European Economic and Monetary Union: The first and the next 20 years

Key findings from the OeNB's 46th Economics Conference in 2019, organized in cooperation with SUERF

Morten Balling, Ernest Gnan, Philipp Warum[1]

In the morning of May 2, 2019, more than 400 participants gathered at the Vienna Marriott Hotel for the OeNB's 46th Economics Conference. This was the second time the conference has been organized in cooperation with SUERF – The European Money and Finance Forum. The conference topic was chosen to mark the 20th anniversary of European monetary union and the euro and thereby offered the opportunity to review the achievements and challenges the euro has brought so far. It also examined the history of the Eurosystem's monetary policy over the past 20 years, and it discussed the way forward. Several specialized sessions focused on the interaction of various policy areas, notably the interplay between monetary and fiscal stability, monetary and financial stability and the fiscal-financial stability nexus. Three further sessions zoomed in on the international role of the euro, on digital currencies including central bank digital currencies, and on ways how to complete European Economic and Monetary Union (EMU).

The euro is the most tangible result of European unification

OeNB Governor *Ewald Nowotny* opened the conference by arguing that the euro is the most tangible result of the European unification process. Day-in day-out, it is used by as many as 340 million people living in 19 European countries. The euro has established itself as the second most important currency in the world and serves as a stable monetary anchor for neighboring countries in Central, Eastern and South-Eastern Europe (CESEE). Its high approval rates reflect the Eurosystem's success in fulfilling its mandate: maintaining stable prices and providing an environment for economic growth and high employment. When the project of European integration was launched in the 1950s, exchange rates were still governed by the Bretton Woods System, which established fixed exchange rates vis-à-vis the U.S. dollar. In the late 1960s and early 1970s, the Bretton Woods System entered a state of crisis. Many countries decided to introduce floating exchange rates. The Werner Plan of 1970 and attempts, from 1972 onward, to have European currencies fluctuate against the U.S. dollar together in the so-called "snake in the tunnel" reflected Europe's desire to be sovereign in monetary affairs. The "snake in the tunnel" regime was replaced by the European Monetary System (EMS) in 1979. After the liberalization of capital flows and a series of exchange rate realignments, the EMS crisis of 1992 strengthened the cause for monetary union, which EU Heads of State or Government had just agreed upon at the Maastricht Summit. Governor Nowotny said that in some respects, the euro constitutes a technical solution to the repeated exchange rate crises in Europe. It is also a political solution in that it provides a framework under which diverging political interests can be brought together, discussed and resolved. The key difference to earlier decades,

[1] *Aarhus University and SUERF, mb@econ.au.dk; Oesterreichische Nationalbank, Economic Analysis Division, ernest.gnan@oenb.at and Economic Studies Division, philipp.warum@oenb.at. Opinions expressed by the authors of this report do not necessarily reflect the official viewpoint of the OeNB or the Eurosystem.*

and the crucial advantage we have today, is that now we have the European System of Central Banks (ESCB) and other institutions and procedures that help the European Union resolve conflicts while eliminating the economic and political costs of earlier exchange rate crises. EU economic governance has been reformed and strengthened, national fiscal policies are now subject to stricter European rules. The European Commission's role in monitoring Member States' budget preparation (European Semester) and in imposing sanctions has been strengthened considerably. A broader set of macroeconomic indicators is now regularly evaluated at the European level to identify, and counteract, macroeconomic imbalances at an early stage. The Single Supervisory Mechanism (SSM) for euro area banks and a framework for resolving insolvent banks have been brought about by the banking union. Macroprudential supervision targets the stability of the financial sector as a whole. To make the euro area even more resilient to shocks and increase its ability to act, deepening EMU will remain a key task in the years ahead. A recent report from the European Commission referred to four pillars that are key in supporting the smooth functioning of EMU: economic union, financial union, fiscal union and political union.

The euro is a success, despite the predictions of many skeptics – but the project needs to be completed

In his welcoming remarks, President of SUERF *Jakob de Haan*, De Nederlandsche Bank, referred to Martin Feldstein, who in the late 1990s characterized EMU as a fragile institutional setup. The convergence criteria and the powers given to the ECB would, in Feldstein's view, not be able to ensure that the euro survived in a turbulent international environment. History has proved Martin Feldstein wrong. To underline the strength of the institutional backup of EMU, de Haan quoted ECB President Mario Draghi's famous statement of July 26, 2012: "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough." De Haan characterized the banking union as an important step forward. He stressed the need for a common deposit guarantee system, a fiscal stabilization system and more private risk-sharing.

Jean-Claude Trichet, Chairman of Bruegel, gave a keynote lecture on "EMU – from the past into the future." He started by referring to a friend, who 20 years ago was skeptical about the sustainability of EMU just like Martin Feldstein. His friend had said, "It will not work – forget about long-term sustainability." Trichet remarked that it took more than 100 years to establish a single market in the U.S.A. Thus, we should also consider Europe from a long-term perspective. Establishing the euro initially implied the huge task of merging the currencies of 12 countries. Since then, the number of euro area countries has grown to 19. It is an extraordinary achievement to establish a common currency by merging many national currencies and to provide price stability in the euro area for over 20 years. Many observers in New York and London, however, did not appreciate the broad political support for this impressive project. In terms of convergence, today's euro area of 19 countries is not as good as it should be, although the seven members that joined the euro area last have performed well in this respect. There certainly still exist considerable differences in living standards and economic growth, for instance between Greece and Germany. But similar differences can be found in the United States, e.g. between Mississippi and Massachusetts. In the coming years, more European governance will be needed. Trichet listed many necessary steps, inter alia completing banking union and European capital markets union, improving macroeconomic risk absorption procedures, enhancing the role of the European Parliament in solving disputes, and introducing a euro area budget. While Trichet admitted that some of these steps are not popular at the moment, he found some consolation in the following quotation from Jean Monnet, "Premature decisions do not exist. Time will come for their implementation."

Over the past 10 years, euro area monetary policy has been in crisis mode – new monetary policy practices and instruments are here to stay

Session 1 on the topic "Toward a better EMU: past lessons, structural adjustments" was chaired by OeNB *Governor Ewald Nowotny*. *Peter Mooslechner*, former OeNB Executive Director, gave a presentation on "20 years of EMU, 10 years in crisis mode: what might the future new normal of monetary policy look like?" He characterized the last two decades of EMU as rather different: The years from 1999 to 2007 were the "golden years," while the years since 2008 have been the crisis years. Mooslechner referred to a study by the Bertelsmann-Stiftung (2018), in which a number of people in the EU-28 had been asked: "Do you agree with the following statement: The world used to be a much better place?" The answers showed that, in particular, older people and Italians tended to agree. Mooslechner went on to compare the major central banks' reactions to the 2007/2008 financial crisis. The ECB, the Fed and the Bank of Japan reacted in similar ways. They cut interest rates and expanded their balance sheets. Their reactions took place in a new economic environment characterized by structurally low inflation, low potential growth, low interest rates, the globalization of financial markets, higher financial market complexity, higher systemic risk, higher contagion risk and new regulation efforts. These factors caused significant changes in monetary policy implementation and operation. ECB tender operations were changed, and the ECB developed its own type of quantitative easing. Interest rate policy changed from simple interest rate setting to allowing for negative interest rates, and to a much more complex transmission of monetary policy decisions. Liquidity provision changed from providing for scarcity to targeting large-scale balance sheet expansion. Forward guidance was introduced as a new "art" of making monetary policy by expectations management. Steering the entire term structure of the yield curve has become an accepted and important interest rate policy tool. The maturity of central bank liquidity supply has become significantly longer. Mooslechner expected all these new instruments and approaches to be regularly used in the future if found necessary and appropriate.

A successful EMU needs flexible economies: euro area economies need to continue structural reforms

Luiz de Mello, Director, Policy Studies Branch, OECD, gave a presentation on "Making the most of EMU: challenges and opportunity for reform." He illustrated remaining gaps in living standards between the euro area countries. GDP per capita, for instance, is considerably higher in Luxembourg than in Greece. An important explanation of the observed differences are persistent productivity gaps. Productivity growth has declined in the EU as a whole, and it has been uneven. The countries in Central, Eastern and Southeastern Europe (CESEE) have experienced a relatively dynamic productivity development since 2002. The labor force participation rates of women and older workers are higher in Northern Europe than in Southern Europe. Insolvency regimes differ considerably across countries. The handling of insolvency is much easier in Anglo-Saxon countries than in Eastern Europe. Statistics on outstanding loans and bonds of nonfinancial corporations (% of GDP) show that financing through the issuance of corporate bonds is much lower in the euro area than in the United States. In Europe, there is ample room for capital market expansion. Domestic sovereign bonds represent a high proportion in banks' portfolios, providing for a strong link between banks and their respective national governments. A 2018 OECD survey on the euro area contained recommendations aimed at strengthening the euro area's resilience to shocks by introducing a common fiscal capacity to support countries in difficulties. A dedicated euro area budget could reinforce EMU in the long run. Funds from this budget could be used for energy transition, security, defense, immigration and national debt restructuring. A pre-funded common deposit insurance scheme could reduce financial fragmentation and increase private risk-sharing.

How to escape post-crisis secular stagnation? Five scenarios

Session 2 on "Monetary and financial stability" was chaired by OeNB Vice Governor *Andreas Ittner* and started with a lecture by *Martin Wolf*, Associate Editor and Economics Commentator, The Financial Times, on "Escaping the trap: secular stagnation, monetary policy and financial fragility." In a diagram, Wolf traced the development of the Bank of England's lending rate from 1694 to 2019. Only in the most recent years, the interest rate has been below 2%. From 1992 to 2018, the yield on British ten-year gilts fell from 5% per annum to –2% per annum. In Japan, the interest level has been close to zero since 1990. In recent years, core consumer price inflation in the United States, the U.K., Japan and the euro area has fluctuated between zero and 3% per annum. Since 2007, aggregate private and public debt in relation to GDP of mature economies has remained rather stable at around 370%. Global indebtedness did not fall significantly after the 2007/2008 crisis because a huge credit bubble in China began to develop when the credit bubble in Western countries burst. We are living in a secular stagnation age. Global demand is structurally weak, with population aging and a massive growth in savings contribute to this weakness. How might this end? Wolf saw five possibilities: First, interest rates remain consistently below long-term nominal growth. Demand becomes structurally stronger. Exceptional monetary (and fiscal) policies are withdrawn. Economies grow out of indebtedness. Second, the status quo continues, with ultra-low interest rates, but also with a tolerable growth of nominal and real GDP. Third, there is an inflationary surprise. Central banks fail to respond quickly. So the real burden of debt is substantially reduced, as in the 1970s. Fourth, policy generates an inflationary surprise, central banks raise rates sharply. Debt liquidation ensues, along with another financial crisis. Fifth, there is an unexpected, deep downturn, perhaps because of a policy shock or perhaps for some other reason. Central banks are unable to respond. Again, there will be debt liquidation and a deep recession. Wolf concluded that we are in a global policy trap and need to find a way out.

Monetary and financial stability are closely interlinked and should be coordinated

Ed Sibley, Deputy Governor of the Central Bank of Ireland, spoke about "The banking union and financial stability in the euro area." He explained that the Central Bank of Ireland has a very broad mandate. Policy decisions are taken with a holistic view. The basic philosophy is that the financial system should serve the Irish economy. Transparency and accountability are basic principles. Supervision focuses on individual financial institutions. Macroeconomic stress testing is, however, also essential to individual firms. Financial stability is taken care of both at the level of individual institutions and at the systemic level. Coordination is also required between the national and the European levels. Sibley mentioned several important European initiatives. The Single Resolution Mechanism (SRM) aims at minimizing the economic impact of bank failures and is thus of primary importance to financial supervisors. Interconnectedness and aggressive use of leverage can make crises very expensive. To increase resilience, however, much more has to be done: We need to complete banking union.

Monetary and fiscal stability are closely linked – fiscal policy must find the balance between discipline and economic stabilization

Session 3 on "Monetary and fiscal stability" was chaired by *Ernest Gnan*, Head of the OeNB's Economic Analysis Division and Secretary General of SUERF. *Gottfried Haber*, designated OeNB Vice Governor as from July 2019 and President of the Austrian Fiscal Advisory Council, gave a presentation on "Strengthened EU fiscal framework: fiscal discipline versus economic stabilization." Historically, fiscal policy has had a deficit bias in many countries. Among the main reasons for such a bias are political short-sightedness, moral hazard, lack of transparency, fiscal illusion and biased official forecasts. According to Alexandre Lamfalussy (1989), the main rationale for the inclusion of fiscal rules and the "no bailout" clause in the Maastricht Treaty was that the constraints imposed by market forces might either be too slow and weak or too sudden and disruptive. Since the financial crisis of 2007/2008, a number of steps have been taken in order to strengthen economic governance in the EU. The Stability and Growth Pact has been supplemented by the 2012 Fiscal Compact, the 2013 Two-Pack and several other measures. Independent Fiscal Institutions (IFIs) have become compulsory parts of the economic governance process. IFIs can contribute to better fiscal discipline. By supporting high transparency and quality standards, IFIs can improve the quality of the official information fiscal policy decisions rely on. Since 2008, the number of numerical fiscal rules in force in EU Member States has grown. Haber referred to a number of studies on the impact of fiscal rules on fiscal discipline. The results vary. Gaspar & Amaglobeli (2019) require a fundamental reform of EU fiscal rules. They argue for simpler and more transparent rules that better align political incentives with rule compliance. By way of conclusion, Haber said that improving the quality of public finances is key to easing tradeoffs between consolidation, equity and long-term growth objectives. From a longer-term perspective, fiscal policy should be framed by fiscal rules that are complemented by a well-designed institutional framework in which fiscal councils play a key role. A central fiscal capacity in the euro area might counteract asymmetric shocks without violating fiscal rules.

Overcoming fiscal and financial vulnerabilities requires taking precautions and building up buffers in good times

Ludger Schuknecht, Deputy Secretary-General at the OECD, lectured on "Fiscal financial vulnerabilities." He started by looking at data on general government deficits and debt as percentages of GDP in seven large economies. From 2007 to 2017, both deficits and debt increased in France, Japan, Italy and the U.S.A.. Thus, these countries – and many others – have low fiscal buffers. Also, in the most recent years characterized by positive economic developments, few countries have carried out fiscal consolidation. Due to maturing public debt and continued deficits, many countries have had total financing needs of between 13% and 40% of GDP since 2018. Public finances are vulnerable to changes in asset prices and taxes. Since 2010, bank equity capital has increased in most European countries, but there are still large nonperforming loans. Since 2007, nonfinancial corporate debt, loans and debt securities (as percentages of GDP) have fallen in a few countries, but debt levels are still high, e.g. in Belgium, France and Ireland. Data on public debt ownership show that in Italy, financial institutions own a high proportion of government bonds. Among EU investors, in turn, French institutions and investors have a large exposure to Italy. The factors historically correlated with the fiscal costs of crises comprise high aggregate private debt, high public debt, weak financial institutions, weak regulation and supervision, regulatory forbearance and promises for bailouts for banks and depositors. In his conclusion, Schuknecht recommended to build buffers in good times, implement fiscal rules, strengthen bank balance sheets and extend financial regulation to cover shadow banks.

Stable money needs sound public finances – the Austrian example

In his address, *Hartwig Löger*, Austria's Minister of Finance, thanked Governor Nowotny for the excellent cooperation with the Ministry of Finance, adding that he hoped to benefit from the Nowotny's economic policy advice also after the governor's retirement in August 2019. Löger then explained that as monetary policy and fiscal policy were getting increasingly interconnected, he was going to build his opening address on some reflections about Austrian fiscal policy. He illustrated the importance of a tax reform in Austria, arguing that the government wanted to demonstrate that fiscal discipline is not incompatible with tax cuts.

The international role of the euro: from start-up to scale-up

Session 4 focused on "The international role of the euro" and was chaired by *Martin Summer*, Head of the OeNB's Economic Studies Division. The session was opened by *Kerstin Jorna*, Deputy Director-General of the European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN), who outlined her vision for the euro's future in a presentation entitled "From start-up to scale-up: the global role of the euro." Jorna started out with a quote by Robert Mundell, who once stated that "Great powers have great currencies." From there she went on to revisit the euro's positive development within its first 20 years. She pointed out that the euro had been quick to become the world's second most important reserve currency and that it brought considerable benefits to European citizens and companies. Against this background Jorna then posed the question, "Is the euro great enough?" A stronger euro could have clear benefits for Europe, such as lower economic and political dependence on the increasingly unpredictable U.S.A. and the U.S. dollar.

Moreover, a stronger euro would also be necessary to support the EU's stronger role in a multipolar world. For Jorna, there is no question that we should aspire for the euro to become the world's leading currency, and she therefore described how, from a business perspective, the product (in this case, the euro) could be taken from its startup phase, i.e. its first 20 years, to its scale-up phase, which, in her view, should start immediately. To strengthen the use of the euro in the next 20 years, there are five "boosters" that we should focus on: suppliers (euro-denominated bond issuance), customers (use of the euro in payments and reserves), distribution channels (euro payment infrastructures and market places), after-sales servicing (strengthening the euro area from the inside) and capital (building political capital and trust capital).

The euro has become the second most important international currency – but the euro area institutional setup will require further development for the euro to assume the leading role

Arnaud Mehl, Principal Economist at the ECB, elaborated on "The euro's global role: past, present and future." Mehl began by discussing the euro from a historical perspective, emphasizing the contradicting views about its prospects at the point of introduction and confronting these with statistical evidence about its subsequent development. With hindsight, the euro may have fared better than the most pessimistic observers predicted, seeing a steady increase in the use as a reserve currency since its inception. Yet, when the crisis came, market doubts about the resilience of the euro area grew, and the use of the euro – and thus its international role – started to decline to a level not far from where it had started out, and has remained at these low levels ever since. From a long-run perspective, however, it seems that the euro has successfully established itself as the second most important reserve currency in the world and has taken the place that the pound sterling occupied immediately before the collapse of the Bretton Woods system. Against this historical background, Mehl developed three arguments why the global role of the euro matters. First, global financial cycles need to be understood in relation to the U.S. dollar's predominance and might be mitigated to some extent if that role was less pronounced. Second, dominant currency pricing leads to a considerable effect of U.S. monetary policy on the rest of the world's trade volumes and prices. Third, there is ample evidence that the U.S.A. can and does use the U.S. dollar's dominant position to advance its own economic and geopolitical interests. In his outlook, Mehl stressed that stronger euro area resilience is crucial to strengthening the euro's international role and that this requires the completion of EMU and banking union. Furthermore, and bearing in mind the historical development of the U.S. dollar, creating a truly single, deep and liquid European capital markets union may also play an important part in promoting the global status of the euro.

Box 1

Strengthening the foundations of the euro – Kamingespräch with Peter Praet
Trust is key to successful currency and monetary policy

*At the end of the first conference day, OeNB Governor **Ewald Nowotny** welcomed **Peter Praet**, Member of the Executive Board and Chief Economist at the ECB, to the traditional **Kamingespräch** to discuss about current monetary policy issues. Praet opened with a brief introductory statement on "Strengthening the foundations of EMU" and went on to point toward the puzzle that current surveys frequently reveal high approval ratings of the euro throughout the euro area, while people's trust in the ECB is commonly found to be relatively low. Such findings are, of course, not only true for the ECB but apply, on a more general basis, to many European and national institutions. Still, policymakers should take these doubts seriously and be self-critical when looking for the reasons behind such survey results. Praet therefore questioned whether the ECB's monetary policy is accessible and comprehensible enough to the broader public, especially the less educated. Indeed, there is an educational divide in trust. But trust is also related to how institutions act and communicate, and to the expectations people form on this basis. Even though the ECB has always been remarkably successful in achieving its primary objective, i.e. price stability, inflation expectations since the crisis have at times diverged somewhat from the ECB's price stability definition. Historically, this lack of trust could be linked to several episodes such as exaggerated political promises of the benefits of the euro, which might have fueled high expectations, or the ECB's involvement in the EU Troika during the sovereign debt crisis, which might have led people to see the ECB as a political institution. Even more seriously, at the zero lower bound of interest rates, the extension of the list of eligible assets for monetary policy operations involving quantitative easing may have opened the door to demands for asset purchases in areas that go beyond the monetary policy objective. Furthermore, people might not have always well understood the ECB's increasing responsibility in the realm of financial stability, which is not explicitly part of its mandate. Given these experiences, Praet advocated that central banks should take the perceptions of the general public into account and should be very careful not to suggest anything else than a narrow focus on their price stability mandate.*

The crisis triggered useful reforms in the euro area

As Europe consists of small economies, its prosperity depends on openness. Openness can, however, only lead to prosperity if it is accompanied by an institutional framework. The European integration process has provided such a framework for joint prosperity but there have been large shocks to the process. Not all the distributional consequences of these shocks have been well managed. Yet, while the single currency prevents countries with excessive debt to use inflation to "nominally grow out of debt", it has brought stability and successfully prevented disorders that were common in the past, such as currency crises. Even the financial crisis for which no provisions had been made in the initial institutional design of the union, led to a number of promising policy developments, some of which still remain to be completed. To reduce procyclicality, the liability sides of banks' balance sheets should be more diversified, and further steps toward capital market union must be taken. The completion of banking union should be a top priority, and it is of strategic relevance to reveal to the banking sector as soon as possible what its future regulatory environment will be.

Are central bank digital currencies the future? If yes, how could they be designed?

The second conference day was opened by OeNB Executive Director *Kurt Pribil*, who chaired session 5 on "Digitalization of money: future challenges." *Ulrich Bindseil*, Director General of Market Operations at the ECB, gave a comprehensive presentation on "Central bank digital currency – financial system implications and control." Bindseil started from the observation that discussions about Central Bank Digital Currency (CBDC) are often bundled with idealistic, conservative and fearful attitudes and sometimes also with technological confusion. By focusing on a case in which CBDC would be offered to the general public as conventional deposit money, he attempted to discuss the implications of such a policy from a more pragmatic perspective. Historically, broad-access central bank accounts were not uncommon and have only become less popular among central banks during the last century. Even today, however, nonbank accounts with central banks exist even within the Eurosystem. Bindseil distinguished two effects of CBDC: households substituting CBDC for banknotes (CBDC1) and households substituting CBDC for commercial bank deposits (CBDC2). He then discussed the potential impact of CBDC1 and CBDC2 on the financial structure using a financial accounts and flow-of-funds representation. In the case of CBDC1, central bank and commercial bank balance sheets would not change substantially. For CBDC2, however, commercial banks could experience an erosion of their deposit base and– to avoid "disintermediation" – would have to provide more favorable conditions on their deposits, which would in turn increase their funding costs. In reality, it is likely that a combination of both effects would occur. While CBDC1 would have an a priori neutral effect on the financial accounts, the central bank would have to compensate for CBDC2, e.g. by lowering its policy rates, if it wanted to keep financial conditions unchanged. Furthermore, CBDC could potentially increase the risk of bank runs. Nevertheless, in keeping with and extending the literature on the subject, Bindseil identified conditions under which well-designed CBDC need not necessarily alter the financial structure or provide new systemic risks. Overall, Bindseil concluded that a solid case for CBDC could be made for the sake of efficiency and public involvement in retail payment systems, particularly where the use of banknotes is in decline and where people want CBDC. Yet, CBDC's potential consequences on the financial system and its stability have to be taken seriously, and Bindseil envisioned a two-tier system in which lower interest rates would be paid above a certain threshold to encourage the use of CBDC as a means of payment but to discourage its use as a large-scale store of value or safe haven investment. Bindseil explained that two-tier remuneration could be effective to control the quantity of CBDC and thereby the size of the central bank's balance sheet, but that this would not be equivalent to controlling CBDCs' impact the structure of the financial system at large. Still, if CBDCs were well managed, changing the structure of the financial system per se might not be wrong.

How risky are crypto assets? A taxonomy

Andrei Kirilenko, Director of the Centre for Global Finance and Technology at the Imperial College London, continued with "A risk-based taxonomy of crypto assets." For Kirilenko, recent developments in the crypto economy somewhat resemble the Cambrian explosion of species in that the number of crypto assets, the amounts invested in them and their complexity are increasing dramatically. Kirilenko also saw a link between the development of crypto currencies and a variant of Moore's law, namely the observation that "the number of computations conducted by an integrated circuit at the same cost increases exponentially." At some stage in the early 2000s, computing power became strong enough for complex cryptographic puzzles to be solvable on standard PCs. Moreover, online communication facilitated the development of decentralized self-sustaining computational ecosystems that could be governed by distributed ledger technology and thus provided a basis for the subsequent explosion of digital, yet scarce assets. In order to make sense of these crypto asset developments, Kirilenko offered a risk-based taxonomy in which different types of assets are ranked according to their expected return and their risk of not being adopted. Although, at this point, probabilities of adoption are extremely uncertain for most crypto assets, adoption probabilities are generally a function of asset security, i.e. technological vulnerability, and stability, i.e. vulnerability to governance risks. The four main types of crypto assets can therefore be ranked by increasing expected returns and increasing risk of nonadoption as follows: CBDC, stable coins, crypto currencies and crypto tokens. To illustrate his point, Kirilenko discussed the first and last of these asset types in greater detail. For CBDC, here broadly defined as a digital form of central bank money different from balances in traditional reserve or settlement accounts, the risk of nonadoption could be kept close to zero since a central bank can, in principle, make its use mandatory and the expected return could even be negative since safe and liquid central bank deposits may at times be valuable in themselves. CBDC would make sense in economic areas with a strong digital economy, for which access to a secure payment system with an ultra-liquid and digitally native asset would be beneficial. Crypto tokens, i.e. representations of assets or utilities on a blockchain, are the opposite of CBDC as they involve high risks of nonadoption, i.e. high rates of failure, but also high expected returns. Having some similarities with company shares in the crypto realm, tokens are meant as investment or participation vehicles for risky digital projects. The risk-based perspective on crypto assets provides further insights into a rapidly developing segment that poses many questions regarding regulation and calls for the attention of central banks and regulators, financial institutions and global technology platforms. During the ensuing discussion, Kirilenko said that after a learning period, people have now become used to the fact that bonds are no longer issued in paper form. Maybe after some years of seeing digital money and crypto assets, they will also become used to a world in which money is no longer issued in paper form.

EMU involves complex integration and convergence dynamics

Doris Ritzberger-Grünwald, Director of the OeNB's Economic Analysis and Research Department, chaired the final session on "Completing European Economic and Monetary Union." The first presentation on "The complex dynamics of integration and convergence in EMU" was held by *Bruno Cabrillac*, Deputy Director General of Economics and International Relations at the Banque de France. Cabrillac began by giving an overview of the multitude of institutional innovations that have occurred or are under way in the EU since the onset of the financial crisis. Although significant progress has been made, two strong red lines currently remain in the European policy discourse: the mutualization of debt, and permanent public transfers. Next, Cabrillac attempted to provide an outlook for the next 20 years of EMU by examining statistical evidence from the past 20 years. Real convergence as measured by GDP per capita can mostly be observed for EU countries which are not part of EMU or which joined the euro area later, while there actually seems to be a trend toward divergence for initial euro area countries. Projecting current trends into the future, further real divergence seems likely. Another trend that should receive more attention is the rise of old age dependency ratios that, although occurring in all countries concerned, also contributes to divergence. If there were perfect labor mobility within EMU, real divergence would be reduced to a problem of regional planning. However, the integration of EMU labor markets is only weak, with barriers ranging from language barriers to policy obstacles like cross-border pension portability. Furthermore, levels of education and public expenditure on education differ considerably across countries. For all these reasons, idiosyncratic shocks would persist while structural divergence would continue, both of which indicate the further need for risk-sharing. Yet, there is a difficult tradeoff between risk-sharing and risk reduction, since first, public debt levels and paths as well as GDP growth and current account balances are diverging; second, there is a connection between bank and sovereign resilience; and third, higher labor mobility might also have a negative effect by worsening potential output for structurally weaker regions in the long term. The question arises whether banking union and capital markets union, if fully implemented, would even be enough. Considering this, Cabrillac formulated his 2038 agenda: fully implement the single market, including that for financial services, strengthen institutional integration, promote labor market integration and raise and harmonize education levels.

How to reform and deepen the euro area? Reconciling risk-sharing with market discipline

Isabel Schnabel, Professor of Financial Economics at the University of Bonn and Member of the German Council of Economic Experts, gave the final presentation on “Reconciling risk-sharing with market discipline: a constructive approach to euro area reform,” based on a report by the Centre for Economic Policy Research (CEPR) which she co-authored with a group of internationally renowned scholars. Schnabel began by providing a brief diagnosis of the current state of the euro area, which is codetermined by the slowing expansion of the global economy and the slowing expansion at home, and currently also faces high risks such as trade conflicts, Brexit and the resurgence of a possible euro area crisis. On the upside, significant progress has been made since the last euro area crisis, and several institutional improvements (e.g. banking union, the European Stability Mechanism, the reform of the Stability and Growth Pact) and regulations (e.g. Basel III and macroprudential regulation) have been implemented. Nevertheless, public debt levels remain high in many euro area countries, most of which exhibit little fiscal space for the next crisis. What is even worse, there might as well be limited monetary space in case of another crisis or recession as monetary policy has still not been normalized and the European banking sector remains weak. While risk-sharing is still insufficient in the euro area at large, recent developments in Italy are sending new warning signals. While recently, EU membership has at least started to become more popular again, even this observation is accompanied by large differences across EU countries, with anti-European movements apparent in some. Overall, the status quo remains unstable. Crisis management has increased political tensions in Europe and led to discontent of both debtor and creditor countries. Schnabel identified certain types of political "philosophies" across Europe that have created a deadlock, preventing further reform and thereby threatening stability. In this context, Schnabel distinguished between what she called the "German" view and the "French" view. The "German" view propagates the unity of liability and control, more market discipline and incentive compatibility, fiscal discipline and enforceable rules, and the notion that there should not be a transfer union. The "French" view, by contrast, propagates insurance against asymmetric shocks, the avoidance of procyclicality, and the need for "safe assets." These views also imply different solutions to current euro area policy problems. While the "German" view prescribes the orderly restructuring of sovereign debt, credible fiscal rules with sanctions, and removing privileges for sovereign exposures, the "French" view prescribes fiscal capacity, European deposit insurance and "safe assets." Schnabel, however, argued that these views do not really demand a political compromise but are an economically consistent approach only if taken together. The central hypothesis of the CEPR report was therefore that risk-sharing and market discipline are complements. The authors argued that "1) Risk-sharing without discipline induces moral hazard and is not sustainable in the long run. 2) Disciplining devices based on administrative or political procedures alone are hard to enforce. 3) Market discipline without risk-sharing is destabilizing and therefore not credible." Hence, they concluded that both risk-sharing and market discipline are necessary. From this perspective, Schnabel then developed a reform program for the euro area with the following essential elements: strengthening the financial architecture (breaking the sovereign-bank nexus, creating a European banking and capital markets union), raising the credibility of the fiscal framework (making the expenditure rule less procyclical and more easily enforceable, enabling the credible restructuring of sovereign debt as the last resort) and increasing stabilization through a European unemployment reinsurance (based on an incentive-compatible design and without permanent transfers). Schnabel concluded that although reforms might come too late to deal with current issues, they may help stabilize expectations about the future of EMU. The euro area should therefore agree on an incentive-compatible design of risk-sharing mechanisms, because, as she said, "Our future is Europe –we do not have another one."

This OeNB-SUERF conference has been the tenth joint OeNB-SUERF event since 2008 and the second annual Economics Conference the OeNB and SUERF organized together. The conference also offered a welcome opportunity to formally recognize Governor Nowotny's and the OeNB's long-standing support for SUERF. In recognition of Governor Nowotny's services to the European integration project and his commitment to the causes of SUERF, SUERF President Jakob de Haan and SUERF Secretary General Ernest Gnan awarded Governor Nowotny honorary membership in SUERF.