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# Diversity in finance: An overview

REINHARD H. SCHMIDT

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Reinhard H. Schmidt, Goethe-Universität Frankfurt, e-mail: schmidt@finance.uni-frankfurt.de

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**Summary:** This paper aspires to provide an overview of the issue of diversity of banking and financial systems and its development over time from a positive and a normative perspective. In other word: how different are banks within a given country and how much do banking systems and entire financial systems differ between countries and regions, and do in-country diversity and between-country diversity change over time, as one would be inclined to expect as a consequence of globalization and increasingly global standards of regulation? The general answer to these questions is that there is still today a surprisingly high level of diversity in finance. This raises the two questions addressed in the second part of the paper: How can the persistence of diversity be explained, and how can it be assessed? In contrast to prevailing views, the author argues that persistent diversity should be regarded as valuable in a context in which there is no clear answer to the question of which structures of banking and financial systems are optimal from an economic perspective.

**Zusammenfassung:** Der Beitrag behandelt die Unterschiedlichkeit – oder Diversität – von Bank- und Finanzsystemen in Deutschland, der Europäischen Union und weltweit und deren Veränderungen im Zeitablauf. Damit wird zugleich die Frage angesprochen, ob sich die Bank- und Finanzsysteme im Zeitablauf aneinander angleichen. Allgemein wird vermutet, dass unter dem Einfluss der Globalisierung und der zunehmend international werdenden Regulierung Unterschiede immer mehr verschwinden und dass dies wirtschaftspolitisch wünschenswert ist. Der empirische Befund ist allerdings, dass das Ausmaß der Diversität in den letzten Jahren erstaunlich wenig abgenommen hat. Dies wirft die zwei Fragen auf, denen der zweite Teil des Beitrags gewidmet ist: Wie ist es zu erklären, dass sich eine höhere Diversität erhalten hat, als weithin vermutet wird, und wie ist Diversität im Finanzsektor zu bewerten? Dazu argumentiert der Verfasser, dass es angesichts der Tatsache, dass man nicht weiß und nicht wissen kann, welche Strukturen im Finanzsektor optimal sind, Diversität ökonomisch als vorteilhaft und damit als erhaltenswert einzustufen ist.

- JEL classification: F02, F39 und G16
- Keywords: Financial systems, diversity, convergence

## I Introduction

### I.1 Diversity as a largely neglected topic in economics

One can hardly overlook that these days diversity is a hot topic—though not in economics. The outcome of the recent mid-term elections for the US Congress that seems to have attracted more attention than any other one is an “increase in diversity”: The share of members in both houses of the US Congress who are not elderly white men is now higher than it has ever been. It is also widely discussed among experts and in the general public that there has recently been a loss of diversity in nature, due among other things to the use of powerful pesticides and other agricultural inputs.

It is so evident what diversity means in these contexts that it does not even require a definition, let alone a well-defined measure, of diversity. Moreover, most references to diversity in this broad sense do not only mention facts but also include value judgements: more women in Congress or in corporate boards and more different species of plants and animals on a given area of land are simply good.

It would go too far to say that diversity is completely ignored in economics. However, in itself diversity in that sphere of reality economics deals with rarely attracts attention among economists. The more respect formal and abstract models and the statistical significance of econometric findings are gaining, the more economists seem to lose sight of the fact that countries, firms, states and human actors differ in many respects. One could easily cite important recent research contributions with no traces of institutions and institutional differences of any kind and instead just one “representative agent” living and operating in an institution-free idealized economic environment, an environment without any diversity.<sup>1</sup>

Of course, microeconomics and the theories of international trade, competition policy and distribution cannot address their topics without accepting the fact that countries, firms and human beings differ. However, even there diversity is not per se an interesting issue but rather only one among other starting points of the analysis.

This neglect of heterogeneity/differences/diversity in today’s economic discourse stands in a marked contrast to other social sciences that have always laid much more focus on how different countries and their institutional features, firms and their structures and strategies and human actors and their endowments, expectations and aspirations are. For instance, within jurisprudence there is a well-established sub-discipline called comparative law with its own journals, chairs and conferences. Equally, the presumed fact that there are different “varieties of capitalism” and its implications for economic development and welfare have for many years held a top position among research topics in sociology and political science.<sup>2</sup> In contrast, works on comparative economics are rare exceptions and therefore diversity per se hardly has a place within the universe of economic science.

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1 This critical remark mainly refers to the so-called new macroeconomics. However, Binder et al. (2017) show that this line of research is no longer state of the art and therefore the critique does no longer fully apply.

2 Standard sources include Hall and Soskice (2001) and Amable (2003).

## 1.2 Diversity in finance

There is one field of economics to which the above assessment that diversity hardly matters does no longer apply, namely finance. The modern debate<sup>3</sup> started with the empirical work of King and Levine (1993) on the relationship between finance and development and growth in the early 1990s and the theoretically oriented landmark book “Comparing Financial Systems” by Allen and Gale from 2000. Together with various coauthors, Levine and Allen have since that time continued to investigate financial systems and their diversity in empirical as well as theoretical studies. Boot and Thakor (e.g. 1997) have made important theoretical contributions to our understanding of “financial system architecture”. Corbett and Jenkinson (1997) have analyzed “how investment is financed” in the major economies. Hackethal et al. (2002) have investigated whether the financial systems of different EU countries have become more similar as a consequence of globalization and European economic integration. And ten years after Allen and Gale, two monographs explicitly addressed the “diversity of banking systems in Europe”<sup>4</sup>.

The interest in comparative finance has been stimulated by the advances achieved in the so-called new institutional economics, a field which emphasizes the importance of information and incentives for economic cooperation and the role that institutions play in mitigating the negative consequences of asymmetrically distributed information and distorted incentives. This branch of economic theory provides the conceptual basis for taking institutions and institutional diversity seriously and in doing so permits to go beyond mere descriptions. Thus, it does not come as a surprise that even the recent editions of the well-known corporate finance textbook of Richard Brealey and Stewart Myers, in which Franklin Allen is now a coauthor (e.g. Brealey et al. 2019), has incorporated sections on financial systems and corporate governance from comparative perspective and that Jean Tirole’s “Theory of Corporate Finance” (2006) starts out with more than one hundred pages which describe the diversity of financial and governance systems in different parts of the world. As these authors evidently see it, institutions matter more than most economists had acknowledged before; institutional frameworks differ more between countries than was known before; and understanding these differences is more important for anyone who is working in different financial systems or is involved in designing regulation for finance in different countries and regions than economists had believed and acknowledged for a long time.

## 1.3 Diversity, comparisons, development and convergence

What exactly is diversity and to what exactly does diversity in finance refer? Trying to answer these questions in some detail here serves to structure the debate at the upcoming DIW-conference in June and the analysis in the present paper. The concept of diversity relates to the fact that not all elements that belong to a given set are similar under certain aspects. As far as finance is concerned, it can relate to banking systems, financial sectors and even to entire financial systems or parts or elements of financial systems such as firms’ financing patterns or corporate governance regimes. Moreover, one can look at diversity within a given country or region—henceforth called “in-country diversity”—and to different countries at the same time, labeled as “between-country diversity”.

3 Of course there were precursors such as Goldsmith or Gurley and Shaw.

4 See Ayadi et al. (2009 and 2010). “Diversity” is also a part of the title of Michie (2011).

As a first level of analysis, one can for instance use the concept of in-country diversity to study how much the banks in a given country differ with respect to their business models, their sizes and complexity and their legal forms. Between-country diversity is almost by definition addressed when countries and their financial systems or some parts or aspects of these systems are compared. Do the predominant financing patterns of large corporations or their corporate governance regimes or even the type of the entire financial systems differ between countries?<sup>5</sup>

Interestingly, one can also combine in-country diversity and between country diversity in order to find out whether countries differ in terms of how diverse their banking systems are, as I will do in Section 2 of this paper.

It would be more than surprising if financial systems and their main elements did not change over time. The concept of diversity also lends itself to describing and analyzing financial system developments including the development of their diversity over time. For instance, one can analyze if the banks or the financing patterns or the corporate governance regimes of large corporations in a given country become more or less similar. And finally, and perhaps most importantly, one can also combine the comparison between countries and that over time to check if the diversity of the entire financial systems of different countries increases, decreases or stays the same. The concept of diversity thus offers a possibility to address the interesting issue of financial system convergence.

This conceptual basis shapes the structure of what is to follow in the remainder of the present article. In the next section I address the development of banking systems and of entire financial systems. The section starts with a look at banking systems and in-country diversity as well as between-country diversity and their respective developments and then turns to between-country diversity of financial systems and its development. As that section leads to the conclusion that there is a certain trend in the direction of convergence but that this trend is much weaker than one might expect, Section 3 discusses possible reasons for the surprising degree of persistence of a remarkable degree of diversity. Section 4 is dedicated to the assessment of (persistent) diversity both within and between countries and summarizes the main conclusions.

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5 On financing patterns see Corbett and Jenkinson (1997), who argue that there are no systematic differences between countries, and Hackethal and Schmidt (2005), who show that, and why, this view is probably wrong. On national corporate governance regimes, see various articles in Gordon and Roe (2004), notably the reprint of the influential paper of Hansmann and Kraakman from 2000, in which the authors argue that national differences are no longer relevant, and the critique by Bebchuk and Roe. On types of financial systems see Rajan and Zingales (2003), who show that in the past the type of a country's financial systems is not constant over time, and Fohlin (2000) who in contrast identifies permanent patterns.

## 2 The development and diversity of banking and financial systems<sup>6</sup>

### 2.1 Banking systems

As is well known, the German banking system rests on three pillars, or, in more prosaic words, it consists of three groups of banks that differ with respect to the legal and ownership structure of a typical bank belonging to each of the groups.<sup>7</sup>

The first “pillar or group” comprises the private commercial banks. Roughly speaking, the entire group holds about 40 percent of all bank assets in Germany, and it can be subdivided into two parts, the small group of so-called big banks (*Großbanken*) and the large and rather heterogeneous group of “other” private credit institutions. In terms of bank assets, the two subgroups are about equally large. The big banks are true universal banks with relatively large branch networks throughout Germany and with a substantial presence in other countries in Europe and worldwide. As far as their legal and ownership structure are concerned, they are corporations subject to the German Corporate Code (*Aktiengesetz*). Their shares are listed and publicly traded and held by the general public and German and foreign institutional investors. By law and by now also in practice, these big banks are essentially managed in the interests of their shareholders, they are “shareholder value banks”.<sup>8</sup>

The second “pillar” consists of the public banks that jointly form the savings bank group. Their combined total assets are more or less similar to those of the private commercial banks. The group of public banks can also be subdivided into two subgroups of about equal size in terms of assets. One subgroup comprises the local municipal savings banks, and the other one the public regional banks, called *Landesbanken*. Almost all savings banks are public law institutions, and the regional banks are either also public law institutions or corporations whose shares are held by the savings banks of their respective region and by the respective states (*Bundesländer*). Thus they all do not have private owners. By law and also in practice the public banks have a dual mandate. They are required to be successful as financial institutions and to support the respective local and regional economy. Thus they can be classified as “stakeholder value banks”.

The third “pillar” or banking group is formed by the cooperative banks and their central financial and non-financial institutions. Their combined total assets are about half of those of the other two groups. Cooperatives must be successful as institutions and at the same time support the economic undertakings of their owners/members. Thus, like the savings banks, they are “stakeholder value banks”.

With its three pillar structure the German banking system displays a high degree of diversity as far as legal forms, ownership structure and business objectives are concerned. Interestingly, the three-pillar structure has a long tradition. Savings banks came into existence in the early years of the 19th century, the first cooperative banks were created some 50 years later, and the group of

6 This section builds on Schmidt (2018).

7 As the wording suggests there are a few exceptions within each of the three groups.

8 This has not always been the case, as Kotz and Schmidt (2016) show. About 20 years ago, also big banks were more or less managed with an orientation to the public interest.

private big banks emerged after the first German unification in 1870/71. Thus the diversity of the German banking system has been largely the same since the late 19th century.<sup>9</sup>

How is the situation in other countries of Western Europe? Only 30 years ago, almost all countries of continental Western Europe had a three pillar banking structure that largely resembled that of Germany. Thus in-country diversity had been more or less equally high and also stable throughout the entire 20<sup>th</sup> century. This implies that as far as in-country diversity of banking systems is concerned, the between-country diversity was at a low level.

However, this is now a thing of the past. With the exception of Germany and Austria, all other countries have experienced fundamental changes in their respective banking systems. A common denominator is a substantial gain of importance of big private shareholder value-oriented banks at the expense of stakeholder value-oriented banks.<sup>10</sup> What does this mean for diversity? First of all, in-country diversity has decreased in a majority of countries. As far as between-country diversity is concerned the parallels in the direction and the timing of change suggest that the diversity between those countries in which fundamental changes occurred, has not changed. However, if one extends the comparison to those countries which have retained their three pillar systems one finds a gradual increase in between-country diversity.

How is the situation outside of Western Europe? Of course, countries differ greatly with respect to their national banking structures including the degree of in-country diversity. In the United States, we now find several very large strictly shareholder value-oriented commercial banks. One type of cooperative banks, the Savings and Loan Associations, had lost much of their former role after the crisis of the 1980s, and after the demise of the Glass-Steagall Act in 1999 the importance of small local private banks also declined. Thus in-country diversity has gone down. In the so-called third world countries, state-owned banks had played a strong role in the past. This is why they used to have substantial in-country diversity, and at least in this respect they were somewhat similar; that is, between-country diversity was relatively low so that about 25 years ago it was still possible to talk meaningfully about the “typical” developing country banking system.

But this has also changed in recent decades. Especially in former colonies and in countries with strong ties to the United States or their former colonial masters, a reform process like that in most of Western Europe has reshaped banking structures. Large private commercial banks have gained in size, market share and power, and other types or groups of banks, notably government-owned banks, have lost ground. As a consequence, in-country diversity has gone down in most countries. But since this process took effect in parallel in many parts of the world, between-country diversity may have also decreased. The common trend of making banking systems more similar to those of Anglo-Saxon industrialized countries gained momentum after the end of the East-West divide and the demise of the Soviet Union. However, there is a remarkable exception to this general trend: Still today, state-owned banks play an important or even dominant role in the so-called BRIC countries. Therefore, a general statement that national banking systems have become more similar, would go much too far.

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9 For more detail see Schmidt et al. (2014) and Kotz and Schmidt (2016).

10 For details, see the two volumes by Ayadi et al. on savings banks (2009) and cooperative banks (2010) in Europe and the summaries and updates in Bülbül et al. (2013).

## 2.2 Financial systems

For a deeper understanding of diversity in the financial sphere, it is not enough to look at how diverse banking systems are, how they develop and possibly become more similar in a cross-country comparison. This is why I now broaden the perspective and look at entire financial systems.

I use the term “financial sector” for the totality of financial institutions, which comprise banks, other financial intermediaries and markets. These institutions provide all sorts of financial services to the other parts of an economy. Thus the financial sector constitutes the supply side of the market for financial services. The concept of the financial system is broader than that of the financial sector in that it adds the demand side. The demand for financial services comes mainly from households which typically accumulate savings and transfer income into the future, and firms that need outside financing in order to fund their investments. But not all financial transactions of households and firms involve the financial sector. Therefore, a full picture of the financial system also requires seeing to what extent households and firms make use of the supply from the financial sector or instead rely on their own means for solving financial problems as for instance in the case of internal financing. How firms finance their investments and how households accumulate and transfer wealth over time, and even how the control of capital is organized, i.e. corporate governance, are therefore core elements of any financial system.

For a long time, financial systems have been classified as being either bank-based or capital-market-based.<sup>11</sup> Even though it is not possible in my view to claim that one of the two types is better than the other, the classical two-way classification can be used for assessing between-country diversity: Diversity is lower if all or at least most of the countries have a financial system of one and the same type. In addition, countries can differ with respect to the extent that their financial systems are consistent, as I will explain below.

Now look at real financial systems. For a long time, the German financial system was the model case of a bank-based system. This was due to five features: (1) Banks were by far the most important players in the financial sector. (2) Bank loans were the most important source of external funding of non-financial firms. (3) The former three big banks (*Deutsche Bank, Dresdner Bank und Commerzbank*) used to play the central role in the governance of large non-financial corporations. (4) There used to be close relationships, so called house-bank relationships, between large corporations and one among its banks, and house-banks did indeed behave differently from other banks if their partner firms experienced difficulties. Finally, (5) organized capital markets were relatively unimportant as a source of enterprise financing and as an instrument of corporate governance. These five features of the German financial system fitted together well, so that the German financial system was also consistent.

This was the situation about 20 years ago. At that time most other national financial systems on the European continent were equally of the bank-based type. In this respect between-country diversity was limited. However, the British financial system and to a certain extent also that of Ireland were not bank-based but rather capital market-based. Including them into a pan-European picture shifts the balance in the direction of more diversity.

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<sup>11</sup> On the limitations of this two-way classification and the ambiguity of the terms bank-based and capital market-based see Fohlin (2000).

In the meantime financial systems have changed in most countries. As a general rule one can say that the importance of banks has declined and that of capital markets has grown, even though only the French system has been fundamentally transformed from being a strongly bank-based system to a clearly capital market-based system. In most other cases only the extent to which they were bank-based has declined. In so far, diversity on the European continent may have slightly increased.

*Germany* is a particularly interesting case for assessing the changes that have occurred. At times it appeared as if the German financial system were on its way towards becoming another capital market-based system. However, this may not be the appropriate diagnosis. After all, Germany has retained its three pillar banking system with a preponderance of a stakeholder orientation and the mandatory codetermination and its dual board structure as main characteristics of a bank-based financial system. Instead, the numerous institutional changes that have indeed taken place in Germany around the turn of the century and in particular the transformation of the big banks and their interaction with German companies make me think that instead of a fundamental transformation what did occur in the German financial system was a loss of consistency (Hackethal et al. 2005).

An important change in recent years concerns bank lending policies. Especially large banks in the advanced economies no longer refinance their lending operations mainly with customer deposits but rather by borrowing in the interbank markets, and their lending rates have come to reflect the terms at which they can obtain funds from the interbank market rather than from their client deposits. Thus they now more and more follow a strategy which Hardie and Howarth (2013) call “market based banking”. Moreover, the former widely adopted stakeholder value orientation of many European banks, including most large private banks, has given way to a stronger shareholder value orientation.

All in all, there seems to be a general and common trend in the development of most financial systems in *Western Europe*: they seem to lose their former bank orientation and adopt more elements of a capital market orientation. As this is a common trend, diversity has somewhat declined over the past two decades. But this decline is weaker and between-country differences are still today stronger than had been anticipated when European financial and monetary integration began to have a high place on the EU’s political agenda.

On a *worldwide* scale, financial systems differ more than in Europe and these differences are surprisingly stable, as Allen et al. (2004) have demonstrated by comparing total bank assets to the aggregate market values of listed stocks and outstanding public and private bonds (expressed as a percentage of GDP) in the large economic regions of the world for the years 1994 and 2004. One can extend this comparison with more recent data (as in Schmidt 2018) and supplement them with comparative data on the financing patterns of non-financial firms and corporate governance regimes around the world only to find a high and largely stable level of financial system diversity.<sup>12</sup>

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12 On the “heterogeneity” of banking systems see Kind (2018), on that of firms’ financing patterns see Hackethal and Schmidt (2005) and on corporate governance systems in different regions see Goergen (2007).



## 2.3 Summing up

Since the concepts underlying the arguments in this section are rather complicated, I conclude this section with a brief summary.

As far as banking systems are concerned, the big picture can be summarized as follows:

- In-country diversity in most of Western Europe has declined as large private shareholder value-oriented banks have gained in importance at the expense of stakeholder value oriented banks.
- In many respects national banking systems have become more similar over time even though there are still many differences which I have not discussed for space reasons. Thus overall between-country diversity may have declined.
- However, as far as differences between European countries in terms of their respective in-country diversity are concerned, one cannot see a change as formerly most banking systems were three pillar systems representing similarly high levels of in-country diversity, while now large banks dominate in most countries, which represents similarly lower levels of in-country diversity.
- Germany and Austria are the exceptions to this general rule. In these countries in-country diversity has remained high and as a consequence their banking systems are now less similar to those of most other European countries.
- On a world-wide scale, banking systems differ greatly, not least with respect to their in-country diversity, and in spite of some common developments there is still a high level of between-country (or between-region) diversity.

As far as financial systems are concerned, the big picture can be summarized as follows:

- Still today the differences between the structures of the financial systems of Western European countries are substantial in spite of a common trend towards a stronger capital market orientation. Thus between-country diversity is still high but somewhat declining.
- On a world-wide level, the differences between financial systems of large economic regions are even more pronounced and also somewhat declining, though less than in Europe. Thus between-regions diversity is high and almost stable.

## 3 Explaining persistent diversity

As stated in the introduction, it seems highly plausible that financial systems in Europe and even world-wide become more similar over time. In other words, one would expect a decrease of diversity or a more or less gradual convergence. Three drivers of a possible convergence could play a role here.

The first one is common and generally applicable regulation issued by international or supranational organizations such as the Basel Committee, the OECD, the IMF and in particular the EU. It leads to convergence because it forces national decision makers to make their country's financial sector conform better to the common rules. This driver of convergence can be expected to be most effective within the EU.

The second one is pressure from a dominating economy, such as England in the 19th century or the United States after the end of the East-West divide, or from international organizations such as the IMF or the World Bank—or even a combination of both.<sup>13</sup> It is likely to be most effective in countries with strong ties to, or dependence on, an economically and politically dominant power and its allies in the international organizations.

The third possible driver of convergence is one that economists are most prone to think of: competition in combination with globalization. The argument goes like this: The quality of its financial system is a determinant of the economic success of a country. Provided that there is one financial systems design that is widely regarded as being the best one for economic success, one can expect that under the pressure of increasing international competition and trade all countries will end up adopting this financial systems design, just as under international competition all countries that produce steel are likely to sooner or later adopt the best steel-making technology.

However, in reality we observe much less convergence—and even a stubborn persistence of diversity—than the three arguments might suggest. How can this be explained? The roles of international regulation and of hegemonic powers may be weaker than one might think. More importantly, the seemingly plausible analogy between steel making technology and financial systems is misleading. While there probably is just one single and generally acknowledged optimal steel making technology it cannot be taken for granted that there is also just one optimal financial system design. In the years before the turn of the millennium the Anglo-Saxon type of a capital market oriented financial system was widely regarded as the best one and the one that many countries would try to implement. However, from today's perspective, this claim would be hard to substantiate. A number of theoretical papers have shown that under certain conditions and according to certain criteria capital market-based systems are superior to bank-based systems. However, the conditions are rather restrictive, and the assessment standards are quite special. Moreover, other authors have produced models that show the exact opposite. But they equally invoke rather special conditions and standards for assessing financial systems. The outcome of empirical studies of financial systems quality and the finance and growth nexus is similarly ambiguous. Therefore, at least as of today one cannot use the type of a financial system—bank-based or capital market-based—as an indicator of quality.<sup>14</sup>

Moreover, the formerly wide-spread conviction that capital market-based financial systems are superior to bank-based systems has lost most of its former plausibility as a consequence of the great

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13 A combination of both was certainly behind what is called "the Washington consensus" that emerged in the 1990s. Its effects on financial systems in all parts of the world are well known and clearly favored convergence according to the American model. This powerful de facto alliance was even reinforced by prominent academics such as La Porta and his coauthors. See La Porta et al. (1998) and, with a very critical view on what constitutes an important element of diversity in banking, La Porta et al. (2002). A carefully articulated dissenting view can be found in a series of papers by Olivier Butzbach and Kurt von Mettenheim, e.g. those collected in Part 1 of Butzbach and von Mettenheim (2014).

14 For an overview of the theoretical work see Allen et al. (2014) and for the (earlier) empirical work Levine (2000).

financial crisis. After all, the crisis had started in a country with a clearly capital market-based system, and it has started for reasons that are rooted in the strong market orientation of that system.<sup>15</sup>

In my view, both bank-based and capital market-based systems can be economically valuable. Whether a given financial system is good does therefore not depend on its degree of bank- or market-orientation but rather on other factors. One such factor is whether a financial system is “consistent”. Both bank-based and capital market-based financial systems can be more or less consistent and therefore good or not so good.

What does the term consistency mean? A genuine system has an important property called complementarity. Complementarity means that the elements of a (financial) systems have the potential to fit together well in the sense that their positive effects reinforce each other mutually and their negative effects mutually mitigate each other. Financial systems are complementary systems in this sense. Consistency means that the elements of a given (financial) system take on such values that the potential inherent in the complementarity of the system is unlocked. Therefore, the degree of consistency is a good indicator of the quality of a (financial) system.<sup>16</sup>

In a context in which complementarity and consistency play an important role one can rather expect path-dependence and diversity than convergence, and this is even more so the case the stronger the pressure from international competition and globalization is.

#### 4 Assessing diversity

Diversity can be assessed very differently. Persistent diversity can indicate a lack of efficiency or of pressure to adopt the best legal form, size or business model of the banks in a country or region and the optimal structure of a financial systems with respect to the roles of financial intermediaries and financial markets, the financing patterns of non-financial firms and their corporate governance regimes. Diversity can also be understood as a consequence of entrenched interests standing in the way of an economically reasonable modernization of banking and financial systems (Rajan and Zingales 2004). If these are the main causes of diversity, then diversity is simply undesirable.

Diversity is also not positive from the perspective of regulators and supervisors. It makes their job difficult as it stands in the way of developing and using a unified approach to regulation and supervision; and if a unified approach were nevertheless chosen it might not do justice to the differences in financial sectors and systems that exist for good or not so good reasons. Moreover, in-country diversity as well as between-country diversity may be difficult to reconcile with the aim of establishing a level playing field that would make competition in the financial sector effective. And finally a high level of diversity might be incompatible with monetary integration.<sup>17</sup> Thus, there are a number of reasons why diversity may not be desirable.

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15 See Kotz and Schmidt (2016) and Meyer (2018, chapter 5), who make this point in almost identical words.

16 For more detail, including the theoretical background, see Hackethal and Tyrell (1999) and Hackethal and Schmidt (2000).

17 For details and additional references see Kotz et al. (2017).

On the other hand, diversity of financial systems and their main elements between countries and regions can be understood as a rational response to different requirements that financial institutions are supposed to meet and different legal, economic, social and political environments in which they are embedded. It seems highly plausible that diversity in the financial sphere has the additional advantage of making the financial sector itself and the supply of financial services to the non-financial parts of the economy more stable and shock-resistant.<sup>18</sup>

An overall assessment of the dangers and the merits of diversity is difficult. We do not know enough about how strong the different effects taken one by one are, how important they are, how they interact and how they can be integrated and weighted in order to arrive at a general assessment. Clearly, more research in this area is called for.

However, there is one additional aspect of diversity which in my view speaks strongly in favor of diversity and thus against attempts to aspire or foster convergence through political means:<sup>19</sup> Nobody can really tell to which challenges banking systems and financial sectors will be exposed in the future and to which requirements they will have to respond. Neither researchers nor policy-makers know, and in fact nobody can claim to know, which structure of the banking system, the financial sector and the entire financial system will turn out to be best in the future. In this respect, we are in a situation of genuine or structural uncertainty. At the latest, the great financial crisis has demonstrated that one cannot consider a banking system dominated by large shareholder-oriented banks and a capital market-based financial system as being generally superior. The following argument shows why this situation calls for preserving diversity.

Imagine that the type of a banking system and of a financial sector and a financial system that some decision makers and so-called experts currently regard as the best one today would have been implemented everywhere. This would imply that all other relevant institutional forms and thus also diversity would have disappeared. In this situation, the accumulated knowledge about how other types of banks, other banking systems and other financial systems function and can be used by society might very soon be lost. This knowledge is not trivial; it is an essential part of human and social capital.<sup>20</sup> If one could be absolutely certain which institutional structures are optimal this loss of knowledge would not matter. However, nobody can know this for sure. It could well be that in some 50 years people and even a majority of decision makers come to the conclusion that under the circumstances prevailing then it would be better to have those structures in the financial sphere in place that had once been abolished or superseded. Recreating, reviving and implementing them might be simply impossible or at least extremely difficult.

Therefore, preserving diversity *now* is a protection against the risk of *later* not having something that one might *later* need even though one does not know *now* that one will *later* need it. This is the standard argument that biologists or ecologists invoke when they argue for protecting endangered species: We cannot know today how valuable some plants or animals, which are now endangered,

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18 In particular British authors such as Charles Goodhart or Andy Haldane from the Bank of England emphasize this aspect. See the references in Michie and Oughton (2013).

19 This argument has, according to my information, been first developed in Ayadi et al. (2009) and (2010) and taken up and extended by Michie (2011) and Michie and Oughton (2013).

20 Note that the German concept of a cooperative bank is on the United Nations' list of the World Immaterial Cultural Heritage since a few years.

might be in the future for fighting diseases which may come up in the future and are therefore completely unknown today. This argument can be transferred almost one to one from biology to finance and it leads to the two main normative conclusions of this paper:

1. It should be regarded as unambiguously positive that in spite of globalization and European integration the level of diversity in the German banking system has remained high and that on a global scale the diversity of banking and financial systems has also remained rather high in recent years.
2. Preserving diversity in the financial sector should have a high political priority on the national, European and global level. Its long-term benefits probably outweigh by far the short-term disadvantages that too much diversity may seem to have.

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