

# Summary of the Discussion on Energy Background

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In discussion of the background to energy problems, three broad topics emerged. First and most fundamentally, the importance of energy disturbances in contributing to the economic malaise of the 1970s and early 1980s was questioned. Second, the general nature of the policy response to energy shortages, relying heavily on energy supply increasing measures rather than on energy demand reducing policies, was critically analysed and the role for future conservation was explored. Finally the topic of the presentation of economic analyses was discussed, with the fear expressed that the method of presentation may mislead policy makers and may even create a dangerous atmosphere of complacency.

On the first topic, while it was felt that the media was responsible for exaggerating the role of oil prices in creating macroeconomic disturbances, many economists also over-emphasised the significance of the oil market in recent economic history. The discussants thought that although it was right to stress the importance of energy in the world economy, one must be careful not to expect too much from the solution of energy difficulties. The oil price rises of 1973/4, and latterly of 1979/80, triggered a crisis that was probably imminent anyhow. Furthermore, any problems brought to the surface were then worsened by an ill-conceived government response that prolonged and exaggerated the direct consequences of oil price increases. By channelling the oil price rises into the sectors with the lowest elasticities of demand governments displayed no concern to reduce energy demand. If they had sought to reduce energy demand the price rises would have been allowed to feed through to the domestic or transport sectors instead of being pushed into the industrial sector. Hence an industrial recession inevitably followed.

Although governments may have exaggerated the direct consequences of oil price rises, it is not clear that long run macroeconomic instability on the scale experienced since 1973 has arisen as a consequence of oil price changes. Steady state analysis in general suggests price changes are unlikely to have a long run effect so it seems unlikely that the oil price increases alone would have a lasting effect on unemployment. Indeed, the historical ratio of energy costs in GDP is too small for energy price rises to be as significant as usually cited. This much was agreed by the discussants; however, agreement over the other contributory factor was not forthcoming.

Modellers of the impact of oil prices on macroeconomic systems reported that it was only when real wages were assumed to be rigid that a lasting world recession was predicted by the models. In models where labour markets were allowed to clear, sufficient flexibility in substituting between energy sources together with some downward movement in real wages was enough to avert macroeconomic instability. That is, events in the energy forum only served to reveal underlying structural problems in the world economy that would have come to the surface following any disruption in raw material supply. To the modellers then, the true cause of the problem lies in factor price rigidity. Conversely, some discussants felt that real wage rigidity was actually beneficial. If real wages had fallen, the ensuing global contraction may have been exaggerated many times over. This view, however, was only satisfactory so long as the financial surplus can be recycled – to the extent that recycling failed then a problem arose. Hence defects in the banking system should be analysed to explain the economic malaise. The banking system was important because of its transfer role. Following the oil price increases, if the oil exporting nations had the same propensity to save as the oil importers, then there would be no reason why global income would change. There would be a real transfer from oil importing to oil exporting countries only. However, since not all the oil exporting countries are high absorbers these countries, mainly within OPEC, were only willing to lend and were not willing to purchase real assets. Thus, OPEC was content to wait for the transfer of real resources. The oil importing nations, principally in OECD, then were able to postpone the necessary structural changes. The borrowers (in OECD), however, have shown no willingness to undertake the adjustments necessary for the real transfer to occur. Instead of serious attempts to move into current account surplus, as required for a real transfer, OECD countries have been running current account deficits and have

been unconcerned about the inflationary consequences. Only if this inconsistency between OPEC and OECD long run aspirations is resolved – a responsibility of the banking community in setting the real cost of borrowing – can stability in the macro-economy be achieved.

While agreeing with the significance of the transfer problems and the difficulties of redistributing wealth from OECD to OPEC, some discussants favoured a longer term perspective which revealed a rather different cause of the world's macroeconomic problems. In this long term view the periods of macroeconomic growth can be associated with golden ages surrounding the growth and development of one principal product. The impressive growth record of the 1950s and 1960s was associated with the rise in importance of the motor car. This growth had numerous industrial linkages to the iron and steel sectors, into the production of components and into the distribution of fuel, but now appears to have ended. Indeed the end of this golden age can be traced back to before the first oil price shock in the late 1960s, when the first signs of a decline in the manufacturing base and of unemployment moving onto a higher trend can be detected. More worryingly, the next age appears to be an age of information revolution, barely likely to have the spin-off stimuli into other sectors and barely likely to lower unemployment. In this longer term perspective, increases in the price of oil are of no great importance.

Considerable time was spent in attempting to identify the facts or factors other than the price of oil that underpin the economic malaise, entered in the 1970s. However, few policy implications emerged from this discussion. For example, even if the economic recession would have been less severe had wages been flexible, since it is and never will be possible to move to a system of flexible wage rates, this analysis is not relevant to policy. Again, even if the economic recession should really be seen as an end of a golden age, policy makers will find little comfort or guidance in their attempts to mitigate the damaging consequences of industrial stagnation. Instead, policy makers must take a more pragmatic view. While solving the energy problem may not bring instant economic recovery, if one dimension can be eased then economic recovery comes closer. So although the discussants agreed that in principle energy policy was only an attempt to tackle the symptoms, and not the causes, of the difficulties, it is still crucially important as no other factor appears to trigger the problems so acutely or so intensely.

The nature of energy policy was the second topic pursued in the

discussion of the background papers. Policy can either be directed at increasing energy supply or at reducing energy demand, but in practice several reasons were debated which suggest that the latter direction has tended to be neglected in favour of the former. First, the discussants felt that policy makers may believe the energy : GDP ratio is beyond their influence and, hence, a reduction in energy demand can only be achieved by restraining GDP – a politically unattractive option. Second, the power of the organisations responsible for supplying energy, both in the private and the public sectors, was thought to have been a significant factor. This power is in contrast to the rather weak influence that emanates from the atomistic, diverse nature that characterises energy demand. Furthermore, in many countries – particularly those in the Eastern bloc – the members of the energy supply organisations are not just powerful individuals but are also the decision makers responsible for policy. In this instance, it would be rather surprising to find policy makers attempting to reduce energy demand since this would also reduce their power and importance. Third, also as a result of the different organisational structures of energy supply and of energy demand, policy makers probably find it easier to implement measures when the institutional framework comprises few actors, such as exists for energy supply, than when no institutional framework exists, as is the case for energy demand. Recently not just large organisations but some countries within OECD or the EEC have spent considerable sums in developing expensive energy resources and now have a vested interest in reversing any weakness in oil demand. Finally, the discussants thought that many countries attempted to use an expansionary energy supply sector as a springboard for economic growth throughout the economy. Indeed, in extreme cases an increasing oil supply seemed to have been viewed as a prerequisite to growth. Several discussants though, felt the causality in this argument should be reversed – in the absence of growth, investment in energy supply may no longer look attractive, particularly if constraints of a technical or financial nature exist. As a corollary to the view that stimulating energy supply is desirable for reasons of economic growth, many mechanisms to reduce energy demand appear to have undesirable side-effects. For example, it may be possible to reduce energy demand in the transport sector significantly by switching from private modes of transport to public modes of transport. In the developing world, the consequent loss of demand for a labour intensive product such as automobiles may have many ramifications.

Despite this distinction between energy supply increasing and energy demand reducing policies, the problem for policy is similar in that no matter which direction of emphasis is chosen, problems of capital shortages are likely to be confronted. With the long lead times common to energy supply projects, costs tend to be heavily front-end loaded and as energy demand is a demand derived from the capital or housing stocks which require substantial inflows of finance if their efficiencies are to be improved, capital must be in ready supply if adjustment is to occur. Indeed, many discussants thought the disappointingly small-scale response to energy price increases was the direct consequence of capital market constraints, particularly as the period of adjustment in the late 1970s and early 1980s was characterised by restrictive monetary policies which saw interest rates rise and national income fall. Even assuming capital can be raised, several delegates suggested that it may still be unrealistic to expect governments to pursue energy supply increasing and energy demand reducing policies simultaneously, since policies to reduce energy demand if successful are hardly likely to create attractive conditions for investment into new sources of energy supply. This factor also suggests that once a government has chosen to encourage the energy supply sector it is not likely to pursue a conservation programme with any degree of vigour.

Historically, many delegates suspected that politicians held a rather misplaced optimism and that this is an additional reason to explain the lack of a serious policy to reduce energy demand. On the one hand, politicians appear to believe that technological advances would be forthcoming on a sufficient scale to bring new forms of energy into commercial reality. Egged on by promises from many large corporations politicians saw the substantial energy price rises as the catalyst required for the technological breakthroughs to occur. In reality, of course, the costs of producing new sources of energy have risen at least as fast as energy prices. On the other hand, politicians appeared to doubt (particularly after the first oil price shock in 1973/4) the permanence of higher energy prices. This doubt further inhibited and delayed the structural changes, such as lowering the energy intensity GDP, necessary for a return to a period of economic growth.

In an environment where energy conservation is not pursued vigorously, little attention has fallen on the issue of how to measure conservation. If a serious energy reducing policy were to be followed, however, the measurement of the policy's impact would raise several

problems. For example, a decline in energy consumption brought about by stagnant or falling GDP cannot be counted as conservation. Instead some temporal investigation into the ratio of energy use of unit of GDP should be made, although this must overcome two further difficulties.

First, changes in the product mix, where different products have different energy intensities, will confuse the ratio, and second, increases in the efficiency of energy use may allow energy consumption to rise while the measured energy : GDP ratio falls.

Despite agreement that energy conservation had been neglected, the delegates differed in their views on the desirability of pursuing energy conservation. If a country has ample energy resources or if solar energy can be tapped then a policy designed to absorb higher oil prices at a macroeconomic level may be preferable in the long run to a policy that passes higher oil prices through to decisions on a microeconomic level, thereby forcing a price increase in the short term and initiating structural changes that may have to be reversed later on. Furthermore, it is important to recognise that different societies will have different priorities. While some may concentrate on efficiency and will wish to pursue energy conservation vigorously, others will be more concerned with income or wealth distribution and may avoid measures to conserve energy if these ends would not be enhanced. Accepting these differences some economists with neo-classical sympathies emphasised that the rate of return on most energy conservation projects is so much higher than the rate of return available on new energy supplies that energy conservation would improve a country's economic efficiency to such an extent that any detrimental consequences to the distribution of income or wealth could more than adequately be rectified.

In concluding this topic the discussion tended to favour a positive role for government in energy conservation, even if only to counter-balance the active role played by most governments promoting energy supply. The danger with this conclusion, however, is that governments may over-react and suppress energy demand too severely. Instead some attempt to dismantle government interference in energy supply, although likely to encounter strong opposition, would be beneficial.

The third area of discussion in the session on background papers centred not on the content of the papers but on the method of presentation, particularly to non-economists. When assessing the impact of a factor such as a major oil price change, there are

numerous problems – for example, in measuring the elasticity of real income, social costs are poorly quantified and feedback effects through changes in real income on export demand are rarely assessed – but the seriousness of these problems tends not to be emphasised. Delegates felt that this lack of emphasis creates an impression of certainty and of scientific knowledge which is not appropriate given the inherent uncertainty of the subject matter. Policy makers would then be led to underestimate the costs of uncertainty. Similarly, in drawing international comparisons there is a tendency for economists to neglect to emphasise the qualifications that underly such comparisons. Different countries may have different time horizons for assessing policy, they may have different objectives for demand management (most strikingly Eastern bloc countries tend to be need based rather than demand based as in the West), countries tend to have different compositions of GDP, they quantify GDP differently, and they are often in greatly differing stages of development. Unless these differences are stressed, policy makers can easily be misled into believing one country's response to energy problems would be superior in all circumstances.

The presentation of forecasts was also thought to be lacking. Economists often adopt the scenario approach where forecasts are made conditional on a range of assumptions but fail to clarify the nature of this approach and how it differs to a recommendation or an unqualified forecast. In making estimates of future demand and supply the equilibrating force is rarely specified and the implications for energy prices, although central to any estimates, are all too frequently omitted. Interpretation of an estimate in the absence of such information is, however, rather meaningless. This is another factor which credits economists with a level of spurious accuracy and undermines the importance of adopting policies to combat the costs of certainty. Unless the spurious level of accuracy is exposed policy makers may be lulled into a dangerous state of complacency.