Schachter, Gustav

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ARTICLES

Oil Problems

Energy Crisis and New International Equilibrium

by Gustav Schachter *

The author discusses the short-term and long-term aspects of the present energy crisis. He describes the various scenarios for the immediate future and the long run that could be given place by the emerging hold of OPEC over the oil consuming countries.

The energy crisis has subsided. Oil is in abundant supply, but at four-fold prices. A short-run disequilibrium was created between producers of primary goods and producers of intermediate and final goods. In the long-run, however, the expectations are that a new international equilibrium will be established, which will continue to be favourable to the nations producing the industrial goods, because these nations control the productive aparatus of the world.

For the short-run the energy crisis really has been a petroleum crisis, created by disequilibrium between demand and supply. World demand of energy over the last decade increased faster than the capacity to produce energy. While the United States consumes one-third of the world's energy, the growth rate of energy demand has been much smaller in the United States (3.8 p.c.) in comparison with Japan (20 p.c.) and the EC (13.2 p.c.). This growth rate has meant doubling the EC's energy demand every five or six years, and Japan's every four years.

There is a great difference also in the final use of petroleum. While in the United States about half of it is used for moving cars, in the EC and Japan between 85–90 p.c. of all petroleum is used for industry and households. This adds different dimensions to the problems faced by the United States vs. the EC-Japan group. The United States cannot check the consumption of petroleum with it's combination of large gas guzzling cars and no public transportation (an electric train carries a thousand people consuming energy equivalent of fifty cars). Europe has less of a problem of petroleum consumption by cars since it has a wide spread and well developed railroad system. Therefore, the EC-Japan group is affected where it hurts most: industrial production.

The deliberate shift from coal to petroleum and the accelerated growth rate of energy use has put all western countries (and for that matter the rest of the world as well) in an awkward position because there is no possibility of substitution. The United States cannot very well stop the cars since no efficient substitute means of transportation exists and Europe cannot stop its industries though they run on petroleum energy. Therefore, in the short-run, European and Japanese industries are much more vulnerable than American industries. Of course, the industrial composition of each area is also important because some industries such as asphalt, aluminum, and chemicals have a high input of energy (petroleum or indirectly electricity), while the manufacturing of household equipment and apparel have very little need of energy. There is a mitigating factor in all this because industries with high energy consumptions are also capital intensive. Due to the very little use of labor, employment is not directly affected. But these industries may in turn affect the secondary industries that receive supplies, parts, and intermediate products from these primary industries.

As one would have expected, the industry hardest hit has been the automobile industry. This industry is based on 15,000 components [1] and has linkages that directly or indirectly affect the entire economic system. In the United States, the shortage and the high price of gasoline have induced the American consumer to be more willing to drive a small car. But, the American car industry was unprepared for this change. This shift in consumer demand is providing a positive factor for the economy as a whole. The automobile industry is now investing hundreds of millions of dollars for conversion from manufacturing of large cars to small cars. This has a multiplier effect on the durable goods industries with shifts in the distribution of employment but still not sufficient to trigger a depression.

* Professor of Economics, Northeastern University, Boston, Mass. and Research Associate, SVIMEZ, Rome, Italy.

[1] Major inputs, composition by weight: steel 65 p.c.; iron 15 p.c.; plastic and rubber 2.5 p.c. each; glass 2 p.c.; aluminum and zinc 1.5 p.c. each; copper and lead 1 p.c. each.

Directly Price-Affected Sectors

Europeans are more conscious of gasoline prices than Americans. Even in the past, European prices were always about double the prices of gasoline in the United States. Therefore, cars tend generally to be smaller. But with the gasoline shortage last winter the market demand for cars all but collapsed. Some European economists claim that car manufacturing can easily be switched to produce mass transit equipment. Recently, Agnelli of FIAT stated that he is not going to switch to the manufacturing of mass transit transport equipment because there is no demand for such equipment. This is a sticky problem both in the United States and in Europe. Corporations produce those goods that will maximize profits, hence for which there is the most demand. Demand for mass transit equipment is voiced through public sector. In general governments pay lip service to the need of conserving energy by using mass transportation, but do not allocate enough funds for accomplishing this, claiming depleted government resources and fear of further inflation.

In the United States, for the last twenty years private enterprise with the government's tacit and sometimes overt approval managed to completely destroy most inter-city mass ground transportation. To reconstruct even to the level of the 1950's would require billions of dollars. Also, development of adequate mass transit would require other billions of dollars. For a while, as long as gas was difficult to obtain, policy makers and private economists forecasted a big development in mass transit, but minimum funds were made available by the government. The switch towards mass transit has diminished considerably now that gasoline seems plentiful again even at double the price of a few years back. It seems that mass transit will not be a national priority in America for a long while. In this respect, Europeans and Japanese are in much better position, even though recently, both France and Italy increased their passenger railway rates considerably thus diminishing somewhat the energy saving incentive to use inter-city mass transportation.

Another sector greatly affected by the shortage of petroleum is electricity. It is well known that besides households, most industries depend on electricity. The prospects of nuclear energy are still far off; the hopes we had during the 1950's have not yet materialized, because of high costs and not absolutely fail-safe conditions. Shortages of petroleum should not be an impediment for producing electricity because modern plants are constructed to be able to switch from consumption of petroleum to consumption of coal almost instantaneously. This sort of conversion is mainly beneficial to the United States because it has high coal reserves. It is estimated that the United States has ample coal for about 500 to one thousand years. Japan is more affected than the US since it has neither coal nor oil resources. The mitigating factor for Europe is that there are large deposits of coal in West-Germany and England. The environment problems still remain. However, it was calculated that one barrel of petroleum equivalent of coal energy costs about six dollars when completely cleaned of pollutants. With petroleum selling at ten to thirteen dollars per barrel, coal has again become a competitor. But, the coal industry was not prepared. Coal mines are in great part owned by the same petroleum companies that are at least partly to blame for the petroleum shortages. The coal producers claim that for the next ten years the demand for coal will not be sufficient enough in the US nor in Europe to replace petroleum for electricity and industrial uses.

International Cost Problems

In the long run, the main problem is the problem of cost. We have evidence already of world-wide runaway inflationary trends. Inflation in the United States is over 10 p.c., the worst inflation since World War II. Between 1945 and 1973 only for a very few years did inflation in the United States ever exceed 5 p.c. Of course, in Europe, inflation has been ranging from 5 to 10 p.c. or more throughout the 1960's. Since last year, inflation in some EC-countries and in Japan is over 15 p.c. The world-wide inflation experienced for the last year or so will continue to grow endangering world trade and finances.

The growing restiveness of the Third World will bring the cost of raw materials (including petroleum) to levels not accessible especially to the Third World. In addition, by a rachet process, prices of industrial products will accelerate at even a faster rate. A bushel of wheat increased four times over the last few years. We have to realize that the major producers of wheat, corn, and soybeans are the industrial countries and less so the Third World. Poor countries will have to pay higher prices for raw materials, for agricultural products *and* for industrial products. Thus, the terms of trade will again favor the industrial countries. Countries such as Italy and the UK, who import both raw materials and food products are experiencing more problems than the United States, a net exporter of primary and secondary products. This, however, is a short run problem because in the international market a new equilibrium will be reached in prices. In the process, a change in the industrial structure of many countries will occur and also in the economic relationship among various countries. Most

serious is that petroleum shortages may propel world hunger because as fertilizers and feed become more expensive, less food is available. The Third World lacking mineral wealth is rapidly becoming the starving Fourth World.

US – European Relations

At inflated prices, world trade has increased by about 25 p.c. between 1972–73. World prices increased more than 10 p.c. with prices of petroleum and wheat increasing fourfold. Grains and energy account for about half of the world trade. For the short run, terms of trade between Europe and the United States are favorable to the latter. For example, last December it was thought that Europeans would corner the US market for small cars. This did not happen because of the high prices of Volkswagen type cars as compared with small US cars. Europe and Japan have been losing the competitive edge through the US devaluation of 1971 and 1973, and faster growing European inflation rates. The United States has also been gaining because of lesser problems of energy supplies.

With a higher rate of interest in the United States than ever before, the short-term capital markets could attract European investors. It was expected that most Europeans and oil producing countries would also be more evident in the United States stock market but the high interest rate does not favor equity portfolios. In addition, there are opportunities for direct investment in the United States. Europeans and Japanese could and did in fact purchase US farms to assure a ready supply of agricultural products. Foreign purchases in US coal mines have taken place for a number of years. France, the Netherlands, Italy, and Japan have already invested many millions of dollars in the US coal industry.

The emerging hold of OPEC (Organization of Petroleum Exporting Countries) over the oil consuming countries could give place to various scenarios for the immediate future and for the long run. For the short term (through 1976):

☐ Funds (about $ 40 bn) accumulated by the OPEC countries will be used in short term investment on the Eurodollar market. International liquidity will increase high inflationary pressures. This will not be as burdensome as some might fear because oil producing nations' new ready cash is still a small share of international equity. The equity of New York Stock Market Exchange alone at the depressed prices of 1974 is worth $ 3 trillion.

☐ The international energy demand that has been increasing at an annual rate of 7 p.c. over the last decade will stabilize at 1973 levels or decline. The decline might stem from problems of balance of payments of some European countries (UK, France, and Italy) and Japan, and an economic slow down. Since the largest share of oil products in these nations are intended for industrial use, any industrial decline will result in lower demand for petroleum. Even at this writing (July 1974) the supply of petroleum products exceeds demand by over a million barrels a day.

☐ Prices of industrial products will increase further (on top of the 35 p.c. over the last year) but this will still not allow the industrial oil consuming countries to recover some of their losses caused by skyrocketing oil prices. Most industrial trade is among these developed economies. It would be different if the buyers of industrial goods were the oil producing countries. But, total demand for industrial goods from OPEC countries does not and could not amount for much in the near future. With prices skyrocketing, domestic demand in developed countries will slow down and therefore imports will, too. This will put strong pressure on oil prices. (Saudi Arabia may break away and lower prices by about $ 2 or $ 3 per barrel). Since revenues are high enough for most oil producers, they might just slow down production.

Long-term Perspectives

For the long term (within a decade) the OPEC countries could strive for rapid industrial growth, speculate on world financial markets and squander their riches.

Under the *best* conditions and policies, given a proper political climate (no renewed fighting in the Middle East and no internal upheavels), the industrialization of Arab oil countries (Saudi Arabia outproduces or can outproduce all other OPEC countries together) will be capital intensive such as investment in infrastructure, refineries, aluminum, steel, and petrochemicals. This would not upset the international market equilibrium. These products are not employment creating; therefore it does not matter if production is at Abu Dhabi or at Rotterdam. Indeed, to build up these basic industries, oil producing countries need purchase machinery, equipment, *and* technology from oil consuming countries. These aquisitions will boost European and Japanese export of durable goods and therefore strengthen the oil consumer economies.

Changes in international industrial structure will follow next. This can only happen if the international demand of goods produced by basic industries (steel, petrochemicals, etc.) is maintained and expanded. Saudi Arabia and Kuwait can hardly consume the production of one integrated steel mill complex or aluminum plant. The non-

oil producing less developed countries do not enter the picture because they are worse off than before October 1973 because of increased oil prices. The demand of basic industries' products essentially remains with developed economies for at least the next decade. Thus, the well-being of OPEC countries depends directly on the well-being of the US, Western Europe, and Japan.

Under the *worst* conditions, the scenario of Spain's conquest of America in the 16th century can repeat itself. At that time Spain accumulated huge quantities of gold that it used to buy goods and services from other Western European countries. This way the industrial revolution just bypassed Spain leaving stagnation for another 300 years. If the "black gold" is used today in the same manner, OPEC countries will never again get this opportunity.

Consumer countries will push ahead with oil substitutes. Even present technology allows this. At this time an oil barrel equivalent of "clean" coal cost between $ 4–8 and gas extracted from coal is quoted at even lower prices. Success in research and development in low price substitutes will dictate the future price of oil. The international market will bear a price per barrel lower than its substitute, and it appears that it will be lower than today's posted price. On the demand side, a rapid shift to mass transportation, smaller cars and changes in the method of electricity production will relax the pressure on oil and might in the process scramble the OPEC countries in competition to prices far below the prices of substitutes. At that time, to protect substitutes, governments of both consumer and producing countries will draw up a commodity agreement (such as for cocoa and coffee) to keep international prices above what the market would otherwise be.

The neo-mercantilistic approach being adopted by some industrial countries can be self-defeating. Italy's new trade regulations may boomerang. The limitation in imports might hit exports. If Japan, France, and the United Kingdom follow suit – a probable alternative – international trade could decline to the dangerous levels that propelled the world depression of the 1930s. Under these circumstances, the new international equilibrium will be reached when incomes will be lowered, prices will be high, and demand for manufactured goods will decline. A more hopeful scenario is possible only through cooperation and planning among consumer countries to counterbalance the temporary powers gained by OPEC.