Financial markets
Vittorio Grilli

Summary

One potential effect of the integration of European financial markets concerns the geographical location of financial ‘hot spots’. It is likely that liberalization will tend to promote countries with already large and well developed international financial markets. Attracting the residents of smaller countries, these markets will become larger and more liquid, and thus even more appealing. It is very unlikely that other European countries could design policies apt to threaten London’s supremacy as the main European financial centre. While the article focuses on the market for bank deposits, similar considerations apply to other financial markets. It appears that a large part of cross-country bank deposits are explained by country-specific factors, such as particular institutional arrangements in the areas of capital controls, tax regulations and secrecy laws. However, the relative importance of these factors varies between inter-bank deposits and non-bank deposits: taxation and banking secrecy matter for non-bank deposits while the very size of the economy influences inter-bank deposits. Finally, imperfect competition and switching costs imply that more intense competition will be felt primarily in the market for large deposits. Small deposit contracts will probably be unaffected by liberalization, at least in the short run.
Europe 1992: issues and prospects for the financial markets

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1. Introduction

The decision to remove barriers to the flow of goods and services among the members of the European Community by 1992 will have profound consequences in many different sectors of the economy, both in Europe and the rest of the world. There is a widespread belief (almost fear) that the impact of the integration process will be particularly powerful in the capital markets. Because transformations and innovations in financial markets usually occur suddenly and rapidly, economic policy corrections may be hard to implement.

In several European countries, financial market regulation has been so extensive that the national capital markets have been isolated, almost completely protected from foreign competition. The transition to a new open environment could produce radical changes and uncertainty about what will happen, in itself, reason for concern. Structural changes could involve shifts in the location of some of the markets and, therefore, induce a geographical redistribution of business activity, employment and income. Notwithstanding such concerns, however, there is a general enthusiasm and optimism about the benefits that the process of integration of the monetary and capital markets will bring. This sentiment is not confined to Brussels, but is shared by a large portion of the population. For example, according to a recent poll by Eurobarometer, as reported in the box below, almost 80% of Europeans list the ability freely to make payments and carry money across borders as advantages of 1992. Some 70% also list the possibility of opening bank accounts anywhere in the community.¹

¹ Table 1 also reveals considerable differences in national attitudes toward 1992.

Financial support from The Council for West European Studies at Yale University is gratefully acknowledged.
Box. Eurobarometer survey of Spring 1988 on the advantages of the Single European Market in 1992

Question: The coming into being of the single European market by 1992 will mean the free circulation of persons, goods and property within the European Community Countries. Some people think this will mostly be an advantage. Others think it will be a disadvantage. Can you tell me, for each of this single common European market which I am going to mention, whether you personally think it will be an advantage or a disadvantage?

<table>
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<td>79</td>
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<td>67</td>
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<tr>
<td>Public works</td>
<td>52</td>
<td>50</td>
<td>38</td>
<td>56</td>
<td>48</td>
<td>50</td>
<td>58</td>
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<td>46</td>
<td>50</td>
<td>56</td>
<td>58</td>
<td>47</td>
</tr>
</tbody>
</table>

1. Make payments: The ability to make payments without complication within the whole European Community.
2. Carry money: The possibility to take any amount of money with you when you travel to other countries of the European Community.
3. Buy products: The possibility to buy in one's own country any product lawfully sold in other countries of the European Community.
4. Residence: The opportunity for any citizen of a country within the European Community to go and live without limitation in any country of the Community for instance to retire there or to study there.
5. Work: The opportunity for any citizen of a country within the European Community to go and work in any other country of the European Community.
6. Bank account: The possibility to open a bank account in any country of the European Community.
7. Property: The possibility to buy land or property throughout the Community.
8. VAT closer: Bringing closer together the rates of VAT applied in the various countries of the Community so that products are sold under similar cost conditions.
9. Border control: Elimination of custom controls when crossing frontiers between countries inside the European Community.
10. Public works: The possibility for a contractor from another country to be in charge of public works (for instance, building a bridge or a road) in our country if his offer is cheaper at the same level of quality.
Much of this optimism is based, at least in the professional literature, on principles borrowed from basic trade theory under the assumption of perfect competition. Current discussions start from this not so much because it is an appropriate description of how financial markets operate, but rather because of the lack of a well developed alternative. In fact, there is a paucity of theoretical and empirical analysis in the area of international financial intermediation. Neither the industrial organization literature, nor the international trade and finance literature offers many insights into the issue of what determines the structure, trade flows, and prices in these markets. Obviously, I will not attempt in this paper to fill in these gaps by formulating a complete theory of financial structures in an integrated world economy. Instead, I will illustrate how, by applying frameworks other than perfect competition, we can obtain predictions which are far less optimistic than what is often heard. I will also focus on two specific issues.

The first issue concerns the effects of liberalization on the long-run structure of international financial markets, and in particular their geographic location. Nowadays, we are familiar with the idea and existence of ‘financial centres’ like London, New York and Tokyo, i.e. with the clustering of different types of financial intermediaries in specific locations. Recent years have witnessed considerable changes in the relative importance of these centres, as well as the emergence of new ones like Singapore, Hong Kong and the Bahamas. How can the existence of such ‘hot spots’ be explained? Will the events of 1990–92 induce modifications in their relative importance, possibly leading to the emergence of new ones? The sober conclusion will be that drastic locational changes are quite unlikely. The second issue concerns the specific market for international bank deposits. One of the most debated components of the integration programme is the possibility of opening bank accounts in any member country. To what extent will this new freedom affect the international flow of bank deposits and what kind of movement should we expect in deposit interest rates? The conclusion is that most of the significant changes and gains in this area are likely to be confined to particular segments of the market, effectively bypassing a large number of depositors.

2. The effects of liberalization on the location of financial centres

‘... I predict, very tentatively, that Brussels will emerge as the financial center of the European Community, for the following reasons: it serves as the headquarters for the Commission; it attracts foreign corporations and will ultimately attract foreign and European banks;
it tolerates the world intellectual medium of exchange, the English language.


Even if Belgium (including Luxembourg) has an important role in the international banking industry, many would name London as the main European financial centre. However, even though recent developments in financial markets may prove Kindleberger’s conclusion inaccurate, the question that he tried to address is now more relevant than ever. At the world level, in addition to the UK, the US and Japan host the largest financial centres. These countries’ complex networks of financial markets and financial intermediaries (listed in Table 1) are not matched anywhere else in terms of manpower and volume of activity. Could the liberalization of European capital markets alter the relative importance and location of world financial markets? Will part of the business, now concentrated in these centres, move towards the newly liberalized markets thereby making the geographical distribution of financial activity more uniform? Or, instead, will the activity originated in the recently liberalized countries flow towards London, New York or Tokyo, widening the gap between the ‘financially’ developed areas and the rest of the world?

The real question is why financial activities tend to be highly concentrated. At the outset, it must be emphasized that we do not have a well-developed theory to answer this question. Clearly, regulations matter. ‘Off-shore’ centres like Nassau and the Cayman Islands, are examples of particularly favourable regulatory environments because of the absence of income, corporate, and capital gains taxes as well as because of bank secrecy. However, advantages in terms of regulation do not account for the dominance of a centre like London, where the tax structure is far less benevolent than in the off-shore centres. For such major centres the explanation is more likely to be the existence of increasing returns deriving from thick-market externalities, as described by Diamond (1982). By recognizing the dependence of a firm’s productivity on the size of the market in which it operates, this approach can offer an appealing account of the growth and concentration of financial markets. The idea is simple and is formalized in Appendix A. Concentration arises whenever a firm’s productivity directly benefits from the proximity of competitors or firms engaged in related activities. Each firm is more profitable, possibly larger, than if it were operating alone. On the surface, it looks as if there were economies of scale. Yet, these external economies are clearly distinct from the more traditional, internal, economies of scale.
Table 1. Principal characteristics of the main financial centres, 1987

UK (London)
Stock Exchange
60% of Eurobond Market
London Futures and Options Exchange (FOX)
London International Financial Futures Exchange (LIFFE)
London Metal Exchange
International Petroleum Exchange of London
Baltic Futures Exchange
International Freight Futures Exchange (BIFFEX)
London Grain Futures Market
London Meat Futures Exchange
London Potato Futures Market
Soya Bean Meal Futures Market

US (New York and Chicago)
New York Stock Exchange
American Stock Exchange
Commodity Exchange (COMEX)
New York Futures Exchange (NYFE)
New York Mercantile Exchange (NYMEX)
Coffee, Sugar and Cocoa Exchange
New York Cotton Exchange
Chicago Board of Trade (CBT)
Chicago Mercantile Exchange (CME)
Mid-America Commodity Exchange (Chicago)

Japan (Tokyo)
Tokyo Stock Exchange
Tokyo Commodity Exchange for Industry
Tokyo Financial Futures Exchange

This idea is well suited to describe financial centres, since they are complicated networks of various types of intermediaries and specialized firms operating and interacting in closely related markets. As these markets become larger, communication channels are more developed, the number of agents operating in the market increases, and accordingly business opportunities and commercial partners are more easily found. In addition to this improved 'matching process' on the customer side, matching on the labour input side becomes easier as well. In fact, the existence of a large market guarantees the training, and thus the availability, of a skilled labour force, which is an essential element for success in this highly specialized market. Because the productivity of the financial industry depends so crucially on the size of the market, large industrialized economies probably enjoy a comparative advantage.
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in attracting financial firms from the rest of the world. Such thick-market externalities explain why the size of the economy matters, and why the four largest international financial centres (London, New York, Tokyo and Paris) are also the financial centres of four out of the five largest economies.\(^2\) This idea also suggests that public incentives to create a large financial market may be hard to design. Indeed, any particular firm’s incentive to move largely depends upon other firms also moving to the same location. In the end incentives may be dispensed with if many firms have moved, but initially it may be very hard, and very expensive, to trigger the change.

Even if these forms of externalities can help us understand why financial activities are not uniformly distributed in space, and why, instead, they tend to be concentrated in a few ‘hot spots’, several other important questions are still left unanswered. For example, why are financial intermediaries so highly concentrated in London and in New York and not in Madrid or Boston? Can the location of these centres be altered, and will European integration have such an effect?

Explaining the precise geographical location of financial centres is a difficult problem. Because the economic and institutional environments are important, policy decisions in these areas must have contributed to the configuration of today’s world financial scene. Moreover, strictly geographical considerations, like the time zone to which a country belongs, are also crucial. Yet, a whole series of historical events which span over several centuries have shaped the current situation. It is probably impossible to disentangle them, as Robert Hall has recently observed:

‘... the distribution of economic activity is probably close to indeterminate, so the location of economic hot spots is largely a matter of historical accidents’.

(R. Hall, ‘Noise Over Space and Over Time,’ 1988 Arthur Okun Memorial Lectures.)

The type of market-size externalities considered here are known to imply the possible existence of a large number of equilibria and do not provide any clue to understanding, or predicting, which one actually

\(^2\) The fact that Germany doesn’t have a centre of the same importance does not necessarily contradict the theory proposed above. Rather, the manner in which financial markets evolved in Germany after World War II is largely responsible for this absence. For obvious reasons, following World War II, Berlin ceased to be the financial capital of Germany, leaving the country without a clear dominant centre. Dusseldorf, Hamburg and Frankfurt shared a similar moderate level of status in the banking industry for almost two decades. It was only in the 1960s that Frankfurt emerged as the clear market leader and thus, until then, Germany was not characterized by the same degree of market thickness as the other major countries.
occurs. The fact that there exists more than one possible configuration indeed suggests that market locations are determined by a wide variety of factors. Thick-market externalities can also produce considerable amounts of inertia in an industry because, by itself, a firm may not be able to take advantage of a more efficient environment unless a whole number of other firms also decide to move to the new location. This is a typical example where coordination is required: unless all firms agree to move together, none will move, and there is no mechanism to trigger such a collective action. This also implies that market sizes and locations may be rather difficult to change by policy actions once an equilibrium has been reached. Quite to the contrary, we should expect that liberalization will favour countries with developed markets, so that in the medium run at least, it is very unlikely that London’s supremacy will be challenged. Indeed, this would require very aggressive behaviour by the other European governments, including the adoption of off-shore types of regulations which appear to be largely incompatible with a concerted liberalization. In the whole, the existence of externalities might prevent the industry from achieving a higher level of profits, i.e. from shifting to the locations made more efficient as the result of deliberate public incentives. (Excessive market inertia is shown by Farrell and Saloner, 1986 to arise in a situation similar to that described above.)

3. The market for international bank deposits

3.1. Some stylized facts

In advanced economies, the financial sector is an important contributor to both employment and output. In Europe, the banking sector alone employs between 2.5 and 7.0% of the labour force and its value added represents between 4.2 and 6.0% of GDP (Table 2). It is, therefore, understandable that a considerable amount of attention has been directed towards the evaluation of the possible consequences of 1992 on the future of this industry. The liberalization of 1990–92 may operate through two main channels. First, liberalization will necessarily imply symmetric treatment of domestic and foreign (European) banking institutions, especially in matters like the establishment of new branches or the acquisition of existing ones. Second, the elimination of exchange controls will give individuals the freedom to choose foreign banks for their deposits or their loans. In theory, both channels could provide a way to increase competition in some of the more restricted national markets.

Several elements, however, suggest that the primary effects of 1990–92 will operate through the second channel. This is not to say that
Financial markets

Table 2. Importance of the financial sector, 1985

<table>
<thead>
<tr>
<th></th>
<th>Banking</th>
<th>Banking and insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employment (% of total)</td>
<td>Value added (a) (% of GDP)</td>
</tr>
<tr>
<td>Belgium</td>
<td>3.0</td>
<td>4.4</td>
</tr>
<tr>
<td>France</td>
<td>2.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Germany</td>
<td>2.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Italy</td>
<td>—</td>
<td>6.0</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>7.0</td>
<td>—</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Spain</td>
<td>—</td>
<td>4.8</td>
</tr>
<tr>
<td>UK</td>
<td>2.5</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Source: Price Waterhouse, The 'Cost of Non-Europe' in Financial Services.

Notes: (a) 1983 data; (b) 1982 data.

Table 3. Summary of restrictions in financial markets between EEC countries

<table>
<thead>
<tr>
<th></th>
<th>Establishment of branches</th>
<th>Participation and acquisition</th>
<th>Exchange controls</th>
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</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>none</td>
<td>none</td>
<td>yes</td>
</tr>
<tr>
<td>France</td>
<td>none</td>
<td>&gt;20%</td>
<td>yes</td>
</tr>
<tr>
<td>Germany</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Italy</td>
<td>none</td>
<td>none</td>
<td>yes</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>none</td>
<td>none</td>
<td>yes</td>
</tr>
<tr>
<td>Netherlands</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Spain</td>
<td>yes</td>
<td>&gt;50%</td>
<td>yes</td>
</tr>
<tr>
<td>UK</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

Source: Price Waterhouse, The 'Cost of Non-Europe' in Financial Services.

Direct foreign investment in banking will not take place, or will occur only in limited amounts. On the contrary, this phenomenon is already present and is becoming increasingly important. However, this is part of a general worldwide trend towards financial integration, and is not necessarily related to 1992. The reason is that the existing discriminatory laws against non-resident EEC financial institutions which are currently in place, and bound to become void, are not actively enforced anyway. Table 3 documents these regulations. Spain has restrictions on the number of branches that a foreign institution may open (no more than three), and restrictions on the percentage of a Spanish bank that a non-resident may acquire without prior approval (no more than 50%). These restrictions have not been too strictly enforced since in 1986 there were already 37 foreign banks operating in Spain. In France, the
government has the general prerogative to cancel any foreign invest­
ment in a French company, if it exceeds a 20% share. In the specific
case of banks intervention by the authorities may occur even below the
20% limit. In practice, however, the French government has been less
and less inclined to intervene in these matters and, in 1983, there were
already 119 foreign-controlled banks out of a total of 289. In some
other European countries, foreign participation in the industry is
already quite substantial, and is likely to increase in the future, but
1992 does not appear to have a major role to play in this process.

This is why we shall concentrate on the second channel, trade in
international deposits. Table 3 also documents the existence of exchange
controls inhibiting the flow of funds. Belgium and Luxembourg still
operate under a two-tier exchange market arrangement. It is also
important to notice the presence in France, Italy and Spain, of various
restrictions which have prevented residents from holding bank accounts
abroad. One of the most direct consequences of European liberalization
on the banking sector will be the removal of these restrictions to capital
flows. The market for bank deposits is a critical market, given that
deposits are, by far, the most important source of funds for commercial
banks, as shown in Table 4. Depending on the country, they constitute
between 60 and 90% of total bank liabilities. In addition, in most of the
countries surveyed, non-bank deposits (as opposed to inter-bank
deposits) represent the largest share of total deposits. A different picture
obtains if we consider non-resident deposits, i.e. deposits received by
banks from agents resident in countries other than the one in which
the bank operates; the total amount of non-resident deposits was
$4,911 bn. in the second quarter of 1988, and almost 80% of these
deposits are the result of international inter-bank operations. Moreover,
the amount of international trade in deposits has increased considerably
over the last 15 years. If we use the total output of the OECD countries
as a unit of measurement, then between 1972 and 1986 inter-country
bank deposits have risen from 10 to 35% of output.

In Table 5 we present the geographical distribution (as of 1988Q2)
of these stocks, expressed as fractions of world totals. These tables reveal
a number of interesting features. First, the UK appears to be the single
favourite destination of non-resident deposits, in both the inter-bank
and non-bank markets. However, grouped together the large 'off-shore'
centres (the Bahamas, the Cayman Islands, Hong Kong and Singapore)
have the largest share of inter-bank deposits. Second, the US and
Belgium (including Luxembourg), and the UK seem to have a similar
role in both the inter-bank and non-bank markets. Third, some coun­
tries seem to have become specialized in particular segments of the
market. For example, Japan has established itself as the second largest
market for total foreign deposits, and this position is due almost exclusively to its active role in the inter-bank market. Switzerland, on the contrary, has concentrated on the collection of deposits from non-banks.

The changes in the relative size of the most important geographical areas in the international market for bank deposits are described by Figures 1 to 3. The position of Belgium and Luxembourg has remained very stable over the years in all categories. Switzerland, on the other hand, lost almost half of its market share. The loss occurred mostly during the early 1970s, and affects particularly transactions with the non-bank sector. Part of this decline seems to have been deliberately self-inflicted with the imposition, in July 1972, of a negative interest rate on non-resident Swiss franc deposits.\(^3\) Japan and the off-shore centres show a strong positive trend in both categories, with the exception of Japan, apparently unable, or unwilling, to attract deposits from non-banks. The UK shows a declining trend until 1978. At the time when Margaret Thatcher was elected and foreign exchange controls were removed, the decline was halted and a moderate growth in market share was observed, at least until 1985. It is worth noting that the reversal in the trend occurred earlier (1976) for deposits from non-banks. While the US share of inter-bank deposits shows a positive trend,

\(^3\) This regulation was later removed in February 1980.
Table 5. Foreign deposits at domestic banks, 1988Q2 (% of world's total)

<table>
<thead>
<tr>
<th>Non-banks' deposits</th>
<th>Banks' deposits</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>20.8</td>
<td>17.4</td>
</tr>
<tr>
<td>Switzerland</td>
<td>14.7</td>
<td>Japan</td>
</tr>
<tr>
<td>Belgium-Lux.</td>
<td>8.8</td>
<td>US</td>
</tr>
<tr>
<td>US</td>
<td>7.5</td>
<td>Belgium-Lux. (c)</td>
</tr>
<tr>
<td>Cayman Islands</td>
<td>7.4</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>France (c)</td>
<td>5.2</td>
<td>France</td>
</tr>
<tr>
<td>Bahamas</td>
<td>5.0</td>
<td>Singapore</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.9</td>
<td>Cayman Islands (a)</td>
</tr>
<tr>
<td>Germany</td>
<td>3.4</td>
<td>Bahamas</td>
</tr>
<tr>
<td>Canada (b)</td>
<td>2.9</td>
<td>Germany</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.8</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Japan</td>
<td>0.7</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Italy</td>
<td>—</td>
<td>Canada (b)</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>—</td>
<td>Italy</td>
</tr>
</tbody>
</table>

Notes: (a) 1987Q4; (b) 1988Q1; (c) 1987Q3.
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Figure 1. Total liabilities

deposits from the non-bank sector declined until 1981, and then increased substantially. It is not a coincidence that in December 1981 the international banking facilities (IBFs) were enacted. IBFs’ regulations authorized US banks to operate separate books when accepting foreign Eurocurrency deposits to be lent abroad, making these funds free from reserve and insurance requirements. This allowed US-based banks to regain their competitiveness with respect to the off-shore centres, especially the Bahamas and the Cayman Islands.

Figure 2. Inter-bank deposits
3.2. The role of institutional factors in the international movements of bank deposits

As already stressed, we lack a well-developed theory of international trade in banking services which could help identify the crucial elements responsible for the movements in international bank deposits described above. In principle, however, we should view the decision to deposit funds in different countries as part of a global portfolio optimization problem. Such a problem could be described as follows. Agents observe the interest rates (levels, variability and correlations) offered by the various banking systems, and hold views on the corresponding exchange rates (expected changes, variability and correlations). From this, agents deduce the expected returns and the associated risks on various international bank deposits. In principle, appropriate portfolio decisions could then be made. However, an empirical assessment of this approach requires data on the composition of foreign deposits in each country, broken down by the nationality of ownership and currency of denomination. Unfortunately, these data are not available, which prevents further analysis along these lines.

Because banks are highly regulated, the institutional environment plays an essential role in shaping international deposits. Factors like tax regulations, minimum bank reserve requirements, and secrecy laws are especially important in this context. The examples, already mentioned, of foreign exchange liberalization in the UK or the establishment of the international banking facilities in the US strongly suggest that purely regulatory factors may have strong effects on the direction of trade in bank deposits. The experiences of off-shore centres, like the Bahamas...
or the Cayman Islands, are other examples of the importance of such factors. Given that 1992 will operate essentially through the removal of technical barriers and the partial harmonization of regulations, it is important to determine, in more detail, the effects of these institutional elements on the performance of a country in attracting foreign deposits. Several regulations and practices may favour or frustrate the international movement of capital and, in particular, of bank deposits. In the following analysis we sort them into three different categories: capital controls, withholding taxes, and secrecy laws.

3.2.1. Capital controls. Under the generic label of capital controls, there is a large and diversified body of measures. They include the absolute legal or regulatory prohibition on making capital transactions, requirements of case-by-case authorization, restrictions on the timing of the operations, surrender requirements, prudential regulations and so on. Countries still differ considerably in this dimension. Discussions of capital controls also often implicitly refer to restrictions on capital outflows from a country, i.e. constraints imposed on residents' financial decisions. Indeed, countries like Italy and France have had very restrictive legislation of this kind throughout the 1970s and the 1980s. Others, like the UK and Japan, removed such restrictions at the end of the 1970s. At the same time, other countries like Germany and Switzerland have always had a very permissive attitude toward capital outflows but, from time to time, have limited the amount of capital inflows in order to maintain close control over monetary aggregates:

‘... restrictions have from time to time been imposed to ward off speculative inflows of foreign exchange and create greater room for maneuvers for monetary and fiscal policy at home. In 1972-3, for example, capital imports into the Federal Republic of Germany were restricted by a number of administrative measures.’

(Deutsche Bundesbank Special Series No. 7., p.70.)

Some of these administrative measures have involved the imposition of particularly high reserve requirements on liabilities to non-residents. At one time, in 1978, the reserve requirement was virtually 100%. Another example, already mentioned, is the temporary imposition, in Switzerland, of a negative interest rate on non-resident Swiss franc deposits. In general, all types of restrictions on capital movement tend to isolate the domestic financial market and delay its development, thereby discouraging the inflow of deposits.

3.2.2. Withholding taxes. Another regulatory element that is crucial in international deposit decisions is the extent to which interest on bank
deposits is subject to withholding taxes. As reported in Table 6, which describes the current situation on the matter, there are considerable differences in tax regulations regarding the treatment of non-resident deposits. In some countries, like Germany, Luxembourg, the Netherlands and the UK, deposits owned by non-residents are not subject to any withholding tax. Other countries, like Italy, Japan and Switzerland, apply heavy withholding taxes. The rates reported in Table 6 should be used with caution because special bilateral conventions can substantially reduce the tax rate applicable to the residents of the signatories. The rates in Table 6 apply in absence of a treaty. The difference between these statutory rates and special treaty rates can be quite substantial.

The location of deposits is obviously related to the net rate of return available in the various centres but also depends on net rates available on other assets into which bank deposits can be easily converted. Indeed,
it is likely that foreign bank deposits are also used as convenient temporary parking for funds to be invested in other assets abroad. It is, therefore, important also to consider how income from other assets is taxed. Interestingly, countries which do not levy any withholding tax on bank deposits, like Germany or the US, instead impose high tax rates on dividend income.

3.2.3. Secrecy. Banking secrecy takes various forms, depending on the history, legal framework and customs of a country. Adherence to banking secrecy is analogous to the exercise of professional discretion which is typical of lawyers or doctors. This type of professional confidentiality does not legally extend to banks in all countries. When it does, bank secrecy is enforced to varying degrees. In some countries it is limited to the dissemination of information to other private citizens and institutions, in others it also extends to public authorities, either domestic or foreign. The demand for secret or hidden assets is believed to be quite substantial. It arises from different motivations, both legal and illegal. Walter (1985) offers five reasons underlying the demand for secrecy: personal confidentiality, business confidentiality, capital flight motivated by political reasons when secrecy is needed to preserve the safety of the owner, tax evasion and criminal activities.

Switzerland has the longest tradition of banking secrecy and the strictest legislation. Actually the legal basis of the Swiss banking secrecy can be found in its Constitution and Civil Code. Violations of bank confidentiality are met with severe punishment. Penalties include not only administrative and financial measures, but also criminal sanctions. In 1977, a Convention of Diligence was signed by all the major Swiss banks. The purpose of this action was to limit the role of banking secrecy in illegal activities. Though somewhat weakened by the Convention, bank secrecy is consistently maintained in Switzerland. In 1981, Luxembourg also passed strict bank secrecy laws, thereby becoming the EC country with the most protective legislation in this area. None of the other main industrialized countries has extensive secrecy laws. In some countries, like the UK and Germany, the principle of secrecy is recognized and applied to a certain (though limited) extent. Yet in others, like France and Italy, banks are ‘required by law to be informers’ (Chambost, 1983).

In order to investigate the influence of these various regulations on international bank deposits we use data from 10 countries (Belgium-Luxembourg, Canada, France, Germany, Italy, Japan, the Netherlands, Switzerland, the UK and the US) covering 16 years (1972-87). The
previous discussion suggests the following relationship:

\[ D_{it} = \alpha_0 + \alpha_1 \text{TaxI}_{it} + \alpha_2 \text{TaxD}_{it} + \alpha_3 \text{CapitalIn}_{it} + \alpha_4 \text{CapitalOut}_{it} + \alpha_5 \text{Secrecy}_{it} + \alpha_6 \text{GNP}_{it} + \alpha_7 \text{Time}_t + \epsilon_{it} \]  

(1)

where \( D_{it} \) is the stock of non-resident deposits in banks of country \( i \) at time \( t \); \( \text{TaxI} \) is the withholding tax on non-resident bank deposits; \( \text{TaxD} \) is the withholding tax on non-resident dividend income; \( \text{CapitalIn} \) is a dummy variable representing restrictions on capital inflows; \( \text{CapitalOut} \) is a dummy variable representing restrictions on capital outflows; and \( \text{Secrecy} \) is a dummy representing the extent of banking secrecy. The exact values of the dummies are described in Appendix B, which also provides bibliographical references. \( \text{GNP} \) is the country’s contribution to total OECD output: it is meant to capture thick-market externalities which, we argued in Section 2, are likely to be related to the relative size of the country. Finally, given the strong growth of trade in deposits, a time trend is also included. Table 7 reports the results of estimating (1) for inter-bank and non-bank foreign deposits separately. The distinction between inter-bank and non-bank deposits is very important since they seem to respond to very different incentives. Only controls on the inflow of capital appears to have a significant effect on both. Otherwise, inter-bank deposits are affected by the tax treatment of dividends and by the size of the economy. Non-bank deposits, on the other hand, respond to the withholding tax on bank accounts and to secrecy protection.

These results provide some interesting insights into what really motivates international bank deposits. For individual investors (non-banks), tax avoidance is probably the main motivation: this would explain why they seek bank secrecy and low levels of withholding taxes. By contrast, institutional investors (banks), while considering taxes, attach most importance to the dimension and development of the financial markets, at least if we accept that the GNP variable reflects the existence of thick-market externalities. Finally, we note the highly significant and negative effect that the withholding tax on dividends exerts on inter-bank deposits. This suggests that bank deposits are not made simply to earn interest income but are also used by banks as ‘parking’ in between other financial market transactions.

What are the implications of these results for the liberalization of 1990? By eliminating the existing restrictions on the free movement of capital, liberalization will definitely have an effect on the location of deposits. However, the tax treatment of interest and dividend incomes may play an even more powerful role in shaping the geography of bank deposits. Undoubtedly, the abolition of capital controls will favour
Table 7. Regression results (Panel data: 10 countries, 1972–87)

<table>
<thead>
<tr>
<th></th>
<th>Non-banks’ deposits</th>
<th>Inter-bank deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( R^2 = 0.53 )</td>
<td>( R^2 = 0.68 )</td>
</tr>
<tr>
<td>Constant</td>
<td>1.69</td>
<td>3.96</td>
</tr>
<tr>
<td></td>
<td>(3.40)</td>
<td>(11.86)</td>
</tr>
<tr>
<td>Interest tax</td>
<td>-4.04</td>
<td>-0.61</td>
</tr>
<tr>
<td></td>
<td>(-4.97)</td>
<td>(-1.10)</td>
</tr>
<tr>
<td>Dividend tax</td>
<td>-1.01</td>
<td>-5.09</td>
</tr>
<tr>
<td></td>
<td>(-1.01)</td>
<td>(-7.49)</td>
</tr>
<tr>
<td>Capital inflow</td>
<td>-1.22</td>
<td>-0.45</td>
</tr>
<tr>
<td></td>
<td>(-3.70)</td>
<td>(-2.02)</td>
</tr>
<tr>
<td>Capital outflow</td>
<td>-0.30</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(-1.40)</td>
<td>(1.33)</td>
</tr>
<tr>
<td>Secrecy and offshore</td>
<td>0.66</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(8.64)</td>
<td>(1.97)</td>
</tr>
<tr>
<td>GNP</td>
<td>-0.11</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>(-1.31)</td>
<td>(3.82)</td>
</tr>
<tr>
<td>Time trend</td>
<td>0.68</td>
<td>0.98</td>
</tr>
<tr>
<td></td>
<td>(4.96)</td>
<td>(10.50)</td>
</tr>
</tbody>
</table>

Notes: \( t \)-statistics in brackets. The 10 countries are: Belgium–Luxembourg, Canada, France, Germany, Italy, Japan, the Netherlands, Switzerland, the UK and the US.

countries with low withholding tax rates. This problem is widely recognized but, to date, no decision regarding withholding tax levels has been agreed upon. Although EC governments are negotiating about some form of tax rate harmonization, there is still much discord and disagreement. As a result, it is difficult to predict the ultimate effects that liberalization will have through this channel. Similar arguments hold for the issue of bank secrecy. In this case, the possibility of harmonization may be even smaller. In fact, the revision or elimination of banking secrecy may involve changes in the fundamental structure of a country’s legal system and is thus very difficult to implement.

4. **Imperfect competition, switching costs and bank deposits**

The evidence offered in the previous section supports the view that international bank deposits respond strongly to the institutional structure of national markets and various forms of controls and regulations. Other factors are likely to be important too, although difficult to capture empirically. Certainly, we expect that the relative efficiency of different national banking sectors has a role to play. Liberalization, by eliminating capital controls, will put banking systems with different levels of cost efficiency and quality of service in direct competition. This is why this
section focuses on the differences in microeconomic factors, abstracting from the institutional environment. A prerequisite to pursuing this line of investigation is to agree on the proper way of characterizing the market structure of the banking sector. If it were a perfectly competitive market, and if depositors were intrinsically indifferent between using domestic or foreign financial intermediaries, then immediately following liberalization we should observe a massive flow of deposits toward the lower cost countries. The process would continue until prices were equalized through a general reduction towards the lowest levels in the Community. The less efficient, high cost intermediaries would either reshape or disappear. This characterization is quite extreme.

In what follows, we show that price convergence following liberalization will be limited and that the gains are not going to be uniformly shared by the whole population. In particular, if price reductions occur, they are likely to be confined to limited segments of depositors, while remaining consumers will be unaffected, or even harmed, by liberalization. The reason behind this assessment is essentially that the markets for bank deposits are characterized by segmentation and frictions that substantially reduce the extent of competition. Evidence that the banking industry is not perfectly competitive is provided by the casual observation that product differentiation is an important dimension of bank competition. Within the same country, where the institutional and regulatory environments are relatively homogeneous, the terms of a deposit contract vary substantially from bank to bank. Even within the same bank similar types of deposits are frequently remunerated differently, suggesting that banks have the ability to discriminate across customers (and the size of their deposits). Hence, banks have some market power stemming from product differentiation and it is preferable to describe the market for deposits as oligopolistic. Of course, the scope for product differentiation and price discrimination arises from the diversity of depositors. In particular, depositors are likely to respond very differently to interest rate incentives (technically, they differ in the interest rate elasticity of their demand for deposits). Such heterogeneity most probably arises because different customers have different levels of information about alternative forms of investment and they face different costs of acquiring, updating and processing such information. Not only does the cost of searching for better opportunities vary, but the cost of managing ‘international’ portfolios differs substantially among individuals as well. It is reasonable, at least for expository purposes, to assume that large depositors are more sensitive to deposit yields.

In this type of market, the best strategy for a bank is to price-discriminate among customers, offering low prices (e.g. high deposit
rates) to the more sensitive customers (e.g. the large depositors), and high prices (low deposit rates) to the less sensitive customers (small depositors). (Appendix A presents formally the implications of a departure from the assumption of perfect competition). This effect is described graphically in Figure 4, where customers are differentiated by their wealth ($w$), wealthier consumers being more sensitive to deposit yields. The interest rate schedules are upward sloping because banks offer better rates to larger customers. Now suppose that the country opens its commercial banking market to foreign competition and that the country is small enough so that foreign banks do not change their strategies, i.e. they maintain their interest rate schedule unchanged. If the foreign banking system is more competitive and/or more efficient than the domestic one, it will be characterized by a higher deposit interest rate schedule. In the absence of any other market friction, capital market liberalization will lead to an outflow of deposits which will lead either to a global increase in the domestic interest rate, or to the failure of the domestic intermediaries.

However, if market imperfections exist and are important, the effects of capital market integration may be far less extensive. As mentioned above, collecting and updating information about alternative banking systems is costly and, even if we ignore the burden of this searching process, we still have to consider the costs, both monetary and non-monetary, of switching between domestic and foreign bank accounts. Moreover, maintaining a business relationship with a bank located

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4 The precise shape of the curve depends on the specific characteristics of the demand for deposits. In the case of Figure 4, we assume that the elasticity of demand increases with the size of the depositor, and does so at a decreasing rate.
abroad can be far more complicated than with a bank located 'around the corner'. Assuming that management costs are proportional to the size of the deposit, the foreign deposit rate effectively faced by domestic customers will be lower than its actual level. Graphically, this is represented by a downward shift in the foreign interest rate schedule. The foreign schedule will cross the domestic schedule at some level of $w$, say $\bar{w}$. Only depositors larger than $\bar{w}$ will face a foreign interest rate higher than the domestic rate and will, therefore, have an incentive to move their deposits abroad. As a result, only the market for large deposits will become more competitive (to the benefit of large customers), while small deposit contracts will be largely unaffected by liberalization. Nor is it any longer the case that domestic interest rates will equal the foreign rates. Foreign interest rates will still exceed the corresponding domestic rates. (These basic conclusions are not altered, under the alternative assumption that the 'switching costs' are fixed. In this case the shift of the foreign interest rate schedule will now be greater at a lower level of deposit size and it is, therefore, possible that the cut-off level $\bar{w}$ will be larger than in the previous analysis.)

It is even conceivable that small depositors could actually be worse off and face declining yields on their bank deposits. So far it has been implicitly assumed that the banking sector was characterized by fixed marginal costs. In this case, increased competition for large deposits will not have spill-over effects on smaller deposits. However, if the banking industry were characterized by decreasing marginal costs (internal economies of scale), negative spill-over effects would arise. Because the loss of market share to the foreign competitors would reduce the scale of operation of the domestic banks, their marginal cost would increase and they would lower the interest rate on those deposits which are smaller than $\bar{w}$.\(^5\) Whether this last effect is likely to occur is an open question. Evidence from the US suggests that constant or increasing marginal costs are the norm (Benston, Hanweck and Humphrey, 1982, and Murray and White, 1983). However, it is interesting to notice what happened in the UK equity market after deregulation in October 1986. The Price Waterhouse (1988) report on the 'Cost of Non-Europe' shows that the commission costs for large transactions decreased after October 1986 while commission costs have actually increased for small bargain values (Table 8). To be sure the apparent existence of the negative spill-over effect may be related to other reasons

\(^5\) In the opposite case, in which the banking industry is characterized by increasing marginal costs, the spill-over effects will be positive. Increased competition in the large deposit tier will tend to raise interest rates for small deposits as well.
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Table 8. Commission rates on equities in the London stock exchange

<table>
<thead>
<tr>
<th>Bargain values (pounds)</th>
<th>Pre-deregulation (%)</th>
<th>Post-deregulation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>1.53</td>
<td>1.63</td>
</tr>
<tr>
<td>5,000</td>
<td>1.26</td>
<td>1.60</td>
</tr>
<tr>
<td>10,000</td>
<td>1.02</td>
<td>1.25</td>
</tr>
<tr>
<td>20,000</td>
<td>0.60</td>
<td>0.63</td>
</tr>
<tr>
<td>50,000</td>
<td>0.53</td>
<td>0.34</td>
</tr>
<tr>
<td>100,000</td>
<td>0.39</td>
<td>0.28</td>
</tr>
<tr>
<td>500,000</td>
<td>0.31</td>
<td>0.25</td>
</tr>
<tr>
<td>1,000,000</td>
<td>0.22</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Source: Price Waterhouse, *The ‘Cost of Non-Europe’ in Financial Services.*

than decreasing marginal costs; it could be the result of cross-subsidization of larger deposits by small deposits. Yet, if the British experiment is a front-runner to EC-wide deregulation, there is some indication that small deposits may end up at the losing end.

So far we have assumed that the foreign banking sector did not change its interest rate schedule in response to the opening of the home market. It is possible, however, that in order to attract new depositors from the home country, foreign banks decide to raise their rates in order to capture a larger share of the domestic market (lower $\bar{w}$ in Figure 5). Of course such a strategy would reduce profits from the already established clientele. Therefore, the smaller the size of the domestic market, the smaller the potential gain in depositors and,

Figure 5. The determination of $\bar{w}$
therefore, the less likely it is that foreign banks will alter their pricing behaviour.\(^6\) A related point was recently raised by Klemperer (1987), analysing the impact of switching costs on the strategic behaviour of firms. Because the existence of switching costs makes the demand for deposits less responsive to price changes, the best strategy for a bank would be to increase the deposit rate only temporarily. Then, after having increased its market share, they could exploit the fact that customers are partially 'locked-in' by the existence of switching costs and decrease the interest rate back to its original level. Thus, while on impact, the liberalization could produce considerable price adjustments, in the longer run these effects may tend to disappear. When most of the movements of deposits have taken place, and the market shares are firmly established, the banks could find it optimal to decrease the interest rates towards pre-liberalization levels. However, if depositors anticipate this type of behaviour, they may decide to limit the extent to which they reallocate their deposits. In this case, the liberalization will only produce an apparent price competition among financial intermediaries, without affecting much the cross-country movements of deposits.

5. Conclusions

Three main conclusions emerge from this article. The first concerns the geographical location of the main financial markets, the so-called 'hot spots'. It seems highly likely that the liberalization process will strengthen the already existing dominant markets, namely London and possibly New York. As residents of countries with relatively small financial markets find it more attractive to operate in developed centres, these markets will become even larger and more liquid, and thus yet more appealing. Of course some countries may be tempted to adopt policies designed to threaten London's supremacy as the main European financial centre but success is most unlikely. Indeed, such action would have to be quite aggressive, like the introduction of off-shore types of regulations. Even in the improbable case that a country takes these extreme types of measures, there is no certainty that they will have the desired effect as thick-market externalities tend to produce considerable amounts of inertia in the financial industry.

A direct empirical study of international bank deposits confirms the existence of external economies of scale or thick-market externalities. The finding that country-specific institutions go a long way towards explaining the observed international bank deposits underscores the

\(^6\) Notice, however, that the rest of the analysis would still be valid even if the foreign banks were to increase their interest rate schedule. The only difference is that \(\bar{w}\) would be smaller.
importance of the liberalization move for the industry. Of particular interest is the result that the inter-bank deposit market responds to a different set of regulations than the general public deposit market: both markets are of course quite sensitive to capital controls, but inter-bank deposits seem driven above all by the size of the economy—a measure of thick-market externalities—while non-bank deposits respond primarily to the tax treatment and to the extent of banking secrecy. These results imply that the wholesale market (inter-bank deposits) should follow the same trend as the ‘hot spots’. While there is some scope for movement in the retail market (non-bank deposits) if countries try to change the regulatory environment, switching costs once again may frustrate these efforts. This is why the third main conclusion is that the increase in competition induced by the European integration will primarily affect the market for large deposits. Small deposit contracts will probably remain unaffected, at least in the short run. It cannot even be ruled out that the increased competition in the larger deposit market will have adverse spill-over effects on smaller bank customers.

Discussion

Charles Bean
London School of Economics

There is a school of thought according to which 1992 will have more profound implications in financial markets than in goods markets, which are already fairly integrated. The removal of remaining capital controls and restrictions on the location of banking activities will affect both the structure of financial markets and the functioning of macroeconomic policies such as the EMS. Much has been written on the latter topic, but little on the former, with the exception of the European Commission’s ‘Costs of non-Europe’ exercise. Grilli has drawn welcome attention to some debatable assumptions in the Commission’s report—particularly that of perfect competition.

In the first part of the paper, Grilli addresses the question why financial activity locates where it does and, therefore, whether financial liberalization will lead to a more homogeneous distribution of financial services throughout the Community. He points to economies of scale arising from ‘thick-market externalities’ as the main reason for the agglomeration of financial activity in a few centres. The focus is very much on physical externalities, such as those due to communication networks. However, a non-tangible externality in the form of a centre’s general reputation for excellence may be equally important. Unlike physical externalities, such a reputation can be destroyed quite quickly by one or two financial scandals (Guinness?). It should also be said that
these externalities need not always be beneficial. Congestion externalities may be important, as in the bidding-up of the salaries of a small number of financial experts with specialist expertise.

This line of argument predicts that the present pattern of financial ‘hot spots’ is unlikely to be affected by 1992. An individual firm will not relocate in pursuit of small internal cost reductions, because of the loss of the external benefits of staying where it is. Only if all firms move together is a relocation likely to occur. Governments may provide financial incentives to encourage such co-ordinated movement, but Community regulations will limit the extent of such action. So, is London’s hegemony assured? Probably. But the current British attitude to the EMS and the process of monetary unification raises the prospect that the UK will be left on the sidelines as the rest of the Community forges a common currency area and a system of central banks to administer it. The resulting shift in focus away from London could be exactly the push needed to ensure that financial firms centre their activities in Paris or Frankfurt.

The rest of the paper looks at the market for bank deposits. Grilli argues, probably correctly, that 1992 will not lead to major changes in banks’ direct investment, since foreign participation in the banking sector is already widespread. The evidence presented suggests that, while capital controls are important, the tax regime and the level of bank secrecy are equally important, so the degree of harmonization in these fields may be important in determining the reallocation of bank deposits in the Single Market.

This analysis ignores difference in the efficiency of banks in different countries. Price Waterhouse took the view in the Commission’s report that deposits would flow towards the most efficient financial intermediaries who could offer the most attractive terms to depositors. Grilli argues that this will occur only for large deposits, since the market for small deposits is subject to significant segmentation and frictions. While I think this judgment is correct, the evidence is not entirely persuasive. Deposit accounts and other instruments are typically bundles of characteristics. A cheque account may or may not have associated overdraft facilities; a building society deposit account may make it easier to get a loan, and so on. There may also be fixed costs or other non-linearities in the costs of servicing an account: the apparent variation in the terms offered (e.g. in Table 8) may reflect these features rather than a lack of competitive behaviour per se.

Grilli also draws attention to switching costs that lock in existing customers. It is worth emphasizing that these do not imply the absence of competition, but rather that such competition occurs when customers first open accounts. This is evident in the UK where there is intense
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competition between the banks for student accounts through introductory offers.

Though I have considerable sympathy with the paper’s general arguments, let me close by noting two shortcomings. First, I was disappointed that, having dismissed the analysis in the Commission’s study as simplistic, Grilli did not attempt to furnish alternative estimates of the microeconomic gains from financial market integration. Are the issues discussed in the paper important or are they just second-order effects? Second, there is no discussion of the asset side of banks’ balance sheets. Financial market integration could be just as important for the cost and supply of bank loans as in the market for deposits.

Jean-Pierre Danthine
University of Lausanne and CEPR

‘There is a paucity of theoretical and empirical analysis in the area of international financial intermediation. Neither the industrial organization literature, nor the international trade and finance literature offers many insights into the issue of what determines the structure, trade flows, and prices in these markets.’ This observation by the author gives the paper the right outlook. 1992 will indeed be as much of a challenge for the economics profession as it is likely to be for the European economies themselves. This paper squarely faces important issues that have not previously been addressed. It shows us how poorly prepared we are, as a profession, to produce convincing and insightful answers to the questions raised by the occurrence of a significant shock such as the completion of the internal market.

The paper tackles three issues. First, it argues that the supremacy of London as the dominant financial centre in Europe is likely to be unchallenged. It is on this point that Grilli’s contribution is most convincing. The model he provides is useful to organize thoughts. Its prediction looks like a fairly safe bet, elegantly supported by the concept of thick-market externalities: even if Paris were to develop into an objectively more efficient financial centre than London, coordination problems could well prevent the emergence of the most efficient geographical distribution of activities and indeed would favour the status quo.

The second issue that the paper addresses relates to the institutional determinants of foreign bank deposits. Here Grilli’s main conclusion is that the factors explaining inter-bank deposits (the level of the dividend tax, the existence of capital controls and the size of the economy) are quite different from the factors explaining non-bank deposits (the level of the interest tax, the presence of controls on capital outflows and the extent of banking secrecy and offshore facilities). While
this is a plausible result, one should use the usual dose of caution in interpreting econometric estimates, such as these, derived outside a fully specified economic model. (In the absence of appropriate data, the economic determinants of international movements of deposits are not part of the regressions). Furthermore, the values given to some of the explanatory variables, notably the secrecy dummy, would deserve further discussion and a sensitivity analysis. The ranking of countries on the secrecy issue is debatable, as is, a fortiori, the index of secrecy ranging from -1 (for France) to +5 (for Switzerland).

Third, pursuing the question of international competition for deposits, Grilli develops a model suggesting that the assumption of perfect competition used in computing the gains from integration in financial markets is likely to lead to an overvaluation of these gains. Assuming an oligopolistic market structure with depositors differentiated by their interest rate elasticity, he obtains the result that an increased degree of competition between banks will favourably affect only the largest depositors. The small depositors could be left unaffected or could even be hurt if the loss in market share to foreign competitors reduces the scale of operations of domestic banks and increases their marginal cost.

I wonder about the significance of bank deposits in the context of 1992. Competition in international banking focuses less and less on deposits and increasingly on the range of services that the banks can offer to corporations. Yet the general message conveyed on this issue is undeniably important: let us be cautious about the benefits of the internal market when they have been computed on the basis of perfect competition models (even if we are not really in a position to produce comparable data under more realistic hypotheses). As to the specific conclusion that the biggest share of the benefits from financial deregulation and integration in Europe is going to accrue to the largest players in the markets, it conforms with the strategy of the large international banks; apparently they do not expect to make profits from small customers in foreign markets.

**General discussion**

Luigi Spaventa wondered whether the demand for deposits was determined on a portfolio basis. The main reason for holding deposits abroad was to facilitate investment in other assets: Belgium and Luxembourg were good countries in which to do so because of the absence of withholding taxes. Several other speakers pointed to the significance of arbitrage induced by differences in regulatory regimes. Denis Richard
stressed the distinction between the liberalization of capital movements by 1990, which would not make a great difference since there was considerable movement of capital already, and the establishment by 1992 of the freedom to supply services, which could lead to a major shake-up of the regulatory environment and competition via product innovation.

This led to a discussion of whether the gains from 1992 in the financial sector had been exaggerated in the Cecchini Report. Victor Norman was puzzled by the magnitude of the estimated gains in relation to gains in the real economy. 1992 was not just about coordinating regulation but also about lowering transaction costs more generally. But these were already low in financial markets. Jacques Melitz thought the Report had attached too much significance to apparent price differentials for service products. Many banking services were joint products so that pricing decisions for any one product were largely arbitrary. He also pointed out that reserve requirements would not be unified. Damien Neven said that domestic and international banking were very different: the Price Waterhouse study of prices had included many products that were not internationally traded. Colin Mayer thought that many of the existing price differentials were exacerbated by informational problems faced by consumers. 1992 was about diminishing these problems, especially through the development of common regulatory standards. It would be important to know how much freedom of access financial institutions enjoyed in each other’s markets. Jean-Pierre Lambert was worried by the effects of 1992 on concentration in the industry.

Mayer also said he was unconvinced by the arguments that London’s preeminent position in Europe was secure. Two reasons why markets might move could be major differences in regulatory costs, and differences in the efficiency of the settlement process. Paris was already on the way to establishing a much more efficient settlement process than that in London, and it would take London some time to catch up.

Appendix A. The theoretical models

A1. Thick-market externalities, ‘hot-spots’ and financial centres inertia

Assume that the production function of a typical financial intermediary is given by:

\[ y = \beta x^\alpha \quad \alpha < 1 \]  

(A1)

where \( y \) is the amount of financial services produced, and \( x \) is the
amount of input. The financial firm is assumed to maximize profits:
\[
\max \Pi = y - px
\]
where \( p \) is the price of input in terms of output. In the absence of any thick-market externalities, firms in different locations will have similar production decisions given by:
\[
x = \left( \frac{\alpha \beta}{\mu} \right)^{1/(1-\alpha)}
\]
If we abstract from possible differences in the relative price of inputs at different locations, financial intermediaries in different countries will make similar decisions, i.e. they will be producing the same amount of services, and they will have the same level of profits.

Thick-market externalities mean that the productivity of a firm is positively affected by the size of the market in which it operates so that the production function of a financial firm in country \( i \) is given by:
\[
y_i = \beta x_i^\gamma \quad \gamma > 0; (\alpha + \gamma) < 1
\]
where \( Y_i \) is the total amount of financial services produced in country \( i \). The larger the size of the market, the larger the firm’s production for a given use of inputs. Let \( Y_i = n_i y_i \), i.e. the product of the number of banks in country \( i \) multiplied by the amount of services offered by each firm. Therefore,
\[
y_i = \beta^{1/(1-\gamma)} x_i^{\alpha/(1-\gamma)} n_i^{\gamma/(1-\gamma)}
\]
The production decision of the typical firm in country \( i \) is given by:
\[
y_i = \left( n_i^\gamma \beta \left( \frac{\alpha}{(1-\gamma)p} \right)^{\alpha/(1-\gamma)} \right)^{1/(1-(\alpha+\gamma))}
\]
In the presence of thick-market externalities output and profits are affected by the size of the market. In a large economy, with a large number of firms, output and profit for each bank are greater than those in a small economy. If the various national markets become integrated, firms located in smaller markets will have an incentive to move towards larger markets.

The government can reduce the incentive for domestic financial intermediaries to relocate part of their activities abroad by acting as a market maker, i.e. by trying to broaden the dimension of the domestic market before the opening of frontiers. Even if there are initially only a few operators in a particular financial market, the government could substantially increase the degree of liquidity by actively participating in the market. A natural example would be futures and options markets for government securities. Let then \( Y_i = g_i n_i y_i \), where \( g_i \) is an indicator
Financial markets

of the participation of the government in the market. Now the output of the firm in the domestic market will be given by:

\[ y_i = \left( g \gamma n \beta \left( \frac{\alpha}{1-\gamma} \right)^{\alpha/(1-\gamma)} \frac{1}{(1-(\alpha+\gamma))} \right) \]  

so that government intervention can compensate for the initially small size of the domestic market, and reduce the incentive for domestic firms to move abroad.

The model can also illustrate the potential inertia of markets characterized by agglomeration externalities. Suppose that a country, say France, introduces new measures which increase the efficiency of its domestic financial market. This is captured by an increase in the \( \beta \) coefficient in the production function. Firms which decide to locate in Paris will face a production function given by:

\[ y_p = \beta^l x_p^a (n_p y_p)^\gamma \]  

where \( \beta^l = k \beta \), with \( k > 1 \), and the subscript \( p \) indicates the location 'Paris'. It is clear that if the whole market moved to Paris, the productivity of the sector could increase. However, whether this move will happen is an open question. Consider the case of a bank located in the current leading centre, say London, which is evaluating the possibility of a switch to Paris. The effects of the decision on bank productivity and profits depend on the actions of the other firms. Suppose that nobody else decides to move to Paris. It can be shown that the output (profits) of the switching firm will be greater than if it remained in London only if:

\[ k > \left( \frac{n_L}{n_p} \right)^\gamma \]  

where \( n_L \) and \( n_p \) are the size of the London and Paris markets, respectively. The increase in productivity must be large enough to compensate for the differential in liquidity in the two markets. If this is the case, the move is always profitable, independent of the other firms’ decisions, and the market will unquestionably move to Paris. However, if (A9) does not hold, a firm will decide to move to Paris only if it thinks that a large enough number of firms are doing the same. The outcome, therefore, depends on market expectations which, in this case, will be self-fulfilling. It is quite possible that the market will remain in London, despite the potential advantage of moving to Paris.

A2. Monopolistic competition in the market for deposits: an example

Suppose, for the moment, that marginal costs are constant and identical across firms. Potential depositors have different elasticities of demand
for deposits. This difference derives from different levels of a characteristic variable, $w$, with which individuals are endowed. For convenience, we refer to this variable as wealth. There are $N$ banks in the market, supplying a homogeneous product (deposit) to customers with identical characteristics. Therefore, they will offer the same interest rate to everyone in the same class of depositors. Finally, we make the standard Cournot assumption that firms compete by choosing a level of deposits and we look for a non-cooperative Nash equilibrium. With fixed marginal costs, banks will decide on the level of deposits for each class of customers, independently of other classes. Routine calculations yield the equilibrium level of interest rate for the customer class $w$, as:

$$r_d(w) = \left( \frac{N \varepsilon(w)}{1 + N \varepsilon(w)} \right) (\bar{r}_L - c)$$  \hfill (A10)

where $c$ is the level of the marginal cost, $\bar{r}_L$ is the (exogenously given) rate on bank assets and $\varepsilon(w)$ is the interest rate elasticity of the demand for deposits of customers with wealth $w$. 

First, notice that more competitive markets, i.e. markets with larger numbers of banks, will be characterized by a higher deposit interest rate, for all classes of customers. Second, the higher the marginal cost, the lower the interest rate. Given the opposite effects of competition and cost efficiency, it is possible that high cost banking systems can nonetheless offer high interest rates if they are characterized by a high degree of competition (i.e. large $N$). Finally, note the existence of price discrimination across customers: different classes of depositors will face different deposit rates. Under the reasonable assumption that larger depositors (high $w$ individuals) have larger elasticities of demand, i.e. $\varepsilon' > 0$, they will be offered higher rates than small depositors.

A3. Monopolistic competition, switching costs and international trade in deposits

Suppose that the banking system of the rest of the world is completely identical to the domestic one, except for a lower (constant) marginal cost. In this case, it is easy to show that:

$$r_d^*(w) = r_d(w) + \left( \frac{N \varepsilon(w)}{1 + N \varepsilon(w)} \right) (c - c^*)$$ \hfill (A11)

where $r_d^*(w)$ is the foreign interest rate on deposits and $c^*$ is the foreign marginal cost, and $c > c^*$. Therefore, the foreign interest rate is always higher than the domestic one, for all classes of deposits. Moreover, since $\varepsilon' > 0$, the difference between domestic and foreign rates is increasing in $w$. This is described in Figure 4. Now suppose that, for domestic residents, there is a positive cost of switching to a foreign bank and of managing foreign bank accounts. We represent these costs by assuming
that the foreign interest rate effectively faced by domestic customers \((i_D^*(w))\) is given by:

\[
i_D^*(w) = r_D^*(w) - s
\]

(A12)

where \(s\) is the 'switching cost'. The \(i_D^*(w)\) and \(r_D(w)\) schedules intersect at a level of wealth \(\bar{w}\) implicitly defined by

\[
s = \left( \frac{N e(\bar{w})}{1 + N e(\bar{w})} \right) (c - c^*)
\]

(A13)

Consequently, domestic customers who are smaller than \(\bar{w}\) will face foreign effective rates which are below the domestic ones (Figure 5 in the text). The positive effects of liberalization are further reduced under the plausible assumption that smaller depositors face larger 'switching costs', i.e. if \(s = s(w)\) and \(s' < 0\). In this case, in fact, the intersection between \(i_D^*(w)\) and \(r_D(w)\) will occur at a higher level of \(w\).

Finally, consider the case in which the marginal cost is not constant. It could be shown that in this case the interest rate equation would be given by:\(^7\)

\[
r_D(w) = \left( \frac{N e(w)}{1 + N e(w)} \right) (\bar{\tau} - c'(\tau))
\]

(A14)

where \(\tau\) is the total amount of deposits sold to all classes of customers. If, because of foreign competition \(\tau\) decreases, the marginal cost \(c'(\tau)\) increases thus generating a decrease in \(r_D(w)\), for \(w < \bar{w}\).

Appendix B. Dummy variables used in the regression

Table B1. Restrictions on capital outflows

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Source: IMF Exchange Arrangements & Exchange Restrictions, Summary Table (restrictions on payments in respect of capital transactions); OECD Controls on International Capital Movements.

\(^7\) For simplicity, we now assume that \(N = 1\).
Table B2. Restrictions on capital inflows

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Source: Sarver (1987); OECD, Controls on International Capital Movements.

Table B3. Secrecy laws

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</table>

Source: Blum (1984); Chambost (1983); Sarver (1987); Walter (1985).

References


