Pension Systems and Financial Systems in Europe: A Comparison from the Point of View of Complementarity

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Pension Systems and Financial Systems in Europe: A Comparison from the Point of View of Complementarity

By *Marcel Tyrell* and *Reinhard H. Schmidt*[*]

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I. The Complementarity of Pension Systems and Financial Systems

The design of national pension or retirement payment systems is one of today's most hotly debated issues in virtually all of the highly developed industrialised countries.[1] This is evidenced not only by the numerous reform proposals but also by the difficulties that have emerged when countries have tried to redesign their pension systems, a prime example of which can be seen in the evolution of the most recent pension reform in Germany.[2] There are several reasons for the high level of public interest in this subject. For one thing, the shift in the demographic structure caused by falling birth rates has led to a crisis of the pension schemes that are financed on a pay-as-you-go basis. For another, the advocates of funded pension systems argue that this approach, even allowing for the risk components, generates a higher yield on the invested contribu-

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[*] We are grateful to *Roland Eisen*, who had organised the conference where we presented a first version of this paper, and to *E. Philip Davis* who served as our discussant at that occasion, as well as to two anonymous referees who provided valuable suggestions on how to improve the paper.

[1] *Orszag* and *Stiglitz* (1999), *Diamond* (2000) and *Feldstein* (1998b) represent different standpoints in the international discussion. See, with regard to Germany, the special-topic issue "Rentenreform" (Pension reform) of the journal *Perspektiven der Wirtschaftspolitik* with contributions by *Homburg* (2000), *Breyer* (2000), *Schmähl* (2000), *Börsch-Supan* (2000) and *Thum* and *von Weizsäcker* (2000), and also the contributions by *Atkinson* (1999), *Sinn* (1999) and *Wagner* (1999) to the 1998 annual conference of the Verein für Socialpolitik, whose main topic was the future of the welfare state. This topic is also the subject of controversy in France and the U.K. On the discussion in France, see *Blanchet* and *Legros* (2000), and in Britain, *Tonks* (1999), *Clark* (2000a; 2000b) and *Williamson* (2000).

[2] On this subject see in particular *Rürup* (2001).

tions and promotes the formation of real capital.[3] Thus, converting to this type of system would reduce the burdens and spread them more equitably between the generations.

It appears to us that in this discussion one aspect is largely overlooked: the relationship between the characteristics of the national financial systems and those of the respective national pension systems.[4] Discussions about the advantages and disadvantages of various pension systems, and about the problems entailed in designing such systems, are always shaped by the context in which they take place, and the respective financial system – or, to be more precise, the other elements of the respective financial system apart from the pension system – is probably the most important aspect in this context. The specific context that we have made the subject of this paper relates to the following questions:

1. Are there differences between the financial systems and the pension systems in various European countries?
2. If this is the case, is there a correspondence between the differences as regards national pension systems and the differences with respect to the respective financial systems?
3. If such a correspondence can be demonstrated, is there a relationship between each country's financial system, narrowly defined, and its pension system which goes beyond a mere correspondence?

At first sight, searching for such differences and parallels might appear to be a purely theoretical endeavour. But we think that it can also yield insights that are of practical relevance. Our belief that this may be the case is based on the propositions that there exists a relationship of complementarity between the elements of the overall system comprising the pension system and the other parts of the respective national financial system, and that the possible consistency of these complementary elements has important consequences for the functionality and stability of the financial system over time and likewise for the functionality and stability of its parts, including the pension system.[5] Insights into the extent to which the financial system and the pension system influence each other allow us to draw at least tentative conclusions about the necessity and feasibility of changing them.

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[3] See, for example, *Börsch-Supan* (1998), *Feldstein* (1998; 1998b) and *Siebert* (1998) as advocates of a far-reaching conversion to a retirement payment system based largely on funded pension schemes, and *Sinn* (2000) and *Breyer* (2001), who also present arguments for the opposite case.

[4] Although the existence of such a relationship has recently been recognised in the academic discourse on the design of retirement payment systems, discussion of this relationship has been – bar a very few exceptions, such as *Davis* (1995) and *Clark* (2000b) – narrowly focused on the capital market.

[5] See *Hackethal* and *Schmidt* (2000a) for details and for the arguments behind the assertion that there is an association between complementarity and consistency and the efficiency of financial systems, and *Hackethal* and *Tyrell* (2000) for a model of the interrelationships between important elements of financial systems.

The paper is structured as follows. In the next section we briefly outline the differences between three major European economies – Germany, France and the United Kingdom – as regards both their financial systems and their pension systems, and highlight the ways in which the differences between the national pension systems mirror the differences between the countries' overall financial systems. In section III we discuss important ways in which the pension system and the respective financial system influence each other. Taken together, sections II and III are intended to support our assertion that there is a relationship of complementarity – and, in two of the three cases, one of consistency as well – between the national financial system and the national pension system. This result will be summarised in section IV where we also briefly discuss the implications which this relationship is likely to have for the development of the systems.

II. Core Characteristics of the Financial Systems and Pension Systems

1. National Financial Systems and How They Differ

a) Definition of Terms and Classifications

It is advisable to differentiate between the narrowly defined concept of the financial sector and the broadly defined concept of the financial system.[6] The term financial sector is used here to designate that part, or sector, of the economy which offers the other sectors opportunities to invest and obtain financing. Its principal elements are banks, other financial intermediaries and organised financial markets (in particular securities exchanges). In contrast, the concept of the financial system includes not only the financial sector but also the entire spectrum of options available to the non-financial sectors to accumulate assets and undertake intertemporal transfers of income, to procure and deploy funds for investments and to manage the risks entailed therein. This definition of the financial system is intentionally broad, and it draws the attention to the fact that the financial system encompasses the totality of financial transactions in a country's economy. The financial system not only consists of the supply side of the market for financial services, i.e. the financial sector, but also the demand side. The demand for financial services comes from households, which accumulate wealth, and from firms, which need capital in order to invest. The financial system includes households and firms not only in so far as they make use of the services of the financial sector, but also in so far as they *do not demand*, or *do not succeed in obtaining*, these services.

In order to fully grasp the aspect of how capital is transferred and allocated in an economy, the analysis of financial systems must also take account of corporate control or corporate governance. It goes without saying that the state is also a part of the financial system – not only because it both supplies and demands financial services, but also because it serves as the organiser and regulator of the financial sector. On the basis of this broad definition, pension systems are

[6] For a discussion of these concepts, see *Schmidt* and *Tyrell* (1997) and *Hackethal* and *Schmidt* (2000a).

also a part of financial systems, regardless of whether they are rooted in a country's financial sector or not.

Given that the usual classification of financial systems into two groups – those which are bank-dominated and those which are capital market-dominated – cannot be applied directly to corporate governance systems, an analogous distinction is made in the literature between insider and outsider systems.[7] We also adopt this classification here.

The generally accepted view is that the financial systems of Germany and Japan are bank-dominated – and that the French system also fell into this category prior to the mid-1980s[8] – whereas those of the United States and the U.K. are capital market-dominated. As regards the manner in which control is exercised, Germany and Japan – and probably still also France – rely on the insider system, whereas the U.S. and the U.K. have an outsider system.

In the following discussion, the financial systems of Germany, the U.K. and France are briefly characterised without explicitly taking pension systems into account.[9] In section II.2 the three national pension systems will then be outlined.

b) The German Financial System

The core elements of the financial system in Germany can be characterised as follows:

Financial sector

1. Banks, and universal banks in particular, dominate the financial sector.
2. Non-bank financial institutions (NBFIs) that are independent of banks – especially pension funds and unit trusts – play only a minor role.
3. The stock market is underdeveloped by comparison with other industrialised countries.
4. When accumulating financial assets, households rely mainly on investment options offered by banks and insurance companies.

Financing patterns

5. External financing of small and medium-sized enterprises is provided primarily in the form of long-term bank loans.

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[7] See *Franks* and *Mayer* (1994). This classification is discussed in greater detail in section III.2.

[8] One could, however, abandon the bipolar classification of financial systems and consider three prototypes with state-dominated financial systems as a third class. The old French system seems to fall into this class. See subsection II.2.d below.

[9] For a more detailed description and an empirically based analysis of the financial systems in these countries, see *Schmidt*, *Hackethal*, and *Tyrell* (2002) and the studies summarised therein.

6. Pension reserves continue to be an important source of internal financing.

Corporate governance

7. There are extensive cross-shareholdings among companies, and complex group structures.
8. The public limited company is not the dominant legal form among corporations.
9. Most firms listed on the stock exchange have concentrated shareholder structures, very often with a big corporation as the single largest shareholder.
10. Aside from the shareholders, other stakeholders such as banks and employees play a role in corporate governance.
11. Long-term and implicit contracts between the stakeholders create commitments and stable relationships, and form the basis for corporate control.
12. External control via the capital market, especially a *public* take-over market, is virtually non-existent.

That these three sets of elements are complementary, and in the case of the German financial system also largely consistent, is most easily illustrated in the case of the banks and their roles. Bank dominance is reflected both in corporate financing patterns and in the specific mode of corporate governance. A key difference between banks and capital markets lies in the way in which they process information.[10] Whereas capital markets externalise information via the price mechanism, thereby making this information public, banks internalise relevant information and are thus in a position to provide financing, even in "difficult cases" with highly asymmetric information. This is why in Germany relationships between firms and financial intermediaries are often close, long-term and, by international standards, not very transparent. The fact that nearly all German banks are universal banks is an advantage in terms of overcoming information asymmetries. The breadth of their relationships with firms enables them to more effectively manage the risks arising out of long-term credit relationships with companies. The predominate form of corporate control in Germany is based on consensus not so much *despite* the many conflicts which are unavoidable in a stakeholder system, but rather *because of* these conflicts, as they make it imperative to find compromises. In practice this consensus-oriented system also makes it easier for the banks to assess and manage such conflicts and integrate the employees and the trade unions into a system in which the individual components are dependent on one another. Additional aspects of complementarity will be taken up later as we continue to broaden the spectrum of aspects and elements which we employ to characterise the entire financial system.

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[10] For a detailed discussion of this aspect, see *Tyrell* (2001).

c) The British Financial System

In nearly all respects, the situation in the U.K. is the opposite of what one finds in Germany:

Financial sector

1. Not commercial banks but NBFIs, in particular unit trusts and pension funds, dominate the financial sector.
2. The stock market is highly developed.
3. The accumulation of financial assets by households occurs mainly through investments in the capital market, either directly, or via pension funds and unit trusts.

Financing patterns

4. External corporate financing occurs to a large extent through the capital market, either directly or indirectly.
5. Bank credit tends to be short-term and is provided “at arm’s length”; it does not entitle or enable the lender to exert influence over the borrower, and is based on a more limited exchange of information than is usual in Germany.
6. As a consequence of the large volumes of capital which they have at their disposal, pension funds are an important source of external financing for companies.

Corporate governance

7. The public limited company is the dominant legal form among corporations.
8. Cross-shareholdings between companies are rare, and not very extensive; group structures are not very complex and transparent.
9. The shares of companies listed on the stock exchange are mainly held by “small”, i.e. private, shareholders or institutional investors representing such investors.
10. Corporate control is exercised largely via market mechanisms; in particular the public takeover market plays an important role.
11. Relationships to non-shareholding stakeholders are mostly governed by explicit contracts and on the basis of market mechanisms, and tend to be short-term in nature. This reduces the incentive for employees to invest in firm-specific human capital, but it does permit a significantly higher degree of flexibility.

The British system, viewed as a totality, can also be interpreted as a consistent system of complementary elements: the relationships between firms and financial intermediaries tend to be at arm’s length, short term, and largely transparent. Neither corporate finance nor corporate governance is dominated by banks; instead, market mechanisms, which rely on the externalisation of infor-

mation, play a major role in shaping the relationships between the stakeholders. The relationships of most banks with their corporate clients focus on short-term lending and transaction services. This deprives them of an important foundation on which to build long-term customer relationships, which is reflected in limited roles of banks in the longer-term financing and in the governance of non-financial corporations. In contrast, outsiders – and above all the large pension funds and unit trusts – have far more influence over corporate management at the average British firm than they do in Germany. In this situation, it is almost natural that the maximisation of shareholder value is perceived as the exclusive objective of the firm. The importance of this principle would undermine the effectiveness of mechanisms which managements might use to try to ensure that other stakeholders develop, or maintain, a commitment to firms, and therefore reduces the incentive to undertake firm-specific investments. Accordingly, well functioning external labour markets take the place of co-determination within firms as a means of protecting employees' interests.

d) The French Financial System

The French financial system cannot be classified as easily as that of Germany or the U.K., especially given the substantial changes it has undergone in the last 20 years.[11] In the past, i.e. until approximately 1986, France had a system based on a highly fragmented banking sector whose essential character was determined by the state's desire to control the financial life of the country and by the nature of the activities it undertook to ensure that the workings of the financial sector served its interests as it defined them. A considerable proportion of all external corporate finance – nearly 50 percent at the start of the '80s – took the form of credit provided at subsidised interest rates, with the Caisse de dépots et consignation, the Banque de France and the Trésor forming the core elements of the intermediation system. The organised capital markets were almost exclusively oriented towards meeting the financing needs of the state, and were therefore of little relevance as a source of corporate finance. De facto, there was also no clearly defined mode of corporate governance. Rather, the instruments that might have served to protect the interests of both shareholders and other stakeholders were supplanted by the influence of the state. In this sense, it was legitimate at the start of the '80s to speak of a French "third way".[12]

The new banking law of 1984 and the deregulation and opening of the money and capital markets to private sector participants in 1985/86 (*"le petit bang"*) were ultimately precipitated by the government's intention to make public sector borrowing easier. As a consequence, the banks declined in significance as fi-

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[11] For a comprehensive overview of the French financial system including the changes which it has undergone since the mid 1980s, see *Faugère* and *Voisin* (1994), *Bertero* (1994) and *Plihon* (1998).

[12] *Walter* (1993, p. 24) comes to a similar assessment: "The French financial and industrial systems have traditionally been dominated by the strong influence of central government." In a series of publications, *Pastré* shows how persistent this dominance of the state over the financial sector and even the entire financial system has proved to be; see in particular *Pastré* (1992; 1998).

nancial intermediaries, a development which was offset by a major increase in the importance of the capital markets. Nonetheless, complex group structures persist. Corporate control is not transparent, and the dominant figure in the prevailing governance system still is clearly the chief executive officer who is, in most cases, also the chairman of the board. French corporate governance still has many features of an insider system, even though the influence of foreign institutional investors has in the meantime led to some change in the *gouvernement d'entreprise* too.[13]

At first glance the French system would appear to be in the process of shifting from the German type to the Anglo-Saxon type. However, the new structure that has emerged from the changes that have taken place over the last few years is still far from consistent – in many cases, the elements of the system do not fit together (yet). The observed instability of several elements of the French financial sector in the last decade is a sign of functionality problems and thus an indicator of inconsistencies. The element that once used to define the character of the entire financial system, and which linked its various components and thus also ensured that the system remained workable, was the strong position of the state and the elites that were closely associated with it. This element has largely ceased to play an important role. The controlling function of the state has not been assumed by another power centre located within the state apparatus or in close proximity to it. In other words, the old forms of complementarity and consistency which once characterised the system have not been replaced by a new *"logique".*

e) Summary and Conclusions 1

This brief comparison of the financial systems of Germany, the U.K. and France, which for lack of space necessarily leaves aside many aspects, reveals considerable differences between the financial systems of these three large European economies. Over time, the overall structure of the financial system in Germany has been very stable and that of the U.K. has been largely stable, whereas that of France has changed dramatically over the past 20 years. From this it follows that the respective overall structures of the German and British financial systems are no less clearly different from one another today than they were 20 years ago. In Germany the bank-dominated, insider-controlled system with long-term, partly implicit contracts still prevails, whereas in the U.K. the more adversarial, capital market-oriented, outsider-controlled system with short-term explicit contracts dominates.[14]

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[13] Recent changes in the financing relationships in France, which correspond to the changes discussed here, are the topic of an article in the monthly report of the Deutsche Bundesbank for October 1999.

[14] However, recently there have been certain developments in Germany which would seem to indicate that the very large multinationals are instituting changes in their financing patterns and control structures which amount to a shift towards the Anglo-American model. For a more detailed assessment, see *Mann* (2002) and *Schmidt*, *Hackethal*, and *Tyrell* (2002), and the recent report on corporate finance by the Bundesbank and Banque de France (*Friderichs*, *Paranque*, and *Sauvé* 1999). Similary, in the banking sector one

In France the new structure which has emerged from the changes of recent years is still far from being stable; some of the elements of the system *no longer* fit together, others *do not yet* fit together, and it is questionable whether they might ever fit together. It seems fair to say that in France much has become "anglicised", but that so far this has not given rise to a consistent system of the Anglo-Saxon type.

The pronounced differences between the financial systems of the three large economies, in terms of how they function as well as in terms of how they have developed over time, and in terms of the degree of consistency which they exhibit, suggests hat it might indeed be an interesting question how the respective national pension systems fit into this overall picture.

2. National Pension Systems and How They Differ

a) Definition of Terms and Classifications

A pension system, or what Americans would refer to as a "social security system", is a system for providing in advance for income in the period after people's working lives have come to an end. It encompasses the main sources of this income and their significance, as well as the various rules, arrangements and institutions that are relevant to the provision of pensions. Most pension systems comprise three so-called pillars or subsystems: the state pension system, which may take the form of an insurance system or a system for providing a basic pension financed with tax revenues; company pension schemes; and the measures taken by individuals and households on their own – possibly with the support of tax benefits – to create a source of retirement income. Pension systems differ from one another in terms of the relative importance of these three subsystems and also – and these are the aspects on which we focus in this paper – in terms of their design.

There are two kinds of state or statutory pension systems: pay-as-you-go systems and funded systems.[15] In a pay-as-you-go system, at a given point in time income is provided to the retirement-age population in the form of transfers from the generation that is currently working. The contributions paid in by the economically active population are disbursed to the current generation of pensioners. A characteristic of this procedure is that at no time do the institutions which operate the system hold a sizeable volume of assets. Any transfer system has to be designed in such a way that it induces the providers of the transfers to participate. The mechanism for achieving this may be a generally recognised social norm, or direct state coercion, or the promise of payments of at least equal magnitude in return, or any combination of the three. In a funded pension system, by contrast, the income a person receives in old age takes the form of a repayment, with interest, of savings invested in the capital market which that

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can see a tendency of the large German banks to reduce corporate lending relative to investment banking.

[15] For a detailed comparison of these two ways of organising pension systems, see *Breyer* (2000).

person accumulated during his or her working life**.** This investment may be organised and effected via the state, via parafiscal institutions or via private-sector financial institutions. However, if the last of these three alternatives is selected, compliance with the private contracts must be assured, with legal force or the coercive power of the state being used, if necessary, to enforce such compliance.

The basic alternatives for the design of company pension schemes can be characterised as follows: either the funds are left within the company and the employees who are entitled to receive pensions become (long-term) creditors of the company; or the funds are invested outside the firm, in which case the employees covered by the pension scheme become creditors (or co-owners) of a pension fund or a retirement fund. Within each of these two basic categories, a further distinction may be made: company pension schemes may either provide employees a certain predetermined level of retirement income ("defined benefits") or require that they make payments of a certain predetermined size during their working lives ("defined contributions").[16]

b) The German Pension System

In Germany, the relative importance of the three "pillars" is roughly as follows:[17] The strongest pillar is the statutory pension insurance system, which provides for generous benefits compared to those paid by the statutory pension systems in many other countries. The size of payments received after retirement is based on the amount which people pay in during their working lives in the form of compulsory contributions that are set on the basis of their specific income levels, and the system is financed on a pay-as-you-go basis. Together with civil servants' pensions and the supplementary pension funds for public-sector employees, this pillar accounts for nearly 85% of the income of the average pensioner household. In addition, there are company pension schemes most of which are financed through pension reserves retained within companies. In 1997 such schemes accounted for approximately 5% of the income of the average pensioner household. Thus, given the shares of average retirement income contributed by statutory and company pensions, and in view of the fact that most company schemes are based on internal reserves, so far very little pension-related accumulation of assets has taken place via the capital market. If one includes private life insurance policies as a form of retirement provision, then this source supplies the remaining 10% of the total volume of payments to pensioners.[18] By the very nature of things, any distinction that one might make

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[16] One big difference between defined benefit and defined contribution scheme is that the former scheme adds an element of insurance against capital market volatility and thus allows some intergenerational risk sharing. The latter aspect will be discussed in section III.2.

[17] The following discussion of the German pension system draws on material presented in *Börsch-Supan* and *Schnabel* (1999), *Davis* (1995; 1999) and Arbeitskreis "Finanzierung" der Schmalenbach-Gesellschaft für Betriebswirtschaft e. V. (1998).

[18] In 1998 pension funds had assets in the size of 3% of GDP in Germany under control. Including the assets of life insurance companies with 21% of GDP, the size of the funded schemes in terms of assets amounts to roughly 25% in Germany. This figure should be

between private retirement provision and other forms of private wealth accumulation is necessarily arbitrary. Yet, a considerable portion of private households' total saving takes the form of investment in non-monetary assets (in particular, residential real estate), and thus, even if one assumes that some of the wealth accumulated for other purposes is also eventually used as a source of retirement income, the accumulation of financial assets "in the capital market" is still probably of only limited importance.

In the past, pension reserves were an important source of corporate finance, especially for Germany's large enterprises. By 1995 the volume of pension reserves had grown to almost DM 280 billion.[19] A comprehensive analysis of the financing structures of German firms that was carried out by the Bundesbank found that at big companies with more than 2000 employees, pension accruals were equivalent to just under half of these firms' own funds.[20] At DM 123 billion, the volume of new pension reserves created between 1982 and 1993 was roughly on a par with the volume of shares issued by German firms during the same period.[21]

All in all, the German social security system is very generous. In generating net retirement incomes that are currently still more than 70% of the pre-retirement net earnings of a worker with a 45-year earnings history and average life time earnings, it has a substantial higher replacement rate than, e.g., the U.S. or the U.K..[22]

c) The British Pension System

Compared with Germany, state pension insurance in Britain is less generous, whereas company pensions and private provision for retirement play a much larger role.[23] State pensions comprise a tax-financed basic pension which is not a function of income earned during the beneficiaries' working lives and is rather meagre, and a State Earnings Related Pension Scheme (SERPS), which is financed on a pay-as-you-go basis by contributions from wage and salary earners, employers and the self-employed. The basic pension currently works out to 16% of the average monthly income of all employed males. According to recent calculations it may even fall to only 7–8% by 2030 in real terms as a consequence of being indexed to retail prices.[24] The supplementary SERPS pension is supposed to be equivalent to 20% of a worker's average income, assuming it exceeds a certain minimum earnings level (if it does not, then the SERPS pen-

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compared to the correspondent figure in Britain, which is higher than 170% of GDP (*Davis* 2001).

[19] See *Arbeitskreis "Finanzierung" der Schmalenbach-Gesellschaft für Betriebswirtschaft e. V.* (1998).

[20] See *Deutsche Bundesbank* (1999).

[21] See *Nürk* and *Schrader* (1995).

[22] See *Börsch-Supan* and *Schnabel* (1999).

[23] Under almost all circumstances the replacement rate is far beyond 60% (*Blundell* and *Johnson* 1999).

[24] For the he following figures, see *Blundell* and *Johnson* (1999).

sion is supposed to be equivalent to 20% of this minimum amount). However, people can opt out of the earnings related social security system, and, as a substitute for participation in the compulsory insurance system, join a company pension scheme or set up a personal insurance plan, which then becomes a compulsory private pension scheme. 75% of the British labour force choose this option. Roughly two thirds of the people who have opted out of SERPS have joined company pension funds and the other third have insured themselves on an individual basis, which creates a flow of funds into the capital market.[25] The funds paid into voluntary company pension schemes are also usually invested in the capital market, given that in most cases the firms that operate the schemes transfer the funds that are accumulated in the form of contributions to an external pension fund.

In view of the overall structure of the British pension system, it is not surprising that insurance companies and pension funds play an extremely important role as financial intermediaries and also in the British capital market. Britain's state pay-as-you-go system provides only rudimentary cover, with funded systems – i.e. arrangements involving the investment of contributions in the capital market, either directly or indirectly, but largely in form of "defined contribution" pension funds – providing the lion's share of all income received by pensioners in the near future.

d) The French Pension System

The French pension system is dominated by the state pension insurance scheme, the Régime Général de la Sécurité Sociale, which operates on a pay-as-you-go basis, and a compulsory additional pension scheme, the Régime Complémentaire, which provides a form of insurance that must be taken out by employers for the benefit of their employees. It is financed with contributions from both the employers and the employees, also on a pay-as-you-go basis, and could thus be described as a type of company pension.[26] But unlike company pension schemes in Germany, the Régime Complémentaire is a compulsory system, with contributions being paid into funds which cover specific occupational groups, regions or industries and which are organised under two apex bodies, the Association des Régimes de Retraites Complémentaires (ARCO) and the Association Générale des Institutions de Retraites Complémentaires (AGIRC). The associations, which comprise a total of 180 individual funds, ensure that resources are transferred among their member organisations to even out financial imbalances between "rich" and "poor" funds, and they support the "régime général" with their surpluses. The funds are closely monitored by the relevant government ministry. Thus, in France company pension schemes are so closely linked to the state pension insurance system that, de facto, they may

[25] On this point, see also *Davis* (1995).

[26] For a more detailed presentation of the material covered by the following brief discussion, see in particular *Blanchet* and *Pelé* (1999) and *Blanchet* and *Legros* (2000).

be regarded as a component of that system while genuinely independent company pension plans are practically non-existent.[27]

Viewed as a whole, pension provision in France is very generous. Pensions are equivalent to roughly 80% of the average employee's earnings, with the share rising to 100% of workers' income in certain low-paid occupations, and almost the entire system is financed on a pay-as-you-go basis.[28] However, private provision for retirement through investments in unit trusts and insurance policies has increased markedly in recent years – due not least to the fact that the French pension system is bound to experience major financial problems in the not-too-distant future, which has created considerable uncertainty regarding its long-term viability.

e) Summary and Conclusions 2

The section has shown that not only the financial systems, but also the pension systems differ greatly between the three large economies covered in this paper.[29] Moreover, it suggests that there are not only striking parallels between the fundamental features of the financial systems and the pension systems of the three countries, but also a high degree of complementarity and possibly also of consistency. In this subsection, we limit ourselves to a few suggestions on this issue by extending the arguments from section II.1.e to include the basic features of the national pension systems into the characterisation of the overall financial systems.

At least until now, the German pension system does not involve the capital market to any appreciable extent.[30] This fact corresponds to the relatively limited role of the capital market in Germany in general. But there may be more than a correspondence. The comparison with Great Britain suggests that the structure of the German pension system may also be a cause of the "underdevelopment" of the German capital market.[31] The limited importance of the capital market as a source of funding for firms and as a monitoring mechanism implies that the pressure on the managements to follow a policy of strict shareholder value maximisation is also limited, which may in turn contribute to the relatively limited attractiveness of the stock market. This feature corresponds well to the German corporate governance system and the role of banks and employees in this sys-

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[27] See *Davis* (1995) and *Friderichs*, *Paranque*, and *Sauvé* (1999).

[28] See *Blanchet* and *Pelé* (1999).

[29] The most visible difference refers to the degree of state involvement in the provision of retirement income, measured by the size of public pension expenditure as a percentage of GDP. This share is more than two-and-a-half times larger in Germany and France than in the UK (*Davis* 2001).

[30] The recently introduced so-called Riester-Rente is expected to change this situation at least to a certain extent, and this anticipated effect is one of the reasons why this new element of the German pension system is generally welcomed by the advocates of a capital market-oriented financial system.

[31] One should not overestimate this assessment of "underdevelopment" of the German stock market. It only refers to its size. In terms of its function as a secondary market, the German stock market is far from being underdeveloped; see *Theissen* (2002).

tem. If the capital market were more important, and also exerted a strong pressure on management, the other stakeholders apart from the shareholders might rightly fear that management might have to break the implicit contracts which, until now, secure their interests and thus also serves as the functional basis of the German corporate governance system.

The British pension system is clearly capital market oriented, which corresponds to the general feature of the British financial system. The administration of pension funds is in the hands of financial intermediaries and their managers, that have an exclusive financial orientation, and the greater part of the pension money is invested in shares. Therefore, in Britain pension capital is not "assimilated" to bank loans, it is essentially "normal" equity. The British capital market-based pension system makes the stock market an important source of company financing and an important instrument of corporate governance, and it thereby limits the role which would otherwise be expected from banks and which British banks are not well equipped to perform. The British corporate governance system is strictly in line with the – pension system supported – strong role of the capital market, and there would hardly be a need for having either banks or employees represented on British boards of directors. Moreover, the "assimilation" of pension capital to "normal" equity allows to assign a clear and unambiguous task to management, which consists in maximising the value of the shares. The unambiguous definition of its task makes it much easier to monitor the performance of management, and ideally, this monitoring is done through the workings of the stock market including the market for corporate control. This correspondence suggests that the British financial system, with the pension system as an integral part, is also consistent.

As we argued above, the French financial system does not (yet) seem to have settled down to a sound and stable equilibrium. Or, in other words, it is no longer and not yet a consistent system of complementary elements. Firm financing in France is increasingly capital market based these days, and the capital market is also slowly beginning to become an important element of the French corporate governance system. This would suggest that a pension system which relied heavily on the capital market would support the entire system. But a pension system which is almost completely based on the pay-as-you-go principle, as the French system still is, does not support the working of the capital market. Moreover, the French pension system is still largely state-dominated. In former times, this was consistent with the general character of the French financial system. But today, the state has reduced its role in the financial system. These considerations reinforce the general impression derived above, namely that the French system is – at least at present – inconsistent.

All this goes to show that there are not only vast differences between the narrowly defined financial systems and the pension systems in the three countries, but also interesting parallels and, in the cases of Germany and the U.K., clear indications of complementarity and consistency between these two subsystems. Having established this point, we will now analyse two specific aspects of complementarity, before we return to the issues of complementarity and consistency in greater detail in section IV. below.

III. Extending the Analysis

1. Ricardian Equivalence and its Limitations

The starting point for the following considerations is a general warning not to overestimate the apparent differences in the design of national pension systems. Because if one makes the simplifying and idealising assumptions that are usually made in (neoclassical) economic analyses, and if one disregards the redistributive component that undoubtedly exists in all real pension systems, then the idea which first comes to mind is that the specific design selected for a pension system may be irrelevant. If employees themselves have to take greater responsibility for providing for their own retirement income, they will demand and, under equilibrium conditions also receive, higher wages. If companies pay money into pension funds, they will borrow equivalent amounts to replace these funds if they need them for investments. If households are forced, through withheld portions of wages or payments into a pension fund, to reduce their disposable income in the present in order to increase their future income, they will make the necessary adjustments to their consumption and savings patterns. In a model world of perfect and complete markets, in which there are no financing restrictions and in which individuals take account of the welfare of future generations, the so-called Ricardian equivalence would obtain and the manner in which the pension system is financed would be irrelevant.

However, in view of the offsetting reactions, i.e. adjustments, that are induced by the necessity of making payments into pension systems and to fund investment in some way, it would be inappropriate to judge the effects ascribed to what seem, prima facie, to be widely differing pension schemes, exclusively on the basis of their direct effects reflected in payment flows. A meaningful basis for comparison and assessment can only be created by also looking at the offsetting reactions which are prompted by the imperfections in the specific markets into which the pension systems are integrated. Two types of secondary or indirect effects of the design of pension systems will be discussed in the following sections in order to deepen our analysis of consistency and complementarity from above. In section III.2, we will investigate the extent to which each of the pension systems, in its ideal-typical form, is able to reduce certain macroeconomic or aggregated risks stemming from market imperfections, while, in section III.3, we will examine inventive effects of the systems from a microeconomic perspective, before we return to the question of how the various elements of the national financial systems as a whole fit together.

2. Statutory Pension Systems and Risk Allocation

a) Intratemporal versus Intertemporal Risk Sharing

The allocation of risk in an economy is shaped by numerous market mechanisms and institutions. Indeed, risk allocation is one of the main functions of financial intermediaries and capital markets, and thus also of pension systems. Different institutions each have their own comparative advantages when man-

aging, i.e. reducing and efficiently allocating, specific risks. A crucial distinction in this context is the one introduced into the discussion by Allen and Gale, who distinguish between, on the one hand, risks which relate to a specific point in time, such as those which are the focus of models used in financial theory (e.g. the CAPM), i.e. intratemporal risks, and so-called intertemporal risks on the other.[32] The latter type of risks can result, for example, from macroeconomic developments, such as the oil price shock in the early 1970s, the stock market crashes of 1989 and 2000/2001, or the dramatic fall of all asset prices, and especially of the prices of shares and real estate, that has been under way in Japan since the beginning of the '90s. In all of these cases there were pronounced, long-lasting and highly correlated changes in the prices of most assets, including market-traded assets, which meant that investors were unable to effectively offset the resulting non-diversifiable risks.[33]

The quoted papers by Allen/Gale investigate the extent to which various financial institutions, such as financial intermediaries and capital markets, are capable of offsetting intratemporal risks on the one hand, and intertemporal risks on the other. A characteristic trade-off emerges: institutions that are particularly good at managing risks at a given point of time, or intratemporal risk, are not so good at dealing with intertemporal risks, and vice versa.

Allen and Gale show convincingly that intertemporal risks can only be smoothed intertemporally, and that there are basically two strategies available for achieving this. One is intergenerational risk sharing, which, as will be explained below, can be effected above all via the pension system; and the other is the accumulation of claims against banks and insurance companies. A key feature of asset accumulation as a mechanism of risk reduction – which is based on the same logic as that which underlies the strategy of stockpiling to cover the risk of a shortage of material goods – is that the holders of the claims do not incur any, or only a very minor, price risk, even though the market value of the assets by which their claims are ultimately secured may well be subject to risk. In practical terms, this means that the asset-accumulating households hold claims for a fixed amount against the aforementioned types of financial institutions. Therefore, at least from a subjective point of view, they bear no price risk, or only a very small one. If the financial institutions meet the claims, they are able to smooth the intertemporal risk at the level of the society as a whole.

For asset accumulation to work, two preconditions must be satisfied: First, competition between the financial institutions which meet claims for fixed amounts on the basis of deposits must not be too intense because heavy competition for customers' money might lead the institutions, in the event of "posi-

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[32] See, above all, *Allen* and *Gale* (1995; 1997 and 2000), but also *Bhattacharya* and *Padilla* (1996), *Bhattacharya*, *Fulghieri*, and *Rovelli* (1998) and *Fulghieri* and *Rovelli* (1998).

[33] Of course, these risks could be further reduced given that pension funds are diversified globally. But first of all, what we observe in almost all countries with sizeable pension funds is still a clear home bias concerning their investment behaviour. For the U.K. this can be witnessed very clearly from the figures in *Blake* (2001) which show that the average portfolio weight of U.K. investment in U.K. pension funds is nearly 75%. Secondly, even if pension funds were perfectly diversified globally they would still bear a considerable amount of intratemporal risk, which can only be smoothed intertemporally.

tive" shocks, to decide to stop smoothing the yields which they pay out in order to attract new customers. This behaviour would destroy the asset accumulation mechanism. Second, capital markets as alternative providers of investment options must not be so important, and not so easily accessible and not so attractive for savers, that they would shift their assets from financial intermediaries to the capital markets if market trends were favourable, as in the long run this would also render intertemporal risk-smoothing impossible. In practice this means that in purely quantitative terms financial intermediaries issuing fixed claims must play a dominant role in capital allocation in order to cushion the risks associated with the assets they hold.

Real capital markets are not able to perform this intertemporal smoothing of risks which cannot be diversified at a specific point in time, because they do not approximate the ideal of an Arrow-Debreu world in which there are complete markets for all present and future risks. Nonetheless, real capital markets can definitely make a contribution to an efficient allocation of time-specific, potentially diversifiable risks through the exchange mechanism. In fact, they are veritable specialists in risk allocation at a given point of time. Conversely, financial intermediaries are well suited to smoothing intertemporal risks, especially if – as in the case of savings banks and co-operative banks – there are no market prices for the shares of the capital of these institutions that are held by their owners: In times of relative surplus these intermediaries take in assets in the form of funds and in times of relative shortage they disburse funds, thereby "concealing" changes in the true wealth of households and enabling them to avoid major fluctuations in their expenditures for consumption.[34]

What role does the form of the statutory pension system play in this context? The pay-as-you-go system is a mechanism for intertemporal and intergenerational risk sharing in which the level of expected pensions is determined primarily by the development of incomes earned by people in work and of course on the number of people in work relative to pensioners, but is scarcely influenced by (longer-term) fluctuations in the price of assets. With funded pension systems, in contrast, this type of risk sharing is *not* feasible precisely in situations where (1) the accumulated savings are – as most reform proposals advocate – invested via pension funds on the capital market in equities and (2) the pension system is designed according to the "defined contribution" principle. In such case the beneficiaries bear the full asset price risk. Longer-term fluctuations in asset prices cannot be smoothed in this system because the return on the accumulated asset claims is directly dependent on equity price movements. That these risks are real, even today, is easy to appreciate if one considers the hypothetical case of a Japanese employee who provided for his old age by investing in a Japanese equity fund. Since 1989 he would have achieved a negative return of nearly 40%.[35]

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[34] For a more detailed discussion of this mechanism, see *Allen* and *Gale* (2000), in particular Chapter 6.

[35] Surely this Japanese worker has been taking unwarranted diversifiable risk by investing solely in an equity fund, but the picture wouldn`t change very much, if he has invested only 75% in the home equity market, which is a fairly good description of pension funds` investment behaviour in capital market oriented systems (*Blake* 2001).

Like the capital market and banks/savings institutions/insurance companies, the design of the pension system also has an influence on risk allocation within an economy, and each of these two parts of the financial system strongly influences the other and helps to define how it functions. In countries like Germany, France and Italy, but also Japan, where banks play, or, as the case may be, played, a strong role and the capital market traditionally plays, or played, a weak role in the financing process within the economy, the pension system is to a large extent based on the pay-as-you-go principle, while in capital market-dominated countries funded systems are much more important. What might be the cause of this correlation?

There are two mechanisms which are suitable for the intertemporal smoothing of risks, namely asset accumulation and intergenerational risk sharing. Asset accumulation in the financial sector is best achieved by a banking system that is not integrated into the capital market to a great extent. Indeed, a system of state-owned savings banks would be the most extreme example of such an "insulated" system. Intergenerational risk sharing is effected by a pay-as-you-go system. One might be inclined to think that in practice each of the two mechanisms can substitute for the other: where "savings bank-like" banks play an important role, there may be less of a need for a pay-as-you-go system – and vice versa.

Yet, in the final analysis it would be incorrect to consider the existence of demand-induced substitutionality as the only, or even as the dominant relationship between these two elements of a financial system. Imagine a financial system in which banks dominate the financing process, and enable the intertemporal smoothing of risks to take place through asset accumulation. The introduction of a funded pension system which accumulated substantial volumes of funds would lead to inconsistencies in this system, because the advantage of a funded system is precisely that the pension funds are given the opportunity to invest in tradable equities in order to achieve a higher return than is possible with the pay-as-you-go system. However, in order for this to be feasible, well developed, differentiated, liquid capital markets must exist which are accessible to a great many different types of market participants. But if such a market existed, banks and insurance companies would lose the ability to smooth risks, because the option of shifting funds to the capital market would become so attractive both for the financial institutions themselves and for depositors and the holders of insurance policies that the financial intermediaries, and ultimately the savers/depositors/ insurance policy-holders as well, would no longer be able to "immunise" themselves against asset price changes.

b) The Non-Tradability of Human Capital

In the final analysis, the problem described in the preceding section stems from the fact that in the real world intertemporally complete (capital) markets in which all kinds of claims on future state-dependent income can be traded do not exist. As early as 1983, the Nobel laureate Robert C. Merton drew attention to an additional aspect of the imperfect nature of markets which is of relevance when assessing pension systems: the non-tradability of human capital. Merton

argues that private activities undertaken to create retirement income usually give rise to investments that generate a return which is a function of the profitability of real capital in the specific economy in question. Generally speaking, though, optimal protection against the risk of falling returns through diversification can only be achieved if all assets, i.e. not only real capital but also human capital, are tradable. Typically, though, human capital is not tradable. As a consequence, at the beginning of his life cycle an individual is poorly protected against changes in the future factor productivity of labour and capital, and thus against factor price risks. If there is no trade in claims on the returns on the deployment of individuals' human capital, this means that during his working life a *young* person holds an unbalanced portfolio because his weak net asset position has prevented him from accumulating real capital on any appreciable scale. The situation is exactly the reverse for old people. A retired person or old-age pensioner mainly holds claims on the returns of real capital; his human capital has become almost worthless. If there were a private market for human capital, young workers would sell claims on the return on their own human capital – "shares" in that capital – to the older generation and use the proceeds to buy shares in real capital. This opportunity would enable them to achieve a better balance in their portfolios and to "diversify away" at least a part of the factor price risk. The corresponding opportunity would also be advantageous for the older generation, as it could participate in the income obtained by future generations from economic activity, and it would also end up holding a portfolio with a better risk structure. However, information- and incentive-related problems create limits to the feasibility of participation,[36] and ethical barriers, the nature of which does not need to be explained, preclude the establishment of such a market.

On the basis of a theoretical model, Merton showed that, in conjunction with a consumption tax, a pay-as-you-go system can take the place of this missing market for human capital. Although we cannot discuss Merton's line of reasoning in detail here, the underlying logic should be clear: in a pay-as-you-go system, various generations can participate in the future changes in factor prices via the *intergenerational* exchange that takes place in such a system. If certain conditions are met, the risks resulting from the non-existence of a market for human capital can be efficiently shared between the generations. This leads to an increase in welfare and improves the incentives to invest in human capital.[37]

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[36] Transactions cannot be conducted with a generation that has not yet been born. For this reason, the capital market is intertemporally incomplete. This aspect is modelled as part of overlapping generations models in *Boldrin* and *Montes* (2002) and *Rangel* (1999).

[37] The conditions that must be given in order for *Merton's* analysis of 1983 to be valid have in the meantime been analysed in detail. See *Breyer* (1989), *Richter* (1990; 1993) and *Enders* and *Lapan* (1993). However, the basic relevance of the argument is not questioned. The recent analyses of the imperfect nature of the market for human capital by *Sinn* (1998), *Werding* (1999) and *Boldrin* and *Montes* (2002), which confirm the validity of Merton's findings, are of particular interest in this connection.

c) Summary and Conclusions 3

In this section we made an attempt to show that the pay-as-you-go principle does indeed have advantages, provided one takes certain market imperfections into account. Moreover, we argued that there are economic reasons why the design of statutory pension systems should be compatible with the predominant mode of risk allocation.

What are the implications of the Allen/Gale argument concerning intertemporal risk smoothing? If intertemporal risk smoothing is considered to be important in an economy, it makes sense to have this function performed by strong banks acting in conjunction with a relatively small and underdeveloped capital market on the one hand, and, on the other, with a pension system based on the pay-as-you-go principle. Thus these two elements of a financial system are indeed complementary in the sense that each supports the other and helps it to function, and in the final analysis this complementarity with regard to the supply side can outweigh the demand-induced substitutionality. Following the same logic, well developed capital markets and banks which are, relatively speaking, less important as financial intermediaries on the one hand, and, on the other, a funded pension system operating on the "defined contribution" principle, are complementary. Thus, both institutional designs, i.e. that prevailing in Germany and that prevailing in Great Britain, may be regarded as consistent also under the additional aspect introduced by Allen and Gale.

What is the connection between the line of reasoning based on Merton's analysis of the missing market for human capital and the overall structure of financial systems? In the brief overview of the German financial system in section II, we tried to make it clear that the relatively strong incentives to undertake firm-specific investments in human capital which the German system provides, and its institutional mechanisms for the protection of such investments, constitute one of the key advantages of this type of financial system. This protection should be reinforced, and not undermined, by the fundamental design of the pension system. The pay-as-you-go principle provides such protection.[38]

3. Company Pension Schemes and the Financial System

In this section, the predominantly macroeconomic considerations of section III.2 will be rounded off by the presentation of relevant microeconomic aspects. It makes sense to add a microeconomic perspective because the type of financial system that has evolved in a given country influences the way in which incentives are created in the economy, the way in which its firms take decisions, and the way in which these incentives and decisions serve to resolve conflicts

[38] We do not wish to create the impression here that there are no drawbacks to this type of system. *Sinn* (1998) in particular has drawn attention to the free-rider problem with respect to investments in human capital in a pure pay-as-you-go system. However, as is explained in the concluding remarks, the effects of these perverse incentives can be alleviated by suitable institutional adjustments within the system.

and take various interests into account.[39] It has already been pointed out that in France real company pension schemes do not exist. For this reason, the arguments presented in this section do not apply to France.

a) Company Pension Schemes and the Creation of Incentives

Company pension schemes are an important instrument for influencing the behaviour of employees and employers. These effects apply above all in two areas: For one thing, the company-level pension system can influence employees' decisions as to when they will voluntarily retire. This can also mean that they will opt to retire before reaching the statutory retirement age.[40] For another, depending on the specific design of the national pension system, employees are given various incentives to accumulate firm-specific human capital and to develop a long-term commitment to their companies. This latter aspect is of particular importance if one wants to analyse how the design of company pension schemes fits into respective national financial systems. Pension funds clearly have advantages over pension reserves if criteria such as transparency or the generation of returns which are appropriate to the degree of risk incurred are applied. With pension funds, improved risk diversification can be achieved because employees' pension claims are more independent of the specific firms for which they work.

However, a pension funds system has disadvantages if the goal is to strengthen employees' commitment to their companies. Krahnen (1990), among others, has drawn attention to this point: in the German system the number of years a person has been employed by a company is taken into account when determining the size of the company pension to which he is entitled, and typically employees must have worked at a given company for 10 years in order to be entitled to receive a company pension. This reduces the incentive to go to work for a different company and is conducive to the stability – or as the reverse side of the same coin, inflexibility – of employment. Although this effect can in principle also materialise in the British system, which relies primarily on pension funds operating according to the defined-benefit principle to provide company pensions, it is much easier in the U.K. for employees to take their pension entitlements with them if they change jobs (there is greater "portability" of such entitlements) because the pension funds, which are legally autonomous entities, are better able to maintain pension benefit accounts for employees of various firms, and because employees are entitled to receive retirement benefits after only two years.[41] Thus, in the British system, the ability of the company pension system to

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[39] For a detailed discussion of this point, see *Schmidt* and *Grohs* (2000) and *Hackethal* and *Schmidt* (2000a).

[40] *Lazear* in particular drew attention to this point as early as 1983. However, it seems to us that one cannot develop an explanation for this aspect which "fits into" the overall context of the financial system as it has been defined here, and therefore we will not discuss this aspect in this paper.

[41] See *Davis* (1995).

create incentives for workers to make a long-term commitment to a given company has been weakened by the creation of institutional arrangements.[42]

Mechanisms which encourage immobility, or loyalty to one's employer, which is a key feature of the German system of company pension provision, would appear to be meaningful particularly if great significance is attached to the accumulation of firm-specific human capital. From the point of view of employees, the German system creates incentives to accumulate such capital. Consequently, the use of pension reserves "fits into" the German financial system. However, the incentives to undertake investments in firm-specific human capital must be supported and safeguarded by other features of the system as a whole (e.g. corporate financing patterns, the structure of the financial system, and, most importantly, corporate governance structures) in order to ensure that employers, i.e. owners or managers acting only in the owners' interest, do not exploit these investments to pursue their own interests This would create the so-called holdup problem, which we discuss in the following subsection.

b) Company Pension Schemes, Corporate Finance and Corporate Governance

In this subsection, we briefly investigate how the company-related pillars of the national pension systems correspond to the basic features of the rest of the financial systems in the three countries, namely corporate financing patterns and corporate governance, before we conclude the paper by addressing the more general question of how the entire pension systems are related to the rest of the financial system.

Whether there are differences in the national patterns of corporate finance in Germany, France and the U.K. is a hotly debated topic. The picture that emerges from balance-sheet data and from the type of flow-of-funds analyses that have been predominant in this field of research so far, does not provide a clear answer to this question.[43] Based on their own flow-of-funds studies, Mayer (1990) and Corbett and Jenkinson (1997) conclude that national patterns of the financing of corporate investment do not vary in any essential way between countries and that internal financing dominates in all of the countries covered by their investigations. However, recent studies on intermediation rates in the three countries featured in this paper indicate that, as regards external financing, bank finance is more important than finance provided by the capital market in the continental European countries, while the opposite is true in the U.K. and the U.S.[44] This impression is supported by studies of national financing pattern, which take issue with the methodology and the empirical findings of Mayer and Corbett and Jenkinson. If a critical assumption underlying their methodology is eliminated, Germany turns out to be the country among those compared in this

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[42] On the other hand, of course, there is much to be said for the introduction of such arrangements, and for the design of a system which offers "portability".

[43] See Deutsche Bundesbank (1994; 1999), *Mayer* (1990), *Rajan* and *Zingales* (1995) and *Corbett* and *Jenkinson* (1997).

[44] See *Schmidt*, *Hackethal*, and *Tyrell* (1999).

paper in which the volume of internal financing proves to be economically the most significant.[45]

How do these features of the financial systems of Germany and the U.K. fit into our picture of vastly different company pension systems in these countries? On the one hand, the pension reserve, as the typical form of company pension scheme in Germany, is a source of internal finance and, on the other, in purely formal terms it is a form of debt. This is in itself a factor which explains the differences between the financing patterns in Germany and the U.K.

But there may be an additional indirect effect on the national patterns of corporate financing. If improved internal financing options are available, these can be used to smooth the firm's cash flow. This possibility reduces the firm-specific risk and with it the risk of bankruptcy, and in this sense it can have a positive impact on the willingness of firms to take on more outside debt[46] and of banks to provide outside debt, as well as of employees to undertake investments in firm-specific human capital, which again reduces the firm-specific risks.

In the U.K., provision for retirement income is "outsourced" and not dependent on the fortunes of specific companies. This fact increases the need for outside financing from the capital market and at the same time makes the capital market better able to meet this demand for company financing – a point which is clearly reflected in the differences which we outlined above between the financing patterns of companies in the U.K. and the U.S. on the one hand, and those of continental European countries on the other.

Ultimately the incentive effects of a country's company pension scheme are determined by the systems of corporate governance in that country. In an outsider system, the interests of other stakeholder groups than the shareholders are safeguarded by explicit contracts or are taken into account in the sense that obvious violations of these interests will lead to the "exit" of the stakeholders in question – i.e. the termination of employment and credit relationships – or to lawsuits or other forms of legal action. Each of these possibilities would have a negative impact on the market value of the company in question.

In an insider control system, by contrast, there needs to be a process by which, and a forum in which, the interests of the most important stakeholder groups – the shareholders, the banks and the employees, but also the state and important suppliers and/or customers – are alligned with the goal of achieving a consensus. The alignment and balancing of interests is effected via long-term and at least partially implicit contracts, which are safeguarded by active participation in the system by which corporate governance is exercised. The viability of an insider system depends on whether the various groups can be given sufficient rights to influence the affairs of the company, and on whether conflict-resolution mechanisms are in place. As far as employees are concerned, legal

[45] See *Hackethal* (2000) and *Hackethal* and *Schmidt* (2000b), as well as OECD (1995, p. 91), and Deutsche Bundesbank (1999), which, in a large-scale study carried out in co-operation with the Banque de France, compared the structure of corporate finance in Germany and France on the basis of balance-sheet data and arrived at this same conclusion.

[46] See *Froot*, *Scharfstein*, and *Stein* (1993).

and/or de facto co-determination rights provide these mechanisms. The importance of companies' pension reserves seems to have been an essential argument in favour of mandatory corporate-level codetermination.[47]

The British pension funds invest up to 80% of their resources in equity shares, they typically hold a broadly diversified portfolio, and through their behaviour as investors they help to create the basis for an active takeover market.[48] Overall, they pursue a policy of active portfolio management, but they hardly actively intervene in corporate decision-making. The individual pension funds compete vigorously with each other in their efforts to attract employees' retirement funds. This shapes their behaviour as investors and causes them to focus on short-term profitability, which is compatible with the almost exclusive orientation of company management towards shareholders' interests that is characteristic of the outsider system. In relying heavily on the capital market as an outlet for the huge amounts of money which they collect, the British pension funds at the same time strengthen the role of the capital market and reinforce the pressure for management from the capital market and, by necessity, management orientation on shareholder value maximisation.

Thus, there seems to be more than a mere correspondence between the specific forms of company-related pensions and general features of the financial systems under discussion. In both Germany and the U.K., the company-related pillars of the pension systems serve to stabilise the respective national corporate governance systems and the specific national financing patterns.

IV. Concluding Remarks

1. Summary and Conclusions 4: Consistency of the Overall Financial Systems

It was the goal of this paper to show that there are differences between national financial systems (narrowly defined, i.e. excluding the pension systems) and national pension systems and that two of the three national overall financial systems, namely those of Germany and the U.K., but not that of France, are largely consistent systems of complementary elements at present. In line with the broadly defined concept of the financial system which was introduced at the outset of the paper, the respective national pension systems have been characterised as constituent elements of the three countries' financial systems. In structural terms, the various features of the pension systems in Germany and the U.K. "fit into" the overall environment created by each country's financial

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[47] As the authors have been told by Professor *Kübler*, who defended the Federal Government in the German Federal Constitution Court (Bundesverfassungsgericht) case of 1978 in which the codetermination law of 1976 was challenged by the German Federation of Employers as being unconstitutional, the presumed size of corporate pension reserves may have been the decisive argument why the Court ruled that the law is compatible with Article 14 of the German constitution, which protects private property. For details concerning this Constitutional Court case see *Kübler*, *Schmidt*, and *Simitis* (1978).

[48] For a more detailed discussion of the points raised in the following, see also *Davis* (1999) and *Clark* (2000b).

system. More specifically, the individual elements of the financial systems of Germany and the U.K. tend to support each other in the way they contribute to the functioning of the entire systems, and also to mitigate possible adverse effects which they might be assumed to have. These insights highlighting the complementarity of the national pension systems and the rest of the respective national financial systems supplement and round out the findings regarding these financial systems which we have presented – above all in collaboration with Andreas Hackethal – in a number of other papers.

For Germany, the results of our assessment can be summed up as follows: The German financial system is dominated by banks and bank financing and a system of insider control corporate governance. By contrast, organised capital markets play only a secondary role as a source of financing and an outlet for savings as well as in the governance of large corporations. The German pension system, which comprises a statutory pension system based on the pay-as-you-go principle and company pension schemes which rely primarily on pension reserves, contributes to the continued viability of the financial system as a whole in two ways: Firstly, the statutory pension scheme "protects" the banking system against competition from powerful and efficient capital markets, and thus helps to maintain its ability to perform intertemporal risk smoothing as defined and analysed by Allen/Gale and Merton; and it permits banks to play an important role in the long-term financing of business. And secondly, the fact that the company pension schemes rely on pension reserves, which are invested internally by firms, also makes the employees who are entitled to pension benefits an important group of "creditor-like" stakeholders who have placed capital at the disposal of the companies for which they work. This status creates a commitment on the part of the employees which makes them less likely to leave the companies they work for; it increases their incentives to accumulate firm-specific human capital. Moreover, it creates a certain congruence between their own interests and those of the banks and the company's managers. The various parties have a common interest in ensuring the long-term viability of the company, and this common interest takes precedence over their specific individual interests. In view of the increasing importance of non-transferrable knowledge as a means of generating competitive advantages, a stakeholder orientation of this type is probably also in line with the interests of the owners (shareholders), in particular the so-called strategic investors who hold large blocks of shares. Long-term employment, financing and ownership relationships are still a characteristic feature of the German economy, and while relationships of this type have the disadvantage of being inflexible and opaque, they may be even more important today than they were in the past.

The German system of corporate governance, which forces shareholders, banks and employees to co-ordinate their interests, also provides a certain amount of protection against the accumulation and exercise of excessive decision-making power by the managers of companies, who are often not adequately monitored by the capital markets. The German corporate governance system, which is still an insider controlled system and which relies heavily on the strict institutional separation between management and supervisory board, implies that the interests of various stakeholder groups can, and do, play an important role in determining what the top management of corporations should

strive for, and in monitoring the actions of the management. This institutionalised stakeholder system is consistent with the fundamental features of the German pension system.

The logic behind our hypothesis that there is a good “fit” between the German pension system and the overall financial system can be illustrated by considering how things would change if Germany “all of a sudden” had a pension system of the British type. The German capital market would not be able to provide the investment opportunities which the pension-related intermediaries would require. In spite of this, a change to a capital-market based pension system would put corporations under stronger pressure from the capital market than they experience today. It seems quite plausible to assume that this pressure would be so strong that the banks would no longer be able to exert influence on companies and would therefore curtail their financing. The present corporate governance system and co-determination as a part of it would cease to function, because the other stakeholder groups would rightly have to fear that management will mainly react to the pressure of the stock market and cease to respect the other stakeholders’ interests. With the present set of financial system elements in place, a sweeping introduction of a British-style pension system would make the entire German financial system inconsistent and therefore also ineffective, or it would pave the way towards many other far-reaching changes.

The British system also seems to be consistent. In the U.K., the provision of retirement income is effected via pension funds which invest their assets in the capital market – primarily in shares – and for which it is very important that the capital market plays a key role not only in corporate finance but also in corporate governance. There is a good “fit” between the British form of pension provision, the design of the British financial sector and the British mode of corporate control. The U.K. financial system is capital market-dominated, and intertemporal risk management à la Allen/Gale is not highly developed. But intratemporal risk can be handled in a very efficient way.

As we did in the case of Germany, let us consider what would happen if the nature of the pension system were to change radically, i.e. let us suppose that, within the British financial system, the provision of retirement income were to be effected primarily via a system based on the pay-as-you-go principle and pension reserves used for internal financing. This would only have the effect of weakening the capital market in its dual function of being a source of funding and a mechanism of corporate control, without, however, creating a functional equivalent of the capital market in the form of banks active in long-term lending to business, and of an insider-control system. Thus, the resulting overall system would not be consistent, and it would probably also not function.

While the German and the British financial systems seem to be consistent configurations of complementary elements also as far as the national pension systems are concerned, the French financial system currently appears to be inconsistent. This applies to the financial system apart from the pension system, and it is also reflected in the lack of consistency between the emerging new features of the financial system apart from the pension system on the one side, and the pension system on the other side.

The French system for the provision of retirement income consists of both a statutory pension system and company pension schemes and is based almost exclusively on the pay-as-you-go principle. Given the way the pension system is designed, it does not encourage employees to undertake firm-specific investments in human capital, and it also does not support the disciplining function and the financing function of the capital market. In a financial system which is becoming increasingly similar to the systems of the U.K. and the U.S. in terms of its financing patterns, this leads to frictional losses and conflicts. In France as well, risk management à la Allen/Gale is not highly developed due to the fact that the position of the banking sector has been seriously weakened in the course of the last two decades. The individual elements do not fit together and they do not create a consistent overall system.[49] Only in this specific sense, the French pension system fits into the overall picture of the French financial system.

2. System Dynamics and the Scope for Change[50]

It would certainly be naive to conclude, based on the great significance of the compatibility of a country's pension system with the other parts of its financial system, that all consistent systems are necessarily also good systems. In our view, the most that one can say is that an incoherent system cannot be a good system. And even after the passage of pension reform legislation in 2001 which provides, among other things, for the introduction on a limited scale of options for funded pension provision, the conformity of the German pension system with

[49] Of course we acknowledge that there are financial systems with insider control and relationship banking but also sizeable funded pension systems, as for instance in the Netherlands, which do not appear to be inconsistent. We thank a referee for raising this point. But for several reason we do not believe that the case of the Netherlands makes our basic argument invalid. First, while the compulsory occupational pensions in the Netherlands are fully funded, the defined benefit nature of these pensions also incorporate a pay-as-you-go component with respect to intergenerational risk sharing, because it links pension income to wages rather than to rates of return in capital markets (*Bovenberg* 2002). Second, the pension schemes are administered outside the company, mostly by industry-wide or company pension funds, whereby employees and employers are represented equally in the board of the pension funds. This reflects the tradition of social partnership in the Netherlands and seems to have a strong impact on the behaviour of the pension funds as investors. Although they invest a considerable amount of their funds in equity markets, most of these funds are invested abroad, and as far as they invest in the Netherlands, the Dutch pension funds have traditionally abstained from playing an active role and thereby supporting a stricter shareholder orientation which would upset the traditional consensus-oriented governance system in their home country (*Kremers* 2002). Third, neither for employers nor for employees is there room for opting out of the collective arrangements and invest their accrued pension capital individually, as it is possible in the United Kingdom. All in all, it appears to us that the Dutch pension funds do not profoundly affect the insider-oriented financial system in the Netherlands and thus also do not undermine its risk sharing arrangements.

[50] Because of space limitations, we do not discuss the impact of the EU or – more general – of the increasing global financial integration on the future of European pension systems. We feel that it needs (at least) a paper on his own to do justice to these important aspects. For some discussions we refer to *Clark* (2002) and *Feldstein* and *Siebert* (2002).

the overall financial system has not been undermined.[51] By the same token, though, it cannot be assumed that this reform has solved the very serious problems confronting the German pension system, which are an outgrowth of demographic trends and certain special factors, such as German unification. The introduction of pension funds or other comparable institutions, on a *broad* scale – which would create a new overall system *based primarily* on funded systems for the provision of retirement income – is seen by many observers as offering the only possible solution to the problems of the German pension system. Accordingly, the Anglo-Saxon type of financial system is often presented, either explicitly or implicitly, as a model which Germany should strive to imitate.[52] Thus, one could ask whether the creation and large-scale introduction of pension funds in Germany might be both a part of, and an indication of, a *gradual* shift from the current configuration of the German financial system to a new architecture based on the Anglo-Saxon model.

The consistency of financial systems also has implications in terms of the ways in which processes of change can – or, more importantly, cannot – take place. This is why we feel it is unlikely that there will be a gradual, smooth transition from the current German financial system to one which is configured like the systems in the U.S. and the U.K. Our reasons for taking this position are as follows: The economy of a country exerts pressure on its entire financial system which invariably has the effect of promoting modifications in the design of the system which will make it operate efficiently. And if the system is to be efficient, it must, at the very least, be configured in such a way that its individual elements fit together. However, when reforms are implemented, they usually do not target the system as a whole, but rather only individual elements of it.

If partial reforms undertaken within financial systems do not work, "bad" systems can prove to be very durable. On the other hand, we cannot expect bad systems to last indefinitely; at some point, a fundamental change is inevitable. But how might a "revolutionary" change in the nature of a financial system take place? Would such a change automatically involve the better system being adopted after a competition between systems had highlighted the advantages and disadvantages of each? Not necessarily. Indeed, it is more likely that in such a competition, the specific system that makes the greatest use of explicit incentives and mechanisms, and thus relies to the smallest extent on implicit coordination mechanisms to organise relations between economic agents, would emerge as the "winner". There can be no doubt that this description more closely fits the British system than the German one.[53]

Nonetheless, there are options which would allow the "pay-as-you-go" system to be retained as the dominant organising principle of the national pension sys-

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[51] *Jürgen Pfister*, the chief economist of the Commerzbank, takes a similar view. In a recent paper, he notes with regret that the new German pension funds – one of the elements of the private, corporate pension system which the state makes a special point of promoting via favourable tax treatment – "can hardly count as pension funds along Anglo-American lines" (*Pfister* 2002, p. 344).

[52] With regard to pension systems, see *Feldstein* (1998a; 1998b), and for a more general discussion of this point, see *La Porta* et al. (1998).

[53] For a detailed discussion of this point, see *Schmidt* and *Spindler* (2000).

tem, and at the same time permit the urgent financing problems faced by the statutory pension system to be solved in such a way that the configuration of the financial system would not be undermined to any appreciable extent, and that the burdens would be allocated equitably between and within the generations. Sinn in particular has recommended a solution along these lines, which he has discussed in various publications.[54] He recommends augmenting the prevailing pay-as-you-go system on a limited scale through the introduction of elements of a funded system. In his view, the crisis of the pay-as-you-go system in Germany is in essence an outgrowth of demographic developments. In the final analysis, this means that, overall, the working-age population is investing too little in future human capital, i.e. the current generation of working-age people is not having enough children to enable the system to pay the pension benefits to which it will be entitled when it reaches retirement age. From this, Sinn draws the conclusion that those members of the economically active population who do not have any children, i.e. those who have not invested in human capital, should be entitled to smaller pension benefits in the framework of the pay-as-you-go system. Moreover, he recommends that, in addition to making their contributions to the statutory pension system, they should be induced to invest a portion of their income in real capital. In Sinn's view, the resulting *double* burden is justified because this part of the population also has lower expenses due to the fact that they do not have (a sufficient number of) children.

The introduction of a system of this type would, firstly, make the pension system as a whole more equitable and improve the financial situation of the existing statutory pension system; secondly, it would, over the long term, create improved incentives to invest in human capital, and thus safeguard the viability of the pay-as-you-go principle. This reform of the existing system for the provision of retirement income would require the incorporation of elements of a funded system on only a limited scale, but it would preserve the basic structure of the system, and thus also preserve its consistency with the other elements of the financial system, which is, as we firmly believe, a desirable outcome from the standpoint of national economic policy.[55]

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[54] See *Sinn* (1998; 1999), as well as *Boldrin* et al. (1999) and *Breyer* (2000; 2001), who argue along similar lines.

[55] In this connection, it is also interesting to examine the findings of an empirical study dealing with the current degree of acceptance of the welfare state – and its future – in continental Europe which was carried out by *Boeri*, *Börsch-Supan*, and *Tabellini* (2001) and was based on surveys conducted in Germany, France, Italy and Spain. The following sentence sums up the authors' conclusions: "Whether we like it or not, public opinion in continental Europe seems to be strongly averse to the social model advocated by Mrs. Thatcher in the U.K. or by President Reagan in the U.S." (p. 44) .

Summary

At present, the question of how national pension or retirement payment systems should be organised is being hotly debated in various countries, and opinions vary widely as to what should be regarded as the optimal design for such systems. It appears to the authors of this paper that in this discussion one aspect is largely overlooked: What relationships exist between the pension system and the financial system in a given country? As such relationships might prove to be important, the present paper investigates the following questions:

1. Are there differences between the national pension systems of three major European countries – Germany, France and the U.K. – and between the financial systems of these countries?

2. And if the existence of such differences can be demonstrated, is there a correspondence between the differences with respect to the national pension systems and the differences as regards the countries' financial systems?

3. And if such a correspondence exists, is there any interrelationship between the national financial and pension systems of the individual countries which goes beyond a mere correspondence?

Looking mainly at two aspects – namely, risk allocation and the incentives to create human capital – the authors of this paper argue

1. that there are indeed considerable differences between the financial and pension systems of the three countries;

2. that in both Germany and the U.K. there are also systematic correspondences between the respective pension systems and financial systems and their economic characteristics, whereas such a correspondence cannot be identified in the case of France; and

3. that these parallels are, in the final analysis, based on complementarities and are therefore likely to contribute to the efficiency of the German and the British systems.

The paper concludes with a brief look at policy implications which the existence of consistency between national pension systems and national financial systems might have.

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