid up

EUR 2.4m to the ECB's capital, and by adopting the euro, it will transfer the additional EUR 62.8m to the ECB in order to fully pay up its share of the subscribed capital, totalling EUR 65.2m.

Furthermore, by joining the Eurosystem, the national central bank has to allocate funds to the revaluation account for unrealised gains from assets, liabilities and off-balance-sheet instruments of the ECB and contribute to the provisions item. Funds allocated to the revaluation account do not originate from the ECB's realised profit, but from the contributions of Eurosystem national central banks. Assuming that the amount on the revaluation account of the ECB in the year preceding the adoption of the euro in Croatia remains the same as the one in 2016, the CNB would have to pay up a total of EUR 246.7m. In addition, the CNB will pay up a certain amount for provisions which may, under the same assumption, amount to EUR 65.2m. Provisions are used for the amortisation of unrealised losses that are not covered by the revaluation account and that result from the materialisation of exchange rate, interest rate and credit risks or the risk of a change in the price of gold.

By joining the Eurosystem, the CNB will transfer a part of its international reserves to the ECB according to the capital subscription key. The value of CNB international reserves transferred to the ECB is estimated around EUR 350m, which accounts for only 2.9% of the total value of international reserves. For the transferred part of the reserves, the ECB pays the national central banks a remuneration of 0.85% of the main refinancing operations rate. The CNB will continue to manage the component of net international reserves that is not transferred to the ECB in line with its own guidelines, as it has done before. The earnings from that component of the portfolio will belong to the CNB, and the application of ECB accounting standards and guidelines should allow for a more favourable distribution of the CNB's profit in the Croatian state budget.

In addition to the aforementioned one-off financial obligations, after the adoption of the euro, the CNB will be permanently required to transfer realised monetary income to the ECB, by which it will also acquire the right to participate in its distribution at the level of the Eurosystem. The total monetary income collected is reallocated to national central banks according to their shares in the subscribed capital at Eurosystem level, provided that the ECB did not record losses and decided to compensate them from the total monetary income collected (*see 3.1.6 Participation in the allocation of the Eurosystem's monetary income*).

Following the adoption of the euro in Croatia, ECB Guideline on the legal framework for accounting and financial reporting in the European System of Central Banks, Statute of the ESCB and of the ECB and the Act on the Croatian National Bank will become the fundamental regulatory framework for accounting and financial reporting in the CNB. The ECB Guideline[104] contains mandatory rules, mainly referring to items related to monetary policy, as well as recommended rules and requirements related to reporting. Accounting rules are mandatory for Eurosystem national central banks, but their purpose is limited to the accounting and reporting regime in the ESCB. In order to achieve consistency and comparability, national central banks are recommended to apply the rules indicated in the ECB Guideline to the greatest extent possible when compiling their national

104 Guideline (EU) 2016/2249 of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (recast).

reports and financial statements as well. The CNB's controlling function will apply the common Eurosystem-wide cost methodology in order to control incurred costs in line with the Eurosystem's list of functions. In this way, all central banks of the Eurosystem report incurred costs according to the same functions, as defined by the list.

5.4 Other adjustments in the context of euro adoption

5.4.1 Measures to prevent the rise in consumer prices due to currency conversion

The Government will establish adequate mechanisms of monitoring the conversion process in order to minimise possible abuse in the rounding of prices and the consequential unfounded rise in consumer prices. When introducing the euro, all amounts in kuna will be converted into euro following precise rounding rules, applying a fixed conversion rate and rounding prices to the nearest cent. According to a Eurobarometer survey, the greatest concern among citizens associated with the euro adoption is the possible unjustified increase in prices in case a part of businesses and retailers uses the adoption of the euro to increase the prices of goods and services. The Government will particularly pay attention to consumer protection and take necessary steps to prevent possible abuse.

Dual display of prices in both kuna and euro is a key measure used to protect citizens from potential unfair business practice in price conversion. In order to enable citizens to identify the unjustified rise in prices during conversion, businesses and points of sale will be required to display prices in both currencies during a period of several months, before and after the changeover to the euro. Price developments will be additionally carefully monitored during the transition to the euro, and the public will be regularly informed on the findings. The Government will include consumer protection associations in the price monitoring mechanism along with the competent government body. Ethical behaviour of businesses during price conversion will be stimulated by the Government through other mechanisms as well, e.g. through agreements that businesses may voluntarily join, binding them to fairly convert prices from kuna to euro. Businesses that sign the agreement will, in turn, acquire the right to use a logo recognisable to consumers. State administration bodies will supervise the implementation of legislation regarding price rounding, the application of the correct rate of conversion into the euro and the dual display of prices, and citizens will be able to report suspected breaches of legislation in a simple manner. Businesses that do not comply with legislation will face sanctions in terms of the public disclosure of their names and fines.

Details regarding the measures for the protection of citizens from an unjustified rise in prices will be subsequently provided in the National Euro Changeover Plan. Specified measures are expected to be efficient in avoiding an unjustified rise in prices, thus preventing the adoption of the euro from having a significant effect on the overall level of prices. Experiences of euro area Member States confirm that the protection mechanisms stated above are, as a rule, efficient in preventing a rise in prices during the conversion process (*see 3.2.2 Increase in the price level due to conversion*).

5.4.2 Legal, accounting and IT preparations

The Croatian legal framework will have to be adjusted to the new currency due to which the Government will propose the adoption of an Act on the Adoption of the Euro. By adopting the Act on the Adoption of the Euro, legal acts and recommendations of the EU that constitute the basis for euro use will be transposed into the national legislation. The umbrella law governing the conversion of the kuna to the euro will avoid the need to amend all existing laws in the provisions of which kuna is mentioned. The Act on the Adoption of the Euro will also define particular stages of euro adoption, such as the preparatory and transitional period, including the period of dual circulation, during which both currencies have the status of legal tender. In addition, obligations of public and private entities in the adjustment to the conversion will be defined. Finally, the Act will include provisions on the adherence to the principle of continuity of contracts and other legal instruments and consumer information and protection.

The adoption of the euro will not affect the validity of existing legal instruments, i.e. all contracts, financial instruments and other instruments having legal effect will continue to apply. In the process of the conversion of the national currency to the euro, the principle of continuity of contracts[105] has to be observed in order to contribute to legal safety and clarity. In line with the application of the aforementioned principle in Croatia, parts of contracts referring to the value in kuna will legally mean the value in euro, calculated according to the fixed conversion exchange rate. In that context, contracts and other legal instruments will continue to be valid and will not have to be individually amended in order to replace currency units in their provisions. In addition to contracts entered into by business entities, i.e. legal and natural persons entering a civil obligation by signing a contract, the principle of continuity will apply to other legal instruments as well, such as legal provisions, administrative acts, court decisions and other instruments with legal effects, including financial instruments.

Adjustments will be necessary in the accounting system as well, as after the date of the adoption of the euro, all financial statements will have to be reported in euro. The euro will thereby become a part of the new financial reporting standard used in financial statements, business books and other accounting documents. After the euro is introduced, financial statements compiled for previous reporting periods will be corrected by converting reported values from the kuna to the euro. Adjustments in the accounting of public finances will require the government budget and all other financial statements of all public authorities to be reported in euro.

Accounting adjustments will be accompanied by adjustments in the area of information technology, and all private and public entities will be responsible for the organisational and technical preparations of their IT systems prior to the adoption of the euro. In doing so, the above stated entities should ensure the smooth and continuous functioning of IT systems. Before the euro is introduced, public authorities will ensure the adjustment of the payment system, tax system and fiscalisation system, banking operations, pension and health care insurance and other systems the daily correct functioning of which is of public interest. In doing so, they

105 Council Regulation (EC) No 1103/97 of 17 June 1997 on certain provisions relating to the introduction of the euro; Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro; Council Regulation (EC) No 2169/2005 of 21 December 2005 amending Regulation (EC) No 974/98 on the introduction of the euro.

will inform the citizens, entrepreneurs and other entities on the recent changes in a timely and transparent manner. Adjustments include changes to relevant databases and forms, payment slips, invoices and all other electronic and material documents created in IT systems.

5.4.3 Adjustments in the area of statistics

By incorporating the Act on the Adoption of the Euro in the national legislation, legal and operational changes will be introduced into the official statistics system. As of the euro adoption date, in conducting statistical surveys in the context of which financial data is collected from subjects, the data will be reported in euro instead of kuna. Producers of official statistics will change reporting forms used when conducting statistical surveys in a timely manner.

Furthermore, adjustments will have to be made to the statistical IT infrastructure used for the collection, control and processing of data and the compilation of statistical reports in line with the valid national and international standards applied by respective producers of official statistics. Producers of official statistics will convert all historical series of statistical indicators reported in kuna into the new reporting currency, the euro.

As of the date of the adoption of euro, Croatia will be required to submit statistical data to the European Commission and the ECB that it is currently not required to submit. To explain, the rules of the European Commission and the ECB pertaining to statistics prescribe additional reporting requirements for euro area Member States and Member States that wish to introduce the euro. These requirements refer to the generation of data on a more detailed disaggregation level and/or data with shorter terms for submission, and in some cases, this includes the establishment of entirely new statistical surveys as well. Euro area Member States and EU Member States that have not introduced the common currency are mainly required to present data separately, which will result in the need to adjust many data collection systems. Two additional surveys will have to be introduced: a survey on the import prices of products, which requires the monitoring of changes in the prices of all products having certain standard features, and a new ECB survey (the so-called AnaCredit), for the introduction of which the Member States have been preparing for a long time, and which refers to the collection of very detailed statistical data on the credit debt of all legal entities in the EU (at the level of the individual commitment of the debtor, above a certain reporting threshold).

6 Guidelines for economic policy after the adoption of the euro

After the adoption of the euro and the loss of independent monetary policy, Croatia will retain important economic policy tools. The Government will continue to have at its disposal fiscal and structural policies, and the CNB will, in addition to participating in the formulation of ECB's common monetary policy, maintain a high level of independence in the implementation of macroprudential policy.

6.1 The importance of prudent fiscal and structural policies

After the adoption of the euro, the Government will continue to implement fiscal and structural policies with a view to increasing potential growth and competitiveness and ensuring macroeconomic stability. Policy makers will continue to concentrate on ensuring long-term sustainability of public finances and increasing the competitiveness of the domestic economy after the euro is adopted.

Stability of public finances constitutes the basis for sustainable economic growth and overall macroeconomic stability. One of the key determinants of the Government's economic policy is the fiscal consolidation based on the decrease of budget deficit and incentives to economic growth, which, among other factors, contributes to the drop in the public debt-to-GDP ratio. Fiscal policy will continue to lay emphasis on the strict control of budgetary spending and the use of any income in excess of the planned amount to further improve budget balance and reduce public debt. Focus on fiscal rules, particularly the provisions on the medium-term budgetary objective and the restrictions on expenditure growth, will contribute to the maintenance of long-term public finances sustainability. Besides making efforts to reduce risk in public finances, the Government will seek to boost the competitiveness of the economy through fiscal policy by further reducing the tax burden and non-tax levies.

General government budget plays an important stabilisation role during a business cycle, and its importance will be additionally increased following the adoption of the euro. In order to enable fiscal policy to have a stabilising effect on the economy, tax burden should be reduced and public consumption should be increased during periods of unfavourable economic developments. In contrast, during periods of economic expansion, fiscal policy should be restrictive or at least neutral in order to prevent excessive expansion in domestic demand and the

accumulation of macroeconomic imbalances. Fiscal policy in Croatia has mainly been procyclical thus far; i.e. it was expansionary during periods of economic growth and restrictive during recession (*see Figure 12 in Part 3.2.1*). In the future, the Government will pursue countercyclical fiscal policy which should contribute to a balanced growth of Croatian economy.

After the euro is introduced, a rise in relative costs will have to be prevented. In terms of labour costs, this means that the so-called relative unit labour costs[106] should not grow, i.e. that wages should change in line with productivity. Therefore, wage policy will be an important element of overall economic policy with the aim of preventing the rise in wages in the public sector from outweighing the growth in productivity in the economy. In addition to avoiding an unjustified growth in public consumption, this would reduce the risk of a spillover of excessive growth in wages to the real economy. However, one must note that, against the backdrop of free movement of workers in the EU, the dynamics of wages in the private sector are, in addition to domestic factors, to some extent affected by the cross-border mobility of workers that can lead to a deficit (surplus) of labour force in certain professions, and thus result in pressures on wage growth (drop).

Besides carrying out measures to strengthen price and cost competitiveness, it is important to put in effort with regard to the non-price competitiveness factors in the economy. To reduce the risk of accumulation of macroeconomic imbalances following the accession to the monetary union, it is necessary to strengthen the non-price (structural) competitiveness of the economy. Structural competitiveness is greatly a result of the quality of the business environment, human capital and investment in research and development and their impact on the level of innovation in the economy.

Accordingly, economic and development policy will be based on the improvement of the business environment, in which the private sector is the driver of economic development. The improvement of the business environment will contribute to the quality of public governance and public economic policies, creating long-term foundations for the improvement of the competitiveness of the Croatian economy in line with the relevant global methodologies. The consolidation of inspection services in the economy and the further reduction of administrative costs and non-tax levies will relieve entrepreneurs and craftsmen. Action will be taken with the aim of increasing institutional efficiency, which includes the simplification of rules and the acceleration of the operation of administrative bodies and courts. An increase in the efficiency of public administration will be achieved primarily by the efficient management of human resources and the revision of the remuneration policy system that will stimulate expertise and ensure remuneration based on the results of each employee's work. Continued pension and health care system reforms that will increase their long-term financial sustainability will also contribute to the improvement of the business environment by making room for reducing the burden on the economy, primarily in terms of the decrease of gross labour cost.

106 Unit labour costs are calculated as an average wage-to-labour productivity ratio.

6.2 The role of macroprudential policy in mitigating macroeconomic and financial risks

Following the adoption of the euro, the CNB will continue to be highly autonomous in the area of macroprudential policy, which will allow it to continue to directly affect bank behaviour. In the process of joining the EU, Croatia had to remove obstacles to the free movement of capital, removing the option of applying instruments to slow down capital inflows, and after euro is introduced, the CNB will not be able to make use of monetary policy instruments any more. Nevertheless, the CNB will continue to have at its disposal macroprudential policy instruments through which it will be able to affect the liquidity, capitalisation and credit activity of banks. After the global financial crisis, a series of new, stricter standards in the area of managing the capital and liquidity of financial institutions was established on a global level, which entered into force on 1 January 2014 in the EU. National supervisory authorities received new instruments that serve to increase the banks' resilience to shocks and decrease the undesired cyclical volatility of credit activity.

Although the new macroprudential instruments differ from those used successfully by the CNB in the past, they will help preserve the banks' capital and liquidity, contributing to the overall financial stability. Among the instruments intended for strengthening capital, additional capital buffers play a key role (capital conservation buffer, countercyclical capital buffer, structural systemic risk buffer and buffers for global and other systemically important credit institutions), as they directly increase the banks' resilience to losses. The CNB already applies some of the aforementioned buffers.[107] New liquidity management standards in the EU (the requirement for liquidity coverage and the net stable funding ratio) will ensure the continued high liquidity of banks even after the euro is introduced. Furthermore, it will be possible to put to use some of the instruments for the purpose of slowing down excessive credit growth. For instance, the CNB can increase the countercyclical capital buffer rate in order to curb credit growth. At the same time, the CNB can contain credit demand by imposing a limit on the loan-to-value (LTV) or debt service-to-income ratio (DSTI), which would reduce the maximum amount of loan that a client may be granted for a given value of collateral, i.e. income. Finally, the CNB may prescribe the maximum allowed amount of loan to domestic deposit ratio (LTD), which would bind banks to fund credit growth primarily from domestic sources and slow down their foreign borrowing.

Bearing in mind the CNB's experience thus far, it is likely that macroeconomic and financial risks will, as earlier, be addressed on time also after the euro is introduced. The CNB was one of the rare national regulators which had recognised the risk of excessive capital inflows and credit expansion even before the crisis broke out and which had applied adequate instruments to mitigate the risks.[108] Considering the CNB's experience in the area of macroprudential policy, it is likely that the central bank will continue to successfully respond to similar challenges after the euro is introduced.

107 Since the beginning of 2014, the CNB has applied the capital conservation buffer, structural systemic risk buffer and other systemically important institutions buffer. The countercyclical capital buffer has also been activated, but its rate currently stands at 0%.

108 See for example, Bokan et al. (2010), Galac (2011), Kraft and Galac (2011), Lim et al. (2011, 2013), Vujčić and Dumičić (2016), and Dumičić (2017).

The European macroprudential policy coordination system, constituted by the European Central Bank and the European Systemic Risk Board, is an additional guarantee that the macroprudential policy will continue to be actively implemented in Croatia. The ECB has binding macroprudential powers in the area of banking arising from its role of the single supervisor in the banking union. It has the power to tighten macroprudential measures adopted at national level in euro area Member States if it deems necessary, but does not have the right to ease them. This power of the ECB refers only to measures harmonised at EU level (such as capital buffers), and not to measures based on national legislation (such as LTV and DSTI). In contrast to the ECB that has at its disposal legally binding powers, the ESRB uses non-binding warnings and recommendations that encourage national macroprudential bodies to perform activities aimed at removing systemic risks and vulnerabilities. Furthermore, the ESRB fosters cooperation between Member States, particularly with regard to the adherence to the principle of reciprocity in the application of macroprudential instruments. The CNB is actively involved in the activities of the decision-making and working bodies of the ESRB: the Governor of the CNB is a permanent member of the ESRB General Board and is currently serving a three-year mandate in the ESRB Steering Committee. In line with the ESRB initiative to encourage Member States to establish national macroprudential policy implementation frameworks, the Financial Stability Council was founded in late 2013, comprising representatives of the CNB, Croatian Financial Services Supervisory Agency (Hanfa), the Ministry of Finance and the State Agency for Deposit Insurance and Bank Resolution (DAB). The most important tasks of the Financial Stability Council are the participation in the formulation of macroprudential policy, recognition and assessment of systemic risks, ensuring coordination between competent bodies and taking action in line with the warnings and recommendations of the ESRB.

7 Conclusion

The analysis of the economic costs and benefits of euro adoption shows that it is in Croatia's best interest to initiate the process of euro adoption as soon as possible. Croatia is ready to initiate the process of euro adoption, as confirmed by the level of achieved real and nominal convergence. The adoption of the euro is also an obligation assumed by Croatia when it joined the EU, and activities which necessarily precede euro adoption will have a positive effect on the Croatian economy irrespective of the objective of introducing the common currency.

Croatia will reap significant and permanent benefits from the adoption of the euro. The benefits of euro adoption refer to the decrease of risks to macroeconomic and financial stability, more favourable conditions of financing and lower transaction costs. These benefits should enable stronger economic growth, increase economic efficiency and make Croatia more attractive for investments. The benefits of introducing the euro in Croatia could be relatively higher than in other Member States due to a high degree of euroisation.

The greatest benefit of euro adoption is the elimination of currency risk to which households, corporations and the government have been extremely exposed. Total debt denominated in foreign currency, including debt indexed to a foreign currency, exceeds HRK 500bn (approximately 150% of the GDP), and more than 90% of the amount is indexed to the euro. Against this backdrop, a strong depreciation of the kuna against the euro would increase the debt and the burden of debt repayment for domestic debtors. Following the adoption of the euro, domestic sectors will generate their income in euro, i.e. in the currency to which the majority of their liabilities is indexed, so they will not be exposed to the risk of depreciation of domestic currency and the consequential increase in the burden of debt repayment. The vulnerability of household and corporate balance sheets will thus be reduced, as will the risks for public finances, bearing in mind that as much as three quarters of total public debt is indexed to the euro. Indirectly, this will also benefit banks, which are indirectly exposed to currency risk through their clients.

By introducing the euro, the risk of banking and balance of payments crisis will drop, and the risk of currency crisis will be eradicated entirely. The Croatian banking system is highly capitalised and liquid, indicating a very low probability of the outbreak of a systemic banking crisis. The system's resilience will be additionally increased by the adoption of the euro as banks will be able to borrow euro from the central bank in case of liquidity disturbances, which is not the case at present. This will, at the same time, remove the risk of banking system difficulties leading to the exhaustion of international reserves, and consequently to the balance of payments and currency crisis.

Additional benefits of euro adoption will stem from the decrease in interest rates, lower transaction and currency exchange costs and stronger protection in

case of economic disturbances. By eliminating a part of systemic risks, the country's risk premium will decline, leading to an improvement in borrowing conditions for all sectors. By changing over to the euro, conditions for the reduction of regulatory requirements for banks will be met, thereby enabling the relative decrease in interest rates on loans. Furthermore, the non-financial sector will make savings in currency exchange transactions, as there will no longer be a need for exchanging kuna to euro and vice versa, and entities involved in international trade will also save due to the drop in charges for cross-border payments in euro. The introduction of the euro will therefore have a favourable effect on the competitiveness of Croatian exporters. Among other benefits of adopting the common currency, the participation in the allocation of the Eurosystem's monetary income and the access to the European Stability Mechanism are worth noting. The latter mechanism provides stronger protection in case of economic disturbances compared with the instruments currently at Croatia's disposal and, at the same time, positively affects the confidence of financial markets towards Croatia.

The adoption of the euro will have a positive effect on domestic and foreign investments. More favourable borrowing conditions will increase the competitiveness of the economy and create additional space for investments and employment. At the same time, by removing currency risk, the total risk to which international investors are exposed will be reduced, which will increase Croatia's attractiveness as a destination for foreign direct investment.

While the benefits of the adoption of the euro are significant and permanent, costs are mainly low and have a one-off effect. Croatia will have to settle one-off costs of currency changeover and pay up funds into the capital of the European Stability Mechanism and the capital and reserves of the European Central Bank. A slight one-off price increase is possible in the changeover process. The risks of the occurrence of excessive capital inflows and the accumulation of macroeconomic imbalances are greatly subdued owing to the expected adequacy of the common monetary policy for Croatia and EU mechanisms for the prevention of macroeconomic imbalances. Furthermore, after the adoption of the euro, Croatia will still have at its disposal fiscal, structural and macroprudential policies by which it will be able to reverse potential unfavourable trends.

The loss of independent monetary and exchange rate policy will not create significant costs considering the circumstances in which monetary policy is implemented in Croatia and the synchronisation of business cycles in Croatia and the euro area. Economic literature suggests that small countries, as a rule, cannot pursue an active monetary policy, i.e. that they are less able to use monetary policy to alleviate macroeconomic shocks. Central banks of small countries have to adapt their policy to global financial developments if they wish to protect themselves from excessive speculative capital flows. This refers to Croatia as well, so the monetary policy of the CNB is greatly determined by the monetary conditions in the euro area, which is, among other things, associated with the high presence of banking groups from the euro area in the Croatian banking system. Banks in foreign ownership can directly borrow from their parents abroad and thereby reduce the desired effects of the CNB's interest rate policy. Furthermore, the monetary policy in Croatia is additionally determined by a high level of credit and deposit euroisation. In such an environment, the stability of the exchange rate of the kuna against the euro is, without a doubt, the key instrument for maintaining financial and overall macroeconomic stability. Hence, Croatia will not lose much by introducing the euro,

i.e. by adopting the common monetary policy. This is corroborated by empirical research which indicate that the monetary policy of the European Central Bank should principally meet the needs of the Croatian economy considering that the business cycle in Croatia is synchronised with the business cycle in the euro area.

The initial step in Croatia's path towards the adoption of the euro is joining the Exchange Rate Mechanism II (ERM II), which requires the support of euro area Member States and EU institutions. As there are no formal requirements to join the ERM II, the support of euro area Member States and EU institutions may depend on the assessment of the level of convergence and macroeconomic stability of the candidate Member State. It may depend on the circumstances in the euro area itself and the political will to further enlarge the monetary union. In order to gain support, Croatia will continue implementing a responsible fiscal policy and structural reforms in order to reduce existing macroeconomic vulnerabilities, strengthen competitiveness and create conditions for a sustainable convergence of income.

Croatia has a good starting point for participating in the Exchange Rate Mechanism II. It has achieved a relatively high level of income and price convergence and has a long history of low and stable inflation. This is best supported by a comparison of the achieved level of income and prices in Croatia and new euro area Member States at the time they joined the ERM II. When it comes to nominal convergence criteria, the public finances sustainability criterion, i.e. public debt has, until recently, been the greatest obstacle for Croatia. However, since 2015, fiscal indicators for Croatia have improved significantly as a result of fiscal consolidation measures and economic recovery. The continued commitment of fiscal policy to a balanced budget should ensure the continued decrease in public debt at a satisfactory pace. In that sense, Croatia should be able to meet all formal criteria for euro adoption soon after joining the ERM II.

Fiscal, structural and macroprudential policies will be the main tools of economic policy following the adoption of the euro in Croatia. In addition to having long-term effects on the reduction of imbalances in public finances, sound fiscal policy will create the foundation for the decrease of tax burden and widen the manoeuvring space for the policy's countercyclical effects, thus increasing the resilience of the economy. With such a fiscal policy, combined with adequate structural policies, the Government will improve competitiveness and, at the same time, contribute to balanced economic growth. Within the context of these measures, the emphasis will, among other things, be placed on an adequate wage policy which will, in the long term, ensure that movements in wages in the public sector are aligned with the movements in productivity in the economy. The CNB will continue to take countercyclical action by using macroprudential policy instruments to affect the banks' liquidity, capital and credit activity.

Efforts put in to fulfil the criteria to introduce the euro will positively affect the Croatian economy and they are necessary irrespective of the objective of adopting the common currency. Policies directed at reducing fiscal weaknesses and eliminating excessive macroeconomic imbalances strengthen the resilience of the Croatian economy and reduce its susceptibility to crises. At the same time, they have a favourable effect on competitiveness, employment and economic growth. Croatia will, therefore, continue to implement sound fiscal policy and structural reforms to eliminate existing vulnerabilities and meet all criteria for the adoption of the euro as soon as possible.

References

Arghyrou, M. (2006): *Monetary Policy Before and After the Euro: Evidence from Greece*, Cardiff Economics Working Papers, No. E2006/23, Cardiff University, Cardiff.

Attal-Toubert, K., L. De Belleville, and B. Pluyaud (2002): *The Short-term Impact on Prices of the Euro Cash Changeover*, Banque de France Bulletin Digest, No. 107, pp. 55-80.

Aucremanne, L., and D. Cornille (2001): *Attractive Prices and Euro-rounding Effects on Inflation*, Working Papers, No. 17, National Bank of Belgium, Bruxelles.

Baldwin, R., V. DiNino, L. Fontagné, R. A. De Santis, and D. Taglioni (2008): *Study on the Impact of the Euro on Trade and Foreign Direct Investment*, Economic Papers 321, European Commission Directorate-General for Economic and Financial Affairs.

Banco de Espana (2003): *The Effect of the Euro Cash Changeover on Inflation*, Annual Report 2002, p. 95.

Bokan, N., L. Grgurić, I. Krznar, and M. Lang (2010): *The Impact of the Financial Crisis and Policy Responses in Croatia*, CNB Working Papers, No. 22, Croatian National Bank, Zagreb.

Brkić, M., and A. Šabić (2014): *Framework for Monitoring Macroeconomic Imbalances in the European Union – Significance for Croatia*, CNB Surveys, No. 17, Croatian National Bank, Zagreb.

Brkić, M., and A. Šabić (2017): *Je li euro optimalna valuta za Hrvatsku: ocjena korištenjem teorije optimalnih valutnih područja*, CNB Surveys, No. 36, Croatian National Bank, Zagreb.

Bukovšak, M., A. Ćudina, and N. Pavić (2017): *Uvođenje eura u Hrvatskoj: mogući učinci na međunarodnu razmjenu i ulaganja*, CNB Surveys, No. 33, Croatian National Bank, Zagreb.

Bukowski, S. I. (1999): *The Maastricht Convergence Criteria and Economic Growth in the EMU*, Working Papers, No. 24, Economics Department, University of Perugia, Perugia.

Bun, M. J. G., and F. Klaassen (2007): *The Euro Effect on Trade is not as Large as Commonly Thought*, Oxford Bulletin of Economics and Statistics, Department of Economics, University of Oxford, Vol. 69(4), pp. 473-496.

Calvo, G. (1997): *Varieties of Capital-market Crises*, in: The debt burden and its consequences for monetary policy, Calvo, G., and M. King (ed.), MacMillan Press, London.

Calvo, G. (2002): *On Dollarization*, The Economics of Transition, Vol. 10(2), pp. 393-403.

Chang, R., and A. Velasco (1998): *Financial Crises in Emerging Markets*, NBER Working Papers, No. 6606, National Bureau of Economic Research, Cambridge, MA.

Christodoulopoulou, S., and O. Tkačevs (2014): *Measuring the Effectiveness of Cost and Price Competitiveness in External Rebalancing of Euro Area Countries: What Do Alternative HCIS Tell Us?*, ECB Working Papers, No. 1736, European Central Bank, Frankfurt.

Committee for the Study of Economic and Monetary Union (1989): *Report on Economic and Monetary Union in the European Community*, Office for Official Publications of the European Communities, Luxembourg.

Croatian National Bank (2014): *Asset quality review confirms a high capital adequacy ratio of the observed banks and of the system as a whole*, press release, Croatian National Bank, Zagreb.

Croatian National Bank (2014): Bulletin, No. 209, Croatian National Bank, Zagreb.

Croatian National Bank (2015): Bulletin, No. 216, Croatian National Bank, Zagreb.

Croatian National Bank (2016): Bulletin, No. 226, Croatian National Bank, Zagreb.

Darvas, Z., P. Hüttl, S. Merler, C. De Sousa, and T. Walsh (2013): *Analysis of developments in EU capital flows in the global context*, Final Report, Bruegel, N° MARKT/2013/50/F.

De Nardis, S., R. De Santis, and C. Vicarelli (2008): *The Single Currency's Effects on Eurozone Sectoral Trade: Winners and Losers?* Economics: The Open-Access, Open-Assessment E-Journal, Kiel Institute for the World Economy, Vol. 2, pp. 1-34.

Debates and Policy Alternatives, Levy Yeyati, E., and F. Sturzenegger (ed.), MIT Press, Cambridge, MA.

Deutsche Bundesbank (2004): *The Euro and Prices Two Years On*, Monthly Report, Vol. 56(1), pp. 15-28.

di Mauro, F., and K. Forster (2008): *Globalisation and the Competitiveness of the Euroarea*, ECB Occasional Paper Series, No. 97, European Central Bank, Frankfurt.

Dinga, M., and V. Dingová (2011): *Currency Union and Investment Flows: Estimating the Euro Effect on FDI*, IES Working Paper 25/2011, IES FSV, Charles University.

Dumičić, M. (2017): *Effectiveness of Macroprudential Policies in Central and Eastern European Countries*, CNB Working Papers, No. 48, Croatian National Bank, Zagreb.

Dumičić, M., I. Ljubaj, and A. Martinis (2017): *Perzistentnost euroizacije u Hrvatskoj*, CNB Surveys, No. 37, Croatian National Bank, Zagreb.

European Central Bank (2003): *Effects of the Introduction of the Euro Banknotes and Coins on Consumer Prices*, Annual Report 2002, pp. 40-42.

European Central Bank (2014): *Aggregate Report on the Comprehensive Assessment,* European Central Bank, Frankfurt.

European Central Bank (2016): *Convergence Report*, European Central Bank, Frankfurt.

European Commission (2016): *Convergence Report 2016*, Institutional Papers, No. 26, European Commission, Bruxelles.

Eurostat (2003): *Euro Changeover Effects*, annex to news release dated 18 June 2003, Eurostat, Luxembourg.

Eurostat (2007): *Information Note on Euro Changeover and Inflation in Slovenia*, Eurostat Report, Eurostat, Luxembourg.

Eurostat (2009): *Euro Changeover and Inflation in Slovakia,* Eurostat Report, Eurostat, Luxembourg.

Eurostat (2011): *Euro Changeover and Inflation in Estonia,* Eurostat Report, Eurostat, Luxembourg.

Eurostat (2014): *Euro Changeover and Inflation in Latvia,* Eurostat Report, Eurostat, Luxembourg.

Eurostat (2015): *Euro Changeover and Inflation in Lithuania,* Eurostat Report, Eurostat, Luxembourg.

Folkertsma, C. (2001): *The Euro and Psychological Prices: Simulations of the Worst-Case Scenario*, Staff Reports, No. 71, De Nederlandsche Bank, Amsterdam.

Folkertsma, C., K. C. Van Renselaar, and A. C. M. Stokman (2002): *Smooth Euro Changeover, Higher Prices? Results of a Survey Among Dutch Retailers*, Research Memorandum, No. 682, De Nederlandsche Bank, Amsterdam.

Frankel, J. (2010): *Monetary Policy in Emerging Markets: A Survey*, NBER Working Papers, No. 16125, National Bureau of Economic Research, Cambridge, MA.

Frankel, J., and A. Rose (1998): *The Endogeneity of the Optimum Currency Area Criteria*, Economic Journal, Vol. 108, pp. 1009-1025.

Frankel, J., and A. Rose (2000): *Estimating the Effect of Currency Unions on Trade and Output*, NBER Working Papers, No. 7857, National Bureau of Economic Research, Cambridge, MA.

Friedman, M. (1953): *The Case for Flexible Exchange Rates*, in: Essays in Positive Economics, Friedman, M. (ed.), University of Chicago Press, Chicago.

Funda, J., G. Lukinić, and I. Ljubaj (2007): *Ocjena Balassa-Samuelsonova učinka u Hrvatskoj*, Financijska teorija i praksa, Vol. 31(4), pp. 315-346.

Galac, T. (2011): *The Central Bank as Crisis-Manager in Croatia – A Counterfactual Analysis*, CNB Working Papers, No. 27, Croatian National Bank, Zagreb.

Gil-Pareja, S., R. Llorca-Vivero, and J. A. Martinez-Serrano (2007): *The Effect of EMU on Tourism*, Review of International Economics, Vol. 15(2), pp. 302-312.

Government of the Republic of Croatia (2017a): *Program konvergencije Republike Hrvatske za razdoblje 2017. – 2020.*, Government of the Republic of Croatia, Zagreb.

Government of the Republic of Croatia (2017b): *2017 National Reform Programme*, Government of the Republic of Croatia, Zagreb.

Hüfner, F., and I. Koske (2008): *The Euro Changeover in the Slovak Republic: Implications for Inflation and Interest Rates*, OECD Economics Department Working Papers, No. 632, OECD, Paris.

IMAD (2007): *Euro Changeover Effect on Inflation in Slovenia*, Statistical Office of the Republic of Slovenia, Ljubljana.

Ingram, J. C. (1962): *Regional Payments Mechanisms: The Case of Puerto Rico*, University of North Carolina Press, Chapel Hill.

International Monetary Fund (2015): *Central and Eastern Europe: New Member States Policy Forum 2014*, IMF Country Reports, No. 15/98, International Monetary Fund, Washington, DC.

Izquierdo, M., J. F. Jimeno, T. Kosma, A. Lamo, S. Millard, T. Rõõm, and E. Viviano (2017): *Labor Market Adjustment in Europe during the Crisis: Microeconomic Evidence from the Wage Dynamics Network Survey*, draft ECB Ocassional Paper, European Central Bank, Frankfurt.

Jagelka, T. (2013): *Bilateral Trade and the Eurozone: Evidence from New Member Countries*, World Economy, 36(1), pp. 48-63.

Kanada, J. (2003): *Inside and Outside the Boundaries of the European Union: The Impacts of a Monetary Union on Tourism in Spain*, Stanford University, Stanford, CA.

Kenen, P. (1969): *The Optimum Currency Area: An Eclectic View*, in: Monetary Problems of the International Economy, Mundell, R. A., and A. K. Swoboda (ed.), University of Chicago Press, Chicago.

Kotarac, K., D. Kunovac, and R. Ravnik (2017): *Usklađenost poslovnih ciklusa i ekonomskih šokova između Hrvatske i država europodručja*, CNB Working Papers, No. 51, Croatian National Bank, Zagreb.

Kraft, E., and T. Galac (2011): *Macroprudential Regulation of Credit Booms and Busts – the Case of Croatia*, Policy Research Working Papers, No. 5772, World Bank, Washington, DC.

Krznar, I. (2011): *An Analysis of the Domestic Inflation Rate Dynamics and the Phillips Curve*, CNB Working Papers, No. 31, Croatian National Bank, Zagreb.

Kunovac, D., and N. Pavić (2017): *Može li uvođenje eura u Hrvatskoj smanjiti trošak zaduživanja?*, CNB Surveys, No. 35, Croatian National Bank, Zagreb.

Kunovac, M., and A. Pufnik (2015): *Features of the Labour Market and Wage Setting in Croatia: Firms Survey Results*, CNB Surveys, No. 19, Croatian National Bank, Zagreb.

Levy Yeyati, E., and E. Sturzenegger (2001): *Dollarization: A Primer*, in: Dollarization, Lim, C., F. Columba, A. Costa, P. Kongsamut, A. Otani, M. Saiyid, T. Wezel, and X. Wu (2011): *Macroprudential Policy: What Instruments and How to Use Them? Lessons from Country Experiences*, IMF Working Papers, No. 11/238, International Monetary Fund, Washington, DC.

Lim, C., I. Krznar, F. Lipinsky, A. Otani, and X. Wu (2013): *The Macroprudential Framework: Policy Responsiveness and Institutional Arrangements*, IMF Working Papers, No. 13/166, International Monetary Fund, Washington, DC.

McKinnon, R. (1963): *Optimum Currency Areas*, American Economic Review, Vol. 52, pp. 717-725.

McKinnon, R. (2001): *Optimum Currency Areas Revisited*, Stanford University, mimeo.

Ministry of Finance of the Republic of Croatia (2017): *Public Debt Management Strategy for the 2017-2019 Period*, Ministry of Finance of the Republic of Croatia, Zagreb.

Mintz, N. N. (1970): *Monetary Union and Economic Integration*, The Bulletin, New York University, New York.

Mongelli, F. P. (2008): *European Economic and Monetary Integration and the Optimum Currency Area Theory*, Economic Papers, No. 302, European Commission, Bruxelles.

Mostacci, F., and R. Sabbatini (2008): *Rounding and Anomalous Changes in Italian Consumer Price in 2002*, in: The Euro, Inflation and Consumers' Perceptions. Lessons from Italy, Del Giovane, P., and R. Sabbatini (ed.), Springer.

Mundell, R. A. (1961): *A Theory of Optimum Currency Areas*, The American Economic Review, Vol. 51(4), pp. 657-665.

National Bank of Belgium (2002): *The Adaptation of Prices to the Changeover to the Euro*, Economic Review, 4th Trimester, National Bank of Belgium, Bruxelles.

National Bank of Slovakia (2006): *The Effects of Euro Adoption on the Slovak Economy*, NBS Research Department Paper, National Bank of Slovakia, Bratislava.

Pufnik, A., and D. Kunovac (2012): *Pricing Behaviour of Croatian Companies: Results of a Firm Survey and a Comparison with the Eurozone*, CNB Working Papers, No. 36, Croatian National Bank, Zagreb.

Pufnik, A. (2017): *Učinci uvođenja eura na kretanje potrošačkih cijena i percepcije inflacije: pregled dosadašnjih iskustava i ocjena mogućih učinaka u Hrvatskoj*, CNB Surveys, No. 34, Croatian National Bank, Zagreb.

Rappoport, V. (2009): *Persistence of Dollarization after Price Stabilization*, Journal of Monetary Economics, Vol. 56, pp. 979-989.

Rey, H. (2015): *Dilemma not Trilemma: The global Financial Cycle and Monetary Policy Independence*, NBER Working Papers, No. 21162, National Bureau of Economic Research, Cambridge, MA.

Rõõm, T., and K. Urke (2014): *The Euro Changeover in Estonia: Implications for Inflation*, Bank of Estonia Working Papers, No. 6/2014, Bank of Estonia, Tallinn.

Santana-Gallego, M., F. Ledesma-Rodriguez, and J. Perez-Rodriguez (2016): *The Euro Effect: Tourism Creation, Tourism Diversion and Tourism Potential within the European Union*, European Union Politics, Vol. 17(1), pp. 46-68.

Santos D., R. Evangelista, T. Nascimento, and C. Coimbra (2001): *Conversion of Prices from Escudos into Euro: Quantitative Estimate of its Effect on the CPI*, Banco de Portugal Economic Bulletin, Banco de Portugal, Lisabon.

Scheiber, T., and C. Stern (2016): *Currency Substitution in CESEE: Why Do Households Prefer Euro Payments?*, Focus on European Economic Integration, Vol. Q4/16, OeNB, pp. 73-98.

Schiavo, S. (2007): *Common Currencies and FDI Flows*, Oxford Economic Papers, serial online, 59(3), pp. 536-560.

Sturm, J.-E., U. Fritsche, M. Graff, M. Lamla, S. Lein, V. Nitsch, D. Liechti, and D. Triet (2009): *The Euro and Prices: Changeover-related Inflation and Price Convergence in the Euro Area*, European Economy Economic Papers, No. 381, European Commission, Bruxelles.

Velasco, A. (1987): *Financial Crises and Balance of Payment Crises: A Simple Model of the Southern Cone Experience*, Journal of Development Economics. Vol. 27(1 – 2), pp. 263-283.

Vujčić, B., and M. Dumičić (2016): *Managing Systemic Risks in the Croatian Economy*, BIS Papers, No. 861, Bank for International Settlements, Basel.

Winkelried, D., and P. Castillo (2010): *Dollarisation Persistence and Individual Heterogeneity*, Journal of International Money and Finance, Vol. 29, pp. 1596-1618.

Legal sources

Act on Amendments to the Act on the Croatian National Bank (OG 54/2013)

Act on the Croatian National Bank (OG 75/2008)

Agreement of 16 March 2006 between the European Central Bank and the national central banks of the Member States outside the euro area laying down the operating procedures for an exchange rate mechanism in stage three of Economic and Monetary Union (OJ C 73, 25 March 2006)

Council Regulation (EC) No 1103/97 of 17 June 1997 on certain provisions relating to the introduction of the euro

Council Regulation (EC) No 2169/2005 of 21 December 2005 amending Regulation (EC) No 974/98 on the introduction of the euro

Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro

Guideline (EU) 2015/510 of the European Central Bank of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60) (recast)

Guideline (EU) 2016/2249 of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (recast)

Guideline of the European Central Bank of 14 July 2006 on certain preparations for the euro cash changeover and on frontloading and sub-frontloading of euro banknotes and coins outside the euro area (ECB/2006/9)

Labour Act (OG 93/2014)

Odluka o proširenju primjene Standard Cost Model (SCM) metodologije za mjerenje i ciljano smanjenje administrativnog opterećenja gospodarstva (OG 60/2017)

Regulation (EC) No 924/2009 of the European Parliament and of the Council of 16 September 2009 on cross-border payments in the Community and repealing Regulation (EC) No 2560/2001 (OJ L 266, 9 October 2009)

Resolution of the European Council on the establishment of an exchange-rate mechanism in the third stage of economic and monetary union (OJ C 236, 2 August 1997)

Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (D/12/2, European Commission, Bruxelles)

Treaty on European Union (OJ C 202, 7 June 2016)

Treaty on the Functioning of the European Union (OJ C 202, 7 June 2016)

Uredba o provedbi postupka procjene učinaka propisa na malo gospodarstvo (Test malog i srednjeg poduzetništva) (OG 43/2017)

Abbreviations

BS – Balassa-Samuelsonov effect

CBS – Croatian Bureau of Statistics

CDS –credit default swap

CEE – Central and Eastern European

CICR – currency-induced credit risk

CLVPS – Croatian Large Value Payment System

CNB – Croatian National Bank

DAB – State Agency for Deposit Insurance and Bank Resolution

DSTI – debt service-to-income ratio

EA-12 – euro area (12 Member States)

EA-19 – euro area (19 Member States)

ECB – European Central Bank

EDIS – European Deposit Insurance Scheme

EMU – Economic and Monetary Union

ERM II –Exchange Rate Mechanism II

ESCB – European System of Central Banks

ESM – European Stability Mechanism

ESRB –European Systemic Risk Board

EU – European Union

EU-28 – European Union (28 Member States)

EUR – euro

EuroNCS – National Clearing System for the clearing of euro payment transactions

GDP – gross domestic product

HANFA – Croatian Financial Services Supervisory Agency

HICP – harmonised index of consumer prices

HRK – kuna

IMF – International Monetary Fund

LTD – loan-to-deposit ratio

LTV – loan-to-value ratio

NCS – National Clearing System

SCM – standard cost model

SMEs – small and medium-sized companies

SRF – Single Resolution Fund

SRM – Single Resolution Mechanism

SSM – Single Supervisory Mechanism

STEM – Science, Technology, Engineering, and Mathematics

TARGET 2 – Trans-European Automated Real-time Gross settlement Express Transfer system 2

TARGET 2-HR –Trans-European Automated Real-time Gross settlement Express Transfer system 2-HR

TEU – Treaty on European Union

TFEU – Treaty on the Functioning of the European Union

VAR model – vector autoregressive model

Abbreviations for Member States

AT – Austria

BE – Belgium

BG – Bulgaria

CY – Cyprus

CZ – Czech Republic

DE – Germany

DK – Denmark

EE – Estonia

EL – Greece

ES – Spain

FI – Finland

FR – France

HR – Croatia

HU – Hungary

IE – Ireland

IT – Italy

LT – Lithuania

LU – Luxembourg

LV – Latvia

MT – Malta

NL – Netherlands

PL – Poland

PT – Portugal

RO – Romania

SE – Sweden

SI – Slovenia

SK – Slovakia

UK – United Kingdom

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