UNITED NATIONS

E

Economic and Social Council

Distr.
GENERAL

CES/2004/30
29 March 2004

Original: ENGLISH

STATISTICAL COMMISSION and ECONOMIC COMMISSION FOR EUROPE

CONFERENCE OF EUROPEAN STATISTICIANS

Fifty-second plenary session
(Paris, 8-10 June 2004)

SERVICE SECTOR STATISTICS AND MONETARY POLICY

Invited paper submitted by the Bank of England, United Kingdom[1]

INTRODUCTION

1. At first glance, it is perhaps not obvious why monetary policy setters might be interested in sectoral statistics. The UK's monetary policy framework is founded on an explicit target for aggregate, not sectoral, inflation. And the Monetary Policy Committee's (MPC) armoury – predominantly the short-term real interest rate – applies to the economy as a whole, and is not designed to allow a targeted differentiation between sectors.

2. Indeed, one would expect to observe a high degree of independence between a successful monetary policy regime and sectoral economic activity. If monetary policy achieves its ultimate goal of price stability, firms and workers can rely on clear signals from relative prices to guide their economic decisions. Over time, some sectors of the economy will thrive, and others will decline; some sectors will experience high inflation, others will see their output prices fall. This is normal and desirable, and simply reflects the ebb and flow of economic opportunities through time, and the consequent reallocation of resources.

3. So why is the Bank of England interested in sectoral statistics? In setting policy, the MPC has to make two broad judgements. First, what inflationary pressures are incipient in the economy? And second, to what degree, and over what time period, can monetary policy influence those pressures? Assessing the degree of inflationary pressure is no easy task, and involves making judgements on a range of economic relationships, supported by detailed

[1] Paper prepared by Simon Hayes and Benjamin Martin. The views expressed here are those of the authors, and do not necessarily correspond to the views of the Bank of England or the Monetary Policy Committee.

analysis of an enormous array of data. As discussed below, sectoral data play an important role here[2]. Also, research has shown that the relationship between the monetary authorities' interest rate decisions and future inflation may vary according to the sectoral make-up of the economy. So again, good-quality sectoral statistics have the potential to improve the efficacy of monetary policy.

GAUGING THE DEGREE OF INFLATIONARY PRESSURE

4. An important step in gauging the degree of inflationary pressure in the economy is to assess the current and future state of demand relative to the economy's supply capacity. Estimates of real GDP growth for recent quarters are an important indicator of current demand conditions. In addition, econometric forecasts of demand are typically substantially influenced by the assessment of current demand: where we expect to go to depends on where we think we are. In this sense, early estimates of GDP growth are doubly important for gauging demand pressures.

5. Because early estimates of real GDP growth in the UK rely heavily on the output measure of GDP, service sector statistics first appear on the Bank's radar with the release of the preliminary estimate of quarterly GDP growth. Prior to publication of the preliminary release, Bank staff form a view of overall GDP growth from sectoral forecasts using a variety of indicators, primarily business surveys and information from the Bank's network of regional Agents. This allows for a more targeted identification of the news contained in the preliminary release[3].

6. Given the size of the service sector in the UK economy, the quality of the initial estimates of overall GDP growth are heavily influenced by the quality of the service sector estimates. For example, although the bias in the first estimates of services sector growth is slightly lower than that for GDP growth as a whole (-0.14pp, compared with -0.15pp), the large weight of services means that this sector accounts for more than half of the bias in the first estimate of GDP growth. And around four-fifths of the variance of revisions to GDP growth can be attributed to the variance of service sector revisions[4]. Accurate early estimates of services growth are therefore an essential ingredient for an accurate early assessment of overall demand pressures.

7. In subsequent releases, the sectoral coverage of the services sector expands, and the data become more mature. These feed into an ongoing process of reassessment of the recent performance of the aggregate economy, which impinges directly on the MPC's view as to how economic activity is likely to develop. The focus on the output data in determining early estimates of GDP growth means that for some time after the initial estimates, close attention is paid to the sectoral breakdown of the aggregate estimate, with a view to corroborating information derived from other sources, or to identify puzzles in the data.

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[2] And the Bank of England Act (1998) states that the Committee should collect 'the regional, sectoral and other information necessary for the purposes of formulating monetary policy'.

[3] In this regard, it is particularly useful that the ONS publishes an estimate for distribution sector growth at the preliminary stage, as well as overall growth in services. One of the main UK business surveys – the CIPS services survey – does not cover the distribution sector. So this more detailed sectoral breakdown within services in the official data provides a clearer view of the coherence between the qualitative information from surveys and the early official estimates.

[4] This revisions analysis covers the sample 1993:1-2002:4, comparing the vintage published on 26 March 2004 to the first estimate.

8. A second leg to the Bank's analysis of inflationary pressure focuses on cost pressures along the retail supply chain. To this end, factors that influence manufacturers' costs and prices, and those facing the providers of services, are analysed in some detail. With regard to the manufacturing sector, the ONS produces comprehensive measures of manufacturers' materials costs, and their output prices. But fewer data are available on the costs of bought-in services. In the UK, bought-in services account for around 45% of service sector total costs, and around 15% of manufacturers' total costs, so this is a material hole in the information set. The Bank is therefore strongly supportive of the ONS's current workplan to improve the coverage of its experimental Corporate Services Price Index, and to publish the corresponding sub-indices.

THE TRANSMISSION MECHANISM OF MONETARY POLICY

9. Having gauged the balance of demand pressures relative to supply, the MPC needs to determine what level of the official interest rate is most consistent with the inflation target. The relationship between official interest rates and inflation is called the monetary transmission mechanism, and it is not well understood. In principle it is possible to identify a range of channels through which changes in official interest rates will impact upon output and inflation; but the quantitative importance of each, and the degree to which their strength may vary with economic conditions, is very difficult to assess. Detailed econometric analysis of sectoral data has an important role to play in developing understanding of this aspect of monetary policy.

10. Data limitations mean that much of the existing empirical literature on the monetary transmission mechanism focuses on the manufacturing sector. For example, Peersman and Smets (2002)[5] studied the impact of a change in monetary policy on the output of eleven manufacturing industries across a range of euro area countries, and found that interest rate increases had a larger negative impact on output during recessions than in booms. Dedola and Lippi (2000)[6] also used sectoral manufacturing data and found evidence that the availability of bank finance to firms played an important role in the monetary transmission mechanism. These are interesting insights, but the low and declining share of manufacturing in GDP naturally limits their usefulness.

11. Empirical evidence that includes the services sector is scarce, but what there is provides further evidence of the complexity of the transmission mechanism. For example, Ganley and Salmon (1997)[7] find that the response of service services sector output to an interest rate shock is smaller and slower than for the manufacturing sector in the UK. Farès and Srour (2001)[8] find similar results in Canada. But both of these studies are hampered to a degree by a lack of breadth of coverage in basic service sector data.

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[5] Peersman, G and Smets, F (2002), 'The industry effects of monetary policy in the euro area', *European Central Bank Working Paper*, Number 165, August.

[6] Dedola, L and Lippi, F (2000), 'The monetary transmission mechanism: evidence from the industry data of five OECD countries', *CEPR Discussion Paper*, Number 2508.

[7] Ganley, J and Salmon, C (1997), 'The industrial impact of monetary policy shocks: some stylised facts', *Bank of England Working Paper*, Number 68, September.

[8] Farès, J and Srour, G (2001), 'The monetary transmission mechanism at the sectoral level', *Bank of Canada Working Paper*, Number 2001-27, December.

PRIORITIES FOR SERVICE SECTOR STATISTICS DEVELOPMENT

12. So what are the priorities for the future development of service sector statistics from the perspective of monetary policy assessment? With regard to breadth of coverage, the 'service sector' umbrella covers a diverse set of economic activity. The differences between the manufacturing and services sectors in the UK are well documented (see, for example, Julius and Butler (1998)[9]). But the heterogeneity within the service sector is also marked. This is not surprising once consideration is given to the range of economic activity that comes under the 'service sector' umbrella: the 'services' label may be one of the few things that a goods transportation firm has in common with, say, a merchant bank. These differences in activity give rise to clear differences in economic structure and performance. High-level aggregates are therefore of limited use in helping monetary policymakers piece together patterns in economic activity.

13. Turning next to accuracy, it goes without saying that, other things equal, more accurate data are preferred to less accurate data. As discussed above, one major interest here from the Bank's perspective is the extent to which better quality service sector statistics would have a direct read-across into the quality of early estimates of real GDP growth. In addition, poor quality data blunt the effectiveness of econometric analysis, and so dampen the confidence with which the results of detailed technical research can be relied upon for policy analysis.

14. Similarly, other things equal, more timely data are to be preferred to less timely data. The MPC meets every month to decide on the level of interest rates; and may meet in-between regular meetings if exceptional events may require a policy response, so there is a clear premium on timely information. But other things are not usually equal. In particular, there is generally a direct trade-off between timeliness and accuracy: the earlier that estimates are published, the more prone to revision they will tend to be. From the perspective of a sophisticated user, revisions need not be such a problem, since earlier estimates can be given an appropriate weight in policy analysis based, for example, on past revisions performance. However, even then there is likely to be a point when the additional noise introduced by increased timeliness offsets the benefits of more timely availability.

15. Similar arguments can be advanced for data frequency. Again, other things equal, monetary policymakers are unlikely to say no to more frequent data. However, there is often a trade-off between frequency and volatility, with higher-frequency data tending to be more volatile. So even if the data are perfectly measured – so that there are no revisions – it may be hard even for sophisticated users to gauge whether the latest data are consistent with the prior assessment of the economy, or whether they should lead to a revision of that view. On balance, our view is that for many series, statistical filtering together with an in-depth knowledge of the data mean that we are able to extract real value from higher-frequency data. But these caveats mean that the cases for improved breadth and accuracy are somewhat stronger than those for increased timeliness and frequency.

16. Coherence between different official statistics is also highly desirable. In conjunctural assessment, Bank staff often use higher frequency data as indicators of lower frequency series that are of more direct interest. The ease with which the former can be mapped into the latter

[9] Julius, D and Butler, J (1998), 'Inflation and growth in a service economy', *Bank of England Quarterly Bulletin*, November

determines in part the weight given to the indicator variable. For example, in the UK the monthly estimates of the Index of Production (IoP) are fully coherent with the quarterly estimates. In contrast, the conceptual read-across from monthly retail sales data to quarterly household consumption is indirect, and the empirical relationship between the two appears unstable. As a result, the retail sales data are arguably less use as an indicator of quarterly consumption growth than are the monthly IoP data of quarterly industrial output growth. Coherence across data series is also a great aid to econometric analysis, as it eliminates one source of error variability and in so doing sharpens up the analysis.

17. The above discussion is focused on specific areas for development by national statistical agencies. But there is, in addition, need for a more overarching institutional evolution. It is probably impossible to come up with an economic statistic that absolutely nobody would want. But statistical agencies have limited resources. They therefore need rigorous and coherent procedures for assessing and reviewing the allocation of those resources across the production of different statistics. This is quite a challenge, as it means coming to an assessment of whether, for example, more frequent data on service sector statistics for monetary policy should be produced at the cost of, say, detailed data on agricultural output, which may be useful for other public policy needs or for academic research. Improvements to the quality of one set of statistics inevitably come at the cost of production or development of other statistics. Greater awareness of the implicit relative prices of competing statistical development projects would aid the prioritisation of future work, and make policymakers more aware of the trade-offs inherent in their demands for statistical development.