The Price of Oil and Monetary Policy in the Eurozone

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Abstract. This note considers the effect of the current oil price shock on the Euroland economy and the asssociated desirable monetary policy response. The first section provides some background on oil prices. The second section considers the importance of oil price shocks for inflation in Euroland. The third section analyses the current shock and the fourth section considers the appropriate monetary policy response.

1. Background on oil prices

Commodity prices are subject to wide price swings in response to variations in both supply and demand. The price of crude oil is no exception and since 1869 it has oscillated around a mean of $19.20 per barrel, adjusted for inflation in 2002 dollars.[1] In this section, I describe the recent behaviour of oil prices.

Uncertainties associated with the first Gulf War were the main factor that led to about an 80 percent rise in the price of oil between late 1989 and October 1990.[2] After the war the price fell, declining 60 percent by March 1993. In the early and mid 1990s there was increased demand from Asia and between March 1993 and January 1997 the price of oil rose by about 73 percent. In the late 1990s, economic problems in Asia and increased OPEC production led prices to decline by abut 55 percent between the start of 1997 and the end of 1998, to just $11.28. Strong demand, cutbacks by OPEC and bad weather led to a doubling of oil prices between the end of 1998 and Septemer 2000. Recession and increased OPEC production led to subsequent price declines. Since then, unrest in Venezuela and tensions in the middle east have caused the price to rise by about 150 percent from the December 2001 low of $19.33 to the 26 January 2005 price of $48.79. Historically, the recent increase in the price of oil is large, but it is smaller than the increase in the late 1990s, the 210 percent increase during the first OPEC oil crisis (1972-4) or the 156 percent increase during the second OPEC oil crisis (1978-81).

2. The Importance for Euroland

Typically, increases in commodity prices lead to inflation as they increase the direct cost of consuming the commodity, and if the commodity is an input, then a rise in its price increases the cost of producing other goods. To the extent that this cost increase is passed on to consumers, this is an additional source of inflationary pressure. How important is the recent rise in oil prices for the Euroland economy? Increases in oil prices should immediately increase the prices of consumption goods such as gasoline and heating oil. However, these goods are not a large share of the Euroland consumption basket; in 2004, total oil energy had a 4.3 percent share in the HICP basket. Adding gas and solid fuels

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[1] "Oil Price History and Analysis," *Energy Economics Newsletter*, 19 Oct. 2002.

[2] Here the oil price is defined as the monthly NSA spot dollar price of a barrel of West Texas Intermediate crude.

brings the share up to 5.7 percent.[3] As an input, energy represents a relatively small share of the cost of production, about six percent in the United States, and probably less in Euroland.[4]

Oil is priced in dollars and the euro has been appreciating against the dollar. Measured in euros, the recent increase (since December 2001) in the price of a barrel of oil is about 100 percent, rather than 150 percent. Assume that the share of oil in consumption is 5.7 percent, the share of oil in production is 5.0 percent and all price increases are immediately passed on to consumers. Then, if nothing else changed, a rough estimate of the effect of an upper bound on the 100 percent increase in oil prices over the past three years on *past* HICP inflation is about 10 percentage points, or about 3.2 percentage points per year. However, declines in real income in an oil-importing area and higher input prices should lead to lower consumption and investment demand which would dampen the increase.

Is the past increase in oil prices likely to have an effect on future HICP inflation and how large is that effect going to be? This depends on what one assumes about the time-lags and size of the effect of oil price increases on inflation, as well as what one assumes about the future path of the oil price. Estimating these lags and magnitudes is difficult as they change over time with changes in market structure and changes in developed economies' dependency on oil prices. Oil price increases appear to affect inflation more rapidly than they have in the past, but their effect is smaller than what is was previously.

Past increases in oil prices might affect future inflation in Euroland for a couple of reasons. First, firms may pass through the effects of higher energy prices with a lag. Second, wage setters might attempt to extract wage concessions following the energy price rises. This would increase the price of other goods and lead to higher inflation. Rigid labour markets in Europe tend to exacerbate this effect; the credibility of the ECB for being tough on inflation mitigates it.

3. The Current Oil Price Shock

The effects of oil price shocks can be substantial; oil price shocks have been a contributing factor in every global recession of the last thirty years.[5] In real terms, however, the current price of oil is lower than it was at its peak in the 1970s and developed economies have become much less dependent on oil. A worrisome feature of the current shock, however, is that instead of being a purely temporary rise, it may be associated with a permanent increase in the long-run price of oil. The dollar price of oil has already fallen significantly from its October 2004 high of $53.13, but an interesting feature of the current episode is the behaviour of the far future price of oil. During the period 1990 - 2001 this price was fairly stable, despite the oscillations in the spot price. Since 2001 it has has risen sharply and the price for delivery in December 2011 is $39.58. While there is great uncertainty, this suggests that market participants expect the current elevated price of oil to be long lasting.

This expectation appears reasonable. In the past fluctuations tended to be temporary, driven by time-varying supply shocks and business-cycle related demand shocks. The

[3] *ECB Monthly Bulletlin*, January 2005, p. 34.

[4] The figure of six percent for the United States is from a speech by Jeffrey C. Fuhrer, senior vice president and director of research at the Federal Reserve Bank of Boston, at the Metals Service Center Institute's Aluminum Division conference in November 2005, *Metal Center News,* December 14 , 2004.

[5] This point is made by Roubini, N. and B. Setser, "The Effects of the Recent Oil Price Shock on the U.S. and Global Economy," August 2004.

current shock is associated, in part, with a demand shock that may be less transitory: the burgeoning Chinese demand.

4. Policy Response

Oil price increases, or indeed any negative supply shock, presents an unpleasant situation for the ECB. The shock increases inflation at the same time that demand and economic activity are slowing. The appropriate policy response depends on how much of the shock is expected to be transitory and how much is expected to be more longer lasting. There appears to be little argument for responding to a short-lived spike in oil prices with a more restrictive monetary policy aimed at further reducing aggregate demand. In the scenario where the shock is transitory, the uncertainty about the timing and size of the effects of the shock, the lags associated with monetary policy, as well as the further reduction in economic activity, suggest that monetary tightening may due more harm than good.

The oil price shock will be clearly visible to the public. If it reverses itself quickly and if the central bank is widely assumed to be commited to low and stable inflation, the failure to react to a short-lived commondity-price shock should not lead to a loss of credibility. Clearly however, responding to an output loss caused by a temporary oil price shock with a *loosening* of monetary policy is undesirable. It would increase inflationary expectations at a time when inflation is already rising.

If the shock is believed to have a persistent component, as the current one may have, then the ECB should respond with a tighter monetary policy than it would have employed if there were no oil price rise. If it did not do this, higher prices of energy goods would be followed over time with higher prices of other goods as firms passed on higher production costs to consumers. Not responding in the scenario where the shock is believed to be long-lived would lead to expectations of inflation, increases in wage demands and further increases in inflation. The challenge for the ECB is in determining how of the oil price shock is short-lived and how much is long-lived.