

Monetary Policy, Labor Markets, and Fiscal Policy

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Why is inflation targeting so popular, both among central banks and among academic economists? For two conceptually separate reasons:

The first is the obvious one. Stabilizing inflation is good per se. The signals sent by both intratemporal and intertemporal prices are much easier to read, decisions are easier to take when inflation is low and stable.

The second is less obvious, but even more important. It is that changes in inflation are a signal that output is either too high or too low. Thus, keeping inflation constant is a way of achieving the right level of output.

The argument behind the first proposition is very general. The argument behind the second proposition is model dependent. It is exactly true in some of the simpler models we use to think about monetary policy, such as the benchmark New-Keynesian model. In that model, there is, as Jordi Gali and I have christened it, a “divine coincidence”: Stabilizing inflation in the face of either taste or technology shocks indeed yields the right level of output from a welfare viewpoint.

* MIT and NBER. Remarks at the 50th Anniversary of the Bundesbank Conference, September 2007.

This divine coincidence breaks down however when the benchmark model is extended to allow for additional distortions, be it distortions in asset, goods, and labor markets, or distortions coming from fiscal policy. In the presence of such distortions, it is typically the case that stabilizing inflation does not generate the right level of output, or, put the other way, that maintaining the right level of output requires deviations from stable inflation.

What should the central bank do in such cases? The general answer, which is not much help: Be more flexible. But how and how much depends depends on the specific distortion. In this sense, the topic I was allocated for this session is much too large for me to do it justice here. Doing it justice would imply identifying all relevant distortions, and working out the implications of each one for optimal monetary policy. We are a long way from being there. In my remarks, I shall sketch how I believe we should think about the issue, and then take a stab at what I see as some of the most relevant distortions coming from the structure of labor and goods markets, and from fiscal policy. You will see that I have more questions than answers.

1 A Theoretical Detour, with Apologies

To think about the issue, one must keep in mind three different concepts of output (careful readers of Woodford (2003) will see that I simplify a bit, but this is for a good cause):

The *efficient* (or constrained-efficient, or first-best) level of output: What output would be if chosen by a central planner, given tastes and technology. That level of output is typically unattainable. From a welfare view point, the best that can be done is to keep output at a constant distance below first best.

The *natural* (or second-best) level of output. What output would be with existing distortions, but abstracting from nominal rigidities.

The *constant x -inflation* level of output: What output would be if inflation, using price deflator x , were kept constant. x may be the CPI, the GDP deflator, the nominal wage index, or some other index.

In general, these three concepts do not coincide. In the benchmark New-Keynesian model (a model with constant elasticity demand functions, monopolistic competition in the goods markets, and Calvo price-setting) however, it turns out that they are closely related:

The (log) distance between the efficient and the natural levels of output is constant, unaffected by technological and supply shocks (such as changes in productivity growth, or changes in the price of imported oil).

The natural level of output is the same as the constant inflation level of output, when inflation is computed using the domestic output deflator.

Together, these two relations imply that the optimal monetary policy is to keep domestic output price inflation constant. Constant inflation delivers the natural level of output, and keeps the distance from the efficient level of output constant.

Being a central banker in this environment is a dream: There is no trade-off between stabilizing inflation and doing what is right for output, namely stabilizing the welfare-relevant output gap. But we do not live in the benchmark model, and, in real life, being a central banker is not so easy:

Think of shocks which leave efficient output unaffected, but decrease natural output. This may come from the interaction of shocks and distortions, or from changes in distortions. A textbook example would be an increase in monopoly power, leading firms to increase their markups, and leading in turn to a decrease in the natural level of output. In this case, keeping output at the natural level may be very bad from a welfare viewpoint.

Or think of shocks which affect efficient and natural output levels in the same way, but where achieving the natural level of output requires sta-

bilizing not price inflation, but some other rate of inflation, for example wage inflation. In this case, stabilizing price inflation may be again very bad from a welfare viewpoint.

All this probably sounds a bit abstract; this is indeed the characteristic of theoretical detours. Let me try to make it more concrete by exploring the implications of specific distortions in goods and labor markets, or distortions coming from fiscal policy.

2 Labor and Goods markets. Nominal Wage and Price setting.

The benchmark model assumes that only final goods prices are subject to nominal rigidities. This is surely not the case: Wages are also set in nominal terms, often for up to a year. What happens when both prices and wages are subject to nominal rigidities? The answer was given by Erceg et al (2000):

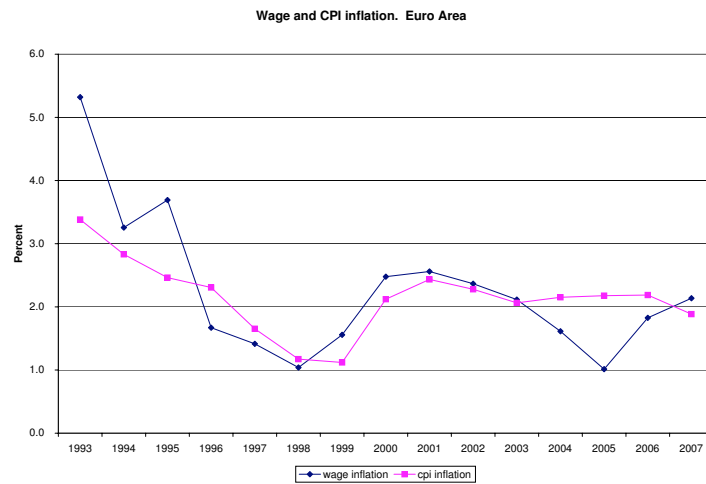
When there is both staggered wage and price setting, then stabilizing price inflation does not deliver the natural level of output.

Absent other distortions, it is still desirable to stabilize output at its natural level. This can be done by stabilizing a proper weighted average of wage and price inflation.

This pair of results is potentially very relevant. In an earlier set of comments on this topic (2007), I focused on the evolution of price and wage inflation in transition countries in the early 1990s. The differences between the two rates of inflation in a given year were often extremely large. In this environment, stabilizing price inflation would have implied large deviations from the natural level of output, and thus potentially large welfare losses.

The question here is how relevant this issue is today in the Euro area. The figure below shows the evolution of Euro-area wage and CPI inflation since

the early 1990s. The two lines are quite close, so the issue may not be so important. But the warning is still very relevant. What should the central bank do in an economy where most of the nominal rigidities come from wage setting? How much attention should it pay to nominal wage inflation versus price inflation?



3 Goods Markets. Variations in Markups

The benchmark model assumes constant markups of price over marginal cost. But markups are not constant, and variations in the markup present central banks with an obvious trade-off.

By assumption, the efficient level of output does not change, but, if labor supply is short of totally inelastic, an increase in markups will decrease natural output. In this case, stabilizing inflation is clearly not the optimal

policy. Stabilizing inflation still delivers the natural output level, but this level is no longer optimal. The optimal policy takes the following form: In response to temporary increases in markups, allow for a temporary increase in inflation, a temporary deviation of output above the natural level. In response to temporary decreases, do the opposite. In other words, follow a flexible inflation targeting policy.

How relevant are variations in markups? I suspect that they are very relevant. From software to drugs, there is an increasing number of goods with large fixed costs, and low marginal cost. For these goods, markups, not marginal cost, account for most of the price. And markups change frequently. Think of the programs now used by airline companies to set prices for specific flights, and which change prices many times during the day, often by large amounts (I realize these changes could be due to changes in marginal cost; many of them seem however to reflect changes in the perceived elasticity of demand).

Or take the recent micro evidence on passthrough of exchange rate movements (Gopinath et al 2007). For many imports, the evidence is that exchange rate movements have very limited effects on the price, even over long horizons. This in turn implies large movements in markups for the producers of those imports. This in turn suggests movements in markups in response to movements in exchange rates, and so, in response to monetary policy (Again, I realize that some of these products may sell in competitive markets, with foreign producers having no price-setting power. Many of them however appear to be differentiated goods, where price-setters have some monopoly power).

Or take the large medium-run movements in the labor share, which have characterized many European countries over the last thirty years. The figure below shows for example the large decline in the labor share, adjusted for self employment, in the Euro 12, since 1990. What this implies, if anything, for monetary policy depends on the causes of this evolution. It may

partly be due to changes in production functions, due to technological progress. But it may also be due to changes in markups, in which case, it does have implications for monetary policy.



What is the decline in the labor share due to? What do we know about markups and exchange rate movements? What do we know about movements in markups in general? The common answer is, unfortunately, very little. This is clearly an important area for research, and one with implications for monetary policy.

4 Labor Markets. Real Wage Rigidities

The benchmark model has flexible real wages. In response to, say, an increase in the price of oil, workers accept a real wage cut sufficient to avoid, or at least to limit, the decrease in employment.

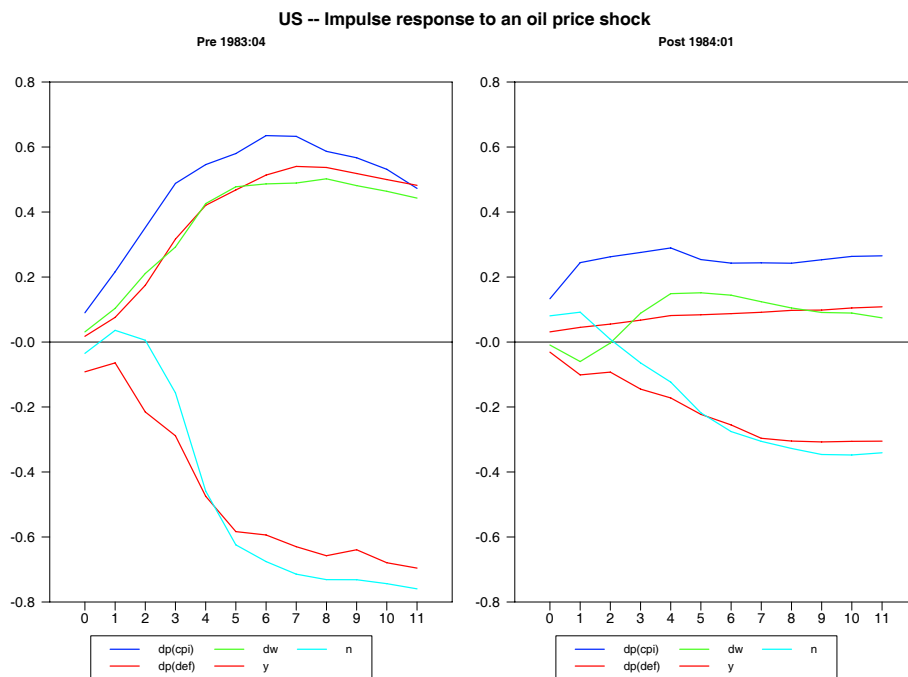
There are good reasons to think that, in reality, real wages are much less flexible than in this benchmark. Adverse shifts in labor demand are more likely to translate into employment decreases rather than in large real wage declines in the short run. Using the terminology introduced earlier, they are likely to lead to a much larger decrease in the natural level of output than in the efficient level of output.

If this is the case, this again has important implications for monetary policy. Keeping inflation stable in the face of such adverse supply shocks will still keep output at its natural level, but this natural level will be inefficiently low. Or, to use simpler language, keeping inflation stable may lead to an inefficient recession. In this case, the optimal policy is to allow output to exceed the natural level until real wages have adjusted, thus to allow for temporarily higher inflation in response to adverse supply shocks—symmetrically, to allow for temporarily lower inflation in response to favorable supply shocks (for a more formal treatment, see Blanchard Gali (2007a)).

How flexible should monetary policy be? This depends in turn on how rigid real wages are. And, on this also, the evidence is not clear cut. The figure below, taken from recent work with Jordi Gali (2007b), shows the impulse responses of the CPI, the nominal wage, the GDP deflator, employment, and output in response to a 10% increase in the price of oil, estimated over two separate samples, 1960:1 to 1983:4, and 1984:1 to 2005:4, for the United States.

The first subsample strongly suggests the presence of real wage rigidities. The increase in the price of oil leads to an increase in the CPI, which leads in turn to an increase in nominal wages and an increase in the GDP deflator; this, despite a decrease in output and employment. But real wage rigidity seems nearly absent in the second subsample. The increase in the CPI is not followed by an increase in wages, while the decrease in employment is much smaller. Jordi and I have not carried out the similar exercise for

the Euro area as a whole; but our examination of the IRFs for France, Germany, and Italy suggest very much the same pattern for the post 1984 period: Little increase in wages in response to the CPI increases, after an increase in the price of oil. This is suggestive of a sharp decrease in real wage rigidities, even in Europe. How we can reconcile this with continuing high unemployment in some of the Euro countries is yet another puzzle we need to solve.



Bottom line: Monetary policy should not be conducted independently of the characteristics of labor markets. Nominal wage rigidity implies paying more attention to nominal wage inflation. Real wage rigidity requires more flexible inflation targeting in the face of supply shocks.

Before moving on to fiscal policy, let me take up one potential objection

to this line of argument, namely, that the problem is more game-theoretic than I have made it sound. Maybe real wage rigidity is not exogenous with respect to monetary policy. Flexible inflation targeting, if too flexible, may encourage real wage rigidity, and strict inflation targeting may in turn encourage real wage flexibility. How much weight this objection carries depends on a number of factors. It depends on the structure of bargaining, and is more relevant the more centralized is wage bargaining. It also depends on what inflation does to income distribution. In the benchmark model, inflation is a way of decreasing markups, and thus decreasing the profits of firms; in this context, there are indeed strong incentives for unions to want more inflation, and for real wage rigidities to be stronger, the more accommodative is monetary policy. In a richer and perhaps more realistic model, inflation may also be a way however of decreasing real wages. In this case, it is not obvious that unions have an incentive to want inflation. This is, again, an issue that needs to be explored further.

5 Fiscal Policy and Distortions

There are (too) many ways to think about the interactions of fiscal policy and monetary policy:

At one end, one can think of fiscal and monetary policy as jointly and optimally determined, an approach explored by Benigno and Woodford (2003) for example. At the other end, one can think of fiscal policy as barely responsible, operating in an environment of high government debt and potential monetization. The first approach is of normative, but little positive, relevance. The second approach is unfortunately often more relevant (Blanchard 2003). But neither seems the right frame to think about the interactions between fiscal and monetary policy in the Euro area. Current fiscal policy is far from optimal, but also far from committing the excesses of the past. In some countries, the ratio of government debt is

high, but still far from unsustainable—an assessment reflected in the very small premia on national government debts. And, given the rules in place, the risk of large-scale monetization of government debt seems extremely remote.

In that environment, how should the central bank take into account its effects on fiscal policy? A relevant channel seems to be through the effects of changes in interest rates on interest payments on government debt.

Increased interest payments may lead to larger deficits and higher debt over time, and to increases in distortionary taxation, now or later. In this context, think of a shock which, absent fiscal policy implications, would lead the central bank to sharply increase interest rates. Now reintroduce the fiscal policy constraint, and suppose increased interest payments lead, now or later, to an increase in distortionary taxes and thus to a decrease in the natural level of output. Under these assumptions, optimal monetary policy is likely to imply a smaller increase in interest rates, and thus, again, more flexible inflation targeting than in the absence of this fiscal policy channel (after these comments were written, I discovered an article by Benigno and Woodford (2007) which, as usual, formalizes this point very nicely).

One can attack this argument in at least two ways.

The first is that the effect may be too small to worry about. Even for a country with a 100% debt to GDP ratio, an increase in the short real interest rate of, say, 5% for a few years, requires a modest permanent increase in taxes, and thus a small distortion. Even if financed by a larger, transitory, tax increase, the effect may still be too small to worry about. How relevant is this counterargument can only be settled through quantification, and I have not done it.

The second, which parallels the argument made earlier about real wage rigidities, is that advocating for flexible inflation targeting in this context ignores the game-theoretic nature of the relation between the fiscal and

the monetary authorities. By increasing interest rates less, the monetary authority in effect partly validates the bad behavior of the government. Symmetrically, by increasing interest rates as it would absent high government debt, the monetary authority may force the government to be more responsible. This counterargument does not strike me as irrelevant, although I suspect we overestimate the effects of tough monetary policy on the fiscal authorities.

6 Conclusions

One can think of many other distortions, each with specific implications for monetary policy. If, in response to a shock, the monetary policy response needed to achieve the natural level of output comes, for example, with distorted relative prices, then the optimal policy may be to limit the distortion and not try to achieve the natural level. The argument may apply to exchange rates, or to bubbles and fads. I shall stick to my assigned topic, and not go there today.

I draw two conclusions from my very tentative explorations and speculations. In the presence of distortions, monetary policy is likely to involve flexible inflation targeting. The big practical issue is how flexible. And here, it is clear that we do not have enough understanding of the relevant set of distortions and of their empirical magnitudes to give very precise answers. Central banks will have to keep an open mind, and feel their way over time, seeing how flexible they need to be, while making sure that medium run expectations remain anchored. On this anniversary day, I wish them the best of luck.

References

- Benigno, P. and M. Woodford, 2003, “Optimal Monetary and Fiscal Policy: A Linear-Quadratic Approach”, *NBER Macroeconomics Annual*, 271-333.
- Benigno, P. and M. Woodford, 2007, “Optimal Inflation Targeting under Alternative Fiscal Regimes”, in *Monetary Policy under Inflation Targeting*, F. Mishkin and K. Schmidt-Hebbel, Santiago, Central Bank of Chile, 37-75.
- Blanchard, O. , 2005, “Fiscal Dominance and Inflation Targeting: Lessons from Brazil”, in *Inflation Targeting, Debt, and the Brazilian Experience, 1999 to 2003*, F. Giavazzi, I. Goldfajn, and S. Herrera eds, MIT Press, 49-84.
- Blanchard, O. , 2007, “Monetary Policy. Science or Art?”, in *Monetary Policy: A Journey from Theory to Practice. An ECB colloquium held in honor of Otmar Issing*, European Central Bank.
- Blanchard, O. and J. Gali, 2007a, “Real Rigidities and the New Keynesian Model”, *JMCB*, (39-1), February, 35-66.
- Blanchard, O. and J. Gali, 2007b, “The Macroeconomic Effects of Oil Shocks: Why are the 2000s so Different from the 1970s?”, NBER WP 13368
- Erceg C., D. Henderson, and A. Levin, 2000, “Optimal Monetary Policy with Staggered Wage and Price Contracts,” *Journal of Monetary Economics*, 46(2), 281-313.
- Gopinath G., O. Itskhoki, and R. Rigobon, 2007, “Currency Choice and Exchange Rate Pass-Through”, manuscript.
- Woodford, M., 2003, *Interest and Prices. Foundations of a Theory of Monetary Policy*, Princeton University Press.