

The Interaction of Monetary Policy and Wage Bargaining in the EMU

Determination of Employment and Output in an Endogenous Money System

Question and Relevance

I am going to research how monetary policy and wage bargaining structures interact and jointly determine employment, output and inflation. This question is significant in three ways. First, the answer might help to explain why the USA experienced an extraordinary, basically inflation-free expansion during the late 90s (which was often attributed to monetary policy) while growth in Europe remained subdued. As a consequence, my results might hint how monetary policy should be conducted to maximise growth without endangering price stability. Second, understanding the interaction between monetary policy and wage bargainers could help to foresee consequences labour market deregulation might have on output, growth and inflation when it changes wage bargaining structures. This question is important as there is a strong push for labour market reform in the EU. Third, understanding the macroeconomic role of both monetary policy and wage bargaining structures might help to make the EMU macroeconomic policy dialogue a viable policy instrument.

The traditional textbook view

Standard macroeconomic textbook models such as the AS-AD or the New Classical model picture a monetary economy as a system that attains full employment equilibrium as long as frictions are absent. In this world, unions and collective bargaining agreements are imperfections which lead to real wages higher than in full employment equilibrium. These excessive real wages are the main cause of unemployment and loss in output. The higher union power, the more excessive is the real wage – and the higher the equilibrium rate of unemployment (See e.g. Burda/Wyplosz 1997, p. 150). The rate of inflation, on the other hand, is solely determined by the central bank's monetary policy. The higher the rate of monetary expansion, the higher inflation. As an independent central bank is less prone to inflate the economy in order to push unemployment down during election times, the more independent a central bank, the lower the rate of inflation. Since individuals in the textbook models rationally anticipate the rate of monetary expansion, the rate of inflation does not have any influence on unemployment. A more independent central bank thus provides more macroeconomic stability without any further costs (Grilli et al. 1991).

Recent approaches

With the advent of EMU and the large adjustment costs (especially unemployment) European countries experienced during the convergence process, research focused more on the interde-

pendence of central bank independence, wage bargaining structures, inflation and unemployment. Hall and Franzese (1998) found empirically that the more coordinated wage bargaining, the lower the costs of disinflation and thus of an independent central bank. They argue that only if wage bargaining is sufficiently coordinated, unions and employers are able to receive and process signals sent out by the central bank concerning the monetary policy rule used. Moreover, only in a coordinated wage setting process, single unions are protected that the other unions' wage demands lead to inflation and a loss in purchasing power.

Iversen (1999) shifts the focus from coordination to the number and weight of unions bargaining independently for sector-wages. He argues that sufficiently large wage bargainers have a perceivable influence on the aggregate price level. As with non-accommodative monetary policy the nominal stock of money is fixed, unions can effect the real money supply and thus aggregate demand. When unions are sufficiently large, they might try to increase employment in their sector by lowering their wage demands and thus increasing demand for their sectors' products. This argument has been formalised in Soskice/Iversen (1998) and later (Soskice/Iversen 2000) in a complete macro model of monopolistic competition based on the Blanchard/Kiyotaki (1987).

Critique of modern approaches

This new literature adds a lot of intuitive understanding to the role of wage bargainers and central banks. However, there are some shortcomings. The argument of Hall/Franzese would imply that under EMU (with an independent, non-accommodating central bank) countries with strong coordination should do best. However, after the first years in EMU France, a country in which wage bargaining is only lightly coordinated outperformed its neighbor Germany in terms of growth and employment. On the other hand, Soskice/Iversen's argument would imply that with switching from an accommodating to a non-accommodating monetary policy, unemployment in countries with intermediate centralisation of wage bargaining (such as Belgium or Italy) should decrease. This is not what was observed when Belgium and Italy joined the ERM and thereby ended accommodating policy. In addition, following the Soskice/Iversen argument, the increased wage restraint of German workers from the mid-90s on (unit labour costs began falling in Germany early in 1996) should have led to an increase in employment. Instead, unemployment increased until late 1998. Finally, neither the Hall/Franzese nor the Soskice/Iversen argument is able to explain the USA's impressive growth performance in the 90s.

In my opinion, the models' failure to explain these real-world puzzles stem from questionable (though in standard textbook models common) assumptions about the nature of money. Not

only is money's role in financing investment and production neglected, but the money stock serves as the mechanism which always balances demand and supply (via the so-called *real balance effect*). With a lower aggregate price level, aggregate demand in these models increases precisely because the individuals' real wealth has now increased (real wealth is defined as the *nominal* money stock divided by the price level). However, a look at the empirical facts suggest that (a) the nominal money stock cannot be exogenously controlled by the central bank and (b) that even an increase in the real money stock does not produce the predicted increases in aggregate demand.

In addition, the distinction between “accommodating” and “non-accommodating” monetary policy seems to be insufficient to distinguish between the different ways in which monetary policy in industrialised countries is conducted today. In fact, no large country presently has an “accommodating” policy. Nevertheless, most economists would agree that there are definite and decisive differences between the ECB's and the Fed's policy stance.

Alternative model proposed

To point to these differences in policy stances and the consequences for the economy is one of my aims. To do so, I will model the economy without relying on the real balance effect, but with endogenous money¹. Using a theory of endogenous money has the advantage to be able to explain why countries with a higher rate of inflation in general experienced lower growth and why there is a consensus among modern central banks to run a non-accommodating monetary policy. As endogenous money finances capital, people have to be willing to hold money (in fact, money is the counterpart of a part of real capital in the macroeconomic balance sheet) in order for capital to accumulate quickly. Only if money is reasonably stable, people will be willing to hold it in their portfolio. Thus, price stability leads to more capital accumulation.

I will use models common for monetary policy evaluation such as Taylor (1993), Clarida/Gali/Gertler (1999) or McCallum (2001) and will try to extend them with elements from Post Keynesian theory such as Betz (1993), Moore (1988), Riese (1986) and Wray (1990). In the model thus constructed, monetary policy is responsible for the equilibrium rate of interest, which influences investment and the equilibrium capital stock. As output is a function of the capital stock employed, the central bank has a direct responsibility for growth.

¹ The term *endogenous money* here describes a money which is a) not net wealth to the private sector as it is created by private agents being willing to enter into credit contracts and b) the stock of which cannot be exogenously determined by the central bank without the co-operation of the private and banking sector.

However, in setting the rate of interest, the central bank is constrained by nominal wage developments as well as financial markets. Against this background, I will then analyse which kind of wage behaviour and which kind of monetary policy leads to the best outcomes in terms of output and employment. These results will be in the form of some parameters which depict how strongly for example the central bank reacts to shocks to the price level or wages react to unemployment.

My working hypothesis is that trade unions not creating wage pressure and the central bank not reacting to one-time-price hikes would be the ideal solution as in this setting, a low and stable interest rate could be maintained without endangering medium-term price stability. A consequence of this low interest rate would be a higher rate of investment and thus higher output.

Quantitative and Qualitative application

After estimating wage functions and monetary policy rules for some OECD countries I will finally pick two to four countries which exhibit a mix of a monetary policy setting and wage bargaining structures which is – from my theoretical analysis - either extremely favorable or extremely unfavorable to growth. For these countries, I will describe the specifics of the wage bargaining system and how they lead to the described outcome in short case studies not exceeding 5 to 10 pages.

From the results thus obtained I will finally try to draw a conclusion on: a) how the Euro-area has to be seen with its mix of wage bargaining and monetary policy rule and b) what could be done to improve this setting.

Data

For the estimation of wage equation and monetary policy rules I will rely on data from the national accounts either obtained from the OECD, from Eurostat or from the national statistic offices. Qualitative data on wage bargaining systems in the countries will be obtained from recent literature on that topic, and from interviews with journalists or union economists working on those specific countries.

References

- BETZ, K. (1993): *Ein Monetärkeynesianisches Makroökonomisches Gleichgewicht*. Metropolis, Marburg.
- BLANCHARD, O.J., AND N.KIYOTAKI (1987): "Monopolistic Competition and the Effects of Aggregate Demand," *American Economic Review*, 77, 648--666.
- BURDA, M., AND C.WYPLOSZ (1997): *Macroeconomics: A European Text*.
- CLARIDA, R., J. GALI, AND M. GERTLER (1999): "The Science of Monetary Policy: A New Keynesian Perspective," *Journal of Economic Literature*, 37, 1661--1707
- HALL, P.A., AND R.J. FRANZESE (1998): "Mixed Signals: Central Bank Independence, Coordinated Wage Bargaining, and European Monetary Union," *International Organization*, 52, 505--535.
- GRILLI, V., D.MASCIANDARO AND G.TABELLINI (1991): "Political and Monetary Institutions and Public Finance Policies in the Industrial Countries," *Economic Policy*, 13, 341--392.
- IVERSEN, T. (1999): *Contested Economic Institutions: The Politics of Macroeconomics and Wage Bargaining in Advanced Democracies*. Cambridge University Press, Cambridge et al.
- MCCALLUM, B.T. (2001): *Monetary Policy Analysis in Models Without Money*, NBER Working Paper No. 8174.
- MOORE, B.J. (1988): *Horizontalists and Verticalists: The Macroeconomics of Credit Money*. Cambridge University Press, Cambridge et al.
- RIESE, H. (1986): *Theorie der Inflation*. Mohr, Tübingen.
- SOSKICE, D., AND T.IVERSEN (1998): "Multiple Wage-Bargaining Systems in the Single European Currency Area," *Oxford Review of Economic Policy*, 14, 110--124.
- SOSKICE, D., AND T.IVERSEN (2000): "The Non-Neutrality of Monetary Policy with Large Price Setters," *Quarterly Journal of Economics*, 115, 265--284.
- TAYLOR, J.B. (1993): *Macroeconomic Policy in a World Economy. From Econometric Design to Practical Operation*, W. W. Norton & Co., New York and London.
- WRAY, L.R. (1990): *Money and Credit in Capitalist Economies: The Endogenous Money Approach*. Hants, GB.