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The Industry Effects of Monetary Policy in the Euro Area by Gert Peersman and Frank Smets[++]– A Review

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I. Introduction

The article sheds some light on the question of "whether monetary policy has stronger effects on economic activity in recessions than in expansions". It analyzed which industries are relatively more affected in downturns. The estimation was done by examining eleven manufacturing industries in seven countries of the euro area (Australia, Belgium, France, Germany, the Netherlands, Italy and Spain). The major contribution of the article was that it analyzed explicitly business cycle asymmetries in the industry effects of monetary policy. It explained the cross-industry heterogeneity on the basis of individual industry characteristics. The article is related to the works of (Garcia and Schaller, 1995; Kakes, 1998; Dolado and Maria-Dolores, 1999; and Peersman and Smets, 2001b). They, however, did not distinguish between various explanations for the asymmetry during recessions and booms. Following Dedola and Lippi (2000), two broad channels were identified and their distinguishing features were highlighted. The channels are through the interest rate and broad credit. Industry dummy for the durability of the goods produced by the sector, industry measures of investment intensity and the degree of openness were the determinants for the interest rate channel.

The article used quarterly industrial data for the period 1980 – 1998 from the Organization and Economic Cooperation and Development (OECD) countries database. The industries in each of the countries considered are: food, beverages and tobacco; textile, wearing apparel and leather industries; wood and wood products, including furniture; paper and paper products, printing, publishing; chemicals, petroleum, coal, rubber and plastic products, except machinery and equipment; electrical, apparatus, appliances and transport equipment. Two systems of equations were estimated using SURE methods to account for the correlation in the residuals. Country

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and industry dummies were included to take into account country-specific effects. A similar set of equation was estimated for the difference between the policy effects in boom versus a recession and a weighted average of those effects. It allows for the assessment of the characteristics that have a significant impact on the total effects and determine which characteristics affect the symmetry in the policy effects across business cycle phases.

The article was structured as follows: section 1 discussed the methodology for estimating the industry effects of a euro-wide monetary policy change and the results. It further analyzed the extent the effects of policy vary across countries, sectors and business cycle phases. Section 2 explained the industry characteristics and the result of the regression analysis while a number of robustness checks were performed in Section 3. Section 4 concludes the article.

II Highlights of the Paper

The article focused on euro-wide area not only because it more closely resembles the current policy regime with a single euro-wide monetary policy but also because during most of the sample period domestic monetary policies in the seven countries considered were to a large extent coordinated through the participation in the Exchange Rate Mechanism (ERM) and other fixed exchange rate mechanisms.

In a recession, 60 out of 74 industries were negatively affected by a policy tightening, whereas in an expansion only 41 industries are negatively affected. While the average difference between the effect in a recession versus a boom is clearly negative at -0.48, there are industries in which the policy effect in a recession is not larger than in an expansion. The correlation between the policy effects in downturn and those in expansions is surprisingly low at 0.07.

A number of patterns were clear from the estimation of the effect of the industry and country effects on the policy multipliers in booms and recession. First, it appears that both in recession and in booms the average policy multiplier is significantly negative. The average effect over the business circle is about -0.47. In addition, the degree of asymmetry in booms versus recession is very significant. This confirms the result of Peersman and Smets (2001b) who find a significant degree of asymmetry using country data.

It appeared that the overall output effects of the common monetary policy shock did not seem to differ significantly from the average effect in the euro area. In contrast, the degree of asymmetry is significantly higher in Germany and lower in Italy and Belgium. It is worthy to note that this is the case even though industry composition was controlled for. The higher asymmetry of Germany is consistent with the findings of Peersman and Smets (2001b). After controlling for the industry composition, Austria and Netherlands are no longer negative outliers in the degree of asymmetry. The overall policy effects are small in the food, beverages and tobacco and non-metallic products industries. In contrast, the overall effects are significantly larger in the fabricated metal products, transport equipment and to a lesser extent, the chemicals sectors. It suggests that the durability of the output produced by the sector is an important determinant of its sensitivity to monetary policy changes. This was mainly because the demand for durable products, such as investment goods, is known to be much more affected by a rise in the interest rate through the usual cost-of-capital channel than the demand for non-durables such as food.

The correlation matrix of the various industry characteristics showed some unique features. First, there was a positive correlation between investment intensity and the share of large firms in the industry. Capital intensive industries also feature a smaller share of short-term debt in total debt. Second, there does not appear to be a strong correlation between the size measures and any of the balance sheet indicators. Finally, as expected, the maturity structure of debt and the working capital ratio are highly correlated. Also, the leverage ratio and the coverage ratio are highly correlated.

The article x-rayed some useful results. Industries producing durables and industries producing non-durables both react significantly to monetary policy shocks and have a significant degree of asymmetry. The durability dummy was highly significant in explaining the average impact of monetary policy. Sectors producing durable products are more sensitive to monetary policy changes. This finding supported the hypothesis that this determinant of the strength of the traditional interest rate channel should not have different effects in booms versus recessions.

First, there was no significant impact of other interest rate channel characteristics. Investment intensity and openness do not seem to be important in explaining cross-industry differences in the overall impact of monetary policy. There was a significant effect of the degree of openness in recessions. Sectors with a higher degree of openness appear to be less

affected than more closed sectors. This effect was, however, relatively small. Second, in contrast to some of the interest rate channel characteristics, there was no significant effect of the balance sheet indicators on the total policy effects. However, consistent with the financial accelerator hypothesis, there was evidence that weaker balance sheets imply a significantly stronger policy effect during recessions than during booms. The ratio of short-term debt over total debt and the coverage ratio seem to work more consistently with the financial acceleration hypothesis. In addition, industries with a higher leverage ratio (i.e. higher debt relative to total assets) appear to be less sensitive to monetary policy innovations during a boom. To some extent, this perverse effect showed that high leverage may be an indicator of good credit standing and high borrowing capacity. The effect of size on the degree of asymmetry was, however, significant in most cases. This was the result of a highly significant effect in recessions and an insignificant effect in booms. It confirmed the financial accelerator hypothesis. Industries with firms of a smaller size are more negatively affected by policy tightening in recessions versus booms. This result was significant for all size indicators.

A robustness analysis of the result showed that the results obtained were generally robust with respect to alternative methodologies and alternative monetary policy indicators. However, there are two slight differences. First, using the panel data techniques the leverage ratio has a significant effect in a boom. A higher leverage was associated with a smaller sensitivity to monetary policy shocks in a boom. Second, the share of small firms in total industry value-added is wrongly signed in a boom. This indicated that large firms are more sensitive to monetary policy shocks in a boom. This result was startling and the authors did not offer any explanation for it.

The modifications to the basic model showed very similar results from the basic model. All coefficients and standard errors are very comparable. The durability dummy was highly significant in explaining the total impact of monetary policy and the term structure of debt, the coverage ratio, financial leverage and the size indicators explained the degree of asymmetry between both business cycle phases. The difference with the basic result is that a significant impact of the degree of openness and the coverage effect of monetary policy was established. Also, there was an insignificant effect of financial leverage on the degree of asymmetry.

The strengths of the article lie in its contribution to the existing conclusion

that there is role for both traditional cost-of-capital channels and the broad credit channel in explaining the sectoral effects of monetary policy. The results that financial accelerator mechanisms work mainly during recessions were consistent with some of the literature reviewed in the article.

The analysis of the union-wide effect of monetary policy on output, particularly estimating for each individual industry of a country is novel. Also, the usage of filtered recession probabilities derived from Peersam and Smets (2001b) distinguished booms from recession.

A major drawback of the indicator used was that it included both euro area and non-euro area trade. Since the analysis was on the effect of an area-wide monetary policy innovation, the ideal indicator should have included only non-euro area trade. Such indicator could not be constructed. The implication of this drawback is that the openness indicator is on average much larger for the smaller countries than for the larger countries. It was nevertheless useful to include the indicator in the regression analysis, because the country effects could be picked up by the country dummies that were included in the regression.

III. Comments and Relevance of the Article

This article established an important role for the conventional interest rate channel in explaining cross-industries difference in total impact of monetary policy and an important role for balance sheet characteristics in explaining the effects in recessions and the degree of asymmetry. Overall, the article threw more light on the industry effects of monetary policy in the euro area. The impact of monetary policy on industries producing durable goods is almost three times as high as the impact on non-durable goods.

This article is relevant to member countries of the West African Monetary Zone (WAMZ), now that the countries of the West African sub-region are trying to form a monetary union, similar to the European Union. The zone comprises The Gambia, Ghana, Guinea, Nigeria and Sierra Leone. Its establishment was envisaged to quicken the process of restoration of macroeconomic stability, promote fiscal discipline through peer group pressure mechanism, sustain exchange rate and price stability and spur sustainable growth. The rationale for establishing WAMZ is to have the countries form a monetary union with a view to merging with the 41 year-old UEMOA as a strategy for establishing a single currency for ECOWAS.

The benefits that could arise from an integrated sub-region are obvious as the West African Monetary Union is predicated on the fact that economic integration can indeed enhance the prosperity and welfare of the citizens of member states. It facilitates the pooling of risk between otherwise vulnerable economies and enables the region to exploit complementarities and attract the levels of investment required for the development of modern industries, enjoy specialization, economies of scale and better access to technological spillover. Also, a monetary union encourages the mobilization and improved management of human and financial resources as well as hastens macroeconomic stability.

The exploration conducted by the authors could serve as a pointer to the authorities of WAMZ on the need to examine the industry effects of the harmonized monetary policy of the member countries on the Zone. This would give the authorities insights to the necessary policy adjustments in order to guard against negative effects on any member country. Doing this, may have to be preceded with the harmonization of monetary policies in the Zone, as members are operating various monetary policy techniques.

From the above explanations, macroeconomic stability would be required to shape the overall investment climate in the WAMZ countries. Also, the need to fasten the process of macroeconomic stability, promote fiscal discipline through peer review mechanism, sustain exchange rate and price stability, as well as sustainable growth, particularly in the sub-region is imperative. This is very crucial for creating an enabling environment for industry and ensuring the survival of entrepreneurs in member countries. Monetary policy designed to achieve macroeconomic stability requires that such key cost variables as the interest and exchange rates exert significant influence on aggregate demand, general price level and savings and investment. A judicious mix of these policies is critical for favourable and improved macroeconomic environment which would encourage the private sector to effectively take decisions that could lead to more efficient production. In order to achieve sustained growth in the industrial sector of member countries of the WAMZ, there would be need for the implementation of appropriate macroeconomic strategies. These include, low inflation, more stable exchange rate, maintenance of suitable fiscal policies, and strengthening the on-going structural reforms in the WAMZ countries. Finally, it would be expedient to plan against the frequent swings in capital expenditure arising from volatile export product revenue that have characterized all the WAMZ countries.

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