



intermediation, 37 from the insurance sector, 131 from the capital market (investment firms, collective investment undertakings, asset management companies, the stock exchange, and central securities depositories), 46 from the pension fund sector and around 2,820 entities reporting to NBS under NBS Decree No 264/2015 on reporting in accordance with the Foreign Exchange Act.

In 2016 a total of 161 reporting templates were designed for data collection requirements under national law, 200 as required by the EBA, 103 as required by EIOPA, and two in accordance with

the EU's Alternative Investment Fund Managers Directive.

With the aim of providing access to historical data, the process of transforming and migrating historical data to the IS SCP was launched in 2016 and remains ongoing.

To ensure data quality and improve the processing of statistics on securities, interest rates and certain balance sheet items, individual modules were further developed in 2016 using business intelligence tools.

6 ECONOMIC RESEARCH

The economic research conducted at Národná banka Slovenska (NBS) focuses mainly on practical issues in the financial, economic and monetary spheres, while also supporting the central bank's core tasks with more sophisticated theoretical or model-based solutions. The research outputs represent the result of inter-departmental collaboration within the bank, as well as cooperation with experts from other institutions, both domestic and foreign.

The nature of the research tasks performed at NBS are determined by the central bank's needs and by the medium-term research agenda approved by the NBS Bank Board. The relevancy and quality of the research is supervised by an independent research committee, which approves research projects and makes recommendations to improve research activity.

The principal outputs of NBS research activity are published by the central bank as peer-reviewed working papers, discussion papers, or analytical documents. Altogether in 2016 NBS published a total of nine working papers, analyses and analytical commentaries¹⁹, addressing issues in the following areas in particular: the labour market and real economy; economic modelling; monetary policy and inflation; and fiscal policy.

Research on the convergence of the Slovak economy towards the average EU level showed that in an environment of falling relative prices,

not even higher economic growth – boosted by the absorption of the remaining EU funds available from the previous financing period – was sufficient to revive the catch-up process in economic performance and productivity. The structural reforms that could lay the ground for further catching-up have not been carried out. Slovakia remains marked by wide regional disparities in terms of key real economy indicators.

Research based on new detailed data on European firms confirmed that firms placing their products also in foreign markets are more productive. Firms' productivity increases in parallel with experience acquired. A small number of highly efficient firms account for the bulk of exports, and these firms continued to grow even during the crisis. The outcome of research on a narrow sample of firms in new EU Member States confirmed that export openness increases the volatility of firms' output. In contrast, however, with findings for firms in large advanced economies, new research provided evidence that firms in new Member States which export diverse products, or export to multiple markets, do not necessarily have greater stability of sales.

Research findings in the area of economic modelling were largely focused on new approaches to testing the validity of the assumptions applied in time series models. One research paper provided empirical evidence for non-linearity and non-normality of distribution in a large majority of macro-

¹⁹ The full texts of working papers and analyses can be found on the NBS website, at <http://www.nbs.sk/en/publications-issued-by-the-nbs/research-publications>



economic indicators, thus raising questions about the fact that normal distribution and linearity are often underlying assumptions in indicator models. Another paper in this area proposed ways of improving the currently used linearity tests and demonstrated their success in a large number of stock return time series. A further paper took a small open DSGE model for the Slovak economy and augmented it with a more sophisticated fiscal sector, thereby allowing an evaluation of the impact of different consolidation measures on economic activity in the short term and over the long term.

Research in the area of monetary policy and inflation addressed one of the key questions of monetary policy, i.e. to what extent is current inflation determined by expectations for future inflation. The outcomes show that price dynamics in Slovakia are determined more by inertia than by inflation expectations. Inflation trends in Slovakia are determined mainly by unit labour costs and import prices.

The most important insights resulting from NBS research activity are published in domestic and foreign academic journals. The success of NBS staff members in having work published in peer-reviewed journals was notably greater in 2016 compared with the previous year. This included contributions to such prestigious journals as *The Journal of Finance*, *Journal of Monetary Economics*, *Econometric Reviews*, *Econometrics and Statistics*, and *International Journal of Central Banking*. Research findings that had local significance appeared in Slovak and Czech peer-reviewed journals such as *Finance a úvér*, *Ekonomický časopis* and *Politická ekonomie*.

Some of the outcomes of joint international research projects involving NBS staff members were published in 2016 as working or occasional papers of foreign institutions, including the ECB (four papers), the Bank for International Settlements, the EU project FinMap, the Nottingham Centre for Research on Globalisation and Economic Policy (GEP), and the Oesterreichische Nationalbank (OeNB)²⁰.

NBS's international research cooperation is realised mostly via its participation in Eurosystem/ESCB research groups and research networks dedicated to particular fields of activity. In 2016, as in previous years, NBS was involved in three

such research networks, as described in the following paragraphs.

The 2016 activities of the Household Finance and Consumption Network (HFCN) were focused on preparing a report on the results of the second wave of the Household Finance and Consumption Survey (HFCS) conducted in the euro area and other participating countries. Key stylised facts from the HFCS and details of the survey methodology were published in two ECB Statistics Papers in 2016. Trends in the net wealth of Slovak households were the subject of separate analytical commentaries published by NBS. During the year, the anonymised data from the Slovak component of the HFCS were provided to external researchers for research purposes. At the same time, preparations continued to be made for the HFCS's third wave in Slovakia.

In 2016 the Wage Dynamics Network (WDN) – which examines wage dynamics and their responsiveness to external shocks – focused on processing and harmonising data from a recent Europe-wide firm-level survey that produced a number of interesting findings. One of the WDN's published outputs to which NBS staff members contributed was a paper on the relationship between wage rigidities and employment.

Within the Competitiveness Research Network (CompNet), the main task in 2016 was to map current developments in research on export performance, resource allocation and global value chains. NBS's involvement in CompNet in 2016 resulted in its contribution to several outputs (including one ECB paper) and the production of two NBS papers.

Another important area of international research cooperation in 2016 was the participation of NBS staff members in workshops, conferences and seminars other than those organised by the Eurosystem/ECB research networks. In 2016 NBS researchers presented the results of their work at a number of scientific conferences, both in Slovakia and abroad.

In November 2016 NBS organised an international research conference entitled *Monetary policy challenges from a small country perspective*. The keynote contributions to the conference were delivered by Randall Kroszner, Professor of Economics at the Chicago Booth School of Busi-

²⁰ ECB Occasional Paper 167: *Savings and investment behaviour in the euro area*, ECB Working Paper 1902: *Export Characteristics and Output Volatility: Comparative Firm-Level Evidence for CEE Countries*, ECB Statistics Paper 17: *The Household Finance and Consumption Survey: methodological report for the second wave*, ECB Statistics Paper 18: *The Household Finance and Consumption Survey: results from the second wave*, BIS Working Paper 566: *Monetary facts revisited*, FinMap Working Paper 56: *Fiscal policy and the term structure of interest rates in a DSGE model*, Nottingham GEP Research Paper 19/2016: *Wage Adjustment and Employment in Europe*.



ness and a former member of the Board of Governors of the Federal Reserve System, and Andrew Filardo, Head of Monetary Policy at the Bank for International Settlements and a former member of the US President's Council of Economic Advisers. Among the issues discussed were: how to estimate the impact of specific non-standard monetary policies on inflation, economic growth and employment; how to correctly time and sequence the implementation of non-standard monetary policies; the causes and consequences of the current low inflation environment; the importance of central bank forward guidance as a monetary policy tool; and monetary policy transmission in small open economies. The conference was attended by representatives of cen-

tral banks and leading European academic institutions.

In 2016 NBS hosted or co-hosted more than 30 seminars for experts. Some of the events had a discussion format and addressed current economic issues. Most were research-oriented and provided a platform for domestic and foreign researchers to present the interim or final outcomes of their work.

In 2016, as a way of supporting economic research in Slovakia, NBS established a doctoral study and research support programme and a visiting researcher programme. Both programmes also extended the central bank's opportunities in regard to external research cooperation.

7 EUROPEAN AFFAIRS AND INTERNATIONAL COOPERATION

7.1 EUROPEAN AFFAIRS

EUROPEAN UNION (EU)

Of the events on the EU's agenda in the first half of 2016, the most significant for Národná banka Slovenska (NBS) was the April informal meeting of the ECOFIN Council in Amsterdam, which focused on strengthening of the Banking Union, the "Panama Papers", and sustainable finances.

On 1 July 2016 Slovakia, for the first time in its history, assumed the Presidency of the Council of the EU. During the six months of its EU Presidency, Slovakia was responsible for chairing and coordinating meetings at all levels, from expert to ministerial. The Slovak EU Presidency represented a major challenge also for NBS, which, within the field of its competences, cooperated with Slovakia's Ministry of Finance on, primarily, outstanding issues concerning the EU's Banking Union and Capital Markets Union (CMU). Under the Slovak EU Presidency, discussions on CMU-related amendments to the legal regime for prospectuses ('the Prospectus Directive') were brought to a successful conclusion. NBS staff contributed to the agenda related to the proposed Money Market Funds Regulation. Furthermore, in the fight against international terrorism, the Slovak EU

Presidency oversaw the approval of a draft directive amending the directive on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing.

From NBS's perspective, the most important event of the Slovak EU Presidency was the September informal meeting of the ECOFIN Council in Bratislava, which was attended by finance ministers and EU Member States' central bank governors, as well as by the ECB's President, Mario Draghi. The main topic of this meeting was a euro area joint fiscal capacity and related fiscal mechanism alternatives. The ECOFIN Council was preceded by a meeting of EU Member States' central bank governors with the ECB President, at which views were exchanged on ECOFIN issues and on the efficiency of the European Fund for Strategic Investments in supporting EU economic growth.

7.2 COOPERATION WITH INTERNATIONAL INSTITUTIONS

INTERNATIONAL MONETARY FUND (IMF) / WORLD BANK GROUP (WBG)

In 2016 NBS was, as usual, represented at the Spring and Annual Meetings of the IMF and WBG