CHAPTER 16
Universal Banking, Intertemporal Risk Smoothing, and European Financial Integration

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ABSTRACT
How should countries’ financial systems be reformed? This question is of particular importance for the European Union as it moves toward a single unified system. Traditional theory suggests that market-based systems are desirable. This chapter argues that this view is too simplistic. Comparing financial systems is a complex issue with many different facets. For example, if markets are incomplete, they will be unable to provide optimal risk-sharing and intermediaries may be able to do better. It is suggested that while United States-style market-based systems provide good opportunities for cross-sectional risk-sharing, they do not allow intertemporal smoothing. In contrast, for German-style intermediated systems with universal banks, the reverse is true.

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16.1 INTRODUCTION
Differences in financial systems in different countries are striking. In Germany, we find a universal banking system where banks undertake a wide range of activities, including both banking and securities activities. They dominate the financial system, which has relatively underdeveloped financial markets. In the United States, on the other hand, the Glass-Steagall Act has prevented banks from freely engaging in both commercial banking and securities activities, and financial markets have played a much more important role.

As international financial systems become increasingly integrated, the need to reform each country’s system has become clear. How to reform those systems is a hotly debated policy issue. Much of this debate has centered on universal banking and the relationship between banks and financial markets. These issues have particular importance for the European Union. The stated goal of creating a single European financial system, without any barriers between member countries, implies a movement toward a single kind of financial system.1 One possibility is to move towards a German-style intermediated system. Another is to adopt a United States-style market-based system, by fostering easy access to the sophisticated financial markets in the city of London and encouraging the development of other countries’ markets. In fact, a number of countries within the European Union, such as France and Spain, have already moved away from an intermediated system towards a market system. Should a market system be the goal, or would a German-style system be more desirable?

The theories that have been invoked to justify many of the moves to market-based systems are based on traditional neoclassical models. Competition is thought to be desirable because it leads to increased efficiency. Opening up new financial markets is thought to be desirable because it offers increased risk-sharing opportunities. An illustration of this line of reasoning is provided by Melitz’s (1990) description of France’s move to a market-based system in the mid-1980s:

As one contemplates the panoply of measures that took effect in France from late 1984 to the end of 1986, there is no doubt that the changes were inspired by a general vision. This was no mere lifting of controls: new instruments were created; new markets were added,

1 See Saunders and Walter (1994), pp. 119–24, for an outline of the history and plans for European financial integration, and Institute of International Bankers (1994) for recent developments.
including markets in futures; and the importance of permitting every individual agent to hedge his risks was clearly recognized. The whole program smacks of a close acquaintance with the principles of the theory of finance.

In Allen and Gale (1995a), we argue that the comparison of financial systems is complex, and a whole host of factors are involved in determining the welfare costs and benefits of each system. Using as a benchmark an idealized, intermediary-based system, which we term the “German” model, and an idealized, market-based system, which we term the “United States” model, we suggest that each type of system has advantages and disadvantages in overcoming market failures. Prescriptions such as “increased competition improves efficiency,” or “allowing access to a greater range of financial markets improves risk-sharing,” are too simplistic.

From a theoretical perspective, one can make a case for both systems. If we lived in an Arrow-Debreu-McKenzie world with complete markets, there would be no need for intermediaries, except perhaps as a means of reducing transaction costs. On the other hand, in the presence of moral hazard and adverse selection, one can argue that intermediaries must have an advantage, since they can replicate anything that markets can do; in addition, they have the ability to write long-term incentive contracts to reduce agency costs. In the real world, which falls somewhere between these two extremes, markets are incomplete, and intermediaries pose incentive problems of their own. Designing an optimal financial system involves a detailed weighing of the offsetting costs and benefits and will likely require a mixture of markets and intermediaries.

In Allen and Gale (1995b) we focus on the risk-sharing differences between the two benchmark German- and United States-style systems. One difference is that in a market-based system, asset values are continuously marked to market, which implies that individual investors bear a substantial amount of risk from fluctuations in market prices. An illustration of this difference is provided by the German and American experiences of the 1970s and 1980s. In the United States, the real value of the stock market approximately halved after the “oil shock” in the early 1970s and stayed at this level for the rest of the decade, as shown in Figure 16-1. Households that had provided for retirement by investing in the stock market and needed to liquidate shares in order to pay for consumption were forced to reduce their standard of living substantially. By contrast, in the 1980s, the stock market approximately doubled in real value and the process was reversed; households whose savings were invested in the stock market were able to increase their consumption substantially. The important point is that these United States households bore substantial consumption risk over the two decades.

The United States experience can be contrasted with that of Germany over the same period. As stressed in Allen and Gale (1995a), German households save for retirement and other purposes primarily in various forms of bank accounts and other debt-like instruments, such as insurance policies. Although Germany also experienced an “oil shock,” the value of these savings was not halved. German investors were able to consume the amount they had planned as banks drew on reserves to maintain payouts. In the 1980s, there was a sustained boom in Germany, as in the United States. During this period, the value of households’ savings did not increase, since they were held in the form of fixed claims on
the intermediaries. The intermediaries, however, were able to build up reserves. In contrast to the United States case, we could argue, households did not bear as much risk from their savings, because of the depletion and addition to reserves by intermediaries.

The “oil shock” and boom of the 1980s are examples of what are usually termed nondiversifiable risks. They are risks that affect the whole economy and cannot be diversified away by holding a large portfolio containing many stocks. Standard financial theory has little to say about the hedging of nondiversifiable risks. It assumes that the set of assets is given, and it focuses on the efficient sharing of these risks through exchange. We term this kind of risk-sharing “cross-sectional risk-sharing," which is discussed in Section 16.2. Financial markets are well suited for providing this kind of risk-sharing.

Allen and Gale (1995b) depart from the traditional approach by focusing on how nondiversifiable risk can be reduced by a financial system. We term this “intertemporal smoothing.” It is argued that financial markets cannot provide this kind of risk reduction, whereas intermediated financial systems can. This is discussed further in Section 16.3.

The example of intertemporal risk smoothing is an illustration of the general failure of incomplete markets to provide optimal risk-sharing. Risk-sharing is a kind of insurance, and any form of insurance lends itself to problems of adverse selection and arbitrage. Intermediaries may be able to do better than markets, precisely because their assets are not freely traded and are not marked to market. In Section 16.4, we offer some other examples of this general phenomenon.

The purpose of this chapter is to develop the implications of some of these ideas for the policy issue of European financial integration. Much of the financial reform that has occurred in countries such as France and Spain has been concerned with moving away from a German-style intermediated system and allowing access to global financial markets. In doing this, they gain the advantages of cross-sectional risk-sharing. However, they may be losing the advantages of intertemporal smoothing and other forms of risk-sharing. It may be that this change is desirable, but it is important that the tradeoff be properly understood before moving in this direction. This is particularly true for Germany, where the potential already exists for a system of intertemporal smoothing. Once the move to a market-based system has been made, it is much more difficult to regain the advantages of an intermediated system.

An obvious question is whether universal banks can extend the activities they undertake to simultaneously obtain cross-sectional risk-sharing and intertemporal risk smoothing. This possibility is discussed in Section 16.5. Section 16.6 contains some concluding remarks.

16.2 CROSS-SECTIONAL RISK-SHARING

It has long been recognized that one of the major functions of financial markets is to provide opportunities for risk-sharing (Arrow, 1964). Markets allow individuals to diversify portfolios, hedge idiosyncratic risks, and adjust the riskiness of portfolios to suit their risk tolerances. In this cross-sectional risk-sharing, different individuals are exchanging risks at a given point in time.

One of the salient characteristics of market-based financial systems, such as those in the United States and the UK, is the enormous variety of financial products available to the average investor. The diversity of instruments and markets does provide many opportunities for cross-sectional risk-sharing.

In Germany, the possibilities for cross-sectional risk-sharing are more limited. Relatively few stocks are quoted on the stock exchanges, and there are few mutual funds or other intermediaries that can provide direct ownership of stocks without high transaction costs. Trading futures and options is not a practical possibility for most investors. In short, investors have restricted opportunities to share risk cross-sectionally through markets. Most save in bank accounts, which do not provide opportunities for hedging.

From the point of view of cross-sectional risk-sharing, the United States model appears to offer a much richer menu of choices than the German model, and it is tempting to conclude that a market-based system provides superior risk-sharing opportunities compared to an intermediated system. However, markets have their own limitations, and if markets are incomplete, or if participation in financial markets is incomplete, intermediaries may have some advantages in providing risk-sharing by smoothing returns over time.

16.3 INTERTEMPORAL RISK SMOOTHING

If markets were complete in the Arrow-Debreu-McKenzie sense, there would be no difficulty in obtaining insurance against all risks. But in the real world, participation is incomplete (not everyone is able to trade at a
fictitious initial date) and the markets available are incomplete (even if all
securities can be synthesized by continuous trading, the costs of doing so
make this impractical as a method of optimal risk-sharing). Intermedi-
aries can do better by setting up a risk-sharing mechanism for the partic-
pants, but the sense in which they can do better is subtle and the way
they achieve this improvement involves some important qualifications.

There are two forms of intertemporal risk-sharing that are not likely
to be available in a market-based system. One is intergenerational risk-
sharing, where risks can be smoothed over time by “passing” them from
one generation to another.\footnote{For a further discussion of the issues involved in intergenerational risk-sharing, the reader is
referred to Gale (1994) and the references cited therein. A model of intermed-
iation in which liquidity risk is shared between generations is provided by Qi (1994), who extends the
Diamond-Dybvig model to an intertemporal setting. In Qi’s model, there is no aggregate
uncertainty and hence no scope for intertemporal risk smoothing.} In order for one generation to liquidate its
holdings of assets, another generation must be willing to buy. The price at
which this exchange takes place may be volatile, because of fluctuations
in interest rates, for example. This price variation may introduce substi-
tutional consumption risk. An intermediary can provide insurance against
these swings in asset prices by averaging gains and losses over time. But
without some institution to bridge the gap between successive genera-
tions, the market does not provide any mechanism for sharing this risk. In
a market-based system, different generations participate in the market at
different points in time (this is an example of incomplete participation),
and individuals have an opportunity to avoid the downside risks of such a
scheme by “opting out” when the returns are unfavorable (this is an exam-
ple of arbitrage unraveling an insurance scheme). These two factors com-
bine to prevent the market from providing optimal risk-sharing.

Another means by which intermediaries can achieve intertemporal
smoothing is asset accumulation. A formal model is provided by Allen
and Gale (1995b). We contrast a market economy, in which individuals
invest directly in a safe asset and a risky asset, with an intermediated
economy, in which a long-lived intermediary holds all the assets and of-
fers deposit contracts to each generation. Because of the “overlapping
generations” structure of the model, the price of the risky asset in the
market economy is always low enough that its return dominates the safe
asset, which is never held. As a result, each generation bears the full divi-
dend risk on the risky asset.

In the intermediated economy, on the other hand, intertemporal
smoothing is provided to individual investors, who do better according to
almost all welfare indicators, by accumulating reserves in the form of the
safe asset. In fact, in a long-run-average sense, the intermediary can
eliminate risk altogether. This is a form of intertemporal risk pooling,
analogous to the risk pooling that markets perform when they allow in-
vestors to diversify risks across many assets. However, unlike the cross-
sectional risk-sharing allowed by markets, intertemporal risk pooling
requires the accumulation of large reserves of the safe asset. It may seem
odd that holding a dominated asset can improve welfare, but this is sim-
ply a reflection of the market’s mispricing of the safe asset. The market
does not value the asset’s contribution to future generations’ welfare
through risk reduction.\footnote{Fuighieri and Rovelli (1994), and Bhattacharya and Padilla (1994) also compare the performance
of markets and intermediaries in achieving an efficient intertemporal allocation of resources, but they assume there is no aggregate uncertainty in consumption.} The long-lived intermediary can make almost
everyone better off by a uniform amount; that is, it allows what we term
an almost “uniform Pareto improvement.”

The importance of this example is that it shows that financial mar-
kets and intermediaries are not simply veils thrown over a fixed set of
assets. The institutions in the economy actually determine, in conjunction
with other factors, the set of assets accumulated by agents. By adopting
one or another set of institutions, the economy is placed on a different
trajectory of capital accumulation, with important implications for the
aggregate risks to be shared.

At a theoretical level, it seems that an intermediated financial sys-
tem can achieve a higher level of welfare than a market-based system.
Whether these insights can be usefully applied to actual financial systems
depends on a number of empirical considerations. In terms of applying
the analysis to Germany, the first is the extent to which German financial
intermediaries take a long-term view and smooth depositors’ returns by
running reserves up and down. It can be argued that German intermed-
iciaries are inately cautious and have a desire to build large reserves. There
are a number of reasons for this. One is the conservatism of German reg-
ulators. German banks are closely supervised by the Bank Supervisory
Board in cooperation with the Bundesbank, which has traditionally fol-
lowed conservative policies in order to maintain a sound currency. An-
other possibility is that asymmetric information between depositors and
banks makes it optimal for German banks to develop a reputation for financial stability. Whatever the reason, German banks are generally believed to hold high levels of hidden reserves, which they draw down in bad times and build up in good ones. They may only partially smooth returns and may not achieve the full potential for intertemporal risk smoothing. Nevertheless, their performance may be a significant improvement over the market.

One of the main reasons that an intermediated system does better than the market in the example described is that intermediaries have a longer time horizon than individuals. If investors have a "perfect" bequest motive in the sense that successive generations act like a single infinitely lived individual, the intermediary-based system would not do better. However, whenever bequest motives are not perfect in this sense, an intermediary-based system will do better. All the empirical literature we are aware of suggests that bequest motives are extremely imperfect.4

The analysis in Allen and Gale (1995b) focuses on one particular market failure: incomplete market participation. This is meant to be a paradigm for other types of incomplete markets. We would argue that there are many market failures that limit the ability of markets to smooth risk intertemporally. Examples are: the problems of writing individualized contracts, transaction costs, moral hazard, and adverse selection. In many cases, such market failures do not impede the ability of an intermediary-based system to smooth returns over time by building up and running down reserves. Such a system has a significant advantage in reducing this type of risk.

We have focussed on the role of intermediaries in smoothing intertemporal risk. Another important issue is the extent to which institutions other than intermediaries can alleviate the effects of risk. Governments, for example, could provide intertemporal smoothing by investing in safe assets directly. However, in recent years, responding to the argument that the private sector is better able to make investment decisions, governments in a number of countries have reduced their direct investment and have privatized their existing holdings of assets. If there are government failures that limit the effectiveness of governments in investing directly, intermediaries may be able to smooth the risk more effectively.

4 See Altonji, Hayashi, and Kotlikoff (1992) and the references cited therein.

Other risk-alleviating methods available to governments are social security schemes and budget deficits. "Pay as you go" social security schemes and budget deficits are concerned with reallocations at a given point in time. They are methods of sharing risks between and within generations; they do not achieve intertemporal smoothing through asset accumulation. Funded social security systems can provide intertemporal smoothing through asset accumulation, but only if the fund is invested in real assets rather than paper claims such as government debt. The government may play an important role in this respect, if it is interested in the long-run welfare of its citizens. Similar considerations apply to occupational pension schemes provided by industrial groups or large employers, if they take a longer-term view than individuals.

16.4 EUROPEAN FINANCIAL INTEGRATION AND DISINTERMEDIATION

One of the major issues in moving toward a fully integrated financial system in Europe is management of the transition. One alternative is simply to remove barriers and allow all investors, firms, and financial institutions to have access to markets in every country. For example, investors in Germany would have easy access to the international capital markets in London and would be able to invest in the wide array of funds and assets available there.

We started by considering a financial system with intermediaries and without markets. One might expect that a larger set of alternatives, markets plus financial intermediaries, would make individuals better off than markets or intermediaries alone. One could use markets to achieve optimal cross-sectional risk-sharing and use intermediaries for other forms of risk-sharing. But this argument relies on a very broad ceteris paribus assumption and overlooks the fact that many other things will be different in the two economies.

In Allen and Gale (1995b), we formally model what happens if a relatively small, intermediated financial system is opened to competition from global financial markets. We show that there is a significant problem of disintermediation, which undermines the ability of an intermediated financial system to provide intertemporal smoothing. The reason is that risk-sharing of the type discussed in the previous section always implies some form of arbitrage opportunity. Taking advantage of arbitrage opportunities is rational for the individual, but it can lead to an equilibrium in
which everyone is worse off. This is why market-based financial systems cannot provide intertemporal risk smoothing of the type described, even if a wide variety of financial instruments is available.

The effect of competition from financial markets is modeled by assuming that the intermediated financial system is small compared to the financial markets, so the market equilibrium is unaffected by the presence of the intermediary. Each generation has a choice of whether to participate in the intermediary's risk-sharing mechanism or to make use of the financial markets. To simplify, we suppose that an agent has to choose one or the other; allowing partial participation would make the threat of disintermediation greater and would strengthen our result. Then, in order to persuade agents to participate in the risk-sharing mechanism ex post, the mechanism must offer a higher expected utility than the market, conditional on the information available to the agent at the moment he makes his decision. In fact, we show that subject to this disintermediation constraint, the intermediary can do no better than the market; that is, no generation can be made better off, even in an ex ante sense.

This result does not depend on the fact that the early generations are almost certainly going to lose out because they will be required to contribute to the reserves more than they can hope to gain from risk-sharing. The result continues to hold if we give the risk-sharing mechanism a "head start" in the form of an arbitrarily large but finite initial reserve. Eventually there will come a time when the reserves are depleted. If the return on assets is below average, the risk-sharing mechanism will not have the reserves to subsidize the return. However, if the return is above average the risk-sharing mechanism will tax the return in order to replenish its reserves. Thus, the return offered by the risk-sharing mechanism is dominated by the market return, and investors will therefore opt out of the intermediated system. Anticipating this, preceding generations will also opt out and the whole scheme will unravel.

This parable suggests that simply opening up the German financial system to competition from the global capital markets in London may cause difficulties for German financial institutions. The banks will no longer be able to smooth away non-diversifiable risks, and if they try, they face the threat of disintermediation and the instability that this might cause. Although cross-sectional risk-sharing will be significantly improved, this may not be enough to compensate for the elimination of intertemporal smoothing or the risk of financial instability. Moreover, once disintermediation has occurred, it will not be easy to reestablish an intermediated system, because the early generations would be called upon to accept a lower expected return from the intermediated system than is available in the market system, in order to build up reserves.

The tradeoff between cross-sectional risk-sharing and intertemporal risk smoothing depends on the degree of heterogeneity within each generation in terms of risk-sharing capacity. If there are wide differences, then improving cross-sectional risk-sharing possibilities are desirable. On the other hand, if each generation is fairly homogeneous, so there is not much scope for cross-sectional risk-sharing, then intertemporal risk smoothing will allow a larger improvement in welfare.

The direction in which the European Union should move when establishing a single financial system depends on a complex array of factors. The analysis described here suggests that market-based systems have limitations. We would argue that this is an example of a more general weakness of markets. In an Arrow-Debreu-McKenzie world with complete markets, complete participation, and no transaction costs, efficient risk-sharing can be achieved, but these conditions are not satisfied in practice.

Societies have therefore developed a number of institutions that provide insurance not provided by financial markets. Governments provide unemployment insurance and social security benefits. Companies provide health insurance and occupational pension plans. Banks and insurance companies provide claims that are not subject to fluctuations in market prices. The problem is that all these schemes for providing insurance against non-diversifiable risks involve some form of intertemporal risk sharing, since nondiversifiable risks can only be averaged over time, and the intertemporal aspect of these insurance arrangements leads to arbitrage possibilities. If, at any time, agents can find a better investment, they will take it. Governments can compel participation, but other institutions cannot. So, the existence of markets tends to undermine private intertemporal insurance arrangements of all kinds, precisely because there will be times at which the current market return will be more attractive than the smoothed return offered by the institution. An insurance company that tries to smooth the returns on its annuity policies will find a lot of takers when market returns are low and few when they are high, but it cannot stay in business this way, at least not in a competitive environment. In a financial system dominated by a few large institutions that have all chosen to smooth returns and in which financial markets do not exist to provide competition, this situation may be quite stable.
16.5 CAN UNIVERSAL BANKS ACHIEVE THE BEST OF BOTH WORLDS?

An interesting issue is whether it is possible to have a financial system that simultaneously obtains the benefits of cross-sectional risk-sharing and intertemporal risk smoothing. One problem has already been alluded to: there is a fundamental tension between intertemporal risk smoothing and the existence of financial markets. This suggests that if cross-sectional risk-sharing and intertemporal risk smoothing are to be achieved simultaneously, it seems unlikely that this can be done by a combination of traditional bank accounts and financial markets. One possibility is to create a universal superbank, which offers a menu of bank accounts with different risk characteristics, combining the best features of both the market and traditional intermediaries.

One barrier to implementing universal superbanking is the problem of maintaining liquidity without undermining intertemporal smoothing. One of the chief rationales for having a variety of products is that customers can use their private information (about risk preferences, liquidity needs, and so forth) to construct tailormade portfolios. Since new information is continually arriving, the customer will want to rearrange his affairs as time goes on. The only practicable means of allowing customers to make use of this information is to offer them the opportunity of reallocating their wealth among the different funds. Yet, this threatens to wreck whatever intertemporal smoothing schemes the bank has managed to set up.

Another barrier arises from the difficulty of finding variables to which the returns of the various accounts could be indexed. Ideally, these variables should be observable, verifiable, and nonmanipulable. One possibility is to have the bank set up a mutual fund, the assets of which are owned by shareholders and held by a trustee, so that the returns to each investor's account are tied to the performance of the fund's portfolio. Once this is done, however, it effectively rules out the possibility of intertemporal risk smoothing. The depositors are the legal owners of the fund, and the bank cannot infringe their ownership rights by making transfers into and out of the fund.

On the other hand, if the deposits are invested in the general assets of the bank, it is not clear how the rate of return will be determined. Because the bank's assets are not marked-to-market, any measure that one might choose is manipulable. In fact, to the extent that intertemporal smoothing is offered by the bank, we want the return to be manipulable, rather than being tied to an index that is beyond the bank's control. Deposit contracts do not suffer from this problem, because they either specify a fixed rate of return or allow the rate of return to be set at the discretion of the bank.

For all these reasons, it may be difficult to improve on the range of products that German universal banks offer, without undermining the potential for intertemporal smoothing. There is thus a tradeoff in deciding on the structure of a financial system. If investors are fairly homogeneous, there is little advantage to cross-sectional risk-sharing and little cost to adopting the German model, which allows intertemporal risk smoothing. On the other hand, if there is enough heterogeneity that the benefits from cross-sectional risk-sharing outweigh the benefits from intertemporal risk smoothing, a market-based system may be preferable.

16.6 CONCLUDING REMARKS

In this chapter, we have identified two types of financial system. A market-based system promotes cross-sectional risk-sharing. An intermediary-based system promotes intertemporal risk smoothing. The best system for a particular situation depends on the degree of homogeneity in each generation. According to this view, it is not immediately clear that a move toward a single European financial system will lead to an improvement in welfare. The parts of the European Union that currently have intermediary-based financial systems, such as Germany, may well be made worse off, because there may well be disintermediation, and the possibilities for intertemporal smoothing may be eliminated.

The European Union is not the only place where the issue of financial integration is an important one. The Clinton administration has made
it a priority to encourage the Japanese to open their financial system and allow foreign competition. Just as our analysis suggests that the German financial system might be damaged by the move toward a single market in the European Union, the effectiveness of the Japanese financial system might also be reduced by such a change. Similarly, with NAFTA and the extension of this free trade zone to the rest of the Americas, again it is not immediately clear that moving toward a single financial market will benefit all countries.

REFERENCES


DISCUSSION

Comments on Part Five

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The chapters in this part raise some interesting questions about the future structure of financial markets. They begin with the observation that countries like Germany, which permits universal banking, have relatively undeveloped capital markets, while countries like the United States, which has functional separation between investment and commercial banking, have well-developed capital markets. Is this a fluke? Is there something behind this regularity? Is there an interaction between the structure of financial intermediaries (in particular, banks) and the development of the capital market, so that countries will have to select between a German-style financial system or a United States-style system? If so, what determines whether one style is better than another, in terms of welfare? What are the implications for the European Union and the globalization of financial markets? As markets become more integrated, will there be forces that work towards convergence of financial systems, or will different styles of systems be able to coexist? On first reading, the chapters by Franklin Allen and Douglas Gale and by Arnoud Boot and Anjan Thakor suggest that there is a role for banks in the future. But a closer reading of the chapters indicates that there are alternatives to banks that might be Pareto-improving.

Franklin Allen and Douglas Gale focus on the differences in risk-sharing that different financial systems allow. We are in a second-best world of incomplete markets—not everyone has access to financial markets, and there are transactions costs—hence, there is a potential role for intermediaries. Capital markets allow idiosyncratic risks to be hedged via portfolio diversification; in addition, they permit cross-sectional risk-sharing, that is, the efficient sharing of nondiversifiable risks, like oil price shocks. Well-developed capital markets provide a variety of different instruments that give individuals a greater ability to adjust the riskiness of

* The views expressed here are those of the author and do not necessarily represent the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.
their portfolios to their own levels of risk tolerance. But the market does not provide a mechanism for reducing the level of nondiversifiable risk in the economy.

Intermediaries might be able to play this role, by building up reserves in good times to pay out in bad times, thereby smoothing returns. Capital markets don't permit such intertemporal smoothing, because no one can be assured that the next generation will participate in the market. The intermediary can achieve an almost uniform Pareto improvement over the market, because it forces participation—I think of the intermediary as a commitment device. The reason the intermediary doesn't completely dominate the capital market is that the early generations have to contribute more to buy up the intermediary's reserves than they get from risk-sharing.

An obvious question arises: Why must we make a choice between the cross-sectional risk-sharing of capital markets and the intertemporal risk-sharing of intermediaries? Can't we have both? The answer is no. This is important, because it means one can't consider the development of the capital market independently from the intermediary structure. Allen and Gale show that if a small, intermediated financial system is opened up to competition from global financial markets, then the intermediated system breaks down. One way to think about this is that the capital market gives an outside option to those investors who happen to be making a decision at a time when reserves need rebuilding. The intermediary works only because it forces participation; once this participation constraint is relaxed, the system breaks down. Notice that even a universal bank cannot achieve both intertemporal and cross-sectional risk-sharing by offering a menu of different accounts with different risk characteristics. This is so because as long as its customers have the ability to reallocate their portfolios through time, they can undermine the intertemporal risk-sharing scheme the bank has set up. Moreover, an intermediated system would be difficult to establish in a market that has access to global capital markets, because the necessary reserves would be difficult to raise.

This analysis suggests that countries will have to make a choice. If they want the cross-sectional risk-sharing afforded by capital markets, they will probably have to give up the intertemporal risk-sharing offered by intermediaries. If they want the intertemporal risk-sharing, they will have to shut themselves off from global capital markets. The preference will depend on the level of each type of risk, and this depends on the heterogeneity within and across generations. If there are wider differences within than across generations, then cross-sectional risk-sharing will be relatively more important, and a financial system dominated by a capital market will be better. If there are wider differences across than within generations, an intermediated system will be preferred.

This is an important observation, because it can link financial system evolution to social evolution. By bringing together different countries into one market, European unification might suggest increased heterogeneity within generations, at least initially, so that the United States-style system would be preferred. If heterogeneity decreased through time, an intermediated system would improve welfare, but would be difficult to achieve, since the capital markets would already be well-developed. So, history matters. The heterogeneity result also suggests that more centralized countries might tend to have universal banking, while more decentralized countries, like the United States, won't.

Several other questions came to mind as I read the chapter. First, even if the intermediary is offering this intertemporal smoothing, why do they do it? The answer clearly depends on what one believes is the intermediary's objective function. Allen and Gale argue that the intermediaries in Germany are operated in the public interest—only commercial banks are profit maximizers, and they hold only a quarter of the banking assets. Also, bank regulation makes the intermediaries cautious and gives them the incentive to develop a reputation for financial stability over a longer time horizon. If we want the intermediary to provide this intertemporal insurance, perhaps the goal of regulation should be to create the incentive for the intermediary to do so. Safety and soundness regulations can be interpreted as forcing the intermediary to survive in the long run and, therefore, to have a longer-run view.

The chapter aims to compare capital-market-dominated financial systems to bank-dominated systems, but in what sense are the intermediaries banks? There is no real discussion of the intermediary's asset choice or of monitoring. Basically, the intermediary is just a device that allows the accumulation and disbursement of reserves through time. If there are other ways to achieve the intertemporal risk-sharing, then countries would not have to give up intertemporal risk-sharing to get cross-sectional risk-sharing. Also, it would appear that a funded social security system or pension fund could achieve the same thing that intermediaries are achieving here. Hence, a United States-style financial system with well-developed capital markets plus a funded social security system could achieve the best of both worlds—we would not need banks. Again,
it would depend on the social security system having the correct objective function, as the intermediaries are assumed to have in Allen and Gale's chapter. I would say that to explain the empirical fact with which they start, intermediaries in countries like Germany must be offering something more than intertemporal risk-sharing.

The intermediaries in Arnoud Boot and Anjan Thakor's chapter are more like the intermediaries we typically think about. It's their capital market with which I have some trouble. They study the effect of financial system design on financial innovation. Here, commercial banks solve a moral hazard problem by monitoring borrowers to deter asset substitution. (Note that borrowers are the ones that have to be controlled here, whereas in Allen and Gale, it's the investors who have to be forced to participate in the intertemporal risk-sharing scheme.) Investment banks engage in financial innovation to design securities that can lower borrowers' capital cost by increasing the informativeness of the security's prices. The capital market is inhabited by informed traders, uninformed traders, and liquidity traders. The liquidity traders are necessary to enable informed traders to profit from their private information. Informed traders gain information that, if known by the firms, would allow them to make a payoff-enhancing investment. The information the informed traders have is noisily conveyed to firms via the price of the firm's debt security in the capital market.

Thus, a borrower's choice of financing method—bank, or capital market—depends on the tradeoff between the value of solving the asset substitution moral hazard problem versus the value of being able to make a payoff-increasing investment based on the information conveyed by the capital market price. Therefore, whether to choose bank financing or capital market financing will depend on the severity of the borrower's moral hazard problem, and on the amount of information revealed in the security price, which is why financial innovation is important. Investment banks can choose the informativeness of the price by innovating. Boot and Thakor show that there is a threshold level such that if a borrower's moral hazard problem is more severe than the threshold level, the borrower will seek bank financing; if the problem is less severe, the borrower will go to the capital markets. This threshold level will depend on the structure of the banking system, since the structure will affect the degree of innovation and, hence, the informativeness of the capital market price. If there is functional separation between commercial and investment banks, then investment banks do not consider the effect of innovation on bank demand. In contrast, a universal bank would internalize the effect of innovation on the commercial bank's customer base. Thus, when there is universal banking, there will be less innovation, prices in the capital market will be less informative, and more borrowers will opt for bank financing than for capital market financing. These results seem consistent with the financial structures in Germany and the United States.

A few questions came to mind as I read the chapter. First, informed traders in the capital market here are very informed relative to other agents. They know more about the firm's prospect for being able to make a valuable real investment than does either the firm itself or the bank, even after monitoring the firm. It could be that the informed traders are more knowledgeable about, say, macroeconomic conditions than the firm or bank and that these conditions will be important for the firm's investment possibilities. If this is the case, it should increase the security prices of all firms whose profits move similarly across the business cycle. Thus, firms should take the signal not just from their own prices, but from capital market prices in general.

This issue aside, notice that Boot and Thakor, and Allen and Gale, both give us explanations of why countries with universal banks might have less-developed capital markets than countries with functionally separated investment and commercial banks. According to Boot and Thakor, it's because universal banking reduces the level of competition between investment banking and commercial banking, and the investment bankers control the development of capital markets. According to Allen and Gale, the capital market would disrupt the functioning of the universal bank, and the exogenously given characteristics of the agents would determine the type of financial system we see.

Just as in Allen and Gale's chapter, Boot and Thakor's argument doesn't bode well for commercial banks. A universal banking system leads to less innovation than a functionally separate banking system, and so to worse real decisions on the part of firms who opt for capital market financing. Yet, more borrowers opt for bank financing than in a functionally separate banking system, so there is more control of the moral hazard problem. The outcome of this tradeoff is ambiguous. On first look, it appears that commercial banks have a role to play. However, there may be other ways to control the moral hazard problem. For
example, if financial innovation means that the capital markets are more
developed, there are more participants, etc., then the market for corpo-
rate control should be more developed and could serve as a substitute
for commercial bank monitoring. Hence, we are again left with a finan-
cial system that involves a well-functioning capital market, and no role
for commercial banks.

Michael Gruson’s chapter shows how complicated things can be-
come when we go from theory to practice. The two previous chapters
addressed what might happen when markets with different financial sys-
tems are opened up to one another. Will there be pressures to adopt one
system over another? Here, we see an example of how the regulators of
one system are trying to contain any such pressures. In the United
States, bank holding companies are generally restricted to lines of busi-
ness that are related to banking, and they cannot own shares in commer-
cial companies. In contrast, many other countries allow universal banks,
which can engage in a vast array of activities unrelated to banking.
When these foreign universal banks operate in the United States, they
are generally proscribed from engaging in many nonbank activities, in
order for United States banks not to be put at a competitive disadvan-
tage. Having to conform to these regulations increases the cost of oper-
ating in the United States. Gruson points out several examples where
foreign banks that were acquired by commercial companies had to sell
their United States branches.

Is it realistic for United States regulators to believe they can contain
the pressures that exist when two different financial systems are opened
up to one another? Does the cost of trying to write and enforce such regu-
lations exceed the benefit? Might there be another way to try to re-
concile the differences? One argument for the separation of commerce
and banking in the United States is that it prevents extension of the federal
safety net, especially deposit insurance, to a new set of players (commer-
cial firms). Some United States regulators have determined that, at the
moment, the benefits of separation outweigh the costs, but I don’t believe
they have considered the cost imposed if foreign banks should abandon
the United States. Nor have they considered the possible reduction in any
benefit of separating banking and commerce were changes to be made to
the safety net. Considering either approach might tip the cost–benefit
analysis toward universal banking in the United States.

This example serves to underscore the point that just as one should
not study the banking system in isolation from the capital market, as
pointed out in the previous two chapters, one has to consider the whole
regulatory structure when studying financial system design. Universal
banks are not permitted in the United States, which has a fairly generous
federal deposit insurance system. But universal banks are permitted in
Germany, where deposit insurance is private and noncompulsory. This is
hardly a coincidence.
All three chapters are valuable contributions to the debate on universal banking, albeit in different ways. They raise a whole host of interesting issues, most of which I will not be able to address. Briefly, I found the Allen and Gale comparison of markets and intermediaries as providing different types of risk-sharing opportunities a very illuminating way to think about certain issues in comparative financial system analysis, in particular their claim that in an environment where both corporate securities markets and universal banking are allowed to operate, markets will dominate intermediaries. The Boot and Thakor chapter was also interesting, and though I am probably not convinced of the applicability of their main results to the real-world observations of the German and United States financial systems, I was particularly struck by their point that path dependence is likely to be very important in the evolution of financial systems. I will return to some of these points in my comments. While I will not comment in detail on the Gruson chapter, I found it to be an extremely valuable resource for future reference with respect to the legal treatment of foreign banks in the United States.

Indeed, in the spirit of the Gruson chapter, the main focus of my remarks will be on the important differences in the legal and regulatory environment in the industrialized countries, differences which I believe have not really been recognized by contributors to the debate on the costs and benefits of universal banking, and more generally on the outcomes we observe in different countries with regards to systems of corporate governance, corporate finance, and the role banks play in these areas. Owing to time constraints, most of my remarks will be focused on differences between the United States and Germany, although Japan and the U.K. also provide useful insights.

When most scholars and policymakers focus on the universal banking debate, they contrast Glass-Steagall in the United States with Germany's Banking Act as the primary reason for the differences we see in banking behavior, corporate financing, and corporate governance in the two countries. But the legal environment for universal banking is not the only, or perhaps not even the most, important legal and regulatory difference between the two countries that impacts on these areas. There are large and significant differences between the United States and Germany in the legal and regulatory environment surrounding the provision of nonbank finance to firms. These differences comprise two elements:

1. The active suppression of corporate securities markets in Germany for much of the postwar period, through taxes, mandated issuance procedures, and outright regulatory prohibition.

2. The passive suppression of corporate securities markets in Germany, through the absence of strict disclosure requirements for firms wishing to issue public securities.

It is a combination of these legal and regulatory differences—those that relate to universal banking and those that relate to the activity of corporate securities markets—that produce the economic outcomes we observe in the two countries with regard to the importance of corporate securities markets, the way corporations are financed and governed, and the role banks play in each of these areas. It's worth spending a minute detailing these legal and regulatory differences in the stance toward corporate securities markets, because I believe they are overlooked by many academics and policymakers.

First, Germany (and Japan for that matter) has had an historical bias in its laws and regulatory environment against nonbank finance. Table 1 gives a few of the legal and regulatory constraints on nonfinancial firms' access to nonbank finance in Germany (and Japan). These constraints existed until very recently. They have been far reaching and have posed a heavy burden on any corporation seeking nonbank finance domestically or abroad. They have revolved essentially around stiff securities transaction
**TABLE 1**

**Legal and Regulatory Constraints on Nonfinancial Firms’ Access to Nonbank Finance**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Japan</th>
<th>Germany</th>
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<tr>
<td>Equity</td>
<td>Heavy taxes on transactions in equities until 1988.</td>
<td>New share issues must be offered to existing shareholders first. Corporation tax of 1% on all equity issues until 1972. Secondary trading in equities subject to securities transfer tax until 1992, ranging from 0.1% to 0.25%. Annual net asset tax of 1% on corporate net assets, payable irrespective of net income position.</td>
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taxes and cumbersome issue authorization procedures that firms must go through to make a security offering. Perhaps most significant in Germany is a legal requirement (not detailed in the table) that requires employee representation on the board of all companies that issue equity publicly. This has been extremely important in discouraging the development of the public equity markets. Corporate lawyers in Germany will tell you that the issuance of public securities of any form has not been a viable alternative for most German businesses, because of these restrictions.

Recently, there has been significant relaxation of these restrictions in both Germany (since the late 1980s) and Japan (since the early 1980s). This has implications for the development of their financial systems in the future, which I will return to at the end of my comments.

Quite apart from the active discrimination against nonintermediated forms of finance in postwar Germany, the greater laxity of their disclosure requirements may have been an additional (passive) factor in discouraging the development of nonbank sources of corporate finance. Firms in the United States wishing to issue securities to the public are required to disclose much more information than those in Japan and Germany. For strategic competitive reasons, of course, firms may not have sufficient incentive voluntarily to provide the financial information that outside investors require before they will consider extending such finance (for example, they may be afraid that competitors could take advantage of such information). With little disclosure of financial information, potential outside investors will be discouraged from supplying funds to firms through bond or equity markets. Absent a regulatory and legal framework requiring adequate disclosure to outside investors, such as has existed in the United States throughout the postwar period, the development of a liquid market for corporate securities may be effectively impeded. Sylla and Smith (1993) use just such an argument to explain the differing speeds of development of stock markets in the United States and the U.K. In particular, they place a primary responsibility for the development of liquid corporate securities markets in the United States in the postwar period on those elements of the Securities Acts of 1933 and 1934 that mandated strict disclosure requirements for all firms issuing public securities.

What does all this mean for the way we view the debate on universal banking in general and the two theoretical chapters in Part Five?
First, on the general debate, it is really quite wrong to think that the only thing holding the United States back from the system of corporate finance and governance that we observe in Germany is the Glass-Steagall Act. While this may seem obvious to many, I believe this is the implicit assumption held by many policymakers and some academics. For the United States to adopt the German system would entail not only repeal of Glass-Steagall, but also the active and passive suppression of corporate securities markets, which of course is not even on the table for discussion. What it does make sense to talk about is the movement of either system toward a more liberal regulatory environment for both universal banking and corporate securities markets.

Second, with regards to the Boot and Thakor chapter, among their claims is that in a universal banking environment, capital markets will be less developed, financial innovation lower, and disintermediation less. This may or may not be true. But you won’t get any confirmation of these propositions from a casual look at a country that has had universal banking but that also has suppressed its capital market development by regulatory fiat.

Third, with regards to the Allen and Gale chapter, there is much discussion about the German system moving towards freer capital markets and the tendency this has for disintermediation. One could interpret the Japanese experience over the last 10 years as a particular example of this already happening. There is a host of evidence that despite the advantages (less information problems and liquidity restraints) documented for Japanese firms from tight bank relationships, many Japanese firms were actively reducing the strength of their bank ties in the 1980s as deregulation led to many opportunities for external finance from securities markets as opposed to traditional bank finance. There is now already plenty of evidence that the ties between banks and large firms that have easy access to the Euromarkets and the developing domestic bond market are weakening substantially in response to this deregulation (See Hoshi et al., 1993, and Kester, 1991).

I would encourage the authors to look carefully at the Japanese experience. It would probably also do the German authorities some good to do this as well, since they have more recently been moving in the direction of deregulating their corporate capital markets, largely in response to the immense political pressure they are under to allow Frankfurt to compete with London in the financial services arena in the single European market.

Finally, I want to return to the issue of where the industrialized countries are headed in terms of the design of their overall financial systems. There is clearly some long-term convergence going on in the legal and regulatory environments, and the focal point of this convergence is not the German or United States system as it currently exists, but an environment where banks are free to conduct investment and commercial banking activities and where corporate capital markets are unhindered by regulatory and legal obstacles. What will be the primary mechanisms of corporate finance and control in such a financial system? Allen and Gale, I suppose, would claim that the outcome would look more like the United States system today than the current German system. What makes this question difficult, however, is the following:

1. There are different forms of universal banking. In particular, there is likely to be an important difference between outcomes under a system where universal banks are allowed just to underwrite corporate securities versus a system where they are allowed to own large equity stakes in nonfinancial firms.

2. Among the developed industrialized countries, we do not have models where universal banking (where banks are allowed to own nonfinancial firms) and free capital markets have been allowed to coexist. In particular, as I have stated, Germany is not such a model. The closest thing to this model might arguably be the United States in the early 20th century.

3. Even if we had models we could look at, they might not be very informative with regards to what would happen in other countries that adopted both universal banking and free corporate capital markets. Why? Because, as Boot and Thakor point out, the starting point is important. In particular, a convergence of regulatory environments may not imply convergence of economic outcomes, because institutional history matters.

These are all issues policymakers and academics will have to struggle with, and these chapters are a valuable contribution to the debate.
REFERENCES

