The euro and the oil market: new challenges to the industry

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Abstract

The euro has the potential to put an end to the U.S. dollar hegemony in world trade and finance, so far not disputed. The euro has, however, little chance of establishing its own hegemony comparable to that of the U.S. dollar. After a period of competitive substitution, there will be a competitive coexistence between the euro and the dollar. Oil trade could play an important part in this game, but any serious challenge to the position of the dollar raises huge risks for the oil industry. Oil producers will only have an interest in pricing their crude in euro if it appreciates against the dollar. Even if European demand does not count much in the formation of oil prices, the North Sea production and the Brent market have an important role. The Brent market largely determines oil prices in the Atlantic, the Mediterranean, the Gulf, and even Asia. For the establishment of the euro as a currency of international trade, a conversion of the Brent market to euro would be an important victory. The game is, however, as much political as economic. Within OPEC, Iran, Iraq, and Libya could have a political interest in hurting the United States by pricing their oil in euro. In the North Sea, Britain and Norway could have an economic interest in pricing their oil in euro, but their political links with the United States could weigh in the opposite direction. The stakes are enormous. The North Sea and the Gulf producers will essentially decide the outcome.

1. Introduction

The purpose of the present paper is to discuss the significance of the new European currency, the euro, on oil trading and the oil market. After initially discussing the functions that the euro has to fulfill as a new currency, the article in the first part treats the motivations and ambitions behind the new currency. The point is that the

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The euro is not only to function as a means of payment within Europe, but also as an international currency. Hence, it could eventually rival the U.S. dollar (USD) as a reserve currency and a vehicle for international trade. Oil pricing is important in this respect. Any pricing of crude oil in euro is a sensitive political issue, as it would challenge the hegemony of the dollar in world trade and hence of the United States in the world economy (“Welcome to Euroland,” 1999).

Section 2 discusses Europe’s monetary ambitions. Section 3 discusses some strengths and weaknesses of the euro in relation to the USD, with a particular reference to energy trade. Section 4 treats Europe’s energy use and oil balance, pointing out the precarious dependence of oil imports for the initial euro area. Section 5 deals with the currency risk in the oil market. Because the oil market is not perfect, oil prices do not immediately adjust to currency fluctuations. Hence, as historical data show, the real price of crude oil and oil products in the various markets outside the United States depends not only on dollar prices for crude and products but also on the strength or weakness of the USD. Section 6 discusses Europe’s oil market interests in the light of currency risks as well as economic links with the major oil and gas exporters. Emphasis is put on the potential for rivalry between Europe and the United States in relation to Middle Eastern markets and finance. Section 7 treats the exporters’ dilemma and the eventual prospects for oil trading in multiple currencies. There is an emphasis on the problems of forward oil trading in more than one currency and the potential consequences of North Sea oil being priced in euro. Section 8 discusses the euro as a potential threat to the hegemony of the USD and the U.S. seigniorage, the value of money creation. The discussion refers to the economic and political significance of oil trading and pricing, as well as the relevance for the relations between Europe, the Middle East, and the United States. Section 9 discusses three different scenarios for the eventual impact of the euro on oil trading.

2. Europe’s monetary ambitions

By January 1999, eleven countries, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain, were meeting the third stage of the Maastricht process. Their currencies are now denominated in the new common currency, the euro, and no longer independent units of account (Münchau, 1997). The various national central banks cede authority in monetary policy to the new European Central Bank (ECB). The project’s aim is to physically replace the national coins and notes with euro-based notes by June 2002, which is the final stage. The political process leading to the euro has been rapid, and the momentum has increased since 1996–97. The move into the second and third stages has confounded skeptics (Congdon, 1997). Compelled to meet the Maastricht Treaty criteria to ensure economic convergence with financial discipline, by meeting targets for cutting deficits, inflation and interest rates, the participant countries have improved their financial situation. In some cases, such as Italy, Portugal, and Spain, the financial improvement has been astounding, ensuring a wide participation in the new currency. Improved finances and a wider basis do not, however, guarantee success. The risk is no longer
that the euro will not see the third and final stage, but that it will be short-lived (Jean Boissonat, 1998, p. 61ff).

The initial euro area, “Euroland” as it is sometimes called, has a population larger than that of the United States, approximately two hundred and ninety million versus two hundred and seventy million. It has a labor force of approximately one hundred and twenty-two million, which is almost as large as the U.S. labor force of one hundred and thirty-three million. Finally, it had in 1997 an economic output measured by the gross domestic product of about 6.3 trillion USDs, almost equal to that of the United States, which was 7.8 trillion dollars. Hence, Euroland is the world’s second largest economy.

With a swift change, the monetary reality of Europe will be the euro already at the outset. Moreover, participation by many countries is in the longer run likely to strengthen the euro rather than weaken it, contrary to what the financial markets seemed to believe at an earlier stage (Portes, 1997). A wide participation changes more of intra-European trade from foreign to internal trade of the euro area. This again reduces the need for the participating countries to keep currency reserves, the bulk of which are in U.S. dollars. A wide participation also creates a large European capital market, strengthening the attraction of the euro as a store of values. Hence, it could increase the international demand for euro and reduce that for U.S. dollars. That would imply a restructuring of the international economic and financial system, replacing the predominance of the United States and the dollar with a bipolar system, which also rests on Euroland and the euro. Such a change is likely to affect oil pricing and trading. So far, the practical purposes of the euro have been highlighted. Correspondingly, the discussion has focused on the practical obstacles, essentially the criteria for participation and the timing. Hence, the political resolve to establish a European currency and make it a success has been largely ignored.

The motivations behind the euro are both practical and political. The overriding political objective is to strengthen Europe’s integration. Hence, the initial euro arrangement, which is incomplete, does not represent a final design, but an important step forward in a political process (Münchau, 1998, December 15). For France, which has been a driving force, the immediate political objective has been to control the German economic power through a common central bank and a common currency. The explicit French view is that a common currency should both tie Europe together and strengthen Europe in relation to the United States. An important French objective is to challenge the USD hegemony that has been uncontested since World War II and sovereign since the breakdown of the Bretton Woods system, thereby making relations between Europe and the United States more balanced (“Hubert Védrine,” 1997).

Less explicitly, many other Euroland countries seem to support this objective, pursuing practical advantage as well as political influence. In German industry and finance, for example, there is a widely held opinion that the diversity of European currencies is a draw-back in global competition and that a common currency represents a historical chance to further European integration and promote European interests (Hanke & Walter, 1998, p. 45ff). Moreover, a common currency could strengthen Europe’s bargaining position in trade disputes with the United States. French ambi-
tions are to make Euroland an economic, political, social, and cultural counterweight to the United States (Rousset, 1995, p. 227ff). Finally, some German observers even see the euro as an instrument to gradually enlarge the European Union to the east, in the longer run including Russia (Obst, 1997, p. 75ff). Thus, ambitions are legion, but so are the problems.

Analyzing the euro’s chances of success requires a frame of reference. A currency has at least four distinct functions, as a unit of account, a standard of value in contracts, a medium of exchange, and a store of value. The simplest aspect is a monetary redenomination, converting national currencies to euro. At the practical level, the immediate objective is to establish a common unit of account and a new standard of value in contracts within and between the participating countries. Moreover, the ambition is to launch a new medium of exchange for goods and services. Finally, the ambition is to establish a new store of value as a prerequisite for a European capital market. All four aspects are pertinent to the oil market.

The four different functions make a logical chain. Fulfilling all four functions requires a market confidence that governments cannot decree. Failure to fulfill any of the four functions mentioned would make the euro unsuccessful. The store of value is the most critical issue, as it requires the confidence of competitive international financial markets. Failure on this point would also compromise the euro’s other functions.

For the euro to be an effective unit of account, it also has to be the standard value in contracts. Hence, it needs to be accepted as the standard nominal accounting unit also in long-term transactions, such as pension and life insurance policies, which typically run over decades. For the euro to be an acceptable standard of value, those who sell goods and services in the marketplace must accept it as a medium of exchange. Finally, for the euro to act as a medium of exchange, it must be generally considered a long-term asset, being in demand as a preferred store of value. To sum up, for the euro to be an effective unit of account, it must appear robust and lasting, which requires the confidence of those who store values. The challenge is as simple as that, and the outcome, whichever way, will have international repercussions and affect oil trading.

Governments and politicians cannot accomplish that process alone. The participating governments have by decree forced their firms and individuals to convert to euro as their accounting unit. Existing contracts will be redenominated to euro. The Euroland governments cannot, however, impose the euro as the standard of value in new contracts. For new contracts, Euroland’s firms and individuals will have to be convinced to prefer the euro to alternatives such as the USD. Indeed, the ambition is to introduce the euro as the standard of value in international contracts, so that Euroland businesses will be able to purchase from outside as well as invoice in euro. The practical advantage would be to remove the currency risk and the corresponding hedging cost from Euroland businesses that so far have been purchasing from outside in U.S. dollars but invoicing in European currencies such as the German mark (DEM). This is relevant to oil trading.

The Euroland governments are equally unable to force the sellers of goods and services to prefer the euro as a medium of exchange. The real value of the euro will depend on demand for it, which relies on confidence, relative to the supply, which is
made by monetary policy. The ambition to use the euro also in trade between Euroland and the rest of the world implies that the new currency must achieve an international confidence. This leads to making the euro a preferred store of values, and not only for Europeans. Thus, those who store values will have to be induced to choose the euro by the prospects for its real value and interest earned, against for example the USD. Otherwise, a single European capital market would not successfully emerge. Consequently, the euro project has immense international repercussions. The aspiration is to introduce a supplement and a competitor to the USD in international trade and finance (Nicolat & Jacquet, 1998). Hence, the international acceptance and use of the euro will be major gauges on which to judge the future success or failure of the venture, also within Euroland. In this respect, oil could be particularly important.

The above reasoning evidently applies to oil. From the outset, oil products in Euroland sell in euro as the unit of account. Making contracts for products in euro will, however, carry a currency risk and a hedging cost as long as crude oil is priced and traded in U.S. dollars. Unless crude oil is also priced and traded in euro, it will not be a fully accepted medium of exchange for one of Euroland’s most important commodity imports. Hence, the sellers of crude oil, the world’s most important traded commodity, would not prefer the euro as a store of values, for example, when selling crude oil on forward contracts. Therefore, pricing and trading in the oil market could be an important measure of the euro’s international acceptance. Reasonable yardsticks are crude oil pricing and trading in euro for its use as a standard of contracts and a medium of exchange, at least for Europe’s oil imports, as well as a store of values for oil exporters selling forward. These issues will be discussed at greater length below.

The direct practical motive is to provide the European Union (EU) internal market with a common unit of accounting, a common standard of contracts, and a common medium of exchange. Briefly, the immediate aim of a single currency is to facilitate intra-European trade, reduce currency risks and transaction costs, and make prices more transparent. The single currency will eliminate transaction costs within Euroland to firms and individuals. The annual savings of such financial costs have been estimated at about 0.5% of Euroland’s GDP (Emerson et al., 1992, p. 31ff).

These gains will be potentially more important for the smaller member countries of Euroland, with relatively open economies, than for the larger ones, whose national currencies have been more widely used and whose economies are relatively less open. Correspondingly, the potential savings will be more important to small- and medium-sized firms than to large multinational firms, which are already used to operating in many different markets. Hence, the single currency redistributes competitive advantages within Euroland’s single market to the potential benefit of the smaller countries and small- and medium-sized firms, for whom the elimination of the currency risk and risk premiums could represent significant savings. In the long run, this would stimulate investment and raise income. As an example, the single currency is of a greater potential advantage to a small Finnish, Irish, or Portuguese firm than to a large French, German, or Italian multinational corporation. Applied to oil, the single currency will be of a relatively greater potential advantage to small oil companies and independent refiners than to the large multinational oil companies, opening new
markets. The prerequisite is that the smaller firms have the resources to benefit from larger markets and to operate in different cultural contexts. Otherwise, there is a risk that the single currency will strengthen concentration and reduce competition.

Moreover, pricing goods and services in the single currency enhances price transparency, with a pressure for prices to converge downward, reducing inflationary pressures. Furthermore, the single currency will create economies of scale. The elimination of the currency risk within Euroland will mean a large extension of the home market for the industries and services involved, with a corresponding potential for specialization, efficiency gains, and higher earnings through more open competition in a larger market. Eliminating the currency risk will also spur cross-border mergers and acquisitions within Euroland. The oil company merger of French Total and Belgian Petrofina is telling in this respect. The outcome is likely to be reduced downstream competition and a stronger European oil company with more resources for upstream projects abroad.

Finally, the single currency will lead the markets for similar categories of financial instruments to merge, with benefits in market depth and efficiency, reducing financial costs. Indeed, a large European capital market emerges, more comparable to that of the United States in size and depth than the different national capital markets. Likewise, banking costs in connection with cross-border trade and payments within Euroland will decline. Again, the cuts in financial costs will be more important to small- and medium-sized firms than to large multinational corporations. Similarly, these savings will be relatively more important to small oil companies and independent refiners than to the large multinational oil companies. Hence, the single currency will contribute to more transparent and more competitive oil product markets in Euroland. This effect will be enhanced by the gradual opening of the EU gas and electricity markets to competition, with third-party access and transparency.

Logically, the next step will be for Euroland firms to conclude contracts in euro also in trade with countries outside Euroland, not only for invoicing, but also for purchasing in the world markets. That would shelter Euroland firms from the currency risk of international trading, saving hedging costs. Hence, purchasing in euro would presumably give Euroland firms a competitive advantage corresponding to that of U.S. firms, which since 1945 have largely been sheltered from the currency risk because their transactions essentially are in U.S. dollars (Demarolle & Quinet, 1997, p. 89).

This is an eminently practical consideration, which nevertheless has important political ramifications. By launching an international reserve currency, Euroland arrogates itself seigniorage in international economic relations. Seigniorage can be defined as the right to issue money for use outside its own territory, which is equivalent to floating debt free of interest (Rogoff, 1998). This is a challenge to the position of the United States in international economic relations and its almost exclusive seigniorage since 1945.

Moreover, the ambition to use the euro in international transaction implies that the new currency should appear attractive compared to the established currency in such deals, the USD, and gradually appreciate. A weak new currency would have limited chances of success. This evidence may not have dawned on all European
Table 1

<table>
<thead>
<tr>
<th></th>
<th>Population (million)</th>
<th>Labor force (million)</th>
<th>Unemployment</th>
<th>Employment (million)</th>
<th>GDP (billion U.S. dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euroland</td>
<td>289.5</td>
<td>122.4</td>
<td>12.3%</td>
<td>107.4</td>
<td>6292.5</td>
</tr>
<tr>
<td>W. Europe</td>
<td>383.8</td>
<td>168.2</td>
<td>10.9%</td>
<td>149.9</td>
<td>8506.8</td>
</tr>
<tr>
<td>U.S.</td>
<td>268.0</td>
<td>133.9</td>
<td>5.4%</td>
<td>126.7</td>
<td>7820.3</td>
</tr>
</tbody>
</table>

Source: OECD and CIA.

politicians, who are concerned about employment, as an appreciating euro would also compromise Euroland’s industrial competitiveness. Nevertheless, Euroland’s central bankers have recognized the need for the new currency to establish itself through strength (Münchau, 1998, December 30). Hence, the objective of the euro is both practical and political. The political purpose is to further European interests worldwide, at the expense of U.S. interests and privileges if necessary. Against this backdrop the euro could eventually represent the first serious challenge to the position of the USD in the international economy since the pound sterling was dethroned after World War I (Bergsten, 1997a). This is also a challenge to the U.S. hegemony in international economic relations. Oil pricing is pertinent in this respect.

3. Euro strengths and weaknesses

Just the numbers will give the euro an international importance beyond that of the various national currencies that it replaces (Portes, 1997, s. 2). The initial Euroland and the rest of Western Europe together make an economic zone surpassing the United States in population, labor force, and economic output, as is shown in Table 1. Hence, Euroland extended to all of Western Europe would make the world’s largest economy, with a GDP ~10% above that of the United States. The additional countries are the EU members Denmark, Greece, Sweden, and the United Kingdom, plus Iceland, Norway, and Switzerland, which are outside of but closely associated with the European Union. If the euro is a success, other EU countries will have strong incentives to participate. This essentially concerns Denmark, Sweden, and the United Kingdom, but in the longer run also Norway and Switzerland. It might happen more quickly than generally assumed in 1999. In Europe, the cost of not participating in the euro could easily be marginalization and depreciation or higher interest rates to defend the exchange rate. For the United Kingdom, exchanging the pound for the euro could strengthen London as a major international finance center. In this perspective, the euro could, in the beginning of the next century, be the common currency for a population of almost 400 million people with a gross domestic product above that of the United States.

Unemployment is substantially higher in Euroland, as in Western Europe, than in the United States. As shown in Table 2, in 1997, economic output measured as GDP per capita in Euroland was well below that of the United States, at about 75% of the
Table 2
Performance Criteria: GDP, Employment, and Primary Energy Use, 1997

<table>
<thead>
<tr>
<th></th>
<th>GDP/capita (USD)</th>
<th>GDP/employment (USD)</th>
<th>Energy use/GDP (10^11 btu/USD billion)</th>
<th>Energy use/capita/employment (10^11 btu/million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euroland</td>
<td>21,736</td>
<td>51,409</td>
<td>7,399</td>
<td>161</td>
</tr>
<tr>
<td>W. Europe</td>
<td>22,165</td>
<td>50,576</td>
<td>7,526</td>
<td>167</td>
</tr>
<tr>
<td>U.S.</td>
<td>29,180</td>
<td>58,404</td>
<td>11,938</td>
<td>348</td>
</tr>
</tbody>
</table>

Source: OECD and BP.

U.S. level, but GDP per person employed was relatively higher, with Euroland reaching 87% of the U.S. level. This indicates less low-productivity and low-paying jobs in Euroland than in the United States. Euroland’s use of primary energy per capita in 1997 was less than half the U.S. level, with a primary energy use per person employed at about 60% of the U.S. level. Hence, in relation to economic output, measured as nominal GDP, Euroland had a markedly more efficient use of energy. These data indicate that the Euroland economy is approaching that of the United States in size, but that on some measures it is more efficient, especially in the use of energy.

A major weakness of the euro is that it is a currency not of a federated country, but of a group of totally sovereign countries with different economic situations and differing political priorities. They are also in different phases of the business cycle, with divergent needs concerning monetary and fiscal policies, although business cycles will tend to converge with integration. Under the preceding government, Germany was pressing for the other Euroland countries to embrace monetarism and force through a budgetary harmonization of low deficits (Fernández Jilberto & Mommen, 1998). Since the 1998 elections, the new German government seems to have a more Keynesian approach, giving a higher priority to reducing unemployment. This may also prove an easier platform for a consensus on economic policy within Euroland.

The euro does not represent Europe’s first attempt at a currency union. The historical record of Europe shows that currency unions have not lasted. The most successful example is perhaps the Scandinavian currency union that functioned fairly smoothly from the 1870s until the World War I. It comprised only three neighboring, politically similar countries, which harmonized their monetary policies. Other attempts, such as the Latin currency union, were less successful. By contrast, the German currency union was successful as a precursor of political unity in the nineteenth century.

Euroland is larger and much more diverse than any currency union so far attempted in Europe. It lacks a central government with fiscal powers. Hence, Euroland will suffer from a separation of monetary policy from the other instruments of economic policy, which essentially remain at the disposal of the member states. There is an evident risk that Euroland economic and monetary policies will be paralyzed by conflicts between central bankers with a preference for price stability and politicians with a preference for growth and employment (Wolf, 1999, February 10). There is a problem not only of communication and coordination between the monetary author-
European economic integration is still at an early stage, and the differences between the various parts of Euroland are likely to increase with more trade and specialization. These differences are serious, but not necessarily fatal.

Attaining the financial objectives of the Maastricht Treaty has had a high social cost in terms of declining labor market participation and persistently high unemployment (Strøm, 1998). Euroland has much more rigid labor markets than the United States. Cultural differences and union strength indicate that Euroland has few chances of reaching U.S. labor market practices. Most Europeans would not even find that desirable. Requirements of a strict financial discipline remain in force after the launching of the euro in 1999. Moreover, the member countries have a limited freedom of action in economic policy, so far without a strong federal government that can make up for these deficiencies, coordinate policies on behalf of Euroland, or even out differences. This is a major contrast between Euroland and the United States, and therefore between the political bases of the euro and the dollar. In the worst case, this is a recipe for strife, political instability, and economic failure. In the best case, these constraints will put pressure on member countries to successfully harmonize economic policies, including fiscal policies, until at some future point Europe reaches the stage of a political confederation. In the meantime, there is rising concern that monetary policy is too rigid, but there is less political willingness to undertake radical structural reform. Euroland runs a risk of combining monetary rigidity with insufficient reform, which could cause a strong euro and low economic growth, as in Germany in the early 1990s.

Skeptics and critics tend to overlook the political commitment behind the euro. The euro and Euroland are phases in a political process rather than an economic experiment. Skeptics tend to ignore the political will to make the euro a success, as much as they have ignored the political will to launch the euro. Nevertheless, in the long run monetary and political unions are interdependent. Many European politicians and business leaders see the euro as perhaps the most important step in the direction of a political confederation. If the euro is a success, it will accelerate political unification. If it is a failure, it will also be a severe setback to European integration (Congdon, 1997, p. 95). To be a success, the euro will require a closer consultative cooperation on economic policy or stronger confederal institutions with competence in economic policy (Münchau, 1998, December 15). In the meantime, a crucial point will be the strength of the euro versus the dollar. Also in this case, the laws of supply and demand apply (Auverny-Bennetot, 1998, p. 86). This is as much a matter of business and political confidence as of economic and commercial facts.

The first fact is that at the outset, the euro seems to be fairly valued against the USD in terms of purchasing power parity, based on the German and French currencies (Temperton, 1997). The second fact is that with some exceptions, most of the Euroland currencies are also fairly valued against each other, again based on purchasing power parities. The third fact is that Euroland traditionally has a trade surplus. Euroland sells more goods and services to the rest of the world than it does buy, contrary to the United States. Hence, whereas the U.S. trade deficit translates into a large flow
of dollars to the rest of the world, Euroland is in the opposite position, so that the supply of euro to the outside world will be relatively less than the supply of dollars.

Limited supplies alone do not make a strong currency; it also needs demand. As a newcomer to the international financial markets, the ECB and the euro need to gain confidence. One condition is that Euroland appears as an area of low inflation, balanced public finances, and political stability. The political stability may require a social success in terms of rising employment. Hence, job losses due to cross-border restructuring should be more than offset by new jobs due to market expansion. Another condition is that Euroland combines stable economic growth and liquid capital markets, presenting attractive investment opportunities. Investor interest in Euroland would be a factor fueling international demand for the euro.

The objective of the Economic and Monetary Union (EMU) is a stable currency that is neither overvalued nor undervalued. An overvalued euro would hamper exports and stimulate imports, compromising growth and employment, but causing foreign indebtedness. An undervalued euro would stimulate not only growth and employment, but also inflation. The political imperative to make the euro a success indicates a chance that, at least at the outset, Euroland’s monetary authorities will have a preference for a strong euro. In that case, the euro might see international demand rising more quickly than anticipated. An excessively strong euro could present a risk for Europe’s competitiveness. Hence, it could provoke political measures to limit the eventual rise of the euro against the USD, for example by an exchange rate ceiling (Wolf, 1999, February 3).

The introduction of the euro is likely to be followed up by measures to gain the confidence of financial markets (Portes, 1997, p. 2). The European Central Bank has the independence and the means to counter any lax budgets of participant countries by tight money. Furthermore, structural forces work for a strong euro in relation to the dollar (J. P. Morgan Global FX Research, 1996). The broader the participation, the stronger these structural forces would be. By launching the euro, a large share of the participant countries’ foreign trade is redefined as internal trade within the euro area. Central banks’ needs to keep currency reserves are generally determined by the countries’ imports, although there is no consensus on a “correct” volume of reserves in relation to imports (Temperton, 1997). Regardless, currency reserves required would decline significantly, as imports from outside Euroland will be much less than historical imports of the member countries. The European Central Bank therefore has excessive currency reserves at the outset, most of which are in U.S. dollars. Large currency reserves could strengthen confidence in the euro.

Subsequently, the European Central Bank and the participant national central banks could reduce currency reserves. This would in practice mean selling dollars and transferring the proceeds to the treasuries of the participant countries. The sale of dollars could depress its exchange rate in relation to the euro. Transferring the proceeds would reduce budget deficits of the participant countries and enhance euro confidence.

Furthermore, the establishment of a large euro area and large capital market operating in euro would cause a rising demand for euro among third-party central banks, firms, and individuals. A general diversification, with numerous agents substituting
Table 3

<table>
<thead>
<tr>
<th></th>
<th>Consumption</th>
<th>Production</th>
<th>Balance</th>
<th>Self-sufficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euroland</td>
<td>46,559</td>
<td>18,171</td>
<td>−28,388</td>
<td>39%</td>
</tr>
<tr>
<td>W. Europe</td>
<td>64,018</td>
<td>41,871</td>
<td>−22,147</td>
<td>65%</td>
</tr>
<tr>
<td>U.S.</td>
<td>93,356</td>
<td>72,575</td>
<td>−20,781</td>
<td>78%</td>
</tr>
</tbody>
</table>


part of their dollar holdings by euro, would depress the former and strengthen the latter. In this connection the large international oil companies and the oil exporting countries would have an important role. If they should wish to have a share of their reserves in euro, they would also want euro revenues.

4. Euroland, energy use and oil balance

Euroland is a smaller user and producer of energy than the United States, but an almost equally large importer because it is much less self-sufficient (Table 3). Whereas the United States in 1996 had an energy self-sufficiency of 78%, the corresponding figure for Euroland was only 39%. This indicates that Euroland enjoys much less energy security than the United States, including both a supply risk and a price risk. Including the rest of Western Europe, essentially the North Sea oil and gas producers Norway and the United Kingdom, the Euroland figure for energy self-sufficiency rises to 65%, which is much closer to the U.S. level. Hence, the two major North Sea petroleum producers are of a particular economic and political importance to Euroland. Assuming that in a crisis they would give priority to servicing Euroland, the supply risk diminishes. The price risk nevertheless remains, enhanced by a currency risk, insofar as imported energy, also from the North Sea, is priced in U.S. dollars and not in euro.

Euroland’s oil balance is indeed precarious, as shown in Table 4. Insofar as there is a supply and price risk in the oil market, Euroland is highly exposed. Its oil production just covers 3% of consumption. Even if its oil consumption is markedly lower than that of the United States, which has a smaller population, Euroland is the world’s second largest oil importer, importing in 1997 marginally less oil than the U.S. In this respect, the North Sea oil producers that so far are outside Euroland make a significant

Table 4
Oil Balances Euroland, Western Europe, and the U.S., 1997

<table>
<thead>
<tr>
<th></th>
<th>Consumption</th>
<th>Production</th>
<th>Balance</th>
<th>Self-sufficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euroland</td>
<td>10,280</td>
<td>296</td>
<td>−9,984</td>
<td>3%</td>
</tr>
<tr>
<td>W. Europe</td>
<td>13,636</td>
<td>6,184</td>
<td>−7,452</td>
<td>45%</td>
</tr>
<tr>
<td>U.S.</td>
<td>18,309</td>
<td>8,255</td>
<td>−10,054</td>
<td>45%</td>
</tr>
</tbody>
</table>

Source: BP statistical review 1998 edition. Amounts given in 1,000 bbls/day.
difference. With the North Sea, Western Europe—still defined as Euroland, the European Economic Area and Switzerland—is one of the world’s major oil producers. Even if total oil consumption is higher, oil self-sufficiency rises to 45%, the same level as the United States. Net oil imports are, however, significantly less. In this perspective, insofar as oil keeps a special economic and political significance, Norway and the United Kingdom are, in political terms, exceptionally important trading partners for Euroland. Therefore, if Euroland and the rest of Western Europe can rely on British and especially Norwegian oil, their oil supply security is comparable to that of the United States. As long as North Sea oil is not, however, priced in euro, Euroland is still exposed to a currency risk enhancing the oil price risk.

The North Sea also makes a striking difference for the natural gas balance (Table 5). Euroland is a fairly moderate gas user, but its production is even more modest, with a self-sufficiency of only 50%. This compares to the U.S. gas self-sufficiency of 87%, with a much higher consumption. Western Europe, with the North Sea, is a larger user of natural gas, but its self-sufficiency is 72%, which is closer to the U.S. level. This again highlights the importance of Norway and the United Kingdom for Euroland’s energy supplies. The North Sea countries are, however, of no help for Euroland’s coal balance (Table 6). Whereas the United States is a net coal exporter, Western Europe is a substantial net importer.

In any case, the low self-sufficiency in Euroland means that energy imports, in spite of a more efficient energy use, represent a higher cost in relation to economic output than is the case with the United States. This is shown in Table 7. When including the North Sea producers, for Western Europe the cost of energy imports in relation to GDP almost halves. The same applies to oil imports, which in 1997 represented a considerably lower cost in relation to GDP for the United States than for Euroland, but higher than for Western Europe. Hence, when including the North Sea production,
Table 7
Oil and Energy Imports in Relation to GDP, 1997

<table>
<thead>
<tr>
<th></th>
<th>GDP (billion USD)</th>
<th>Oil imports (billion USD)</th>
<th>Energy imports (billion USD)</th>
<th>Oil imports/GDP</th>
<th>Energy imports/GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euroland</td>
<td>6,292.5</td>
<td>71.1</td>
<td>90.1</td>
<td>1.13%</td>
<td>1.43%</td>
</tr>
<tr>
<td>W. Europe</td>
<td>8,506.8</td>
<td>49.8</td>
<td>65.3</td>
<td>0.59%</td>
<td>0.77%</td>
</tr>
<tr>
<td>U.S.</td>
<td>7,820.3</td>
<td>63.5</td>
<td>70.1</td>
<td>0.81%</td>
<td>0.90%</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on preceding tables.

Western Europe apparently is less exposed to oil supply and price risk than is the United States. This is a major distinction between the initial Euroland and Western Europe as an entity. The North Sea oil and gas producers make the big difference, as indicated by Table 7.

By experience, oil is perhaps the only commodity whose price has a macroeconomic importance. The low price elasticity of demand for many oil products, especially in transportation, means that an oil price hike, as in 1973–74 and 1979–80, in many ways functions as a tax increase on consumers and oil importing countries, raising costs and straining balances of payments. Correspondingly, an oil price decline, as in 1986 and in 1998, functions as a tax rebate, reducing costs and easing the balance of payments for the oil importers. Hence, a country’s degree of oil self-sufficiency can condition the oil risk to its balance of payments and its currency stability. The currencies of oil exporters, such as Norway, can appreciate with rising oil prices and depreciate with sinking oil prices, everything else being equal.

Euroland’s extreme oil import dependency could make the euro position in relation to the USD vulnerable to oil price movements. With rising oil prices, Euroland’s trade balance would deteriorate relatively more than that of the U.S., but with descending oil prices, Euroland’s trade balance would also improve comparatively more. As will be discussed below, the inclusion in Euroland of the North Sea oil producers, or at least their use of the euro for pricing and trading oil, would make a big difference in this respect.

5. The oil market currency risk

The question of pricing oil in euro or dollars could become critical for the two major North Sea producers, Norway and the United Kingdom, as for other oil and gas exporters that conduct most of their trade with Europe. Briefly, the issue is that oil prices, at least in the short run, do not seem to adjust for changing relative exchange rates. Market rigidities, imperfect competition, and low price elasticities for both oil demand and supply, at least in the short run, mean that oil prices do not automatically adjust for currency rate changes. The low short-term price elasticity of demand means that the value of oil traded in relation to other goods and services is more immediately affected than volumes. Hence, in the oil market the price risk is supplemented by a considerable currency risk for all agents who do not make transactions in their own
currency. Today, this is practically the case for agents outside the United States or countries with currencies tied to the USD. For those agents, the oil price risk and the currency risk represent mutually independent risk parameters.

Currency movements will in principle not affect the value of oil in relation to other imported goods, for example bananas or tin. By contrast, currency movements do affect the value of oil against goods and services that are not traded internationally. Even against goods and services that are traded internationally, price adjustment to currency movements is often a slow and imperfect process because of protection and imperfect competition. Hence, the same commodity can have different relative values in different markets, even if the long-term trend is in the direction of equalization. Imported goods decline in relative price when a country’s currency appreciates, and they rise in relative price with a depreciating currency. That, of course, also applies to oil.

The international issue is that oil prices in nominal dollars do not immediately adjust to currency movements. If the oil market had been characterized by perfect competition, movements in the dollar exchange rate against major currencies would have had a counterpart in changes in the nominal dollar price of oil, to retain the market equilibrium and guard the stability of the supply and demand balance. Such a perfect competition and instantaneous adjustment would have an expression in a close negative relationship between the nominal dollar oil price and the dollar exchange rate of the currencies of important oil exporting and importing countries. In principle, a high dollar exchange rate would accompany a low dollar oil price and vice versa. In this case, currency movements and oil price changes would tend to even out. Hence, the choice of currency for pricing oil would be without importance for its value in the various markets.

Correspondingly, a strong positive relationship between the dollar oil price and the dollar exchange rate of the currencies of important oil exporting and oil importing countries would be the expression of imperfect competition and slow adjustment in the oil market. It could also be a sign that oil prices drive exchange rates, not the contrary. In this case, currency movements and oil price changes would tend to amplify each other. Hence, the choice of currency for pricing oil could be important for its value in the different markets.

The absence of any strong relationship would indicate that oil prices and exchange rates are driven by different forces, which at times may coincide and at other times work in different directions. This would be a sign that currency markets often act in a fairly arbitrary way, with a consequent risk that sometimes oil price movements and exchange rates move in the same direction, but not always.

Experience since the first oil price rise in 1973 indicates that adjustment between oil prices and exchange rates is imperfect and slow, but with major differences between periods and countries. Hence, the oil price and the dollar exchange rate represent overall mutually independent risk parameters for agents outside the U.S., but with varying intensity and direction. The historical pattern, seen from Western Europe, is that in some cases movements of the dollar exchange rate enhance oil price movements, but that in other cases, the dollar exchange rate tends to mitigate oil price changes.
Table 8


<table>
<thead>
<tr>
<th>Annual average</th>
<th>Brent Blend Spot</th>
<th>BRENT Blend DEM/USD</th>
<th>BRENT Blend NOK/USD</th>
<th>BRENT Blend DEM</th>
<th>BRENT Blend NOK</th>
<th>BRENT Blend DEM/NOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>14.36</td>
<td>2.17</td>
<td>7.40</td>
<td>31.32</td>
<td>106.28</td>
<td>342.55</td>
</tr>
<tr>
<td>1987</td>
<td>18.35</td>
<td>1.80</td>
<td>6.74</td>
<td>33.01</td>
<td>123.63</td>
<td>374.97</td>
</tr>
<tr>
<td>1988</td>
<td>14.86</td>
<td>1.76</td>
<td>6.53</td>
<td>26.06</td>
<td>96.73</td>
<td>371.35</td>
</tr>
<tr>
<td>1989</td>
<td>18.16</td>
<td>1.88</td>
<td>6.90</td>
<td>34.11</td>
<td>125.33</td>
<td>367.45</td>
</tr>
<tr>
<td>1990</td>
<td>23.87</td>
<td>1.61</td>
<td>6.25</td>
<td>38.03</td>
<td>147.44</td>
<td>387.38</td>
</tr>
<tr>
<td>1991</td>
<td>20.07</td>
<td>1.66</td>
<td>6.49</td>
<td>33.25</td>
<td>130.01</td>
<td>391.02</td>
</tr>
<tr>
<td>1992</td>
<td>19.29</td>
<td>1.56</td>
<td>6.21</td>
<td>30.02</td>
<td>119.46</td>
<td>398.08</td>
</tr>
<tr>
<td>1993</td>
<td>16.95</td>
<td>1.66</td>
<td>7.11</td>
<td>28.01</td>
<td>120.15</td>
<td>429.25</td>
</tr>
<tr>
<td>1994</td>
<td>15.83</td>
<td>1.63</td>
<td>7.07</td>
<td>25.64</td>
<td>111.57</td>
<td>435.09</td>
</tr>
<tr>
<td>1995</td>
<td>16.88</td>
<td>1.44</td>
<td>6.38</td>
<td>24.36</td>
<td>107.60</td>
<td>441.74</td>
</tr>
<tr>
<td>1996</td>
<td>20.63</td>
<td>1.50</td>
<td>6.45</td>
<td>31.06</td>
<td>133.13</td>
<td>429.27</td>
</tr>
<tr>
<td>1997</td>
<td>19.16</td>
<td>1.73</td>
<td>7.08</td>
<td>33.16</td>
<td>135.22</td>
<td>408.04</td>
</tr>
<tr>
<td>1998</td>
<td>12.93</td>
<td>1.76</td>
<td>7.54</td>
<td>22.83</td>
<td>97.44</td>
<td>428.01</td>
</tr>
</tbody>
</table>

Source: Bank of Norway.

The lack of a clear pattern shows that oil prices and currency exchange rates have overall different driving forces. Sometimes they coincide; sometimes they diverge.

For example, after the first oil price jump, in 1974–75 as in 1977–78, the decline in the USD exchange rate in relation to European currencies was not compensated for by a higher dollar oil price. Hence, nominal oil prices fell in Western Europe, so that the purchasing power of a barrel of oil sold in the European market declined. The oil price rise in 1979–80 hit both the United States and Western Europe, but the rising dollar exchange rate in relation to most European currencies during the years 1980–81 and 1982–85 caused an additional oil price upsurge for most of Europe. It was only partially and belatedly followed by a dollar oil price decline. Hence, the purchasing power of a barrel of oil rose relatively more in Europe than in the United States. In 1986, the Europeans, by contrast, experienced both a dollar oil price and a dollar exchange rate decline, causing a larger nominal oil price drop in European currencies than in the USD. By 1998, currency appreciation had contributed to oil having relatively less value in the German market than in the United States or in Norway, compared to the 1986 reference (Table 8).

Norway is relevant as a major oil exporter. Measured by annual averages, there is a fairly close correlation between oil prices in U.S. dollars and Norwegian krone (NOK). That is confirmed by a study of the years 1986–94 (Akram & Holter, 1996). Still measured by annual averages, there is a correlation, although less strong, between the USD oil price and the value of the Norwegian currency against the USD. The Norwegian currency tends to appreciate against the dollar with rising oil prices and depreciate when oil prices fall. Hence, in Norway’s perspective, the dollar oil price and the dollar exchange rate tend to even out. When oil prices fall, the dollar rises, and the dollar falls when oil prices rise, seen from Norway.
This trend is clearer for the period since 1986 than earlier, and it may be statistically influenced by the 1990–91 Gulf crisis, when oil prices were high, but the USD was low against European currencies (Akram & Holter, 1996). This may have been due to high German interest rates responding to large budget deficits to finance reunification in those years. The German interest rates affected most of Western Europe. Hence, in a Norwegian perspective, the oil market seems to have become more perfect, with prices and exchange rates adjusting more quickly since 1986. The counterpart is that the value of the Norwegian currency against the USD seems to be largely driven by the oil price. That may be reasonable, given Norway’s large oil exports.

The nominal average Brent Blend spot price in 1998 was 10% lower than in 1986, measured in U.S. dollars. Measured in the Norwegian currency, it was about 8% lower. The average 1998 value of the Norwegian currency against the USD was 2% below the 1986 level. In the meantime, the oil price had fluctuated less when measured in Norwegian krone than in U.S. dollars. The tendency was for nominal NOK oil prices to stay lower than in nominal U.S. dollars compared to the 1986 reference. The exception is 1998, when low oil prices seem to have put an unusually strong downward pressure on the Norwegian currency, causing nominal NOK oil prices to decline somewhat less than otherwise would have been the case.

When focus is on the German mark (DEM), a somewhat different picture emerges. First, on an annual basis since 1986, the correlation between oil prices in U.S. dollars and those in DEM is weaker. There is a correspondence, but it is weaker than between nominal oil prices in U.S. dollars and Norwegian krone. Secondly, on the same basis, the correlation between the nominal dollar oil price and the value of the German mark against the dollar is weaker than for the Norwegian krone. Over the period of 1986–98, the German currency tended to appreciate less than the NOK against the dollar with rising oil prices, and correspondingly depreciate less when oil prices fell. Thus, from a German perspective, the dollar oil price and the dollar exchange rate tend to even out considerably less. Seen from Germany, there is less of a pattern for the dollar to fall when oil prices rise, and for the dollar to rise when oil prices fall.

From a German perspective, the oil market seems to be less perfect, with prices and exchange rates not adjusting as readily. The value of the German currency against the USD does not seem to be strongly driven by the oil price, which is normal, given the relatively minor importance of oil imports in German foreign trade. Over the period considered, there has been 1998 was almost 30% lower than in 1986, measured in DEM. The average 1998 value of the German currency against the USD was almost 25% above the 1986 level. In the meantime, the oil price had fluctuated less when measured in DEM than in U.S. dollars. The appreciation of the German currency against the USD caused nominal DEM oil prices to stay considerably lower than in nominal U.S. dollars compared to the 1986 reference.

A final observation is that the largely oil price–driven Norwegian currency has depreciated by about 20% against the DEM over the period of 1986–98 (Table 8). Hence, both oil exporters and importers in Europe seem to be exposed to a considerable oil price risk to their currencies. For the European oil exporters, the risk is that a falling USD exchange rate will mitigate a nominal oil price rise, as in the late 1980s,
Table 9

<table>
<thead>
<tr>
<th></th>
<th>Brent Blend DEM/USD</th>
<th>Brent Blend NOK/USD</th>
<th>Brent Blend DEM/NOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day-to-day</td>
<td>-0.353</td>
<td>-0.565</td>
<td>-0.032</td>
</tr>
<tr>
<td>One trading day lag</td>
<td>-0.354</td>
<td>-0.565</td>
<td>-0.032</td>
</tr>
<tr>
<td>Five trading days lag</td>
<td>-0.356</td>
<td>-0.565</td>
<td>-0.027</td>
</tr>
<tr>
<td>Ten trading days lag</td>
<td>-0.357</td>
<td>-0.565</td>
<td>-0.028</td>
</tr>
<tr>
<td>Fifteen trading days</td>
<td>-0.359</td>
<td>-0.565</td>
<td>-0.031</td>
</tr>
<tr>
<td>Twenty trading days lag</td>
<td>-0.358</td>
<td>-0.562</td>
<td>-0.033</td>
</tr>
<tr>
<td>Thirty trading days lag</td>
<td>-0.355</td>
<td>-0.553</td>
<td>-0.038</td>
</tr>
<tr>
<td>Annual averages</td>
<td>-0.439</td>
<td>-0.693</td>
<td>-0.014</td>
</tr>
</tbody>
</table>

or enhance an oil price decline, as in 1986 and 1998. For the European oil importers, the risk is that a rising USD exchange rate will inflate a nominal oil price rise, as in the early 1980s, or mitigate an oil price decline, as in 1992 and 1997.

Measured by the daily movements of the Brent Blend oil price and the USD exchange rate over the entire period between January 1, 1986, and December 10, 1998 (Table 9), there is a modest negative covariance for the Norwegian krone. Oil prices may have an influence, but with a simple correlation coefficient of -0.565 on a daily basis can only statistically explain about one third of the krone movements against the dollar. The trend is for the USD to appreciate in relation to the NOK with sinking oil prices and to depreciate with rising oil prices, but the covariance is weak. For the USD in relation to the German mark, there is a similar but even weaker trend, so that the oil price cannot explain much of the exchange rate movements between the USD and the DEM with a simple correlation coefficient of -0.353 on a daily basis. When measured on a daily basis over the whole period, there is no indication of a relationship between oil prices and the German mark exchange rate in relation to the Norwegian krone. Correlation coefficients on a daily basis indicate a slight lag in the adjustment of exchange rates to oil price movements, with correlation coefficients for a 15- to 20-trading day lag being the strongest.

When measured on the basis of annual averages, as presented in Table 9, the relationship between oil price movements and currency exchange rate variations appears less weak. The negative correlation between the oil price and the USD exchange rate in DEM is less weak on an annual basis than on a daily basis, although it is not pungent. There is a more convincing negative correlation between the Brent Blend price in U.S. dollars and the U.S. dollar exchange rate in NOK on annual averages. In this case, oil price movements may explain statistically more than a quarter of the exchange rate movements.

Within this overall pattern of daily movements, there are salient differences between years, as shown in Table 10. When measured on a daily basis, the relationship between the oil price and the USD exchange rate in relation to the DEM is shifting. In two years, 1990 and 1994, there is a fairly strong negative correlation. In 1990, nominal
Table 10
Simple Correlation Coefficients between Brent Blend and Exchange Rates (Annual-Daily Basis)
1986–1998

<table>
<thead>
<tr>
<th></th>
<th>Brent Blend-DEM/USD</th>
<th>Brent Blend-NOK/USD</th>
<th>Brent Blend-DEM/NOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>0.387</td>
<td>0.134</td>
<td>-0.280</td>
</tr>
<tr>
<td>1987</td>
<td>0.491</td>
<td>0.128</td>
<td>-0.677</td>
</tr>
<tr>
<td>1988</td>
<td>-0.559</td>
<td>-0.652</td>
<td>-0.076</td>
</tr>
<tr>
<td>1989</td>
<td>-0.320</td>
<td>-0.182</td>
<td>0.391</td>
</tr>
<tr>
<td>1990</td>
<td>-0.834</td>
<td>-0.839</td>
<td>0.507</td>
</tr>
<tr>
<td>1991</td>
<td>-0.251</td>
<td>-0.250</td>
<td>0.118</td>
</tr>
<tr>
<td>1992</td>
<td>-0.567</td>
<td>-0.600</td>
<td>-0.113</td>
</tr>
<tr>
<td>1993</td>
<td>-0.599</td>
<td>-0.755</td>
<td>-0.687</td>
</tr>
<tr>
<td>1994</td>
<td>-0.731</td>
<td>-0.738</td>
<td>0.538</td>
</tr>
<tr>
<td>1995</td>
<td>-0.182</td>
<td>-0.068</td>
<td>0.687</td>
</tr>
<tr>
<td>1996</td>
<td>0.487</td>
<td>-0.091</td>
<td>-0.717</td>
</tr>
<tr>
<td>1997</td>
<td>-0.651</td>
<td>-0.692</td>
<td>-0.480</td>
</tr>
<tr>
<td>1998</td>
<td>0.352</td>
<td>-0.222</td>
<td>-0.496</td>
</tr>
</tbody>
</table>

dollar oil prices rose, but the USD depreciated in relation to the DEM. In 1997, the USD appreciated in relation to the DEM, but dollar oil prices declined. For most years there is no significant statistical relationship. For several years—1988, 1990, 1992, 1993, 1994, and 1997—there is fairly significant negative correlation between the oil price and the USD exchange rate in relation to the NOK. For example, in 1990 a simple correlation coefficient of 0.839 means that the oil price can apparently explain almost two thirds of the rise of the NOK against the dollar. This may be

Table 11

<table>
<thead>
<tr>
<th></th>
<th>Brent Blend-DEM/USD</th>
<th>Brent Blend-NOK/USD</th>
<th>Brent Blend-DEM/NOK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>25.70</td>
<td>17.82</td>
<td>2.44</td>
</tr>
<tr>
<td>1987</td>
<td>18.15</td>
<td>17.20</td>
<td>1.92</td>
</tr>
<tr>
<td>1988</td>
<td>17.75</td>
<td>15.77</td>
<td>1.58</td>
</tr>
<tr>
<td>1989</td>
<td>15.81</td>
<td>20.93</td>
<td>1.77</td>
</tr>
<tr>
<td>1990</td>
<td>20.97</td>
<td>28.40</td>
<td>1.69</td>
</tr>
<tr>
<td>1991</td>
<td>28.30</td>
<td>17.70</td>
<td>1.49</td>
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<tr>
<td>1992</td>
<td>18.10</td>
<td>17.82</td>
<td>1.52</td>
</tr>
<tr>
<td>1993</td>
<td>17.95</td>
<td>13.06</td>
<td>1.64</td>
</tr>
<tr>
<td>1994</td>
<td>13.02</td>
<td>16.18</td>
<td>1.73</td>
</tr>
<tr>
<td>1995</td>
<td>16.15</td>
<td>18.70</td>
<td>1.56</td>
</tr>
<tr>
<td>1996</td>
<td>18.89</td>
<td>23.87</td>
<td>1.44</td>
</tr>
<tr>
<td>1997</td>
<td>24.38</td>
<td>16.09</td>
<td>1.55</td>
</tr>
</tbody>
</table>
misleading, however, as there is an equally strong covariance for the DEM against the dollar over the oil price. The explanation is probably that the DEM appreciated because of high German interest rates and that the NOK was linked because of Norway's exchange policy of the time.

In 1993, 1994, and 1997, simple correlation coefficients between 0.57 and 0.73 mean that the oil price can explain between one third and one half of the movement of the Norwegian currency against the dollar. Norway had then abandoned the fixed link with the German currency. Finally, for several years, there is a fairly significant negative correlation between the oil price and the DEM rate over the NOK. This seems to have been a fairly persistent phenomenon during the years 1996–98, although the relationship is statistically modest. In 1997 and 1998, simple correlation coefficients of about 0.5 means that the oil price can explain about one quarter of the decline of the NOK against the DEM. This trend shows the exposure of the NOK to oil price movements. In 1996, the DEM depreciated against the krone as oil prices rose. Hence, in 1998, low oil prices seem to have weakened the NOK in relation to the USD and the DEM, but only as one of several factors.

To sum up, the decline of the crude oil price in 1986 and 1987 in Europe was enhanced by the dollar depreciation, but in 1988, the oil price decline was partly offset by the dollar appreciation. In 1989, the rising crude oil price was, for Germany, somewhat offset by a slight dollar depreciation, but for Norway it was enhanced by a slight dollar appreciation. In 1990, for both Germany and Norway, the oil price rise was to some extent offset by the dollar depreciation. Subsequently, during the years 1991–1993, the oil price decline was somewhat offset by the dollar appreciating against both German and Norwegian currencies. Later, in 1994 and 1995, oil prices rose, but the dollar depreciated against the DEM and the NOK. By contrast, in 1996, oil prices rose considerably, which was enhanced for both Germany and Norway by the dollar appreciating. In 1997, the oil price decline was, for Germany and Norway, to some extent offset by the further dollar appreciation. Finally, for Germany in 1998, the oil price decline was enhanced by the modest dollar depreciation, but for Norway it was somewhat alleviated by the dollar appreciation.

As shown in Table 11, measuring the variables by calendar year gives no clear image. Dividing the time span between 1986 and 1998 into periods based on the oil price trends, as shown in Table 12, gives an equally confusing picture. The oil price does not seem to influence the USD/DEM exchange rate, and vice versa. The exceptions are some periods with sudden oil price declines or rises, as during the spring of 1986, the summer of 1994, and the fall of 1996. Hence, normally other forces than oil prices drive the relationship between the USD and the DEM. Most of the time, oil prices seem irrelevant in this respect.

As pointed out, the Norwegian currency is in a different league, essentially because oil exports are more important to Norway than oil imports are to Germany, although Norwegian policy has been to stabilize the krone exchange rate to the German currency within a band. The NOK appreciated against the USD with rising oil prices in the fall of 1986, and from the fall of 1993 to the fall of 1994, and again after a brief respite to the fall of 1995. Correspondingly, the NOK depreciated against the USD with
Table 12
Simple Correlation Coefficients between Brent Blend Prices and Exchange Rates (Daily Basis for Oil Price Trend Periods 1986–1998)

<table>
<thead>
<tr>
<th>Period</th>
<th>Oil price trend</th>
<th>Brent Blend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>USD/DEM / USD/NOK / DEM/NOK</td>
</tr>
<tr>
<td>Jan. 1–July 14, 1986</td>
<td>Falling</td>
<td>0.792 / 0.168 / −0.620</td>
</tr>
<tr>
<td>July 14, 1986–Jan. 15, 1987</td>
<td>Rising</td>
<td>−0.859 / −0.134 / 0.808</td>
</tr>
<tr>
<td>Jan. 15, 1987–Oct. 5, 1988</td>
<td>Falling</td>
<td>0.095 / 0.136 / 0.039</td>
</tr>
<tr>
<td>Oct. 5, 1988–Jan. 4, 1990</td>
<td>Rising</td>
<td>0.259 / 0.330 / −0.033</td>
</tr>
<tr>
<td>Jan. 4–June 6, 1990</td>
<td>Falling</td>
<td>0.207 / 0.129 / −0.276</td>
</tr>
<tr>
<td>June 6–Oct. 12, 1990</td>
<td>Rising</td>
<td>−0.911 / −0.908 / 0.824</td>
</tr>
<tr>
<td>Oct. 12, 1990–June 26, 1991</td>
<td>Falling</td>
<td>−0.592 / −0.603 / 0.008</td>
</tr>
<tr>
<td>June 26–Oct. 18, 1991</td>
<td>Rising</td>
<td>−0.663 / −0.667 / 0.539</td>
</tr>
<tr>
<td>Oct. 18, 1991–Sep. 10, 1993</td>
<td>Falling</td>
<td>−0.467 / −0.633 / −0.588</td>
</tr>
<tr>
<td>Sep. 10, 1993–Aug. 1, 1994</td>
<td>Rising</td>
<td>−0.833 / −0.844 / 0.581</td>
</tr>
<tr>
<td>Aug. 1–23, 1994</td>
<td>Falling</td>
<td>0.860 / 0.783 / −0.876</td>
</tr>
<tr>
<td>Aug. 23, 1994–Apr. 24, 1995</td>
<td>Rising</td>
<td>−0.680 / −0.693 / 0.547</td>
</tr>
<tr>
<td>Apr. 24–July 24, 1995</td>
<td>Falling</td>
<td>0.160 / 0.412 / 0.604</td>
</tr>
<tr>
<td>July 24, 1995–Oct. 22, 1996</td>
<td>Rising</td>
<td>0.655 / 0.531 / −0.751</td>
</tr>
<tr>
<td>Oct. 22, 1996–June 12, 1997</td>
<td>Falling</td>
<td>−0.868 / −0.878 / 0.257</td>
</tr>
<tr>
<td>June 12–Oct. 6, 1997</td>
<td>Rising</td>
<td>0.354 / 0.037 / −0.646</td>
</tr>
<tr>
<td>Oct. 6, 1997–Dec. 10, 1998</td>
<td>Falling</td>
<td>0.096 / −0.789 / −0.691</td>
</tr>
</tbody>
</table>

sinking oil prices from the winter of 1991 through the summer of 1993, as was the case from the fall of 1996 to the summer of 1997. It was marked from the fall of 1997 through 1998, as is witnessed by a correlation coefficient of −0.789. For these periods, statistical evidence suggests that the oil price can explain half to two thirds of the movement of the NOK against the dollar. For other periods, evidence is less clear or lacking.

Likewise, the position of the NOK against the DEM has weakened in some periods with declining oil prices. Salient examples are the spring of 1986, the period from the winter of 1991 through the summer of 1993, the summer of 1994, from the fall of 1996 to the summer of 1997, and again from the fall of 1997 through 1998. At other times, the NOK has depreciated against the DEM even with rising oil prices, as during the fall of 1986 and the fall of 1990. The notable exceptions are the period from the summer of 1995 to the fall of 1996, and the fall of 1997, when the NOK appreciated against the DEM in a context of rising oil prices. Hence, the depreciation of the NOK against the DEM appears as a secular process, indicating that the oil price is only one of several driving forces for the Norwegian currency. Nevertheless, data indicate that since the summer of 1995, except for the period from October 1996 to June 1997, the position of the NOK against the DEM may have become more sensitive to oil price movements than was previously the case. The simple correlation coefficient of −0.691 means that the oil prices can explain almost half of the depreciation of the NOK against the DEM. This corroborates data presented earlier of the increased sensitivity of the Norwegian currency to oil prices in 1997 and 1998.
The historical lack of a clear statistical relationship means that from a German point of view, for example, an oil price decline may or may not accompany a dollar appreciation. Likewise, an oil price increase may or may not accompany a dollar depreciation. Most likely, this is typical for most of Europe’s oil importers. Hence, it is also representative for Euroland. If the dollar should appreciate against the euro, chances are that the relative value of oil in the Euroland market would increase, with deteriorating terms of trade for the world’s second largest oil importer. Insofar as the euro appreciates in relation to the dollar but oil is still being priced in dollars, the outcome would reasonably be a decline in the relative value of crude oil in Europe, with improving terms of trade. Because European gas prices are largely determined by oil prices, the outcome would also influence the value of natural gas at the import point. For European oil buyers there is a risk that an oil price increase and a dollar appreciation coincide, which was the case as recently as in 1996. In 1998, Germany experienced a strong oil price decline and modest dollar depreciation, another indication that the two at times move in the same direction.

6. Euroland’s oil market interests

Euroland’s interests in the oil market are determined by its position as a large oil importer and by the political ambitions to make the euro an international reserve currency. The immediate oil market interests are price moderation and predictability, together with a physical security of supply. Price moderation may be difficult to obtain, but eliminating the currency risk caused by crude oil being traded in dollars may enhance predictability. Euroland’s oil and gas interests also comprise overall economic and political links with the major exporters.

Pricing and invoicing in dollars mean that the price risk in the oil market in reality is less for U.S. buyers than for those in Europe. Hence, U.S. oil importers save currency-hedging costs that burden their European counterparts. A fairly recent example is that U.S. oil buyers could avoid the further oil price rise during the years 1981–85, over the one of 1979–80, which hit Europe because of the dollar appreciation. U.S. oil buyers could, on the contrary, benefit from lower oil prices already by 1983. Because oil is the price leader in the energy markets, U.S. businesses could benefit from relatively lower energy costs several years before their European competitors. This might have been one of several factors that caused an economic upturn in the United States some years ahead of Europe. Close political ties with the Gulf oil exporters induce them to place their financial surpluses in the United States rather than Europe. Moreover, the United States commands the internationally most accepted medium of exchange and store of value. Again, at an eventual new oil price increase, the United States would be in a more favorable position by transferring the deficits abroad, by running a large trade and payments deficit because of the dollar’s position as the world currency. This is a practical advantage of seigniorage.

Hence, the choice of currency for pricing and trading oil is not only a technical issue of economic adjustment, but also an issue of distributing power and risk. This is a pertinent issue at the launching of the euro. Euroland’s interest and ambitions
are to enjoy the same privileges as the United States in relation to oil—that is to pay for oil in its own currency. This has important consequences for Euroland’s relations with the oil exporters, starting with those of the North Sea.

European oil importers and consumers would have an interest in oil being traded in euro and no longer in dollars in order to eliminate the currency risk. From its launching, the euro is the trading currency of the spot product markets in Rotterdam, Marseilles, and Genoa. The Rotterdam market determines oil product prices in northwest Europe. The markets in Marseilles and Genoa determine oil product prices in the Mediterranean. So far, these markets have been fragmented, dealing in limited quantities for various countries.

Even if European oil product prices are quoted in different currencies, they have so far been largely driven by crude prices in the North Sea Brent market (Horsnell & Mabro, 1993, p. 241). The introduction of the euro creates much larger and more uniform European oil products markets, especially with the harmonization of the technical specifications. For the oil industry, the gain is lower transaction costs, economies of scale, more opportunities for specialization and higher earnings (“Euro Risk,” 1997). A significantly larger and more integrated European products market will have a greater impact on the price formation in the Brent crude oil market, which currently operates in dollars, because most of the oil traded there is sold to northwest European refiners. The counterpart would be a higher currency risk for the European sellers of crude oil in the Brent market. Hence, converting the Rotterdam spot market to the euro raises the issue of the currency choice for trading European crude oil.

Converting the Rotterdam and other product markets to the euro does not suffice, however, to change the pricing currency of crude. Euroland, as it exists initially, has a minimal crude output and no weight in the supply balance. It does not have the necessary market power to change the currency for crude pricing, even in Europe. Such a fundamental change would require the cooperation of the European crude oil producers. They would have the market power, but their interests are less clear in eventually substituting the euro for the dollar.

At this point politics enter the picture. The credibility of the euro as a currency competing with the dollar could be at stake. The ambition to make the euro an international medium of exchange and store of value would appear to be unrealistic if Euroland should continue indefinitely to pay for its oil imports in U.S. dollars, especially its purchases of North Sea oil. Hence, Euroland has an interest in converting at least part of the international oil trading from dollars to euro, not only to eliminate the currency risk, but perhaps as much to enhance the international position of the new currency. In this perspective, Norway and the United Kingdom are particularly important to Euroland, not only as crude oil suppliers, but also as potential obstacles or eventual supporters of the euro being accepted as an international reserve currency.

If the North Sea oil producers would not price and trade their oil in euro, it would be a sign of low confidence. It would indicate that the oil exporters with the closest ties to Euroland would not accept the euro as a medium of exchange for their oil and eventually as a preferred store of value as a substitute for the dollar or for keeping oil in the ground. In that case, Euroland’s overwhelming dependence on imported
oil could translate into an oil price risk for the euro stability. Rising oil prices would hit Euroland more adversely than the United States in terms of trade and balance of payments, because oil and energy imports represent a relatively greater burden on Euroland's economy. Hence, the euro could appear as a weaker currency than the USD in relation to the risk of rising oil prices. Hence, other oil exporters would also have little reason to accept the euro in oil pricing and trading. Against this backdrop, it is in the interest of Euroland and the ECB to reduce the euro exposure against the oil price risk, first of all by pricing and trading North Sea oil in euro, and eventually by including the North Sea oil producers in Euroland.

If the North Sea oil producers should agree to price and trade oil in euro, it would appear as a sign of confidence. Using the euro as a medium of exchange for their oil and as a store of value should eventually lead to the price formation of North Sea oil taking place in euro. That could also provide incentives for other oil producers to do likewise. Most likely, that would first apply to Russia and the North African oil exporters. In this case, Norway and the United Kingdom would at least for oil trading purposes emerge as parts of Euroland. Hence, Euroland's oil import dependence would decline to a level comparable to the United States. Moreover, rising oil prices would hit Euroland enlarged with the North Sea less adversely than the United States in terms of trade and balance of payments. In relation to the risk of rising oil prices, the euro could thus appear as a stronger currency than the USD, because oil and energy imports represent a smaller burden on the economy of Euroland enlarged with the North Sea than the U.S. economy. In that case, other oil exporters could have good reasons to price and trade oil in euro.

Oil trading and price formation in euro could be seen as an important step toward international acceptance for the new currency. Failure to accomplish such a step would in the long run compromise euro credibility and expose Euroland crude oil buyers to a protracted currency risk and, as a result, a hedging cost and competitive disadvantage in relation to U.S. oil buyers. It would also put Euroland at some disadvantage over the United States in economic and political relations with oil and gas exporters. If those countries that sell oil to Euroland should not accept the euro as a medium of exchange and store of value, at least on an equal footing with the USD, the international credibility of the euro would be seriously compromised. Consequently, Euroland would appear as a weaker rival to the United States for trade and political influence, especially in the Middle East and North Africa. If, by contrast, the euro is accepted as a medium of exchange and a store of value by those countries that sell oil to Euroland, its commercial and political position would strengthen in relation to the United States, and probably also in the Middle East and North Africa. North Africa and the Middle East are often seen as the “near abroad” of the EU, which is Europe’s legitimate sphere of interest (Piening, 1997). Hence, there is an evident potential for rivalry with U.S. interest in the Middle East, not the least over oil. Pricing oil in euro could promote European interests.

The issue again boils down to euro strength in relation to the USD. A weak euro would be of little interest for oil exporters, also those in the North Sea. In that case, Euroland oil product prices would most likely continue to be driven by crude oil
prices in U.S. dollars, making the euro marginal in the oil market. A strong euro would, by contrast, give incentives to the International Petroleum Exchange in London to trade North Sea oil in euro rather than dollars. In this case, the euro would suddenly have a central position in the world oil market. The outcome is to some extent up to Norway and the United Kingdom to decide. For Euroland’s monetary authorities, strength is a way to give the euro international credibility. Pricing North Sea oil in euro would be a breakthrough.

The question of pricing oil in euro or dollars could become critical for the two major North Sea producers, Norway and the United Kingdom. As will be discussed at greater length below, any change in the pricing currency of North Sea oil could have worldwide repercussions. The risk is that competition between the euro and the dollar imposes new elements of price instability and financial uncertainty on the oil industry. This means an incremental income risk for the oil exporters.

7. The oil exporters’ dilemma

Today, international crude oil transactions are made in U.S. dollars. For oil traded across borders, the dollar is the only accepted unit of account, standard of contracts, and medium of exchange. Moreover, it is the preferred store of value for countries that export oil. Oil prices are formed in spot, term, and future transactions with several geographical locations as references, but they are all in dollars. Spot oil bargains in Singapore, future deals in London, and term arrangements in New York have one common denominator, the USD.

Since oil price movements and exchange rates do not always offset each other, the oil exporting countries also experience a currency risk, enhancing the oil price risk to their terms of trade. The exact risk depends on the structure of the foreign trade, essentially the origin of their imports. The dollar depreciation against European currencies in 1972 gave OPEC reasons to renegotiate oil prices upward, because most member countries had most of their trade with Europe. Today, Western Hemisphere oil exporters, such as Argentina, Canada, Colombia, Mexico, and Venezuela, are minimally exposed to a currency risk in relation to oil because most of their foreign trade is with the United States. Other oil exporters are more exposed to a currency risk enhancing the oil price risk because their foreign trade is geographically more diversified. The North Sea oil exporters are highly exposed to a currency risk that enhances the oil price risk, because for both Norway and the United Kingdom, Euroland is the major trade partner. Hence, for both Norway and the United Kingdom, oil prices and exchange rates to a considerable degree influence the terms of trade. This risk is particularly high for Norway, as is highlighted by the weakness of the Norwegian currency during 1998. Against this backdrop, oil exporters that do most of their trade with Europe could have an interest in pricing oil in euro, insofar as it strengthens against the dollar. This is especially the case for Norway and the United Kingdom.

In this game, the North Sea and Middle Eastern oil exporters will have a decisive influence. They would have to ponder practical business considerations against political
interests. It would be up to the key oil exporters to eventually change the pricing currency for crude oil. They have different interests on the issue of pricing crude in euro or in dollars. Those oil exporters that do most of their trade with Asia or North America would have little interest in pricing oil in euro, unless such a move would give them a price increase. This applies to Argentina, Colombia, Mexico, and Venezuela, besides Indonesia and Malaysia. Oil exporters with large assets in dollars or in the United States would have an interest in keeping the dollar as the currency for oil trading. This essentially applies to the wealthier Gulf exporters, such as Kuwait, Saudi Arabia, and the United Arab Emirates.

By contrast, as suggested above, those oil exporters that do most of their trade with Europe could have an interest in pricing oil in euro. This applies to Algeria, Iran, Iraq, Libya, and Russia, besides Norway and the United Kingdom. For these countries, eventually pricing oil in a strong euro would be a way to defend their purchasing power, but also to prevent new energy taxes in Europe resulting from declining oil and gas prices. In the case of a strong euro, the issue of pricing oil in a basket of currencies or indexing oil prices could once more emerge on OPEC's agenda. Most reasonably, the United States would use its political leverage with the Gulf oil exporters to maintain the dollar as the oil currency. OPEC member countries with a strained political relationship with the United States would, however, have reasons for pricing oil in euro. This applies to Iran, Iraq, and Libya. Insofar as Iraq would be back in the market at full historical capacity, 3.5 million bbls/day, those three countries would have oil exports almost as large as those of Kuwait, Saudi Arabia, and the United Arab Emirates together. Such a situation could eventually strengthen the position of Iran.

The European oil exporters, Denmark, Norway, Russia, and the United Kingdom, would have an interest in stabilizing their oil revenues and hence the oil price in relation to their key European trade partners. Moreover, a strong euro would compromise the economics of the North Sea petroleum industry as long as oil prices and revenues are in dollars, because costs are largely set on a European basis. Gas exports would eventually make oil pricing in a strong euro imperative for Algeria, Norway, and Russia because European gas prices, as mentioned, are largely determined by oil prices.

For Norway and the United Kingdom, choosing to price oil in euro could represent an important step toward joining Euroland. The potential advantages would have to be weighed against the inconveniences. Outside Euroland, the Norwegian krone risks appearing as an easy target of speculation and arbitrary moves, floating between the euro, oil prices, and the dollar (Norman, 1998). The cost could be high interest rates and economic contraction, and eventually higher unemployment. The United Kingdom and the pound sterling could risk a similar fate, although to a lesser extent. Both Norway and the United Kingdom nevertheless have economic interests and preoccupations that diverge fairly strongly from those of continental Western Europe, which is roughly the present Euroland. Whereas low oil prices are harmful to the United Kingdom and especially to Norway, they are beneficial to continental Europe and to Euroland in its present form. Moreover, both countries tend to be in phases of the business
cycle that are somewhat different from continental Europe. Therefore, for the United Kingdom and especially for Norway, converting to oil pricing and trading in euro must have tangible benefits in terms of more stable and higher oil revenues as well as in currency stabilization and lower interest rates. The prerequisite is a strong euro.

On the European stage, Norway and the United Kingdom together have the market power to change crude oil pricing. This has a wider significance, because the North Sea has a central position in international oil trading and oil price formation. Most crude oil transactions outside North America and cargoes destined for North American ports seem to be directly or indirectly conditioned by the North Sea Brent crude oil market (Horsnell & Mabro, 1993, p. 282). Norway and the United Kingdom thus together have a considerable leverage in international oil trading. Norway has become the world’s second net oil exporter after Saudi Arabia. Statoil, Norway’s national oil company, has become the world’s largest seller of light crude.

For the large European oil producers, essentially Norway and the United Kingdom, a weak euro in an early phase would represent a risk that their currencies would appreciate, with a consequent loss of industrial competitiveness in relation to Euroland. If the euro strengthens and oil prices stay low, Norway in particular would experience deteriorating terms of trade and most likely a further currency depreciation in spite of high interest rates. In case of a high oil price and a weak euro, Norway could face problems identical to those of Switzerland, with an appreciating currency because of flight capital from Euroland (Hellström, 1997). For Norway, a radical solution could be to substitute the euro for the krone as the legal tender in Norway, although the country is not a member of the European Union. If the euro were in use in Denmark, Finland, Sweden, and the United Kingdom, such a move could be quite rational for Norway. Paradoxically, a weak euro could give Norway and the United Kingdom reasons to sell oil in dollars but to use the euro at home. A strong euro could give Norway and the United Kingdom reasons to use the euro both for oil sales and at home.

The stakes are also political. The key for eventually converting the oil trade to euro is in the North Sea and the Middle East. To maintain oil pricing and trading in dollars, the United States would need the active assistance of the Gulf oil exporters. This would strengthen their bargaining position in relation to the United States, insofar as the U.S. political system would be able to act rationally in relation to Arab interests. Most likely, Norway and the United Kingdom would also be subject to heavy U.S. pressure to keep pricing oil in dollars. Norway and the United Kingdom thus risk facing a delicate political dilemma. Their choice of currency for pricing oil could be an important element in the competition between the euro and the dollar. Choosing the dollar could be seen as a conscious preference for U.S. over European interests, especially if it should entail costs and risks. Choosing the euro could be seen as an unfriendly act towards the United States and a conscious priority of relations with the European continent. For both countries, such a step would imply a break with a long tradition in foreign policy. For Norway, pricing oil in euro might eventually also be considered a bargaining asset toward European Central Bank participation in stabilizing the Norwegian currency.

In a currency competition over the oil market, Europe has an important asset in the Brent market. This is the market for spot, term, and futures oil transactions quoted
at the International Petroleum Exchange in London. It operates in dollars, like the New York and Dubai oil markets. The Brent market first of all determines North Sea oil prices, but it is also important for the North Atlantic oil price formation (Horsnell & Mabro, 1993, p. 246). It has, for example, a considerable impact on the prices of African crudes going to American ports (Horsnell & Mabro, 1993, p. 259).

The Brent market today is one of three key reference points in international oil trade, the other two being New York and Dubai. The salience of the Brent market is partly due to its intermediary position in Europe, between the Middle East and North America and partly due to the rising volumes of North Sea oil in the market. Even more so it is because of the large number of mutually independent agents and transactions and hence its transparency. Today most transactions in crude oil outside North America seem to refer to Brent prices (Horsnell & Mabro, 1993, p. 282). For example, the Dubai oil market largely operates with a reference to the Brent market and oil demand in Europe (Horsnell & Mabro, 1993, p. 270). The Dubai market is significant because it determines to a large degree crude oil prices in East Asia, including prices of Indonesian and Malaysian oil as well as Mexican crudes exported to Asia (Horsnell, 1997, p. 292). The Brent market thus is a price leader for crude oil not only in Europe and Africa, but indirectly also in the Middle East and East Asia (‘Horsnell’s Choice,’ 1997).

Because most North Sea crude is sold to refineries in Northwest Europe, Norway and the United Kingdom could eventually have an evident interest in selling their oil in a strong euro. It would reduce the overall oil price risk by eliminating the currency risk. A ‘Eurobrent’ market would, however, have wide international repercussions.

Introducing the euro in oil pricing and trading would, however, carry heavy risks and inconveniences. A ‘Eurobrent’ market would enhance oil price instability. Today, oil price formation takes place by a complex interaction of spot, term, and futures trading for different qualities of crude with various reference points, but as mentioned, practically all prices are in U.S. dollars. The conversion of one major reference point, Brent, from dollars to euro would further complicate this interaction and enhance the currency risk. Eventually, parallel trading in two mutually independent currencies could make the oil market less transparent, less liquid and less efficient. Parallel transactions in two currencies, the euro and the dollar, could lead to a stronger price risk for all parties involved. The term and futures markets for oil would have to discount the exchange rate between the euro and the dollar. The international oil market is thus sensitive to the potential instability resulting from a new major currency. Competition between the euro and the dollar could lead to additional imperfections and tensions in the oil market.

Hence, the introduction of a new currency for oil trading would increase the price risk for all parties involved. Furthermore, oil prices could become more sensitive to expectations concerning economic and monetary policies in both Europe and the United States. In the United States today, there seems to be a close link between monetary policy decisions and energy prices (Ukpong, 1996). The main reason is that oil demand is closely linked with the level of economic activity and that oil is the price leader in the energy markets.

So far, this connection has appeared less evident in Europe, perhaps largely because
of the fragmentation of energy markets and monetary policies. With the euro and
the consequent centralization of monetary policy, energy prices could be more closely
influenced also in Europe, especially as barriers to competition are lifted in the gas
and power markets. The international oil market would thus have to discount both
European and U.S. monetary policies. Poor prospects for co-ordination could make
this a recipe for instability. An unstable, competitive coexistence between the euro
and the dollar could eventually last for several years in the oil market, but in the
longer run one of the currencies would probably win.

Against this backdrop, the emergence of a “Eurodubai” oil market could be signifi-
cant. In commercial terms, trading in oil in euro in Dubai could be sensible, given
the impact of Brent trading and European demand, especially if the euro appreciates
against the dollar. In political terms, however, it would be quite controversial. As
already pointed out, Iran and Iraq could have reasons for trading oil in euro in Dubai.
For Gulf States and especially Saudi Arabia, whose weight also appears decisive in
the future, could have both economic and political reasons for maintaining the dollar
in Dubai oil trading. Insofar as the Gulf oil producers pursue market share, not
economic rent, they could have an advantage in oil remaining priced in dollars against
an appreciating euro, causing the economics of the North Sea oil industry to deteriorate.
Saudi Arabia be expected to prefer trading oil in euro rather than dollars only if the
political relations between the United States and Saudi Arabia deteriorate markedly,
for example with a more overt conflict between Israel and Arab interests.

The eventual emergence of a “Eurodubai” oil market after a “Eurobrent” market
would in many ways signal the end of the dollar hegemony in international oil trading.
It could also signal the replacement of the dollar by the euro as the leading international
currency. A dual oil market may gradually emerge, with oil being quoted in dollars
in Western Hemisphere transactions and in euro in most of the rest of the world,
especially in the North Sea and the Gulf. Given the crude deficit of the Western
Hemisphere, the formation of oil prices would then take place in euro.

The currency risk would then mean that the total price risk could be higher for
North American than for European oil transactions, the opposite picture of the present
situation. An oil victory for the euro would eventually represent an important step
in establishing its position as the leading international currency. An intermediary
solution could be that OPEC prices oil in a basket of currencies, as was proposed
during the dollar weakness in 1977–78, if the euro should appreciate against the dollar.
This time, that could mean a heavy euro component. Hence, oil prices might rise in
nominal dollars, but that would imply political reconsideration among the Gulf oil
producers. Any OPEC pricing of oil with a reference to other currencies would signal
some lack of confidence in the USD. It would also require a change of oil strategy
for the Gulf oil producers.

8. The euro, oil, and U.S. interests

Even if OPEC’s importance for oil supplies has diminished since the 1970s, the
Gulf producers, Saudi Arabia, Kuwait, and the United Arab Emirates, retain a decisive
influence on oil prices. They have low production costs that enable them to keep a spare capacity and financial resources to adjust their oil export volumes up or down. So far, the United States has a greater economic, political, and military significance for the Gulf oil producers than has Europe. The United States is the larger oil importer, has more political weight in the Middle East, and is the military guardian of the Gulf oil producers. The United States also has the world’s largest capital market, so far the only one that has been able to accommodate the occasionally large financial surpluses of the Gulf oil producers.

Since the end of the Cold War, the Middle East has been the object of intense competition between the major powers for political influence and economic positions, whether for oil investment or arms sales. France has been the champion for European interests, often in direct competition with the United States. Even with a common currency, Euroland is no match for the United States in the Gulf. Euroland has little political weight in the Middle East, although especially France, seconded by Italy and Spain, would like to have more influence. They hardly have any military capacity in the area. Hence, for Euroland to substitute for the United States in the Gulf would require the removal of military, political, and ideological regional threats to the Gulf regimes. That means that Iran and Iraq would have to appear as unequivocally peaceful and cooperative neighbors, maybe together with a settlement of the Israeli–Palestinian conflict. Otherwise, the United States is likely to remain a key component in the Gulf oil producer strategies, even with a large European capital market, unless U.S.–Gulf relations should deteriorate markedly.

Since the 1986 oil price decline, the Gulf oil producers have apparently used their freedom of choice in oil policy to largely keep U.S. oil prices, measured by the one month forward price of *West Texas Intermediate* (WTI) within a range of USD 16–21/bl. That corresponds roughly to a price range for North Sea Brent oil of USD 15–20/bl. The strategy of the Gulf oil producers since the mid-1980s has apparently been to secure their market in the United States, which as the world’s most mature oil province has some of the world’s highest average lifting costs. Their means has been an oil price in dollars, making U.S. oil imports increase gradually.

Their consideration has evidently been that a notably lower oil price would in the longer run compromise oil production in the United States, with a risk of protective measures (Ayoub, 1996, p. 144). That hypothesis could be tested if low oil prices in the range of USD 10–12/bl. prevail. A much higher oil price would enhance U.S. marginal oil production, eventually stimulate the development of alternative energy sources, and bring burdens on U.S. consumers. The Gulf States have a political interest in the United States at least indirectly being dependent on their oil. The U.S. counterpart seems to be to abstain from taxing oil consumption more heavily, together with military protection. When adding financial assets to these considerations, it is evident that the United States enjoys the priority attention of the Gulf States over Europe. Hence, their oil policies have been targeting oil prices in dollars in the United States, not in European currencies.

The Gulf States and the United States have largely complementary interests in relation to oil. Since at least 1991, the U.S. policy has been to stabilize the international
oil market through supply diversification that will reduce the price risk for all users, not only those in the United States (National Energy Strategy, 1991, p. 4). Moreover, rising energy consumption and imports make the U.S. interests weigh increasingly in favor of consumers, and hence low prices. U.S. policy is to increasingly use cheap imported oil instead of more costly domestic oil and politically controversial measures to curb energy demand (Terzian, 1998, p. 15ff). This amounts to a concern for oil supply security that matches well with the Gulf concerns for secure oil markets. Saudi Arabia in particular has an interest in providing the market with increasing volumes of oil at stable prices, if necessary through foreign participation in its oil industry. Moreover, recent Saudi moves to invite foreign oil companies seem particularly targeted at U.S. oil companies, further strengthening the bilateral Saudi–U.S. relationship that is the backbone of the oil market.

The euro complicates the definition of stable prices, especially if it appreciates against the dollar. A strong euro would most probably cause oil product prices to rise in Euroland relative to the cost of imported crude, thereby raising refiner margins and transferring part of the economic rent downstream into oil refining. For the Gulf oil producers, with their focus on the U.S. market, rising European refiner margins could be of limited interest, or could give incentives to downstream investment in Europe. For other oil producers, that could be an incentive to raise crude prices. Eventually, the euro could for some time lead to a two-tiered oil market, as in the late 1970s.

By its use outside Euroland, the euro becomes a supplement and a rival to the dollar. To function as a unit of account in international markets, the euro must be accepted as a standard of value in international contracts and as a medium of exchange. Hence, trading and price formation in important markets could increasingly take place in euro, not in dollars. This is pertinent for the oil market. Moreover, for the euro to fulfill such a role, it must also be an acceptable store of value. Consequently, the task of successfully making a single currency for Euroland will necessarily imply taking on the international position of the USD. The European objective is to create a new international reserve currency, which by necessity will challenge the oil strategies of the Gulf producers.

Europe has its distinctive commercial and financial interests, different from and competing with those of the United States. With a common currency, Euroland will presumably be in a much stronger position to defend its own interests in international markets. Euroland has good reasons to challenge the U.S. commercial and financial advantages that emerge from the leading role of the USD. For the U.S. private sector, the advantage of the dollar hegemony, mentioned above, has been a shelter from currency risks and hedging costs. The leading position of the dollar also gives political advantages to the U.S. government.

The European critique is that the present institutional order of the international economy and especially the position of the dollar give unreasonable advantages to the United States. Indeed, European politicians and industrialists are envious of the U.S. seigniorage in the international financial system, which amounts to the ability to gain real revenues from currency creation. It provides the Federal Reserve, the
U.S. central bank, with an endowment to float debt free of interest (Rogoff, 1998). This is the normal function for a central bank within the national territory, but the United States has been acting as the world’s central bank. Because the USD has had the unique position of being a currency for both the United States and the world since 1945, the U.S. government has had the exclusive privilege of being able to issue money to pay for expenses outside. It can print dollars to pay for imports of goods and services, for investment, or for military expenses.

The Bretton Woods system that was established at the end of World War II built explicitly on the leading position of the United States and the USD, but with mutual obligations. The counterpart to using the USD as the leading currency was a fixed dollar exchange rate in relation to gold, and the possibility for other countries’ central banks to exchange dollars for gold. In practice this was an obligation for the United States to cover a part of its monetary mass by gold. The purpose was to prevent the United States from abusing its position as the world’s central bank to run large budget balance of payments deficits, financed by the money printing press. Estimates of the proportion of the stock of U.S. dollars held abroad vary, but about one half may not be exaggerated (Rogoff, 1998, p. 268f). Today, the USD is widely used throughout the world, not only as an accounting unit and a standard in contracts, but also as a medium of exchange and a store of value. The latter functions are especially important for the USD in countries with weak currencies, as well as in the underground economy and by criminal elements. As will be discussed later, this widespread use represents both a strength and a potential weakness for the USD.

The position of the dollar as the leading international currency has also strengthened the U.S. position in world trade. The Bretton Woods system was largely made by and for the United States. The principle of a free movement of goods and capital reflected the interest of the United States against the previous trading blocs around the European colonial empires. By defining the rules of international trade, assisted by the dollar, the United States has been in a better position to defend its commercial interests than any European country or Japan. In the 1990s, this has permitted the U.S. government to intervene on a selective and bilateral basis to defend U.S. exporters, such as Boeing versus Airbus.

The most important privilege of the international seigniorage is an extended freedom in budgetary policy and foreign economic relations. By printing money, the U.S. government can borrow from the rest of the world without paying interest. Because the United States has been functioning as the world’s central bank, its deficits provide liquidity to international trade. Hence, normal rules for budgetary discipline and balancing trade do not apply with equal rigor to the country with the leading international currency. Instead, it has the possibility of letting others finance its deficits (Giacobbin & Roux, 1986, p. 102). Its government and politicians can more easily finance expenditure by creating money without fearing the usual repercussions on international creditworthiness and interests rates.

Through this mechanism, the United States has fewer limits to deficits and debts than do other countries, although the position rests on confidence. The counterpart to the deficits is other central banks, firms, and individuals building up their holdings
of notes and bonds in U.S. dollars. Hence, for the United States, the key issue is inflation, not deficits, as long as the dollar remains an uncontested medium of exchange and store of value throughout the world. The weaker link between public expenditure and interest rates represents an advantage in economic growth for the reserve currency country. This advantage does not emanate from savings or productivity, but from an institutionalized power position. For that country’s private sector, it can eventually imply an advantageous combination of public demand and a favorable access to capital through deficit spending.

In practice, the dollar hegemony has permitted the United States to let its currency float. Somewhat simplistically, other currencies have been denominated in dollars without any reciprocity. Hence, the dollar has been an accepted means of payment throughout the world. Since 1945, this has given the United States significant advantages in economic policy because the U.S., more easily than others, has been able to finance its budget and trade deficits through the printing press. The use of the dollar as the international currency implies that the United States buys more from the rest of the world than it sells, to secure international liquidity. Hence, a U.S. trade deficit is a key element of the international economic system, as long as there is no rival to the USD in international transactions. At times the United States has been able to run large budget deficits and keep lower interest rates than any other country with a corresponding deficit.

In practice this has meant that the rules of budget discipline that the International Monetary Fund (IMF) has prescribed, largely inspired by the United States, do not apply to the United States itself. Hence, the political reality of the international economic system is that saving is less important for the United States than for other countries. This may be contrary to the U.S. ideology, but it is nevertheless a political reality. This institutional condition may perhaps explain some of the low savings rate of U.S. households. It is less important to save and renounce on the pleasures of consumption when the savings of the rest of the world are at the disposal within fairly large limits. Hence, the traditionally low savings rate of the United States has a rational explanation in the institutional international financial order. That condition may now be challenged by the euro.

Already in the 1960s, the United States surpassed reasonable limits for deficit financing through money creation. The United States financed its Vietnam War largely through monetized budget deficits. By printing dollars, the U.S. deficits were financed by other countries. The outcome was a general inflation in the Western world (Klein, 1978). By the same institutional mechanism, the United States was in a better position than other oil importers to absorb the oil price shocks of the 1970s. Because the oil price was denominated in dollars and oil was paid in that currency, the United States could respond and pay by creating more dollars. Hence, between 1974 and 1978 inflation eroded the real oil price and purchasing power of the oil exporters.

During the Reagan administration in the 1980s, the United States could run huge budget deficits, while the IMF was insisting on balanced budgets for poorer countries. Again, the international position of the dollar permitted the United States to some extent to finance its budget deficits by other countries. This time, there was a consider-
able net flow of capital from the developing countries to the United States, partly financing the military effort. The combination of large U.S. budget deficits and tight monetary policy caused exceptionally high interest rates and a dramatic deterioration of the debt burden of developing countries. The high oil prices of the early 1980s severely affected oil importing developing countries, while the United States could benefit from the financial surpluses of the oil exporting countries.

Within the present institutional order, such a way out of economic problems is the privilege of the United States. Today, about 65% of the world’s currency reserves are in U.S. dollars, the rest being held in German marks, Japanese yen, and other currencies. The dollar is highly over-represented in the world’s currency reserves compared to the importance of the United States in the international economy. About one half of international trade is invoiced in dollars, but the U.S. only accounts for one eighth (Temperton, 1997, p. 166). The proportion of dollar bills outside the banking system held by non-U.S. residents has been estimated to about two thirds of the total (Demarolle & Quinet, 1997). An unknown but hardly insignificant part consists of counterfeit dollar bills.

Since 1945, U.S. firms have to a large degree been sheltered from the currency risk because their transactions essentially are in U.S. dollars (Demarolle & Quinet, 1997, p. 89). Pricing and invoicing in dollars mean that the price risk in the oil market in reality is less for U.S. buyers than for those in Europe or Japan. U.S. oil buyers could avoid the further oil price rise during the years 1981–85 that hit Europe. They could, on the contrary, benefit from lower oil prices already by 1983, although the high dollar exchange rate hampered the competitiveness of U.S. manufacturing. Because oil is the price leader in the energy markets, U.S. businesses could benefit from relatively lower energy costs several years before their European competitors. This might have been one of several factors that caused an economic upturn in the United States some years ahead of Europe. Again, at an eventual new oil price increase, the United States would be in a more favorable position by transferring the deficits abroad. Close political ties induce Gulf oil exporters to put their financial surpluses in the United States rather than Europe.

Against this backdrop, Europe has reasons to resist or moderate the USD hegemony. To challenge the USD has with some interruptions been a recurrent theme in French foreign economic policy since de Gaulle’s government in the 1960s made an effort to strengthen the role of gold at the expense of the dollar. The motivation was to prevent the United States from financing its budget deficits, and the Vietnam War, by the money printing press, and hence the rest of the world (Viansson-Ponté, 1971, p. 146). De Gaulle’s attempt was halted by the events of May-June 1968. After large gold purchases during the years 1965–67 at the then low official price, the capital flight of 1968 forced the French government to buy and borrow dollars rather than selling them (Kindleberger, 1996, s. 133). In the perspective of international economic relations, the United States was the main beneficiary of the French student revolt and workers’ general strike. No longer embarrassed by the French challenge, the Nixon government could in 1971 commit an international economic coup by devaluing the dollar and unilaterally suspending the link to gold. The most significant correction to the United
States did not come from Europe, but from OPEC, which succeeded in negotiating an oil price increase to compensate for the dollar devaluation. The market by itself provided no such correction.

The United States itself undermined the Bretton Woods system because the country no longer could bear the limitations imposed by the mutual obligations. Since 1971, international economic relations to some extent are under a unilateral U.S. dominance. The advantages to the United States cause envy and discontent in Europe, perhaps especially in France, because they appear unjustified. Since 1971, there has been no serious challenge to the dollar. Oil is still priced in dollars. In the late 1970s, there were discussions in OPEC to price oil in a basket of currencies or to index the oil price. Some countries then had a political motivation to move away from the dollar, while others had motivation to stay with the dollar. The oil price increase of 1979–80 and the surging dollar exchange rate made the issue redundant.

Since 1968, it has been evident that France does not have the resources alone to challenge the dollar. The outlook may be more promising for Euroland. An implicit political motive behind launching a common European currency is to have the participant countries enjoy the same economic advantages as those so far enjoyed by the United States, in addition to a greater commercial and financial weight in the world. In practical terms, an extensive international use of the euro would mean that the euro area could have a larger trade deficit and at the same time lower interest rates than what would otherwise have been possible. For Europe the potential gain is both a greater freedom in economic policy and more economic and political influence in the world. The counterpart is the risk of a corresponding loss for the United States. In this connection, the oil market might be important to the outcome. If European oil trade is still done in dollars several years after the launching of the euro, the euro will to a considerable degree appear as a failure. Using the euro in European oil trade would be a sign of success.

Politics add to structural economic forces. In many quarters there is a political desire to curtail the power of the United States, eventually by hitting the dollar hegemony. In Europe, not only in France, there is an increasing unease over what is experienced as the Clinton government's ignorance and arrogance in international affairs, as well as unilateral moves in trade policy and foreign policy. Russia could eventually have an interest responding to U.S. advances in Central Europe and Central Asia by weakening U.S. economic power. China could have its own motives to weaken the United States to strengthen its position in East Asia.

For the United States economic interests, however, the most perilous factor could be frustration in the Middle East. The U.S. unconditional support for Israel combined with an ignorance of Arab interests and the isolation of Iran, Iraq, and Libya carries an economic and political risk. It creates critics and adversaries of U.S. interests, even in moderate countries. For the Arab countries, the U.S. hegemony in the area since the Gulf War is becoming embarrassing. The United States, instead of contributing to finding solutions, is often seen as exacerbating the problems (Hawatmeh, 1997). The U.S. support for Israel, practically on no terms, is widely seen as encouraging Israeli intransigence, if not Jewish extremism. A continued Israeli undermining of the
peace process thus risks straining the ties between the United States and the key Gulf oil exporters ("Angry Saudis Step Up Pressure," 1997). Hence, the Netanyahu government in the longer run could strengthen both the more extreme fundamentalists in the Arab world and eventually Saddam Hussein. In any case, it weakens the position of the United States in the Middle East. A more moderate Iran could also be an embarrassment to U.S. interests. Egypt reportedly considers converting part of its currency reserves from the dollar to the euro ("Egypt," 1999).

Indirectly, the weakening of the United States in the Middle East could serve European interests. The combination of oil and financial reserves gives some of the countries of the region the potential to defend Arab political interests, as has already been demonstrated historically. A new European currency could provide some of the countries of the region with an alternative to the reliance on the United States, an opportunity to weaken the U.S. hegemony and eventually an alliance with Europe (Zorgbibe, 1997, p. 196ff). For the United States, key interests are thus at stake. The question is, however, how the U.S. political system copes with such issues. The U.S. bureaucracy and vested oil interests are evidently more attentive to Arab interests than is Congress, where foreign policy ultimately is made.

If the euro, after a quick introduction and a strict monetary policy, should appreciate in relation to the dollar, one of the consequences would be descending real prices for oil and gas for Europe. Insofar as the price decline would be transferred to consumers, the economic and social gain could be considerable, especially if combined with sinking real interest rates. Alternatively, falling euro prices for oil and gas could provide European governments with an occasion to levy even higher taxes on energy, further transferring economic rent from oil and gas producers to consumer country governments. With a strong currency, Euroland could draw substantial benefits from an increasing part of international trade being invoiced in the euro. The counterpart would be a greater influence on the rules of international trade and better opportunities to defend European commercial interests.

A strong euro would not necessarily be excessively harmful to the competitiveness of European industry, because most European countries essentially trade with each other. Indeed, Western Europe, defined as the European Union plus Iceland, Norway, and Switzerland, has relatively less external trade than the United States. In particular, trade with Asia is of less importance. The EU practices a fairly protectionist trade policy, restricting competition from imported manufactured goods (Fernández Jilberto & Mommen, 1998, p. 14). To a large extent the European exports of capital goods seem to be more dependent on quality than on price. This is particularly the case for German exports. More generally, the competitive position within Europe is of great importance to Germany. In this perspective, the euro would be a positive element for German industry, preventing the German currency and relative cost level from sliding upward.

The factors that today strengthen the USD could, under different circumstances, weaken it. The extensive use of the dollar outside the United States, by central banks, firms, and individuals, and not the least by the gray or black economy, also represents a major risk exposure (Friedman, 1989, p. 209ff). In trade between Euroland and
third countries, the widespread use of the dollar could soon be replaced by the euro (Portes & Rey, 1998). Insofar as the USD meets competition from a credible alternative, in this case the euro, the risk is that central banks, firms, and individuals will diversify their currency risk. They are therefore likely to substitute the euro for part of their dollar holdings and in salient cases prefer to conduct trade in euro rather than dollars. For example, in Russia and some other former Soviet states, the USD to some extent functions as the real currency, as a standard of contracts, medium of exchange, and especially store of value. In case the public should have more confidence in the euro, the dollar could quickly be relegated a secondary status, depreciating against the euro, especially in the gray and black markets, but with an impact on exchange rates in the open world market. Moreover, a number of Asian countries, not the least Japan, could have an interest in diversifying currency reserves into euro (Laurens & Plassart, 1999). The stage could thus be ready for a competitive substitution by the euro for the dollar. Insofar as part of the dollars held by foreigners returns to the United States, the outcome could be an uncontrollable increase in the money supply, causing inflationary pressures. The successful euro would thus be a major problem to the United States (Pfaff, 1999).

An immediate consequence would be that the United States would have to submit to the general rules of the international economy and no longer enjoy the privileges of almost exclusive seigniorage. Large budget and payments deficits could no longer be financed by foreign sources. The position of the dollar in relation to other major currencies would likewise be of greater concern. For the domestic U.S. scene, this could mean a more urgent need to review priorities in spending and economic policy and to raise the savings rate. If a growing part of international trade were to be conducted in euro, the outcome would be a rising currency risk for U.S. firms. In terms of foreign policy, the outcome would be a reduced U.S. influence in the world and less resources to pursue its interests and conduct military operations abroad. For the United States, buying oil in euro would imply a higher price risk and especially a risk of higher real oil prices if oil were to be priced in strong euro. The outcome could be that the market would impose relatively higher oil prices on U.S. consumers, which U.S. politicians have so far refused to do. Moreover, insofar as competition from the euro would limit the ability of the U.S. to run large trade and current account deficits, imported oil would lose in competitiveness against domestic oil, and in political terms even to some extent against energy conservation measures. This is also a risk of market loss for the oil exporters.

Much is at stake for the United States. The basis for the U.S. hegemony has been viewed as unquestionable since the end of the Cold War and especially since the Gulf war, although some analysts have identified Europe as a potential challenger to U.S. power (Nye, 1995, p. 231ff). It is an open question to what extent the United States has the resources to defend historical positions and privileges in competition with Europe. An eventual outcome could be that the dollar remains a currency for the Western Hemisphere, while east Asia uses the yen and Europe, Africa, the Middle East, and west Asia increasingly use euro in their transactions. Hence, the Middle East and North Africa would be more closely tied to Europe.

The termination of the U.S. economic hegemony does not necessarily imply the
rise of a corresponding hegemony for Europe. If the euro gradually replaces the dollar in international trade and as a reserve currency, the reason would not only be Europe’s economic strength, but also political preferences in countries acting in their own, not Europe’s interest. This essentially concerns the Middle Eastern oil exporters. Hence, the euro would eventually be an international currency under close scrutiny. In this perspective, Europe could not hope for the same privileges and advantages with the euro as those enjoyed historically by the United States with the dollar. A competitive coexistence between two large reserve currencies would give other agents a choice and hence a stronger bargaining position. This is pertinent to the oil exporters.

A more worrying perspective is the mismatch between the potential economic strength of Euroland, or even the European Union, and its political capabilities and the United States. This is also a question of political maturity. Whereas U.S. policies on various issues increasingly aim at managing global problems, recognizing that the world’s problems also affect the United States, Euroland, or even the European Union, so far seems preoccupied with managing its own affairs. As indicated above, U.S. oil policy since the Gulf War is to secure oil market stability, preferably at low prices, to the benefit of all oil users, not only U.S. consumers. Such a dimension appears absent from European oil policies. Where they exist as in France, they by contrast seem to aim fairly exclusively at securing national advantages. That is evidently also an important dimension of U.S. policies, but not the only one. Another, even more salient example is U.S. monetary policy. The U.S. Federal Reserve largely acts as the world’s central bank by taking the economic situation in the whole world, not only in the United States, into account when it decides interest rates. Hence, the United States and the Federal Reserve also act as the world’s lender of last resort. This function also gives political power. Such a dimension seems absent from the ECB, at least at the outset.

Therefore, Euroland, or even the European Union, will not be able to translate its prosperity into power to make a counterweight to the United States unless it accomplishes a political union and assumes a greater responsibility for the world’s problems (Nicolat & Jacquet, 1998). Moreover, assuming a global responsibility would necessarily mean cooperating with the United States, not confrontation, whether over oil, the Middle East, or Russia. Hence, European ambitions at competing with the United States for superpower status may be premature. As for oil, the long-term outcome may well be oil pricing and trading in both dollars and euro, but perhaps within a cooperative framework of currency stabilization that would reduce the exchange rate risk and hedging costs. The historical record is, however, that no stable monetary regime has been managed by two fairly equal powers (Bergsten, 1997b). In the meantime, there is real risk of instability caused by progressive substitution by the euro for the dollar. The risk is especially high to the economics of North Sea oil.

9. Three scenarios

The practical impact on oil markets and trading can be analyzed through three scenarios. The first scenario is that the euro does not become the success expected.
Disagreement and problems of coordination between member states and with the European Central Bank lead to inconsistencies in economic policy, inflation, and lack of confidence. Within Euroland there is a flight to other currencies, including the USD that strengthens quickly against the euro, which depreciates from U.S. $1.15 to $0.75 after 3 years. Since oil is priced in dollars, the result is rising energy prices in Euroland. Rotterdam product prices continue to be driven by Brent crude oil prices quoted in dollars. Even if a weak euro improves the competitiveness of Euroland industries, the effect on actual exports is slow. The OPEC countries, the North Sea oil producers, and Russia see no reason to price and trade crude oil in euro, which remains a secondary international currency, not a serious rival to the dollar. The Russian public prefers to keep their savings in dollars.

A second scenario is that the euro is more successful than hoped for and after an introductory period of 2 or 3 years, it appreciates to U.S. $1.60. The euro strength is helped by political infighting in Washington and a moderate stock market decline, while Euroland makes a convincing demonstration of sober cooperation, facilitated by higher growth through efficiency gains. Denmark and Sweden decide to join, and public opinion in the U.K. is favorable to joining Euroland. There is a flight of capital from the dollar to the euro, which amplifies with the introduction of euro notes and coins in 2002. Competitive substitution to the dollar picks up. The Russian public exchanges their savings to the euro, which becomes their real currency. Hence, prospects are for a further appreciation of the euro against the dollar. Since oil is priced in dollars, the outcome is declining real energy prices in Euroland, which further reduces inflation and boosts economic activity, with a rising gap between the trends of euro product and dollar crude prices, transferring economic rent downstream in the oil and gas chains. The Rotterdam product market pulls on Brent crude prices, but refiner margins remain high in Euroland. Hence, Norway, Russia, and the U.K. decide to price and trade crude oil in euro. Japan exchanges part of the currency reserves into euro and shows a preference for euro bonds as the U.S. trade deficit amplifies. This leads to a dollar crisis. Private Kuwaiti and Saudi capital moves into the euro. It forces OPEC to introduce a currency basket for crude oil pricing, with a heavy euro component. These events signal the end of the dollar hegemony.

A third scenario is instability, with the euro fluctuating between U.S. $0.90 and $1.40 even on an annual basis, partly because of U.S. attempts to fight the competitive substitution by raising interest rates. Denmark and Sweden decide to join the euro, but in the U.K. public opinion remains hostile. Algeria, Libya, Iran, Iraq, Norway, and Russia decide to price and trade oil in euro, but Kuwait, Saudi Arabia, and the United Kingdom decide to stay with the dollar. Hence, a two-tiered oil market emerges, with high currency risk, high hedging costs, and high arbitrage profits. The international business community, led by the oil industry, tries to persuade Euroland and U.S. politicians and central bankers to agree on target zones with narrow bands for the dollar–euro exchange rate. The United States professes an almost ideological aversion to linking exchange rates. The ECB responds by putting a ceiling on the euro rate against the dollar followed by similar measures in Japan. Hence, the United States loses power to set exchange rates to Europe and Japan. OPEC starts pricing oil in a
basket of currencies. This is a soft end of the dollar hegemony and the start of an era where the United States is no longer sovereign in international financial matters.

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