

## Sharon Donnery: Micro data for monetary policy decisions

Discussion by Ms Sharon Donnery, Deputy Governor of the Central Bank of Ireland, at the Eighth ECB Statistics Conference “Central bank statistics: moving beyond the aggregates”, Frankfurt am Main, 6 July 2016.

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It is a pleasure to be here to discuss the topic of “Micro Data for Monetary Policy Decisions” and the contributions of Governor Stournaras and Director General Bindseil.<sup>1</sup> I spent much time, early in my career as an economist and as a member of the Working Group on Money and Banking Statistics for the Central Bank of Ireland.<sup>2</sup> The work of the group at that time was focused, amongst other things, on developing the monetary aggregates which would be used to underpin Eurosystem monetary policy. Therefore, it is of great interest to return to this issue at a time when the policy environment has become so much more complex and challenging.

The primary objective of monetary policy is simple – maintaining inflation rates of below, but close to, two per cent over the medium term. Achieving that objective is far more challenging. Whilst Governor Stournaras and Ulrich approach the importance of micro data for monetary policy decisions from quite different perspectives, their contributions can be regarded as mutually reinforcing as well as containing some interesting unique insights.

### Information enhancement for policy

Governor Stournaras is right to emphasise that monetary policy is still mainly about broad aggregates rather than distributional issues and this implies that the role of micro data is complementary. But the recent crisis and turmoil in financial markets means that detailed distributional information is increasingly important in understanding the transmission mechanism. As Governor Stournaras so eloquently puts it, what motivates our interest in micro data is that it allows us to “go beyond and behind” aggregate information in our quest to better understand what the aggregates are telling us about the transmission mechanism. This is a point also made by Ulrich who provides details about how this happens in practice. Monetary policy makers have almost always combined information from various sources to improve their understanding of macroeconomic conditions. And in these more volatile and complex times (with even noisier signals than usual) micro and granular data has become an increasing part of this process of combining information.

In terms of “going behind the aggregates”, Governor Stournaras elaborates on the role of granular data in identifying structural changes in important economic relations that underpin monetary policy decision making. He uses the case of how “Goodhart’s Law” frustrates policy makers using a specific monetary aggregate as a policy instrument – because the relationship between the instrument and policy objectives become unstable. He asserts that micro data can help us in this situation. Granular data allows policy makers to observe the financial innovation that causes the instability in the instrument-target relationship. With the additional information from micro data it is possible to correct for the biases arising from financial innovation.

In a similar vein, nonlinearities in responses to monetary policy actions due to debt overhang, wealth effects, credit constraints, information asymmetries and other imperfections in funding

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<sup>1</sup> I would like to thank Joe McNeill, Rory McElligott, Peter Dunne, and Mícheál O’Keeffe for their contributions to this speech.

<sup>2</sup> Donnery, Sharon (2003) “Money Supply in Ireland”, Central Bank of Ireland Quarterly Bulletin, 2003 Q3:73–95.

and lending markets, could all be better tracked and understood using micro data. In this regard, micro data from the Household Finance and Consumption Survey allows us to better assess how household spending will respond to monetary policy actions. And the Household Finance and Consumption Network is a good example where standardisation of the survey across countries greatly enhances the data. Similar points can be made about other data initiatives by the ECB, for example AnaCredit. AnaCredit should contribute to our understanding of the response to monetary policy actions, for example the incidence of credit default, and to the coordination of macroprudential and monetary policies.

In the spirit of “going beyond and behind the aggregates” I can add an example where micro data has been invaluable in broadening the information set of researchers and policy makers. Securities holdings data has improved our understanding of the linkages between holders and issuers of securities. A recent ECB Case Study demonstrated that the recently developed Securities Holding Statistics database can be used to calculate the effect of interest rate changes on the market value of government debt broken down by segments of the holder population.<sup>3</sup> So we can now identify many detailed components of the balance sheet channel of the monetary policy transmission mechanism as never before.

### **Designing, implementing and monitoring standard and non-standard monetary policy**

Ulrich and his colleagues examine the increased need, the expanding use and the increasing challenges associated with micro and granular data in three main contexts. The first is in monitoring and assessing the workings of the money markets. The second is in dynamic monitoring, recording and assessment of collateral and counterparty eligibility for monetary policy operations. The third is in the design, implementation and assessment of the effectiveness of non-standard measures – specifically the various Asset Purchase Programmes. All of these areas have either become more acutely relevant, or arose directly as a consequence of the financial and sovereign debt crises and for various reasons these areas have become more challenging in recent years as Ulrich describes.

Despite rapid changes in the structure of interbank markets in the pre-crisis period, the monitoring and assessment of money markets was not a well-researched topic. The reasons for this are probably many and varied but one crucial ingredient was absent – high quality and comprehensive granular data about how monetary policy operations and money market behaviour interacted. Since the financial crisis the ECB and other central banks have not been slow in responding to the data gaps and Ulrich points out many new promising developments (particularly the Money Market Statistical Reporting) that will allow us to see developments at a high frequency and eventually, through research efforts, to understand when these markets are not functioning well. This topic has been addressed at many recent ECB (and other central bank) conferences and it has begun to generate substantial research dedicated to gaining an understanding of money market developments before and during the crisis.<sup>4</sup>

An important development here is the expansion of monitoring beyond the unsecured money market. The crisis led to a significant switch in activity to collateralised repo trading and the

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<sup>3</sup> ECB Economic Bulletin (2015) Issue 2 – Case Study 5 “The effect of interest rate changes on the market value of government debt holdings”.

<sup>4</sup> Useful references include; (a) Dunne, Peter G., Michael J. Fleming & Andrey Zholos (2013) “ECB Monetary Operations and the Interbank Repo Market”, Federal Reserve Bank of New York Staff Reports No 654, (b) Mancini, Lorian, Angelo Ranaldo and Jan Wrampelmeyer (2016) “The euro repo market”, Review of Financial Studies 29(7): 1747–1779, (c) Frutos, Juan Carlos, Carlos Garcia-de-Andoain, Florian Heider and Patrick Papsdorf (2016) “Stressed Interbank Markets: Evidence from the European Financial and Sovereign Debt Crisis”, ECB Working Paper No 1925.

peculiarities of these markets need to be monitored and understood better. It is also good to hear that Money Market Statistical Reporting data will be disseminated in an aggregated form at a “reserve maintenance frequency”. This will make it easier to assess the interaction between monetary policy operations and the behaviour of banks within the interbank market.

This brings the discussion naturally around to the second main area identified by Ulrich and his co-authors; that is, the monitoring, eligibility and use of collateral and the dynamic assessment of counterparty quality. This area was also brought to the fore during the crisis when there were episodes of collateral hoarding that contributed to problems in the secured interbank markets and also in access to official operations. It is also important to extend this analysis to the use and availability of collateral within the wider interbank market. In the pre-crisis period there was significant growth in the lending of collateral. This facilitated improved access to funding and it increased the efficiency in the use of collateral and the management of reserves. But the contraction in availability of this type of collateral was most probably due to hoarding by security lenders. We still have limited knowledge of this activity.<sup>5</sup>

Last, the use of micro-data in the context of the design and assessment of the effectiveness of Asset Purchase Programmes (and other non-standard measures such as the TLTRO) is clearly of interest from a monetary policy perspective. It was interesting to hear about the challenges in implementing the Asset Purchase Programmes. It appears that micro-data and technical developments have been combined very efficiently to help in identifying the best timing of purchases and what should be purchased in order to have a good outcome for the Asset Purchase Programmes. At the same time, this aims to avoid structural damage to important markets in terms of liquidity and market efficiency. Research on the “announcement”, “stock” and “flow” effects of asset purchases is underway in the ECB and some NCBs to ensure that we are well informed about the deeper consequences of the programme but there remains a challenge regarding how this programme interacts with other aspects of monetary policy for example the behaviour of banks in Ordinary and Targeted monetary policy operations as well as in regard to use of the ECB’s deposit facility. The Money Market Statistical Reporting and Asset Purchase Programmes data could be usefully combined to provide insights in these areas.

### **Perspectives from the Irish experience**

Allow me to briefly give you some perspectives from Ireland, which is a good example of how micro data may have helped in the past and is currently being used to assess the effects of monetary policy. In the pre-crisis period, credit demand in Ireland was stronger than elsewhere in the euro area due to a variety of factors.<sup>6</sup> On the supply side, the absence of exchange rate risk encouraged banks to expand their use of plentiful external funding. This combination caused an excessive build-up in the level of indebtedness across all sectors of the economy. Understanding the effects of the distribution of this indebtedness across the household and corporate sectors (and the legacy in terms of the health of the banking sector) is not possible from aggregate data.

Research using the Household Finance and Consumption Survey has shown that differences in initial wealth and indebtedness affect the transmission of monetary policy to the real economy.<sup>7</sup> We have also found evidence that factors such as the variability in access to

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<sup>5</sup> Hördahl, Peter, & Michael R. King (2008) “Developments in Repo Markets During the Financial Turmoil” BIS Quarterly Review pp 37–53.

<sup>6</sup> See Lane, Philip (2006) “Real Effects of European Monetary Union,” *Journal of Economic Perspectives*, 20(4):47–66. Also see Honohan, Patrick and Philip Lane (2003) “Divergent Inflation Rates in EMU,” *Economic Policy* 18(37):357–394.

<sup>7</sup> Arrondel, Luc, Pierre Lamarche and Frédérique Savignac (2015) “Wealth effects on consumption across the wealth distribution: empirical evidence.” ECB Working Paper 1817, June 2015. Also see, Mian, Atif, Kamalesh Rao and Amir Sufi (2013) “Household balance sheets, consumption and the economic slump.” *Quarterly*

funding by banks due to their different levels of impairments and provisions, or in the type of mortgage products being offered to borrowers, can be crucial for distortions in monetary policy transmission.<sup>8</sup>

Other examples from our experience of using granular data during the crisis include;

(i) Household sector,

Bank economists have studied the effects of credit conditions on property prices using granular data from a combination of sources.<sup>9</sup> This work involved loan-level data matched against a sample of households from a household income survey. This revealed excessive tolerance of high loan-to-income ratios by Irish financial institutions in advance of the crisis.

(ii) Enterprise sector,

The effect of debt overhangs related to the property market for the case of small and medium sized enterprises (SMEs) was studied using a unique granular dataset on the property and core enterprise debts of Irish SMEs.<sup>10</sup> The authors highlight the extent to which Irish non-real-estate SMEs borrowed for property investment purposes. This reveals details of an additional channel through which credit-driven property booms can have long-lasting harmful effects on economic growth prospects.

(iii) Financial institutions,

The pass through of the ECBs policy rate to Irish commercial bank variable interest rates has been studied at a granular level to help understand the pre-crisis build up in indebtedness and its overhang.<sup>11</sup> Until the end of 2008 variable rates for all lenders closely followed changes in the ECB's policy rates, short-term wholesale rates and tracker rate mortgages. Thereafter, the relationship breaks down, in part due to banks' increased market funding costs, and this clearly restricts the transmission of looser monetary policy.

## Security & confidentiality

The less commonly-held ground covered by our speakers was just as interesting and arguably just as important as the common themes. Governor Stournaras highlighted the issue of data security and the fear of a loss of privacy. This is certainly an important issue since a reversal of public opinion could reduce many of the benefits we hope to enjoy from micro data availability. It is imperative, therefore, that strategies are put in place to safeguard personal confidentiality while allowing maximum use of data for research and analysis.

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Journal of Economics, 1687–1726. Lydon, Reamonn (2013) "Do households with debt problems spend less?" Irish Central Bank Economic Letters Series, 2013, No. 2.

<sup>8</sup> See (a), Holton, Sarah, Martina Lawless, and Fergal McCann (2014) "Firm credit in the euro area: A tale of three crises", Applied Economics Volume, 46(2):190–211, (b) Holton, Sarah, Martina Lawless, and Fergal McCann, (2013) "SME Financing Conditions in Europe: Credit Crunch or Fundamentals?", National Institute Economic Review, 225:R52, (c) Gerlach, Petra, Brian O'Connell and Conor O'Toole (2015) "Do Credit Constraints Affect SME Investment and Employment?", Economic and Social Review, 46 (1), 51–86, (d) Casey, Eddie and Conor O'Toole (2014) "Bank-Lending Constraints, Trade Credit and Alternative Financing during the Financial Crisis: Evidence from European SMEs", Journal of Corporate Finance, 27 (C), 173–194.

<sup>9</sup> McCarthy, Yvonne, and Kieran McQuinn (2013) "Credit conditions in a boom and bust property market", Central Bank of Ireland Research Technical Paper 8/RT/13.

<sup>10</sup> McCann, Fergal, and Tara McIndoe-Calder (2014) "Property debt overhang: the case of Irish SMEs", Central Bank of Ireland Research Technical Paper 14/RT/14.

<sup>11</sup> Goggin, Jean, Sarah Holton, Jane Kelly, Reamonn Lydon and Kieran McQuinn (2012) "The financial crisis and the pricing of interest rates in the Irish mortgage market: 2003–2011", Central Bank of Ireland Research Technical Paper 1/RT/12.

However, having such high levels of security and restrictions on our micro data, that we obtain very few of the benefits, would be an extremely inefficient outcome. Making such data available to the wider scientific community – in a suitably anonymised manner – is also important to maximise the policy benefits of granular data. This point is elaborated on by Ulrich and his colleagues, who emphasise how even when data are confidential, external researchers can temporarily work in central banks, but subject to the same confidentiality requirements.

Granular or big data represents the future. Policy makers must also respond to challenges by further integrating granular data into evidence based policymaking. Otherwise we risk falling behind the private sector which has not delayed tapping the value of this resource. We all recognise that micro data is viewed broadly as a great opportunity to deepen our understanding of economic behaviour and to identify new sources of risks arising in a rapidly changing financial environment. Big and exciting challenges lie ahead for both compilers and users of data, and we must embrace these with enthusiasm and skill.

Thank you.