

RISK IN FINANCIAL CONGLOMERATES: MANAGEMENT AND SUPERVISION

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Samenvatting

Financiële conglomeraten, die bank-, aandelen- en verzekeringensactiviteiten combineren, nemen in de financiële wereld een steeds voornamere plaats in. Cross-sector consolidatie is gestimuleerd door trends zoals disintermediatie, mondialisering en deregulering. Hierdoor zijn nieuwe uitdagingen ontstaan voor zowel het management van conglomeraten alsmede voor de toezichthouders. Wij bespreken de theoretische redenen waarom toezichthouders geïnteresseerd zouden kunnen zijn in het risico van een financiële instellingen en waarom er – voor dergelijke financiële instellingen zelf – ook redenen zijn om in het risico van de bedrijfsactiviteiten geïnteresseerd te zijn, zowel vanuit het bedrijf zelf als ook vanuit de markt. Na een beschrijving van de nieuwe institutionele opzet van toezicht in Nederland, richten wij onze aandacht op de volgende vraag: hoe kan een toezichthouder een raamwerk voor toezicht ontwerpen waarin recht gedaan wordt aan de eigen verantwoordelijkheid van het conglomeraat maar dat, tegelijkertijd, het publieke belang waarborgt? Dit raamwerk zal, naar ons idee, grote gelijkenis vertonen met de “Supervisory Review”, zoals voorgesteld in het nieuwe Bazelse akkoord.

Trefwoorden: toezicht, financiële conglomeraten, banken, verzekeraars, diversificatie.
JEL-code: G21, G22, G28

Abstract

Financial conglomerates, combining banking, securities trading, and insurance, have become an important part of the financial landscape in many countries. Cross-sector consolidation has been fostered by trends such as disintermediation, globalization, and deregulation creating new challenges for both the group’s management as well as for regulators. We discuss the theoretical reasons why supervisors are interested in the riskiness of a financial firm and why – for firms – a similar concern emerges from the theory on risk management, both from a market and a firm perspective. After describing the Dutch institutional set-up, we turn to the discussion of the following question: How can a supervisor devise a framework of supervision that does justice to a financial conglomerate’s own responsibility and, at the same time, safeguards the general public’s interest? The framework, we feel, should be similar in flavor to the Supervisory Review, as proposed in the new Basel accord.

Keywords: supervision, financial conglomerates, banks, insurers, diversification.
JEL-codes: G21, G22, G28

Executive summary

In the Netherlands, and a number of other countries, financial conglomerates have become an important part of the financial landscape. Such conglomerates combine banking, securities trading, and insurance within one organization. This degree of cross-sector consolidation has been fostered by trends such as disintermediation, globalization, and deregulation. The combination of different activities, notably banking and insurance, within one organization creates new challenges for both the group's management as well as for regulators, as discussed in this paper.

A number of arguments have been put forward why financial firms are “special” and would thus merit regulation and supervision. One argument is for instance that banks are prone to bank runs, because of the nature of demand deposits. Another argument is that the general public has difficulty in assessing the viability of insurance companies, similar to banks, because they are opaque institutions. It is also argued that combining banking and insurance within one organization might lead to contagion risks between sectors. These, and many other arguments will be discussed: a general conclusion is that because of these arguments, supervisors are interested in the riskiness of a financial firm. A similar concern emerges from the theory on risk management, both from a market and a firm perspective. Management and the supervisor thus have a common interest in the risk profile of the firm and its management.

The development of the financial arena, with increasing cross-sector integration, has prompted many supervisors to reorganize. Historically, as in most countries, Dutch supervision was organized along sectoral lines. Recently, supervision has been split between prudential and market-conduct supervision. This structure should result in efficient regulation and supervision of financial conglomerates as well as for firms operating in just a single sector. We will briefly discuss the new set-up.

We conclude with a discussion of the following question: How can a supervisor devise a framework of supervision that does justice to a financial conglomerate's own responsibility and, at the same time, safeguards the general public's interest? Input in this discussion will be our joint work with the industry concerning economic capital, a commissioned study about legal firewalls, and the discussions within the supervisory community. The framework, we feel, should be similar in flavor to the Supervisory Review, as proposed in the new Basel accord.

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1. Introduction

In the past decade we have seen financial conglomerates gain in importance. Financial conglomerates are groups that combine banking, securities, and insurance activities within one organization.¹ Trends such as disintermediation, globalization, and deregulation have made cross-sector consolidation possible. Consolidation has been driven by the search for revenue enhancement and cost savings and has been encouraged by improvements in information technology. So far most consolidation has been within sector and country. Nevertheless some cross-sector groups of impressive size have been formed. An example is the ING-group whose balance sheet, at the end of 2001, equals a little more than 705 billion Euro. Although generally the external risks facing financial firms have not changed in essence, combining different activities within one organization presents new challenges for both the group's management as well as for regulators. In this paper we will discuss the most important issues in this area.

After outlining the developments that have led to the formation of large, complex and diversified financial firms, or in other words financial conglomerates, we discuss the reasons that have been cited, mainly in the academic literature, for regulatory intervention, covering banking, insurance, and financial conglomerates in turn. Sheer size by itself, after all, does not merit the extensive regulation to which financial firms are subject. The reasons cited for banks are the possibility of bank runs, of systemic crises, of moral hazard due to a lender of last resort, and consumer protection concerns. For insurance firms, the main arguments are consumer protection and more general financial stability concerns.

Given the good reasons that exist for regulation and supervision, within what institutional framework does this take place? Consolidation in the financial sector, for instance, would require closer coordination of regulation across the banking, securities, and insurance sectors. In the fourth section of this paper we describe the – European – framework, with special attention to the Dutch situation. Since financial conglomerates were formed relatively early in the Netherlands, the regulatory response had to be formulated ahead of the curve as well. We highlight the motivations that played a role in coming to the present Dutch regulatory structure.

Regulators are not the only stakeholders interested in the risk profile of financial firms. Many firms commit sizeable resources themselves to monitor and manage risk. However, received wisdom is that, in the absence of market imperfections, risk management does not add any value. The reasons for managing risk are thus based on violations of the assumptions of the Modigliani-Miller irrelevance

¹ Reflecting continental European practice, we consider financial conglomerates which combine universal banking and insurance activities and not financial conglomerates which only combine banking and securities activities, as is more common in Anglo Saxon countries. Thus a bank, in our definition, can be involved in both securities and commercial banking.

theorems. We discuss the most important digressions in turn. Given that both management and regulators are interested in the risk profile of financial firms, they have a shared interest in accurate measurement and, consecutively, management of risk. We then briefly outline measurement methods, primarily to discuss the most important hurdles that have to be taken before a firm-wide risk management system can be implemented adequately.

Finally, we discuss the interplay between supervisors' objectives and financial conglomerate goals. Are these objectives in line with each other or are there areas in which opposite interests are evident? In what way can supervisory regulation support the developments of firm-wide risk management systems and is this beneficial to the industry? The main issue that will be addressed is what the framework for coming to an adequate risk management process and thus a satisfactory level of capital should look like. The central tenet here is the supervised institution's own responsibility in this area. The concluding section summarizes our findings.

2. The rise of financial conglomerates

An obvious definition of a financial conglomerate is a group of firms that predominantly deal with finance (i.e. banks). In financial regulation, however, it has acquired a slightly different meaning: a financial conglomerate has come to mean a group of firms that engage in financial activities that have been kept separate, by law and regulation, for many years in many countries. Combinations of some of these activities - banking, securities trading, and insurance – are still forbidden in many countries. The Group of 10 gives the following definition: “any group of companies under common control whose exclusive or predominant activities consist of providing significant services in at least two different financial sectors (banking, securities, and insurance).” (Group of 10 (2001)). The European Commission is proposing a more precise definition, in two steps: first, a group only qualifies as a financial conglomerate if more than 50% of group-activities is financial and, secondly, if the shares of the banking-sector (including security-activities) and the insurance-sector in the total of the financial activities are within the range 10%-90%. In addition, if the minority share has a balance sheet larger than 6 billion Euro, the group also qualifies as a financial conglomerate. If the group is headed by a non-regulated entity, it is called a mixed financial holding. This definition implies a rather flexible coverage although the previously used definition in the Netherlands was even stricter: any combination of banking and insurance would qualify as a financial conglomerate.

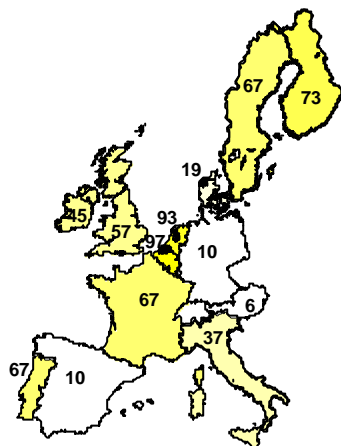
Consolidation in the financial sector has increased significantly over the last decade (Group of 10 (2001)).² Most recent mergers and acquisitions involved firms competing in the same industry and country. Nevertheless a number of highly complex, financial institutions that operate across many

² As noted by NBB (2002) the direction of conglomeration in non-financial firms seems to be towards more unbundling or, in other words, refocusing. See Focarelli and Pozzolo (2001), arguing that regulatory restrictions are still slowing cross-border and cross-sector mergers activity.

sectors and countries have been formed. Well-known examples of groups active in more than one sector are for instance CITIGROUP-TRAVELLERS, CREDIT SUISSE-WINTERTHUR, DRESDNER-ALLIANZ, ING-group, and FORTIS.

In Europe, financial conglomerates have captured significant market shares in a number of countries and markets. As an example, we show bank deposits in figure 1. Financial conglomerates' share is significant in some markets and relatively high in the Netherlands.

Figure 1 Share of financial conglomerates in bank deposits (2000), in percentages



Source: Bankscope, ISIS.

A primary motive for financial consolidation seems to be revenue enhancement and costs savings.³ Consolidation has been encouraged by improvements in information-technology (cf. Van Lelyveld and Donker (2002 (forthcoming))), financial deregulation, globalization of markets, and increased shareholder pressure for financial performance. Various domestic regulatory regimes and corporate and national cultural differences are, however, discouraging consolidation.

Another motive for cross-sector consolidation is that financial segments are melting into one another, as financial institutions venture into diverse product markets (banks now also sell insurance products, for example, and insurance firms sell unit-linked products) or offer innovative, mixed products (such as investment-based mortgages).⁴ New distribution channels, including the provision of financial services through the Internet, reinforce this effect. Hence, financial institutions' activities are becoming more varied and generally more complex in nature. As their organizational structures are adapted to these developments, they too become more complex.

³ We will not discuss, from either a theoretical or an empirical angle, whether forming a conglomerate creates or destroys value. Theoretical discussion can for instance be found in Boot and Schmeits (2000). Empirical evidence for the alleged existence of 'conglomerate discounts' can be found in Berger and Ofek (1995) or Scharfstein and Stein (2000).

⁴ See Allen and Santomero (2001) for more general description of developments in banking.

A number of driving forces causes these motives to be effectual. First and foremost are the technological innovations in the field of information and communication technology, which paved the way for the development of many new products and drastically lowered the operational costs per unit. Large financial institutions are generally better able to fund the extensive investment in IT required. In addition, deregulation has opened plenty of new markets and allowed for new cooperative links between, for example, banks and insurance companies. Moreover, in Europe the generation of shareholder value has become a far more significant concern to management as well. In practice, expansion and diversification are important tools in the strategic reorientation of financial institutions in response to mounting pressure, from both inside and outside the financial sector. In this process, the establishment of EMU has acted as a catalyst, since the currency union advances the integration of financial markets and the consequent creation of a single competitive financial environment.⁵

3. Regulatory concerns about the risk profile of a conglomerate

Given the fact that financial conglomerates have gained in importance in recent years, the question arises whether supervisors should be concerned? Below we will discuss a number of reasons why supervisors would be interested in understanding and – if necessary – influencing the risk profile of any financial institution and in particular financial conglomerates.⁶

In the banking literature the arguments have generally been phrased in terms of capital regulation. Thus, for instance managers' incentives to gamble for resurrection at some point could be contained by prescribing some level of capital. Other, non-capital instruments to control risk might however be just as effective. One could think of, for instance, direct supervision instead. Generally, such measures can be accommodated within the existing, capital-focused literature. In the discussion we will, for brevity, use 'supervision' to denote both regulation and supervision.⁷

Consolidated supervision is an essential tool of (banking) supervision. In simple terms, it is a response to the fact that financial conglomerates very frequently carry on part of their business – in some cases the major part – through subsidiaries and affiliates. Moreover, a bank or insurer may belong to a group headed by a holding company, and in such case supervisors need to take account of the activities of the holding company and fellow subsidiaries of the bank or insurer. Consolidated supervision is therefore a comprehensive approach to supervision which seeks to evaluate the strength of an entire group, taking into account all the risks which may affect an examined institution regardless of whether these risks are carried in the books of the examined institution or in related entities.

⁵ Note that according to the evidence shown by Berger, *et al.* (2002), it seems that consolidation will never become total because there will always be a demand for 'local' banks.

⁶ This section draws heavily on Bikker and Van Lelyveld (2003, forthcoming).

3.1. *Motivation for regulation of financial institutions*

Financial institutions are regulated and supervised for many reasons. The most important are consumer protection (i.e. delegated monitoring), the functioning of financial institutions and markets, the incentives for participants, market failures and, finally, the special nature of financial products.⁸ Critics of regulation argue that market failures are non-existent or, at the most, not serious.⁹ Moreover, it is argued that regulation cannot prevent failures or imperfections, or is too costly, whereas some forms of regulation might even generate new sources of moral hazard. Following Llewellyn (1999), the instruments at hand are *prudential regulation* and *conduct of business regulation*. The former aims to promote solvency and thus the general safety and soundness of institutions, while the latter concerns the customer-firm relationship. Conduct of business regulation is generally framed in a consumer-protection framework. It should, however, be of interest to firms themselves as well and should be seen in a wider risk management setting. Witnessing the growing importance of product liability and the possibility of reputational fall-out, it becomes increasingly more important for a firm to know what you sell to whom.

In the next three sub-sections we consider the need for regulation and supervision for banks, insurance firms and financial conglomerates, respectively. In addition, the third sub-section also seeks to establish whether the ‘silo’ approach or the ‘integrated’ approach is more appropriate for the supervision of financial conglomerates. In the silo approach total risk is a simple sum of sectoral risks, whereas in the ‘integrated’ approach risk reduction for diversification effects or an add-on for contagion risk is incorporated.

3.2. *Reasons for regulation of banks*

Contrary to other firms, banks may use *deposits* for their funding needs. Deposits differ from other types of debt, in that a substantial part of deposits may be retrieved on sight. Demand deposits generate the possibility of a bank run on an individual bank, which is suspected to be insolvent. The first come-first served (FCFS) constraint, facing demand depositors, means that there is a strong incentive for depositors to be in the front of the queue (Chen (1999)). In non-financial near-bankruptcies it is more difficult to jump the queue and thus evade costs.

Another typical characteristic of banks (and other financial firms) is their *opacity*: it is hard to assess the total risk a bank is running. In particular, the value of longer-term investments that are not publicly traded is difficult to establish, especially at any specific point in time, let alone by relative

⁷ Cf. Llewellyn (1999) who adds a further distinction between regulation (setting specific rules), monitoring (observing compliance), and supervision (general observations of bank behaviour).

⁸ See Allen and Herring (2001), Table I, for a discussion of additional motives, including corrective measures employed.

⁹ The fiercest opponents to government regulation can be found in the Free Banking School. See for instance Dowd (1994) or White (1984).

outsiders such as (unsophisticated) depositors.¹⁰ As the banking operations of many banks are fairly similar, financial stress emerging in one bank may indicate similar difficulties in others. In many cases it is difficult to distinguish bank-specific shocks from general shocks. Therefore, a run on one bank may generate runs on other banks, causing serious financial instability.¹¹ Contagion may also be reinforced because banks are interwoven through heavy interbank lending and cross participations. If bank runs are not triggered by true insolvency, they are detrimental to social welfare, because in a bankruptcy contracts will have to be renegotiated or traded at a discount. Hence, special measures are required to reduce welfare impairing bank runs and their threat of financial instability.

A typical feature of banks is that the contracts on both sides of the balance sheet have different maturities: funding is of a short-term nature, whereas lending is generally long-term. This creates both *liquidity risk*, which is often the immediate cause of a bank run, and interest rate risk, possibly damaging solvency. Therefore public authorities must act to monitor these risks and safeguard the public interest. Finally, banks have a pivotal role in the financial system in the clearing and settlement of transactions and - above all - providing finance, in particular to small and medium-sized enterprises.

The risks mentioned above are addressed by constructing a ‘safety net’, usually including prudential regulation and supervision, a lender of last resort and deposit insurance. It is important to note that a well devised financial safety net consists of a mix of *all three* elements. First, the causal forces for financial fragility can be addressed with *regulation and supervision*, lowering the probability of financial instability. Best practice standards on reporting can, for instance, achieve that the opacity of a bank is reduced. Second, implementing a *deposit insurance* scheme for the deposits of households removes the panic inducing FCFS-constraint.¹² Finally, appointing the central bank as the *lender of last resort*, which may provide funds to illiquid but solvent banks (in principle, only against collateral), can in some cases also be the solution for bank-run problems.

Deposit insurance and a lender of last resort cause *risk shifting*. In the case of deposit insurance risk is shifted from the bank’s deposit holders to the insurer, which often consists of all other banks or taxpayers. This means that the risk of deposit holders is not priced, which makes this type of funding relatively cheap.¹³ Risk insensitivity of funding creates an incentive for banks to expose themselves to more risky and thus more rewarding investment. Similarly, a lender of last resort implies that risk is shifted from all funding parties of the bank to the taxpayer, which may provoke

¹⁰ For that reason, the new Basel capital accord introduces a set of disclosure requirements to encourage greater transparency and reduce uncertainty.

¹¹ Seminal contributions in this area are Bryant (1980) and Diamond and Dybvig (1983).

¹² For an overview, see Garcia (2000). In most countries, banks pay premiums to fill a fund, whereas in others, such as the Netherlands, a pay-as-you-go system covers losses. An additional motivation for deposit insurance is consumer protection. For instance, in the Netherlands, all deposits are covered; not only the deposits which are directly demandable and hence contribute to the bank-run risk, but also non-demandable liabilities such as fixed long-term time deposits. Moreover, securities in trust are also covered to some extent.

¹³ Unless the deposit insurance is based on risk sensitive premiums, as is the objective in a growing number of countries (Garcia (2000)) but not in the Netherlands.

more risky bank behavior, because an unpriced insurance covers part of the possible damage. These *moral hazard* problems, brought about by instruments to reduce the fragility of banks, imply an additional reason for regulation and supervision.

3.3. *Reasons for regulation of insurance firms*

The main reason why banking markets are thought to be unstable has to do with banks' funding by deposit holders, with their special FCFS status, in combination with their long-term assets. Insurance firms, however, are not funded by deposit holders but by *policyholders*, without the FCFS rights attributed to deposit holders. Policyholders have the right to surrender a policy, but processing a request to surrender takes time. This allows the insurance firm to liquidate investments under normal conditions, avoiding the 'fire sale' a bank faces in a bank-run situation. In the Netherlands surrendering generally takes place under a certain discount, which covers at least administration and liquidation costs. Often tax treatment is less favorable if the policy is surrendered before legal minimum terms are met. Thus, commuting insurance policies comes with substantial costs and individual policyholders have no need to commute earlier than others. However, the situation may be different in other countries, where other legal conditions prevail for surrendering. Especially in the US, the discounts may be lower and not always actuarially fair, which makes surrendering more likely and thus a greater risk for the firm.

In some respect, policyholders have a position similar to that of deposit holders: banks and life insurance firms are both *opaque* institutions, with a degree of riskiness, which is hard to assess for the lay person. Institutions can thus, without knowledge of the policyholder, behave in a – more – risky fashion. Firms might even attempt to gain market share with policies against actuarially insufficient premiums and then proceed to gamble with the received monies. Hence, *consumer protection* is an important and strong argument for prudential insurance supervision, similar to the motivation for deposit insurance. For many life-insurance policies, the case for consumer protection is even stronger than for deposits, as the contracts last very long. Understandably, policyholders have difficulties in assessing the current riskiness of insurance firms, but even the experts cannot foresee a firm's behavior in, say, five or ten years, let alone over forty or sixty years. It is important to note that the objective of consumer protection is thus a much broader concept than can be attained by market-conduct regulation only.

Where banks and insurance firms share their opacity and the ensuing need for consumer protection, they seem to differ with respect to the other arguments for supervision. At first sight, insurance firms as stand-alone institutions are not likely to constitute a major threat to financial stability through sudden crashes. Even where - due to the opacity of insurers - financial difficulties in one firm may contribute to doubts regarding other insurance firms, this need not automatically lead to panic reactions similar to bank runs, as surrendering of policies takes time and involves costs for the

policyholders.¹⁴ Liquidity risk is not a major problem for insurance firms as their balance sheets generally have a reversed duration structure¹⁵ (life insurance firms) and claims go through a processing cycle, pre-empting surprises (P&C insurers). In addition, unlike banks, insurance firms do not play a role in maintaining the payment system.

However, some financial stability arguments remain or even become of growing importance. First, insurers have become increasingly more intertwined with the banking sector, taking on significant amounts of credit risk. A failing insurer could thus suddenly shift sizeable amounts of risk back to the banking sector, possibly causing instability. Second, in particularly life and pension insurers have material equity holdings. Failure could imply unwinding of these positions, putting downward pressure on equity prices. In particular the expectation of a sell-off could have a relatively quick impact. Third, the stability of the insurance sector is crucial for the general confidence in the financial system and thus for economic growth. Since insurance firms supply a product with a long lifetime, disturbance of this market would have pronounced external effects (cf. Bencivenga and Smith (1991)). Increased uncertainty could lead to reduced investment. Work by for instance Brunetti, *et al.* (1998) shows that confidence in the “rules of the game” is an important determinant of economic growth. Disruption of the insurance market, especially the life- and pension-insurance market, would certainly deal a blow to the confidence in the financial market. In conclusion, the main arguments for supervision of insurance firms are consumer protection and more general financial stability concerns.

3.4. *Reasons for regulation of financial conglomerates*

The current Dutch regulatory regime for a financial conglomerate is a silo plus approach. Separate requirements hold for the bank, the securities firm, and for the insurance firm, as if they were independent institutions, ignoring diversification. In addition, there are various rules about the organisational structure that apply to financial conglomerate as a whole. In determining the total risk of the financial conglomerate, however, diversification effects should also be considered.¹⁶ Although possible diversification effects are not a separate motive for supervision they would influence the overall risk profiles and would therefore be relevant in supervision of a financial conglomerate.

An aspect of a financial conglomerate that could make regulatory intervention necessary is that of *regulatory consistency*. Regulatory inconsistency could lead to ‘double gearing’, where the same capital, issued by the conglomerate, is being counted twice, to satisfy both banking and insurance capital requirements. Another result of inconsistency is ‘excessive leveraging’, which can occur when debt is issued by the conglomerate and the proceeds are given as equity to the regulated

¹⁴ However, a certain contribution to the system risk may occur in as far as these institutions are heavily involved in credit derivatives.

¹⁵ Banks have liabilities with a short contractual duration combined with longer running assets. Life insurers, in contrast have long-term liabilities while their assets are of a much shorter duration.

subsidiary. Because of regulatory inconsistency a financial conglomerate could shift activities from one of its banks to one of its insurance firms, or vice versa, if the respective capital requirements are lower.¹⁷ Such arbitrage is particularly likely where the regulatory framework for banks and insurance firms differ in measuring risk and determining capital requirements. This may even be the case when the regulatory frameworks would be fully harmonized, as different motives for supervision may lead to different regulatory requirements. Moreover, some activities could also be shifted to unregulated entities within the conglomerate.

A second aspect of financial conglomerates is that financial difficulties in one subsidiary in one sector could have *contagion* or *reputation effects* on another subsidiary in a different sector, especially when using the same brand name.¹⁸ In that case, the conglomerate may be more vulnerable than its constituting subsidiaries. Similar contagion problems may also arise with non-regulated entities in a financial conglomerate. If these entities can expect support when needed, a moral hazard problem arises, as they could be tempted to take on more risk than they would otherwise have done. Non-regulated entities would in a sense lean on the deposit insurance and/or the ignorance of policyholders (the so-called free-rider behavior). Also banks and insurance subsidiaries themselves may expect help from the holding company in cases of financial stress and behave more risky in a financial conglomerate than as a stand-alone institute. These possible contagion and cross-sector moral hazard risks form an argument for supervisory intervention at a financial conglomerate that would be stricter than the rules applying to its composing firms and that would also include supervisory requirements for non-regulated entities.¹⁹

A third set of issues is related to the sheer *size and complexity of financial conglomerates*. First, there is the moral hazard associated with the ‘Too-Big-To-Fail’ position of many financial conglomerates. In addition, it becomes more difficult to manage and understand the operation of a firm as the organization grows. Both these issues are not unique to financial conglomerates. Nevertheless these issues tend to come to the fore because financial conglomerates tend to be large.

Table 1 below gives an overview of the various arguments for supervisory intervention that we have discussed. It is clear that combining banking and insurance within one entity poses additional

¹⁶ For the moment, we will ignore the fundamental measurement problems in integrating bank and insurance risk (*i.e.* a common unit of risk and a common time horizon).

¹⁷ Evidence for such behaviour has recently been presented by the International Association of Insurance Supervisors IAIS (2002). The IAIS concluded, based on a survey, that “Regulatory arbitrage is a factor in the ‘underwriting’ type of transactions but does not appear to be the main driver”. In such ‘underwriting’-activities insurers are actively selling credit protection instead of taking on credit risk through direct ownership of assets with credit risk.

¹⁸ See, for example, the outspoken comments in *The Economist* (2002) in reaction to the loss-leader pricing and reputational fall-out from conflict of interest of analysts at Citigroup.

¹⁹ An integrated supervisory regime for financial conglomerates would raise practical problems, as supervision of insurance firms is based on host country control, whereas supervision of banks is based on home country control. As capital requirements of insurance firms are not based on an international agreement (such as the Basel Accord for banks), domestic and foreign insurance divisions face different regulatory treatment.

challenges for supervisors. In addition to the arguments mentioned, it should be noted that diversification could be an important issue in the supervision of financial conglomerates.

Table 1 Arguments for supervision of financial firms

<i>Banks</i>	<i>Financial conglomerates</i>
<ul style="list-style-type: none"> • Bank runs – deposit insurance (moral hazard) • Lender of last resort (moral hazard) • Consumer protection • Financial stability 	<ul style="list-style-type: none"> • Supervisory consistency • Contagion risk • Size of the firms
<i>Insurance firms</i>	
<ul style="list-style-type: none"> • Consumer protection • Financial stability 	

4. Developments in regulation

The previous section established that supervisors have a stake in the well being of a financial conglomerate. Before we turn to the discussion of the market failures that would cause financial conglomerates themselves to be interested in managing their risk, we will first discuss two relevant issues. First, we will briefly discuss the institutional structure of supervision in the Netherlands. Second, we turn to the regulation aimed at achieving supervisors' objectives.

4.1. Institutional structure of supervision

Historically, as in most countries, supervision in the Netherlands has been organized along sectoral lines. Banking supervision resided at the central bank, de Nederlandsche Bank (DNB), the Pensions and Insurance board (PVK) was responsible for the pension and insurance industry, and the Securities Board (STE) was responsible for the securities firms and the exchanges. As early as 1990, however, supervisors realized that the changing financial landscape necessitated closer cooperation. To this end the pension and insurance supervisor, the PVK, and the banking supervisor, DNB, signed the so-called Protocol. In this document the supervisors agreed to coordinate the supervision of banks or insurance companies in conglomerates. The Protocol contains, *inter alia*, the requirement for financial conglomerates to report on group solvency, risk concentration and intragroup transactions.²⁰

Further consolidation of financial firms and increasingly similar product-lines made policymakers realize that even further coordination of regulation and supervision was necessary. The sectoral supervisors for banking, insurance, and securities formalized cooperation through the establishment, in 1999, of the Council of Financial Supervisors. In the Council, the supervisors coordinate rules and policy not specific to a particular sector. Although the Council has been operating satisfactorily, it recently became evident that an even closer coordination is called for. Since

²⁰ A related issue to those mentioned in the previous footnote is that the Dutch insurance supervisor currently focuses on the legal entity while on the banking side the focus is more on the whole group.

September 1st 2002 a new structure of financial supervision is in place in the Netherlands, no longer primarily organized along sectoral lines, but instead function-based. This function-based model closely mirrors developments in some other countries, where there are also moves towards a more cross-sectoral supervisory model.

The central tenet in the new Dutch model is the distinction between prudential and market-conduct supervision.²¹ Prudential supervision concentrates on the financial soundness of an institution. The aim of market-conduct supervision will be to promote an orderly and transparent process in the financial markets and proper relations between market participants, thereby contributing to the protection of consumers. Systemic supervision will remain the responsibility of DNB. Under the old model, the nature of the financial institution determined which supervisory authority is responsible while under the new function-based model, DNB and the PVK both have a responsibility for prudential supervision. Closer cooperation between DNB and the PVK is currently institutionally embedded by cross-representation in their highest executive and supervisory bodies. The member of the Executive Board of DNB responsible for supervision and the chairman of the Board of the PVK each have been appointed in to the other institution's Board. The same cross-sector appointment applies to the chairmen of the Supervisory Boards of both institutions. Moreover, closer coordination of auxiliary services and joint research projects have been initiated. A special area of cooperation is the joint supervision of financial conglomerates. Further integration of both organizations is envisaged.

The Securities Board meanwhile is evolving from the supervisory authority for the securities activities into an integral, cross-sector authority for conduct of business supervision, taking on a new name: the Authority for Financial Markets (Au-FM). The Council of Financial Supervisors will remain as a consultative platform for common concerns such as integrity issue like customer due diligence and anti money laundering, new developments in supervision, and the evaluation of legislation and agreement on international operations. The new supervisory model does not entail any changes in the existing relations between the supervisory authorities and the Minister of Finance, nor between Parliament and the Minister. The concept of 'supervision at a distance' remains as important as ever for the independent and expert exercise of supervision on the financial sector.

4.2. Regulatory policies

Regulation of financial conglomerates is changing as well. In the European community, community law supersedes national law. Once a Directive has been passed in the European parliament, national authorities have to enact these European laws in national legislation. Presently, the European Commission has proposed new regulation for supervision of financial conglomerates which will supplement regulation covering banking, securities, and insurance (EC (2001)).

Instruments that have been defined in the new legislation are group-wide solvency requirements, reporting of large counterparties and intra-group transactions and, last but not least, standards for internal organization and control. An important function that will be created is that of a coordinator selected from the supervisors involved. Such a coordinator will for instance collect and distribute prudential information, assess group-wide information and coordinate supervisory activity especially in times of stress. As noted in section 2, the proposed definition for a financial conglomerate contains a clause that if the balance sheet of the smaller sector exceeds 6 billion Euro, the conglomerate qualifies. The current definition used in the Netherlands is wider: any level of cross-sector activity qualifies a conglomerate as a financial conglomerate.

5. Risk Management in financial conglomerates

5.1. Why manage risk?

In the stylized Modigliani-Miller world of corporate finance textbooks, neither the capital structure nor corporate risk management affects the value of the firm. Investors are able to diversify their invested wealth and a firm will therefore not be rewarded for taking on (or shedding) firm-specific risk. Only the remaining, non-diversifiable systemic risk carries a return. There is thus no reason for a firm to ever alter its risk profile. If market inefficiencies are introduced, however, managing risk and capital structure matter and (may) add value. Five major driving forces can be identified behind firm's risk management: (1) flow of information, (2) taxes, (3) bankruptcy costs, (4) distortions due to contracting problems between firms and investors, and (5) distorted incentives for management due to imperfect contracting between management and shareholders.²² Let us discuss these driving forces in turn.

An important reason why a firm's management would like to invest in a firm-wide risk management system, is the information-flow that such a system can achieve.²³ This information enables management to make better informed decisions on the question where to invest scarce capital in order to maximize profits. It might also make management aware of certain natural hedges (viz. Cumming and Hirtle (2001)). More specifically, it makes it possible to link risk management and capital management, as highlighted by Froot and Stein (1998). In their analysis the desirability of a given investment depends on the extent to which its non-tradable risk is correlated with the non-tradable risk of the institution's portfolio.

A second driving force is that if the tax system is progressive, there is an incentive to smooth earnings to minimize taxes (Smith and Stulz (1985)). Risk management can reduce volatility of

²¹ See DNB (2002) for a more in-depth discussion of the new Dutch institutional setup.

²² See Ligterink (2001) or Cummins, *et al.* (1998) for a further discussion of why firms would engage in risk management. Harris and Raviv (1991) give an excellent overview of the earlier theoretical and empirical work.

²³ This seems to be a quite important argument, both for practitioners and regulators (cf. "Not overlook – concentrations of – significant risks" Joint Forum (1999), "Recognize the interdependent nature of risks" Lam (1999)).

earnings and thus reduce the overall tax burden. If firms are not allowed to carry losses backward or forward for reporting or tax purposes, the ability to smooth will be even better appreciated. Reducing volatility is also likely to increase a firm's debt capacity because the likelihood of a costly bankruptcy will be reduced. Debt holders will thus demand a lower risk premium, increasing the possibility to borrow. Since interest payments are deductible, this will, in turn, increase the tax shield that holding debt supplies.

Third, the existence of bankruptcy costs: management's expectations will incorporate these costs and this is likely to lead to underinvestment.²⁴ Risk management reduces the volatility of earnings and hence the probability of default. This in turn would lead to lower expected bankruptcy cost and thus investment decisions would be closer to optimum.

A fourth driving force is that information asymmetry between contracting firms and financiers could lead to distortions. These contracting problems could occur either prior or post contracting. Prior to contracting, a firm would generally have private information about its credit quality that the market does not have. Overcoming such informational asymmetry makes external financing expensive so that firms do not undertake all projects with a positive net present value (Myers and Majluf (1984)). A similar divide runs between old and new shareholders. Accurate measurement of risk and returns, with accompanying disclosure, could persuade financiers to invest in the firm.

After contracting, there is an incentive for the equity-holders to change the risk-profile of the firm. From their perspective, each additional 'unit of risk' is typically expected to add value because of the equity-holders' limited liability. Debt-holders, however, are aware of these incentives and thus ask for a risk-premium. This would, compared with optimum, lead to underinvestment. Adherence to a strict policy to limit risks would reduce this problem (as long as such policies are credible).

A final reason why the investment decision can be distorted and thus a firm-wide risk management system could be helpful, is because of the so-called principal-agent problem: the informational asymmetry between a firms' management (the agents) and its owners (the principals), the equity-holders. It is difficult for the principal to assess the ability (or effort) of management, even ex-post. Accurate and transparent risk management would make it easier for the equity holders, the principals, to reveal management's role.

A conclusion that can be drawn from the presented literature is that trying to control the volatility of cash flows is worthwhile. Tax considerations, bankruptcy costs, and various forms of asymmetric information can cause hedging behavior to add value for stakeholders. Most of the literature assumes shareholders to be the only stakeholders but this restriction can generally be eased without loss of generality.

5.2. How to manage risk

Risk management presupposes adequate risk *measurement*.²⁵ Risk measurement, however, still differs across banking and insurance activities within financial conglomerates, reflecting, among other things, differences in the dominant risk types that have traditionally been faced. Banks used to focus mainly on credit risk, with more recently some attention for other risks such as market, interest rate, and operational risk. Insurance companies, however, mainly focused on insurance risks, with recently more attention for risks on their asset side. To construct a common risk language across the whole of a financial conglomerate, differences in the sector specific frameworks should be identified and, if possible, agreement should be found consistently covering all relevant risks.

Risk measurement typically starts bottom-up in the different business lines within a financial institution. An example is the Value-at-Risk (VaR) models for market risk, common in banking. VaR was first introduced on trading floors of investment banks but is currently widely used in other areas. A consequence of the bottom-up approach is that each individual risk area is identified individually and, consequently, its effect on the financial conglomerate as a whole is modeled separately. Since measurement methods have been designed with such diverse backgrounds, coming to a common measure of risk is quite a challenge. Within the industry, however, there seems to be a convergence towards a notion of ‘economic capital’ which could serve as a common risk standard. Economic capital can be defined as the amount of capital that a firm itself deems necessary to support the economic risk (i.e. the unexpected losses) it originates given some tolerance level for default.

Since currently most enterprise wide risk management systems are built upon modular models, it is important to have a classification that covers all risks. Consecutively, a module for each risk area can be developed.²⁶ Many such classifications exist and for the present purposes the exact demarcation between the risks is not relevant as long as all risks in both the banking as well as the insurance sector are encompassed.²⁷ An important remark in this respect is that the modular nature of measurement makes it difficult to easily incorporate diversification effects in the risk measurement framework. Especially this effect is important for a financial conglomerate.

Depending on the type of risk being measured, managers can use value-at-risk, earnings-at-risk, or stress tests to assess the level of risk. Moreover, correct measurement of firm-wide risk should not only capture risk but also be able to aggregate all relevant risks across an institution. In the aggregation, diversification-effects should be taken into account. Due to its complexity, we will

²⁴ From management’s point of view, bankruptcy poses a major cost, especially if they have invested (human) capital in the firm (Smith and Stulz (1985)).

²⁵ Risk measurement, risk assessment, and risk management are often used interchangeably. Here risk measurement refers to the quantification of risk. Risk assessment is a broader concept in the sense that it also entails interpreting non-quantitative pieces of information. Risk management, in turn, encompasses risk assessment as well as risk mitigation.

²⁶ Ideally we would like to identify all risk drivers (for instance interest rates) and then jointly model the reaction to the volatility in the discerned risk drivers.

²⁷ See Working Group on Economic Capital Models (2002 forthcoming) for a comprehensive typology of applicable risks.

presently not discuss the technical details of adequate measurement in depth. Some remarks about the most important issues in risk measurement for financial conglomerates are however in order.

First, to come to a valid comparison of risk, the *evaluation period* should be comparable across risk-areas. The horizon over which risks are assessed is generally much longer in insurance than in banking. Another issue is the *accurate measurement of returns*, which is essential for risk measurement. Many assets and liabilities do not have an easily observable market price. Fair value accounting might partly solve this problem if a reasonable, approximate price can be determined for non-traded assets and liabilities. Third, what is a reasonable *frequency to compute economic capital*?²⁸ Theory tells us that for each individual investment, a firm should compute all relevant parameters (Froot and Stein (1998)). For all practical purposes, this is not feasible and many parameters will be determined only periodically. Finally, in many risk areas new measurement methods are continually developing. Operational risk, for instance, has seen considerable development. Business risk, however, is generally still a residual risk category, notionally motivated by intoning the business environment. How do we combine information deriving from *systems in different states of maturity* (cf. Cumming and Hirtle (2001)).

Once management has an adequate view of risks present, objectives can be formulated. Risk management objectives can then be achieved along three ways: a firm can (1) modify its mix of activities or processes, it can (2) adjust its capital structure or it can (3) hedge directly (using a financial instrument or insurance contract). These actions are not mutually exclusive but rather they can be seen to complement each other. Note that the choice of ‘production methods’ could also include accounting choices. Petersen and Thiagarajan (2000) present evidence that sometimes firms use accounting choices to reduce the volatility of accounting income. With regard to the capital structure it is obvious that one way the capital structure can be adjusted is through dividend policy. Another more direct way is through placement or buy-back of either equity or debt.

6. Risk Management in the ‘Supervisory Review’

As is well known, the proposed capital accord for banks (Basel II) comprises three pillars.²⁹ The first pillar is designed to set minimum solvency requirements, possibly using bank’s internal models. In the second pillar, the Supervisory Review, the institution under supervision and the supervisor enter into a dialogue about the required level of economic capital, after jointly setting the solvency level desired. Through disclosure of relevant information, the third pillar, Transparency, serves to enable

²⁸ An issue here is, as noted by Kritzman, *et al.* (2001), that risk is measured as the uncertainty surrounding returns at the end of a set period. Such a focus on the end-outcome ignores the effects of interim losses, no matter how severe. It thus assumes that a firm is capable to withstand any level of interim loss.

²⁹ BCBS (2001)

stakeholders to take remedial action.³⁰ An important practical issue is, off course, the chosen supervisory model, a point we will return to at the end of this section.

The second pillar constitutes a codification of the essence of prudential supervision. First, banks themselves are expected to be able to assess the amount of – economic – capital required, apart from any regulatory requirement whatsoever. This is an essential difference compared to the present approach in that it is no longer the supervisor giving detailed prescriptions but that the institution has its own responsibility. Second, supervisors, too, must be capable of forming an opinion. Such a judgement should not be confined to an evaluation of the process followed by the banks in assessing the economic capital requirement, but extend to the adequacy of the resulting economic capital level as well.

The general spirit of the Supervisory Review approach could also be applied to insurance firms and hence to the whole of a financial conglomerate. The Dutch pension and insurance supervisor (PVK) has drawn up general principles that are very much in line with the Basel proposal.³¹ Moreover, KPMG, in a study for the European commission, and Oliver, Wyman & Company, in a study for Dutch regulators, echo the same sentiments (KPMG (May 2002) and OWC (2001)). The present requirements for an insurer's technical provisions, for instance, can be seen as an analogue to the Pillar 1 minimum capital requirements. In addition to these minimum requirements, additional capital charges are levied for risks that are not fully captured in actuarial modeling. However, given the ample margin between actual and regulatory capital it seems that in the industry's view not all risk are currently captured in the regulatory assessment of capital. An example of a risk that is not captured (sufficiently) could for instance be concentration risk. If it is clear that this risk is present this should give rise to additional capital charges.

In the Basel II Consultative Package, the Supervisory Review is defined as proceeding from four General Principles which can briefly be stated as: (1) banks themselves should assess how much capital they require, (2) the supervisors must review and evaluate the process involved by the assessments performed as well as the capital adequacy determined by banks, which in practice is likely to imply that (3) the solvency requirement as assessed by the firm would be expected to exceed the minimum requirement according to Pillar 1 and, finally, (4) the supervisors must be able to intervene at an early stage before developments have reached a critical point.

Although all four General Principles merit separate attention, we will presently discuss the general framework with a focus on General Principle 2: how would a supervisor assess an institution's risk assessment and capital policy? General Principle 1 has already been worked out to some extent in

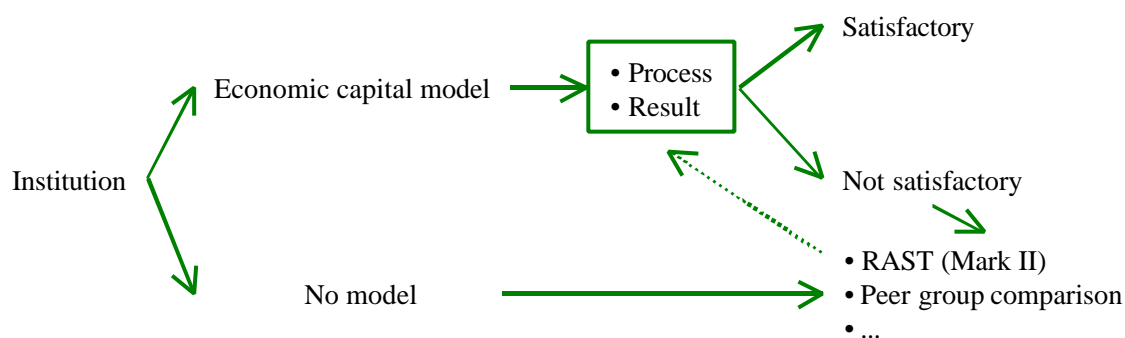
³⁰ This last pillar also increases attention for, what may be defined as, 'rating agencies capital', i.e. the amount of capital required to maintain a given rating.

³¹ PVK (2001), p.9. These general principles, however, still have to be worked out in detail.

numerous general guidelines and ‘best practice’ papers like, for example, Federal Reserve guidelines for reviewing economic capital assessment methods (Board of Governors of the Federal Reserve System (1999)). Although formulating more detailed guidance would definitely be useful, this would go beyond the purpose of the present paper.

A possible general framework to implement a Supervisory Review might follow the steps shown in figure 2. Financial conglomerates would be expected to employ an internal model to determine economic capital. Supervisors would not require a financial conglomerate to use a separate, obligatory model to determine economic capital and adequate implementation of General Principle 1 thus suffices.³² The supervisor’s role would be to assess the adequacy of the process through which the institution determines economic capital. This assessment would be comprehensive and include measurement and capital management policy. In addition to assessing the process, the outcome (i.e. the level of economic capital) would also be assessed by the supervisor.

Figure 2 Steps towards determining the approach to be adopted by the supervisor



It is important to also bear in mind that enterprise-wide risk management is currently the preserve of the more sophisticated (i.e. larger) financial conglomerates. The wide definition currently proposed by the EU-commission implies however that most financial conglomerates will not have implemented such a system. For institutions not using adequate models (‘no model’ in figure 2), supervisors shall need to form a judgement. This implies that supervisors must work towards a more comprehensive implementation of General Principle 2. To this effect, the Dutch supervisors are still considering whether to extend the present risk analysis (RAST), or opt for an entirely novel method possibly involving peer group comparison.

Internationally, supervisors use different methods for assessing an institution’s degree of risk. A well known categorization for bank risks is the one used by three major US regulators³³: the CAMEL rating. The components are Capital, Asset Quality, Management, Earnings and Liquidity and

³² Cf. FSA (2002), p.33 where output from banks’ economic capital models “may be used as a substitute for determining capital in certain aspects ...”

³³ The supervisors are the *Federal Reserve, Office of the Comptroller of the Currency and Federal Deposit Insurance Corporation*.

are seen to reflect the financial performance, financial condition, operating soundness and regulatory compliance of the banking institution. In 1996, in order to make the rating system more risk-focused, a sixth component relating to Sensitivity to market risk was added to the CAMEL rating, resulting in CAMELS. Each of the component factors is rated on a scale of 1 (best) to 5 (worst) and these components are combined somewhat subjectively in to a single rating, on a scale from 1 to 5. Many other systems are using categorizations that are more or less compatible.

The Dutch supervisors have taken a slightly different tack for some time now.³⁴ DNB has a comprehensive Risk Analysis methodology in place, supported by a flexible Risk Analysis Software Tool (RAST). The pension and insurance supervisor, PVK, has a methodology (MARS) that is still in the development stage. Presently the Dutch banking supervisor and the pension and insurance supervisor are merging their respective approaches. For the merged approach the exact delineation of the risk areas differs because, contrary to the American bank-focussed CAMELS, insurance risks have to be explicitly accommodated, but this is a relatively innocuous point. More importantly, a clear conceptual difference is drawn between risks on the one hand and mitigating controls on the other. This practical distinction does not conflict with the theoretical treatment of risks in the literature. Controls can be seen as a way to avoid negative returns and can thus be seen as part of the investment-decision that is central in most theoretical papers.

The present risk analysis methodology is well suited to channel supervisory attention to those areas within a financial institution that are either opaque or risky from a supervisory standpoint. To move forward to Pillar 2 capital requirements, however, will be quite a challenge.³⁵ First, the current method to aggregate individual scores to an overall score is designed to highlight extreme valuations, especially bad evaluations. However, if, based on the score from the risk analysis, – additional – capital requirement will levied, a suitable aggregation algorithm should be devised. Second, once a supervisor has determined the relative riskiness of an institution, he has to take the next step and move from the risk assessment to capital. How does one translate an assessment into a capital requirement? Third, once the appropriate capital level has been determined, it has to be communicated to the institution whether the institution's own assessment of capital is deemed adequate. One option is to withhold comment as long as the institution's capital ratio is above the regulatory minimum. As long as this is the case, discussing capital with the institution is relatively easy for the line supervisor. However, since the assessment is an iterative process, it is conceivable that firms will try to sound out where the regulatory minimum lies. In the end the institution would find out where the minimum lies at the cost of some, possibly costly, uncertainty. Other important questions that remain to be answered are whether a supervisor can use an internal economic capital model without too many modifications

³⁴ Both Dutch approaches are similar in spirit and akin to ARROW, the English FSA's approach. The Norwegian and Swedish supervisors are developing risk analysis systems along very similar lines.

³⁵ Cf. FSA (2002) for thoughts on how the transformation could be achieved.

and whether a supervisor should be able and willing to adequately replicate an institution's model or whether this is a lost race to begin with. It is clear that many challenges remain.

The described framework will also be evolutionary. If internal developments in the supervised conglomerates warrant this, the supervisor will be able to rely more and more on the internal models of the firms. Key ingredient in this "supervision at a distance" is good corporate governance. Only if the corporate governance structure is judged sound, the results of the internal models can be incorporated in the supervisory review. Another development in this area is the convergence in supervisory practices. Since financial conglomerates have numerous supervisors, the supervisory approach, as seen from the perspective of the firm, will become more consistent as supervisory practice converges. Since a clear supervisory treatment is also in the interest of the supervised institution, since it reduces uncertainty, a converged approach can also start on a voluntary basis as is for instance the case for Fortis. Fortis is a party in the MoU's between the Dutch and Belgian sectoral supervisors involved in this Dutch-Belgian financial conglomerate and voluntarily supplies extra information to the supervisors.

Presently, the Dutch supervisors are studying a number of the outstanding issues. Following the OWC (2001) study, Freshfields, a law firm, was asked to investigate the effectiveness of legal firewalls between the legal entities constituting a financial conglomerate. If such firewalls could protect some parts of the conglomerate from adverse shocks occurring in other parts of the conglomerate then the threat of contagion could be reduced. Another initiative is the Working Group on Economic Capital. In this group representatives of industry, both banking and insurance, and supervisors are jointly investigating 'best practice' for economic capital models in the Netherlands. The first report, describing how risks are measured in financial conglomerate, will be published shortly (Working Group on Economic Capital Models (2002 forthcoming)). Together with future reports, the Working Group's work should sketch a comprehensive picture of economic capital models and their uses.

7. Conclusions

Financial conglomerates have become an important part of the financial landscape in a number of countries. In the US the restrictions on cross-sector mergers have been eased only recently. In Europe such restrictions were lifted somewhat earlier and have, in some European countries, led to financial conglomerates with significant market shares and of impressive size.

Sheer size alone however does not warrant the wide-ranging regulation and supervision that is applied to banking and, to a lesser extent, to insurance. We discussed a number of reasons that have been cited in the literature for regulating and supervising financial institutions, summarized in table 1. For banks, the arguments discussed were the possibility of bank runs, of systemic crises, of moral

hazard due to a lender of last resort, and consumer protection concerns. For insurance firms, the main argument is consumer protection. Bringing banking and insurance together in a financial conglomerate yields the risk of supervisory inconsistency and of contagion risk. An ameliorating factor is that the combination of diversified (i.e. less than perfectly correlated) activities will result in a diversification bonus. However, there are also concerns related to the size of financial conglomerates. Since many conglomerates are large, the moral hazard of Too-Big-To-Fail-attitudes arises, resulting in additional risk.

After discussing the reasons for regulation and supervision, we turned to the institutional set-up of supervision in the Netherlands. It is clear that, following the trend in the Dutch banking and insurance markets, the institutional set-up had to be adapted accordingly. In a number of steps, the sectoral supervisors have come to a structure based on functional activity. There are two bodies responsible for prudential regulation and supervision: the Dutch central bank (DNB) and the Pensions and Insurance Supervisory Authority (PVK), currently linked through executive cross-representation and a Memorandum of Understanding. The Netherlands Authority for Financial Markets (Au-FM) is responsible for market-conduct. Such a structure should result in efficient regulation and supervision of financial conglomerates as well as for firms operating in just a single sector.

Financial firms have their own reasons to care about their risk profile. In the classical world of a Miller and Modigliani textbook, the capital structure of a firm is irrelevant. If investors are interested in less risk they can reduce risk by diversifying their portfolio. The firm is thus only rewarded for that part of a firm's risks that is not diversifiable (i.e. systemic risk). Firms, however, do care about their risk profile because reality deviates from the perfect world assumed by Miller and Modigliani. Information flow, taxes, bankruptcy costs, information and incentive imperfections all supply motives for managing risk.

Both supervisors and the industry are thus interested in the management of risk. The question is how to converge to a modus operandi that allows for the most efficient way to achieve the stated objectives. The Supervisory Review, as proposed in the new Basel Accord, suggests a framework that would seem to be fruitful. The central tenet in the Supervisory Review is that it is the responsibility of the supervised institution itself to have a proper measure of risk and how to manage this risk. The role of the supervisor is thus no longer one of supplying detailed guidelines but focuses more on analyzing the integrity of the risk management process as a whole, including the resulting capital level. A necessary condition for the incorporation of internal models in the Supervisory Review is that the corporate governance is adequate. Only then can we rely on "supervision at a distance".

The question how to judge a firm's economic capital model, however, has raised numerous issues that still have to be addressed. Issues are, amongst others, the accurate measurement of returns, the evaluation period, the frequency of computation, and the different states of maturity of methods

across different risk areas. Together with the industry, the Dutch supervisors hope to find solutions to these issues. These solutions will not only be useful to industry but will help the supervisors to come to better assessments of the risk management processes and the resulting capital levels.

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