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30 years of transition

Stability and Security.

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Call for applications: Klaus Liebscher Economic Research Scholarship

The Oesterreichische Nationalbank (OeNB) invites applications for the "Klaus Liebscher Economic Research Scholarship." This scholarship program gives outstanding researchers the opportunity to contribute their expertise to the research activities of the OeNB's Economic Analysis and Research Department. This contribution will take the form of remunerated consultancy services.

The scholarship program targets Austrian and international experts with a proven research record in economics and finance, and postdoctoral research experience. Applicants need to be in active employment and should be interested in broadening their research experience and expanding their personal research networks. Given the OeNB's strategic research focus on Central, Eastern and Southeastern Europe, the analysis of economic developments in this region will be a key field of research in this context.

The OeNB offers a stimulating and professional research environment in close proximity to the policymaking process. The selected scholarship recipients will be expected to collaborate with the OeNB's research staff on a prespecified topic and are invited to participate actively in the department's internal seminars and other research activities. Their research output may be published in one of the department's publication outlets or as an OeNB Working Paper. As a rule, the consultancy services under the scholarship will be provided over a period of two to three months. As far as possible, an adequate accommodation for the stay in Vienna will be provided.

Applicants must provide the following documents and information:

- a letter of motivation, including an indication of the time period envisaged for the consultancy
- a detailed consultancy proposal
- a description of current research topics and activities
- an academic curriculum vitae
- an up-to-date list of publications (or an extract therefrom)
- the names of two references that the OeNB may contact to obtain further information about the applicant
- evidence of basic income during the term of the scholarship (employment contract with the applicant's home institution)
- written confirmation by the home institution that the provision of consultancy services by the applicant is not in violation of the applicant's employment contract with the home institution

Please e-mail applications for the 2020 calendar year to *scholarship@oenb.at* by October 1, 2019.
Applicants will be notified of the jury's decision by mid-November 2019.

30 years of transition

Introductory remarks

30 years of transition: united in diversity

Letná Plain in Prague is one of quite a few mesmerizing places in the Czech Republic's capital. From the top of a hill, it overlooks the city's historical center, its romantic bridges spanning across the Vltava river and the majestic Prague castle. But it is quite a symbolic site, too. It used to be the site of the world's biggest Stalin monument and used to host mass parades celebrating the communist regime. Then, however, at the end of November 1989, at least three-quarters of a million people gathered there to demonstrate against that same communist regime and to call for political and economic freedom. The communist party's rule collapsed under the mass protests soon thereafter. With a touch of historical irony, in the following years Letná Plain hosted the pope and major rock stars before, at the end of June 2019, it witnessed the biggest mass demonstration since the fall of communism. Reportedly, at least one-quarter of a million people came together in a city that has become one of the richest regions in the European Union – a prime example of highly successful economic transition – to express their dissatisfaction with political developments in their country. Hence, Letná Plain is a place that symbolizes, in a nutshell, the long way countries in Central, Eastern and Southeastern Europe (CESEE) have come over the last thirty years both politically and economically, while also representing some of the challenges they are facing today.

30 years ago, in line with the developments in what was then Czechoslovakia, people throughout the entire former Eastern bloc rose up against their governing authoritarian regimes and thereby helped bring down the Iron Curtain and terminate the long-lasting division of the European continent. Thus began a long and difficult – for many unexpectedly long and difficult – journey of transition from totalitarian states with centrally planned, controlled and mostly state-owned economies to modern liberal democracies and market economies. This unprecedented metamorphosis was paralleled by a process of European reunification, which peaked in three Eastern enlargement rounds of the European Union. As a result, 11 former Eastern bloc countries are united today with their once bitter ideological opponents under one European flag. While being emancipated and self-confident partners with their own views and interests, they share equal democratic, legal, institutional and economic values and principles, partially also under the umbrella of a common currency. Moreover, also for countries which are not yet members of the European Union, the EU constitutes a crucial anchor stabilizing them as they proceed on their transformation path.

Buttressed by European integration and (prospective) EU membership, the economic transition the CESEE countries had to undergo spurred an unparalleled process of social, political and economic overhaul and convergence in the region. After an initial economic shock marked by, inter alia, deep recessions, massive price increases and unemployment, the countries' intrinsic strengths came to the fore as state-owned industries were privatized and reforms were implemented. The capital and foreign investment thus attracted improved productivity and competitiveness which, in turn, boosted economic growth. As a result, up until the onset of the global financial crisis, the CESEE economies established a record of significant growth and economic progress.

But it has to be stressed that not just the CESEE countries have benefited from the fall of the Iron Curtain and the ensuing integration of the region into European structures, trade linkages and value chains. Western European countries have profited a great deal, too. Particularly Austria has managed to make use of its strategic location in the heart of the "new" Europe and its strong historical and cultural ties with the CESEE region. As a result, Austrian businesses identified the economic potential of the CESEE region at an early stage. Not only did they expand – often as first movers – their activities into the new markets but in many instances, especially in the banking sector, they developed into key players in these markets, and the CESEE region, in turn, became a significant contributor to Austrian firms' profits.

The boon of the ever-closer trade and financial linkages with Western Europe turned into a bane for the CESEE region during the economic and financial crisis that broke out a bit more than a decade ago. The economic shock quickly spilled over and harshly hit most of the CESEE countries despite their heterogeneity. Countries where the strong, in several instances excessive, pre-crisis expansion had been driven by unsustainable levels of consumption and borrowing were affected in particular. As growth slackened in the aftermath of the crisis, economic convergence temporarily slowed down as well. While it has to be highly acknowledged that, overall, the CESEE countries have caught up impressively to Western European income levels over the last thirty years, partially substantial income gaps still persist. Following unsustainable growth rates just prior to the crisis, average real GDP growth in CESEE has since more than halved, even though the growth momentum has picked up somewhat recently. In addition to lower total factor productivity and investment, adverse demographic developments in CESEE are likely to strongly limit potential growth in the future. Hence, CESEE's growth differential vis-à-vis the euro area has become smaller – despite remaining positive – in recent years. Against this background, it is one of the key challenges for the CESEE countries to kick-start convergence by spurring their potential growth. Related efforts should focus particularly on investment in infrastructure, human and physical capital endowment and innovation aimed at productivity improvements but also on improving the institutional, legal and business environment.

This special issue of the OeNB's Focus on European Economic Integration (FEEI) pays tribute to the impressive historic events and developments in CESEE of the last 30 years. It collects contributions by distinguished experts from outside and inside the OeNB who have kept a close eye on the region throughout transition. The present issue thus represents the OeNB's strategic CESEE research focus as well as its close cooperation with experts from, and on, the region that the OeNB has developed since the early 1990s. The topics covered in this publication are diverse. Peter Backé and Doris Ritzberger-Grünwald, together with guest authors Iikka Korhonen and Laura Solanko, review transformation strategies and experiences as well as public perceptions of transition outcomes across countries. They also highlight the EU's important anchoring role in the transition process. They briefly present the CESEE-related analysis and research work of the OeNB and the Bank of Finland and their research cooperation in this field. Michael Landesmann was invited to provide an overview of 30 years of East-West integration in Europe, reflecting on lessons learned and challenges ahead. He covers, inter alia, issues related to the economics of transition after 1989, institutional and economic catching-up as well as trade and production integration. He also discusses reform reversals and the political regression we see in some CESEE countries today. Specifically, he voices concerns about the development of "illiberal democracies" and the rise of populist forces in the EU as a whole and in CESEE in particular. From a comparative perspective, Philipp Ther's guest contribution focuses on the economic reforms in CESEE and in Germany, the challenges of German unification and the "price" of German unity. Like Landesmann, Ther concludes that one of the consequences of the neoliberal reforms has been the rise of right-wing populist parties in Germany and in some CESEE countries. This issue also presents two pieces of current OeNB research, the first of which has resulted from a research cooperation with the Bank of Albania. In their study, Elona Dushku, Antje Hildebrandt and Erjona Suljoti find that banks' exposure to the housing market has a positive and significant impact on bank stability. Of course, in this context one has to be aware of the problem caused by excessive bank lending denominated in foreign currency. Finally, Thomas Scheiber investigates the use of euro cash in CESEE and the role of expectations about euro adoption. Based on OeNB Euro Survey data, he finds that euro cash holdings are widespread in some CESEE countries and that they are positively affected by people's expectations of euro adoption.

Looking ahead, it is key to sustain our commitment to the region against the background of current economic and political developments in CESEE and to stick to the values and principles laid out in the EU treaties. In particular, we should always keep the European Union's official motto in mind and remain united in diversity. If we do so, I am positive that the success story of the past decades will continue for many years to come. And I hope that mesmerizing places in CESEE like Letná Plain will see people gathering to listen to rock stars or the pope rather than to express their discontent and to call for a change.

Ewald Nowotny, Governor

A tribute to 30 years of transition in CESEE

Peter Backé, Iikka Korhonen, Doris Ritzberger-Grünwald, Laura Solanko[1]

We provide a selective review of transition and transformation in Central, Eastern and Southeastern Europe (CESEE), with a focus on issues particularly relevant from a central banking point of view. In doing so, we examine transformation strategies, compare transition experiences across CESEE and shed light on public perceptions of transition outcomes. We point out the EU's role as an important anchor in the process. We cover cyclical swings in CESEE, in particular the boom-bust experience before and during the financial crisis. Moreover, we reflect on the eastward enlargement of the euro area, as it has included a number of CESEE EU Member States. Furthermore, we review the core areas of the research and analysis on CESEE carried out by the Bank of Finland Institute for Economies in Transition (BOFIT) and the Oesterreichische Nationalbank (OeNB) as well as their cooperation in CESEE-related activities.

JEL classification: E50, F63, N14, O52, P20
Keywords: CESEE, transition, economic development, central banking

This study provides a selective review of 30 years of transition and transformation in Central, Eastern and Southeastern Europe (CESEE), with a focus on issues that are particularly relevant from a central banking perspective. In doing so, it also briefly presents the analysis and research work on CESEE performed by the Bank of Finland Institute for Economies in Transition (BOFIT) and the Oesterreichische Nationalbank (OeNB) as well as their cooperation on CESEE topics.

Cooperation between the Bank of Finland (BoF) and the OeNB has been, and continues to be, broadly based. First, both the BoF and the OeNB have a special interest in analyzing the CESEE region, as the Austrian and the Finnish economies have traditionally had close economic and trade links with the CESEE region. Throughout its history, Finland has maintained strong economic connections with its neighboring countries in the Baltics (Estonia, Latvia and Lithuania) and, in particular, with Russia. Austria also has strong economic ties with the CESEE region, in particular with its neighboring countries. At the beginning of transition, Austria's CESEE neighbors were Czechoslovakia, Hungary, and the Federal Republic of Yugoslavia. But in fact, Austria's connections to CESEE have a much longer history. To name just two examples: Bohemia (the western part of today's Czech Republic) was the industrial center of the Austro-Hungarian monarchy; and migrants from the Eastern regions of the Austro-Hungarian monarchy made up a substantial part of Vienna's population in the 19th and early 20th century.

Second, both central banks have long had a special interest in fostering research activities and promoting the mobility of young researchers working on transition topics. From the early 1990s onward, the BoF and the OeNB have had an exchange program in place for young central bank researchers doing analytical work on the CESEE region. This exchange program has been beneficial for both sides and shows well how two relatively small national central banks (NCBs) in the euro area have been able to mutually strengthen their research capacities through organic cooperation.

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Third, after joining the EU in 1995, Finland and Austria adopted the euro in 1999.[2] At this point, the question emerged of what could be the specific contributions of their central banks to the Eurosystem. At the time, the Eurosystem's general approach was to promote a degree of specialization among its members as this would allow it to become more effective via division of labor. In line with this reasoning, the BoF and the OeNB brought forward their research cooperation, among other things, and started to "officially" specialize in issues related to CESEE, Russia and other post-Soviet countries, in line with their existing comparative analytical advantages, and thus to contribute their expertise to the Eurosystem as a whole. The ECB and the other Eurosystem NCBs highly welcomed this research focus, in particular as none of the CESEE countries had even joined the EU at the time. The BoF and the OeNB thus committed themselves to gaining a deeper understanding of the economies in question – which, at the time, were still rather unknown to most other Eurosystem members – and to supporting them on their way into the EU and, later, the euro area.

As transition moved forward, the activities of Austrian and Finnish companies in CESEE gradually intensified, and the respective economies became more and more interlinked. Austria played a very special role in developing the banking sector in the CESEE transition economies. This was mainly because Austrian banks had only rather limited scope for expansion in Austria, given the country's small size and its relatively risk-averse population. Therefore, Austrian banks began to expand to CESEE: They played an active role in the privatization process of the CESEE banking sector and established new subsidiaries in the region. In the years up to the financial crisis, Austrian banks substantially contributed to the deepening of CESEE financial and, in particular, banking markets. As a result, the total assets of Austrian banks' CESEE subsidiaries grew to about 100% of Austrian GDP by 2008.[3] As the crisis hit, Austrian banks were criticized, on the one hand, for being much too strongly exposed to CESEE (regional concentration risk). On the other hand, they were asked not to withdraw from CESEE and, subsequently, not to deleverage too quickly (see the paragraph on the "Vienna Initiative" below). After 2008, the total assets of Austrian banks' CESEE subsidiaries remained essentially unchanged, in euro terms, until 2015. Then, they fell by one-third as the CESEE business of UniCredit Bank Austria AG's subsidiaries was transferred to Bank Austria's parent bank UniCredit in Milan. More recently, along with strong growth in CESEE, the total assets of Austrian banks' CESEE subsidiaries have started to pick up again.

Similarly, several Finnish banks expanded their operations in the Baltic countries and, later, in Russia. This trend was especially prevalent in the second half of the 1990s and the early 2000s. Later, thanks to the consolidation of banking activities in the Nordic countries, these Baltic and Russian operations became parts of larger pan-Nordic banks. Therefore, their share in Finnish banks' total operations was never very large. Nonfinancial corporations also found promising new markets, with many Finnish companies expanding to Russia. (In per capita terms, Finland still ranks among the top 10 sources of foreign direct investment (FDI) in Russia.) Subsequently, many Finnish companies moved parts of their production networks to China (as did a number of Austrian companies). Such moves happened more

[2] *Euro cash was put in circulation in 2002.*

[3] *All the figures cited in the main body of the text were provided by either the OeNB or BOFIT.*

frequently after China joined the World Trade Organization (WTO) in 2001. It is interesting to note that BOFIT's second research and analysis focus, namely that on China, predates China's accession to the WTO.

1 Transition experiences in CESEE

For practical reasons, we group smaller and mid-sized CESEE countries according to regional features and their current EU membership status. We are well aware that such groupings could be made in different ways and that there might be reasons for altering the classification of individual countries over time. Still, for simplicity's sake, we opt for static country sets. Specifically, we look at Central Europe (the Czech Republic, Croatia, Hungary, Poland, Slovenia, Slovakia), the Baltics (Estonia, Latvia, Lithuania), Southeastern Europe (Bulgaria, Romania) and the Western Balkans (Albania, Bosnia and Hercegovina, Kosovo, Montenegro, North Macedonia, Serbia). In addition, we include two CESEE countries from the (former) Commonwealth of Independent States (CIS), namely Russia and Ukraine. Due to space restrictions, we exclude other CIS countries for the most part of our analysis. Given its unique position, we also do not cover the transition experience in eastern Germany.[4]

After the communist regimes started to collapse in 1989, the CESEE countries opened up and began to change fundamentally. While largely sharing a common history of central planning, they were still rather heterogeneous when the Iron Curtain was torn down in 1989 – and this diversity has remained a central characteristic of the region ever since. At the outset of transition, the key dimensions of heterogeneity across CESEE related inter alia to differences in

- precommunist political and economic systems, structures and records as well as the duration of the communist experience itself,
- the central planning systems (e.g. as regards the existence of market elements),
- economic development levels and sectoral specializations,
- degree of macroeconomic imbalances that existed at the time.

The political transformation experiences also differed significantly across CESEE. As transition unfolded, political legacies, in particular unresolved ethnic conflicts, surfaced in some of the CESEE countries and impacted on transition. While the split of Czechoslovakia was completely peaceful, the Federal Republic of Yugoslavia disintegrated in a traumatic war – a process which resulted in the foundation of several new countries.[5] Today, these new countries, together with Albania, form the Western Balkan region. The Soviet Union ceased to exist in 1991, with Estonia, Latvia and Lithuania regaining their independence. In turn, Russia and Ukraine together with other former Soviet republics initially started out as a relatively loose association: the Commonwealth of Independent States.

Differences in geographical location also proved to be an important factor that shaped transformation: Proximity to Western Europe shows up as a highly significant variable in explaining differences in transition patterns and outcomes in the empirical literature. This echoes the CESEE population's desire to "return to Europe," which was the key motto driving change after the fall of the Iron Curtain, especially in the Central European and Baltic societies. Obviously, it is difficult to disentangle geographical location from another factor that has shaped transformation, namely

[4] *On transition in former East Germany and its relevance for CESEE, see the contribution by Ther in this issue of FEEI.*

[5] *Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia, Serbia, and Slovenia.*

the length of time spent under a centrally planned economic system. After all, central planning was in place for about 70 years in the Eastern parts of CESEE, namely in Russia, Ukraine and the other CIS countries. By comparison, the CESEE countries further to the West – i.e. the Central European, the Baltic, the Southeastern European and the Western Balkan countries – had not been under Soviet rule before World War II and experienced central planning for about 40 years, from the late 1940s to the end of the 1980s.

Despite these differences, the initial blueprint for transition was practically the same for all CESEE countries; however, it was only applied to some extent in many post-Soviet economies: Transition was shaped along the lines of the Washington Consensus, wich combined stabilization, liberalization and privatization measures and was originally deployed in Latin America during the 1980s. Undoubtedly, the measures advocated in the Washington Consensus were key to kick-start and advance transition. At the same time, it was clear from the beginning that a simple master plan would not be suited to tackle all the important dimensions of transformation, at least not immediately. In particular, there were no ready answers to the questions of how to manage an all-encompassing transformation of ownership and, correspondingly, how to tighten budget constraints for companies in the interim. Furthermore, the original Washington Consensus very much underlined the need for deep institutional changes and reforms, but it was also understood – and increasingly so as time went by – that these would take years or even decades to complete. Clearly, macroeconomic stabilization could not wait for the completion of institutional reforms.

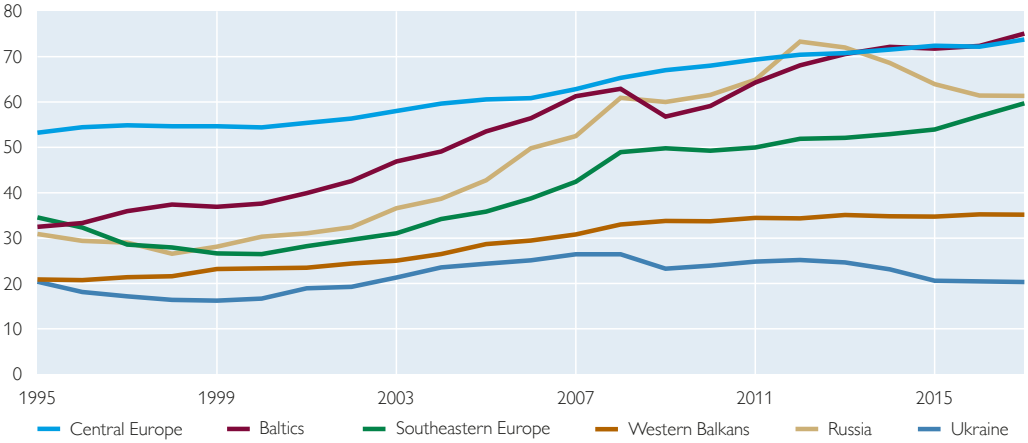
Also, there was no model for how to set up financial intermediation in systems where money and credit had played a completely different role than in a market economy and where no "real" banks, let alone any financial market infrastructure, were present. A popular metaphor that captures these issues is the often-cited notion that it is easy to turn an aquarium into fish soup but much harder to turn fish soup into an aquarium. As the original formulation of the Washington Consensus very much drew on the experiences made in Latin America, where financial markets and institutions had never been abolished, the lack of guidance on these issues in the Washington Consensus is perhaps not surprising. Moreover, early reform plans of CESEE countries also left important issues of equity versus efficiency unaddressed.

At the onset of transition, high-flying expectations were rather widespread. In Central Europe, the dominant view in late 1989 was that catching-up toward Western Europe would be a matter of five or, at most, ten years. Soon, these expectations met with the hardships of transition (charts 1 and 2). During the early stages of transition, discussions centered around the most appropriate sequence and, even more so, around the optimal speed, of stabilization and liberalization. As to the latter, both camps, advocates of shock therapy and of gradualism, argued that their respective approach would be best suited to minimize output loss during the transition recession. Proponents of shock therapy claimed that speed would lead to an earlier and stronger recovery after an initial slump and that it would also guard better against policy reversals later on (when the window of opportunity for radical change would have closed again). Gradualists, in turn, maintained that their approach would provide some cushioning against unavoidable (short-term) adjustment costs and thus would be better suited to avoid social upheaval and would therefore be more sustainable.

Chart 1

GDP per capita developments in selected CESEE countries

EUR PPS, EU-28=100



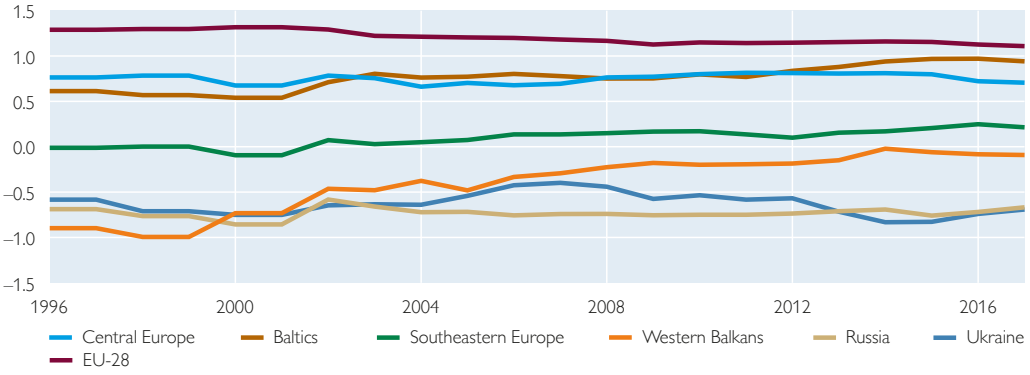
Source: Eurostat, wiiw.

Note: Central Europe: the Czech Republic, Croatia, Hungary, Poland, Slovenia, Slovakia; Baltics: Estonia, Latvia, Lithuania; Southeastern Europe: Bulgaria, Romania; Western Balkans: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia.

Chart 2

Governance developments in selected CESEE countries

Range: –2.5 (worst) to +2.5 (best)



Source: World Bank, Worldwide Governance Indicators.

Note: Central Europe: the Czech Republic, Croatia, Hungary, Poland, Slovenia, Slovakia; Baltics: Estonia, Latvia, Lithuania; Southeastern Europe: Bulgaria, Romania; Western Balkans: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, Serbia.

In retrospect, both approaches proved that they can be viable in principle. While adjustment needs were large all over CESEE, the course chosen was mainly a function of the size of macroeconomic imbalances (which urged speedy action in some cases, e.g. to combat hyperinflation, while allowing for a more staged approach in others), available financing and the political constellations in place at the time. Moreover, the real dividing line between successful and less successful early transition cases was not the one between shock therapy and gradualism, but rather between approaches that were time consistent and comprehensive and those that were not. The latter often resulted in stop-and-go policies and recurrent setbacks. From today's viewpoint, it is also clear that some key changes had to be

introduced fast – e.g. price liberalization (to end shortages and black markets) – while others could not be implemented at the stroke of a pen but needed time. This related, in particular, to the areas of change for which the Washington Consensus had no guidance to offer as well as to measures that required a functioning and reasonably skilled bureaucracy and/or more complex regulation and oversight. More generally, most observers and actors of the transition process only realized with a delay how overarchingly important institution- and capacity-building as well as the establishment of proper governance were in enacting encompassing and enduring change.

From Russia's point of view, for example, there were only very bad or even worse options when the Soviet Union dissolved. The central government's ability to implement any set of coherent policies was very limited, and regions and large state-owned companies, for instance, could no longer be expected to follow instructions. Moreover, the budget deficit was very high. So early reformers moved forward in areas where this was possible, e.g. price liberalization, and attempted to limit the monetary financing of the public sector deficit to constrain inflation. Change in government then meant a partial reversal of these policies with a subsequent return of high and volatile inflation.

When dealing with large, loss-making state-owned enterprises, the hardening of budget constraints proved to be a particularly hard nut to crack in many CESEE countries. Fast privatization often was not feasible, while rapid closure would have wiped out employment in whole regions. There were no tools and no appropriate apparatus to exert the state's ownership rights. Many managers used the ownership vacuum to siphon off valuable assets (some of them so successfully that they became oligarchs). Continued losses added to fiscal challenges, while enterprise arrears constituted a form of surrogate money that thwarted the conduct of monetary policy.

Privatization methods included sales, return to previous owners and mass privatization (via vouchers). The latter was often followed by a fairly swift concentration of ownership, as vouchers were bought up by those with ready access to funds. Many ordinary citizens were disappointed by this outcome, as their hope of a direct participation in the economic transformation process turned out to be only temporary. In many cases, the public sector housing stock, which was mostly rather rundown, was sold at preferential prices (or even given away) to apartment occupiers, which is an important factor in explaining the high share of owner-occupied housing in CESEE.

Likewise, it took some time for the actors of the transition process to realize how important a sound financial system is for promoting prosperity. In the early days of transition, reforms necessarily focused on splitting up the "mono-bank" institution that typically existed under communism into a central bank and a limited number of commercial banks as well as on establishing a basic regulatory framework for the banking sector. Commercial banks remained state-owned. Foreign banks only played a marginal role during the early stages of transformation, if any. Even in the more advanced transition economies, it took many years, often a decade or longer, until financial systems were put on a solid footing in terms of governance and proper risk assessment. Before, during the 1990s, recurrent bank failures and the repeated buildup of nonperforming loans (NPLs) and subsequent bank closures or recapitalizations at public expense were the order of the day in many CESEE countries. The opening-up of banking sectors to foreign investors

substantially changed the picture in the late 1990s and early 2000s, leading to a dominance of foreign ownership in the banking sector in most CESEE countries. In stark contrast, Russia and some other CIS economies never experimented with large-scale bank privatizations, and the state still remains the single largest owner of financial sector assets there.

As regards the convertibility of CESEE currencies, most reformers agreed that there was a strong case for liberalizing current account transactions as soon as sufficient macroeconomic stability was established. In turn, the pace of financial account liberalization was more gradual (also in countries where an economic shock therapy was implemented). The accession of a handful of transition economies to the Organisation for Economic Co-operation and Development (OECD) between 1995 and 2000 promoted progress toward full currency convertibility but also provided instructive evidence for the tradeoffs involved (as the Czech currency crisis in 1997 showed). Today, formerly socialist countries with restricted capital mobility are only a small minority.

In the first decade of transition, and for an even longer period in some countries, monetary policy focused on disinflation after the initial surge in price levels that occurred in the wake of large-scale price liberalization. Monetary policy frameworks, targets and instruments were established. Where multiple exchange rates existed, these were usually unified quite fast, and currencies were typically pegged to a key currency or to a basket during early transition (after an initial devaluation). Some CESEE economies, especially very small and open ones, retained their currency pegs, while others resorted to recurrent devaluations or crawling pegs, often alongside exchange rate bands that were widened over time. In these countries, monetary aggregates played an important role as intermediate targets of monetary policy as well.

As for exchange rate peggers, all three Baltic countries eventually opted for currency boards, with Estonia doing so from the very introduction of its own currency in 1992. Bulgaria took a somewhat peculiar route, as it switched from a fixed but adjustable peg to a currency board in 1997 to end a bout of hyperinflation. Slovenia had a crawling band which, for most of the time, amounted to targeting the real exchange rate. In Russia, a fixed exchange rate had been used as an instrument to bring down inflation as well as inflation expectations. At the same time, many actors and observers both in Russia and abroad hoped the fixed exchange rate would also act as a device to ensure discipline with regard to state finances. In August 1998, this hope was disappointed, and Russia experienced a drastic financial crisis, as the authorities devalued the ruble and the country defaulted on its debt. After the crisis, Russia started a gradual move toward a more flexible exchange rate regime even though the Russian ruble was allowed to completely float only in 2014.

In the smaller and mid-sized CESEE economies, a number of wider-band pegs were discontinued as several countries switched to inflation-targeting regimes from the late 1990s onward. As a consequence, most intermediate exchange rate regimes came to an end and, by and large, a dichotomy of hard pegs and (mostly managed) floats emerged in the CESEE region. Overall, developments in CESEE confirm that the choice of exchange rate regimes per se does not have a strong impact on a country's economic performance. Rather, what matters are stability-oriented policies and a coherent policy mix.

The use of foreign currencies – for cash payments as well as for deposits or loans – has been a fairly widespread phenomenon in CESEE, albeit with considerable

differences across countries and across the country groupings chosen here. In Central Europe, Southeastern Europe and in the Western Balkans, it is mainly the euro that has been used as a second currency (de facto euroization), while in Russia and Ukraine, the U.S. dollar has played a more prominent role. The use of foreign cash and, in some instances, also savings deposits at banks date back to the pre-1989 period, when high inflation and/or hyperinflation and banking crises in the early stages of transition pushed currency substitution further in a number of CESEE countries. In addition, in the years before the financial crisis, foreign currency loans soared in large parts of CESEE. By now, the use of foreign currency has fallen substantially in Central Europe and the Baltics, while it is still pronounced in Southeastern Europe and the Western Balkans (in Montenegro and Kosovo, the euro even is the legal tender: here, we speak of unilateral de iure euroization). In Russia, dollarization has decreased in recent years. In Ukraine, it has fallen slightly. The use of foreign currency weakens the transmission of monetary policy but also creates financial stability risks (especially in the case of unhedged foreign currency borrowing). Learning more about the use of the euro in CESEE was the OeNB's main motivation for introducing the OeNB Euro Survey, a survey among individuals in ten CESEE countries, in 2007. The OeNB Euro Survey regularly collects unique information about people's (euro) cash holdings, saving behavior and debt, but also looks into respondents' economic opinions, expectations and experiences that drive their financial decisions. In the meantime, a considerable body of policy-related research based on OeNB Euro Survey data has developed and key institutions like the European Central Bank (ECB), the European Bank for Research and Development (EBRD) and the World Bank as well as leading researchers in academia have used these data, partly in cooperation with OeNB economists, to empirically explore various aspects of currency substitution as well as other related issues.

2 EU accession as a transformation anchor

There is one key factor that distinguishes transformation in CESEE from all other comprehensive transitions in economic history – namely the EU accession process. While the first eight CESEE countries entered the EU only in 2004 and three other CESEE countries followed in 2007 and 2013 (see figure 1), the perspective of EU accession has been a very important policy and reform anchor for CESEE countries at least since 1993, when the EU set out accession criteria.[6] But even before that, the opening-up of EU markets toward CESEE accession countries, followed by association agreements, certainly supported the transition process.

There is ample empirical evidence that participation in the single market, the adoption of the *acquis communautaire*, the inclusion into the common agricultural

[6] *More specifically, this accession perspective has been offered to the Central European countries, the Baltics, Southeastern European and Western Balkan countries and, in principle, also to Turkey. In addition, the EU pursues a specifically designed neighborhood policy with regard to a number of ex-Soviet Union countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine and, in principle, also Belarus) as well as to a number of Mediterranean countries. This neighborhood policy is based on bilateral association, partnership and cooperation agreements which are supposed to be complemented by Deep and Comprehensive Free Trade Agreements. As regards the CESEE countries that were offered an EU accession perspective, initially, there had been a debate of whether acceding countries should enter the EU jointly or individually. In fact, accession negotiations for the 2004 enlargement round started at two different points in time, but eight CESEE countries, plus Malta and Cyprus, managed to fulfill the accession criteria and conclude the negotiations roughly at the same time and thus entered the EU simultaneously. Only for Bulgaria and Romania, the process lasted longer, while for Croatia, it started later.*

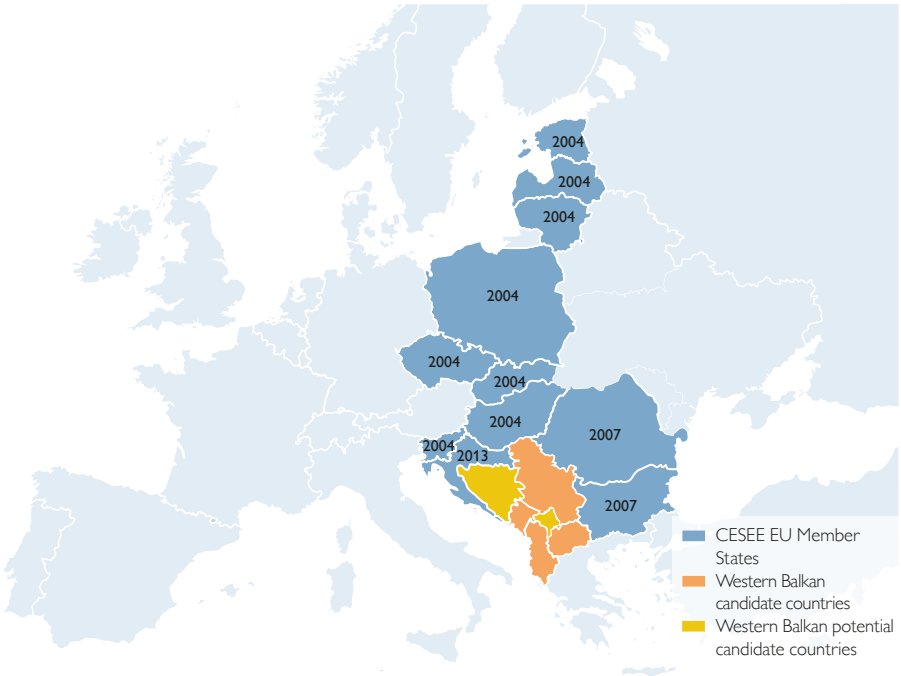
policy and, in particular, in the structural and cohesion policies had a major positive impact on growth and development in the CESEE EU Member States. In particular, it is necessary to mention the positive impact that EU accession (and even just its prospect) had on the creation and strengthening of institutions, on the establishment of a rules-based business environment and thus on CESEE's attractiveness as a production location, on the lowering of trading costs and on funding the transformation process in the CESEE countries.

The *acquis communautaire* provided a blueprint for far-reaching structural and political reforms that in a way complemented the more immediate Washington Consensus reforms in the sphere of macroeconomic policies. In other words, the *acquis* allowed countries with very few existing market-supporting institutions to learn from other countries' experiences, and the prospect of EU membership was an additional incentive for undertaking said reforms. The importance of the *acquis* in all these regards can hardly be overstated, as the sobering fate of reforms in many post-Soviet societies with only a small or no chance of speedy EU membership vividly illustrates.

At the same time, EU membership has further facilitated emigration, which has always been a feature of the transition process. Emigration has been most pronounced among the well-educated, flexible segments of society. Thus, emigration has often been associated with a brain drain that has reduced the comparative advantage many CESEE countries have enjoyed in the past because of their high human capital endowment. Net emigration has only recently started to slow down again, and only the most advanced CESEE countries are recording slightly positive net migration figures, while outflows continue to dominate in many other countries

Figure 1

EU enlargement toward CESEE



Source: OeNB.

of the region. Emigration intentions remain wide-spread across all levels of educational attainment, and they are particularly pronounced among young people and men. Unemployment, regional development, network effects and trust in institutions are closely related to emigration intentions. Most CESEE EU countries as well as the Western Balkan countries have taken a restrictive stance toward immigration from third countries (except from Slavic countries further east, like Ukraine and Belarus). In this regard, Russia is an outlier, as it has been a net recipient of immigration for most of the transition years. In the 1990s and early 2000s, immigrants to Russia were mostly ethnic Russians moving in from other post-Soviet countries, but later on also included migrant and seasonal workers from several Central Asian countries.

3 The boom and the bust

Not least because of EU membership, and aided by favorable global developments, around 2004, the CESEE countries began to witness an economic boom that lasted until the outbreak of the financial crisis. Many CESEE countries experienced buoyant credit growth. Moreover, lending was increasingly oriented toward the nontradable sector. Foreign currency loans – promoted by foreign-owned banks – soared in most CESEE countries, almost regardless of whether borrowers were adequately hedged against currency risks or not. Lending in domestic currencies was also buoyant. Current account deficits rose, and fiscal policy in many cases did little to counteract the boom (or was even procyclical, as windfall revenues were spent rather than saved). Monetary policy's room for maneuver was limited, even in countries with flexible exchange rates, given the momentum of the global financial cycle. Some CESEE countries took measures to limit the cross-border funding of banks and raised the capital requirements for banks – measures that became known as macroprudential tools later on. The empirical literature shows that these measures helped somewhat in taming lending dynamics and/or improving financial stability (by raising banks' risk-bearing capacity). It should be noted, though, that imbalances varied quite considerably in size across individual CESEE countries. In the aggregate, CESEE was the emerging markets region that was most heavily impacted by the financial crisis which unfolded in the fall of 2008 – even though a number of CESEE countries received strong international financial support by the EU, the IMF and other international financial institutions (IFIs), which was complemented by the commitment of key banks to keep their exposure to the CESEE region stable (this joint public and private sector effort to stabilize the balance of payments and, in particular, the financial accounts of many CESEE countries became known as the "Vienna Initiative"). These actions prevented an outright collapse of CESEE exchange rates in most cases. This, in turn, helped avoid a financial meltdown that would have resulted from the massive negative balance sheet effects any major currency devaluation would have caused in the highly foreign currency-indebted region.

But also with respect to the financial crisis, developments differed rather strongly across CESEE when considered at a country-by-country level. In Russia and Ukraine, the 2008 financial crisis led to sizeable devaluations and hastened the transition toward flexible exchange rates. Poland and Albania were the only two European countries that sailed through the crisis without experiencing a recession. Floaters used the exchange rate to smoothen the crisis-related shock to some degree, while Russia achieved a managed depreciation of its exchange rate. Also, Russia benefited from the strong recovery in the oil price from 2009 onward.

Recovery patterns after the crisis were also quite diverse. While the Baltics (where the downturn had already started in 2007) recorded V-shaped recoveries after initially very steep slumps, Croatia was in recession and then stagnation for six years in a row before growth picked up again to reach positive territory. Russia returned to recording rapid growth in 2010 and 2011, but saw economic growth decelerate markedly in 2012 and 2013, even though the price of oil remained well above USD 100 per barrel. This suggests that economic growth was held back by structural factors, including problems in the business environment.

With hindsight, the boom-bust experience many (but not all) CESEE countries have had underlines the importance of taming the cycle, especially by building buffers – both in the fiscal sphere and in the financial sector – during good times and by using borrower-based measures to rein in excessive lending growth during a boom. A second takeaway is the important role of price and wage flexibility in allowing adjustment to shocks to work via quantities and prices after a negative shock hits and thus in avoiding a prolonged pause or even a relapse in the catching-up process.

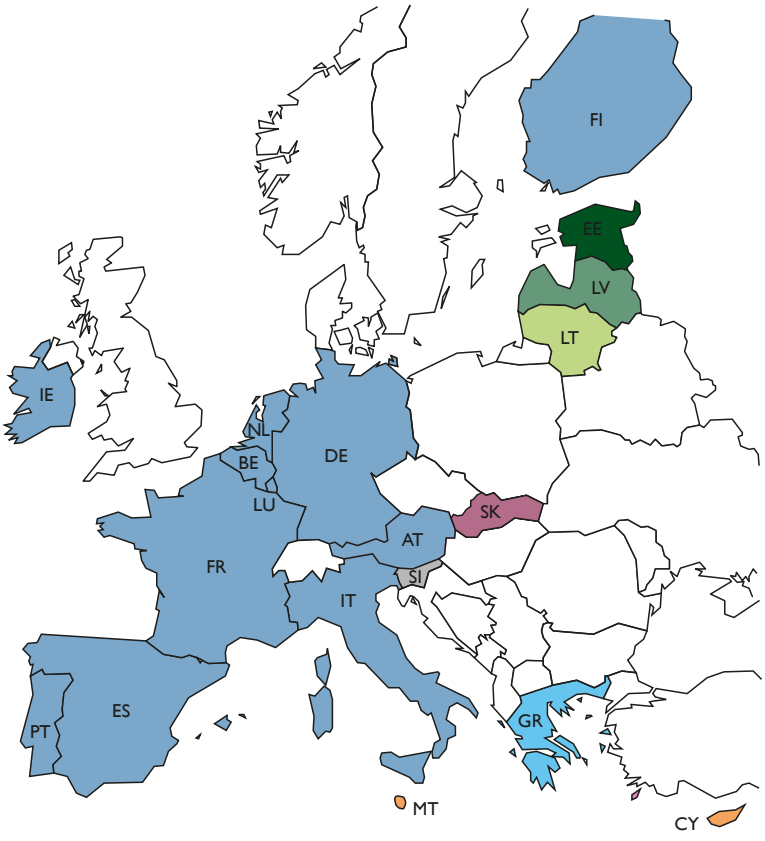
4 The introduction of the euro in CESEE EU Member States

According to the Treaty on European Union, all EU Member States (with the exception of the U.K. and Denmark) are obliged to strive toward eventually entering the euro area. So far, five out of the eleven CESEE EU Member States – namely Slovenia (2007), Slovakia (2009), Estonia (2011), Latvia (2014) and Lithuania (2015) – have joined the currency union.

The institutional deepening of the euro area that started as a consequence of the euro area sovereign debt crisis also has ramifications for future accessions to monetary union. Inter alia, in the process toward euro area accession, aspirant countries will need to establish close cooperation with the Single Supervisory Mechanism (SSM) along with joining the exchange rate mechanism (ERM) II. Moreover, the crisis underlined how extremely important the sustainability of convergence is. Consequently, the convergence assessments of the European Commission and the ECB/Eurosystem have been refined over time to ensure that the respective Treaty provisions are genuinely fulfilled. Sustainability relates to a range of real, structural and

Figure 2

Chronology of euro area enlargement



Source: OeNB.

institutional aspects that are key for smooth participation in monetary union. Thus, while the numerical convergence criteria focus on the nominal dimension, the overall convergence assessments are much broader to ensure that the countries concerned meet the convergence criteria on a lasting basis.

Looking ahead, Bulgaria and Croatia intend to adopt the euro over the course of the next few years. Currently, both countries are preparing for ERM II entry and close cooperation with the SSM. Bulgaria, like the Baltic countries, has entered this process with a currency board arrangement. In Bulgaria's case, this arrangement has been in place for more than 20 years. Croatia, in turn, is following a tightly managed float that is geared toward retaining a large degree of nominal exchange rate stability vis-à-vis the euro.

5 Transformation and well-being

Looking back at 30 years of transition and taking stock of what has been achieved yields an entire spectrum of different transition records. In terms of catching-up, we face a broad range of outcomes. To illustrate this point, frequent reference has been made to the cases of Poland and Ukraine, which entered the transition process with roughly similar per-capita income levels, while today, Poland boasts a per-capita income that is three times higher than that in Ukraine. Successful transition and catching-up have typically been associated with EU membership, the integration into European and global value chains (and thus with a degree of reindustrialization), especially in the automotive sector, as well as sizeable shares of foreign ownership in the corporate and financial sectors.

The CESEE countries that have successfully transformed into market economies are showcases of historic change and also of income convergence – but even there, people's life satisfaction has not improved in line with macroeconomic outcomes, and feelings of being "second class" and of being left behind, especially vis-à-vis Western Europe, are rather widespread. The latter has been documented inter alia by the EBRD's Life in Transition Survey (LITS). This circumstance is often traced to increased disparities in income and wealth, a substantial rise in precarious work contracts, the repercussions of the financial crisis and the dislocations it brought about, perceptions of limited self-determination given the dominance of foreign companies and banks, and the transfer of sovereignty (which had only been reestablished in 1989) as a consequence of EU membership. It is certainly true that regional disparities have increased throughout CESEE, with capital cities usually faring much better than other regions. Moreover, opinion polls in CESEE (like the LITS) show a clear tendency toward "romanticizing" the past, with respondents only recalling its good points while disregarding the bad points.

Such tendencies can also provide fertile ground for populism. In fact, populist-led governments came into office in some CESEE countries during the 2010s. However, there is no obvious link between a country's economic performance during, for instance, the 2008 crisis and subsequent changes in its political direction. The policies of these new administrations responded to some popular concerns by raising taxes on foreign businesses and taking measures to reduce foreign ownership in the national economy, reducing the debt burden of households that had taken out foreign currency loans, raising social transfer payments as well as nationalizing pension pillars funded from obligatory contributions. At the same time, the quality of institutions has worsened in these countries (see also chart 2), corruption and

cronyism have risen, and the separation of powers and the freedom of the media are under threat – and all this is certainly not boding well for the prospects of a continued and sustained convergence in living standards in the future. Moreover, higher levels of suspicion toward e.g. foreign ownership are not conducive to attracting FDI. Paradoxically, in Russia, a very different political system has produced somewhat similar attitudes toward greater foreign participation in the economy, in this case in the form of "import substitution" and "localization" policies.

In fact, all these features of populism are very similar to what we have long seen in countries that have recorded more mixed transition performances that often feature elements of "state capture" by kleptocratic groups that established their power early on in the transition process, right after the communist system had collapsed, and have proven to be very persistent ever since.

Box 1

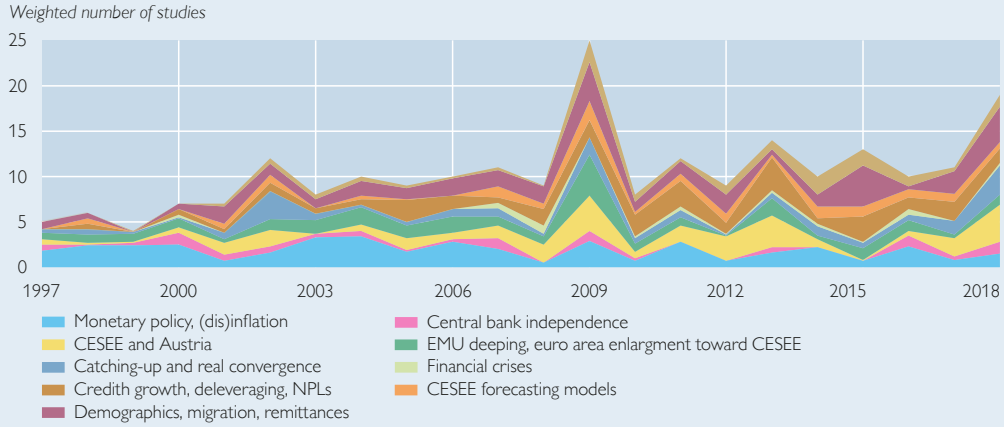
The OeNB's research focus on CESEE has varied over time

In this box, we review how the topics analyzed in the OeNB's flagship publication on the CESEE region, Focus on European Economic Integration (FEEI, before 2004: Focus on Transition – FoT), have shifted over time. Chart 3 shows how coverage of ten selected subject areas has evolved between 1997 and 2018. The number of studies published in FoT/FEEI increased to about ten per year, as the journal's publication frequency was raised from two to four issues per year as of 2009. Special issues were published in 2009 (1989–2009 – Twenty Years of East-West Integration: Hopes and Achievements) and in 2018 (Europe 2030: challenges and opportunities for European integration and convergence, on the occasion of Austria's EU presidency). These special issues also featured contributions by guest authors, which explains the higher overall number of studies in these two years. It is interesting to note that most of the subject areas have been addressed throughout the observation period, while the intensity of coverage has varied over time. Subject areas that have been studied most frequently include monetary policy, inflation and disinflation; as well as CESEE and Austria; and credit growth, deleveraging and NPLs.

To assign the published studies to specific subject areas, we defined ten subject areas, largely based on expert judgment. Then, we identified technical terms that can be expected to be typically and/or very often used in studies concerning a specific subject area. The lists of technical terms per subject area were then used to determine the relative frequency with which

Chart 3

Distribution of subject areas across studies published in OeNB journals[1]



Source: OeNB, authors' calculations.

[1] *Focus on Transition (1997–2003), Focus on European Integration (as of 2004).*

these terms occurred in a certain study. Each study was tested for all ten subject areas. Then, by identifying the three most probable subject areas per study by means of accumulated term frequencies and ranking them by the same method, we obtained a weighted distribution of subject areas for each study. In more concrete terms, every study was assigned to three topics that were given different weights normalized to one. This weighting scheme is reasonable, as subject areas often overlap in one given study. The specific weighting is of course open to debate, as substantial expert judgment was involved in the selection of the technical terms considered to represent a certain subject area. Chart 3 shows how subject areas in FoT/FEEI have developed over time.

Likewise, the main themes of the OeNB's annual flagship Conference on European Economic Integration (CEEI, before 2004: East-West Conference)[7] are particularly indicative of the key policy and research issues that were, from the OeNB's perspective, at the core of the debate at different times during the transition process.

Box 2

Topics of BOFIT publications have shifted over time with the focus of BOFIT analysis

In this box, we review how the topics and geographical focus of publications by the Bank of Finland Institute for Economies in Transition (BOFIT) have shifted over time. We cover three different series of publication, two of which are still being published:

***Idäntalouksien katsauksia – Review of Economies in Transition** (https://helda.helsinki.fi/bof/handle/123456789/39) was published from 1992 to 1999. Some of the published articles were in Finnish, some in English. The publication contained both academic research and more policy-oriented contributions.*

***BOFIT Discussion Papers** (https://helda.helsinki.fi/bof/handle/123456789/9) has been published since 1999. As the name implies, the series is intended for academic research, and papers in the series will eventually be published in refereed scientific journals.*

***BOFIT Policy Brief** (https://helda.helsinki.fi/bof/handle/123456789/25) has been published since 1999, although it was called BOFIT Online until 2004. BOFIT Policy Brief includes analytical contributions on various topics, which are usually not meant to be submitted to refereed scientific journals.*

BOFIT also publishes a weekly news report on the Russian and Chinese economies, but its topics are not studied here.

We illustrate shifts in areas of interest by counting the topics of papers in the aforementioned publications in two ways. First, we look at their geographical focus. A paper might be counted several times if its geographical focus spans several countries. Also, we have counted in papers that discuss Finland's economic relations with other countries. Second, we look at various broad economic topics in the papers, such as monetary policy, structural reforms, etc. While in most cases, assigning a topic (or several topics) to a paper is relatively straightforward, it certainly requires expert judgment.

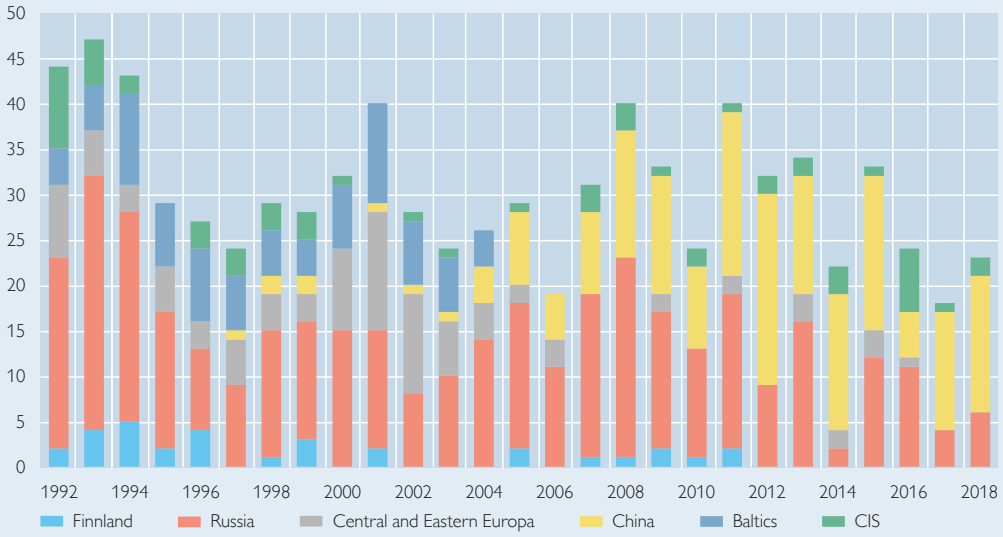
Chart 4 shows how the geographical focus of papers published by BOFIT has shifted over the years. Russia is discussed in 44% of all BOFIT publications studied here, and its importance in BOFIT analysis has remained stable over the years. With a 24% share, China is the second most frequent geographical focus of BOFIT publications. We can also observe the effects of EU enlargement in 2004. Papers dealing with the Baltic countries disappeared altogether after these joined the EU, and the frequency of papers on CESEE declined markedly. This shift was the result of a deliberate decision to reorient BOFIT analysis at the time of EU expansion. BOFIT had begun to analyze China already in 1999, but from 2004 onward, its resources for this research focus have been markedly increased.

[7] *The OeNB has organized this conference since the early 1990s. In 2011 and in 2012, the CEEI was hosted in cooperation with the Bank of Finland.*

Chart 4

Geographical focus of articles published in BOFIT publications

Number of articles[1]



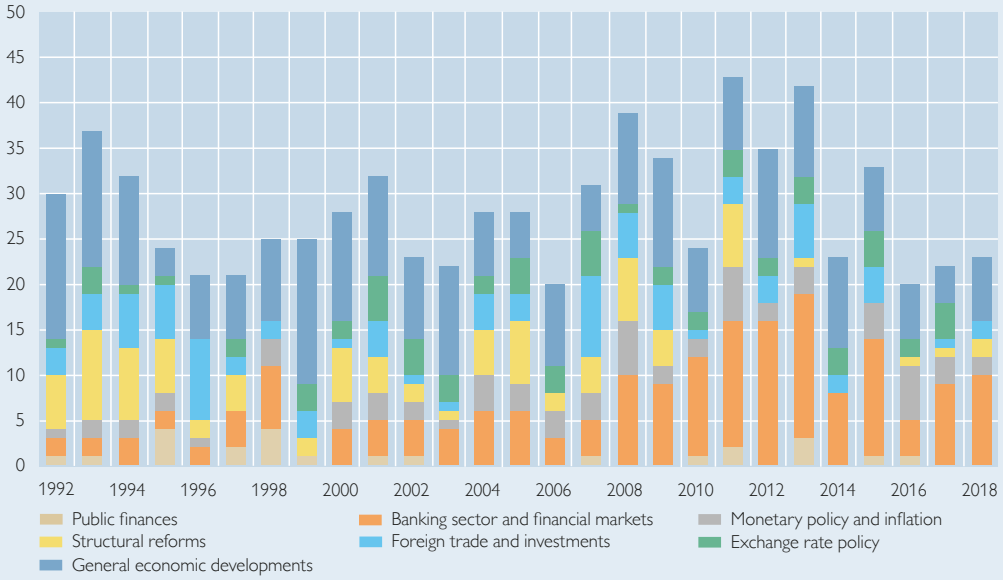
Source: Authors' calculations.

[1] One article may cover several geographical areas.

Chart 5

Distribution of subject areas across articles published in BOFIT publications

Number of articles[1]



Source: Authors' calculations.

[1] One article may cover several subject areas.

Chart 5 plots BOFIT publications by topics. It is perhaps not surprising that the most common category is "General economic developments" with a 32% share in the BOFIT publications covered here. Also, monetary and exchange rate policies as well as inflation have been regularly featured in BOFIT publications. However, the share of papers on banking and financial markets is the second highest at 23%, and has clearly increased since 2008. While this increase coincides with the global financial crisis, the reason behind it is more likely to be a shift of BOFIT's research focus and also the better availability of bank-level data, e.g. for Russia.

6 Looking ahead

Most researchers doing applied empirical work on CESEE see the key challenges for the region in a very similar way:

There seems to be rather limited scope for further catching-up based on the current growth model, which is largely based on assembly and imitation. To keep income convergence going, there is a need for more innovation-based growth so that CESEE economies can move closer to the technological frontier, total factor productivity is boosted and production moves further up the value chain. Higher investment in research and development is needed. Currently, the ratio of research and development expenditure to GDP is around or even below 1% in several CESEE countries. The world average is almost 2.5%.

CESEE's growth potential is also under threat because of adverse demographic trends (aging and migration). After several years of solid GDP growth, labor shortages in a number of (mostly skilled) occupations have started to constitute bottlenecks for growth in many CESEE countries. In the last two to three years, tight labor markets have led to large wage increases, which often exceed productivity developments. While this development promotes wage convergence in Europe, it may dent the cost competitiveness of CESEE economies if it continues unchecked for long. Labor force participation in CESEE has risen in recent years, but strong increases in maternity or paternity benefits in some of the countries may work in the opposite direction.

The recent regression in institutional quality in some CESEE countries gives cause for concern. Persistent dual-economy features and crony capitalism in a number of countries add to the risks that convergence might slow down or stall in the future.

In a number of CESEE countries, the production structure is tilted toward the automotive industry. So far, this specialization has been an engine of catching-up; given the fundamental transformation this sector is bound to go through, however, it seems to be at least as much a source of risk – of asymmetric shocks, for instance. At the same time, it could also be an opportunity if the car industry in CESEE succeeds in staying at the forefront of or even spearheading technological change.

So far, the CESEE region appears to be relatively ill-prepared for the incipient shift to a carbon-free economy. Over wide parts of the region, policymakers are not even aware of how big a change will be needed to accomplish this transformation. At the same time, in some areas, there appear to be opportunities to move directly to a carbon-free economy if policies provide appropriate framework conditions.

Finally, there is the challenge of completing the EU enlargement process in CESEE by proceeding toward the EU accession of the Western Balkan countries. At the current stage, the perspective of EU accession appears to be less of an incentive to the Western Balkans to speed up transformational progress than it had been earlier for Central Europe and the Baltics: This circumstance might be attributable

to state capture, as was also conceded by the European Commission in 2018, but it might also have to do with the fact that the EU as a whole appears to be less eager than in the past to act as a strong anchor for candidate countries and potential candidate countries – despite the rather ambitious accession strategy the European Commission published in 2018 for the Western Balkan region. Obviously, for many countries further to the east of the current EU Member States, EU membership is not a realistic prospect, and their reform efforts will need to find other institutional anchors.

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30 years of East-West integration in Europe: reflections on what we have learned and on challenges ahead

Michael Landesmann[1]

This paper gives an overview of lessons learned from 30 years of experience of East-West integration in Europe. It covers issues related to the economics of transition of the Central, Eastern and Southeastern European (CESEE) economies after 1989, the relatively fast processes of institutional and economic catching-up, trade and production integration and the role of foreign direct investment (FDI). It also analyzes difficult labor market adjustments linked to structural change and changing skill demands, the strong forces leading to regional economic agglomeration and the recurrent difficulties in a range of economies in dealing with macroeconomic, particularly current account, imbalances. Finally, this contribution discusses the issues of reform reversals and political regression taking place in some CESEE countries and the political-economic analysis necessary to deal with these phenomena.

JEL classification: F02, F15, F43, F55, N14, P51
Keywords: East-West integration in Europe, Central, Eastern and Southeastern Europe, CESEE, transition experience, Eastern enlargement, trade integration, external imbalances

Let me start with some personal notes: I got involved in transition issues while I was still at Cambridge during the eventful year of 1989. During the 1980s, I worked with a research team led by Professor Sir Richard Stone on the multisectoral structural modeling of the European economy. With my background as a Central European, the events of 1989 were too exciting to miss. In cooperation with some political scientists (such as John Dunn and István Hont) and the Polish Oxford economist Włodzimierz Brus, we organized a two-year-long seminar series on the transition process at King's College, Cambridge. Moreover, I became involved in projects coordinated by the Centre for Economic Policy Research (CEPR) on developments in Central, Eastern and Southeastern Europe (CESEE) and in a series of projects for the European Commission.

My interest in the historically unique processes of transformation in CESEE and the challenges for the European integration process as a whole led to my departure from England and, in the mid-1990s, to my taking up the position of Scientific Director of the Vienna Institute of International Economic Studies (wiiw). The wiiw was – and still is – specialized in analyzing developments in CESEE in particular and European integration more generally. Working at the wiiw provided ideal conditions for analyzing developments in CESEE and participating in many debates with academics and policymakers in CESEE and across Europe.

The developments unfolding in the CESEE region after 1989 comprised economic, political, social and cultural aspects. There were many things that I learned from observing and analyzing the transition processes in CESEE and their impact on overall European integration. As an economist with expertise on international economic integration and longer-term structural change, I shall focus on a subset

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of issues which have motivated new and enriched existing research lines. These range from an understanding of the early challenges and patterns of transition to differentiated patterns of catching-up and are, at times, also associated with evolving macroeconomic imbalances and challenges for macroeconomic policies. We shall also review what we have learned about patterns of trade and production integration between Eastern and Western European economies, the importance of the legal and institutional anchoring that is linked to the perspective of EU membership, about regional inequalities and patterns of agglomeration, labor market developments and the crucial role of demography and migration flows. Finally, we shall point to the importance of understanding developments regarding reform reversals, social differentiation and the implications for further strategies regarding European integration.

1 The processes of transition

Let us start with the transition process itself. There is no doubt that the dramatic events of 1989 sparked a systemic transformation that had unique features.

What was impressive in the first place was both the speed and depth of the liberalization process of the CESEE[2] economies that initiated the shift toward becoming market economies. This liberalization process (including privatization, price, current and capital accounts liberalization) was faster and – in all likelihood – more complete in the timeframe covered than anything previously witnessed in history. Second, the transition processes involved a range of economies which were geographically very close to advanced, high-income economies and which had already reached a very high level of economic integration among themselves.

Both these features singled out the group of CESEE economies in the period after 1989 and were at the root of a relatively successful process of catching-up in economic and institutional terms as well as of the process of pan-European economic integration we have witnessed over the past decades.

However, the first big surprise for economists in the early phase of transition was the depth of the initial "transformational recession" (a term coined by János Kornai; see Kornai, 1995). The initial stage of transformation was characterized by a dramatic decline in economic activity that brought GDP levels down by between 20% and 40% in the different CESEE economies.

Despite having analyzed the features of planned economies over the previous decades, the economics profession was not well equipped to advise on such a dramatic path of systemic change that involved a fundamental change in the mechanisms of allocation (of factors of production, of goods and services). Such a change amounted to a severe disruption of economic activity that could not be easily understood by means of traditional tools of economic analysis.

In particular, the political economy of transition was ill understood, i.e. the interaction of political and economic processes of systemic change. Given this interaction, certain important reform steps were either blocked or supported by different social and economic actors. The urgency of the need to influence these processes was definitely greater than the understanding of these processes. Only gradually, a body of analytical results was developing based on the application of

[2] *In this article, I will mostly consider a wider group of CESEE economies going beyond those that joined the EU in 2004, 2007 and 2013. Issues of transition and the relationship with the EU remain important in the EU candidate countries of the Western Balkans as well as in countries without a foreseeable EU membership perspective, such as Belarus, Georgia, Moldova and Ukraine.*

new insights of positive political economy and institutional economics (for a synthesis of these results, see Roland, 2000).

What became clear early on was that geographical position, institutional and behavioral anchorage (especially in the *acquis communautaire* and, prior to that, in the conditions defined by the Copenhagen criteria for an EU membership perspective) had great influence on the direction and speed of systemic change and also on the speed and extent of economic recovery. The nature of the relationship and integration with an advanced group of economies such as the EU-15 was quickly recognized as essential when it came to understanding the differentiation of transition processes across the CESEE countries (between those countries that became EU members at different points in time, those that received EU candidate status, and those with very distant or no membership perspectives).

1.1 Growth and catching-up dynamics

All in all, the growth experiences of the transition economies after the first phase of transformational recession conformed to the picture painted by standard economic growth theory regarding the possibility of lower-income economies to converge with higher-income economies (see e.g. the classic textbook on economic growth by Barro and Sala-i-Martín, 2004). Convergence processes could be understood on the basis of either the traditional neoclassical growth model, which predicts that lower-income economies are characterized by low capital-to-labor ratios and relatively high rates of return, or newer growth theoretical formulations, which define the potential for catching-up on the basis of technology gaps and the scope for technology transfer.

However, standard economic growth theory was mostly formulated in rather aggregate terms, and this turned out to be insufficient for understanding the processes of convergence of the CESEE transition economies. In particular, it did not contain sufficient information on why we observed differentiated processes of catching-up among the CESEE countries and, furthermore, on the fact that there were specific features of these catching-up processes which could only be detected at a more disaggregated level. Examples of the importance of a disaggregated assessment were the role of state-owned enterprises and of *de novo* enterprises in different sectors, the importance of the agricultural sector and the extent of initial under-representation of tertiary activities (a feature of communist countries) as well as regional patterns of growth.

One important issue already mentioned above was the relevance of the institutional and behavioral anchorage of the CESEE countries in an EU accession or EU candidacy process. This institutional anchorage was important for two reasons: (1) as a signal to the internal actors, i.e. the economic and political actors in the individual countries, so that their expectations regarding future developments could be aligned, and (2) as a sign of reassurance to outside actors, in particular those that could provide capital, knowhow, support in the setting-up of new types of activities (e.g. in the banking system) and in the modernization of traditional types of activities.

1.2 Trade integration, trade specialization and cross-border production integration

There are a number of interesting aspects in the development of trade structures and trade specialization which, in many ways, also demonstrated the insufficiency of traditional trade theory in analyzing and predicting the development of trade patterns between the CESEE countries and the EU-15, which became CESEE's most important trading partners by far.

The first aspect was the speed of trade reorientation: Before the start of transition in 1989/90, the majority of CESEE economies were members of the Council for Mutual Economic Assistance (CMEA), which was a tightly-knit trading bloc in which trade patterns were generated through a process of planned direction of trade and production flows across CESEE. The breakdown of the CMEA meant that the CESEE economies could reorient their trade flows but were also deprived of a secure market position in other CMEA economies. This meant that in the first phase, until about 1995, trade flows among former CMEA member countries collapsed and there was a very rapid process of trade reorientation, mostly toward the EU-15 economies.

Then there was the speed by which traditional patterns of trade specialization changed in many (though not all) CESEE economies that witnessed a dynamic process of upgrading export structures, both in inter- and intraindustry trade. What were the reasons behind this development? One reason is the same that drove the growth process in general: the potential to benefit from a technology transfer (in a wider sense, i.e. by learning not only about production processes but also about product design, marketing, contractual practices with Western trading partners, etc.).

Early studies on the likely pattern of trade specialization between CESEE and the more advanced EU economies were undertaken within the frameworks of static Ricardian and Heckscher-Ohlin-Samuelson (HOS) theories: The prediction based on these frameworks was that the CESEE countries would specialize in economic activities in which they would have a comparative advantage vis-à-vis their Western European counterparts. Such activities would be lower-tech and less skill- and research and developement-intensive than those of their Western European trading partners. These frameworks in their static formulations were soon understood as being at odds with the rapid processes of upgrading export structures, both at the industry and the product levels.

Hence, over time, more sophisticated and also more appropriate analytical frameworks were used: theories which analyze the emergence of horizontal and vertical patterns of intraindustry trade (see e.g. Hummels et al., 2001; Schott, 2004; Dulleck et al., 2005); theories which look at the dynamics of trade specialization jointly with differentiated productivity catching-up (see Landesmann and Stehrer, 2001 and 2002); theories of fragmentation, of trades in "tasks", and of outsourcing (see Arndt and Kierzkowski, 2001; Grossman and Rossi-Hansberg, 2009; Feenstra, 1998), etc. All these approaches capture features of East-West economic integration more appropriately than the simple application of traditional static trade theory.

Furthermore, the importance of foreign direct investment (FDI) in the upgrading processes of the CESEE countries' tradable sectors was recognized. Most of the CESEE countries had, within a short period, become economies with a very strong presence of foreign investors, and these played an important role in

promoting productivity growth, redesigning product programs and strengthening export capacities. The location decisions of foreign investors also were major factors behind the re-industrialization process that took place in the more successful CESEE countries and behind the development of a new industrial belt of cross-border production networks in Central Europe (see Stehrer and Stöllinger, 2015).

1.3 Labor markets: productivity catching-up, structural change and skill bias

One of the features of the catching-up processes of the CESEE countries was that employment developments were initially very disappointing after transition started, despite a very favorable experience of output (or GDP) developments compared with the EU-15. This phase was one of "jobless growth", while, more recently, we have been observing another phase characteristic of many CESEE economies: that of "employment-constrained growth." There are a number of explanations for this U-shaped pattern of employment growth that characterizes labor market developments in many CESEE countries.

First, the very low responsiveness of employment to GDP growth (i.e. the low employment elasticity with respect to output growth) in the initial phase, after the economies recovered from the initial transformational recession, can simply be seen as the other side of the coin of real income catching-up driven by productivity catching-up. Thus, if the difference in the growth rates of GDP and aggregate employment were the same in the EU-15 and in the CESEE countries, there would be no catching-up of productivity levels between the two groups of economies. This is, of course, arithmetically correct but does not provide much insight into the underlying processes.

Second, a more sophisticated argument was developed in Landesmann et al. (2004). Here, we argue that more complex structural convergence processes lie behind the relative output and employment performances in CESEE. The argument is as follows: At the outset of transition, the CESEE countries had a wide range of industries in which labor productivity gaps to Western European industries were particularly high and in which, consequently, there was a strong potential for productivity catching-up (particularly manufacturing industries and – in many CESEE countries – agriculture). On the other hand, the services industries were strongly underrepresented in comparison with Western European countries. The CESEE countries then underwent not only a convergence process of productivity levels at the aggregate level but also a structural convergence process, i.e. the output composition of their economies and hence the representation of different sectors in the aggregate economy became more similar to those in the advanced Western European countries. Thus, the shares of heavy manufacturing industry and of agriculture declined and those of the services industries (particularly market services, such as retail trade, business and financial services) increased. Services industries are more labor-intensive, and hence, a shift in the output structure toward services increases the employment elasticity of aggregate economic growth. The combination of productivity catching-up (differentiated by industries) and of a structural convergence process (with labor-intensive services industries gradually gaining in importance) thus caused a sharp fall in the employment-output elasticity in the initial phase after transition, followed by a recovery of that elasticity afterward. This led to the U-shaped pattern of aggregate employment growth observed in the CESEE countries over the longer period from 1990 to 2008. More recently, many

CESEE economies have moved into a "labor shortage" regime, which has to an important extent been due to the large outflow of population from the CESEE countries, particularly of young and skilled workers. This phenomenon will be covered in more detail in section 2.1.

1.4 Regional patterns of growth, agglomeration and structural change

At the regional level, we expected a change in development patterns from the outset, as the opening of the CESEE economies toward Western Europe could be expected to change the regional orientation of economic activity in the transition economies. However, a number of additional factors were at work, leading to the important phenomenon of agglomeration, in particular to a very significant strengthening of the economic importance of capital cities and a sharp increase in regional inequality. In most of the CESEE countries, the levels of intra-country regional income inequality surpassed those observed in Western Europe.

What were the explanatory factors in these developments? Without any claim to completeness, the following have played important roles, leading to a sharp increase in regional inequality and tendencies toward the agglomeration of economic activity (particularly in capital cities).

One factor is the aforementioned catching-up process in tertiary activities, which were traditionally underrepresented in the CESEE economies and which, in the early phases of transition, could develop most easily in capital cities or strong urban agglomerations. Such urban agglomerations provide the sophisticated markets and the necessary concentration of people with higher-level skills and, furthermore, the scope for complementarities between tertiary activities necessary to support the development of a vibrant services sector.

The other factor that has supported the tendency toward regional inequality is the strong concentration of FDI activity in regions bordering Western European economies. Such locations have facilitated the easy integration into cross-border production networks and have been able to make use of the more developed logistics and transport infrastructure in their neighboring Western European regions. As infrastructure might improve more widely, further labor supply pools may be tapped, and uneven land prices may also attract FDI to a wider range of regions; this – supported by appropriate regional and labor market policies – could somewhat reduce the degree of regional inequality in the future.

Regions with structural problems or regions at the periphery are a more persistent cause for regional inequality. These include regions that suffer from their geographical position away from the border to Western Europe but also from the legacy of past heavy industrialization in the socialist period, which means that they were severely affected by the deindustrialization processes in the initial period of transition. Lagging regions also include poor agricultural regions that have not been able to sufficiently attract new activities. Such regions have suffered from (at times massive) emigration and a deterioration of the demographic profile as young people leave and also from an erosion of the skill base as the better trained are more mobile. They remain "poverty-trapped" regions faced with social misery and also the political implications of such traps (see section 2.4 for details).

2 More recent processes impacting transition

2.1 Migration flows: projections, impacts and perspectives

East-West integration processes in Europe have always had important implications for labor market integration. The cross-country or cross-regional integration of labor markets can be indirect (the impact on labor markets resulting from trade integration or international investment flows) or direct (i.e. through cross-border labor flows). Migration regimes between the CESEE countries and the EU-15 remained very restrictive until the accession of the first group of new CESEE EU Member States (NMS-8). Hence, the main channels through which labor markets in CESEE and in Western Europe were affected were the indirect channels (trade, FDI, outsourcing, etc.). Only just prior to EU enlargement (which went hand in hand with visa liberalization) and afterward did migration flows become important conduits of labor market integration. This was continually strengthened when the transitory restrictions with regard to labor market access were at first gradually and then fully lifted in 2011 and 2013, respectively. The gradual opening of EU labor markets happened at different points in time in different countries, which also led to diverted migration flows across the EU-15 economies (as some countries, such as the United Kingdom and Ireland, opened their labor markets immediately upon accession of the first group of NMS while others, such as Germany and Austria, kept transitional access restrictions for the full seven-year transition period).

Migration is a complex topic. I will therefore mention only a few of the features that have emerged from work done on this topic in the context of East-West integration in Europe.

Much of the research commissioned by the European Commission and other political institutions was directed toward understanding the scale of migration flows to be expected between the CESEE countries and the incumbent EU Member States under a regime of liberalized access to EU labor markets (in this context, an important study was Brücker et al., 2009). Given the focus of most economic research on the labor market effects of migration (see e.g. Kahanec and Zimmermann, 2010), this was a strange direction of commissioned research on migration, as the main impacts of migration on labor markets were expected not from the scale but the socioeconomic composition of migrants (especially by skill groups).

Hence, there was a strange inconsistency: Public and political interest was focused on the scale of migration flows, while most of the detailed economic research findings on the impact of migration would emerge from microeconomic research focusing on the socioeconomic composition of migrants and their complementarity or substitutability with the host countries' labor force. This inconsistency also reflected the relative neglect of commissioned research on the sociocultural integration of migrants in the respective host societies. This led to an underestimation of political responses to large-scale migration flows in short periods of time (such as in the United Kingdom in the years following 2004, culminating in the prominence the issue of East-West migration received in relation to the Brexit referendum).

Another issue that has been underemphasized until recently is the potentially detrimental impact of outward migration from the CESEE countries on the demographic situation and labor shortages in the countries of origin. Only recently has this topic been taken up (see Leitner and Stehrer, 2019). It is now quite clear that emigration plays an important role in the new "labor constraint" regime experienced in quite a few of the CESEE countries where unemployment rates are among the

lowest in the EU. This labor shortage is particularly acute in the more highly skilled segments. The wiiw's view is that the demographic implications of (past and current) migration flows now represent one of the most important longer-term constraints for persistent catching-up and high growth in CESEE (see e.g. Leitner and Stehrer, 2019). They also have important political economy impacts, such as the "elderly bias" in public spending (see e.g. Vanhuysse, 2009 and 2012).

2.2 Macroeconomic vulnerabilities: current accounts, exchange rate regimes, speed of growth of financial intermediation

One of the important macroeconomic features of most CESEE countries, as would be the case for many catching-up economies more generally, was that they were characterized by large and relatively sustained current account deficits over much of the transition period. The fact that current account deficits emerge is – in many ways – natural in that catching-up economies are (and should usually be) net capital importers (a circumstance that is reflected by current account deficits). Such net capital imports facilitate the catching-up process by exploiting possibilities of productivity catching-up, filling gaps in the spectrum of economic activity (e.g. in financial intermediation) and establishing cross-border production linkages.

However, given the very high degree of capital market integration in Europe, persistent current account deficits can also be a source of vulnerability – both in the short run, in that capital flows might be strongly sensitive to shocks, and in the longer run, when countries build up foreign debt positions and these might turn out to be unsustainable. The recognition of current account positions being unsustainable might, in turn, be a function of changes in external scenarios (such as a change in general risk perception or a general shift in global interest rates) as we witnessed in many CESEE countries following the financial crisis in 2008.

The experience of the CESEE countries in this respect has added to the knowledge about current and capital accounts' vulnerability in emerging market economies (as have previous crisis experiences, such as the Asian, Russian, Turkish and Latin American crises). Two issues of the CESEE countries' recent experience are particularly interesting in this respect. The first is the speed by which the increase in financial intermediation took place in many of the CESEE countries over the recent decades and the role that foreign banks have played in this process. The second issue relates to the importance of exchange rate regimes and policies. These have played rather crucial roles in the different experiences of the CESEE countries.

The degree of foreign banks' involvement in the region was a specific feature of the CESEE countries' experience as it reflected their geographic location and their institutional and behavioral anchoring in the overall European economy. The links of CESEE countries to international capital and, particularly, credit markets came largely under the control of Western European banks, and these banks (given the legal and economic security that anchorage in EU accession or candidacy processes seemingly provided) have been more than willing to be the main agents pushing toward a rapid expansion of financial intermediation. This process was further enhanced by the anchorage of a relatively large number of CESEE economies in various forms of pegged or fixed exchange rate regimes and an expected path toward membership in Economic and Monetary Union (EMU) that – in the eyes of both international lenders and the borrowing economies – led to the perception that the danger of devaluation was rather small. The strong growth of private

sector borrowing (often in foreign currency) resulted from this situation, generating also different responses in countries with flexible exchange rate regimes and countries with fixed exchange rates following the outbreak of the international financial crisis. This experience in the CESEE countries has contributed to our understanding of the benefits and costs of different exchange rate regimes and of the need for cross-border financial market regulation in the context of integrated capital markets in Europe.

2.3 The importance of EU enlargement, the problem of "in-betweens", and Europe's neighborhood

The impact of EU enlargement cannot be judged without also examining the developments in European countries that are laggards in the European integration process. These comprise the countries that seem to spend a long period in the waiting room of EU accession (such as the countries of the Western Balkans and, even more strikingly, Turkey), the countries with little prospect of EU membership in the foreseeable future (such as Belarus, Georgia, Moldova and Ukraine) and those that do not aspire to such membership (Russia).

It is true that many of these countries have also seen considerable increases in average GDP per capita since the mid-1990s. However, they have, for the most part, also been subject to bigger bouts of macroeconomic instability (often very large current account deficits and volatility in capital in- and outflows) than the countries that successfully became full members of the EU. They have also experienced much higher emigration rates than the "ins" and have been much less integrated in the cross-regional production networks that had proven so important for the reindustrialization processes in CESEE. Furthermore, they have also become much more open to the geopolitical strategies pursued by regional and global powers from outside the EU (China, Russia, Turkey, United States). Apart from anything else, this has led to a factionalization (into interest groups) among the elites of these countries as regards the future direction of these countries which, in turn, made a consistent development strategy more difficult. It is clear that further rounds of EU enlargement and also the EU's relationship to countries that are unlikely to become full EU members in the foreseeable future have to be carefully considered in the light of these developments.

Regarding the wider geopolitical and geoeconomic dimension that Europe is facing, one might also say that after 1989, the European integration process for a long time proceeded along rather naïve and technocratic lines. It failed to take account of the fact that outside the EU, "big power" politics (or, at times, "medium power" politics) have shaped the bulk of international relations (and will increasingly do so in a multipolar world). This has become very obvious over the past decade in the growing (and, at times, escalating) conflictual relationship with Russia regarding the destiny of Ukraine and of other buffer states such as Georgia and Moldova. Furthermore, China's strong interest in the Balkan countries (and even in EU Member States such as Bulgaria and Hungary) as part of its One Belt, One Road (OBOR) policy clearly shows that the EU is not the only relevant big player in CESEE. This comes on top of the important role that the U.S.A. has always played in political and security terms.

The refugee crisis is another instance of power-political interventions in Europe's neighborhood (the Middle East and Northern Africa) which has had

significant spillover effects on Europe. It has become evident (especially after the failure of the Arab Spring) that the EU has failed miserably as a development engine for most of its neighbors that have no accession perspective. It is still a little-understood issue why being in the neighborhood of a very large, rich entity such as the EU has had so little development spillover effects. Instances of failed states and failed economies now characterize much of the EU's immediate non-European neighborhood. It is clear that the EU will have to make a major effort to rethink and reshape its neighborhood and development policies and that it also will have to become a more serious player in international relations. Whether the internal political dynamics within the EU will allow this to be the case is another issue.

2.4 Reform reversals, political regression and European integration

The EU's eastward enlargement brought about a rapid economic convergence between Eastern and Western European countries, but recently, there have been increasing signs of social and political divergence within Europe. The single market and free movement of capital and labor have produced many of the expected positive economic effects. Nevertheless, reform reversals emerged, leading to more systematic reversals in some countries, most notably in Hungary and Poland. We observe a reversal of anti-corruption trends, and there are further signs of institutional and political regression as well. This has happened despite countries' strong (legal and institutional) anchoring in the EU and the significant economic impact of financial support to new EU Member States, especially through the Cohesion Fund. The difficulty of behaviorally adjusting to fast-moving structural change (see also Székely and Ward-Warmedinger, 2018) has contributed significantly to these relatively new trends. This is particularly observable in those parts of society (differentiated by age, skills and regional location) that have been negatively affected by strong regional agglomeration effects of economic activity, rising inequalities and the changes in educational requirements that rapid economic integration and convergence entailed.

The phenomenon of unevenly distributed gains and losses from rapid structural change can also be observed in many of the advanced economies in Western Europe and in the United States. However, in many of the CESEE countries, the long phase of authoritarian rule during the communist period and, often, the lack of a prolonged period of democratic experience before that provide a rather shaky basis for stable democratic institutions. Hence, the development of "illiberal democracies" within the EU and the socioeconomic basis of populist forces are worrying and still insufficiently understood phenomena in Europe as a whole and in the CESEE countries in particular. It will require a lot of attention by social scientists and political actors alike as the legacy of the financial crisis has still not been fully overcome, development levels in an integrated Europe remain quite diverse and EU-level institutions remain relatively weak (for interesting recent contributions on some of these issues, see Krastev, 2017, and Eichengreen, 2019).

3 Conclusion and looming challenges

The above is just a selection of a range of topics which have been at the forefront of the discussion of the most remarkable historical experiment of the past 30 years, that of transition in Central, Eastern and Southeastern Europe (CESEE) and of East-West integration in Europe. For a number of CESEE countries, the processes

of East-West integration have culminated in EU membership. But the role of the EU and of European integration extends beyond the CESEE countries that have joined the EU. This article covers some of the topics that have occupied researchers and policymakers alike over this 30-year period. They range from the immediate issue of transition, i.e. the transformation of formerly planned economies into market economies, to the growth dynamics of catching-up economies, the evolution of trade and cross-border production integration, uneven regional growth and labor market developments as well as vulnerabilities in the macroeconomic setup of very open, externally highly liberalized economies. The associated nature of deep structural changes and instabilities experienced by the populations in CESEE are still shaping the complicated political landscape currently unfolding in Europe. They are likely do so in the future as well. Thus, an understanding of the nature of structural change, its unequal impact on different segments of the population and of policies that help to cope with the strains brought about by these processes will provide ample scope for the present and the next generation of economists and other social scientists to apply and further develop the tools of our analysis. Their efforts should also provide an important contribution to successfully managing both the speed and nature of future European integration.

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The price of unity: the transformation of Germany and Eastern Europe after 1989

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This article adopts a comparative perspective and focuses on the economic reforms that were implemented in Germany and Eastern Europe during and after German unification in 1990. After the collapse of communism, most politicians and economists considered neoliberal reforms based on deregulation, liberalization and privatization as the only viable model. Although the reforms in eastern Germany were not labeled as such, they amounted to a "shock therapy," much like in neighboring Poland. Radical privatization and hasty liberalization, in combination with monetary union coming into force in July 1990, resulted in the closure of many enterprises and mass unemployment. The German government tried to compensate the "losers of transformation" with welfare payments, but this resulted in a systemic crisis of united Germany that eventually led to a second round of neoliberal reforms under Federal Chancellor Gerhard Schröder's center-left coalition government from 2001 to 2005. The widening social gaps and the fear of social dislocation have contributed to the rise of right-wing populist parties both in Germany and in East Central European countries like Poland.

JEL classification: F63, N14, O52, P20
Keywords: transformation, neoliberalism, postcommunist reforms, shock therapy, populism, German unification

Anniversaries of historic events make us look at history from a perspective shaped all the more by the present. In 2009 and even in 2014, reviews of transformation and of the "shock therapies" of the 1990s were still mostly or overwhelmingly positive. The global crisis of 2008/09 and recent electoral successes of right-wing populists and nationalists have called into question neoliberal narratives of economic success and even the – in Hannah Arendt's words – liberal revolutions of 1989.[2] In 2009, the German government organized a huge Festival of Freedom in front of the Brandenburg Gate in Berlin to celebrate the 20th anniversary of the presumed *annus mirabilis*. On this occasion, artists were invited to design plastic replicas of pieces of the Berlin Wall, which were lined up and then made to collapse, creating a staged domino effect that symbolized the end of communism. What it rather looked like, however, was an involuntary reference to the global financial crisis. In the end, a domino effect of the bankruptcy of Lehman Brothers on other banks has been prevented, as has the collapse of entire economies in Central, Eastern and Southeastern Europe (CESEE) after the end of communism. Although another depression like the one in the 1930s was averted, the financial crisis and the subsequent euro crisis delegitimized the order created in 1989. Eastern and Southern Europe were hit particularly hard, which called into question European integration – a project that may, in a way, be considered globalization on a smaller scale. Against this background, the 2014 review of European transformation was – yet again – surprisingly positive. Harvard economist Andrei Shleifer and Californian political

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[2] *Of course, Arendt had not yet discussed the events of 1989 in her book "On Revolution" (Arendt, 1963), but they fit in with her pattern of constitutional or liberal revolutions laid down therein.*

scientist Daniel Treisman chose "Normal Countries" as the title of their 2014 review of the transformation process (Shleifer and Treisman, 2014).

Anyone who experienced the "normalization" era in Czechoslovakia that followed the suppression of the Prague Spring would have severe doubts about the term "normal." What is considered "normal" always depends on the prevailing social and political order. Shleifer and Treisman (2014) referred to the synchronous development of former communist countries into free market economies and liberal democracies, confirming Francis Fukuyama's thesis of the end of history. Thanks to comprehensive modernization, the authors argued in the journal *Foreign Affairs* (Shleifer and Treisman, 2014), the postcommunist countries had become normal countries – and in some ways better than normal. Shleifer and Treisman (2014) praised radical reforms – and not gradual reforms – as the best variant of transformation.

The present article discusses a case of postcommunist transformation that was mostly omitted from the English-language literature on CESEE but which, nonetheless, can be regarded as another testing ground for shock therapies: the former German Democratic Republic (GDR). The example of the GDR is particularly interesting because it shows that transformation did not stop at Europe's former East-West divide but that the underlying economic principles and the economic policies they informed had strong repercussions on the West. In the following, we will refer to this type of feedback as "cotransformation" – a phenomenon that had a particularly heavy impact on Germany because of unification. In this sense, Germany is a special case all the more deserving of closer examination.

Germany was rather swift in overcoming the financial and economic crisis of 2008/09 and has since been internationally perceived as a model of economic success. A look back to the late 1990s, however, shows how quickly an upswing can turn into a decline – and vice versa. In 1999, the *Economist* referred to Germany as "the sick man of the euro" (Economist, 1999). At that time, Germany seemed to be caught in a vicious circle of low growth, rising unemployment and government debt (see Ther, 2016a).

Germany's crisis at the time was not least a result of economic policy decisions taken in 1990. In the subsequent decade, the bankrupt GDR and the Socialist Unity Party of Germany (SED) were repeatedly blamed for the economic problems in eastern Germany. What is often ignored, however, is that the main actors of German transformation came from the West. This had to do with the course of German unification, which entailed an extensive exchange of elites in eastern Germany. The electoral success of the Alternative for Germany (AfD) in eastern Germany and, most recently, Bochum historian Marcus Böick's 2018 history of the East German privatization agency, *Treuhandanstalt*, have triggered a long overdue debate about the reform policies of the early 1990s and, particularly, privatization. Especially as a historian, one should be wary about the wisdom of hindsight – yet, one needs also to be very critical of the Thatcherite slogan stating that "there is no alternative."

The economic reforms in the five "new Länder" – which is what they were called in 1990 in a slightly paternalistic manner – aimed at a swift alignment with the West. Not only the Federal Republic of Germany but the entire Western world saw the outcome of the Cold War as a confirmation of the superiority of their political and economic system. Socialism has lost, capitalism has won – this is how renowned economist Robert Heilbroner put it in *The New Yorker* magazine in early

1989 (Heilbroner, 1989, p. 98). Not much later, the International Monetary Fund (IMF), the World Bank and the U.S. Department of the Treasury adopted the Washington Consensus. This economic standard prescription for crisis countries – arranged as a decalogue very much like the Ten Commandments – was first intended for debt-ridden Latin American countries but was then applied, above all, to postcommunist Europe. It starts out with the objective of macroeconomic stabilization – in fact, this always meant austerity programs – and leads on to the triad of liberalization, deregulation and privatization. By way of conclusion, the Washington Consensus makes a case for foreign direct investment (FDI) and global financial capitalism (for details on the Washington Consensus, see Ther 2016b).

1 The year 1989 from a global perspective

The Washington Consensus was part of the global transformation that took place in 1989, as was the democratization of Chile. Chile is important in this context because advisors associated with the Chicago School of Economics were active there. International observers therefore attributed Chile's long recovery following the 1982 Latin American debt crisis mostly to radical privatization, internal and external liberalization and deregulation (only the profitable copper mines remained in state ownership). Chile marks the beginning of the neoliberal "success stories" that later had a strong impact on postcommunist Europe. On closer examination, it is questionable whether Chile's upswing, which lasted until the Asian financial crisis of 1998, can be attributed to the neoliberal economic policy stance under Augusto Pinochet or rather to the Christian and social democrats' economic policy after 1989, which strove for "social equilibrium"[3] by actively fighting poverty and increasing purchasing power.

The ideas of the Washington Consensus were taken up in Europe faster than its authors could have anticipated. In June 1989, *Solidarność* won a landslide victory in the first free elections in postwar Poland, and the communists were happy to let the opposition take over the government so it would be blamed for the economic malaise (which is exactly what happened in the 1993 parliamentary elections). In the summer and fall of 1989, the country's first postcommunist finance minister, Leszek Balcerowicz, developed a reform plan which was soon to be named after him. What came first in the Balcerowicz Plan was macroeconomic stabilization, as Poland was suffering from high inflation that began to show signs of expanding into hyperinflation, unsustainable external debt (more than 70% of GDP, with repayment being impossible given the country's trade deficit alone) and other consequences of its dysfunctional planned economy.

As the Polish version of *perestroika*, the Wilczek reforms, had failed, prominent experts had already begun to turn toward radical reforms at the end of 1988. As early as in 1988, the weekly paper *Polityka* reported on the growing influence of

[3] *The phrase was coined by Alejandro Foxley, Chile's first postdictatorial finance minister, whose views were influenced by Catholic social teaching. For details on his reform concepts, see various documents that can be found in the World Bank archive's files on Chile; in this context, in particular, an 11-page manifest from 1988 and the records of conversations on the occasion of Foxley's visit at the World Bank in 1989 stored in the World Bank archive, World Bank File 16435 (Chile – Lending, Economy and Program (LEAP) – General – Volume 2), the annex to the World Bank report of October 18, 1988, and World Bank File 16436 (Chile – Lending, Economy and Program (LEAP) – General – Volume 3), and the report of October 30, 1989 (all World Bank files listed here are without pagination). On Chile's economic policy and the historical changes of 1989, see also Ffrench-Davis (2010).*

"Eastern Thatcherites" (see Borkowski, 1988, p. 1, p. 4). Much like the Washington Consensus, the Balcerowicz Plan aimed at comprehensive privatization and swift internal and external liberalization. Although it was clear that the reforms would lead to massive social cutbacks and dismissals and that they would be accompanied by a wage limitation law, the majority of the left wing of *Solidarność* and the followers of Catholic social teaching approved. We can thus speak of a "Warsaw Consensus," which was – like its role model – arranged as a decalogue.[4]

The effects of the reforms were mixed. Inflation was indeed brought under control but GDP went down by a total of 18% in 1990 and 1991. Industrial production declined by almost one-third, and wage limitations dampened demand over a sustained period. Another effect were huge numbers of unemployed: In 1992, 2.3 million people in Poland were without employment – 13.5% of the labor force.[5] Critics like Grzegorz Kołodko, later postcommunist finance minister, therefore spoke of a "shock without a therapy."[6] While some international experts would have approved of an even more radical course, Balcerowicz made certain concessions. For instance, he reduced the speed at which large enterprises were privatized; so all in all, he acted in a rather pragmatic way. In 1992, the economy started to pick up again, and Poland was the first of the former Eastern bloc countries to recover from the deep recession of 1989–91. Thus, the shock therapy was internationally perceived to be a success. At the political level, it was not: The parties that had evolved from *Solidarność* lost the 1993 elections against the postcommunists. These, however, did not take back the reforms as previously promised but only mitigated them.

Turning to Germany, Theo Waigel, West German finance minister in 1989, and Wolfgang Schäuble, one of the main authors of the Unification Treaty, were neither among the followers of the neoliberal Chicago School of Economics nor in favor of a "shock therapy." Both ministers of the center-right government were Christian Democrats and adherents of ordoliberalism and the German model of a "social market economy." But apart from social cushioning, stronger government regulation and a system of collective wage agreements, the neoliberal and ordoliberal reform concepts were largely congruent. In Czechoslovakia, the Chicago School had direct influence; Nobel Memorial Prize winner Milton Friedman, for instance, toured East Central Europe in 1990 and found a particularly enthusiastic supporter in Václav Klaus, then minister of finance in Czechoslovakia.[7] The latter's model of voucher privatization was, in turn, taken up in Russia. It did not work there, however. Rather, it led to the emergence of oligarchs, who bought up most of the vouchers, distorted privatization through insider deals and have dominated the Russian economy ever since.

[4] *For details on the contemporary rationale behind the reforms, see Balcerowicz (1992). In this book, Balcerowicz uses the word "shock," which he had prudently avoided in 1989. For details on the American consultants' view of the design of these radical reforms, see Lipton and Sachs (1990, pp. 47–66).*

[5] *See the figures in wiiw (2012), table II/1.7. In December 1989, Balcerowicz had expected a slight decrease in demand and a limited rise in unemployment (see Balcerowicz, 1989, p. 1, p. 5, in particular column 2 on p. 1).*

[6] *For details, see also Kołodko (2000).*

[7] *See also the television documentary called* Free to Choose*, which Friedman produced in 1990 for the Public Broadcasting Service (PBS), a U.S. public television broadcaster. In episode 4 on* Freedom and Prosperity*, Friedman traveled to East Central Europe. The episode also features Václav Klaus, who readily confirms Friedman's teachings. The program is accessible online at www.youtube.com/watch?v=l2h5OR1QX3Y (retrieved on November 11, 2018). Klaus appears as of minute 20.*

2 The German shock therapy

Radical economic reforms can be pushed through most easily if the economies concerned are on the brink of collapse. This was the case, without doubt, in the last year of the GDR. The exchange rate of the East German mark (DDM) to the Deutsche mark (DEM) declined to 7:1 in the fall of 1989, and went even lower, at times, in the winter that followed. This meant that East Germany's high foreign debt could no longer be serviced. The asymmetry of power between West and East was reflected, *inter alia*, in the type of reunification that was chosen: German reunification was executed as an "accession" of the five "new Länder" pursuant to Article 23 Basic Law – and not pursuant to Article 146, which was actually intended for such a scenario. This means that what we are dealing with here was in fact an enlargement of West Germany and not a unification of two equal states.

The sharp fall of the East German mark mirrored the economic problems of the GDR and the gloomy expectations of its future. However, depreciation had already started much earlier. While in the 1980s, the GDR insisted on the parity of the East German mark – both officially and in the compulsory exchange of currency for West Germans – the GDR's foreign trade bank halved the internal clearing rate to the Deutsche mark (like the other currencies of the communist countries, the East German mark was not convertible). In 1988, the foreign trade bank's internal exchange rate, which was kept strictly secret, came to no more than DDM 4.40 to DEM 1, because the GDR was not able to sell its goods at a higher exchange rate.

Illegal moneychangers in the backyards of East Berlin or Leipzig paid roughly the same rate; the black market thus reflected the economic situation more accurately than the official exchange rates. When the East German mark depreciated after the fall of the Berlin Wall, wages and salaries in the GDR, which were low at any rate, depreciated even further. Like in Poland or Czechoslovakia, a tank of fuel or a broken washing machine often were enough to strain a household's budget. This economic crash, together with the general uncertainty, explains why the call "We are one people" grew louder and louder in the fall and winter of 1989/90.

By the spring of 1990, a new slogan had taken hold: *"Kommt die D-Mark, bleiben wir, kommt sie nicht, geh'n wir zu ihr!"* ("If we get the Deutsche mark, we'll stay; if we don't, we'll come get it.") The last part of the slogan referred to the threat of mass emigration from the GDR to escape economic misery. In the East German election campaigns of 1990, the Christian Democratic Union (CDU) offered an obvious way forward: quick reunification and, en route, economic and monetary union with West Germany. The CDU kept this electoral promise: On July 1, 1990, the Deutsche mark – symbol of prosperity – became the official currency of East Germany, prompting celebrations in Berlin, Leipzig and other cities. But how come a 1:1 exchange rate was applied, given the rapid depreciation of the East German mark after the fall of the Berlin Wall?

The Deutsche Bundesbank cautioned against the economic risk of too strong appreciation, arguing the case for a 2:1 exchange rate. Representatives of the State Bank of the GDR even called for a 7:1 exchange rate as this would have corresponded to the country's economic power and would thus have enabled eastern German companies to compete with West German industry.[8] In the end, however,

[8] *For details on the calculation of the exchange rate, see Sinn and Sinn (1992). For details on the proposal by the State Bank of the GDR, see an interview by* Deutschlandfunk *of February 28, 2015, with the bank's vice president Edgar Most, accessible online at www.deutschlandfunk.de/25-jahre-treuhandanstalt-eine-einzige-schweinerei.694.de.html?dram:article_id=312882 (retrieved on February 20, 2019).*

the West German government under Federal Chancellor Helmut Kohl took a political decision and opted for the 1:1 exchange rate (the only exception being large savings deposits and company debts, to which a rate of 1:2 or 1:3 applied, respectively). This move helped the Christian Democrats win the first elections in unified Germany in the fall of 1990. A key argument used in public debates was that it served to prevent another wave of mass migration from eastern to western Germany. The freedom of movement indeed distinguished the situation in Germany from that of the other postcommunist countries.

3 Germany's special path

Given their focus on national unity and traditional orientation toward the West, the western German elites turned a blind eye on what was happening in their immediate neighborhood. The Czechoslovak koruna (CSK), the currency of Czechoslovakia, which was almost as wealthy as the GDR, also dropped dramatically in the winter of 1989/90. Its exchange rate declined to the three-times lower black market rate, i.e. to around CSK 15 to DEM 1. Unlike the West German government, the Czechoslovak government accepted this depreciation. Following the example of Poland and Hungary, Minister of Finance Václav Klaus intended to keep the national currency cheap in order to boost exports, save the large, formerly socialist enterprises and keep unemployment down. This strategy worked rather well until the Czech banking crisis of 1996. While the currency depreciation made Czechoslovak exports cheaper by a factor of around 3 (that is, when taking the official exchange rate in 1989 as a point of reference), German monetary union meant a fourfold price increase for East German exports compared with the 1988 clearing rate. This automatically meant that eastern German products – a *Wartburg* car, to name a typical example – would never be able to compete with a *Škoda* or any other Czech product and that production shifts in industry would most likely pass by eastern Germany.

Monetary union was followed by a second shock to the eastern German economy: the quick liberalization of foreign trade. When East Germany joined the Federal Republic of Germany and, by doing so, the European Community, all trade barriers fell – a step that is laid down, in principle, in the Washington Consensus. The eastern German economy was not able to cope with this competition. From this perspective, joining the EU not before 2004 was an advantage for the other postcommunist countries. But still, the conditions for integration into the European single market and the world market were a lot less protective than in the three decades after 1945, when Western Europe was reconstructed and West Germany experienced its *Wirtschaftswunder*.

The third particularity of German transformation was radical privatization, which disregarded a basic market mechanism. There were times when *Treuhandanstalt*, the German government agency responsible for privatization, was in charge of 12,534 enterprises with more than four million employees. More than 10,000 enterprises were sold until the end of 1992 alone, i.e. in a period of only two years (for details, also on data provided in the following, see Böick, 2018). If such huge numbers of enterprises are put to market, it is clear that their sales prices will drop dramatically. And indeed, instead of the expected profit of around DEM 600 billion, *Treuhandanstalt* recorded losses in the amount of DEM 270 billion, i.e. more than DEM 15,000 per (former) GDR citizen. At the end of 1994, Germany's federal government proudly

announced the dissolution of Treuhandanstalt, stating that privatization had been completed. But with most privatized enterprises, production was simply discontinued. In the enterprises sold by *Treuhandanstalt*, only every fourth job was preserved according to Böick's (2018) calculations. To this day, many mostly medium-sized towns whose prosperity had depended on a small number of large factories have not been able to cope with this structural break.

These critical remarks on Germany's shock therapy – which, unlike Poland's, never became known by that name – prompt the question of whether there would have been any alternatives. In the early 1990s, this was of course denied; "there is no alternative" was the prevailing attitude toward the reforms. Maintaining a realistic exchange rate during monetary union would have disappointed many voters in eastern Germany and created an even wider pay and pensions gap. Would this have been enough for even more people to move from eastern Germany to western Germany, as had been feared? This question cannot be answered ex post. It is a fact, however, that despite the cushioning of the reforms and despite high transfer payments from western Germany to eastern Germany, 1.4 million people moved from the eastern to the western German Länder in only four years (on East-West migration, see Martens, 2010). In this respect, the wider objective of monetary union, namely to keep the people in eastern Germany, was not achieved.

When we look beyond Germany, we see that there were indeed alternatives to quick privatization. In Poland, the Czech Republic and in particular in Slovakia, for instance, large enterprises of strategic importance continued to be run under state management and sold only at the end of the 1990s. This did not mean that these enterprises continued to make losses like they did before 1989; they had to work for profit, which some of them actually succeeded at.

A measure to which there most likely was "no alternative" was the liberalization of foreign trade and the opening of the eastern German market. Slowing down these processes would probably have been possible only within a special customs area, with different import restrictions or within a special economic zone. The People's Republic of China applied such measures in a number of regions; in the EU, however, these would have been difficult to enforce. Moreover, a special economic zone in eastern Germany or in parts of the east German Länder would have entailed stronger economic competition for western German producers – something neither politicians nor enterprises in western Germany had any interest in.

Tough competition from the West also hit those former GDR citizens who had started their own businesses. Compared with other professional groups and with new entrepreneurs in Poland and the Czech Republic, they fared worse. Often, the self-employed experienced a social decline; in the worst case, their businesses went bankrupt (see Diewald, 2016). The professional group that suffered the least were civil servants – unless they lost their positions because they had secretly collaborated with the State Security Service (*Stasi*) or held a prominent position in the SED. Through monetary union and the expansion of collective wage agreements to include the five "new Länder," eastern German civil servants saw their salaries climb substantially. This was all the more true for the many western German civil servants that were sent to work in eastern Germany. They even received special bonus payments (colloquially called *Buschzulage*) for working in eastern Germany. However, the German federal government lacked further visions about which social classes and elites, apart from imported civil servants, were to carry eastern Germany forward.

The price for this mixture of national self-centeredness, neoliberalism and lack of visions for society was an unprecedented economic downturn. By the mid-1990s, industrial production in eastern Germany had dropped to 27% of its 1988 level. No other postcommunist country in Europe, not even war-torn Bosnia and Herzegovina, saw a comparably dramatic decline (see Norkus, 2012, p. 80). As a result, 1.4 million people from the "new Länder" left their homes in the period up to 1994, as already mentioned. This number corresponded almost exactly to that of newly established businesses in Czechoslovakia – the ČSSR had almost as many inhabitants as the GDR, which allows for comparisons of the two countries. In Poland and in Hungary, too, many people started their own businesses. Altogether, around four million businesses were newly established in the *Visegrád* countries in the first five years after 1989.[9] In the GDR, the number of newly founded businesses was significantly lower.

The collapse of the eastern German economy strained the government budget and, in particular, social security funds which, directly or indirectly, had to provide for the millions of unemployed. The government issued early retirement programs, the cost of which was mostly imposed on pension funds, and health insurance providers had to make high transfer payments as well. But pacifying the eastern German "losers of transformation" by social benefits could not be financed in the long run (for details on the crisis of the German welfare state, see Ritter, 2006). The continuous rise of social security contributions, taxes and government debt continued in the 1990s – at the expense of economic growth throughout Germany. The united Germany had reached a dead end; Federal Chancellor Helmut Kohl lost the 1998 federal elections, and Gerhard Schröder won – not least by promising reforms.

4 Second-stage reforms and cotransformation

Schröder's center-left coalition government, formed by the Social Democratic Party of Germany (SPD) and Alliance 90/The Greens, then took a series of measures that had already been implemented in East Central Europe at an earlier stage. These included the partial privatization of pension funds and labor market liberalization. For some time, Germany saw lively discussions about introducing a flat tax[10] on wages and income and an otherwise strongly simplified tax system as well as about collecting healthcare contributions instead of income-related health insurance contributions. With regard to postcommunist Europe, we may speak of a cotransformation that originated in the problems of running eastern Germany and eventually impacted on former West Germany. Of course, reforms and policy models in the West were also a point of reference, especially the social reforms enacted by Tony Blair's New Labour.

What was new about the red-green labor market and social reforms was that they hit people in western Germany as hard as people in eastern Germany, although the latter were affected more by the cutbacks because of the high level of long-term unemployment. Moreover, lower wage growth (below the level of inflation in some years) caused "internal depreciation." This situation, however, had rather

[9] *See the figures on enterprises provided in Berend (2009, p. 61). It should be added, though, that many of these newly self-employed persons took this step because they had lost their jobs. Many of these one-person businesses in trade and retail went out of business when western supermarkets began to spread.*

[10] *After the turn of the millennium, the flat tax was introduced in all the other postcommunist countries (see Appel and Orenstein, 2018. pp. 90–116; on pension reforms at the global level, see Orenstein, 2009); however, in the aftermath of the 2009 crisis, it was discontinued in many countries.*

resulted from the negotiations between employers and trade unions under the *Bündnis für Arbeit* (Alliance for Work), which was in place from 1998 to 2002, than from the reforms. Even before that time, compromises were frequently made at the enterprise level, in line with the slogan "preserving jobs through pay restraints." This was the contribution corporatist Germany, though much condemned at the time, made to ensuring that German industry could later regain competitiveness.

Most mainstream economists have lauded the long-term effect of the Hartz reforms. But the reforms had a negative effect on social and regional disparities. Social inequality in Germany rose from its original level, which almost matched levels observed in Scandinavia, to levels comparable with those recorded in other postcommunist countries, such as Hungary or Poland. Germany's Gini coefficient, the international standard measure of income inequality, went up from 0.25 in 1999 to 0.29 in the 2009 crisis year.[11] While these developments cannot be traced to one single factor such as Hartz IV, it is indisputable that the social and labor market reforms increased fears of social decline. This was, in fact, the intention: The threat of poverty was to motivate people to take on jobs that were badly paid and for which they had to commute much further.

This negative mobilization, which took on an even greater dimension in the poorer postcommunist countries, may have contributed to the subsequent "German job miracle," but at the same time, it caused uncertainty among broad segments of society. This is where we find the underlying reasons for the high numbers of votes for the right-wing populist party Alternative for Germany (AfD) in eastern Germany: In Saxony, the AfD even came in strongest in the 2017 parliamentary elections, beating the CDU by a narrow margin. For Germany, this was a political shock which, however, comes as less of a surprise when comparing the former GDR with Poland, the Czech Republic or Slovakia. Both here and there, it was not only the "transformation losers" that voted for populist parties but also middle class voters who were now better off than before, but who remembered former unemployment and social decline and were afraid – not least on account of the so-called refugee crisis and its instrumentalization by right-wing populists – that things might change and they might have to face social cutbacks yet again.[12]

The fundamental problem here, as with the EU as a whole, is that the current economic order is beneficial particularly to those countries, regions and social groups that already are well positioned. Other parts of Europe and its societies, by contrast, are falling behind and have poor economic prospects.

In some ways, Hartz IV meant a reversal of the 1990 strategy. While monetary union aimed for a swift westernization, Hartz IV and, above all, the newly introduced low-wage sector (e.g. *Ein-Euro-Jobs*, which implied an hourly rate of EUR 1) led to an adjustment of labor costs to wages that were common in Poland and the Czech Republic at the time. This is yet another example of how the united Germany was cotransformed. The very concept of a low-wage sector, however, was developed by Chicago School economists and tested in the 1980s in the "Rust-Belt" states of the U.S.A. Later, the experiment was discarded because it did not yield the desired results.

[11] *The data quoted here for Scandinavia and CESEE are accessible at www.gini-research.org/articles/cr. The respective country reports also provide information on the type of data collection. For details on the social impacts of the Hartz reforms, see i.a. Dörre et al. (2015).*

[12] *For details, see one of the most perceptive books published recently among the many contributions on populism: Manow (2018, p. 94).*

The Hartz reforms, however, did little to ease the predicament of the five "new Länder." This was, among other things, due to the fact that labor market activation – the unemployed were now called "job seekers" – did not help much in regions where there were no or hardly any jobs. There, the government had no other option than to support the unemployed, send them into early retirement or occupy them through job creation measures. This continued to be costly; in total, net transfer payments from western to eastern Germany in the 25 years from 1989 to 2014 came to EUR 1.6 trillion (in this case, "net" means that return flows from eastern to western Germany and transfers to the federal budget, e.g. through taxes collected from eastern Germans, are taken into account).[13] In record years, net transfer payments amounted to up to EUR 100 billion, which were spent on modernizing infrastructure, privatization and, above all, social benefits.

Despite these flows of funds, the "new Länder" only generated roughly two-thirds of western German GDP per capita in 2015 (these figures are based on collated economic data for the five "new Länder"; for details, see the extended new edition of Ther, 2016a).[14] The Czech Republic, which had to cope without the support of a "big brother" in the West, reached almost the same degree of economic power – without the transfer payments mentioned earlier.

5 Summary and conclusions

Germany's history since the fall of the Berlin Wall gives rise to critical questions on various topics – the neoliberal reform concepts of the early 1990s and the early 2000s on the one hand, and the effectiveness of government spending programs on the other. Moreover, any critical examination should also deal with the long-term consequences of the massive uncertainty that was created within society by mass unemployment, the high rates of East-West migration and the way the German public has dealt with these issues since 1990. This applies not only to the former GDR, but to all new EU Member States where economic reforms – irrespective of their economic assessment – came at a price, both politically and socially. Obviously, not enough people have profited from the reforms (see Milanovic, 2013). One consequence of these disparities has been a drastic increase in labor migration from East to West.

It would be too simple, however, to trace any later successes or problems to the shock therapy Germany went through. Moreover, countries that hesitated to implement reforms in the early 1990s (like Romania, Bulgaria or Ukraine) did not fare any better. Still, the argument by Shleifer and Treisman (2014) that there was a direct causal link between the radical reforms and subsequent economic growth

[13] *The figure of EUR 1.6 trillion is quoted from Kühl (2014). The problem with these estimations is that the German federal government has not collected exact statistical data on transfer payments since 1999. Transfer payments also comprise reconstruction aid (which, in some cases, could also be applied for in western Germany) and special benefits, e.g. special economic promotion programs. A comprehensive calculation of all individual types of payments and return flows can be found in Blum et al. (2009).*

[14] *The calculations provided in Ther (2016a), in turn, are based on data on the so-called NUTS2 regions, which are available from Eurostat at ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tgs00006&plugin=1 (retrieved on November 11, 2018). Eurostat data are updated regularly; the last census in Germany, for example, entailed adjustments as population figures were corrected downward and thus GDP per capita had to be corrected upward. Of course, there are other economic data that are more comprehensive than GDP data, e.g. the Human Development Index (HDI); but only GDP data have been collected regularly also at the regional and local level (according to NUTS3 regions, inter alia) since 1989; this is why Ther (2016a) and this article refer mostly to GDP data.*

– in terms of cause and effect – cannot be upheld. There were other factors that also played a decisive role in the course of economic transformation, such as timing: The forerunners of reform had an enormous initial advantage, as had those countries that had already permitted private businesses to a greater extent in the 1980s. Another equally important factor was the geographical proximity to Western European markets; production was rather moved to postcommunist countries located closer to Western Europe than to countries farther off. Irrespective of these factors, educational levels were comparably high across all postcommunist countries (a fact that was woefully ignored during the time of transformation), experts were well trained and wage levels were low. This is not to say that good or bad economic policies did not play a role. But the argument that the shock therapy was at the root of all subsequent economic success does not hold, as the examples of eastern Germany and Poland show.

Moreover, if we only told a success story, we would disregard the problems that occur when building democracies, as exemplified in the populist revolt that took place in the 2001 and 2005 elections in Poland or in the protest votes for the postcommunist Party of Democratic Socialism (PDS) in eastern Germany. The global financial crisis of 2009 and the euro crisis of 2011 called into question the *teloi* of transformation: the pure doctrine of market economy, liberal democracy and the desired convergence with the West. With the *annus horribilis* of 2016 (majority of pro-Brexit votes in British EU referendum, Donald Trump elected President of the United States, defeat of the reformatory left in the Italian constitutional referendum), we have entered a new era. Since then, "the West" as a relatively homogeneous community of values that had been in place since the end of World War II has ceased to exist. In this respect, transformation – which after 1989 had been understood to be teleologically designed – has come to an end. The core countries of liberal capitalism – England and the U.S.A. – have become increasingly protectionist; parliamentary democracy and the rule of law have been weakened; European integration has almost come to a standstill or is being scaled back; and even the word "reform" has widely fallen into disrepute. All this is happening in an economic context that is actually characterized by a generally buoyant global economy. We do not know what might happen politically if there were a recession or a strong rise in interest rates. But as we have seen from the 1989 experience, each change also holds an opportunity.

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Studies

The impact of housing markets on banks' risk-taking behavior: evidence from CESEE

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This study empirically evaluates the impact of housing market dynamics and banks' housing market exposure on banking sector stability in Central, Eastern and Southeastern Europe (CESEE). We investigate whether there are differences between the behavior of banks located in CESEE EU Member States and the behavior of banks located in the Western Balkans. We find evidence that banks' exposure to the housing market has a significant positive impact on bank stability in both groups of countries. Furthermore, for real estate banks in CESEE EU Member States, we find that house price dynamics are positively correlated with bank stability. This outcome may possibly be related to the fact that real estate banks in these countries have better housing market expertise and, moreover, to the generally more advanced institutional environment. At the same time, we find a negative relationship between house price dynamics and bank stability for real estate banks in the Western Balkans, which might reflect the less advanced stage of institutional development in the region.

JEL classification: G21, R39, O52, C23
Keywords: bank risk, housing markets, housing loans, CESEE

The global financial crisis emphasized the devastating effect that the collapse of housing markets can have on the real economy and on bank stability. Therefore, investigating the relationship between housing finance, housing markets and bank risk remains important. Bank risk is closely related to the real estate market, not only because property is used as loan collateral, but also because housing finance depends on banking products. Therefore, real estate market developments can significantly influence bank performance and bank risk.

Based on previous literature (e.g. Banai and Vágó, 2018; Koetter and Poghosyan, 2010), there are two different hypotheses how house price dynamics can affect bank risk: the collateral value hypothesis and the deviation hypothesis. According to the collateral value hypothesis, an increase in house prices boosts the value of collateral pledged by borrowers and lowers credit default risk (Daglish, 2009). Therefore, the collateral hypothesis suggests a negative relationship between house prices and bank risk and a positive relationship between house prices and bank stability. The deviation hypothesis, by contrast, assumes a positive link between house prices and bank risk. According to this hypothesis, a persistent increase in house prices results in higher demand for bank financing (or mortgage) and a higher exposure of banks to bank lending for housing, accompanied by relaxed credit standards, and in excessive lending to risky borrowers, which in turn results in the stronger accumulation of risky assets and an overall higher risk-taking of banks.

Considering the important effect that real estate markets can have on bank stability, a growing body of literature investigates the link between housing markets and banks. However, the empirical literature which covers this topic with

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respect to Central, Eastern and Southeastern Europe (CESEE) is still limited. The main reasons are data limitations and the fact that housing markets in CESEE, and particularly in the Western Balkans, are still relatively new. The aim of this study is to take a closer look at the importance of housing markets and bank stability in CESEE and to understand whether banks' exposure to housing market developments plays a role in this relationship.

We focus on CESEE countries, where housing markets developed from scratch after the fall of the Iron Curtain and involved major transfers of ownership rights. We cover both CESEE countries that have already joined the EU and Western Balkan countries that aspire to join the EU.[2] In some of these countries, particularly in the non-EU countries, housing markets are still undergoing structural changes and still face institutional deficiencies, for example with regard to ownership rights. Further key features of the CESEE countries are their very high homeownership rates and almost nonexistent rental markets. Against this background, housing market analyses are of particular relevance for the authorities in this region in supporting the development of their macroprudential tools and, eventually, in ensuring financial stability in their countries. To our knowledge, there has not been any cross-country research so far on the risk-taking behavior of banks in CESEE in relation to their exposure to housing markets and housing market dynamics. Therefore, the contribution of this study is to provide empirical evidence of the impact of housing markets on the risk-taking behavior of banks in CESEE.

Based on banking data for 16 CESEE countries for the period from 2010 to 2016, we estimate the impact that bank lending for housing and housing markets have on bank stability as measured by banks' z-score. The z-score compares buffers (banks' capitalization and returns) with risk (the volatility of returns) to measure a bank's solvency risk. It is widely used and clearly shows a negative relationship to the probability of financial institutions' insolvency: A higher z-score implies a lower probability of default. We also use the ratio of nonperforming loans (NPLs) as a measure of banks' credit risk to check the robustness of our results. Our final sample comprises 176 banks[3] in 11 CESEE EU Member States and 5 Western Balkan countries. Apart from bank-specific variables, we include control variables to account for economic and institutional developments in the countries covered by our sample. In addition, we look at differences between banks located in CESEE EU Member States and banks in the Western Balkans. Based on the Generalized Method of Moments (GMM) approach as proposed by Arellano and Bond (1991), we find that the exposure of banks to housing markets has a positive impact on bank stability in both country groups. This outcome might indicate that bank lending for housing provides some stability to banks in these regions. Nevertheless, we find a mixed impact of house price dynamics on bank stability. Increasing house prices positively affect the stability of real estate banks operating in the CESEE EU Member States, while the opposite is true for the Western Balkans, where accelerating house prices seem to increase banks' risks. In our view, this outcome could be related to the more sophisticated housing market expertise of banks in the CESEE EU Member

[2] *We cover the CESEE EU Member States (CESEE-EU) Bulgaria, the Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and Slovakia, as well as the Western Balkan countries Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia. Due to data limitations, our analysis does not cover Kosovo.*

[3] *We included all banks with a market share of more than 2%.*

States and to the fact that housing markets in general function better in the CESEE EU Member States. Moreover, these countries have more sophisticated tools and better data at their disposal to assess the value of the collateral of real estate banks and better rule of law. For the Western Balkan countries, real estate banks seem to take higher risks related to house price dynamics than non-real estate banks despite rather moderate house price movements over our observation period. The negative impact of house price dynamics could possibly be linked to the fact that in the Western Balkans, the institutional setup is much weaker and banking and housing markets are less developed than in the CESEE EU Member States.

This paper is structured as follows: Section 1 provides a brief literature review, section 2 offers some stylized facts followed by the description of the data we use for our empirical analysis in section 3. Section 4 explains the empirical model we applied, section 5 discusses our main results, section 6 describes the robustness checks we carried out and section 7 concludes.

1 Literature review

The importance of housing markets for the overall economy as well as for financial stability has been well acknowledged (e.g. Borio and Drehmann, 2009; Cerutti et al., 2017; IMF, 2011). Residential property is one of the major components of households' wealth, and house price developments influence the saving and expenditure decisions of individuals. The housing sector is also strongly linked to the construction sector, which makes a significant contribution to gross value added in all CESEE countries. Furthermore, and most relevant to this study, the housing sector is strongly interlinked with financial institutions, as became obvious during the recent global financial crisis. These interlinkages are attributable to the fact that housing transactions are mostly financed by loans and that property constitutes an important type of collateral for bank lending.

Several studies have analyzed the links between housing markets and bank stability. The studies generally differ with regard to country and time coverage and methodology, and their results are often contradictory. One strand of literature comprises single-country studies. Blasko and Sinkey (2006) covered a large sample of U.S. commercial banks for the period from 1989 to 1996. Their main conclusion is that banks with a large exposure to the real estate market take higher risks and therefore have a higher probability of default. Koetter and Poghosyan (2010) focused on the German housing market and find that deviations of house prices from their fundamentals negatively influence bank stability because of overly risky lending. Rebi (2016) showed for the Albanian banking sector that banks with a higher exposure to the housing market take a higher risk than banks with less exposure. The impact was even stronger when housing market exposure interacted with house price dynamics. In a recent study, Banai and Vágó (2018) analyzed the Hungarian banking sector for the period from 1998 to 2016. The results show that higher house prices drive up bank risk. Furthermore, a higher exposure of banks to the housing market intensifies the impact of accelerating house prices on bank risk. The other strand of literature encompasses cross-country studies. For Western European banks, Gibilaro and Mattarocci (2016) analyzed the impact of housing market dynamics for the period from 2004 to 2011. Overall, the authors showed that the exposure of Western European banks to the real estate market influences banks' risk-taking behavior, making real estate banks more resilient than non-real

estate banks. Moreover, house price dynamics affect real estate banks less, possibly because specialized banks know real estate markets better and have better risk management capacities. A similar study by Morgan and Zhang (2015) of 19 Asian emerging economies found evidence that the exposure to housing markets positively influences bank stability but only up to a certain threshold. Housing market exposure above this threshold jeopardizes bank stability. For U.S. and EU banks, Altunbas, Manganelli and Marqués-Ibáñez (2017) analyzed how specific bank characteristics observed before the crisis are related to bank distress during the crisis. The authors also incorporated information on real estate developments and concluded that higher real estate exposure translates into higher bank risk.

Several studies emphasize the importance of the institutional environment for the relation between housing market developments and the banking sector. The IMF (2011) highlighted that legal institutions and instruments (such as accessible land registries and bankruptcy laws) are key for the efficient functioning of housing markets, for housing finance and, eventually, for bank stability. Also, Koetter and Poghosyan (2010) argue that the impact of housing markets on bank risk is strongly connected to the functioning of the housing market and the existence of market imperfections. According to the World Bank (2018), the CESEE EU Member States rank better, on average, than the Western Balkan countries with regard to the enforcement of contracts or the registering of property.[4] As institutional factors are highly relevant for the smooth functioning of housing markets, we tested whether there is any difference in the impact of housing market dynamics between the two country groups.

2 Stylized facts

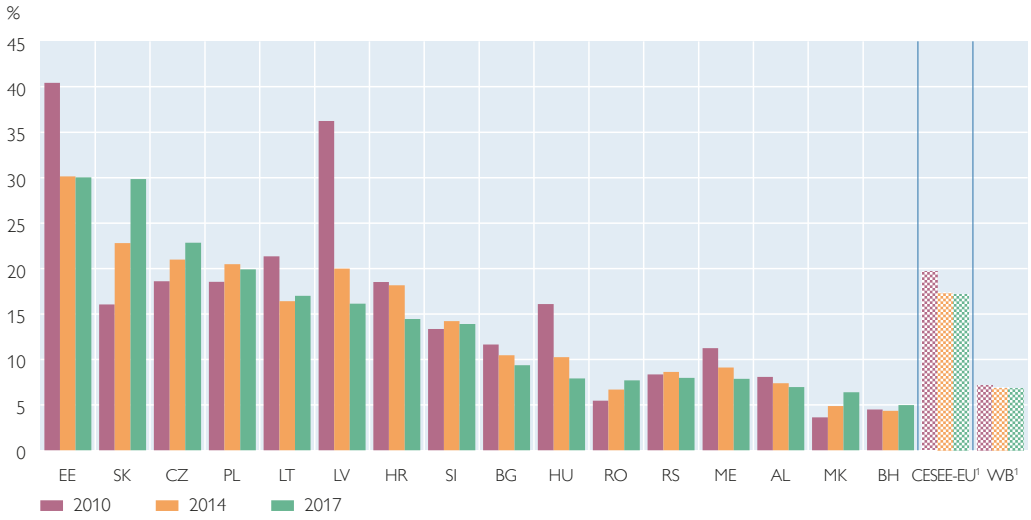
Bank lending for housing represents an important part of financial intermediation in most CESEE countries. However, there are large differences between countries with regard to the volume of housing loans in relation to the respective country's GDP. Noticeably, all Western Balkan countries report a lower ratio than the CESEE EU Member States, indicating their lower level of financial development. Furthermore, housing loan dynamics differ across countries: In some countries, such as in Estonia or Latvia, the share of housing loans in GDP moved downward between 2010 and 2017 (albeit from very elevated levels), while others recorded accelerating shares of housing loans in GDP (most notably the Czech Republic and Slovakia). In the Western Balkans, the – relatively low – ratio of housing loans to GDP remained more or less unchanged from 2010 to 2017. One important feature of bank lending for housing in our sample countries was the high share of housing loans issued in foreign currencies (predominantly in euro). This possibly had a significant impact on the credit quality of housing loans, bank performance and, moreover, on house prices. In several countries, foreign currency loans were converted into local currency loans at favorable rates at a later stage. However, these measures were mostly implemented toward the end of our observation period (except in Hungary) and therefore might only have had a limited impact on bank risk in these countries.[5]

[4] *Table A1 in the annex gives an overview of institutional variables in the CESEE countries that illustrate the major differences in several areas of institutional development.*

[5] *For further details, see box 1, Overview of support measures for foreign currency borrowers (Beckmann, 2017, pp. 13).*

Chart 1

Ratio of housing loans to GDP



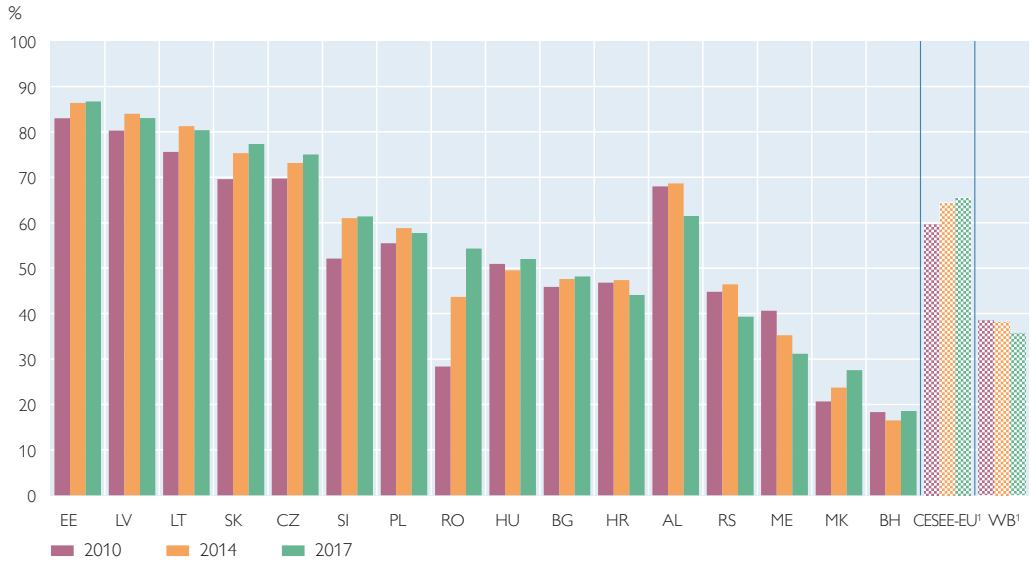
Source: ECB, national central banks.

[1] Unweighted average.

Note: WB = Western Balkans.

Chart 2

Share of housing loans in total loans to households



Source: ECB, national central banks.

[1] Unweighted average.

Note: WB = Western Balkans.

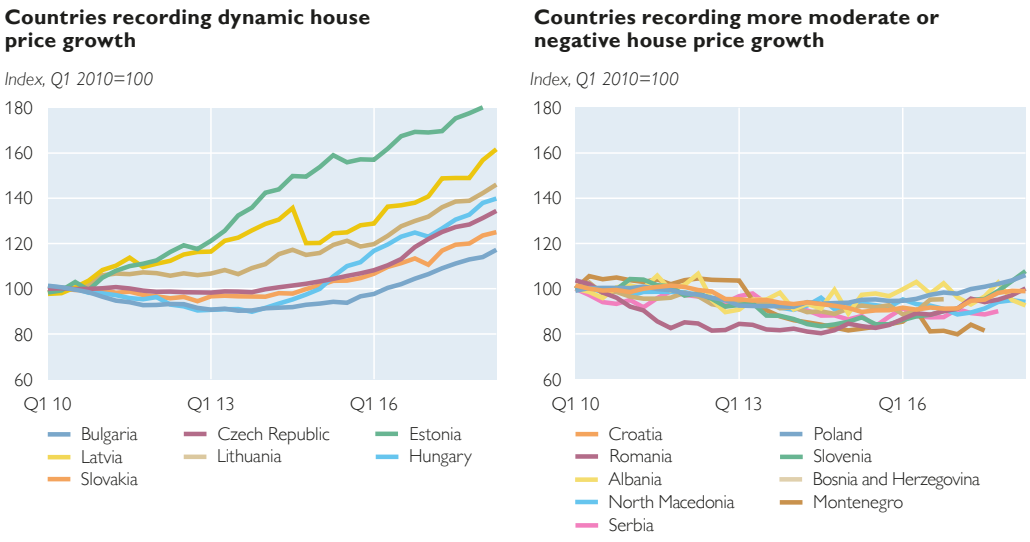
Among the different categories of loans to households (consumption loans, housing loans, loans for other purposes), housing loans dominate lending to households in most CESEE countries and reflect the exposure of banks to the housing market. Most notably, the Baltic countries but also Slovakia and the Czech Republic feature outstandingly high shares of housing loans in total loans to households. In Bulgaria and Croatia, the bulk of lending to households is used for other purposes (i.e. not for housing). The structure is somewhat comparable to some of the Western Balkan countries where a larger part of lending to households is used for consumption purposes. Interestingly, the share of housing loans in loans to households accelerated in all CESEE EU Member States (with the exception of Croatia) from 2010 to 2017. For the Western Balkans, the picture is somewhat different: The share increased only in North Macedonia and in Bosnia and Herzegovina, while it decreased in the remaining Western Balkan countries.

Chart 1 and Chart 2 deliver two important main messages: First, housing loans are an important factor of financial intermediation in many CESEE countries in our sample, and second, housing loans account for the bulk of overall lending to households, in particular in the CESEE EU Member States.

As mentioned before, housing market dynamics, as measured by changes in house prices, are an important variable for explaining banks' risk-taking behavior. In our study, we included the house price index as an explanatory variable in our regressions to evaluate the impact of house price dynamics on bank risk. Chart 3 shows a rather diverse pattern of house price dynamics in our sample countries. We see house prices accelerate strongly in the Baltic countries, Bulgaria, the Czech Republic, Hungary and Slovakia over the period from 2010 to 2017, with the recovery starting later in Bulgaria and Hungary. The pronounced recovery in the Baltic countries needs to be seen against the background that they were hit strongest during the global financial crisis. Other countries, in particular the Western Balkans

Chart 3

House price growth across the country sample



Source: BIS, Eurostat, national central banks.

and some CESEE EU Member States (Croatia, Poland, Slovenia and Romania), feature only moderate or even downward movements of house prices.

3 Data

Our analysis is based on bank data covering more than 170 banks in 16 CESEE countries. The data have been retrieved from the S&P Global Market Intelligence database. This data source offers very good coverage of the total banking sector in CESEE (on average, 90% of the total assets of banks in the region). In our sample, we use annual data on 176 banks, excluding small banks with a market share of less than 2% as these banks are often very specialized and would introduce noise into the dataset. We cover the period from 2010 to 2016.

Following the approach used by e.g. Blasko and Sinkey (2005), Morgan and Zhang (2015) or Gibilaro and Mattarocci (2016), we use the z-score as our dependent variable for measuring the financial stability of banks over time. The z-score indicates the distance of a specific bank from insolvency and is derived from combining a bank's profitability, leverage and volatility (Beck, 2008). Chiaramonte et al. (2016) show that the z-score is a reliable predictor of bank stability. Also, the World Bank (2017) noted that the z-score has several advantages. Most relevant for our exercise is the fact that the z-score, as an accounting-based indicator, can be calculated for any institution for which sophisticated data are not available, as is the case in some of the countries in our sample.

The z-score measurement relates a bank's capital level to the variability in its returns. This enables us to understand how much variability in returns can be absorbed by the bank's capital without making the bank insolvent. Variability in returns is measured as the ratio of the return on assets (ROA) to its standard deviation. To be more specific, the z-score is based on the three-year moving average of the ROA and of the ratio of equity capital to total capital (CAP) for bank i at time t divided by the three-year moving average of the standard deviation of ROA (σ).

$$z\text{-}score_{i,t} = \frac{ROA_{i,t}+CAP_{i,t}}{\sigma_{ROA}} \quad (1)$$

As explanatory variables, we include indicators that account for the bank's business model, housing market dynamics and the overall economic cycle. The bank-specific variables included in our empirical analysis are derived from the balance sheets and income statements reported in the S&P Global Market Intelligence database. We include some indicators to account for the main underlying risks related to a bank's business model, such as bank capitalization (tier 1), bank performance (return on equity – ROE), market risk measured through net interest income (NII) and loan loss provisioning (LLP) as measures of expected banks' credit risk.

Furthermore, we include an indicator of the asset structure to account for banks' exposure to the housing market. The share of housing loans in total loans is not available from the S&P Global Market Intelligence database for all banks and for each year under observation. We were able to collect most of the missing data from the individual banks' annual reports. However, for very few banks, we could not find any information on their housing market exposure; in these cases, we used the market share of loans to households of each bank as a proxy for their mortgage portfolios. Apart from individual banking data, we include house price indices (HPI)

and an institutional indicator as control variables. The institutional variable included in the model is the World Bank's Registering Property (RP) index, which measures the steps, time and cost of registering property. The RP index also takes into account the quality of land administration.[6] Furthermore, we include annual GDP growth rates (real GDP growth) to control for the overall economic cycle.

Table 1 summarizes the main statistical characteristics of the variables of the final sample (1,050 observations covering 176 banks, of which 30% are considered real estate banks) used in our empirical analysis. In addition, we present some of the main descriptive statistics for real estate banks and non-real estate banks. Real estate banks are defined as banks with a share of housing loans in total loans higher than 40%, non-real estate banks are banks with a share of housing loans in total loans that is less or equal to 40%. To test whether differences between the main variables for real estate and non-real estate banks are statistically significant, we apply the F-test. The results of the F-test confirm that these two groups are statistically different almost in all indicators, which justifies the separate estimation of their behavior. If we compare the z-scores of the two groups of banks, we see that on average, real estate banks are more stable than non-real estate banks. We can draw the same conclusion when comparing the banks' NPL ratios. On average, real estate banks have a lower NPL ratio than non-real estate banks (11% versus 17%). The profitability of banks measured by their ROE is relatively low on average (5.4% for the total sample) compared to pre-crisis levels. The low profitability of banks is related to the fact that the period from 2010 to 2016 was characterized by a low interest rate environment and slow GDP growth. Real estate banks, on average, have a higher ROE than non-real estate banks. Furthermore, real estate banks are more capitalized and have a lower level of loan losses than non-real estate banks.

Table 1

Descriptive statistics: full sample (CESEE EU Member States and Western Balkan countries)

		Mean			Standard deviation			Minimum			Maximum				
Indicators	Number of observations	All banks	Real estate banks	Non-real testate banks	All banks	Real estate banks	Non-real estate banks	All banks	Real estate banks	Non-real estate banks	All banks	Real estate banks	Non-real estate banks	F-test	Probability (F-test)
z-score	702	44.75	53.92	42.59	37.75	43.05	36.10	3.40	3.57	3.40	152.95	152.95	152.54	–2.90	–0.004
		%													
NPL ratio	1050	15.94	10.85	17.27	16.65	10.90	17.61	0.02	0.19	0.02	100.00	99.84	100.00	25.70	0.000
LLP ratio	1050	1.43	1.04	1.55	1.02	0.82	1.04	0.00	0.01	0.00	4.43	3.96	4.43	39.14	0.000
Tier 1 ratio	1050	15.65	16.28	15.49	12.84	11.46	13.13	0.43	1.60	0.43	100.00	77.65	100.00	2.56	0.110
ROE	1050	5.35	7.01	4.91	6.63	6.89	6.49	–15.92	–15.74	–15.92	15.12	15.07	15.12	13.13	0.000
Housing loan ratio	1050	25.49	53.35	18.32	18.17	13.04	10.95	0.00	40.13	0.00	100.00	100.00	40.00	1,611.45	0.000
NII ratio	1050	3.05	2.83	3.12	0.85	0.85	0.84	1.46	1.46	1.47	5.13	5.10	5.13	18.47	0.000
Real GDP growth		1.85	2.16	1.77	1.73	1.75	1.72	–2.72	–2.72	–2.72	7.58	7.58	6.38		
		Index													
HPI		100.74	100.88	100.88	20.56	20.88	20.88	66.85	66.85	66.85	172.54	172.54	172.54		
RP index		72.25	71.69	74.77	9.74	9.56	10.15	48.29	48.29	48.63	92.93	92.93	92.93		

Source: Authors' calculations, Eurostat, IMF, national central banks, S&P Global Market Intelligence database, World Bank.

Note: The number of observations is different for the z-score due to the calculation method used.

[6] *For more information, refer to www.doingbusiness.org/en/methodology/registering-property.*

The low level of real GDP growth reflects the overall sluggish average economic performance over the period from 2010 to 2016. In the CESEE countries, the average HPI was only slightly above 100 (index: 2010=100) in the period from 2010 to 2016, which indicates that on average, housing markets were still in a recovery phase. The average RP index is around 72 out of a maximum of 100, which shows that the overall institutional framework is good as regards the registration of property for the whole country sample. Tables A3 and A4 in the annex provide descriptive statistics for the two country groups (i.e. CESEE EU Member States and Western Balkan countries). In general, banks in the CESEE EU Member States are characterized by a lower z-score compared to banks situated in the Western Balkan countries. In terms of credit risk (as measured by the NPL ratio), however, banks in the CESEE EU Member States, on average, display lower levels than banks in the Western Balkan countries. This indicates that for the Western Balkans, credit risk is a more important source of risk for banks' activity. Furthermore, banks in CESEE are well capitalized, with an average tier 1 of 15.6%. We also see that on average, banks in the Western Balkan countries maintain a higher level of capital than banks in the CESEE EU Member States. In terms of their exposure to the housing market, banks in the CESEE EU Member States have a higher housing loan ratio than banks in the Western Balkans. In addition, there are some differences between the CESEE EU Member States and the Western Balkan countries with regard to their institutional frameworks. According to World Bank data (World Bank, 2018), the institutional framework in the Western Balkans is weaker than the average of our country sample despite the progress seen over time.

4 Empirical model

To investigate the impact of bank lending for housing and house prices on bank stability, based on Blasko and Sinkey (2005), Morgan and Zhang (2015) and Gibilaro and Mattarocci (2016), we estimate the following model with our panel data:

$$finstab_{i,j,t} = \alpha + \beta re_{i,j,t} + \theta X_{i,j,t} + \lambda C_{j,t} + \varepsilon_{i,j,t} \quad (2)$$

where *finstab* is the measure of bank stability. As we explained in the previous section, we use the z-score as a measure of bank stability and the NPL ratio as a robustness measure of bank stability. In our equation, *re* measures the exposure of a specific bank to the housing market. For the housing loan variable, we use two measures, *Housing loan ratio* and *Dummy real estate*. *Housing loan ratio* is the ratio of housing loans to total loans for bank i at time t and in country j. *Dummy real estate* is a dummy variable based on the approach proposed by Eisenbeis and Kwast (1991) and Gibilaro and Mattarocci (2013). *Dummy real estate* takes the value of 1 if the share of housing loans in total loans is higher than 40% for bank i at time t, and 0 if the share of housing loans to total loans is less than or equal to 40%. Based on previous research (Cihák and Hesse, 2008), we include a group of control variables for bank-level characteristics as well as macroeconomic and institutional factors that could affect bank stability. The vector X contains the following bank-specific variables: bank-level capitalization (tier 1), bank profitability (ROE), net interest income (NII) and the loan loss provisions ratio (LLP). Vector C contains control variables at the country level, namely real GDP growth (GDP) and the Registering Property (RP)

index. $\varepsilon_{i,j,t}$ represents the error terms, where i=1,…, N represents the bank; j=1,…, M represents the country; and t=1,…, T represents the year of observation.

To evaluate the impact housing market trends have on bank stability (in line with e.g. Gibilaro and Mattarocci, 2016), we add the year-on-year HPI change for each country. Therefore, our baseline equation is modified as follows:

$$finstab_{i,j,t} = \alpha + \beta re_{i,j,t} + \gamma_{i,t} HPI_{j,t} + \theta X_{i,j,t} + \lambda C_{j,t} + \varepsilon_{i,j,t} \quad (3)$$

If we find a positive and significant $\gamma_{i,t}$, the model shows that increasing house prices positively affect bank stability and vice versa. Also in line with Gibilaro and Mattarocci (2016), we include some interaction terms to take account of the interaction between banks' exposure to the housing market and house prices, $re_{i,j,t}HPI_{j,t}$ to be able to simultaneously investigate the impact of housing market dynamics on bank stability (see equation 4). In addition, we compare the effect of housing market dynamics on real estate banks and on non-real estate banks to see whether housing dynamics have a different effect on real estate banks:

$$finstab_{i,j,t} = \alpha + \beta re_{i,j,t} + \gamma HPI_{j,t} + \delta re_{i,j,t} HPI_{j,t} + \theta X_{i,j,t} + \lambda C_{j,t} + \varepsilon_{i,j,t} \quad (4)$$

To evaluate whether there are differences in the behavior of banks situated in the CESEE EU Member States and in the Western Balkans, we split the sample in two main groups and estimate the relation between housing markets and bank stability for each country group.

Regarding the methodology, we use a GMM approach[7] proposed by Arellano and Bond (1991), which allows for the usage of instrumental variables to account for endogeneity issues between error terms and independent variables. As instrumental variables, we used the lag value of our dependent and independent variables (Anderson and Hsiao, 1981; Arellano and Bond, 1991). The Sargan-Hansen test, or Sargan's J test, is used for overidentifying restrictions (under the null hypothesis that the overidentifying restrictions are satisfied) in order to determine the validity of the instrumental variables.

Finally, we assess the robustness of our results with respect to the bank stability indicator by considering the banks' NPL ratios, which can be interpreted is an inverse measure of bank stability, as dependent variables (Morgan and Zhang, 2015). In most cases, banks' credit risk represents the dominant source of bank risk and therefore can impede bank stability. A major drawback of using NPL ratios as an inverse measure for bank stability is their backward-looking perspective on banks' credit risk and that this measure covers only one source of bank risk.

5 Results

Table 2 presents the results for the full sample, with the z-score as the dependent variable based on the GMM approach. As instrumental variables, we used the lag values of the dependent and independent variables. The p-value of the Sargan's J

[7] *To achieve robust and unbiased results, we did some preliminary tests. First, we tested for the presence of unit roots based on the Im-Pesaran-Shin (2003) and Fisher tests (Choi, 2001), which are suitable for unbalanced panels. The test results reject the null hypothesis of a unit root, so our variables are stationary at the 5% level.*

test indicates that our model is specified correctly (Sargan, 1958; Hansen, 1982). The variables tier 1, ROE, NII, LLP as well as real GDP and the RP index represent our core variables and are included in equations (1) to (8). These variables link bank stability to its main characteristics.

As expected, we find a positive and statistically significant relation between bank stability and bank capital (tier 1) and as well as bank profitability (ROE). We find a significant positive relationship between bank stability and NII, confirming the positive impact profit from a bank's core activity has on bank stability. One of the main variables that influence bank stability is banks' credit risk as measured by LLP. As expected, the coefficient is negatively related to the z-score and is statistically significant in all equations. Regarding the macroeconomic variable, we find a positive link between real GDP and bank stability, confirming that favorable economic development has a positive impact on the resilience of a bank. The RP index has a positive coefficient, which shows that improvements of the institutional setting, in particular more regulated real estate markets and the enforcement of property rights, have a positive effect on bank stability.

We find that banks' exposure to the housing market as measured by the *Housing loan ratio* has a positive impact on bank stability in the full sample and is statistically significant in all four equations (see table 2, columns 1 to 4). The same holds for our alternative indicator of housing market exposure as measured by *Dummy real estate* (see table 1, columns 5 to 8). To see what impact housing market dynamics have on bank stability, we included changes in each country's HPI in our equation (see table 2, columns 2 and 6). For the full sample, we find a negative relationship between housing market dynamics and bank stability. However, the coefficients are insignificant in both regressions. In the rest of the estimated equations, we show the combined effect of banks' exposure to housing markets and housing market trends on bank stability. In a first step, as in Gibilaro and Mattarocci (2016), we test whether banks' sensitivity to the housing market is linearly correlated to bank lending for housing. To do so, we include two interaction terms (*Housing loan ratio*HPI* and *Dummy real estate*HPI*) to account for the interaction between our measures of exposure to the housing market and house prices. The estimated results (see table 2, columns 3 and 7) show a positive and statistically significant relationship between bank stability and the interaction terms. In a second step, we add two interaction terms (*Dummy real estate*HPI* and *Dummy non-real estate*HPI*) to estimate the effect that bank specialization has on bank stability. For the full sample, we find a positive and significant coefficient of the interaction term for real estate banks and a negative and significant coefficient for non-real estate banks (see table 2, columns 4 and 8, two last lines). This outcome shows that real estate banks appear more stable than non-real estate banks when house price dynamics are taken into account.

In addition, we estimate the link between bank stability and housing market exposure, taking into consideration the location of the respective bank. Therefore, we split the sample in two groups: banks located in the CESEE EU Member States and banks located in the Western Balkan countries. The empirical results for each group are presented in tables 3 and 4, which only show the effect of real estate exposure and housing market dynamics with respect to bank stability, while control variables, such as bank characteristics or macroeconomic variables, are not reported because they are broadly consistent with those for the full sample.

Table 2

GMM regression results for the full sample

Dependent variable: z-score	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tier 1 ratio	0.04***	0.02***	0.01***	0.02**	0.01**	0.02**	0.01**	0.003
p-value	*0.000*	*0.000*	*0.000*	*0.05*	*0.038*	*0.024*	*0.045*	*0.714*
ROE	0.02***	0.05***	0.01***	0.03***	0.03***	0.03***	0.01	0.06***
p-value	*0.007*	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	*0.174*	*0.000*
NII ratio	0.52***	0.27***	0.50***	0.48***	0.38***	0.28***	0.44***	0.28***
p-value	*0.000*	*0.001*	*0.001*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
LLP ratio	–0.43***	–0.23***	–0.60***	–0.53***	–0.60***	–0.30**	–0.51***	–0.13
p-value	*0.000*	*0.009*	*0.000*	*0.000*	*0.001*	*0.020*	*0.000*	*0.369*
Real GDP growth	0.04	0.10**	0.33***	0.07***	0.34***	0.13***	0.23*	–0.06***
p-value	*0.604*	*0.02*	*0.002*	*–0.00*	*0.000*	*0.000*	*0.09*	*0.000*
RP index	0.05***	0.02**	0.05***	0.09***	0.07***	0.02	0.06***	0.08***
p-value	*0.003*	*0.020*	*0.000*	*0.000*	*0.000*	*0.178*	*0.000*	*0.000*
Housing loan ratio	0.02***	0.02**	0.02***	0.01*				
p-value	*0.000*	*0.000*	*0.000*	*0.087*				
Dummy real estate					0.77***	0.85***	0.63***	0.28*
p-value					*0.000*	*0.000*	*0.000*	*–0.069*
HPI		–0.01				–0.002		
p-value		*0.339*				*0.911*		
Housing loan ratio*HPI			0.001***					
p-value			*0.002*					
Dummy real estate*HPI				0.10***			0.07***	0.10***
p-value				*0.000*			*0.000*	*0.000*
Dummy non-real estate*HPI				–0.08***				–0.15***
p-value				*0.005*				*0.000*
Number of observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050
R-squared	0.56	0.79	0.98	0.88	0.66	0.9	0.73	0.71
Probability (J-statistic)	0.85	0.31	0.42	0.83	0.94	0.27	0.21	0.91

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

Table 3

GMM regression results for the CESEE EU Member States

Dependent variable: z-score	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Housing loan ratio	0.01	0.02***	0.02***	–0.01				
p-value	*0.46*	*0.000*	*0.000*	*0.15*				
Dummy real estate					0.77**	0.83***	0.66**	–0.03
p-value					*0.02*	*0.000*	*0.03*	*0.9*
HPI		–0.06***				–0.06***		
p-value		*0.01*				*0.01*		
Housing loan ratio*HPI			–0.001				–0.002	
p-value			*0.14*				*0.96*	
Dummy real estate*HPI				0.12***				0.05
p-value				*0.01*				*0.25*
Dummy non-real estate*HPI				–0.27***				–0.20***
p-value				*0.000*				*0.000*
Number of observations	634	634	634	634	634	634	634	634
R-squared	0.8	0.76	0.68	0.85	0.63	0.74	0.75	0.72
Probability (J-statistic)	0.93	0.87	0.82	0.44	0.5	0.3	0.14	0.68

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

Table 4

GMM regression results for the Western Balkan countries

Dependent variable: z-score	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Housing loan ratio	0.02***	0.01	0.01***	0.01**				
p-value	*0.001*	*0.140*	*0.000*	*0.040*				
Dummy real estate					0.02	0.52***	0.65***	0.69***
p-value					*0.970*	*0.003*	*0.000*	*0.000*
HPI		–0.03				–0.03		
p-value		*0.320*				*0.238*		
Housing loan ratio*HPI			–0.002***					
p-value			*0.000*					
Dummy real estate*HPI				–0.09**			–0.15***	–0.16***
p-value				*0.050*			*0.000*	*0.000*
Dummy non-real estate*HPI				–0.007				0.02
p-value				*0.800*				*0.450*
Number of observations	398	398	398	398	398	398	398	398
R-squared	0.51	0.46	0.57	0.53	0.94	0.65	0.58	0.58
Probability (J-statistic)	0.70	0.60	0.59	0.37	0.34	0.49	0.30	0.26

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

For the banks in the CESEE EU Member States, we find a positive coefficient for their exposure to bank lending for housing (see table 3, columns 1 and 5), which means that bank lending for housing affects bank stability positively. However, only the dummy variable for bank lending for housing shows a statistically significant outcome. We find a negative and statistically significant impact of house price dynamics on bank stability (see table 3, columns 2 and 6) for banks in the CESEE EU Member States, which suggests that housing market dynamics may negatively affect bank stability. In columns 3 and 7 of table 3, we present the results of the interaction terms accounting for bank lending for housing and house price dynamics. The estimated results show a negative but insignificant correlation between banks' exposure to bank lending for housing and their sensitivity to housing market trends. The results of the interaction terms *Dummy real estate*HPI* and *Dummy non-real estate*HPI* show that there are significant differences between real estate banks and non-real estate banks located in CESEE EU Member States. These results are similar to the results for the full sample (see table 2, columns 4 and 8). The stability of real estate banks is positively influenced by house price dynamics, and the opposite is true for the non-real estate banks. This outcome, as in Gibilaro and Mattarocci et al. (2016), shows that knowledge about and experience in the housing market matters for bank stability. This knowledge and experience are an advantage that non-real estate banks do not have.

The results for the Western Balkans show that banks' exposure to bank lending for housing positively and significantly affects bank stability (see table 4, columns 1 and 5). Furthermore, we find that house price dynamics negatively affect bank stability, but this coefficient is insignificant (see table 4, columns 2 and 6). In addition, the coefficient of the interaction term between banks' exposure to the housing market and house price dynamics is negative and significant. This result confirms that for banks in the Western Balkans, in case of higher exposure to the housing market, house price dynamics negatively affect bank stability (see table 4, columns 3 and 7).

Moreover, we test whether there are differences in the behavior of real estate banks and non-real estate banks. The estimated results presented in table 4 (columns 4 and 8) suggest that in the Western Balkans, the stability of banks specializing in real estate is negatively affected by changes in house prices, while for non-real estate banks, we cannot find a significant relationship between house price dynamics and bank stability. The negative relationship may be related to the less advanced stage of institutional development in the relatilvely new housing and banking sector in the region.

6 Robustness checks

As our results may potentially be influenced by decisions we made to set up our model, we carried out a number of robustness checks. We tested the robustness of our results by taking the NPL ratio – an inverse measure of bank stability – as our dependent variable. The NLP ratio more specifically reflects banks' credit risk. The estimated results are presented in the annex in table A5 (full sample) and in tables A6 and A7 (CESEE EU Member States and Western Balkan countries, respectively).

As in our baseline model, we estimated eight equations considering two different measures for banks' exposure to the housing market (the housing loan ratio and dummy variables to classify real estate versus non-real estate banks) and the interaction between house price developments and banks' exposure to the housing market. When looking at the impact of banks' exposure to the housing market in the full country sample, we find a positive and statistically significant relation between credit risk (as captured by the NPL ratio) and our selected housing indicators. The results suggest that banks' exposure to the housing market affects credit risk positively, i.e. the higher the exposure, the higher the NPL ratio (see table A5, columns 1 and 5), but this exposure has not damaged bank stability as measured by the z-score (see table 2, columns 1 and 5). We find that house prices negatively affect banks' credit risk (see table A5, columns 2 and 6) and in addition we find that a higher exposure of banks to the housing market might decrease banks' sensitivity to housing market dynamics (see table A5, columns 3 and 7). Furthermore for the full sample, we cannot find a significant difference between the behavior of real estate banks and that of non-real estate banks. However, the results for the behavior of real estate banks and non-real estate banks are not fully in line with the results obtained from the z-score regressions for the full sample. This difference may be attributable to the fact that credit risk represents only one of the main risks influencing bank stability.

The results for the CESEE EU Member States and the Western Balkan countries in our robustness check with NPL as the dependent variable (see tables A6 and A7) are broadly similar to the z-score results. Thus, for the CESEE EU Member States, we find that banks' exposure to the housing market has a negative impact on banks' credit risk (i.e. it lowers credit risk), a finding which is similar to the z-score results (i.e. the higher housing market exposure, the higher bank stability). Furthermore, for the CESEE EU Member States, we find that differences in banks' specialization (bank lending for housing and versus non-housing lending) in combination with house price changes has an impact on credit risk.[8] For the Western Balkan countries (see table A7), we find that exposure to the housing market has a significant positive

[8] *For real estate banks, rising house prices have a significant negative effect on credit risk, while the opposite is true for non-real estate banks.*

impact on credit risk (i.e. the higher the exposure, the higher credit risk), which is not in line with the z-score results (the higher housing market exposure, the higher bank stability). In line with the results obtained through z-score estimation, we find differences in the behavior of real estate banks and non-real estate banks. Thus, we see that an increase in house prices positively affects the credit risk of real estate banks and negatively affects the credit risk of non-real estate banks.

For robustness analysis, we assessed the sensitivity of our results to the threshold chosen to distinguish between real estate banks and non-real estate banks. Even when we lower the threshold share of housing loans in total loans to 30%, the coefficients of the entire model remain broadly unchanged.[9]

However, we are aware that factors not included in our study might play a role in the effects of housing market dynamics and banks' exposure to the housing market on bank stability. The following caveats may lay the ground for future work. A potentially relevant factor influencing bank stability is the impact of macroprudential policy measures, which are not included in our model (Altunbas et al., 2017). Furthermore, an alternative indicator for housing market dynamics would be interesting to consider. One possibility would be to include the deviation of house prices from their fundamentals, as has been discussed before (e.g. Bania and Vágó, 2018, or Koetter and Poghosyan, 2010).

Our study is constrained to bank lending for housing to households. In fact, banks' exposure to the real estate markets concerns more than their lending to households. A more comprehensive indicator would be a measure that captures banks' total exposure to the real estate market, which also includes bank lending provided for commercial real estate, for instance. In some cases, this may represent an important part of banks' exposure and the risks associated with it. This is especially relevant for the countries in our sample, where the importance of the construction sector in the entire economy is significant. However, due to data limitations, it is not possible to calculate such an indicator and include it in our study at this stage.

7 Conclusion

Housing markets and the banking sector are strongly interlinked via various channels and there is ample literature on the importance of housing market developments for the risk-taking behavior of banks. However, there is only a limited number of studies that investigate the impact of housing loans and housing market dynamics on bank stability in CESEE. This study is the first attempt to tackle this question for a large sample of CESEE countries based on individual banking data.

We find some evidence that banks' exposure to the housing market and house price dynamics can affect bank stability. However, our results are partly sensitive with regard to the sample chosen (CESEE EU Member States versus Western Balkan countries) – a finding that might be linked to differences between countries. To address the different impacts that housing markets might have on bank stability in different sets of countries, we estimated the link between the housing market and bank stability for banks located in the CESEE EU Member States and in the Western Balkan countries. For the first group, we show that housing market exposure and house price dynamics (i.e. a higher value of collateral) increase bank stability. This is possibly related to real estate banks' specialized expertise in housing markets.

[9] *Results are not presented here but are available upon request.*

Furthermore, the availability of more sophisticated data on housing markets in the CESEE EU Member States than in the Western Balkan countries might influence our results because high data quality surely supports the accurate assessment of the collateral value of houses. In addition, more prudential regulatory requirements for bank lending were implemented in the CESEE EU Member States after the financial crisis, which has supported the positive impact of bank lending for housing on bank stability. By contrast, for bank stability in the Western Balkan countries, we find some evidence that real estate banks are negatively influenced by house price dynamics, while non-real estate banks are not. This outcome might be linked to institutional deficiencies in the relatively new housing and banking sectors that are generally characteristic of the housing markets in this part of Europe.

Overall, our results point toward the importance of improving the institutional setup in CESEE as deficiencies might have negative spillover effects on other market segments – in our case, on the banking sector. Our results emphasize the importance of undertaking measures to improve the functioning of the housing market in light of the relationship between the housing market and the banking sector. Furthermore, to mitigate bank risk arising from housing market exposure, authorities will need to take into account the importance of housing finance for banking sector activity when designing their macroprudential framework.

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Annex

Table A1

Institutional indicators

	Ease of doing business ranking[1]	Dealing with construction permits[1]	Registering property[1]	Resolving insolvency[1]	Enforcing contracts[1]	Getting credit[1]	Corruption perception index[2]
Countries							
Czech Republic	30.0	127.0	32.0	25.0	91.0	42.0	5.7
Estonia	12.0	8.0	6.0	44.0	11.0	42.0	7.1
Hungary	48.0	90.0	29.0	62.0	13.0	29.0	4.5
Latvia	19.0	49.0	22.0	53.0	20.0	12.0	5.8
Lithuania	16.0	12.0	3.0	70.0	4.0	42.0	5.9
Poland	27.0	41.0	38.0	22.0	55.0	29.0	6.0
Slovakia	39.0	91.0	7.0	42.0	84.0	55.0	5.0
Slovenia	37.0	100.0	36.0	10.0	122.0	105.0	6.1
CESEE EU Member States, average[3] (EU accession in 2004)	**28.5**	**64.8**	**21.6**	**41.0**	**50.0**	**44.5**	**5.8**
Bulgaria	50.0	51.0	67.0	50.0	40.0	42.0	4.3
Croatia	45.0	150.0	45.0	51.0	17.0	20.0	4.9
Romania	51.0	126.0	59.0	60.0	23.0	77.0	4.8
CESEE EU Member States, average[3] (EU accession after 2004)	**48.7**	**109.0**	**57.0**	**53.7**	**26.7**	**46.3**	**4.7**
Albania	65.0	106.0	103.0	41.0	120.0	42.0	3.8
Bosnia and Herzegovina	86.0	166.0	97.0	40.0	71.0	55.0	3.8
North Macedonia	11.0	26.0	48.0	30.0	35.0	12.0	4.4
Montenegro	42.0	78.0	76.0	37.0	42.0	12.0	4.6
Serbia	43.0	10.0	57.0	48.0	60.0	55.0	4.1
Western Balkan countries, average[3]	**49.4**	**77.2**	**76.2**	**39.2**	**65.6**	**35.2**	**4.1**

Source: World Bank Doing Business 2018, Transparency International 2018.

[1] *Ranking out of 190 countries.*
[2] *Relates to the perceived levels of public sector corruption according to experts and businesspeople. The score ranges between 10 (highly clean) and 0 (highly corrupt).*
[3] *Unweighted average.*

Table A2

Full sample: number of banks included per country

Country	Number of banks
CESEE EU Member States	
Bulgaria	22
Croatia	26
Czech Republic	20
Estonia	9
Hungary	23
Poland	31
Latvia	17
Lithuania	6
Romania	24
Slovakia	13
Slovenia	13
Western Balkan countries	
Albania	15
Bosnia and Herzegowina	20
Montenegro	11
North Macedonia	14
Serbia	29

Source: Authors' calculations, S&P Global Market Intelligence database.

Table A3

Descriptive statistics: CESEE EU Member States

Indicators	Number of observations	Mean	Standard deviation	Minimum	Maximum
z-score	356	42.2	37.0	3.4	153.0
NPL ratio	634	15.4	15.8	0.0	100.0
LLP ratio	634	1.4	1.0	0.0	4.4
Tier 1 ratio	634	15.4	6.5	0.4	51.7
ROE	634	5.9	6.6	–15.7	15.1
NII ratio	634	2.7	0.7	1.5	5.1
Housing loan ratio	634	28.7	18.6	0.0	100.0
Real GDP growth		2.0	1.8	–2.7	7.6
HPI		98.2	16.0	66.8	163.9
RP index		75.8	9.3	48.3	92.9

Source: Authors' calculations, Eurostat, IMF, national central banks, S&P Global Market Intelligence database.

Note: The number of observations differs for some variables because of missing data and according to calculation methods, especially for the z-score.

Table A4

Descriptive statistics: Western Balkan countries

Indicators	Number of observations	Mean	Standard deviation	Minimum	Maximum
z-score	243	49	39	4	153
NPL ratio	398	17	18	0	100
LLP ratio	398	1	1	0	4
Tier 1 ratio	398	16	6	4	53
ROE	398	5	7	–16	15
NII ratio	398	4	1	1	5
Housing loan ratio	398	20	16	0	82
Real GDP growth		2	2	–3	4
HPI		110	28	90	173
RP index		66	7	49	78

Source: Authors' calculations, Eurostat, IMF, national central banks, S&P Global Market Intelligence database.

Note: The number of observations differs for some variables because of missing data and according to calculation methods, especially for the z-score.

Table A5

GMM regression results for the full sample

Dependent variable: NPL ratio	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tier 1 ratio	−0.02*	−0.01	−0.02***	−0.07*	−0.02***	−0.01**	−0.03***	−0.01
p-value	*0.060*	*0.141*	*0.001*	*0.067*	*0.010*	*0.037*	*0.000*	*0.520*
ROE	−0.02***	−0.02***	−0.02***	−0.06***	−0.04***	−0.02***	−0.02**	−0.02***
p-value	*0.006*	*0.000*	*0.000*	*0.000*	*0.001*	*0.000*	*0.000*	*0.012*
NII ratio	0.10***	−0.05	−0.11***	0.02	0.03	−0.12***	−0.14**	−0.11
p-value	*0.001*	*0.498*	*0.001*	*0.905*	*0.555*	*0.002*	*0.05*	*0.244*
LLP ratio	0.63***	0.54***	0.60***	0.66***	0.64***	0.57***	0.69***	0.61***
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Real GDP growth	0.02	−0.14***	−0.11***	−0.46***	−0.17	−0.13***	0.01	−0.14***
p-value	*0.384*	*0.000*	*0.000*	*0.002*	*0.778*	*0.000*	*0.970*	*0.000*
RP index	−0.01	−0.03***	−0.05***	−0.04	−0.01	−0.03***	−0.04***	−0.03*
p-value	*0.136*	*0.000*	*0.000*	*0.448*	*0.589*	*0.000*	*0.000*	*0.060*
Housing loan ratio	0.01***	0.01**	0.01***	−0.01				
p-value	*0.000*	*0.030*	*0.000*	*0.457*				
Dummy real estate					0.475***	0.13	0.50***	0.09
p-value					*0.000*	*0.180*	*0.003*	*0.697*
HPI		−0.04***				−0.04***		
p-value		*0.000*				*0.000*		
Housing loan ratio*HPI			−0.001***					
p-value			*0.000*					
Dummy real estate*HPI				0.96**			−0.08***	−0.03
p-value				*0.039*			*0.000*	*0.805*
Dummy non-real estate*HPI				−0.18***				−0.06*
p-value				*0.000*				*0.090*
Number of observations	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050
R-squared	0.65	0.67	0.98	0.37	0.57	0.82	0.77	0.6
Probability (J-statistic)	0.63	0.61	0.47	0.78	0.4	0.36	0.98	0.29

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

Table A6

GMM regression results for the CESEE EU Member States

Dependent variable: NPL ratio	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Housing loan ratio	−0.01**	−0.01***	−0.01***	0.09***				
p-value	*0.03*	*0.000*	*0.000*	*0.000*				
Dummy real estate					−0.32*	−0.30**	−0.80***	−1.51**
p-value					*0.09*	*0.03*	*0.000*	*0.03*
HPI		−0.02				−0.02*		
p-value		*0.157*				*0.1*		
Housing loan ratio*HPI			−0.001***					
p-value			*0.000*					
Dummy real estate*HPI				−0.12***			−0.04	0.14*
p-value				*0.000*			*0.269*	*0.09*
Dummy non-real estate*HPI				0.09***				−0.11***
p-value				*0.003*				*0.000*
Number of observations	634	634	634	634	634	634	634	634
R-squared	0.8	0.76	0.68	0.85	0.63	0.74	0.75	0.72
Probability (J-statistic)	0.93	0.87	0.82	0.44	0.5	0.3	0.14	0.68

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

Table A7

GMM regression results for the Western Balkan countries

Dependent variable: NPL ratio	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Housing loan ratio	0.01***	0.02***	0.01***	0.01***				
p-value	*0.001*	*0.001*	*0.01*	*0.011*				
Dummy real estate					0.60*	0.08***	0.50***	0.80***
p-value					*0.060*	*0.600*	*0.008*	*0.000*
HPI		0.01				−0.03**		
p-value		*0.822*				*0.040*		
Housing loan ratio*HPI			−0.001***					
p-value			*0.001*					
Dummy real estate*HPI				0.06***			−0.10***	0.09***
p-value				*0.010*			*0.001*	*0.000*
Dummy non-real estate*HPI				−0.07***				−0.05
p-value				*0.000*				*0.000*
Number of observations	398	398	398	398	398	398	398	398
R-squared	0.51	0.46	0.57	0.53	0.94	0.65	0.58	0.58
Probability (J-statistic)	0.7	0.6	0.59	0.37	0.34	0.49	0.3	0.26

Source: Authors' calculations.

*Note: ***, **, * denote significance at the 1%, 5% and 10% level, respectively. The constant is included but not reported.*

The use of euro cash in CESEE and the role of euro adoption expectations

Thomas Scheiber[1]

This short study presents data on the use of euro cash as a safe haven asset or as a means of payment over the last decade. We contrast these selected key indicators using OeNB Euro Survey data with the main literature findings on the determinants of currency substitution in Central, Eastern and Southeastern Europe (CESEE). According to these key indicators, euro cash holdings are currently widespread in Albania, Croatia, the Czech Republic, North Macedonia and Serbia. Due to overall declining euro cash amounts in the region, the extent of currency substitution continues its long-term downward trend in all CESEE countries. However, we still see a medium to high level of currency substitution in Croatia, North Macedonia and Serbia. Apparently, the determinants of euroization that have been identified in former research are still at work; this finding rests on the new data points of the key indicators presented here with respect to euroization and CESEE respondents' preferences for saving in cash or for saving in foreign currency as well as their habit of making certain payments in euro. Finally, we address the question whether EU integration prospects have an impact on people's propensity to hold euro cash. The simple empirical analysis presented here finds a positive and significant influence of expected euro adoption on the likelihood that individuals hold euro cash. However, such expectations do not seem to affect the amounts of euro cash held.

JEL classification: D14, E41, O16, O52
Keywords: euroization, currency substitution, expected euro adoption, microdata, CESEE

Over the last decade, several publications have used OeNB Euro Survey data to examine the determinants of currency substitution, defined in this study as the use of foreign currency cash as a safe haven asset or as a means of payment, as well as deposit substitution in Central, Eastern and Southeastern Europe (CESEE). This descriptive study builds on this strand of literature and presents updated time series of the main indicators on the use of euro cash in CESEE. How did these indicators perform over the last decade and do recent developments contrast with the main findings? We see that euro cash holdings are still widespread in some CESEE countries, but the importance of euro cash as a safe haven asset has been declining. This decline has been gradual, despite the pronounced – yet temporary – decrease in trust in the euro compared with the local currencies during the euro area sovereign debt crisis.[2] This corroborates the well-established conclusion in the literature that euroization (dollarization) is prone to persistence. And even once macroeconomic stabilization has been achieved, de-euroization does not necessarily take place, at least not fully, (see e.g. Feige and Dean, 2004). The cause of this persistence in the use of foreign currency cash for savings and transactions is essentially rooted in a fairly persistent loss of trust.

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[2] *Currency preferences are closely correlated with trust in the domestic currency compared with the euro, the safe haven currency. A selected set of key indicators on euroization and trust can be found on the OeNB website at https://www.oenb.at/en/Monetary-Policy/Surveys/OeNB-Euro-Survey.html.*

What distinguishes euroization in CESEE from, e.g., dollarization in Latin America is the process of institutional and economic integration in the EU. Also, the use of euro cash in CESEE may additionally have been driven by the development of European value chains, labor migration from CESEE to core industrial countries in the EU and related flows of remittances back to CESEE as well as tourist flows in both directions.[3] The question arises whether EU integration prospects have an impact on people's propensity to hold euro cash. The simple empirical analysis presented here finds a positive and significant influence of expected euro adoption on the likelihood that individuals hold euro cash. However, these expectations do not seem to affect the amounts of euro cash held.

This short study is structured as follows: Section 1 presents descriptive evidence on the prevalence of euro cash holdings, median amounts and the extent of currency substitution based on OeNB Euro Survey data and contrasts euro cash holdings with foreign currency savings and the overall euroization of household assets. Section 2 summarizes research results that explain (1) why Southeastern European (SEE) households prefer saving in cash rather than at banks and (2) why households prefer to use the euro for payments. The new data points on respondents' saving preferences and payment behavior complement this discussion. Section 3 presents results of two simple regressions in order to shed some light on the role of euro adoption prospects. In particular, we investigate which socioeconomic characteristics correlate with the reported euro cash holdings and whether expectations about euro adoption prospects are related to (1) people's propensity to hold euro cash and (2) the amount of euro cash holdings. Section 4 summarizes and discusses briefly some policy implications for the SEE countries.

1 Euro cash holdings still widespread in SEE countries

In a number of countries in CESEE, we have seen a significant prevalence of euro cash holdings. The results of the OeNB Euro Survey waves conducted from 2007 to 2018 show that euro cash holdings are widespread in Albania, Croatia, the Czech Republic, North Macedonia and Serbia (chart 1, left-hand panel). In those five countries, an average share of 36% of respondents reported to hold euro cash in the period 2017–18. The corresponding average for the other five countries (Bosnia and Herzegovina, Bulgaria, Hungary, Poland and Romania) was 13% of respondents.

In the aftermath of the global financial crisis, euro cash holdings became less common, partly because households were forced to use their savings to compensate for a loss of income during the crisis period (Corti and Scheiber, 2014). The recent rebound of euro cash holdings in several CESEE countries shown in chart 1 (left-hand panel) may have been driven by rising incomes or a higher prevalence of remittances.[4]

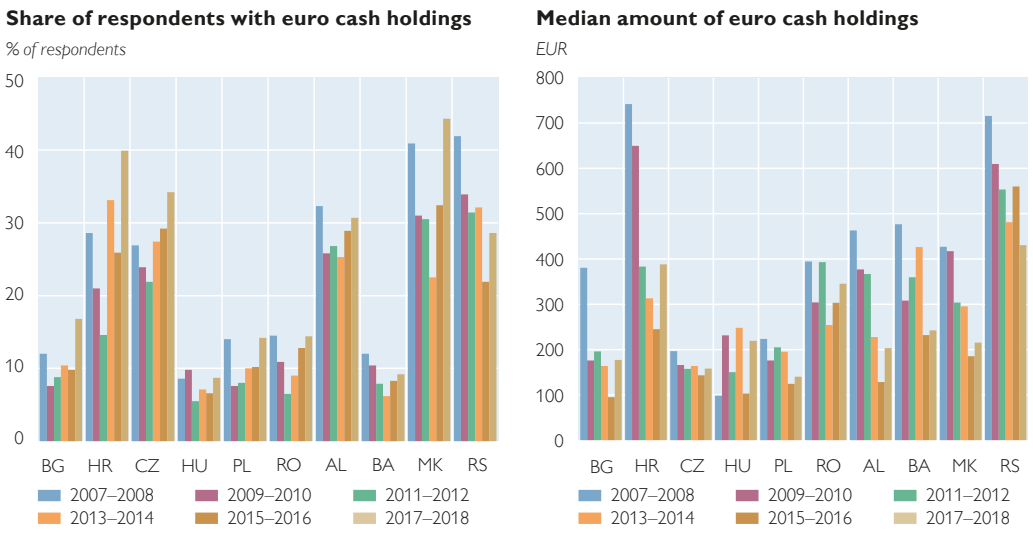
The median amounts – based on self-reported euro cash amounts – show a rather pronounced trend of decreasing euro cash circulation in those countries that exhibited relatively high median amounts in 2007–08 (chart 1, right-hand panel).

[3] *Of course, these factors also play a role in Latin America, but the intensity of integration and the size of bi-directional flows is relatively more advanced in CESEE and in particular in the CESEE EU Member States than in Latin America. Furthermore, CESEE EU Member States have the option to become full-fledged members of Economic and Monetary Union (EMU), which implies the adoption of the euro as sole legal tender.*

[4] *The decline in euro cash holdings in Serbia in recent years, in turn, may reflect the country's dinarization strategy.*

Chart 1

Euro cash holdings in Central, Eastern and Southeastern Europe



Source: OeNB Euro Survey.

Note: Weighted percentages are based on pooled data from survey waves of two consecutive years as indicated in the legend; respondents who answered "Don't know" or who refused to answer have been excluded.

In recent years, the median amount in the Czech Republic, Poland, Bosnia and Herzegovina and North Macedonia has remained roughly the same, whereas the median in Bulgaria, Croatia, Hungary and Albania rebounded substantially. Only the Serbian median amount decreased further in the period 2017–18, yet at EUR 430, it still turns out to be the highest in the region, followed by Croatia (roughly EUR 390).

To highlight the macroeconomic significance of euro cash in CESEE, we relate survey figures to currency in circulation and households' savings deposits. First, the currency substitution index (CSI, chart 2, left-hand panel) relates projected per capita euro cash amounts, as derived from the OeNB Euro Survey, to per capita local currency in circulation outside the banking sector.

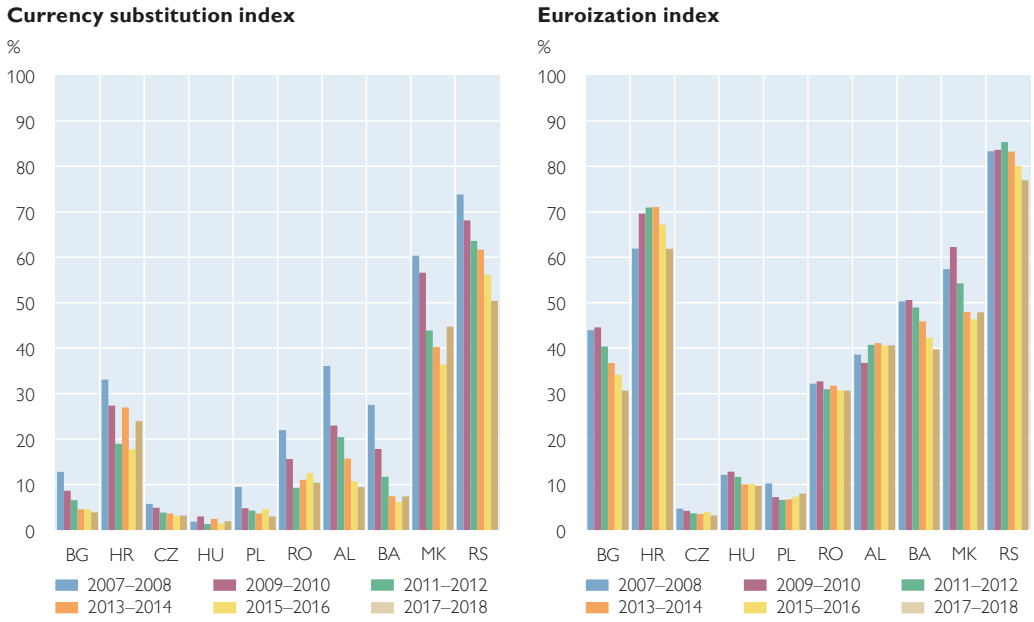
According to this measure, currency substitution had been macroeconomically insignificant in the Czech Republic, Hungary and Poland already in 2007–08 and has declined further since then. Correspondingly, a majority of respondents in these countries reported that they hold euro cash mainly for payments abroad or travelling (Scheiber and Stern, 2016).

Currency substitution has also trended downward in all SEE countries since 2007–08. Bulgaria and Bosnia and Herzegovina were the first SEE countries in which the CSI declined below 10%, which is regarded as the threshold for low euroization in the literature. In Albania and Romania, the CSI declined to 10% in 2017–18. Medium levels of currency substitution prevail in Croatia and North Macedonia, which both experienced a substantial increase of the CSI, to 24% and 45%, respectively, in 2017–18.[5] Meanwhile, the Serbian CSI declined further

[5] *The sharp increase of the CSI in North Macedonia is driven by the results of the 2018 survey wave, which revealed that fairly small-amount euro cash holdings had become more common.*

Chart 2

Euro cash in circulation has decreased, share of euro deposits more stable



Source: OeNB Euro Survey, national central banks.

Note: The currency substitution index in the left-hand panel is calculated as the ratio of euro cash to euro cash plus national currency in circulation. The euroization index in the right-hand panel is calculated as euro cash plus foreign currency deposits divided by the sum of total cash and total deposits. For details, see Scheiber and Stix (2009).

while remaining above 50%.[6] Asked directly about their motives for holding euro cash, respondents cited the store of value function as the main reason (Scheiber and Stern, 2016).

Second, the euroization index combines per capita euro cash holdings and per capita euro deposits of the household sector over total currency in circulation outside the banking sector and total household deposits (chart 2, right-hand panel). Interestingly, the overall extent of households' asset euroization in SEE remained at a medium to high level over the last decade. The decreases of the euroization index visible in chart 2 can be mainly attributed to the downward trend of reported euro cash amounts; the underlying euroization of deposits turns out to be persistent.

2 Explaining household preferences for using euro cash

Money serves as a store of value and as a medium of exchange. Hence, currency substitution also impacts saving decisions. Engineer (2000) analyzed the role of transaction costs in an economy that uses competing fiat currencies. His model predicts that the low-transaction-cost currency (domestic currency) is used for everyday purchases, whereas the stable foreign currency serves the precautionary demand for money and has a lower velocity of circulation, i.e. foreign currency is

[6] *A caveat relates to the fact that surveyed euro cash amounts are likely to suffer from underreporting because some respondents may be reluctant to reveal the true amounts; hence, in all CESEE countries, the true level of currency substitution may be higher than suggested by the reported CSI.*

held as a store of value and used to make occasional large payments. OeNB Euro Survey data show considerable evidence for both uses in the SEE region. In order to be able to derive policy conclusions, a clear understanding of the underlying determinants is helpful. In the following, we summarize selected research results. The new data points on respondents' saving preferences and payment behavior complement this discussion.

2.1 Preference for saving in cash

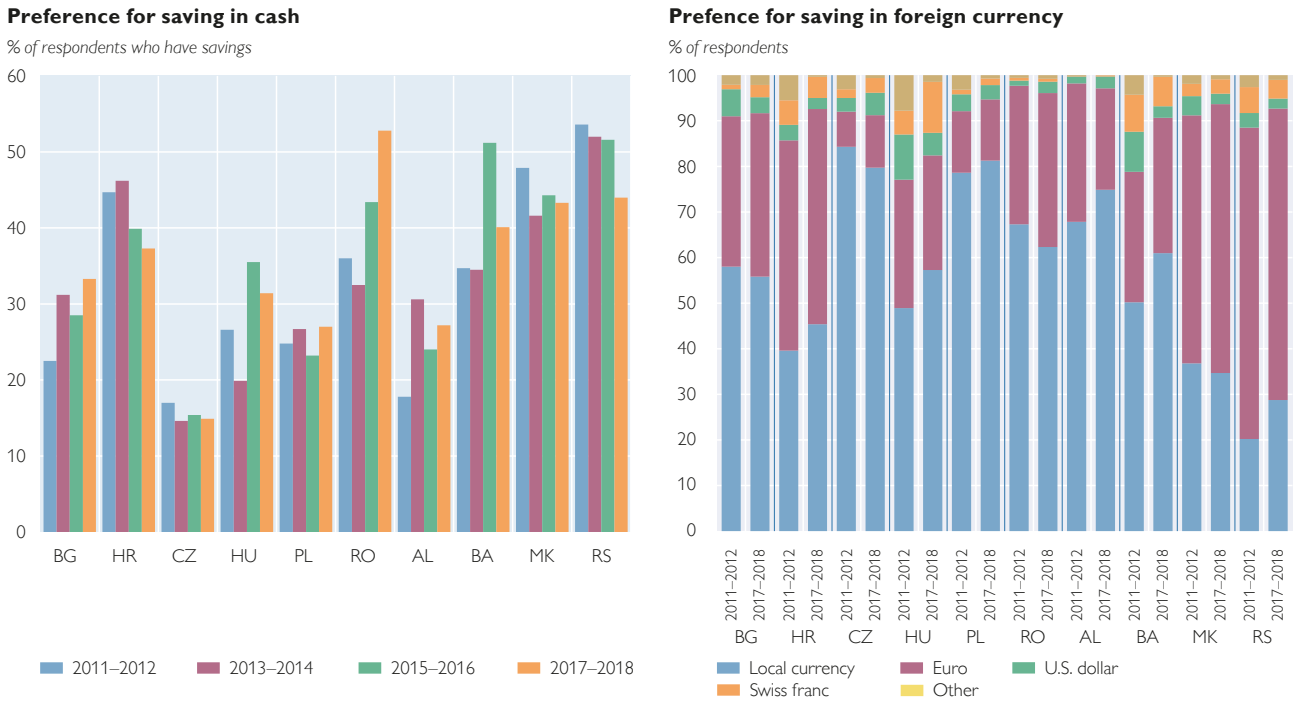
First, Beckmann et al. (2013) looked at the structure of CESEE households' portfolios and found that in 2010–11, cash holdings were, on average, the most important saving instrument even for banked households.

Second, in an analysis of why CESEE households hold sizeable shares of their assets in cash at home rather than at banks, Stix (2013) finds that a lack of trust in banks, memories of past banking crises and weak tax enforcement are important factors in explaining respondents' preference for saving in cash. Moreover, the preference for cash is stronger in euroized SEE economies where a "safe" foreign currency serves as a store of value.

The left-hand panel of chart 3 presents data on CESEE households' preferences for saving in cash.[7] The share of respondents with savings who state that they prefer

Chart 3

Preference for saving in cash or foreign currency



Source: OeNB Euro Survey.

Note: Weighted percentages excluding respondents who answered "Don't know" or who refused to answer. The left-hand panel shows the share of respondents who have a strong cash preference, derived from the statement: "I prefer to hold cash rather than a savings account." The answers of the right-hand panel refer to the question: "Suppose you had two average monthly salaries to deposit in a savings account. Would you choose to deposit this amount in local currency, EUR, USD, CHF or other currency?"

[7] *Note that the question on the preference for saving in cash has been included in all survey waves since fall 2007, yet, the necessary break variable, which controls for savings, has only been available since 2011.*

to save in cash varies between 15% in the Czech Republic and 53% in Romania for the period 2017–18. Results from the literature indicate that the high incidence of cash savings is mainly attributable to trust issues (a phenomenon that is partly related to memories of past banking crises) and not so much a matter of an insufficient supply of bank services. Stix (2013) stresses that the combination of weak institutions and network effects in the use of foreign currency cash renders people's tendency to save in cash rather persistent.

The right-hand panel of chart 3 presents updated evidence on CESEE households' preference for saving in foreign currency, and particularly for saving in euro.[8] Brown and Stix (2015) used this variable from the 2011 and 2012 survey waves as a dependent variable in their paper. In comparison with 2017–18, the preferences for saving in foreign currency remained quite stable. The share of respondents who prefer to save in euro remained close to 50% in Croatia and at around 60% in North Macedonia and Serbia. This direct measure of currency preferences as well as the euroization index above indicate that deposit substitution turns out to be persistent in SEE.

Brown and Stix (2015) show that the preferences of CESEE households for euro deposits are partly driven by their distrust in the stability of their domestic currency, which, in turn, is related to their assessment of current policies and institutions. Furthermore, the authors confirm that the observed persistence of deposit euroization across the region is strongly influenced by households' experiences of banking and currency crises during the 1990s.

2.2 Preference for payments in euro

Chart 4 (right-hand panel) shows the extent to which the euro is used as a means of payment in CESEE.[9] In general, the frequency of payments in euro over the last six months has declined in all CESEE countries since 2008, except for Croatia, Hungary and the Czech Republic. The decline was most pronounced in Bosnia and Herzegovina, North Macedonia and Serbia. At the same time, we see a rebound in euro payments for some countries between 2014 and 2017, notably in Croatia and Albania.

The left-hand panel of chart 4 reports a subjective measure of network externalities, i.e. the share of respondents per country who have savings and who agree with the statement "In [my country] it is very common to make payments in euro" (six-point Likert scale). Since 2008, the perceived measure of network effects has declined substantially in all SEE countries except Albania, where it has remained mostly unchanged.

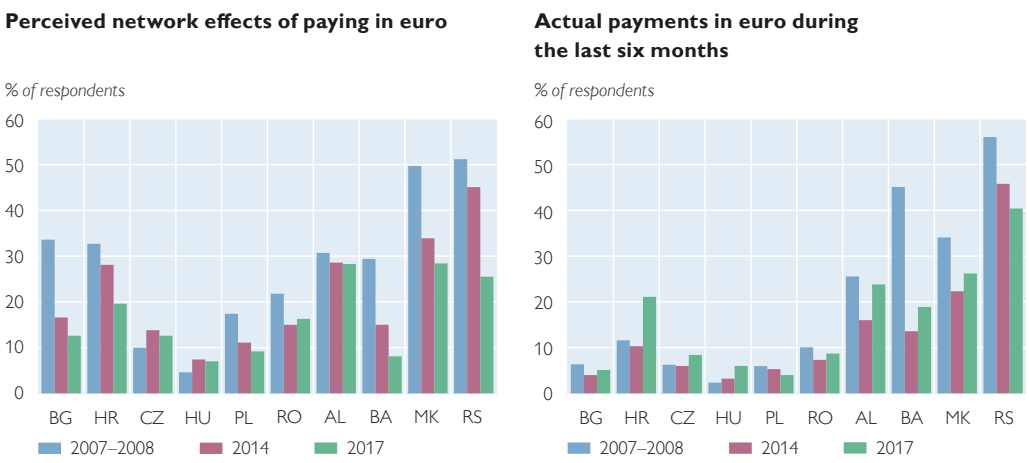
Scheiber and Stern (2016) examine the determinants of currency substitution in SEE. They find that perceived network externalities and monetary expectations (in particular exchange rate expectations) are still significantly associated with the formation of households' preferences for receiving certain payments in euro. Relative trust in the euro versus the local currency – which is mainly related to

[8] *Note that the survey question on the currency preference of deposits has been available since fall 2011. For reasons of readability, the results for 2013, 2015 and 2016 are not included. Data are available from the author upon request.*

[9] *Note that the respective survey question was only asked in the fall 2007, spring 2008, fall 2014 and fall 2017 waves. For reasons of comparability, the left-hand panel of chart 4 is confined to these points in time as well, although data are also available for the years 2010 to 2013.*

Chart 4

Perceived network effects and actual payments in euro over the last six months



Source: OeNB Euro Survey.

Note: The left-hand panel is based on agreement with the statement: "In my country it is very common to make certain payments in euro." The right-hand panel refers to the statement: "Did you make any payments in euro in your country during the last six months?"

past financial crises – turns out to be even more important than depreciation expectations. Overall, the results corroborate prior findings that the prevailing currency substitution is largely demand driven and not so much a consequence of constrained access to banking or payment services available in the local currency.[10]

3 Which characteristics correlate with observed euro cash holdings and the role of euro adoption expectations

Against the background of EU integration, the question arises whether individual expectations with respect to future euro adoption have a significant influence on euro cash holdings. In the following empirical exercise, we distinguish between the six CESEE EU Member States, for which euro adoption is a possible and relevant policy option, and the four EU candidate and potential candidate countries (CPCCs) in the sample. For the latter group of countries – Albania, Bosnia and Herzegovina, North Macedonia and Serbia – EU accession needs to precede the process toward joining the euro area, as in all earlier cases.

The OeNB Euro Survey asked respondents in 2014, 2017 and 2018 when, that is in which year, they expect the euro to be introduced in their country.

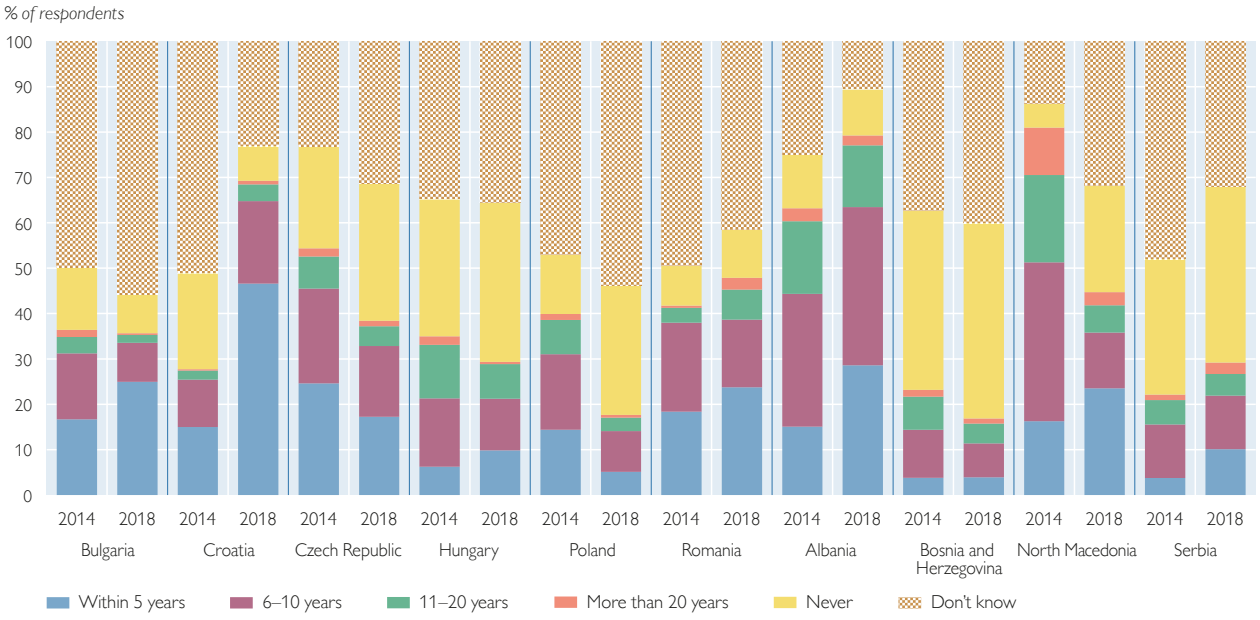
As chart 5 shows, a substantial share of respondents was undecided as to how soon the euro might be introduced in their country ("don't know" answers in chart 5).[11] In comparison with 2014, respondents in Bulgaria have become slightly more optimistic, whereas Czech, Hungarian, Polish and Romanian respondents turned out to be more skeptical. Particularly, the share of "never" replies increased substantially. The exception is Croatia, with declining shares of both "don't know"

[10] *Scheiber and Stern (2016) conclude that currency substitution and the prevalence of payments in euro is largely demand driven and the constraints of access to banking or payment services play a minor role. Brown and Stix (2015) argue similarly in the case of deposit substitution. Beckmann et al. (2018) indicate that some CESEE households are faced with serious constraints of access to banking, which is related to the geographical distribution of banking services.*

[11] *For reasons of readability, the results for 2017 are not shown; data are available from the author upon request.*

Chart 5

Euro adoption expectations: varied responses across countries, many "Don't knows"



Source: OeNB Euro Survey.

Note: Results are weighted; respondents who refused to answer are excluded.

and "never" and with the most optimistic replies, showing a median expectation of euro adoption in four years' time. This may well be associated with Croatia having drawn up a euro adoption strategy in 2017–18.[12]

Although the formal adoption of the euro needs to be preceded by EU accession and ERM II membership of at least two years, a majority of Albanian and North Macedonian respondents in 2014 expected their countries to adopt the euro within the next ten years. By 2018, this share had increased to 60% in Albania, while expectations of North Macedonians have been frustrated substantially. In Bosnia and Herzegovina and Serbia, the "don't know" and "never" replies dominated in both survey waves.[13]

In the following, we present two simple regressions using data from 2014, 2017 and 2018. The first set of regressions examines the influence of selected variables on the probability of an individual holding euro cash (extensive margin). The second set of regressions analyzes the determinants of euro cash amounts given that a respondent holds euro cash in the first place (intensive margin). The explanatory variable of main interest is the expected date of euro adoption

[12] *This shift in public mood in Croatia was already visible in the 2017 survey wave.*

[13] *The question arises whether residents' expectations are realistic. For a comprehensive discussion of the prospect that the six CESEE EU Member States adopt the euro over the next couple of years, see Backé and Dvorsky (2018). At the moment, none of the six CESEE EU Member States is taking part in ERM II; therefore, it is legally possible for these countries to adopt the euro in three to four years, time at the earliest. Regarding the EU accession prospects of the CPCCs, in 2018 the European Commission set 2025 as the earliest possible target date. Against this background, at the time of the interviews in the fall of 2018, the CPCCs would be able to adopt the euro in 10 to 12 years' time at the earliest. However, Grieveson et al. (2018) stress that the Western Balkan countries are faced with numerous challenges on the road to EU accession. They regard the time frame announced by the European Commission as highly ambitious. In their view, it is far from certain that any CPCC will be ready for accession by 2025. Respondents' expectations regarding euro adoption do not in all cases take into account these timelines and thus cannot always be considered to be well-informed.*

measured in years from the point in time when the interview was conducted. For the regression analyses, individual expectations are mapped into a set of dummy variables, each covering a period of two or more years. The base category are respondents who answered "don't know."

3.1 Propensity to hold euro cash: euro adoption expectations play a role but income in euro and remittances are more important

Table 1 presents the results of the first set of probit regressions. The dependent variable is a binary variable for respondents holding euro cash.

For each set of countries, we start out with a simple specification that relates dummies of expected euro adoption to the binary variable that indicates euro cash holdings (columns I and V). Subsequently, we add interacted country and year dummies (columns II and VI) in order to take into account the considerable heterogeneity across countries. In specifications III and VII, a set of socioeconomic control variables is included in the estimations. The socioeconomic controls comprise respondents' gender, age, educational attainment, employment status, financial literacy score[14] and risk aversion. Finally, the most exhaustive specifications IV and VIII additionally contain a set of household characteristics (i.e. household income, household size, income in euro or remittances, as well as relative household wealth[15]). All reported estimation results are based on standard errors, which account for clustering at the regional level.

The estimation results for both regions show that respondents who have concrete expectations of euro adoption are more likely to hold euro cash (extensive margin). The average marginal effects decrease when we add socioeconomic and household controls. For CESEE EU Member States, the average marginal effect of the expectation of euro adoption in 2 to 3 years' time or 4 to 5 years' time increases the likelihood by 7 percentage points vis-à-vis the base category of respondents who answered "don't know" (see specification IV). The average marginal effects decline the farther in the future euro adoption is expected to be. For CPCCs we find a different pattern: The average marginal effects peak at the 12-to-15-year or the 16-or-more-year horizon, increasing the likelihood of holding euro cash by 8 percentage points (see specification VIII). The average marginal effects become weaker and insignificant for expectations of earlier euro adoption.[16] Note that these results can only be interpreted as correlations but not as causal effects due to potential endogeneity.[17]

[14] *The financial literacy score is the sum of correct answers to three knowledge questions on the concept of compound interest, inflation and exchange rate.*

[15] *The OeNB Euro Survey does not include direct measures of household wealth. As an alternative, we use a proxy variable which relies on interviewers' assessment of the condition of the respondents' home compared with neighbouring homes.*

[16] *Table A3 in the annex shows the results of several other country groups. Interestingly, we find two peaks in the country sets that include both EU Member States and CPCCs: an early peak at the 4-to-5-year horizon and a late peak of a similar size at the 12-to-15-year horizon. The comparison indicates that the late peak in the CPCC estimations is mainly driven by Albania and Bosnia and Herzegovina. In particular, the probit estimation including Croatia, North Macedonia and Serbia (i.e. countries with medium to high levels of currency substitution) exhibits an early peak.*

[17] *Reverse causality would be prevalent if residents expected sooner euro adoption because they hold euro cash themselves. Yet, the widespread use of euro cash is a general feature of some countries that all residents of these countries are equally exposed to. This difference in the general level of currency substitution between countries is econometrically captured by the country-fixed effects.*

The group of six EU Member States can be split into two subgroups. On the one hand, there are Bulgaria, Croatia and Romania, which have explicitly stated their willingness to introduce the euro as soon as possible, with Bulgaria and Croatia already preparing ERM II accession and, to this end, cooperating closely with the SSM. On the other hand, there are the Czech Republic, Hungary and

Table 1

Extensive margin: influence of expected euro adoption prospects on euro cash holdings (dependent variable)

	EU Member States (BG, HR, CZ, HU, PL, RO)				CPCCs (AL, BA, MK, RS)			
	I	II	III	IV	V	VI	VII	VIII
Euro adoption expected...								
within 2 years	0.082**	0.041	0.015	−0.001	0.151***	0.048	0.044	0.034
	(0.037)	(0.036)	(0.030)	(0.026)	(0.052)	(0.045)	(0.042)	(0.029)
in 2–3 years	0.164***	0.111***	0.083***	0.067***	0.103***	0.045	0.033	0.023
	(0.025)	(0.014)	(0.013)	(0.011)	(0.034)	(0.030)	(0.029)	(0.023)
in 4–5 years	0.197***	0.127***	0.092***	0.074***	0.105*	0.078**	0.057*	0.046*
	(0.028)	(0.017)	(0.014)	(0.013)	(0.054)	(0.036)	(0.033)	(0.028)
in 6–7 years	0.106***	0.082***	0.053***	0.040***	0.039	0.034	0.015	0.010
	(0.020)	(0.014)	(0.013)	(0.013)	(0.043)	(0.028)	(0.025)	(0.020)
in 8–9 years	0.120***	0.080***	0.054***	0.041*	0.094***	0.052***	0.038***	0.025**
	(0.033)	(0.021)	(0.021)	(0.022)	(0.031)	(0.015)	(0.013)	(0.012)
in 10–11 years	0.060***	0.055***	0.034 **	0.026	0.059	0.080**	0.058**	0.046*
	(0.021)	(0.019)	(0.017)	(0.017)	(0.040)	(0.032)	(0.029)	(0.027)
in 12–15 years	0.068***	0.063***	0.039 **	0.034*	0.160***	0.119**	0.100**	0.086**
	(0.023)	(0.020)	(0.019)	(0.019)	(0.055)	(0.047)	(0.044)	(0.041)
in 16 or more years	0.053**	0.071***	0.047 **	0.030	0.105**	0.105***	0.080**	0.074**
	(0.025)	(0.024)	(0.022)	(0.021)	(0.042)	(0.035)	(0.037)	(0.035)
never	0.016	0.004	−0.003	−0.005	−0.020	−0.005	−0.014	−0.008
	(0.017)	(0.011)	(0.010)	(0.010)	(0.020)	(0.017)	(0.016)	(0.017)
Country, time and interacted fixed effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Dummy: 19 to 34 years old			0.000	−0.004			0.021	0.024*
			(0.009)	(0.009)			(0.014)	(0.013)
Dummy: 55+ years old			−0.027***	−0.020**			−0.048***	−0.030
			(0.009)	(0.010)			(0.018)	(0.019)
Dummy: female			−0.007	−0.011			−0.022***	−0.026***
			(0.007)	(0.007)			(0.007)	(0.006)
Dummy: high education			0.144***	0.118***			0.107***	0.075***
			(0.013)	(0.013)			(0.018)	(0.021)
Dummy: medium education			0.040***	0.037***			0.041**	0.031
			(0.011)	(0.013)			(0.017)	(0.020)
Dummy: self-employed			0.093***	0.063***			0.119***	0.082***
			(0.011)	(0.012)			(0.008)	(0.006)
Dummy: unemployed			−0.033 **	−0.025**			−0.083***	−0.068***
			(0.013)	(0.012)			(0.008)	(0.010)
Dummy: retired			−0.067***	−0.043***			−0.034*	−0.019
			(0.011)	(0.011)			(0.019)	(0.018)
Dummy: student			−0.010	−0.008			−0.058***	−0.044**
			(0.011)	(0.013)			(0.017)	(0.017)
Financial literacy score			0.018***	0.016***			0.007	0.008
			(0.005)	(0.005)			(0.008)	(0.008)
Dummy: risk averse			0.001	0.006			0.034*	0.027
			(0.009)	(0.008)			(0.019)	(0.016)
Dummy: risk aversion: don't know/no answer			−0.046***	−0.032**			−0.031	−0.038
			(0.016)	(0.015)			(0.029)	(0.027)

Source: Author's calculations.

*Note: Average marginal effects from probit estimations using data from 2014, 2017 and 2018; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. P (DepVar=1) denotes the unconditinal sample probablility of the dependent variable. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes.*

Table 1 cont.

Extensive margin: influence of expected euro adoption prospects on euro cash holdings (dependent variable)

	EU Member States (BG, HR, CZ, HU, PL, RO)				CPCCs (AL, BA, MK, RS)			
	I	II	III	IV	V	VI	VII	VIII
Dummy: high income				0.085***				0.089***
				(0.012)				(0.020)
Dummy: medium income				0.035***				0.054***
				(0.008)				(0.011)
Dummy: income don't know/no answer				0.041***				0.043**
				(0.011)				(0.021)
Dummy: income in euro				0.183***				0.215***
				(0.016)				(0.019)
Dummy: remittances				0.099***				0.106***
				(0.012)				(0.032)
Dummy: two-person household				0.000				0.008
				(0.010)				(0.021)
Dummy: three-or-more-person household				−0.016				−0.003
				(0.013)				(0.026)
Dummy: children				0.009				0.023*
				(0.009)				(0.013)
Dummy: house in better condition				0.068***				0.059***
				(0.009)				(0.010)
Dummy: house in poorer condition				−0.043***				−0.063***
				(0.015)				(0.020)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-likelihood	−8,614.1	−8,036.8	−7,577.1	−6,932.0	−6,687.0	−6,233.4	−5,948.5	−5,345.4
Pseudo-R^2	0.03	0.09	0.14	0.19	0.01	0.08	0.11	0.17
Probability > chi-squared	188.1	1,164.3	4,745.3	11,684.6	112.8	..	..	..
Number of observations	17,773	17,773	17,611	17,189	11,685	11,685	11,536	11,131
P(DepVar=1)	0.20	0.20	0.20	0.20	0.27	0.27	0.27	0.27

Source: Author's calculations.

*Note: Average marginal effects from probit estimations using data from 2014, 2017 and 2018; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. P (DepVar=1) denotes the unconditinal sample probablility of the dependent variable. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes.*

Poland, which either have not expressed an official view or said that euro adoption is not a policy priority. Although euro adoption expectations differ substantially among respondents across the two subgroups, estimations confirm the link between euro adoption expectations and the propensity to hold euro cash for both subgroups. As expected, countries with a clear policy priority exhibit stronger average marginal effects that even peak in the more distant future.[18]

For all regions, the receipt of income in euro or of remittances are strong predictors of euro cash holdings. High household income and living in a home that is in a relatively better condition as well as higher educational attainment (for EU Member States) or being self-employed (for CPCCs) are other variables that exhibit high marginal effects.

[18] *For results see table A2 in the annex (columns I and II). For the subgroup consisting of the Czech Republic, Hungary and Poland, the average marginal effects peak at the 4-to-5-year horizon; yet this result is mainly driven by the Czech Republic. For the other subgroup (Bulgaria, Croatia and Romania), average marginal effects peak at the 8-to-9-year horizon.*

Table 2

Intensive margin: influence of expected euro adoption prospects on the amount of euro cash (dependent variable)

	EU Member States (BG, HR, CZ, HU, PL, RO)				CPCCs (AL, BA, MK, RS)			
	I	II	III	IV	V	VI	VII	VIII
Euro adoption expected...								
within 2 years	149.7	31.0	–14.4	–20.1	73.5	103.0	149.6	114.5
	(295.4)	(278.4)	(290.1)	(283.6)	(148.2)	(166.5)	(161.8)	(148.6)
in 2–3 years	280.1**	152.4**	114.2*	81.0	–168.2**	4.5	13.9	19.1
	(106.3)	(64.2)	(64.7)	(59.3)	(65.3)	(65.9)	(66.5)	(76.8)
in 4–5 years	242.1***	109.6*	61.2	8.3	19.8	132.0	102.3	93.0
	(77.3)	(60.3)	(55.6)	(59.4)	(85.2)	(128.6)	(94.1)	(77.7)
in 6–7 years	210.7**	133.3	100.7	51.3	94.8	85.9	29.5	51.8
	(97.8)	(82.3)	(85.2)	(86.7)	(80.1)	(94.4)	(91.5)	(99.1)
in 8–9 years	182.3	107.1	73.2	12.3	–3.3	202.8*	164.0	129.4
	(118.0)	(74.6)	(82.5)	(68.3)	(89.7)	(108.7)	(102.3)	(97.3)
in 10–11 years	25.1	–21.1	–75.6	–53.1	155.6	191.2	163.7	165.0
	(144.5)	(155.5)	(156.5)	(162.5)	(134.5)	(152.0)	(139.5)	(127.2)
in 12–15 years	96.2	3.1	–77.5	–96.8	74.9	257.3	244.0	229.2
	(110.4)	(92.4)	(94.9)	(97.5)	(231.1)	(182.4)	(188.8)	(190.6)
in 16 or more years	185.0	162.9	115.9	49.2	–138.5	–25.0	–3.3	21.2
	(145.6)	(146.1)	(150.3)	(153.4)	(168.4)	(158.0)	(167.0)	(170.2)
never	–83.4	9.7	–17.6	–19.7	131.7	106.3	83.8	121.1*
	(64.6)	(57.9)	(58.8)	(51.9)	(106.2)	(72.8)	(64.7)	(64.0)
Country, time and interacted fixed effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Dummy: 19 to 34 years old			–45.1	–59.5			145.8***	–137.3***
			(40.5)	(43.8)			(35.0)	(35.6)
Dummy: 55+ years old			74.1	58.6			–24.9	38.0
			(53.9)	(52.8)			(63.1)	(77.1)
Dummy: female			–107.1**	–120.6***			–124.4*	–125.1*
			(40.5)	(43.1)			(63.2)	(71.5)
Dummy: high education			134.5	88.9			83.7	–17.9
			(138.5)	(154.6)			(94.8)	(96.2)
Dummy: medium education			20.3	34.3			–58.3	–67.9
			(98.3)	(109.3)			(111.3)	(113.8)
Dummy: self-employed			245.6***	165.2**			243.7	139.3
			(81.4)	(67.5)			(151.0)	(145.1)
Dummy: unemployed			–172.0**	–105.1			–93.0	–53.7
			(81.5)	(76.2)			(77.6)	(75.3)
Dummy: retired			20.0	80.9			35.9	71.8
			(52.3)	(54.1)			(76.2)	(82.4)
Dummy: student			345.4***	–267.6***			364.4***	340.3***
			(107.3)	(97.7)			(64.0)	(52.9)
Financial literacy score			–66.4	–85.5**			72.0**	75.8***
			(40.6)	(39.5)			(25.5)	(22.4)
Dummy: risk averse			–8.7	2.5			34.4	–32.3
			(44.5)	(47.8)			(60.7)	(43.0)
Dummy: risk aversion: don't know/no answer			352.3***	–307.6***			14.0	–78.1
			(110.8)	(98.9)			(194.3)	(184.4)

Source: Author's calculations.

*Note: Ordinary least squares estimations using data from 2014, 2017 and 2018 and conditional that a respondent holds euro cash. Coefficients show changes in the amount of euro cash holdings (in EUR) that are associated with changes in the independent variables; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the average marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes.*

Table 2 cont.

Intensive margin: influence of expected euro adoption prospects on the amount of euro cash (dependent variable)

	EU Member States (BG, HR, CZ, HU, PL, RO)				CPCCs (AL, BA, MK, RS)			
	I	II	III	IV	V	VI	VII	VIII
Dummy: high income				340.8***				444.3***
				(67.1)				(77.4)
Dummy: medium income				183.1***				135.4***
				(47.9)				(45.9)
Dummy: income don't know/ no answer				120.6				321.5**
				(81.4)				(127.7)
Dummy: income in euro				411.3***				332.6***
				(92.3)				(91.6)
Dummy: remittances				0.5				147.1
				(78.5)				(88.9)
Dummy: two-person household				–44.6				–72.4
				(60.2)				(101.9)
Dummy: three-or-more-person household				–124.3*				–67.2
				(67.7)				(110.8)
Dummy: children				21.3				36.1
				(52.9)				(39.2)
Dummy: house in better condition				212.8***				166.7*
				(57.5)				(87.0)
Dummy: house in poorer condition				–64.7				–154.5*
				(51.7)				(82.3)
Constant	532.0***	429.4***	626.7***	372.9*	714.5***	873.0***	909.9***	536.7**
	(73.4)	(128.5)	(180.6)	(193.3)	(57.9)	(201.1)	(232.3)	(217.9)
Log-likelihood	–26,074.3	–25,959.6	–25,740.4	–25,128.3	–21,158.2	–21,101.0	–20,877.2	–20,290.6
F-statistic	6.01	21.65	81.44	180.76	7.05	..	..	..
R^2	0.02	0.09	0.12	0.15	0.01	0.05	0.09	0.14
Adjusted R^2	0.01	0.08	0.10	0.14	0.00	0.04	0.07	0.12
Number of observations	3,097	3,097	3,077	3,014	2,494	2,494	2,473	2,411
Conditional mean of dependent variable in EUR	647	647	648	645	734	734	734	736

Source: Author's calculations.

*Note: Ordinary least squares estimations using data from 2014, 2017 and 2018 and conditional that a respondent holds euro cash. Coefficients show changes in the amount of euro cash holdings (in EUR) that are associated with changes in the independent variables; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the average marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes.*

3.2 Prospects of euro adoption do not seem to affect the amounts of euro cash held

Table 2 shows the result of the OLS regression model that analyzes whether the amount of euro cash held is correlated with euro adoption expectations. The sample is now restricted to those respondents who reported to hold euro cash. The dependent variable is a continuous variable with the reported amount of euro cash.

Table 2 presents the results of the OLS regression in the same way as table 1. The reported coefficients show changes in the amount of euro cash holdings (in euro) that are associated with changes in the independent variables; again, the standard errors account for clustering at the regional level. Due to the considerably

lower number of observations regarding the size of euro cash holdings, the standard errors are rather high.

The main result for both country groups – CESEE EU Member States and CPCCs – is that the prospects of euro adoption do not seem to affect the amounts of euro cash held (intensive margin). The OLS estimations I, II and V do find a positive effect in a euro adoption expected to take place in 2 to 3 years' time or 4 to 5 years' time that is significant at the 5% or 1% level. However, the significance weakens and finally disappears when the variables on the socioeconomic and household characteristics are included.[19]

Again, high income and, particularly, income in euro as well as relatively better homes are robust predictors of higher euro cash amounts in both regions. Moreover, women, students and relatively poorer households are found to hold significantly lower amounts of euro cash.

Interestingly, the regressions for CPCCs yield a significantly negative and sizeable time dummy for 2017 and 2018, in combination with the country-time interaction term for Serbia (not shown), which suggests that the recent de-euroization policies in Serbia have helped drive down euro cash holdings.

4 Summary and policy implications

This short study presents recent data on the use of euro cash in CESEE countries based on the OeNB Euro Survey. We find that euro cash holdings are currently widespread in Albania, Croatia, the Czech Republic, North Macedonia and Serbia. Median amounts vary considerably across countries and have decreased fairly substantially in those countries that had exhibited relatively high median amounts in 2007–08. The recent rebound in euro cash holdings may have been driven by rising incomes or a higher prevalence of remittances.

Nonetheless, the extent of currency substitution, i.e. the use of foreign currency cash as a safe haven asset or as a means of payment, continues its long-term downward trend in all CESEE countries. At the same time, the euroization of household deposits has remained virtually unchanged for the last decade as many respondents still prefer to save in euro, particularly in Croatia, North Macedonia and Serbia.

Furthermore, OeNB Euro Survey indicators show that a sizeable share of Southeastern European (SEE) residents continue to prefer savings in cash to saving deposits. The literature on cash preference and currency substitution shows that people in SEE continue to prefer euro cash for various reasons that are predominantly related to trust. In particular, monetary expectations, network effects, crisis experiences and weak institutions are important determinants of SEE individuals' preferences.

Apart from these well-established determinants of euroization, the question arises whether EU integration has an impact on currency substitution. A brief empirical analysis confirms that people's expectations of euro adoption affect their propensity to hold euro cash. We run two simple regressions using data from 2014,

[19] *See table A2 for the robustness of results with respect to country groups. No combination of countries yields significant correlations between the amounts of euro cash held (for those holding some euro cash) and expectations of euro adoption, except for specification VIII (Albania and Bosnia and Herzegovina), where we do find a significant positive effect for the 4-to-5-year horizon and specification I (Czech Republic, Hungary and Poland), yet this result is exclusively driven by the Czech Republic.*

2017 and 2018. The first regression, a probit estimation, finds a positive and significant influence of expected horizons for euro adoption on the likelihood that individuals hold cash. The average marginal effects decline in the six EU Member States as well as North Macedonia and Serbia, the farther in the future euro adoption is expected to be, while for Albania and Bosnia and Herzegovina, average marginal effects peak at the 12-to-15-year horizon. However, a second regression finds that the expectations of euro adoption do not seem to affect the amounts of euro cash held (for those respondents that hold euro cash at all). Finally, the regression results suggest that high income, income in euro or the receipt of remittances as well as higher wealth increases the likelihood that an individual holds euro cash and, among individuals who do, that they hold higher amounts of euro cash.

Apparently, the determinates of euroization that have been identified in former research are still at work. This finding rests on the new data points of the key indicators presented here with respect to euroization and CESEE respondents' preferences to save in cash or to save in foreign currency as well as the habit to make certain payments in euro. Consequently, the main policy implications are still valid.[20] If SEE countries aim to reduce the use of the euro both as a store of value and as a medium of exchange, they should continue to pursue stability-oriented macroeconomic policies. Furthermore, it seems important for the SEE countries to enhance trust in their local currencies by establishing a track record of reliable economic policy and fiscal institutions. However, in countries that have experienced periods of hyperinflation and/or currency crises, trust can be expected to build up only very gradually.

However, the country-specific historical background and the small size of many SEE countries may render the de-euroization process even more complex.

Finally, EU integration seems to improve the quality of institutions in CESEE countries. Brown and Stix (2015) have shown that better institutions and sound economic policies have a positive impact on SEE residents' monetary expectations, which in turn weakens the demand for foreign currency savings. We do not find evidence that the prospects of euro adoption correlate with the amounts of euro cash held, which gives reason to hope that further EU integration may not undermine current de-euroization strategies.

[20] *See Brown and Stix (2015), Rajkovic and Urosevic (2017), Scheiber and Stern (2016).*

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Annex

Table A1

List of variables used in the regressions

Label	Description
Dependent variables	
Euro cash holdings	Binary dependent variable that takes the value 1 if the respondent reported that he/she holds euro cash, either personally or together with his/her partner.
Euro cash amount	Continuous variable of reported euro cash amounts denominated in euro. Since euro cash amounts were reported in nine euro amount brackets ranging from less than EUR 25 up to EUR 4,000 or more, the values entered for the variable are the midpoints of nine brackets.
Main explanatory variable	
Expected euro adoption	The expected date of euro adoption is derived from the question: "When, in which year, do you think the euro will be introduced in [your country]?" For the regression analyses, individual expectations (measured as years from the point in time when the interview was conducted) have been mapped into a set of dummy variables each covering a period of two or more years as well as a dummy for the answer category "never." The base category: "don't know." Respondents who refused to answer are excluded.
Individual sociodemographic characteristics	
Age	Dummy variables for three age groups: 19 to 34 years, 35 to 54 years (base category) and 55 or more years.
Female	Dummy variable that takes the value 1 if the respondent is female, else zero (base category).
Education	Dummy variables; level of education (high, medium, low). Base category: low education.
Employment	Dummy variable; employment status (self-employed, unemployed, retired, student). Base category: employed.
Financial literacy score	The financial literacy score is the sum of correct answers to three knowledge questions on the concepts of compound interest, inflation and exchange rate. The score ranges from 0 to 3 correct answers.
Risk averse	Dummy variable: 1 if the respondent strongly agreed or agreed to the statement "In financial matters, I prefer safe investments over risky investements," else zero.
Risk aversion: don't know/no answer	Dummy variable: 1 if respondent said "don't know" or refused to answer.
Household characteristics	
Income	Dummy variables; levels of total monthly household income after taxes (high, medium, low, don't know/no answer). Base category: low income.
Income in euro	Dummy variable: 1 if the respondent reported that he/she or his/her partner receives income in euro, else zero.
Remittances	Dummy variable: 1 if the respondent reported that he/she or his/her partner receives money from abroad (e.g. from family members living or working abroad, pension payments, etc.), else zero.
Household size	Dummy variables; number of persons who live permanently in the household (two persons, three or more persons). Base category: single person.
Children	Dummy variable: 1 if children (up to and including 18 years of age) live permanently in the household.
House in better/poorer condition	Dummy variables that takes the value 1 if the interviewer indicated that the dwelling is in a better/poorer condition than the neighboring dwellings. Base category: similar condition as the neighboring dwellings.

Source: OeNB Euro Survey.

Table A2

Robustness check for the extensive margin: euro cash holdings (binary dependent variable)

	CEE	BG, HR, RO	CPCCs	CESEE	SEE	CSI high	Paying in EUR	AL and BA
	I	II	III	IV	V	VI	VII	VIII
Euro adoption expected…								
within 2 years	0,016	0,005	0.034	0.017	0.022	0.018	0.018	0.041**
	(0.064)	(0.029)	(0.029)	(0.020)	(0.022)	(0.033)	(0.025)	(0.020)
in 2–3 years	0.045***	0.086***	0.023	0.054***	0.061***	0.080***	0.053**	0.015
	(0.015)	(0.016)	(0.023)	(0.012)	(0.016)	(0.025)	(0.023)	(0.029)
in 4–5 years	0.065***	0.085***	0.046*	0.067***	0.070***	0.110***	0.072***	0.017
	(0.024)	(0.013)	(0.028)	(0.013)	(0.015)	(0.020)	(0.021)	(0.030)
in 6–7 years	0.015	0.066***	0.010	0.028**	0.035**	0.064**	0.035*	−0.001
	(0.017)	(0.018)	(0.020)	(0.011)	(0.015)	(0.030)	(0.020)	(0.019)
in 8–9 years	−0.024*	0.113***	0.025**	0.035**	0.063***	0.092***	0.058***	0.015
	(0.013)	(0.03)	(0.012)	(0.014)	(0.017)	(0.032)	(0.021)	(0.018)
in 10–11 years	0.007	0,043	0.046*	0.038**	0.052**	0.052	0.060**	0.054*
	(0.018)	(0.032)	(0.027)	(0.016)	(0.020)	(0.034)	(0.025)	(0.031)
in 12–15 years	0,015	0.059**	0.086**	0.060***	0.083***	0.023	0.086**	0.126***
	(0.025)	(0.028)	(0.041)	(0.023)	(0.030)	(0.046)	(0.038)	(0.031)
in 16 or more years	0,009	0,054	0.074**	0.058**	0.076***	0.037	0.079**	0.119***
	(0.025)	(0.037)	(0.035)	(0.023)	(0.029)	(0.043)	(0.034)	(0.037)
never	0.003	−0.031*	−0.008	−0.005	−0.010	−0.019	−0.012	−0.002
	(0.012)	(0.017)	(0.017)	(0.009)	(0.013)	(0.020)	(0.016)	(0.024)
Country, time and interacted fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sociodemographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log-likelihood	−3,189.3	−3,697.8	−5,345.4	−12,318.4	−9,080.0	−4,828.9	−7,075.6	−2,194.3
Pseudo-R^2	0.22	0.17	0.17	0.19	0.17	0.11	0.16	0.22
Probability > chi-squared	..	..	..	..	..	..	..	..
Number of observations	8,621	8,568	11,131	28,320	19,699	8,411	14,032	5,621
P(DepVar=1)	0.18	0.22	0.27	0.23	0.25	0.35	0.29	0.20

Source: Author's calculations.

*Note: Average marginal effects from probit estimations using data from 2014, 2017 and 2018; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. P(DepVar=1) denotes the unconditinal sample probablility of the dependent variable. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes (not shown). Specification I refers to the three Central and Eastern European EU Member States, i.e. the Czech Republic, Hungary and Poland. Specification II consists of three Southeastern European EU Member States, for which the adoption of the euro is a policy priority, i.e. Bulgaria, Croatia and Romania. Specification III refers to the four candidate and potential candidate countries (CPCCs), i.e. Albania, Bosnia and Herzegovina, North Macedonia and Serbia; it is identical with specification IV in table 2. Specification IV comprises all ten CESEE countries covered by the OeNB Euro Survey. Specification V refers to the Southeastern European countries, i.e. Albania, Bulgaria, Bosnia and Herzegovina, Croatia, North Macedonia, Romania and Serbia. Specification VI includes the three countries with a medium to high level of currency substitution, i.e. Croatia, North Macedonia and Serbia. Specification VII includes five countries where the share of respondents reporting payments in euro over the last six months surpasses 15%, i.e. the CPCCs plus Croatia. The final specification comprises Albania and Bosnia and Herzegovina.*

Table A3

Robustness check for the intensive margin: amount of euro cash (continuous dependent variable)

	CEE	BG, HR, RO	CPCCs	CESEE	SEE	CSI high	Paying in EUR	AL and BA
	I	II	III	IV	V	VI	VII	VIII
Euro adoption expected…								
within 2 years	–215.8***	–16.7	114.5	56.5	79.0	68.6	88.8	188.3*
	(64.7)	(345.2)	(148.6)	(138.1)	(146.4)	(200.2)	(166.8)	(105.1)
in 2–3 years	142.3**	13.1	19.1	68.5	52.7	14.7	28.4	35.0
	(53.1)	(90.4)	(76.8)	(47.8)	(60.7)	(87.1)	(67.0)	(103.3)
in 4–5 years	136.4**	–100.7	93.0	41.1	17.1	–64.6	21.4	225.3**
	(49.7)	(82.8)	(77.7)	(49.5)	(64.4)	(67.9)	(67.9)	(78.4)
in 6–7 years	92.9	40.6	51.8	54.9	58.2	30.8	45.5	78.0
	(81.4)	(155.4)	(99.1)	(63.2)	(84.5)	(124.2)	(94.2)	(111.4)
in 8–9 years	133.2*	–106.5	129.4	80.5	67.7	13.1	73.2	184.0*
	(71.0)	(91.4)	(97.3)	(58.6)	(72.1)	(109.5)	(82.6)	(88.5)
in 10–11 years	264.6	–405.2*	165.0	88.9	55.5	5.6	37.2	87.1
	(169.0)	(206.0)	(127.2)	(99.2)	(119.4)	(208.3)	(127.6)	(125.4)
in 12–15 years	–140.9*	–104.6	229.2	123.2	175.2	95.8	166.0	240.7
	(70.6)	(182.5)	(190.6)	(119.0)	(150.4)	(286.8)	(167.1)	(214.9)
in 16 or more years	11.9	99.0	21.2	2.8	1.8	75.3	14.9	–55.0
	(166.6)	(283.5)	(170.2)	(125.1)	(152.2)	(280.5)	(168.6)	(96.0)
never	35.7	–112.7	121.1*	53.1	70.3	92.9	84.4	41.4
	(56.4)	(110.0)	(64.0)	(44.2)	(61.1)	(79.2)	(63.9)	(76.2)
Country, time and interacted fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sociodemographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	291.0	346.4	536.7**	255.3	174.8	776.9***	638.3***	568.9**
	(182.5)	(286.0)	(217.9)	(166.0)	(184.9)	(220.4)	(210.7)	(274.9)
Log-likelihood	–11,309.2	–13,552.3	–20,290.6	–45,457.1	–33,885.5	–20,759.6	–28,598.4	–7,747.2
F-statistic	..	..	..	..	..	..	..	..
R^2	0.15	0.13	0.14	0.14	0.12	0.11	0.12	0.17
Adjusted R^2	0.13	0.11	0.12	0.13	0.11	0.10	0.11	0.14
Number of observations	1,424	1,590	2,411	5,425	4,001	2,426	3,368	942
Conditional mean of dependent variable in EUR	405.5	859.3	735.7	685.2	784.8	907.7	813.6	571.1

Source: Author's calculations.

*Note: Ordinary least squares estimations using data from 2014, 2017 and 2018 and conditional that a respondent holds euro cash. Coefficients show changes in the amount of euro cash holdings (in EUR) that are associated with changes in the independent variables; standard errors are adjusted for clustering at the regional level and reported in parentheses. ***, **, * denote that the average marginal effect is statistically different from zero at the 1%, 5% and 10% levels, respectively. For a definition of the variables, see annex table A1. Base categories are: expected euro adoption: don't know, age: 35 to 54 years, male, low education, employed, not risk averse, low income, single household, house in similar condition as neighboring homes (not shown). Specification I refers to the three Central and Eastern European EU Member States, i.e. the Czech Republic, Hungary and Poland. Specification II consists of three Southeastern European EU Member States, for which the adoption of the euro is a policy priority, i.e. Bulgaria, Croatia and Romania. Specification III refers to the four candidate and potential candidate countries (CPCCs), i.e. Albania, Bosnia and Herzegovina, North Macedonia and Serbia; it is identical with specification IV in table 2. Specification IV comprises all ten CESEE countries covered by the OeNB Euro Survey. Specification V refers to the Southeastern European countries, i.e. Albania, Bulgaria, Bosnia and Herzegovina, Croatia, North Macedonia, Romania and Serbia. Specification VI includes the three countries with a medium to high level of currency substitution, i.e. Croatia, North Macedonia and Serbia. Specification VII includes five countries where the share of respondents reporting payments in euro over the last six months surpasses 15%, i.e. the CPCCs plus Croatia. The final specification comprises Albania and Bosnia and Herzegovina.*

Event wrap-ups

The OeNB's 84th East Jour Fixe
Long-run economic growth and development in CESEE: goals, priorities and implementation strategies

In cooperation with the Official Monetary and Financial Institutions Forum (OMFIF)[1]

Compiled by Katharina Allinger[2]

The Oesterreichische Nationalbank (OeNB) organized its 84th East Jour Fixe in cooperation with the Official Monetary and Financial Institutions Forum (OMFIF). The event took place on June 3, 2019, and discussed the topic of "Long-run economic growth and development in Central, Eastern and Southeastern Europe (CESEE): goals, priorities and implementation strategies." Speakers from diverse backgrounds presented academic, political and other professional expertise to a selected, multinational audience.

In his welcome address, OeNB Governor *Ewald Nowotny* highlighted the OeNB's long-standing research focus on the CESEE region as well as related OeNB products and events. Moreover, he commented on a number of aspects affecting long-run growth in CESEE, such as demographic developments and difficulties in forecasting them, as well as on the increasingly important role of China.

Session 1 discussed long-run growth and resilience and was chaired by *Dubravko Mihaljek*, Head of Macroeconomic Analysis at the Bank for International Settlements (BIS). *Erik Berglöf*, Director of the Institute of Global Affairs at the London School of Economics and Political Science, gave the keynote speech on convergence. He pointed out that some economists and policymakers are concerned about the middle-income trap for CESEE. However, there is limited empirical evidence that such a trap exists. In Berglöf's opinion, the outlook for CESEE will depend largely on how the region deals with the new challenges it currently faces: (1) rapidly changing technologies, (2) social equity and rising populism, and (3) environment and sustainability issues. He argued that overcoming these challenges requires well-executed industrial policies and preferably sector-oriented horizontal policies that promote education or innovation relevant for specific sectors. In his opinion, one issue is that the countries that need such industrial policies the most are often those that lack the state capacity to execute them properly. Berglöf concluded on a positive note, stating that historically, countries that grew fast in initial transition periods – as many CESEE countries did – usually did well also in later periods.

The keynote was followed by a discussion by *Tomáš Slačík*, Senior Economist at the OeNB's Foreign Research Division, who picked up some of Berglöf's key hypotheses. Slačík provided evidence that the structural convergence of CESEE countries toward the EU average between 2007 and 2016 was rather limited. He

[1] *The presentations and workshop program are available at www.oenb.at/en/Calendar/2019/2019-06-03-east-jour-fixe-84.html.*

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found differences across countries when looking at five structural and competitiveness indicators. The information and communications technology (ICT) sector showed the highest convergence, while the human capital indicator diverged from the EU average. Using the example of the automotive sector, Slačík moved on to demonstrate CESEE's increased integration into global value chains. However, the automotive sector currently faces several challenges, in particular ever-stricter emission limits. These will certainly lead to massive structural changes in the industry. Against this background, Slačík argued that the strong reliance of some CESEE countries on automotive industries and their stronger integration into global value chains bear cyclical and structural risks to growth.

In the ensuing discussion, several members of the audience referred to industrial policy. One question was whether the rise of the automotive sector in CESEE resulted from dedicated industrial policies. Most people involved in the discussion agreed that it was. Moreover, given current challenges in the automotive sector, the question was raised whether this showed that governments were not good at picking the "right" sectors for long-term growth. Another question was whether industrial policy should be conducted at the national or EU level. According to Berglöf, in the end these policies need to be solved at the domestic level, but they could be promoted and subsidized by the EU. Berglöf also elaborated on some of the state capacities he considered most important for successful industrial policies: bureaucratic capacity, judicial independence and transparency in procurement.

A live survey of the audience conducted via Mentimeter showed that 50% of survey participants thought that potential growth in the CESEE EU Member States would remain broadly unchanged over the next 10 to 15 years. Of the remaining 50%, a somewhat larger group thought that potential growth would decrease rather than increase. Regarding the audience's views on which topics CESEE policymakers should prioritize, a clear majority voted for "institutional quality and governance," followed by "investment in digitalization/new technologies" and "demographics/emigration" on a close second and third rank. The answer "upgrading of the production chain" came in fourth.

Session 2 focused on green growth in CESEE and on related opportunities and obstacles. It was chaired by *Helene Schuberth*, Head of the OeNB's Foreign Research Division. *Sigrid Stagl*, Head of the Institute for Ecological Economics at the Vienna University of Economics and Business, pointed out that emissions in the atmosphere have progressed well beyond what could be considered a "safe" level. She questioned the term "green growth," which she criticized as being ill defined. Stagl explained that output growth continues to imply an absolute increase in emissions, even though some progress has been made in terms of lowering emissions per unit of output. An absolute increase in emissions is still dangerous, given that we should actually lower the total amount of emissions. A "simple" law demanding a halving of emissions every decade would bring us back to a sustainable path – in the first decade, there will be some "low-hanging" fruits that facilitate achieving the goal. In the ensuing Q&A session, Stagl also elaborated on the effectiveness of different tools for greening the economy – in her opinion, some of the best policy tools are the discontinuation of all subsidies for fossil fuels, direct regulation, and taxes. Market-conform measures, such as emissions trading, tend to be somewhat less effective given uncertainties surrounding prices. Schuberth raised the topic of lock-in effects and Stagl confirmed that these effects were particularly high in the

energy and transportation industries as the related infrastructure was often used for many decades.

Pieter de Pous, Senior Policy Advisor at E3G, shared some insights on just transition with regard to phasing out coal in CESEE. He pointed out that regarding the phaseout of coal, some CESEE countries were progressing faster (e.g. the Czech Republic, Poland and Slovakia) than others (e.g. Bulgaria and Romania). He then turned to coal transition in Canada, Germany, Spain and the United Kingdom to draw some lessons from their experiences. The Czech Republic is currently setting up a Coal Commission, and De Pous emphasized that the mandate and setup of such commissions is critical for their success. Moreover, he pointed out that generous compensations as planned by Germany can make coal transition very costly. He also highlighted the importance of EU funds and the need for stable policy frameworks to ensure investments in renewable energies. De Pous used the U.K. as an example to illustrate that if carried out properly, the transition away from coal could happen very fast.

The OeNB's 84th East Jour Fixe closed with a panel organized by OMFIF and headed by OMFIF Chairman *David Marsh*. *Vojtěch Benda*, member of the Bank Board of the Czech National Bank, *Andrzej Raczko*, Advisor to the President of Narodowy Bank Polski, and *Weixi Gong*, Chief of the Investment Promotion Division and Coordinator of the Investment and Technology Promotion Offices (ITPOs) Network at the United Nations Industrial Development Organization (UNIDO), discussed CESEE and China, and in particular China's Belt and Road Initiative (BRI). The panel covered topics such as the benefits of the BRI for China and CESEE, stronger financial linkages, central bank cooperation and the need for reciprocity in the relationship between China and CESEE. When the audience was asked about their views on Chinese investments in CESEE, most were critical. 50% of the audience participating in the live Mentimeter survey thought that CESEE governments should ensure reciprocity. 30% thought that CESEE governments should be wary about Chinese investments, monitor them closely and/or regulate them. Only 20% opted for the more positive answers about Chinese investments in CESEE.