

Disintermediation and the Role of Banks in Europe: An International Comparison*

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The paper presents an empirical analysis of the alleged transformation of the financial systems in the three major European economies, France, Germany, and the United Kingdom. Based on a unified data set developed on the basis of national accounts statistics, and employing a new and consistent method of measurement, the following question is addressed: Is there a general trend toward disintermediation, with banks losing importance to the markets, that is causing these three financial systems to converge? We find that there is neither a general trend toward disintermediation, nor toward a transformation from bank-based to capital market-based financial systems, nor toward a loss of importance of banks. Only in the case of France could strong signs of transformation as well as signs of a general decline in the role of banks be found. Thus the three financial systems also do not seem to be converging. However, there is also a common pattern of change: the intermediation chains are lengthening in all three countries. Nonbank financial intermediaries are taking over a more important role as mobilizers of capital from the nonfinancial sectors. In combination with the trend toward securitization of bank liabilities, this change increases the funding costs of banks and may put banks under pressure. In the case of France, this change is so pronounced that it might even threaten the stability of the financial system. *Journal of Economic Literature* Classification Numbers: G21 and G23. © 1999 Academic Press

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1. INTRODUCTION

Not too long ago, most economists did not consider the financial sector¹ of a country to be important for welfare and growth. In standard neoclassical theory, financial institutions hardly appear at all. This is not so much because they are simply left out, but rather because financial institutions and financial contracts do not have a *legitimate* place in the theoretical edifice of general equilibrium analysis. Almost the same can be said for growth theory in the traditions of Harrod–Domar and Solow–Swan.² In these theories “capital” is not “financial capital” but encompasses real assets or claims to real assets. Under the influence of the theoretical work of Joseph Stiglitz (e.g., 1985, 1994) and other proponents of a theory based on the economics of information and incentives, and the empirical work by King and Levine (1993) who build upon these foundations, hardly any economist would still question that “finance matters.” As a consequence, academic economists, including those with a strong theoretical inclination, have devoted a great deal of attention to financial institutions, financial structure, and the general design of financial systems.³

As banks are just one part of the financial sector, which also includes organized financial markets and nonbank financial intermediaries (NBFIs), acknowledging that the financial sector and the financial system are important does not necessarily imply that banks, as a special type of financial institution, are also important. As Merton and Bodie (1995) and other adherents of a functional approach to finance argue, the institutional forms through which certain financial functions are executed may not be essential to the functions and might therefore change over time.

When it comes to assessing the present roles and likely future prospects of banks as a special type of institution, opinions differ. Some observers consider banking to be a “declining industry”; the well-known banker Ulrich Cartellieri from Deutsche Bank predicted several years ago that they will be the steel mills and shipyards of the 1990s; and Miller (1998) proclaims “the obsolescence of commercial banking” as an unquestionable fact which only needs to be explained in an acceptable way.

¹ Sometimes the terms “financial sector” and “financial system” are employed in an indiscriminating manner. In this paper we use the term “financial sector” for the totality of institutions which provide financial services to the nonfinancial sectors of the economy, whereas the term “financial system” designates the demand for and supply of financial services and the way in which, and the economic units by which, they are provided. Note that according to this definition not only financial intermediaries and markets, but also the patterns of saving and financing and aspects of corporate governance, are part of the financial system of a country; see Schmidt and Tyrell (1997).

² See the overview in Barro and Sala-i-Martin (1995). According to Levine (1997), the same even holds for the new growth theory in the style of Romer and Lucas, although there would not be a conceptual problem of integrating financial aspects into their models, as the article by Levine demonstrates in detail.

³ For recent surveys see Thakor (1996), Boot and Thakor (1997), and Allen and Gale (1997), Chapter 1.

Others strongly disagree. Boyd and Gertler (1995) paraphrase Mark Twain in the title of their paper "Are Banks Dead?" and suggest what they see as the answer: "(The) Reports (are) Greatly Exaggerated."⁴

The present paper seeks to make an empirical contribution to the discussion of the role of banks. Looking at the situation in the United States, one can indeed get the impression that their role is fading.⁵ As the American economy usually sets the pace for other countries, one might be inclined to think that a *general* process consisting of disintermediation, securitization, and an increase in the importance of nonbank financial intermediaries and financial markets has already led, or will lead, to a *general* decline of banks in industrialized countries.

Europe provides a particularly interesting testing ground for this hypothesis. The ongoing process of European financial integration, which started in the 1980s, has exposed the financial systems of the member countries to a wave of regulatory change. It is more likely in a time of change than in a stable environment that economic forces which could alter the role of banks will indeed have a visible impact. Thus the financial systems of the three major European economies—France, Germany, and the United Kingdom—might exhibit the features of disintermediation and securitization mentioned above with the role of banks in these economies declining as a consequence.

The present paper investigates whether there are *common* tendencies toward disintermediation and securitization in these three countries and whether they indicate, or may have led to, a declining role of banks. The specific questions posed are as follows: (1) Is there a general trend toward disintermediation, with banks losing importance to the markets, that is causing these three financial systems to converge? (2) Is there a common pattern of structural change? We will show that the answer to the general question posed in (1) is negative. On a country by country basis, however, the evidence is mixed. In addition, the paper focuses on problems of measurement. It develops and applies both a general framework and a specific method to measure the importance of banks. While mainly trying to derive substantive results, we also want to assess the method itself by asking how plausible the results of applying it appear in the light of additional information. The answer to the second question is in the affirmative. The common pattern of structural change in all three economies is the growing importance of nonbank financial intermediaries relative to banks.

⁴ For a recent collection of articles supporting this view see the Winter 1996 issue of the *Journal of Applied Corporate Finance*.

⁵ See, e.g., Greenbaum and Thakor (1995), last chapter. However, our most recent, as yet unpublished work on intermediation ratios in the United States indicates that this impression may indeed be misleading. The ratios, which are not presented in this article, hint at a continuous decline in the role of banks since the mid-1970s. However, the level reached in 1997 approximately resembles the level of 1952.

To our knowledge, this is the first comparative study of Germany, France, and the United Kingdom which analyzes comparable data on disintermediation, securitization, and the role of banks.⁶

The paper is structured as follows. Section 2 provides the theoretical background needed to show why banks might be important and how their importance can in principle be measured. Section 3 develops the method of measuring the importance of banks by defining ratios of intermediation and securitization which can shed light on their role. Section 4 contains four hypotheses concerning disintermediation and securitization and the role of banks in the three countries and evaluates them empirically on the basis of these ratios. The discussion of these hypotheses leads to a comparison of the development of the financial systems of the three countries. In addition, the section discusses briefly how reasonable our results appear in the light of additional information. Section 5 draws conclusions with respect to the importance of banks and the limitations and merits of our method of measurement, and points out areas in which future work along the same lines would be useful.

2. THEORETICAL BACKGROUND: WHY BANKS MIGHT BE IMPORTANT

2.1. *The Conventional Theory of Financial Intermediation*

A well-known exception to the tradition in economic analysis of ignoring the role of the financial sector is the theory of financial intermediation of Gurley and Shaw (1955, 1960). According to their view, banks are intermediaries which “go between” surplus and deficit units. They collect deposits from savers, typically households, and channel them to borrowers, typically the enterprise sector and the government. In the process of doing so, they transform the quality of capital with respect to lot sizes, maturities, and risks. The explanation why banks exist follows directly from this function: Banks exist because, as intermediaries and transformers of capital, they are “productive”; they increase the social value of capital by enabling it to be put to more efficient use.

In the analysis of Gurley and Shaw, the distinction between banks on the one side and capital markets and NBFIs on the other side is not well developed. Indeed, Gurley and Shaw largely overlook the fact that under certain circumstances capital markets might be able to perform the functions of intermediation and transformation. The distinction between banks as monetary financial intermediaries and NBFIs does also not play an essential role in their analysis of the function of banks. Thus the explanation given for the existence of banks is implicitly based on the comparison between a situation in which the only intermediaries which

⁶ Country-specific studies employing a similar approach are also rare. The first comparable study for the case of Germany was published not long ago by Domanski (1997). The most relevant source for France is Plihon (1995). No similar study for the United Kingdom has come to our attention so far.

exist are banks and a situation in which there is no financial sector at all and in which financing takes the forms of self-financing or direct financing.⁷ Despite this shortcoming, the conventional theory of financial intermediation provides a basis for measuring the role of banks: The extent to which they intermediate capital provides insights about their importance. We shall use a concept of measurement which builds upon this idea.

2.2. *The New Theory of Financial Intermediation*

The new theory of financial intermediation, based on the work of Townsend (1979), Diamond and Dybvig (1983), Diamond (1984), Allen (1990), Calomiris and Kahn (1991), and others, is much more explicit in analyzing what banks as a special type of intermediary can do better than financial markets and NBFIs, and it explains their existence by pointing out these specific strengths (see, for example, Bhattacharya and Thakor (1993)). We also use these insights for our empirical work.

The individual models which make up this branch of the literature show that banks are financial intermediaries which can, under *specific* conditions, solve *specific* information and incentive problems in the relationships with savers and investors in ways which are, in a *specific* sense, better than the way in which these problems could be solved either by direct financing or by financing via capital markets and/or NBFIs. Although each individual model is highly specific one can summarize the qualitative content of this line of research by saying that “banks are unique” (James, 1987). In fact, they are the specialists for the “difficult cases”: On their asset side they are particularly well suited to act as (delegated) monitors (Diamond, 1984), and thus their special role can be seen in the financing of investment projects which capital markets would not be in a position to assess and to monitor. On their liability side, their special role derives from the fact that they provide liquidity to their clients and can commit themselves to do so even under adverse conditions. The function of providing a certain liquidity assurance to their clients is based on their role of taking deposits from their clients.

Thus in trying to assess the importance of banks one should take a special look at the extent to which they rely on funding in the form of deposits and to which they grant loans which imply monitoring of their borrowers.⁸ Although it may be difficult to measure these qualitatively special roles of banks, in our paper we nevertheless make an attempt to do it.

⁷ An indication of the tendency to set banks at a par with the entire financial sector is the widespread use of the ratio of money to GDP (“financial depth”) as a measure of the quality or the state of development of a financial system (e.g., in World Bank, 1989).

⁸ As Rajan (1996) has pointed out, there is also a functional relationship between the special roles of banks as monitoring lenders and as providers of liquidity. This not only indicates that the analysis of Gurley and Shaw is basically sound, but also reinforces the point that “banks are unique” in that they combine the two complementary activities. See also Diamond and Rajan (1998).

2.3. *Implications*

The implications of the theoretical considerations outlined above are straightforward. Both the conventional and the new theories of financial intermediation can be used as the theoretical background for our empirical work. Their “message” can be summarized as follows:

A high level of financial intermediation performed by banks, and in particular the transformation of deposits into loans which entail the monitoring of borrowers, and the qualitative transformation of capital indicate that banks play an important role. Disintermediation and, to a certain extent, the securitization of bank deposits and bank loans can be regarded as signs of a certain loss of importance on the part of banks.

That banks may lose some of their importance as intermediaries should not be misunderstood to imply that the overall level of intermediation in a given economy declines too. As the “functional approach to finance” (Merton and Bodie, 1995) makes sufficiently clear, it may well be the case that a given function is taken over by other institutional forms. Nor would a decline of the role of banks as intermediaries necessarily indicate that the overall importance of banks declined, as they may take over or expand other functions at the same time.⁹

3. MEASUREMENT: METHOD AND DATA

3.1. *The Concept of Intermediation and Securitization Ratios*

The measurement of intermediation and securitization ratios is based on the concept of the economy as a set of sectors that interchange financial assets. Accumulated over time these financial flows translate into financial assets of one sector and an offsetting liability item of another sector. With the aggregation of financial flows over sectors, flows between entities that belong to the same sector are consolidated, so that, say, a bank’s loan to another bank or a liability of one nonfinancial company vis-à-vis another nonfinancial company are cancelled out. The following Table I is based on this flow-of-funds concept and shows the resulting accumulated and value-adjusted financial assets for the German economy in 1996. The figures are normalized to 1000 so as to make the data easier to interpret.

Entries in a given row indicate financial claims which the sector indicated on the left of the first column holds on each of the other sectors. These claims can either be securitized (sec.) or nonsecuritized (n. sec.). Correspondingly, cells in a given column indicate where the financing of the sector in the top row comes from. The cells on the diagonal would indicate intra-sectoral claims and liabilities; but they are not contained in the matrix of intersectoral claims.

⁹ For the sake of brevity, we shall not keep repeating these general reservations although they apply to most of what follows; see, however, Section 4.3 below.

TABLE I
German Sectors' Financial Assets and Liabilities in 1996 (Normalized)

Assets \ Liabs.	1a		1b		2a		2b		3a		3b		4a		4b		5a		5b		6a		6b		Sum
	Households		nf. Companies		Public sector		Rest of world		Banks		NBFI														
	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.	sec.	n. sec.			
1 Households	—	—	11	15	15	0	9	2	24	106	20	67	270												
2 nf. Companies	0	0	—	—	3	0	4	40	9	48	11	0	113												
3 Public Sector	0	0	2	0	—	—	0	10	1	17	1	0	32												
4 Rest of World	0	0	6	23	18	5	—	—	27	44	2	0	126												
5 Banks	0	94	9	98	24	48	9	45	—	—	13	0	340												
6 NBFI	0	21	15	6	14	2	6	1	21	34	—	—	119												
Sum	0	116	44	143	73	55	28	98	81	248	46	68	1000												
	116		186		128		126		329		114														

It is evident that some sectors, notably households, are on average surplus units while others, notably the nonfinancial (nf.) companies and the public sector, comprise deficit units. The financial sector, which subdivides here into two sub-sectors, namely banks and NBFIs, is characterized by an approximately balanced financial account.

Intermediation ratios (IR) and securitization ratios (SR) of nonfinancial sectors can be computed directly from data like those in Table I. Whereas IRs take a *sectoral/institutional* perspective and indicate what portion of total financial assets (liabilities) of nonfinancial sectors is channeled to (from) financial intermediaries as opposed to claims on (from) other nonfinancial sectors, SRs take an *instrumental* perspective and answer the question: What portion of a given class of total financial claims (liabilities) of nonfinancial sectors is held (owed) in securitized form?¹⁰ The Asset-IR of all Nonfinancial Sectors¹¹ indicates what fraction of total financial claims of the nonfinancial sectors on all other sectors are claims on the two financial subsectors. In Table I it can be computed by dividing the sum of rows 1–4 in column 5a–6b by the total sum of rows 1–4. The Liability-IR of all Nonfinancial Sectors, on the other hand, indicates what fraction of all liabilities of the nonfinancial sectors are owed to the financial sector. It is calculated by first summing over rows 5 and 6 in columns 1a–4b and then dividing the result by the total sums in these columns.¹²

As the financial account of the financial sector is approximately balanced, the Liability-IR of all nonfinancial sectors and the corresponding Asset-IR should be roughly equal. This is indeed the case for the data in the table above:¹³ both ratios

¹⁰ Following standard notions, we treat stocks, bonds, notes, money market instruments, investment certificates, and certificates of deposits as securities.

¹¹ In the remainder of the paper we will use capital letters when referring to the specific intermediation ratios and securitization ratios defined here.

¹² Deleted in proof.

¹³ The equality also approximately holds for our entire data set.

work out at 70%.¹⁴ More than two thirds of the claims of the nonfinancial sectors are thus held against banks and NBFIs, and less than a third are consisting of direct claims on other sectors.

SRs of nonfinancial sectors focus on the type of their assets and liabilities and are computed analogously to IRs. They indicate the portion of a given class of assets and liabilities, respectively, that are securitized. Summing over columns 1a, 2a, 3a, 4a, 5a, and 6a in rows 1–4 and dividing by the total sum of these rows yields the Asset-SR of all Nonfinancial Sectors. The Liability-SR of all Nonfinancial Sectors equals the sum of rows 1–6 in columns 1a, 2a, 3a, and 4a over the total sum of columns 1a to 4b. In the case of the SRs, the equality of asset side and liability side does not necessarily hold because the financial sector may have more securities on either of the two sides of its account. In 1996 the German nonfinancial sectors' Asset-SR was larger than their Liability-SR (30% compared to 26%).

Apparently, Table I also lends itself to the computation of *partial* IRs and SRs. For example, the Asset-IR of Households (80%) indicates the extent to which households' financial assets consist of claims against financial intermediaries. This ratio can be further broken down into the Asset-IR of Households with Banks (48%), which specifies the proportion of bank liabilities in the households' financial portfolio, and the Asset-IR of Households with NBFIs (32%).

The set of liability ratios of nonfinancial companies are also of particular interest. The relative amount of funds provided by banks is given by the Liability-IR of Nonfinancial Companies with Banks (54%), while the proportion of securities in all liabilities is reflected by the Liability-SR of Nonfinancial Companies (24%).

We have so far discussed ratios pertaining to the nonfinancial sectors. However, the concept of IRs and SRs can also be applied to the financial sector itself and to its two components. For example, the Liability-SR of Banks (25%) illustrates the degree to which banks rely on securities to fund their operations. The Liability-IR of Banks (17%) indicates the proportion of funds which banks obtain from other types of intermediaries, i.e., from NBFIs, and thus measures the length of the financial intermediation chain in an economy. This particular ratio exemplifies one of the strengths of our concept: Ratios like "Financial Sector Assets over Total Financial Assets of the Economy" that are frequently employed to describe the importance of the financial sector in a given country may be misleading because they double-count intra-financial-sector claims. For this as well as other reasons they are not well suited to indicate whether the roles of financial intermediaries differ across countries and over time.¹⁵

It should be clear by now that the concepts of measurement utilized in the remainder of this paper have a theoretical background and are defined in a consistent

¹⁴ This, as well as similar figures which follow in this section, refer to Table I above describing the case of Germany in the year 1996.

¹⁵ Figure 6 displays the portion of bank liabilities that are owed to NBFIs and hence are doublecounted when employing the traditional ratio mentioned above. In the case of France this portion exceeds 15% in the early 1990s.

TABLE II
Sources for National Accounts Data

Germany	1982–1996	Deutsche Bundesbank: Ergebnisse der gesamtwirtschaftlichen Finanzierungsrechnung für Deutschland
France	1981–1994	Banque de France: Tableau des opérations financières
United Kingdom	1982–1995	Central Statistical Office, Financial Statistics (The Blue Book)

manner.¹⁶ As we shall see later, they can be employed to formulate and test powerful statements about investment and funding patterns of the various sectors in a given economy.

3.2. *The Data*

This section describes important aspects and problems pertaining to the coverage and construction of our data set. The problems have to be kept in mind when drawing conclusions from the empirical results.¹⁷

National account statistics compiled by national statistical offices or central banks are a data source which lends itself almost naturally to our type of analysis. Table II shows the sources for our three-country study. The data series start in the early 1980s in order to cover the period of far-reaching deregulation and liberalization in France and the United Kingdom in the mid 1980s and reach out as far into the present as data are available to us.

The accounts contain financial assets and liabilities of an economy's sectors on both a flow and a stock basis.¹⁸ Although there is an agreed standard for their construction, a comparison of indicators based on national account statistics from different countries must invariably deal with divergent (i) definitions of sectors, (ii) inclusions of items, and (iii) degrees of intra-sector consolidation. Consequently, we had to adjust the data in these three respects in order to arrive at a truly comparable data set with consistent sector and item definitions. It will become clear, however, that some international differences could not be eliminated.

(i) The most prominent example of international data differences concerns the definition of the sector of nonfinancial companies. Whereas the German sector

¹⁶ To the extent that we are looking at ratios, we are providing some control for business cycle variations across time and countries. However, as a referee has noted, the ratios may be affected by monetary policy, which in turn usually is a function of the macroeconomic environment. We believe this effect to be only minor, because the time period we are analyzing encompasses economic upturns and downturns in all three countries and all relevant ratios indicate only stable trends.

¹⁷ See also Corbett and Jenkinson (1996) who discuss the suitability of national accounts data for measuring the financing behavior of firms over time and across countries.

¹⁸ We have computed IRs and SRs on both bases. In this paper we only present those based on stocks because they are less erratic and thus better suited to illustrate and compare trends that develop over a longer period of time. The drawback of stock-based data for securities—namely, that no distinction is made between changes in value and actual additions to or deductions from the sector accounts—has been found to have no fundamental implications for our main results.

account also covers unincorporated enterprises and partnerships, both the French and the British statistics include these enterprises in the household sector account. The liability ratios for nonfinancial companies of the latter two countries are thus biased toward the financing patterns of big companies and corporations.¹⁹ A second complication arises from the disparate treatment of public enterprises. For Germany and France they could be included in the companies' sector; the data for the United Kingdom did not allow this. As a consequence the privatization waves in the latter two countries bear differently on the respective ratios. Adjustments of sector definitions were also necessary with respect to the financial sector. For the United Kingdom we included building societies in the banking sector since many of these institutions changed their status during our observation period.²⁰ Specific items originally recorded in the public sector, e.g., selected activities of the treasury and the postal bank organization, have been included into the French banking sector. Due to the existence of country-specific institutional forms and functions of NBFIs, their sector is not perfectly homogenous across countries, either. In this case we have not made adjustments.²¹ Adjustments to domestic claims and liabilities vis-à-vis the sector "Rest of World," which is highly aggregated by definition, would have been desirable, but were not possible. In particular, the data did not allow us to differentiate between foreign nonfinancial and financial sectors, so the role of international commercial banking could not be analyzed explicitly.

(ii) The second group of differences in data construction concerns the inclusion of specific asset and liability items, particularly trade credits. The French accounts specify trade credits for each sector on an unconsolidated basis. The accounts for the United Kingdom consolidate trade credits but neither record them for the household sector nor for small companies. Finally, the German accounts only provide information on foreign trade credits. As a consequence, we only consider foreign trade credit for all three countries. For France, where trade credit has traditionally been an essential means of direct financing between all types of companies, this omission tends to exaggerate the intermediation ratios and securitization ratios relative to the other two countries.

(iii) As with trade credits, the degree of consolidation also differs with respect to other items, particularly securities. The British Central Statistical Office reports all items only after intra-sectoral consolidation. Because we are mainly interested

¹⁹ Another particularity of the German data, namely the inclusion of the German households' real estate activities into the nonfinancial companies' sector, aggravates this disparity. However, an omission of the entire real estate subsector does not change our results fundamentally and would imply even greater inconsistencies.

²⁰ No comparable phenomenon could be observed in Germany because German banking law does not provide for such conversions. Therefore we treated the "Bausparkassen" as NBFIs.

²¹ Pension funds represent an important type of NBFI in the United Kingdom, whereas they are almost unknown as a separate type of institution in Germany and France. This is of course due to the specific nature of the Anglo-Saxon pension system. For France we included those financial accounts of the public sector that are attributable to the social security system into the NBFI sector.

in inter-sectoral claims, this in fact suits our purposes. However, since quite a few items are reported separately for the subsectors of the public sector, namely public companies, local authorities, and the central government, inconsistencies may result from nonadjustable flows between these entities. In contrast, the French and the German central banks do not consolidate securities. Hence, we had to neutralize these claims. When we tried to do this, we encountered a problem that securities have in common with a number of other items in all national accounts. In some instances, the construction of the statistics does not permit one to directly determine the other sector on which a specific claim is held or to which a specific liability is owed. An example may help to illustrate the problem: Assume that in a given year the household sector owns 100 units in bonds. No information is provided concerning the issuers of *these* securities. However, from the liability-side data for all other sectors we know their respective weights in the market value of total bonds outstanding in that particular year. We thus had to make a simple, but inevitably crude, assumption to attribute the households' bonds to the various other sectors: We assume that the bond portfolio of households is composed exactly like the portfolio of all bonds outstanding in the respective economy. Extending this assumption to all sectors amounts to postulating that all sectors hold in their portfolio the same *portion* of bonds issued by banks, insurance companies, nonfinancial companies, etc. Due to the lack of detailed information we had to apply this method to all types of securities (bonds, equity, commercial paper, money market instruments) for all three countries, to the item "miscellaneous instruments" for the United Kingdom, and to the items "other assets" and "other liabilities" for Germany.

Again, all of these difficulties have to be borne in mind when we want to interpret the ratios computed in a meaningful way. Our experiences in dealing with the data, however, revealed that they primarily affect the levels of the ratios and not so much their changes over time.

4. HYPOTHESES AND EMPIRICAL RESULTS

4.1. Overview

In this section, we develop and test four propositions or hypotheses²² about changes in the financial systems which should have implications for judging how

²² To avoid possible misunderstandings, we want to emphasize that the following propositions are not law-like general statements in the sense in which the term "proposition" is used in the literature on the philosophy of science. Thus we will call them hypotheses in the following. The domain of our hypotheses is restricted to three countries only. Therefore it might be more appropriate to call our investigation a comprehensive case study. (We are grateful to an anonymous referee for drawing our attention to this point.) By way of implication, we would also like to emphasize that it might be dangerous to generalize our findings to other European countries.

the role of banks may have changed in recent years. The four hypotheses differ in several respects:

(1) While the first three are based on notions which one hears frequently from economists and practitioners from the financial industry when they discuss structural changes in the financial systems of industrialized countries, and turn out not to be correct, the fourth hypothesis, which is better supported by the data, is not a standard claim of the “educated public.”

(2) While the first two hypotheses, which are discussed in Subsection 4.2, are general in that they refer to disintermediation and securitization at the level of the entire financial systems, permitting, however, to draw at least tentative conclusions about changes in the role of (commercial) banks, the third and fourth hypotheses, which we will present in Subsection 4.3, address the role of (commercial) banks directly.

(3) As far as possible, we shall attempt to formulate our hypotheses in such a way that we can test their validity with our intermediation and securitization ratios. In the process of developing and testing the four hypotheses, we will employ ratios which are partial ratios with increasing degrees of differentiation as explained in Section 3.1 above.

In order to motivate our discussion of the four hypotheses and to facilitate the understanding of the logical sequence which underlies their presentation, we employ the same graphical model of financial intermediation and apply it with increasing degrees of sophistication.

4.2. General Hypotheses

Hypothesis 1. There is a general tendency toward disintermediation.

This simple and general hypothesis can be tested with the overall intermediation ratios of assets and/or of liabilities for the totality of the nonfinancial sectors vis-à-vis the entire financial sector. Figures 1a and 1b show that these intermediation ratios do *not* fall in *all three* countries: The hypothesis is clearly not valid for the case of Germany and the United Kingdom. In both countries, the overall intermediation ratios are almost constant, and the ratios are almost equally high. In France, on the other hand, there is a substantial decline of the intermediation ratio; this decline is also relatively continuous over the observation period.

As households are the major surplus sector, we also analyze the partial Asset-IRs of Households²³ (Fig. 1c). Between countries and over time these ratios indicate the same pattern as is shown by the overall intermediation ratios. As nonfinancial companies are a particularly important deficit sector, we also look at the Liability-IRs of the Company sector vis-à-vis the entire financial sector (Fig. 1d). Here again, we observe the same pattern: The ratios of German and British nonfinancial

²³ We remind the reader of the convention to use abbreviations and capital letters when we refer to the ratios explicitly defined in Section 3.

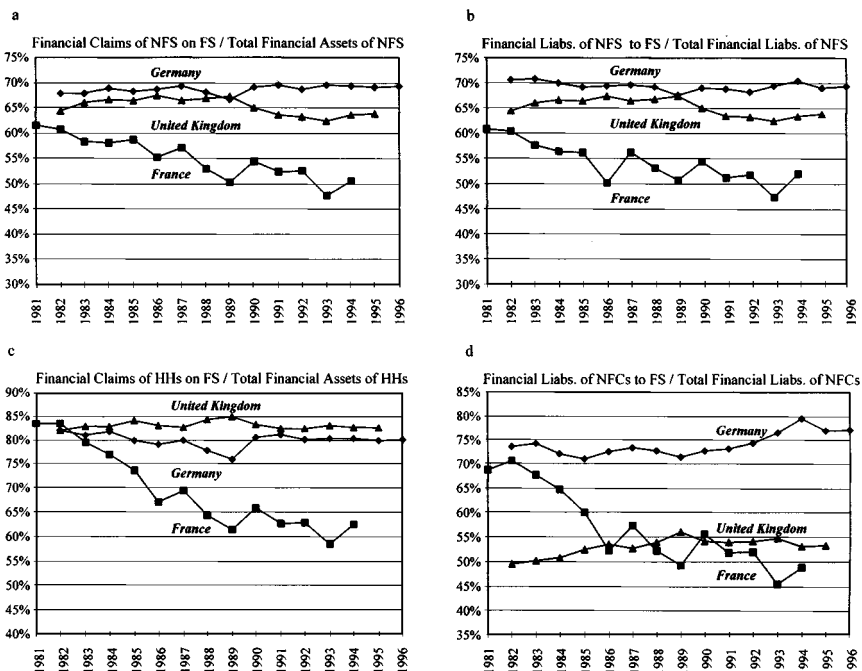


FIG. 1. Intermediation ratios with respect to the financial sectors. (a) Asset-IR of all nonfinancial sectors (NFS). (b) Liability-IR of all nonfinancial sectors (NFS). (c) Asset-IR of households (HH). (d) Liability-IR of nonfinancial companies (NFCs).

companies are not decreasing, in fact, they are increasing to a remarkable extent. In France, the decline in the ratio turns out to be even more pronounced when compared to the overall intermediation ratio.

Thus the first hypothesis can be clearly rejected for Germany and the United Kingdom, and thus also as a general hypothesis, while it can be accepted in the case of France.

In order to lay the groundwork for the comparison with the following hypotheses, we shall briefly explain why one might be inclined to think that an overall disintermediation could indicate a decreasing importance of banks, and why such a conclusion would *not* be warranted. Those who regard an alleged tendency toward *overall* disintermediation as an indication of a declining importance of banks seem to have the following simple model (Fig. 2) of an economy in mind. In this diagram, as well as in those which follow, capital letters indicate the different stocks of claims and liabilities and the flows from which they have resulted.

A process of disintermediation could be characterized by a switch of financial "flows" from the channel C&E, which leads through the banks, on the right in Fig. 2 to channel A on the left. What this over-simplified model overlooks is that the financial sector also includes the subsector of NBFIs. Therefore, a constant

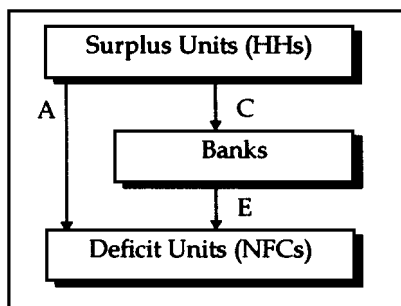


FIGURE 2

intermediation ratio as in the cases of Germany and the United Kingdom could also be consistent with a shift from intermediation by banks to intermediation by NBFIs and thus a decreasing role of banks.²⁴ In the extended graphical model of Fig. 3, this possibility could be represented by a shift from channel C&E to channel B&D.

In the literature, disintermediation and securitization are not always carefully distinguished.²⁵ Occasionally, the two terms are even used synonymously. Like disintermediation, securitization is considered a feature of modern financial systems. Thus, we shall now investigate.

Hypothesis 2. There is a general tendency of securitization.²⁶

This hypothesis cannot be rejected on the basis of the data, as can be seen in Fig. 4. The Asset-SR of all Nonfinancial Sectors (Fig. 4a) shows strong growth for France, only a modest increase in Germany, and almost no change in the United Kingdom. As a consequence, the difference in levels for the United Kingdom and Germany on the one hand, and that for France on the other, becomes more pronounced. An almost identical trend is reflected in the Asset-SR of Households (Fig. 4c) for all three countries: French, German, and, to a lesser extent, British households as well invest an increasing portion of their financial portfolio in securities.

A look at the *Liability*-SRs of all Nonfinancial Sectors (Fig. 4b) reveals a general trend toward securitization. It is interesting to note that, in terms of securitization, the financing patterns of the totality of British nonfinancial sectors seem to have changed more than their investment behavior. This is probably due to the increasing

²⁴ Conversely, it is not possible in principle to derive a declining role of banks from a declining overall intermediation ratio, as the intermediation by NBFIs might decline more; however, as an empirical fact this is not relevant in what this paper discusses.

²⁵ See, e.g., OECD (1995) and for a clear discussion of this “nebulous term” Berlin (1992), or Frankel (1993) with the critical comment by J. Holtcroft.

²⁶ For the sake of clarity we again want to stress that in the context of this article, securitization is defined as an increase in the usage of all kinds of securities by all sectors and not only in the narrow sense of financial institutions securitizing an increasing portion of their assets and liabilities.

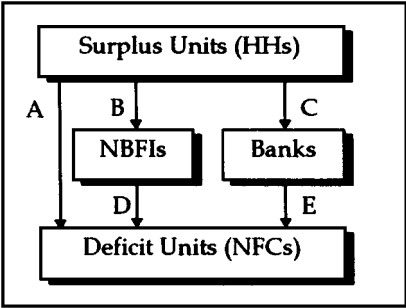


FIGURE 3

involvement of pension funds and life assurance companies as the liabilities of these NBFIs mainly consists of unsecuritized claims held by households, whereas the majority of their assets are bonds and stocks. The extremely high (especially when compared to the other two countries) Liability-SR of Nonfinancial Companies in the United Kingdom is an empirical manifestation of the theoretical notion of a market-based financial system. Large British companies have traditionally met

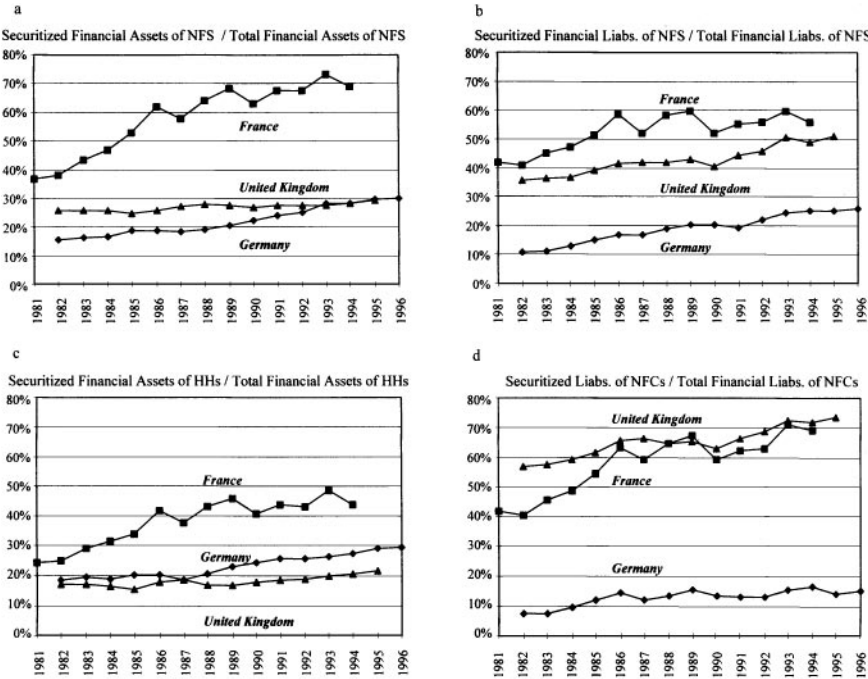


FIG. 4. Securitization ratios. (a) Asset-SR of all nonfinancial sectors (NFS). (b) Liability-SR of all nonfinancial sectors. (c) Asset-SR of households (HHs). (d) Liability-SR of nonfinancial companies.

their external financing needs via the capital markets, and they seem to be doing this to an increasing extent.²⁷

The low Liability-SRs in the German financial system clearly depict one facet of what economists circumscribe with the term “bank-based financial system.” Nonfinancial companies rely on capital markets as a means of financing to an almost insignificant extent (Fig. 4d): They have been satisfying less than 10% of their external—and inter-sectoral—financing needs through securities issues. The considerable increase in the overall Liability-SR after 1991 can be attributed to the German reunification, which greatly increased the financing needs of the public sector.

The French nonfinancial sectors, and in particular the nonfinancial companies, show an increase in their financing via securities, particularly during the early 1980s. The French trend toward securitization, both on the asset and the liability side of the nonfinancial sectors, might indicate that France is changing from a bank-based to a market-based financial system.

What could be the intuition behind considering an increase in the securitization ratio as an indicator of a declining importance of banks? A simple explanation would recur to Fig. 2 in combination with the assumptions that direct financing is largely securitized, while the liabilities of banks are mainly deposits and their assets are mainly loans. Thus, in this “model” disintermediation and securitization would be one and the same thing, and therefore securitization ratios would not add information to that contained in the intermediation ratios.

A somewhat more subtle interpretation would be based on Fig. 3, again in combination with the assumption that the assets and liabilities of NBFIs are more likely to be securitized than those of banks.²⁸ In this interpretation, an increase in the securitization ratios is an indicator of a declining role of banks. As this is not the same thing as a declining overall intermediation ratio, there is a good reason to look at the interaction of the two types of ratios, as we shall do in the next section.

4.3. *Specific Hypotheses about the Role of Banks*

We now turn to two hypotheses which address the role of banks directly, which are based on specific forms of interaction between intermediation and securitization ratios, and which make use of partial intermediation and securitization ratios.

The relevant literature contains some quite bold hypotheses about the development of financial systems. One such hypothesis is that banking is a “declining industry.” A seemingly different hypothesis is that financial systems tend to develop

²⁷ The marked difference in levels between the Liability-SRs of Nonfinancial Sectors and that of nonfinancial companies can be mainly explained by the financing patterns of the “overseas sector.” They are characterized by nonsecuritized interbank operations of *foreign* financial institutions, which depress the overall SR, because, as was explained in Section 3.2 above, foreign banks are counted as part of the foreign sector, and thus as a nonfinancial sector, in the official British statistics.

²⁸ Thus, a closed end investment fund would be the prototypical NBFI. Note that this assumption is not true in the case of the United Kingdom because of the role of pension funds, as explained above.

“naturally” from being old-fashioned and bank-based to being more advanced and capital market-based. The new CEO of Deutsche Bank, Mr. Breuer, seems to see this as the likely future and to regard it more as a chance than as a threat to his bank. Rybczynski (1984) is a standard source for the same view in the academic literature. In fact, except for the emotional overtones, these two hypotheses need not be in contrast because a shift of financial activity to “the capital markets” would also imply a shift away from traditional banking as intermediation. This leads us to our third hypothesis:

Hypothesis 3. Financial systems become more capital market-based and less bank-based; and/or banking is a declining industry.

The not-very-explicit empirical basis for the claim that (commercial) banking is a declining industry or that financial systems are becoming “more modern” is the belief that there are tendencies toward both disintermediation and securitization at an overall level.

Using the results derived in the discussions of hypotheses 1 and 2 above, one *cannot*, on the basis of the alleged association with disintermediation and securitization as potential causal factors, expect that banks are losing importance in Germany, simply because overall intermediation is not on the decline in this country. There should also not be much change in the United Kingdom because the British system has already been “capital-market based” for a long time. In France, in contrast, banks could indeed be declining and/or the entire French financial system could be in the process of transforming itself from a German-style bank-based system to a UK-style capital market-based one as intermediation declines and securitization rises in general. These claims fit the facts quite well. So the first evidence concerning hypothesis 3 is negative: if it were a valid general statement, it would have to hold for Germany, too.

The traditional discussion of the decline/structural change hypothesis is beset with several weaknesses. One is that it does not make enough use of specific data on disintermediation and securitization; another is that it does not measure the result of the combined effect of disintermediation and securitization in a manner which uses consistent measurement concepts. The third and possibly most serious shortcoming is that it is based on an all too vague idea about how disintermediation and securitization “affect” the role of banks. Therefore we want to find out whether our data allow us to say more and in particular to address the role of banks and its change directly. What indicators of the decline in the “importance” of banks or, alternatively, of the transition to a “more modern” financial system can be used?

According to the traditional theory of financial intermediation discussed in Section 2.1, an indicator of the importance of banks is the extent to which they act as intermediaries, i.e., the extent to which savers entrust their money to them and the extent to which they channel these funds to deficit sectors, notably the companies. A straightforward measure of this is the *partial* Asset-IR of all Nonfinancial Sectors with Banks and the *partial* Liability IR of all Nonfinancial Sectors

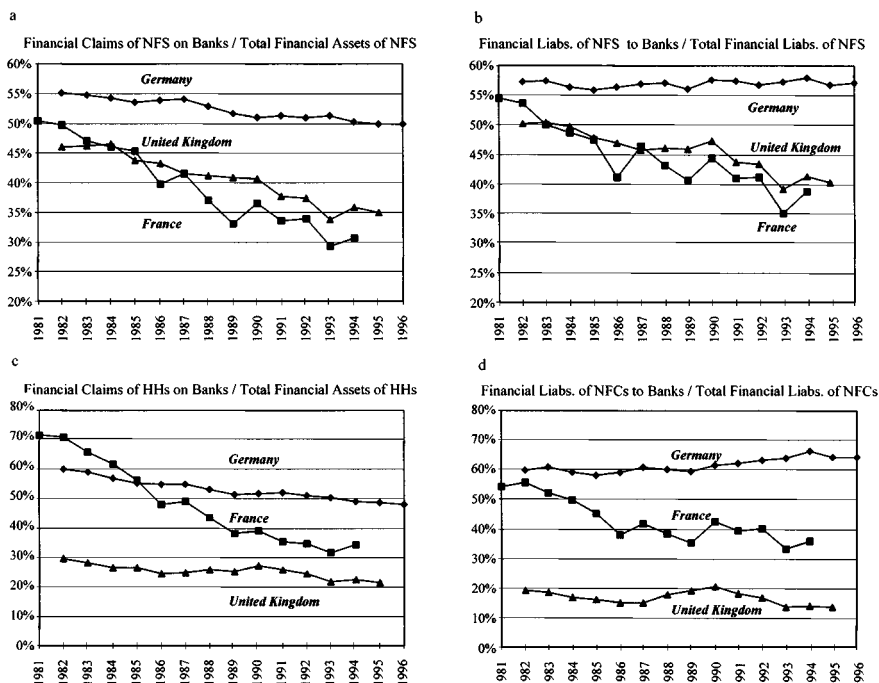


FIG. 5. Intermediation ratios with respect to banks. (a) Asset-IR of all nonfinancial sectors with banks. (b) Liability-IR of all nonfinancial sectors to banks. (c) Asset-IR of households with banks. (d) Liability-IR of NFCs to banks.

with Banks (Figs. 5a and 5b). As was explained above in the context of hypothesis 2, information about *total* securitization ratios can complement the information contained in the (changes in) the intermediation ratios.

A second indicator of the importance of banks, which is motivated by the new theory of financial intermediation addressed in Section 2.2 above, refers to the “quality” of bank services to the nonfinancial sectors. One of these services is the provision of liquidity, and the other is monitoring the use of capital. At least an indication of the extent to which these core functions of banks are indeed being performed by the banks can be obtained from the contracts which they have on the asset and liability sides of their balance sheets. In the light of the new theory of financial intermediation, a highly securitized bank appears to be less socially valuable or, in other words, more of an investment fund and less of a “genuine” bank (Rajan, 1996). The relevant data to be looked at is (a) the Asset-IRs of all Nonfinancial Sectors *with Banks*; (b) the Liability-IR of all Nonfinancial Sectors *to Banks*; (c) the *partial* Asset-IR of Households with Banks; and (d) the *partial* Liability-IR of nonfinancial companies vis-à-vis banks.

(a) The Asset-IRs of all Nonfinancial Sectors with Banks are shown in Fig. 5a. In a marked contrast to the overall asset intermediation ratios, these partial ratios

decline in all three countries, though the decline is strongest in France (from 50% in 1982 to 31% in 1994), quite strong in the United Kingdom (from 46% to 35%), and only moderate in Germany (from 55% to 50%). These ratios indicate that the role of banks as intermediaries indeed seems to have declined relative to NBFIs.

(b) The proportion of liabilities of all nonfinancial sectors with banks as a percentage of all liabilities of all nonfinancial sectors is shown in Fig. 5b. This ratio declines in the cases of France and the United Kingdom and remains stable in the case of Germany.

(c) The partial Asset-IRs of Households with Banks are shown in Fig. 5c. They exhibit the same pattern of change as the overall Asset-IRs with Banks. It is interesting to note that the level of the partial asset intermediation ratio is by far the lowest (over the course of time) in Britain. This indicates that the role of banks as collectors of funds from households has always been more limited there than in Germany. The decline of this ratio in the French case indicates not only a strong trend of “débancarisation” (Faugère and Voisin, 1994) but also a change from the German to the British model.

(d) The partial Liability-IRs of Nonfinancial Companies to Banks are shown in Fig. 5d. This ratio increases in Germany, declines—though not persistently—in the United Kingdom, but falls sharply in France. The cross-country difference in levels is quite striking; but to a certain extent it is merely a consequence of different sector and item definitions pointed out in Section 3.2. Germany has the highest ratio, the United Kingdom by far the lowest. The ratio for France lies in between, but shows a trend from a level close to that of Germany in 1982 to the British level in the mid-1990s.

One can summarize these findings like this: The intermediation ratios of the real sectors with respect to banks are clearly declining in the case of France, somewhat declining in the case of the United Kingdom, and stable in the case of Germany. The decline is more pronounced in the cases of the Asset-IRs than in the case of the Liability-IRs. We shall come back to this interesting fact in the following subsection.

The general, though certainly neither universal nor homogenous, trend toward disintermediation at the level of banks—as measured from the perspective of the nonfinancial sectors—is supported by a general trend in all countries toward more securitization. The various securitization rates show the same general pattern between countries and between asset and liability-securitization ratios as the intermediation ratios. Thus the securitization ratios confirm the overall picture: The role of banks as intermediaries seems to decline strongly in France, hardly at all in Germany, and moderately in the United Kingdom; the trend toward a reduced role of banks is stronger in the case of the funding of banks than of the financing by banks.

How do these observations fit together, and to what extent do they confirm the simple story of a decline of banks as a consequence, or a corollary, of disintermediation and securitization? It seems that using those intermediation and securitization

ratios which we have employed so far, i.e., those derived from the total assets and liability positions of the nonfinancial sectors and *not* of the banking sector, does not support the hypothesis of a *general* loss of importance of banks or, alternatively, of a structural change in the cases of Germany and the United Kingdom. However, for the case of France the hypothesis can be upheld. In France, the role of banks has decreased dramatically on both sides of the balance sheet, while in Germany and the United Kingdom there is only a moderate decline of the fraction of the financial assets of the nonfinancial sectors held in the form of claims on banks.

Thus, although the differences between the three countries are interesting in themselves, we have so far failed to find what we have been looking for, namely a common pattern of the development of all three financial systems. The following constitutes a, possibly more fruitful, attempt to discover such a pattern.

If one uses Fig. 3, the argument presented so far, and also the conventional story of the decline of banking or of structural change of financial systems, rests on the implicit assumption that the three channels A, B&D, and C&E are isolated from each other. A shift of financial flows from C&E to B&D and A, as has clearly happened in France though not in Germany, at the same time represents a shift from a bank-based to a capital market-based financial system and a decline of banking.

However, there is one reason to doubt whether this is really the true—at least whether it is the most interesting—story which the data tells about structural change in the financial systems of the three countries. By their very construction, the various intermediation ratios are not independent of each other. What the nonfinancial sectors hold as claims ($A + B + C$) and what they owe ($A + D + E$) must be the same, and what the financial sector owes the nonfinancial sectors ($B + C$) must be the same as its total claims on the nonfinancial sectors ($D + E$). If the three channels are *not* connected, then it must also be the case that B equals D, and the claims *on* banks (C) must equal the claims *of* banks (E). Statistical problems may be reasons these identities do not hold precisely. But they cannot cause wide discrepancies. If the asset-intermediation ratio of all nonfinancial sectors with banks (C) differs substantially from the liability-intermediation ratio to banks then this is evidence that the assumption of the three channels A, B&D, and C&E being isolated from each other cannot be valid. As can be seen from Figs. 5a and 5b, these rates do differ. In fact, the differences in these ratios are shown to increase considerably over time in Germany and France, whereas in the United Kingdom it has been considerable for the entire observation period.

The consequence of this is that the banks lend out more to the nonfinancial sectors than they collect from them. Such a difference requires that banks are able to substitute a shortfall in funding from the nonfinancial sectors by funding from other sources, which will necessarily be the NBFIs. This observation suggests an alternative hypothesis about structural change:

Hypothesis 4. Only, or primarily, the role of banks as mobilizers of savings from the nonfinancial sectors is declining.

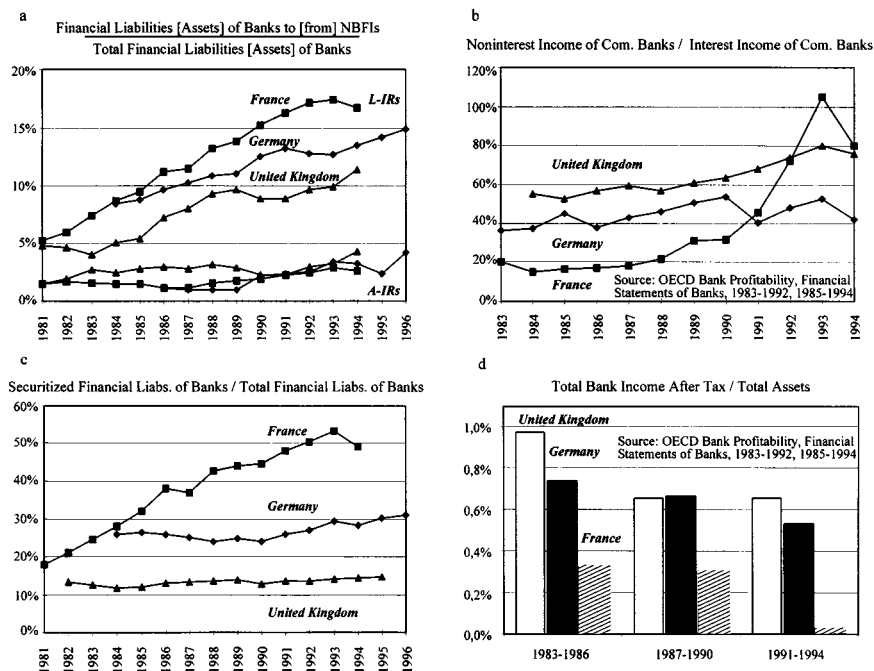


FIG. 6. Bank-specific indicators. (a) Liability [asset]-IR of banks. (b) Income composition of commercial banks. (c) Liability-SR of banks. (d) Profitability of commercial banks.

In Section 3, we defined intermediation ratios of banks on *their* liability side and on *their* asset side, which have not been used in the discussion up to now. They tell us what fraction of bank funds comes from, or goes to, NBFIs respectively and thus demonstrate more clearly what the different levels of the ratios employed so far merely suggest: To a considerable extent—and more so in France and the United Kingdom than in Germany—banks have changed the composition of their funding (see Fig. 6a). While NBFIs are important on the liability side of banks, in none of the three countries do banks invest to a large extent in NBFIs.

The NBFIs which have become an important source of funds for the banks and at the same time important collectors of savings are primarily the investment funds including the OPCVM à court terme (somewhat similar to money market funds) in France and the pension funds in the United Kingdom (Davis, 1996).²⁹

By using a third version of the graphical intermediation model, the change called for by the fourth hypothesis can be illustrated as in Fig. 7: The channel F from the

²⁹ On an aggregated level the British banking sector is much more involved in international financial transactions than its German and French counterparts. We therefore recomputed the ratios ignoring overseas assets and liabilities. Our findings concerning the lengthening of intermediation chains remained nearly unchanged. Hence, they do not seem to be driven by international capital flows.

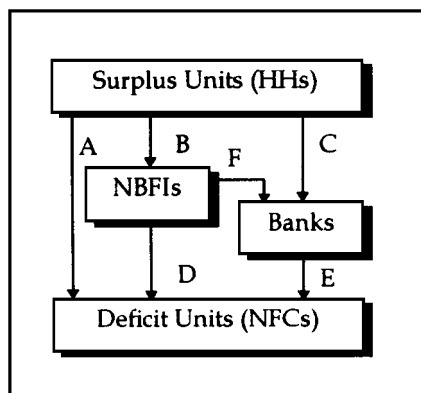


FIGURE 7

subsector of NBFIs to banks has greatly gained in importance in France and also in Britain and in Germany.

The chains of intermediation have become longer, especially in France and in the United Kingdom, over the observation period. This may be a more important change in the financial systems especially in France and the United Kingdom than what the conventional story tells us, and it might have far-reaching implications not only for the role of banks but also for their stability.

One implication refers to the roles of banks. Especially in France and the United Kingdom, but also in Germany, they seem to have altered the focus of their activity vis-à-vis the nonfinancial sectors. In contrast to the more balanced position between savers and borrowers which they had in the past, they are now relatively more active as lenders, and thus probably also as monitors of borrowers, than as mobilizers of savings. To a certain extent this indicates a specialization of functions between banks and NBFIs: NBFIs have taken over a part of the role of collectors of savings; and they pass on an important fraction of the savings which they collect, to the banks as the “lending specialists.” This development is not equally strong in all three countries, but it is present in each of them. We cannot go so far as to say that this is the only, or even the main development in France; but it is certainly an important development which complements those changes which point to a decrease in the general level of the intermediation activity of French banks and perhaps also to a loss of their overall importance.

Referring back to the new theory of financial intermediation, one can ask whether the lengthening of the chain of intermediation and the reduced role of banks as mobilizers of capital indicates a declining role in terms of the *functions* of banks. While their role as lenders to those borrowers who may require close monitoring does not decline as a consequence of this structural change, there could be a reduction of their role as providers of liquidity. However, it is not at all clear whether the extent to which this function is being performed by banks can really

be measured by the level of their aggregate deposits; the change in deposit-taking may be an even more imperfect indicator of a change in the supply. It may well be that the amount and the quality of information which banks have about their clients, the duration of the individual bank-customer relationships, the macro-economic regime, and other factors are more important determinants of the provision of liquidity to clients by the respective banking system than the amount of aggregate bank deposits. So it appears to be at least possible that this function is not performed to a lesser extent despite the decrease in banks' relative importance as deposit-taking institutions.

However, there is a further aspect which deserves attention. Based on recent work by Allen and Gale (1995, 1997) one can ask what the change of the patterns of asset holdings by households implies for the inter-temporal risk smoothing function of the respective financial system, given that a large fraction of the funds invested by the nonfinancial sectors in NBFIs are—either formally or *de facto*—securitized. If we wish to fully appreciate the possible implications of this change for the performance of this function, we should also bear in mind that in all three countries the Liability-SR of Banks has increased over time (see also Fig. 6c), as has the direct holding of securities (Davis, 1996; Berglöf, 1996). Thus, an increasing fraction of the wealth of households is now exposed to price risk. This may have the effect that changes in security values are not dampened as much now as they were in the past by the banking system. Seen in this light, European banks may now be performing the socially valuable function of absorbing intertemporal risk to a lesser extent than they did in the past.

The second important implication refers to the profitability situation of the banks and thus perhaps also to their stability. In terms of funding costs for banks, the increasing securitization of bank liabilities and the increasing reliance of banks on NBFIs as a source of funds have a similar effect of obliging banks to pay more “market-like” rates of interest for their funds to the saving public, and this may endanger their profitability. If we combine the securitized portions of bank funds from the nonfinancial sectors and the funds which flow to the banks through the channel of the NBFIs, then we can assess this cost pressure. The aggregated effect of increasing bank costs is, again, strongest in the case of the French banking sector, and therefore the French banks are most likely to suffer from profitability problems. This is indeed the case, as we shall discuss below.

We want to summarize the discussion of the fourth hypothesis as follows. Structural change in European financial systems is perhaps reflected not so much in a general tendency toward “modernization” in the sense of a move toward a UK-style financial system in which capital markets play a more important role in general and the importance of banks (as intermediaries) is more limited, but rather in the fact that to an increasing extent banks are being substituted by NBFIs in their role as mobilizers of deposits. This development indicates that the degree of functional specialization in the financial systems is increasing. In combination with the trend to substitute bank deposits by bank securities, the process of having NBFIs as intermediaries between the public and banks may put the banking sector under

pressure. This may increase social welfare in the medium to long term, but it may also endanger the stability of financial systems and thereby cause negative welfare effects.

4.4. *Supplementary Evidence on the Changing Role of Banks*

Given the way in which intermediation and securitization ratios are constructed, the nature of the conceptual framework selected, which is based on these rates, restricts the assessment of a change in the role of banks to a purely quantitative analysis of financial assets in the three economies. This subsection discusses the results of other empirical studies which take a different, more qualitatively oriented, perspective and interprets their results with respect to the issues discussed in Subsection 4.3. It is our goal here to find evidence that helps us to better distinguish between mere structural changes and an actual decline of banking as an industry in the three countries for which data is analyzed, and particularly in France, and to understand the—possibly different—roles which banks have in the three countries.

Closely related to investigations which, like the present one, analyze national accounts data are studies that are based on actual balance sheets and income statements provided by the banks themselves.³⁰ Domanski (1997) and Plihon (1995) examine balance sheets of German banks and French banks, respectively, and arrive at results which are very similar to our own: Both the ratio of loans to total assets and the ratio of nonbank deposits to total assets of German banks have remained nearly stable while the corresponding ratios for French banks have fallen dramatically: for France, the ratio of loans to total assets dropped from 84% in 1980 to 55% in 1993 and the ratio of nonbank deposits to total assets fell from 73% in 1980 to 35% in 1993. During the same period, the share of securities in total bank liabilities shot up from 6 to 56% in France. From the OECD Bank Profitability Statistics (OECD, 1994 and 1996) we know that the corresponding ratios for British banks are as low as those calculated for their German counterparts, and also that they have not increased much.

This data source also provides information on the composition of income for larger commercial banks in the three countries (see Fig. 6c). Noninterest income has increased in all countries relative to interest income. Since this trend is much more pronounced in the case of France than for the other two countries, one might conclude that investment banking activities have supplanted traditional intermediation activities to a large extent there. However, if one considers the steep decline in profitability as measured by total income over total assets, this change in income composition seems to have been accompanied by—or even outweighed by—an extreme depression of the interest rate income of French banks. If the data for German and British banks is interpreted in a similar fashion, the picture that emerges

³⁰ Of course, bank balance sheets are one of the sources of data used to compile national accounts statistics. However, the latter are only provided on a consolidated basis and also do not provide information on the income of banks.

would seem to suggest that the roles they have traditionally played in their respective financial system have been eroded to a much smaller extent. Furthermore, a comparison of the levels of the ratios in Figs. 6c and 6d for the three countries in the early 1980s suggests that the traditional roles were quite different right from the outset.

In summary, this piece of additional evidence backs up and extends our own results insofar as the hypothesis that banks are a declining industry seems to be wrong, at least for Germany and the United Kingdom. Even in the case of France, where banks have clearly lost in importance in a quantitative sense, we cannot reject the hypothesis with absolute certainty because we cannot completely rule out that banks there have generally been concentrating more on specific functions, or have assumed functions that are not reflected in our ratios. Not surprisingly, however, the kind of additional evidence discussed above cannot help us much further in defining exactly what the specific traditional roles of banks were in the three financial systems and how they might have changed.

As noted earlier, according to the new theory of financial intermediation, one reason banks are special is their ability to solve problems that arise from information asymmetries between potential receivers and providers of capital better than capital markets. Hence, evidence that could serve as an indication of the extent to which the respective banking sectors in the three financial systems fulfill that task would be very useful in our context.

One can safely assume that such information asymmetries are greater for small companies than for larger companies. Therefore the extent to which small companies obtain finance from banks could be interpreted as evidence of the extent of monitoring provided by banks. A study undertaken under the auspices of the Banque de France examines detailed balance sheet data for the totality of French and German companies, and thus it can make up for one of the weaknesses of national accounts statistics, namely that these statistics are based on intra-sectoral aggregation.³¹ The study shows that small German companies have been relying to a much greater extent on bank loans as a means of external financing than their French counterparts, and indeed that their reliance on bank loans has been increasing. The authors of the study conclude that the typical relationship between banks and their borrowers is closer in Germany than in France. They suggest that this is one important explanation for the fact that French small companies have to substitute bank financing with funds obtained from other external sources, namely equity finance and trade credit.³²

Another study—undertaken by the Bank for International Settlements (Borio, 1995)—which examines the structure of loan markets in 14 countries, sheds some

³¹ See European Committee of Central Balance Sheet Officers: Working Group on Net Equity (1997).

³² Other studies (Breig and Wilson, 1996; Hancké and Cieply, 1996) support this assessment. They find that small companies rely heavily on trade credit, especially that provided by large companies. In the United Kingdom, small companies also face problems in obtaining adequate finance from banks; see Bank of England (1996).

light on the qualitative nature of a typical British bank-borrower relationship. If one assumes that the intensity of the relationship is signaled by the length of time it spans (Mayer, 1988), and that this length is correlated with the average maturity of loans (Hellwig, 1991), then a longer average maturity can serve as a proxy, albeit a weak one, for a greater commitment on the part of both the bank and the borrower to sustain a close relationship. It is very interesting to note that the average maturity of loans to companies is dramatically shorter in the United Kingdom than in both France and Germany. Hence, the core business of British banks seems to be the provision of short-term finance. This might indicate a general emphasis on transactional banking activities.

A third piece of evidence can be found in a paper by Bond *et al.* (1997a), who compare the correlation between cash flows and investment activities of companies across countries.³³ As the authors suggest, the higher this correlation is, the more prevalent financial constraints will be. This in turn would imply greater information asymmetries between lenders and borrowers and hence would raise doubts concerning the existence of close bank-borrower relationships in the given financial system. The authors find that the correlation is significantly greater in the United Kingdom than in Germany and in France and consequently conclude that British banks might not have built up equally close relationships to their borrowers as the banks in the other two countries.

The conclusions drawn from the additional empirical evidence quoted so far are admittedly quite speculative. However, this is to a large extent due to the very nature of our question concerning the roles of banks. At the same time, all of the evidence presented is clearly consistent in one important respect which is also backed up by our own results: Banks have played, and still play, very different roles in the three financial systems. Whereas German banks (still) seem to be engaged in relationship banking, especially with smaller firms, British banks have never fulfilled this function to an equivalent extent. Instead, they have been specialists in short term funding on an arm's length basis.³⁴ Until the early 1980s, French banks had supposedly maintained relatively close relationships with large companies. As these large companies have, in the intervening years, increasingly met their financing needs through the capital markets, the very basis of the banks' "specialization" seems to have eroded. Since their expertise in the close monitoring of smaller firms has traditionally been limited due to the old system of government-sponsored financing of French industry (Faugère and Voisin, 1994), a dramatic loss of lending business has been the result. This assessment is in line with our discussion of the four hypotheses: Banking does not seem to be a declining industry in Germany and the United Kingdom; but bank lending seems to be a rather different business, both in quantitative and in qualitative terms, in Germany and in Great Britain. There has nevertheless been some change in these systems, too. But

³³ See Chirinko and Elston (1996) and Bond *et al.* (1997) for similar approaches.

³⁴ This fact may also be reflected in the surprisingly small size of the British commercial paper market.

it has had more of an impact on the institutions' liability-side activities. French banks, on the other hand, seem to be losing their traditional role in their asset-side business as well, and thus they may eventually find that the entire basis of their existence is threatened.

5. SUMMARY, IMPLICATIONS, AND OUTLOOK

In this paper we have attempted to find empirical evidence to support, or refute, the widely held belief that in the major European economies—Germany, France, and the United Kingdom—the financial system, and in particular the financial sector, and above all the banking sector, is undergoing a process of far-reaching transformation, and that this process is leading to a decline in the role of banks. The research whose results are summarized in the paper is part of a more comprehensive project of the authors which aims to investigate the transformation of the European financial systems in the course of financial integration, a process which is generally expected to make the financial systems in European countries more similar.

The alleged decline of the role of banks should be reflected in, and possibly also be caused by, an overall process of disintermediation, and in particular of disintermediation at the level of banks, and a concomitant trend toward securitization on a system-wide level. In terms of substance and quality, a possible decline of banks can be a reflection of a transition from a bank-based financial system to a capital market-based system, or of some other kind of structural change, or of the "simple" fact that banks, or banking as an industry, are falling on hard times.

The paper seeks to make an empirical contribution to the discussion which centers on the process of financial-system transformation and on the ways in which the role of banks may be changing. Based on the theory of financial intermediation, we develop a general framework for assessing disintermediation, securitization, and shifts in the importance of banks, as well as specific methods of measuring all three. Our data base is derived from national accounts statistics for all three countries and covers the years from 1982 to 1995. These statistics have been made as comparable as possible, but certain inconsistencies could not be eliminated. Together with the general limitations which are an outgrowth of the nature of these statistics—notably, the fact that they cover financial relationships only in the form of financial flows and claims/liabilities and that they do not report intra-sectoral financial flows and claims/liabilities—these inconsistencies restrict the scope of the insights which one could expect to gain from looking at intermediation and securitization ratios and their development over time.

In the paper we formulate and test four hypotheses concerning general developments in the financial systems of the three countries. The first is that there is a general tendency toward disintermediation. This hypothesis is not true at a general level, because in Germany the trend toward disintermediation is almost nonexistent and in the United Kingdom it is not persistent. Only in France is the trend quite pronounced.

The second hypothesis is that there is a general tendency toward securitization. This hypothesis is largely consistent with the data for all three countries, although the respective levels of securitization, and their rates of increase over time, are not similar.

The third hypothesis is that there is a decline in the role or importance of banks. If such a decline has indeed occurred in a given country, it might reflect a shift toward more financial market activity which may or may not affect the economic situation of the banks and the quantity and quality of financial services provided to the nonfinancial sectors by the entire financial industry; alternatively, though, it may merely indicate a worsening of the economic situation of the respective banking sector and a decline of the entire financial system. By their very construction, the intermediation and securitization ratios employed in our study are not suited to deciding the question of which of these two assessments would be called for. However, the data show that the third hypothesis, like the first one, is not supported by the facts for the cases of Germany and the United Kingdom, while it seems to hold in the case of France. Thus, it does not describe a general pattern of financial system development in Europe.

For reasons which are explained in the paper, we think that the possibility of a simple shift from banks to capital markets may not be the essence of what has changed in the three systems, and in particular in France, where all kinds of changes are much more pronounced than in the two other countries. Therefore, we tested a fourth hypothesis which states that there is a tendency on the part of banks to reduce their level of activity as mobilizers of funds from the nonfinancial sectors more than the extent of their role as lenders. The data for all three countries support this hypothesis more than they do the third one. Thus, instead of a simple shift from banks to capital markets we find a trend toward increased specialization by banks in lending operations, with an growing portion of the function of mobilizing savings being left to NBFIs. As in the case of a possible transition from a bank-based to a market-based financial system discussed under hypothesis 3, this process of lengthening the intermediation chains might reflect an economically sound development, i.e., an increase in the efficiency of the entire financial system, and thus not give rise to problems for the banks in terms of profitability and stability for the banking sectors.

Alternatively, however, it could show that the banks are under stress due to increasing costs of funding. The set of data which this paper employs does not permit one to decide which of the two alternatives constitutes the more appropriate assessment.

Summarizing the empirical results derived from our data, the only statement which we can make without any reservation is that France is a special case in that its financial system shows many more—and much clearer and at the same time also much more volatile—signs of change than the German and the British systems.³⁵

³⁵ For a more comprehensive comparison of the French and German systems which arrives at the same result, see Schmidt (1997).

Indeed, the overall structural stability of the German system is quite surprising, whereas the British system is undergoing gradual change of the kind indicated by the fourth hypothesis. One cannot rule out the possibility that the French system is in the process of transforming itself from a German-style bank-based system to a capital market-based system of the Anglo-Saxon type. But one can also see indications that French banks are losing ground in their function as mobilizers of capital. However, the possibility that the French banks are simply in bad shape, and that they are in decline for this straightforward reason, also cannot be ruled out.

Additional information might help to distinguish between these alternative views of what is going on in France, and to compare the French situation with that of the United Kingdom. This comparison might turn out to be more enlightening than the comparison with the German situation for various reasons. One is that, in the light of our statistics based on national accounts data, as well as on the basis of additional information, the French system is now more similar to the British one. Another reason is that these two systems, but not Germany's, have undergone a wave of deregulation and reform in recent years. A third one is that French and British banks have fairly recently transformed themselves into universal banking conglomerates,³⁶ whereas the large German banks have already been truly universal banks for quite some time. Thus, at least superficially, the French and the British banks seem to have reacted in similar ways to a similar change in their environment.

It is interesting to note that despite these evident similarities, the performance of the French and British financial systems, and in particular that of the banking sectors of these two countries, is vastly different. While the profitability, and probably also the stability, of British banks is high and there does not seem to be the concern that important segments of the company sector encounter major problems in obtaining credit from the financial sector, the French banking sector exhibits a surprisingly low level of profitability despite the fact that it basically owns or controls a large part of the increasingly important NBFIs-sector (Bertero, 1994), and also signs of instability. There are also indications that the credit supply to the private sector leaves much to be desired in France.

This leads one to pose the following question: What might be the reasons for such a great difference in the performance of the two systems in general, and of their banks in particular? We do not have the space in this paper to explain why we think that the reasons have much to do with the role of the state in the French financial system and its transformation in the 1980s which is, in turn, reflected in the way in which French banks failed to position themselves successfully in the market. Evidently, this question also has a bearing on the more general issue of whether and how the three financial systems have become more similar over the course of time and whether convergence is to be expected in the near future. The task of investigating both of these questions must be left to future papers.

³⁶ Interestingly, the British clearing banks have been reversing this trend to universal banking conglomerates in recent months; see *Frankfurter Allgemeine Zeitung* (August 10, 1997). This move seems to reflect their tendency to concentrate more on their core business which is transactional banking.

In conclusion, we would like to emphasize that the method of measuring the role or the importance of banks developed in this paper has helped us tremendously to understand what has in fact happened in the major European financial systems and what additional information we need in order to answer the many questions that are still open. That the method and the data have limitations is not surprising; it is more surprising that these limitations do not weigh more heavily.

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