DNB Research Agenda

DeNederlandscheBank

EUROSYSTEEM

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Introduction

This Research Agenda outlines the ambitions for DNB research for the upcoming years. It aims for a more top-down approach in establishing the DNB annual research program by offering guidance for the formulation of individual research projects. As a rule, new projects are only approved if they fit into the longer-term views as outlined in the DNB Research Agenda.

The DNB Research Agenda identifies seven themes: (1) conventional and unconventional monetary policy; (2) inflation; (3) monetary policy, financial markets and credit; (4) financial stability and financial regulation; (5) trust; (6) sustainability; and (7) payments and market infrastructure.

An important aspect that underpins all the topics described below is the attention to the use of rigourous up-to-date methodologies and the development of new analytical and econometric tools. An important value added is the development of new toolbox for simulation and estimation, integrated with the available databases and possibly automated, to be able to adapt flexibly and to provide timely analysis of the arising policy questions.

The broad nature of the Research Agenda accommodates both the usual tasks and the ambitions of DNB, while at the same time it preserves the independence and diversity of our researchers. The resulting research papers will continue to feed into the diverse policy discussions within and outside DNB and give guidance in the policymaking process.

1. Conventional and unconventional monetary policy

The global financial crisis had a profound impact on the practice of monetary policy. Since 2009, the ECB – as most of the central banks in developed economies – added several unconventional monetary policy tools to complement the conventional management of the interest rate as the standard monetary policy tool via open market operations. Forward-guidance, asset purchases, liquidity funding facilities and negative interest rates have been used to improve the working of the transmission channels of monetary policy. There is already a vast literature studying the transmission channels of these unconventional tools - as, e.g., the market *stabilisation channel*, the *portfolio rebalancing channel* or the *signalling channel* -, but much remains to be fully understood and new questions will be on the policy agenda.

This part of the agenda focuses on monetary policy instruments, that is, on the co-existence of conventional and unconventional ones, on their macroeconomic effects and on interaction with fiscal policy. First, given their extensive use for a prolonged period of time and their relative success, we should consider the possibility that these tools design a new

normal for monetary policy where they become part of an enlarged conventional toolbox, more efficient in limiting the problems impairing the various transmission channels. Hence, there is the need to a benchmark framework to think about unconventional tools, and to motivate why these tools are needed for the macroeconomic stabilization role of monetary policy , that is, on top financial stability considerations. Second, some of these measures were clearly seen as temporary – e.g., the PEEP from the ECB – some probably exceeded the initial intended size, because of the persistent problems in the economy. The stock of Eurosystem APP bonds stood at €3250 billion at the end of October 2021, and the net monthly purchases was still around €80 billion. The question therefore arises regarding if, when and how these numbers should change as the economy will eventually normalizes, after the two large shocks of the GFC and the pandemic, and the interest rates will be above the zero lower bound, restoring the functioning of the conventional interest rate channel of monetary policy. What will be the effect on output and inflation of a remodulation both of the flows – the monthly purchases- and of the stock of asset purchases should remain an important focus of the research on monetary policy. Third, given that most of the asset purchased are government bonds, the large and increasing amount of public debt on the Eurosystem's balance sheets dictates to continue research on monetary and fiscal policy interaction to avoid the danger of fiscal dominance.

2. Inflation

Given the ECB mandate, inflation is by definition one of the main object of research. The observed dynamics of inflation in last two decades presented various puzzling behaviour, both regarding its trend and its cyclical movements. Regarding the former, inflation has been consistently below target both in the US and especially in the Euro area. Regarding the latter, the GFC brought about unprecedented peaks of unemployment rates without triggering deep deflationary pressures, as markets and central bankers expected. Then, following the massive injection of liquidity into the system and the recovery of the economy inflation was expected to catch up, but it did not. This puzzling inflation dynamics, led the literature to investigate explanations for both the "missing disinflation" during the financial crisis and the "missing inflation" afterwards. Recent evidence suggests a flattening of the price Phillips Curve, that is, a relative disconnection of inflation from the domestic business cycle. Both problems are first-order importance for a central bank. An inflation level persistently below target threatens the long-run mandate of the central bank and could lead to the de-anchoring of long-term inflation. Inflation becomes harder to control by monetary policy if it is not sensitive to the domestic business cycle conditions.
The fact that inflation has been stable and persistently below the 2% target in the last two decades calls for the identification of possible persistent deflationary forces – demographics, globalization, ICT. A further question relates to the possibility of a relationship between the persistent component of inflation and potential output. The disconnection of the cyclical component of inflation from the domestic business cycle calls for reconsidering the theoretical underpinnings of the New Keynesian Phillips Curve, i.e., the role of inflation expectations, the importance of competition and mark-ups, the labour market and the relationship between wages and prices, the cost-channel of monetary policy. In this respect, a burgeoning literature on inflation expectation sheds new and

important lights on the effects of (non-rational) expectations on inflation dynamics. Further research on how inflation expectations are formed, how they are influenced by monetary policy communications and how they actually influence current consumption and investment decisions by households and firms remains very important. Finally, the recent surge in inflation due to energy and the bottlenecks in the international supply chain provides an interesting new angle to research. The international fragmentation of production could potentially provide an integrated explanation to the recent puzzling behaviour of both the trend and the cyclical dynamics of inflation.

3. Monetary policy, financial markets and credit

The unconventional policies cited above have a direct impact on financial markets and financial intermediaries. This part of the research agenda focuses on the very first step of the transmission channel of monetary policy through markets and financial intermediaries. First, it is important to continue to analyse the impact of recent unconventional measures (PEPP, TLTRO, Tiering, negative interest rates) on financial intermediaries, credit conditions and financial markets. Second, the communication of the central bank is pivotal for the efficiency of forward guidance. An efficient communication of future central bank interest rate policies should be reflected in coherent financial markets prices and in agents' expectations. An effective communication is also crucial for the relationship between the central bank and the financial markets in terms of financial market discipline versus financial market dominance and for the risk of possible fragmentation. Third, the scale of the asset purchase programmes naturally give rise to concerns about their impact on financial markets. Central bank interventions may influence incentives of market participants leading to adverse implications on market functioning. An obvious example relates to the scarcity of financial assets due to asset purchase programmes. Asset purchases reduce the free float of assets in markets, which at some point may have undesirable side-effects, leading to market dysfunction. Another one is related to money markets and interbank reserve trading, given the large amount of liquidity – and thus reserves – injected in the system. The abundance of liquidity also questions whether we are still operating in the corridor framework which was designed for pre-crisis monetary policy implementation with tight liquidity conditions or we are *de facto* operating in a floor system with excess liquidity and likely persistent high demand for reserves.

4. Financial stability and financial regulation

Financial institutions are subject to a complex set of micro-prudential requirements, which continuously evolve to reflect the lessons of financial crises (including an initial appreciation of the experiences with COVID-19). Moreover, international cooperation has become more important in recent years. Within the euro area, the SSM is responsible for banking supervision, although the Banking Union remains incomplete. In addition, most central banks are also responsible for maintaining financial stability from the perspective of the financial system as a whole. A wide array of macroprudential instruments can be

applied, but so far, there is only limited experience. Early detection of (systemic) risks is important to successfully use both micro- and macro-prudential instruments. This calls for a further development of quantitative tools (using granular data) that can inform policymakers on (systemic) risk both in the banking and non-banking financial sector, such as early warning indicators, financial or credit cycle models, contagion mechanisms, and stress test models. As residential and commercial properties make up a substantial part of non-financial private sector assets, and relate to a significant share of financial sector lending and investment, developments in these markets have a profound impact on economic and financial stability. It is important to better understand the strong boom-bust pattern in the housing market, the causes of the slow reaction of the supply side of the housing market, and the relationship of the housing market with the business cycle. Finally, financial institutions are confronted with structural challenges, including the sustainability of their business model (low interest rate environment, impact of climate change) and a shift in their traditional role within the financial sector in light of new technological developments (digitalization of financial service). For instance, developments in the financial industry around artificial intelligence, blockchain, crypto, decentralized finance, cloud computing and other technology related business models. The role of BigTech and small FinTech start-ups, in addition to the 'traditional' financial industry, is resulting in a more diverse and specialized financial ecosystem. This has an impact on both financial stability and financial regulation.

5. Trust

Public trust in financial institutions and financial supervisors is vital because low trust may undermine financial stability and damage the financial services industry, which is detrimental for the well-functioning of the economy. In addition, public trust in the payment system is crucial for its smooth functioning. It is important to know what drives consumers' trust in financial institutions, central banks and the payment system and how to contribute to improving it. Moreover, good knowledge about the economic and social benefits of trust and the impact of a lack of trust is very valuable. Likewise, trust in the central bank may enhance the effectiveness of monetary policy. Furthermore, trust in the central bank is crucial for its political legitimacy. DNB will continue researching trust in financial institutions, financial sector supervisors, central banks and the payment system in the upcoming years.

6. Sustainability

The sustainability of economic growth and the soundness of both financial and non-financial firms are major issues both for monetary policy-making and financial supervision. Global societal and environmental challenges, such as climate change or biodiversity loss, can have a direct impact on our financial and economic system. After all, these challenges and related transitions can translate into financial risks that may threaten economic and financial stability. For example, carbon-intensive assets may become 'stranded' as part of

a low carbon transition. Sustainability also has a socio-economic aspect, reflecting the need for the fruits of sustainable economic growth to be shared among the population. The wealth and income distribution (between households but also between production factors) is often considered an important dimension of sustainability of economic growth. Related to this, the limited accessibility to the housing market for starters and the increasing share of temporary workers are relevant topics of investigation. Likewise, sustainability may require social security arrangements (such as pensions) to be self-financed so that the risks are not transmitted to future generations.

7. Payments and market infrastructures

As a result of the advancing digitization of payment systems and the changing playing field, robustness, safety, accessibility and a European anchored payment system are becoming more and more important. Because there is still a lot to learn about these topics, they will play a central role in research on payments and market infrastructures in the upcoming years. Payments have become more efficient and for many users also more user-friendly as a result of the continuously transforming payment systems and solutions. The downside is that the dependence on the digital payment infrastructure and the complexity of payment chain have increased. As a result, it has become even more important to ensure robustness and safety. Furthermore, consumers from vulnerable groups, such as senior citizens and those with low digital skills, have trouble with the digitization of payment services. They experience a worsening of the accessibility of payment services. DNB wants to counter this development. In addition, DNB wants to prevent the deterioration of the cash infrastructure to ensure that cash remains readily accessible and available in the Netherlands. Furthermore, it must remain possible for point-of-sale transactions to be settled in cash as long as consumers still want this. It is desirable that public money continues to exist. This contributes to trust in the money system. Together with the European Central Bank DNB researches whether the introduction of a digital euro – as an additional form of public money – would be possible. Not only innovation-driven developments but also regulatory measures are transforming the payments ecosystem rapidly. DNB also wants to gain a better understanding of the risks that the arrival of new players in the payment system involves. Although they can contribute to innovation and efficiency, there are risks in terms of market power, dependence on non-European parties, privacy, and the revenue model of incumbents in the payment chain. DNB focuses on a strong European-based payment infrastructure to compete with large players from Asia and the US, to increase harmonization and the interoperability of payment solutions and reduce the inefficiencies in international payments.

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