ID	JEL code(s)	Project title	Contributors	Start date	Project description	End date	Priority area
1. Monetary Policy and Inflation Pass-through							
1.1	E31, E32	Price dynamics exploration in the low inflation environment (PRISMA)	Brian Fabo	01/09/2017	Journal publication. All work seems to be done, but there might be more work if reviewers ask for it.	30/06/2023	1
1.2	E52, E63	The pass-through of VAT changes to retail prices in Slovakia	Brian Fabo, Peter Tóth, Pavel Gertler	01/07/2020	We estimate the pass-through of 2016 and 2020 changes in VAT to retail prices using store-level data in Slovakia on the scanner and CPI microdata. VAT pass throughs are one of the research questions of PRISMA. The pass-through will be estimate for different categoris of goods, domestic-imported goods and private label goods.	30/09/2023	1
1.3		Asymmetric monetary policy rules as a solution to the inflation spiral	Ales Marsal, Katrin Rabitsch (WU)	01/01/2023	Follow-up of a project *Prescription for monetary policy when inflation is high.* It adds to the existing framework by introducing asymmetric monetary policy rules as a tool anchoring inflation expectations when inflation spiral kicks in. From the methodological point of view this should be relatively straightforward application of existing methods on Markov Switching in DSGE model. The idea is that there are two states, in the first one central bank stabilizes both, the real side of the economy and inflation. In the second state of the world, when strong shock hits the economy and triggers price-inflation spiral, the monetary policy strongly response to inflation with little consideration to the real side of the economy.	31/12/2023	1
1.4	E31, E51, G01	Quantity Theory of Credit	Pavel Gertler, Boris Hofmann (BIS)	01/01/2020	From past literature we learn that shifts in money aggregates are linked to inflation in the long run differently in various historical circumstances. Based on long-term historical data for 17 countries from Taylor Schularick dataset, we would like to investigate what role is played by credit aggregates in this relationship, and to what extent credit aggregates are closer tied to house prices, especially under fiat standard. If our hypothesis proves correct, this may serve as a new argument for including asset prices into measurement of inflation. Such evidence could be an additional argument for the role of credit to be considered in the review of monetary policies.	31/12/2023	1
1.5	C63, D83, E58	Machine based index of ad-hoc communication	Pavel Gertler, Natalia Ostapenko (OEM), Marek Bojko (Uni Cambridge)	01/07/2021	We propose a set of algorithmic steps based on text mining algorithms, deep learning and machine learning techniques to turn ad-hoc communication of the ECB Governing Council members (ad-hoc communication between GC meetings) into an index assessing its hawkish or dovish connotation. Such index helps in understanding the chemistry between what policy-makers signal in real time and what market agents capture and respond to. We also test validity of this index on several real life applications.	30/06/2024	1
1.6	E31	Phillips curve and globalization: Evidence from Slovakia	Patrik Kupkovič, (w/ cooperation OEM, ECB WG)	01/2019	Forbes (2018) shows that inflation models should more explicitly and comprehensively control for changes in the global economy. The goal in this project is to model the price development in Slovakia and decompose its evolution between the measure(s) of home slack and global factors.	31/12/2023	1
1,7		The growth reducing inflation threshold in CEE countries inside and outside the Euro Area	Brian Fabo, Reiner Martin, Max Gillman	01/2023	There is a robust consensus in the literature (Judson and Orphanides (1996), Ghosh and Phillips (1998), Khan and Senhadji (2001), Gillman, Harris, andMatyas (2003)) that inflation above a certain "threshold" rate has a negative effect on growth and investment. This threshold is different for industrialized and developing countries. The aim of this project is to examine the threshold for the CEE countries and to test whether the Euro Area membership of some of these countries has influenced the threshold in a significant way.	31/12/2023	1

1.8		How dear is euro and Europe to Slovakia	Pavel Gertler, Reiner Martin, Juraj Zeman	01/2023	Living turbulent time both globally and domestically makes us remind ourselves what are the economic benefits of euro and Europe to Slovakia. We assess these benefits looking at several dimensions. One is the economic comfort of invoicing in domestic currency in a small and very open economy (SvoE). An other is estimating a risk premia of government debt of a SvoE in or outside euro area. On top, we revise our model used for the estimating consequences to Brexit and use input-output tables to assess the trade benefits of common market with respect to EFTA or partnership level. Additional loss of net beneficiency from EU programmes	30/06/2023	1
2. Macroprudential policy and real estate							
2.1		The role of advisors in retail mortgage risk and macroprudential policy	Martin Cesnak, Andrej Cupák, Pirmin Fessler (OeNB), Ján Klacso		We exploit two specific features of the data to assess the role of advisors in retail mortgage risk and financial stability. First, the data allows us to identify if the contract was channeled through an (specific) advisor or directly through a (specific) bank. It also captures the introduction of macroprudential policies since 2018 and provides therefore a reasonable quasi experimental setting. First descriptive results indicate that housing loans channeled through advisors are larger than their counterparts not channeled through advisors. We also find impact of macroprudential policy decisions on the role of advisors. We further show that macro-figures can be misleading in such a situation, as the overall aggregate LTV might rise, even though the mass above 0.8 and therefore risky loans decrease substantially. We deliver additional results on the heterogeneity of advisor effects in terms of loan as well as borrower characteristics. Our study stresses the view, that macroprudential policies as well as their evaluation need to carefully take into account the institutional structure of the loan market.	31/12/2023	2
2.2		Multiple-property ownership: the role of household characteristics and macroprudential policy	Andrej Cupak, Maria Siranova (SAV)	01/05/2022	While there exists a rich empirical literature on the causes and consequences of home ownership (typically looking at the household main residence), there is very limited evidence on the multiple- property owners. At the same time, it is argued that (speculative) real estate investments contribute significantly to the credit cycle and market overheating. Using the most recent EU-level microdata from the 3rd wave of Household Finance and Consumption Survey (collected at around 2017/2018) we analyze the socio-economic determinants driving the household (speculative) real estate investment appetite. Additionally, we investigate the impact of macroprudential policy tightening experienced during the period of 2014-2018 on the household real estate investments.	30/06/2023	2
2.3		Borrower-Based Measures in a DSGE model tailored to Slovakia	Ales Marsal	01/01/2023	The aim of the project is to build up tractable, macro-finance, DSGE model to study impact of borrower-based measures on the Slovak economy. The primary focus lies in two specific Slovak features playing important role in the transmission of macroprudential measures on a financial system resilience. First, we reflect in the model the importance of residential properties in the wealth portfolios of Slovak households as a key transmitter of borrower-based measures to financial resilience. Second, significant fraction of Slovak households features the "hand to month" property which has consequences for the possibility of households to smooth the consumption by intertemporal substitution. These features might magnify the impact of borrower-based measures on the economy.	31/12/2024	2
2.4		Drivers of the Housing Market in Slovakia: The Effects of Rising Borrowing Costs and Inflation	Martin Cesnak, Patrik Kupkovič	01/06/2022	The current environment of rising borrowing costs and high inflation presents challenges for the housing market in Slovakia. To study the effects of these variables and other structural drivers, we use the structural vector autoregression (SVAR) methodology. With zero and sign short-run restrictions, we can identify mortgage supply shocks, aggregate funding (monetary	31/12/2023	2

					policy) shocks, aggregate supply shocks, and other shocks (e.g., housing supply and housing demand shocks) of the housing market. Results of our analysis suggest that the current environment of rising 10y bond spreads, rising lending rates, and increasing inflation (decreasing disposable income) point to declining activity in the housing market in Slovakia.		
2.5		Credit supply or loan demand? Drivers of NFC bank lending in Slovakia	Patrik Kupkovič	01/01/2021	Disruptions in credit markets, especially on the credit supply side, can have serious macroeconomic consequences. The Global financial crisis and the European debt crisis have amplified this link. We assess the macroeconomic relevance of credit supply and loan demand shocks in the non-financial corporations (NFC) bank lending market in Slovakia. Using a structural VAR with zero and sign restrictions a-la Barnett and Thomas (2014), Duchi and Elbourne (2016), or more recently Bobeica and Jarociński (2019) we show that loan demand shocks are at least as important as credit supply shocks. Additionally, bank lending shocks are macro-economically relevant, but not as much as standard aggregate demand, aggregate supply, or monetary policy shocks.	01/06/2022	2
2.6	E21, D19	Sustainable household debt	Ján Klacso	01/11/2021	Indebtedness of households in Slovakia is growing since 2004 despite the Great Financial Crisis or the COVID pandemics. In this project, we estimate the sustainable level of household indebtedness via looking at the debt-servicing capacity of households in light of their optimal consumption path using micro data from HFCS and loan tapes.	01/06/2023	2
2.7	E37	Fundamental price of residential real estate in Slovakia	Martin Cesnak	01/01/2022	Residential real estate prices are affected by demand as well as supply side factors. Demand side factors consist of, inter alia, demographic developments, income growth, RRE price growth, interest rate changes while supply side factors consist of, inter alia, number of available properties on the secondary market or the number of new projects. Within this project we estimate fundamental RRE prices based on these factors.	01/06/2023	2
2.8	C8, E44, E50, G21	Estimating Macro DSTI for Selected EU Countries	Ján Klacso	01/01/2022	Debt service-to-income ratio is one of the most important indicators of retail credit risk. While the calculation of this ratio is straightforward for individual retail clients, obtaining it at the country level is more challenging. On the other hand, such a measure can provide early warning signals and can help explaining household consumption throughout the credit cycle. Such a macro DSTI also makes the debt burden comparable across countries. In this paper we estimate a quarterly ratio of debt service-to-income at the level of indebted households, or macro DSTI, for selected EU countries.	30/06/2024	2
2.9		Macroprudential policy in a high inflation environment	Ján Klacso, Reiner Martin	01/10/2022	High inflation and monetary tightening significantly changed the operating environment for macroprudential policy in Europe and the rest of the world. As a result, it is currently particularly challenging for macroprudential policy makers to assess the impact of macroprudential tools on the demand and supply of loans, on asset prices, credit risk and other fields related to financial stability. In the first stage, the project will start with a theoretical review of the impact that the new operating environment is likely to have on the objectives of macroprudential policy and the operational effectiveness of it's various instruments. In a second stage we are planning to supplement this by empirical work on some of the key macroprudential tools.	31/12/2023	2
3. Structural developments with a focus on micro-data-based analyses							

3.1	E32	MIDAS regression: a new horse in the race of filtering macroeconomic time series	Michal Benčík	01/07/2021	This is a repurposed project, originally devoted to Hamilton filter. Its aim is to find a correction of HP filter, that would alleviate the end point problem. The corrected observations are an out of sample forecasts from a Midas model, using quarterly naive forecasts and monthly indicators as regressors.	01/04/2022	3
3.2	E32, F02	Business cycle synchronization between V4 countries and euro area revisited: different drivers vs. different propagation	Michal Benčík	01/10/2021	This paper will adress the question, whether differences in business cycle in v4 countries vis-a-vis euro area are caused by different driving shocks or different propagation mechanisms. Structural VAR models for output growth rates will be used. If the ex post values of structural shocks are uncorrelated, business cycles in the core and perifery country will have different drivers. If, however, the structural shocks are correlated but the impulse-response functions are different, the overall differences in business cycle will be caused by different propagation.	31/12/2022	3
3.3	C12, C15, C22	Growth at Risk	Marián Vávra	01/01/2019	The concept of growth at risk links current financial conditions to a distribution of the future GDP growth rates. An advantage of this approach is that, if it works, it allows us to assess how a tightening and an easing of financial conditions impacts the distribution of future GDP. Despite the encouraging modelling results for the US economy presented in Adrian, Boyarchenko, and Giannone (2019), some issues are still left open. Our paper focuses on the following two problems. First, the testing methodology motivating the use of a quantile regression for density forecasting is clearly inadequate, which questions the results and the methodology itself. Second, the use of a quantile regression may not be the best modelling tool in cases with a limited number of observations (e.g. the Slovak Republic). The main objective of our paper is to improve the testing methodology and simplify the estimation procedure.	30/06/2023	3
3.4	F13, F14, F40, F63, F62	Position of automative sector of V4 countries in the global value chain	Biswajit Banerjee, Juraj Zeman	01/05/2021	The project will focus on the evolution of the motor vehicles sector in V4 countries during 2010–2020, drawing on the latest update of EU inter-country Supply, Use and Input-Output tables (FIGARO database). The analysis will be based on the global value chain (GVC) approach and will look at the linkages from the gross production and value added perspectives. We will compare the developments of value added and its components, the VAX ratio, backward and forward linkages of exports as well as the position in the GVC of the automotive sector in V4 countries. In this context, the analysis will shed light on the importance of domestic supply chain, regional (EU) supply chain, and extra-EU supply chain.	31/12/2023	3
3.5	F10, F60	Bilateral and Global supply chain participation of the Electronic and Pharmaceutical sectors of India and China	Biswajit Banerjee and Juraj Zeman	01/01/2023	This project will look at the evolution of bilateral and global supply chain participation of the electronic and pharmaceutical sectors of India and China. The objective is to look into the interdependence between China and India in these two sectors and their aggregate participation in GVC. The study is of particular interest against the background of breakdown of supply chains during the covid-19 pandemic and the desire of countries to diversify the input sources of sensitive products. The paper will draw on the latest update of EU inter-country Supply, Use and Input-Output tables (FIGARO database). (This project has been initiated in view of the participation of the NBS in the India Experts' Network of the International Relations Committee of the ECB).	31/12/2023	3
3.6	C13, C16, D81, G21, G32, G33	Firm exit and deleveraging in Slovakia over the business cycle	Biswajit Banerjee and Tibor Lalinsky	01/05/2020	Using firm level data the study will examine corporate deleveraging and firm exit in Slovakia over the business cycle. The sample period will be divided into pre-crisis, crisis, and post-crisis periods. For each of these time intervals, we will categorize firms on the basis of whether they increased their leverage, decreased their leverage or ceased operations during the specified time interval, and analyze the determinants of the probability of increasing leverage,	31/12/2023	3

					decreasing leverage or exit. We will compare if there are significant differences between the three time intervals in the determinants of each state. The explanatory variables that we will consider are those that have been highlighted in the corporate finance literature on capital structure: profitability, liquidity, tangibility, productivity, debt burden, export orientation, ownership, industry affiliation, firm size, and firm age. If the data set permits, the paper will study change in leverage behaviour separately for total debt, business debt, bank debt and non-bank financial debt.		
3.7		Loan guarantees, financial (in)stability and zombification during Covid	Tibor Lalinsky and external co-author(s)	01/01/2023	Following Bighelli et al. (2022), we start with simple logit/tobit,ols regressions to learn how the allocation of pandemic loan guarantees and moratoria differs across counties. We then focus on the consequences of guaranteed loans and moratoria for corporate indebtedness and zombie prevalence across countries, sectors and productivity deciles during and post covid. We first investigate changes in firm leverage and zombification during the pandemic. Next, we analyse which firms increased leverage or became zombies and to what extent we can observe differences between supported and non-supported firms.	31/12/2023	3
3.8		Trade margin adjustments in recessions	Tibor Lalinsky and external co-author(s)	01/06/2021	A detailed analysis of intensive and extensive trade margins adjustments in response to the global financial crisis and corona crisis in Slovakia (and other EU countries) using available firm transaction-level data and firm-level balance sheets data.	01/03/2023	3
3.9	J52, J30	Impact of collective pay agreement on wages	Brian Fabo, Peter Tóth, Jan Drahokoupil (ETUI)	01/01/2021	The project aims to analyze the impact of CPA on individual wages in the EU, where union coverage is rather heterogenous across countries. This topic has been heavily studied in the US, including the context of secular stagnation. However, related European studies using micro data are scarce. The project will utilize data from the Structure of Earnings Survey across the V4 countries available for years 2002 – 2020.	31/08/2022	3
3.10	D12, D14, D31	Results of the fourth wave of the HFCS- Slovakia report	Andrej Cupák, Judita Jurašeková Kucserová, w/ Anna Strachotová (OST)	01/01/2022	The fieldwork of the fourth wave of the Household Finance and Consumption Survey (HFCS) took place in the period of June- October 2021. The Statistical Office will provide raw data by the end of November 2021. Careful processing of raw data is required , which consists of various checks, re-coding of variables, generating weights, flags, imputation of missing data (item non-response), followed by a data validation process of the ECB. Based on final data, results will be analyzed in an NBS occassional paper, summarizing key stylized facts of slovak households' finances and consumption. The report will present distributions of households' assets, liabilities, net wealth, income, consumption and savings at national and regional level, broken down by various household characteristics.	31/05/2023	3
3.11		Working from home – results from HFCS 2021 and postpandemic trend	Judita Jurasekova Kucserova	01/01/2022	A follow-up study to the NBS-analysis of the distribution and trends of teleworking in Slovakia during the pandemics. While the existing work is based on theoretical assumptions, the new study should be based on survey results of HFCS 2021.	31/12/2023	3
3.12	D60, G50, I31	Life satisfaction and income inequality in Slovakia	Biswajit Banerjee, Peter Tóth	01/09/2021	We study the connection between household income and general satisfaction with life of Slovak households, using data from the Household Finance and Consumption Survey (2017). Apart from the effect of actual income earned we consider comparison effects vis-a-vis various (regional) reference groups identified in the sample, as well as heterogenous effects for different levels of income.	30/06/2022	3
3.13		Productivity-enhancing reallocation in the time of extensive policy	Tibor Lalinsky and external co-	01/01/2023	Following Foster, Grin and Haltiwanger (2016), we run a regression where firm employment growth depends on firm's relative productivity. This measures the strength of productivity-	30/09/2023	3

		measures	author(s)		enhancing resource reallocation (PER). We compare estimates for the pre-covid times and in covid times. This tells us if productivity-enhancing reallocation changed during Covid-19 pandemic. Next, we use 2020 data on policy support (for the countries where the data is available). It allows us to investigate how much of the muted PER is due to policy support (and possibly also differences across various policy measures).			

4) Economic and financial effects of climate change

4,1	E37, Q54	Stress testing the possible impact of climate risk on financial stability	Roman Vasiľ, Ján Klacso	01/06/2020	Climate risk is becoming more important also for financial stability. Both physical and transition risk can pose severe losses to financial institutions if not managed properly. The aim is to implement a framework building on the already available tools used for stress testing to estimate potential future losses for the banking sector stemming from climate changes.	01/12/2023		4
4,2		Temperature Dynamics in Slovakia: What Can we Expect to 2050?	Roman Vasiľ, Marián Vávra	01/01/2023	One of the salient variables representing a climate change is the air temperature near the surface. Extreme weather, temperature changes and its variation have important implication for economic activity and human welfare. The aim of the paper is to provide a factual statistical background of changing air temperature dynamics in Slovakia (compared to the European benchmark) using modern time-series techniques (a state-space model). The proposed econometric model is then used for making projections of air temperature dynamics in Slovakia using IPCC temperature scenarios up to 2050.	31/12/2023		4
4,3		Energy demand and price elasticity of Slovak HH and NFCs	Roman Vasiľ	01/01/2023	Energy market has been among the most affected sectors. Changes in energy prices and source of energy supply affects government, households and firms. Long-term and short-term estimates of price elasticity of energy demand for electricity, heating and private transport are prerequisite to understand impact of energy price shocks (i.e. how increase in electricity, heating and fossil fuels prices lower households and NFCs energy demand). Moreover, the energy sector plays a significant role in transition to net-zero economy as it accounts for high share of emissions and offers room for numerous mitigation options. Thus, the estimates of price elasticity of energy demand can be used to evaluate the effects of demography, carbon taxes and energy prices on energy demand and expenditures as well as impact on financial stability.	30/06/2024		4
4,4		Financial awareness and preferences for ESG: a novel microeconomic evidence	Andrej Cupak (NBS), Pirmin Fessler (OeNB), Maria Silgoner (OeNB)	01/01/2022	One of the goals of this research project is to uncover the main determinants of individual investors' preferences for Environmental, social, and governance (ESG) investing. Using unique Austrian microdata, a special attention will be paid to the investor's level of financial literacy. In general, financial literacy has been identified as one of the main predictors of the individual financial behavior (see Lusardi and Mitchell, 2014 Journal of Economic Literature). One of the recent findings in the business ethics literature is that economic agents with higher financial awareness (literacy) care more about non-monetary aspects of the entrepreneur prosperity and social responsibility (justice) (see Sabbaghi et al., 2013 Journal of Business Ethics). We believe there is a close parallel between social and environmental responsibility. In fact, one of the main predictions of the theoretical research of Pastor et al. (2021 Journal of Financial Economics) is that investors who care about environment and who demand "green" assets are willing to give up part of the yield as a compensation for positive externality of building greener societies. This however does not decrease their utility as they enjoy holding these assets. Hence, an investor faces a dual problem of not only maximising her own yields from investing, but also maximising a social welfare function. Therefore, we hypothesize that:	30/09/2023		4

					Individuals with higher financial awareness have greater attitudes / demand for sustainability in their investment behavior.		
4.5		Green Public Investment, Inflationary Effects and the Real Exchange Rate	Guido Traficante (Uni Roma) w/ (potential coauthors Judit Jurasekova, Roman Vasil, Alexander Karsay (RRZ), Marian Labaj (OEM))	01/06/2023	The aim of this research is to consider the effectiveness of green public investment in stimulating an economy in a New-Keynesian model in which public investment increases the stock of public capital in the production of green energy. We will construct a tractable closed economy model and then consider a small open economy country belonging to a monetary union such as Slovakia. This extension will allow to consider the cross-country implications of green public investments. Intuitively, the demand and supply effects discussed above in closed economy are still present, but in open economy the transmission of the fiscal stimulus works also through the terms of trade.	31/05/2024	4
4.6		Environmental Policy and Financial Stability: The Role of Macroprudential Policies in the Race to Net-Zero	Maria Teresa Punzi w/ (potential coauthors Roman Vasiľ, Aleš Maršal)	01/06/2023	Research proposal aims to investigate the following questions: 1. To what extent and under which conditions can climate policy be a source of macroeconomic and financial instability? 2. What is the impact of climate actions on banks' balance sheet? 3. What if Central Banks apply explicit climate change criteria when setting the macroprudential regulatory framework in which banks operate? 4. Would the 'one-for-one' capital requirements for financial institutions funding new fossil-fuel projects a welfare improvement policy that contemporaneously accelerate the development of a green economy? An environmental dynamic stochastic general equilibrium (E-DSGE) model with "brown" (polluting) and "green" (non-polluting) production sectors and two sources of inefficiencies: a pollution externality and financial frictions in a banking sector.	31/05/2024	4