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The Emergence of Cross-Border Insurance Groups within Europe with Centralised Risk Management

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Abstract

This paper analyses the degree of internationalisation of insurance business. Using a novel dataset of 25 large EU insurance groups, we find that the insurance industry has a strong international orientation. About 55 per cent of the business of these large insurance groups is conducted abroad. The cross-border activities are predominantly within Europe (30 to 35 per cent) and less so in the rest of the world (20 to 25 per cent). Next, this paper examines the impact of internationalisation on the organisational structure. We find a clear trend towards centralising risk and capital management activities within large insurance groups, though insurance remains at the same time a local business. Applying the hub and spoke model, we identify which functions are executed at the centre (hub) and which functions are performed at the local business units (spokes).

Keywords: insurance companies, international business, organisational structure.
JEL Classification: F23, G22, L22.

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1. Introduction

The globalisation of financial institutions has accelerated over the last two decades. While there is a widespread literature on the globalisation of banks (e.g. Moshiran, 2006; Berger and DeYoung, 2006), hardly any studies have examined the degree of the internationalisation of insurance companies. The aim of this paper is to fill this gap by exploring the current state of cross-border activities of individual insurance companies.

The empirical analysis in this paper is based on a new data set, comprising a cross-section of the 25 largest EU insurance groups. In the literature, internationalisation is often measured by examining in how many countries financial groups provide one or more of their services (e.g. Berger *et al*, 2003). In this paper, we take a different approach based on earlier work (Schoenmaker and Oosterloo, 2005). The level of cross-border penetration of insurance groups is measured using the Transnationality Index (TNI) developed by Sullivan (1994). The TNI is an unweighted average of three indicators (assets, revenues and employees) and measures foreign activity of an insurance group as a percentage of total activity of that insurance group. The TNI provides a relatively full and stable measure of cross-border activity.

Next, we examine how internationalisation affects the organisational structure of insurance groups. The international presence may induce a growing demand for coherent policies and a central steering mechanism within the organisation. With respect to risk management, one of the major developments has been the shift to a more holistic approach. Such ‘enterprise risk management’ has also led to the wider adoption of Chief Risk Officers. However, the insurance business still has a strong local focus, as most countries differ with respect to the applicable rules and regulations, social security systems, language, culture, etc. To gain insight in the organisational changes, in-depth interviews with top managers of a number of large European insurance groups were conducted.

The remainder of the paper is organised as follows. Section 2 examines the current state of cross-border activities within the EU insurance market. After examining the existing literature, we present the data on individual insurance groups. Section 3 presents the findings of the in-depth interviews on the organisational structure of large EU insurance groups. In the final section, we discuss the implications of our empirical findings and draw conclusions.

2. Measuring cross-border activities of the European insurance industry

2.1 Internationalisation

Generally, it is found that insurance groups are relatively internationally oriented. Van der Zwet (2003) examines the geographic distribution of revenues of the 38 largest financial groups worldwide in 2000. She finds that insurance groups are significantly more internationally oriented than banks. Whereas the banks have a clear home bias (earning on average 61% of their revenues in their home country), insurance companies have a foreign bias (earning 65% of their revenues in host countries). Moreover, it appears that European financial groups are more strongly internationally oriented than their American and Asian peers. Van der Zwet argues that this may be due to the internal market for financial services; when Europe is treated as one country, EU financial groups are as much focussed on foreign markets as financial groups located in Japan, Hong Kong, Australia and the USA. Other studies, such as OECD (2005) and CEA (2005), confirm that the European insurance industry is strongly internationally diversified.

While aggregate data on cross-border penetration of insurance companies are generally available, no attempt has been made to analyse the cross-border activities of individual insurance groups. However, aggregate data might hide significant differences between the international activities of individual insurance firms. The aim of the empirical investigation of cross-border business of insurance firms is twofold. First, what is the trend in the insurance industry? More particularly, has cross-border business increased since the establishment of EMU in 1999? Second, what is the current share of cross-border business of individual insurance firms? How many 'European' insurance groups have emerged? In order to answer the first question we examine aggregate data on the cross-border penetration of insurance groups in Europe. The second question is answered by examining the foreign activities of a cross-section of individual insurance groups.

The literature on the internationalisation of financial services is extensive, but mostly focuses on banks (see Moshirian, 2006, for an overview). A first line of research examines the patterns of foreign direct investment (FDI). How large are the flows into financial institutions in (emerging) economies and what is the impact on the financial system of these economies? A second line of research looks at the cross-border expansion of individual financial institutions. Internationalisation can be measured by examining a specific aspect of the international activities of a financial group. A separate approach is to look at the full set of activities of financial institutions. In the literature on multinational firms, Sullivan (1994) reviews 17 studies estimating the degree of internalisation based on a single item indicator.

Using just a single indicator increases the possibility for errors, as the indicator could, for example, be more susceptible to external shocks. Sullivan develops the Transnationality Index, which is based on three indicators (see below). The Transnationality Index provides a full and stable measure of internationalisation. Slager (2004) and Schoenmaker and Oosterloo (2005) have applied this Index to banking. Extending earlier work, we follow this approach and apply it to insurance groups.

Transnationality Index

We have collected a data set on cross-border penetration of 25 large EU insurance firms, based on the Transnationality Index (Sullivan, 1994). This Index is calculated as an unweighted average of (i) foreign assets to total assets, (ii) foreign income to total income and (iii) foreign employment to total employment.

The indicators are constructed as follows:

- *Assets:* This indicator is composed of goodwill, the investments of the group companies, asset backing contracts with the financial risk borne by policyholders (unit-linked), investments from non-insurance activities, investments in affiliated companies, reinsurers' share of insurance liabilities, receivables, cash and cash equivalents, prepayments and accrued income, and the remaining other assets.[1]
- *Revenue:* This indicator is based on the total gross or net written premiums in a year, depending on which standard is used in the geographical analysis of the report.
- *Employees:* This indicator measures the average or year ends' number of employees, depending on the data availability.

We use all the information we have available for individual insurance groups. For some insurance groups we have information on all three indicators, for others we have information on two indicators and for a couple we only have information on one of the indicators. If data on one (or two) indicator(s) is available, only this indicator is used.

It is interesting to distinguish between regional expansion (e.g. within the European Union) and global expansion of insurance groups. The data on the Transnationality Index is therefore broken down into activities in the home market (h), the rest of Europe (e), and the rest of the world (w).

[1] In situations where it is impossible to separate the specific assets of the insurance activities of large financial conglomerates, bank assets have also been included.

Classifying insurance firms

Following the geographical breakdown of activities, insurance companies are classified as domestic, regional or global firms in this paper. Domestic firms are defined as follows:

1) more than 50 per cent of their business is conducted in the home market ($h > 0.5$)

This first criterion makes a distinction between domestic and international insurance firms. Firms that conduct the majority of their business in their home country are regarded as domestic firms. International firms are divided into regional and global insurance firms. Regional firms are defined as:

1) 50 per cent or more of their business is conducted abroad ($h \leq 0.5$)

2) 25 per cent or more of their business is conducted within the region ($r \geq 0.25$)

The second criterion identifies regional insurance firms among the international ones. International firms that have a sizeable part of their business in the rest of the region (e.g. Europe) are regarded as regional insurance firms ("European firms"). The total business of an insurance group in the region is a sum of the home activities and the activities in the rest of the region ($h + r$).

Global insurance firms are then defined as:

1) 50 per cent or more of their business is conducted abroad ($h \leq 0.5$)

2) less than 25 per cent of their business is conducted within the region ($r < 0.25$)

The remaining group of insurance firms is of a global nature. These firms have no gravity of business at home or in the rest of the region. They operate on a truly global scale. Our classification only distinguishes between domestic, regional and global insurance firms. A further distinction could be made by counting the number of countries in which international firms are operating (Sullivan, 1994). As the focus of this paper is on domestic versus international insurance activities, we do not include this further breakdown.

INSERT TABLE 1

2.2 Data on cross border activities

To analyse the geographic segmentation of EU insurance groups, we examine the consolidated income statements and balance sheets of the 25 largest EU insurance groups. The top 25 of EU insurance groups is selected on the basis of gross written premium in 2005. The data are taken from the annual reports of these insurance groups.

Table 1 presents the outcome of the analysis of the cross-border penetration of 25 large EU insurance groups. To interpret the data in Table 1, we first make a distinction between domestic and international insurance groups. As defined in the previous section, an insurance firm is ‘international’ when 50% or more of its business is conducted abroad ($h \leq 0.5$). In Table 1, the insurance groups that are considered to be ‘international’ have been shaded grey. It is shown that over the sample period about half of the insurance groups can be labelled as being ‘international’. This finding corresponds with earlier research (such as Van der Zwet, 2003), which suggests that EU insurance groups have a strong international focus. Table 1 shows further that there is a specific focus on the European continent within the international activities.

Table 2 divides the ‘international’ insurance groups into two categories: (i) European insurance groups ($e \geq 0.25$) and (ii) global insurance groups ($e < 0.25$). This table shows that in 2000 8 insurance groups can be regarded as ‘European’. In the following years this number shows a slight increase. In 2003 the number of insurance groups that can be regarded as ‘European’ rises to 9 and in 2005 to 10. The number of ‘global’ insurance groups is fairly constant; it varied between three and four over the sample period. The overall conclusion is that most of these ‘international’ insurance groups can thus be regarded as ‘European’. Over the whole sample period about three quarters of the ‘international’ groups can be labelled as a ‘European’ insurance group.

INSERT TABLE 2

Sensitivity analysis

Although the criteria for classifying insurance groups are intuitive, they are somewhat arbitrary as well. We therefore conducted a sensitivity analysis. To see whether more insurance groups have ‘significant’ cross-border business in the European context, the criteria are lowered by 10% and by 20%, respectively. An insurance group is then classified as an ‘international’ insurance group if it conducts more than 45%, respectively 40% of his business abroad ($h \leq 0.55$; $h \leq 0.60$). In this case an insurance group is regarded as ‘European’ as it conducts more than 22.5%, respectively 20%, of its business in the rest of Europe ($e \geq 0.225$; $e \geq 0.20$).

INSERT TABLE 3

Table 3 shows the result of this sensitivity analysis. It reproduces the number of groups that would be regarded as European under the relaxation of the criteria and identifies the insurance

groups that would have been added. We find that only one or two European insurance groups are added under the 10% and 20% relaxation of the criteria.. This finding suggests that our results are somewhat, although not excessively, sensitive to the choice of the criteria.

The insurance market: degree of internationalisation and trends

Figure 1 presents a weighted average of the cross-border activities of the 25 large EU insurance groups. Figure 1 shows that these EU insurance groups, which account for approximately 60% of total European premium volume, are very internationally oriented. In 2005 merely 46% of total group activities is conducted in the home country (h=0.46), which means that 54% of the group activities is performed in host countries. The international activities are predominantly within Europe (e=0.33) and less so in the rest of the world (w=0.21). These figures differ from the cross-border activities of EU banks. Schoenmaker and Van Laecke (2006) find a stronger home bias (h=0.55) for the 30 largest EU banks and a lower European component (e=0.23) and a slightly higher global component (w=0.25). It is clear that the insurance sector is more internationally oriented than the banking sector. These conclusions are in line with the results of Van der Zwet (2003).

Figure 1 Development of the degree of internationalisation (weighted average)

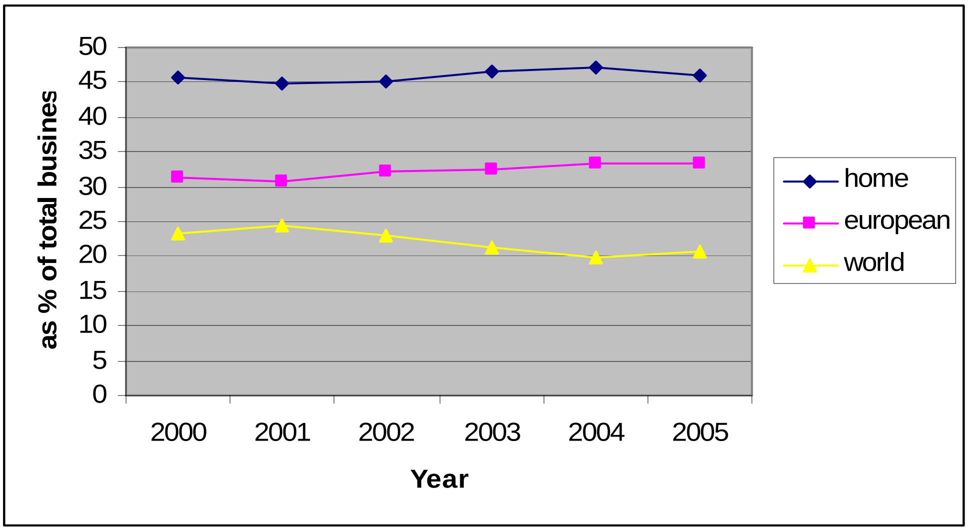


Figure 1 gives an overview of the development of the business over the different geographical areas. We find that the activities in the home country remain at the same level and that the activities conducted in the rest of Europe are slightly increasing from 31% in 2000 to 33% in 2005. The percentage of business conducted in the rest of the world decreased from 23% in 2000 to 21% in 2005. This decrease can be explained by the economic downturn in 2000, i.e. foreign activities were closed down to cut costs. Of these trends, both the increase in EU

activities and the decrease in business in the rest of the world are significant at the 5% level (p=0.008 and p=0.017).

3. Organisational issues

The international activities of insurance groups poses challenges to maintaining the oversight of the group activities (i.e. the risks the group is exposed to, risk diversification possibilities and the management of the group). This may fuel the demand for more coherent policies and a central steering mechanism within the organisation. However, insurance is very much a local business, as insurance is to a large extent influenced by country specific factors, such as the applicable rules and regulations, social security systems and fiscal treatment, which requires a more decentralised approach. In this section we examine the consequences of internationalisation on the organisational structure of insurance groups. In particular we focus on the organisation of risk management and asset management functions, as these are the core elements of finance. We first reviewed the chapters on risk and asset management in the annual reports of our sample of insurance companies. Next, we conducted in-depth interviews with top managers of four large European (re-)insurance groups (i.e., Aegon, Fortis, ING and SwissRe) to gain further insight in the organisational structures.

3.1 Integration of risk and capital management functions

The organisational structure of international financial firms is moving from the traditional country model to a business line model with integration of key management functions. One of the most notable advances in risk management is the growing emphasis on developing a firm-wide assessment of risk. These integrated approaches to risk management aim to ensure a comprehensive and systematic approach to risk-related decisions throughout the financial firm. Although costly to realise, Flannery (1999) argues that once firms have a centralised risk management unit in place, they should expect to reap economies of scale in risk management. Nevertheless, these centralised systems still rely on local branches and subsidiaries for local market data. The potential capital reductions that can be achieved by applying the advanced approaches of the new Basel II framework encourage banking groups to organise their risk management more centrally. The same could also be true for the future Solvency II framework for the European insurance industry. Drzik (2005) argues that, as insurers consider how to implement new ways to measure and manage their business, they would do well to heed the lessons learned in the banking industry, which has been on a similar path for the last decade. Firms that implement a well constructed risk and capital management framework can derive significant near term business benefits, and substantially strengthen their medium-term

competitive position. The emergence of Chief Risk Officers at the head-quarters of large insurance groups confirms this trend towards centralisation.

Kuritzkes, Schuermann and Weiner (2003) provide evidence that internationally active financial conglomerates are putting in place centralised risk and capital management units. The dominant approach is to adopt a so-called ‘hub and spoke’ organisational model. The spokes are responsible for risk management within business lines, while the hub provides centralised oversight of risk and capital at the group level. Activities at the spoke include the credit function within a bank, or the actuarial function within an insurance subsidiary or group, each of which serves the front-line managers for most trading decision-making.

These managers are familiar with the local conditions such as the business cycle (relevant for credit risk) and the legal and social security framework (relevant for actuarial risk) in a country. Moreover, aggregation across risk factors within a business line also typically takes place in the spokes, often in a finance unit that is responsible for funding and business reporting for the subsidiary. While the hub is dependent on risk reporting from the spokes, in many cases it is also responsible for overseeing the methodology development of an integrated economic capital framework that is then implemented within the spokes. The specific roles of the hub vary, but tend to include assuming responsibility for group-level risk reporting; participating in decisions about group capital structure, funding practices, and target debt rating; liaising with regulators and rating agencies; advising on major risk transfer transactions, such as collateralised loan obligations and securitisations; and in some institutions, actively managing the balance sheet. A case in point for insurance firms is group-wide asset and liability management done at the head-quarters (hub).

In-depth interviews

This shift to a more holistic approach is confirmed by the interviews that were conducted. Most insurance managers indicate that they experience a clear trend towards centralisation of risk and capital management processes. Recent developments in the field of accounting (for instance the introduction of IFRS and Sarbanes Oxley Act in the US) and in supervision (Solvency II) make that this trend will continue in the near future. Moreover, as insurance groups operate in various different countries, the need for a coherent policy regarding risk and capital management is increasing. This in turn has led to the adoption of Chief Risk Officers (CRO) in large insurance groups.

Hub functions

The hub accommodates decisions and responsibilities for the group as whole at a central level in the organisation. Based on the annual reports and the interviews, we find that large insurance groups have a distinct central risk management framework in place. However, we also find great differences between the responsibilities and actual implementation of these frameworks. In some groups central risk and capital management processes are still in its infancy, while in other groups these processes are much more advanced and commonly accepted in the organisation.

All groups use their risk management framework to get an overview and to monitor the group-wide risk exposure. The majority of the groups also use their risk framework for specifying their risk appetite and setting risk management, control and business conduct standards for the group's world-wide operations (i.e. 'the rules of the game'). This group-wide risk appetite specifies some risk tolerance levels. Within these risk boundaries the local units can act more or less independently. Furthermore, group-wide policies regarding risk management enable a broadly consistent approach to the management of risks at business unit level.

The risk management framework encompasses several bodies with their own specific tasks. On top of the central risk management framework is the group risk committee at executive level, with the CEO or CFO as the ultimate responsible. Often this committee is responsible for setting the strategic guidelines and policy for risk management, for monitoring consolidated risk reports at group level and for allocating economic capital[2] to various entities of the group. Sometimes groups also have risk committees below executive level. This may be the case in a financial group with both banking and insurance activities. The group risk committee is then responsible for the group as a whole, while banking and insurance risk committees who report to the group risk committee are responsible for the risk management in the banking and insurance respectively.

Furthermore, many groups also have central or group risk management teams. These teams are responsible for the development and implementation of the risk management framework, for supporting the work of the risk committees, for reporting and reviewing risks and for recommendations in further developments in risk methodologies. Many times, these central/group risk management teams are headed by a Chief Risk Officer (CRO). This CRO

[2] *Economic capital* is defined as the amount of capital an insurance company needs to absorb losses over a certain time interval (e.g. a year) with a certain confidence level (e.g. 99.9%).

oversees all aspects of group's risk management and often reports to the CEO or CFO of the group and is present at meetings of the executive board.

All in all, one could argue that in a great number of insurance groups the hub is responsible for setting out 'the rules of the game'. How the spokes operate within these rules is examined below.

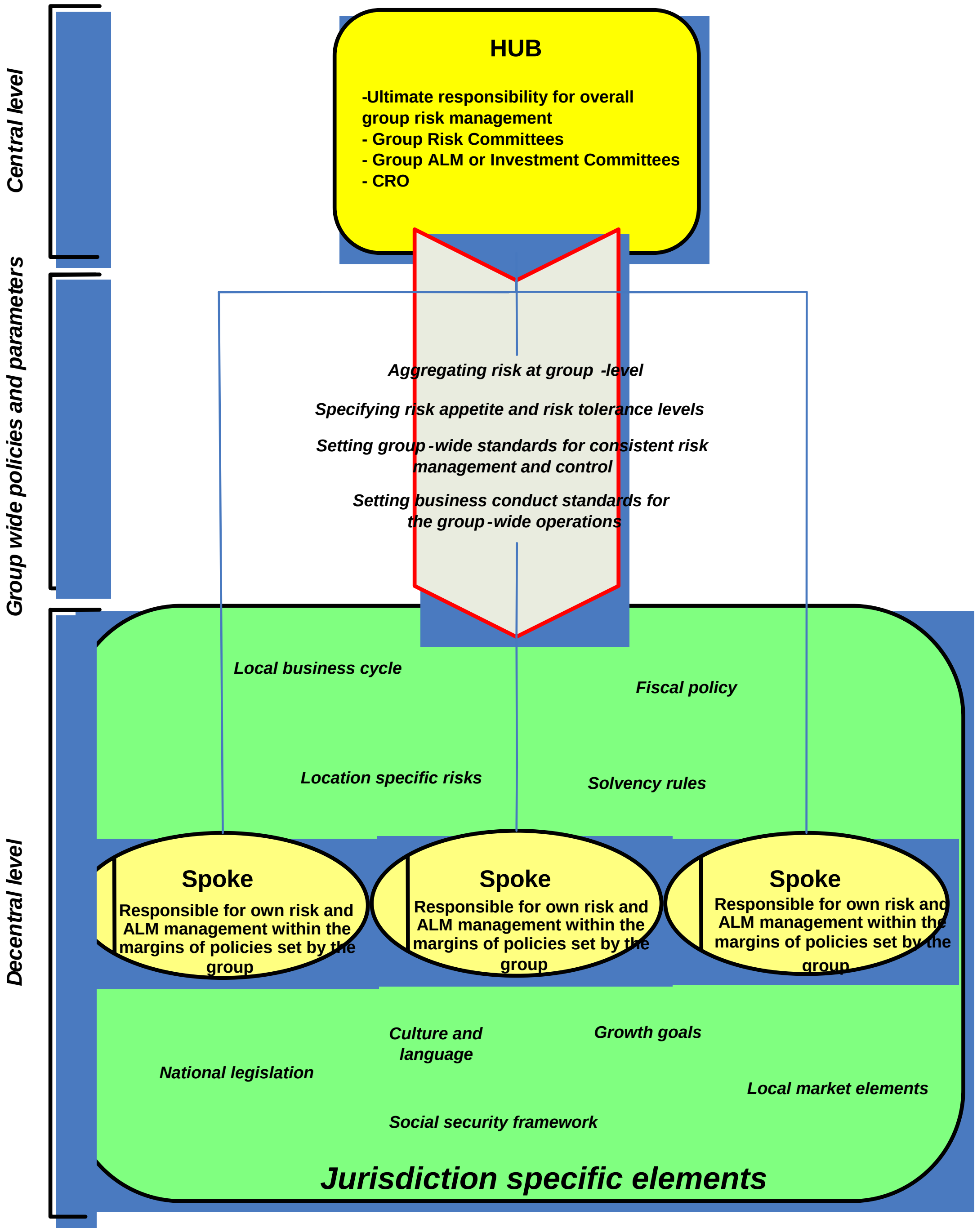
Spoke functions

In the spokes, decisions are being taken on the level of business/country unit. Insurance is very much a local business, with significant differences between the operational environment of the host countries in which the insurance group is active. A number of elements require specific local knowledge and therefore complicate the steering process at a central level. Specific local knowledge is required with respect to national rules and regulations, i.e. legislation regarding fiscal matters, contracts, social security liability, consumer protection, or local risks.

These differences require that a great number of decisions still have to be made at the local business units. In general, the actuary determines the specific risk models at local level. At the group level, these local models are subsequently monitored and assessed. Although the general conditions for determining these local risk models are set at the central level, the local units carry the ultimate responsibility for their risk management. Some groups even have local CRO.

So, despite the emergence of centralised risk management, the risk management practices of the largest insurance groups are still to a large extent influenced by the risk management policies of the local business units. Therefore, in general one could say that the 'rules of the game' are being determined at central level in the hub and that the local managers in the spokes determine 'how the game is actually being played' within the margins of these rules. This general principle is summarised in figure 2. The figure gives an overview of the roles and responsibilities for each level of the organisation, whereby the spokes are placed within a field of jurisdiction specific parameters in order to capture the location specific factors that influence the business decisions.

Figure 2 Organisation of risk and capital management in insurance groups



3.2 Asset management

The picture with respect to asset management is somewhat similar to the developments in risk management. Based on the annual reports and the interviews, we observe a trend towards a more centralised approach to asset management. In a growing number of insurance groups, a holistic approach to asset management is pursued. Gaining economies of scale is an important driver for this trend, as – next to the 'usual economies of scale' – pooling assets can lead to lower transaction costs (i.e. lager deals can be concluded at lower prices). However, this does not mean that all assets of the group enter into the same pool and are managed by a single asset management unit. Only one of the groups that we spoke to has a single asset pool, although others are planning to manage their assets through a single asset management unit. The emergence of large currency areas (i.e. the euro-area) and the integration of European financial markets are mentioned as the most important reasons for this trend.

Hub functions

Often Investment Committees, as well as Asset and Liability (ALM) Committees, at the group level set a group wide policy on asset and liability management with minimum thresholds which the local business units are required to adopt. These committees in the hub ensure that the group-wide standards for asset management are applied at local level. In one insurance group, the group's overall asset/liability exposure is managed by the group's ALM and Investment Committee. The model parameters are managed and tested centrally in the hub and local variations take into account the differences in specific product types. Another group, created a 'chief' for the group's asset management operations. This person does not have 'absolute power' in the asset management decisions but has a coordinating role within the organisation. The creation of this function has led to more consultation and coordination among the different asset management units in the group. However, the manager of this group indicated that for the time being, it is not possible to pool the assets of the whole group in one central asset management unit (although this is the ultimate goal). One insurance group indicated that they are implementing an advanced pooling system in one of their country units. This system enables bulk trading of assets through the pooling of the asset administration. In this system, the assets remain on the balance sheets of the country units while at the same time scale benefits in asset management are achieved.

Some groups have tried to centralise their asset management, but have had to cancel these attempts. An important reason for this is that these groups were confronted with additional costs, as they had to pay additional taxes on internal asset transactions. Another reason can be the lack of confidence between the different geographical units within an insurance group.

Spoke functions
Several groups manage their assets at the local level, while the general policies are determined at the hub. Again, one could say that 'the rules of the game' are being determined at the central level in the hub, while the local managers can determine 'how the game is actually being played' (see figure 2). Local managers have to implement standards and guidelines for ALM that are determined in the hub, but have sufficient flexibility to adapt the general policies to local circumstances. In this way they are able to deal with the diversity of products and differences in regulation and legislation in the different jurisdictions.

With respect to the latter, one could think of restrictions regarding the allocation of written premiums. As a result, not all premiums can be freely invested across the world; a restriction that complicates the asset management from a central location. Therefore, insurance groups may be forced to keep a certain amount of their assets in the various countries in which they do business, irrespective of better investment possibilities elsewhere. However, one should note that most premiums and other assets are freely available and can be pooled and invested all over the world. It can therefore still be beneficial to manage the asset of the group from a central location.

4. Conclusion

The aim of this paper is twofold. First, we explore the current state of cross-border activities of the European insurance industry. Second, we examine how internationalisation affects the organisational structure of insurance groups.

Our data set of 25 large EU insurance groups illustrates that the insurance industry has a strong international orientation. Within a six-year period (2000–05) the number of insurance groups that can be regarded as 'European' is increasing from 8 and 10, when applying our criteria that 50% or more of their business is conducted abroad and that 25% or more of their business is conducted in other European countries. A further 3 to 4 insurance groups can be regarded as 'global' players (50% or more of business is abroad and less than 25% in the rest of Europe). Furthermore, the weighted averages of the geographical segmentation of the insurance business show that about 55% of the business of insurance groups is conducted abroad. These results are in line with conclusions of other studies (e.g. Van der Zwet, 2003), which also find that a substantial part of the activities of the large insurance groups is conducted outside the home country.

We subsequently examine how internationalisation affects the organisational structure of insurance groups. In particular we focus on the organisation of the risk and capital management functions, as these are the core elements of finance. Based on in-depth interviews with high-level managers of a number of large European insurance groups, we find a clear trend towards centralising risk and capital management activities within large insurance groups. First, the size of the organisation as well as the significant international presence result in a growing demand for a centralised view of the group's capital and the risks the group is exposed to. Second, the move to international accounting standards (IFRS) and advanced risk models for capital (Solvency II) give a boost to centralisation. Third, by making optimal use of the available knowledge in the organisation, a group-wide framework can be established, which is often reflected by setting central parameters in which the local business units have to act. Many insurance groups have group wide frameworks (or indicate that they work on those) for risk and capital management.

Although variation exist in the state of play of the centralisation process, the function in the hub (centre) more or less based on the following elements: aggregating risk at group level, specifying risk group appetite and risk tolerance levels, setting group-wide standards for consistent risk management and control, and setting business conduct standards for the group-wide operations. However, since insurance has a strong local focus (as every jurisdiction has its own specific characteristics with respect to legislation, culture, fiscal policy, social security, etc.) the insurance groups still have to give a lot of responsibilities to managers of the local business units. After all, they are familiar with these country specific elements and have the knowledge that is needed to manage the firm adequately and to take the appropriate decisions. It is thus almost impossible to steer and manage all the processes at the central level in the organisation. The centre rather functions as a coordinator and it sees to it that practices of local managers do not diverge too much.

It can therefore be concluded that the international presence in various jurisdictions has given rise to a shift to a more holistic approach towards risk and capital management, although local knowledge is still needed to properly operate within the national markets. The dominant pattern is that the 'rules of the game' are determined at the central level (the hub), while the actual implementation of these policies is more or less left up to the local managers (the spokes). This enables a coherent policy for managing risk and capital, while local management is given sufficient room to take account of local practices and developments.

A question for future research is to what extent geographic expansion of insurance groups leads to diversification benefits and consequently to a higher valuation of international

insurance groups. While the answer to the first question is very likely to be positive, the answer to the second question is not clear.

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Table1 Index of the cross-border business of 25 large EU insurance groups

			GWP 2005	2000			2001			2002			2003			2004			2005		
	Insurance Groups		in EUR mln	*h*	*e*	*w*	*h*	*e*	*w*	*h*	*e*	*w*	*h*	*e*	*w*	*h*	*e*	*w*	*h*	*e*	*w*
1.	Allianz	DE	92,190	36	47	18	41	42	18	39	43	18	39	42	19	39	43	18	36	45	19
2.	Axa	FR	65,995	26	41	34	25	42	34	26	44	31	26	44	31	26	45	29	27	44	29
3.	Generali	IT	62,678	34	60	7	34	60	8	36	60	6	39	57	4	39	58	4	40	54	6
4.	ING	NL	45,758	29	21	57	22	20	58	22	20	58	24	21	56	24	20	57	22	18	59
5.	Aviva	UK	40,385	47	31	22	50	33	17	52	35	13	53	37	10	51	38	10	49	42	10
6.	Zurich Financial Services	CH	39,494	13	46	42	12	42	46	10	52	39	10	57	33	9	60	32	11	53	36
7.	CNP	FR	26,488	99	1	0	97	1	2	86	5	11	84	5	11	84	5	11	79	10	11
8.	Prudential 1)	UK	21,929	53	1	45	49	1	49	45	1	53	44	2	54	44	2	54	42	1	57
9.	HBOS	UK	20,434	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5
10.	Credit Agricole	FR	19,986	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5
11.	AEGON 2)	NL	18,882	16	27	56	16	26	58	16	27	57	21	26	54	20	26	54	19	26	55
12.	Ergo	DE	15,919	87	13	0	85	15	1	85	15	1	85	15	1	85	15	0	85	15	0
13.	Winterthur 3)	CH	13,658	34	53	13	32	55	13	32	54	14	42	44	14	38	42	21	37	51	12
14.	Skandia	SE	13,288	27	33	41	29	37	34	43	46	12	41	50	8	37	53	10	36	53	12
15.	Groupama	FR	13,247	87	12	1	87	12	1	87	13	1	85	15	1	79	20	2	80	19	1
16.	Swiss Life	CH	13,032	52	49	0	55	45	0	51	49	0	46	54	0	47	53	0	46	54	0
17.	Fortis	BE	12,919	34	30	35	30	36	33	32	35	33	34	34	32	45	46	8	46	45	8
18.	BNP Paribas	FR	11,527	58	23	20	58	23	20	58	23	20	53	28	20	57	23	20	55	25	21
19.	Royal & Sun Alliance	UK	9,373	46	21	34	45	20	35	43	21	37	45	27	29	47	33	20	46	33	21
20.	Fondiaria-Sai	IT	9,342	100	0	0	100	0	0	100	0	0	100	0	0	99	1	0	99	1	0
21.	RBS Group	UK	8,871	86	4	11	83	4	5	82	5	13	82	5	13	79	5	16	78	6	16
22.	Unipol	IT	8,234	95	2,5	2,5	95	2,5	2,5	95	2,5	2,5	95	2,5	2,5	95	2,5	2,5	95	2,5	2,5
23.	Eureko	NL	6,577	63	37	0	58	42	0	61	39	0	79	21	0	78	22	0	87	13	0
24.	Lloyds TSB	UK	6,290	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5	90	5	5
25.	Legal & General 4)	UK	5,963	91	5	5	91	4	5	91	5	5	91	5	5	91	5	5	86	8	6
	Weighted average			*46*	*31*	*23*	*45*	*31*	*25*	*45*	*32*	*23*	*47*	*33*	*21*	*47*	*33*	*20*	*46*	*33*	*21*
	Number of domestic insurance groups				14			13			14			13			13			12	
	Number of EU insurance groups				8			8			7			9			9			10	
	Number of global insurance groups				3			4			4			3			3			3	

Notes: The top 25 EU insurance groups is selected on the basis of Gross Written Premium (GWP) in 2005. The division of business into business in the home country (h), in the rest of Europe (e) and the rest of the world (w) adds up to 100 percent.

1) Due to a lack of data, investment sales are not included. So the value noted here underestimates the real business of Prudential. 2) According to our criteria, AEGON should be regarded here as a European insurer. Since more than half of its activities are collected in the rest of the world (*w*), AEGON is marked as a global insurance group. 3) In June 2006 Winterthur was sold to AXA. 4) Due to a lack of data, investment sales are not included. So the value noted here underestimates the real business of Legal & General.

Source: Authors' calculations based on annual reports.

Table 2 Categories of international insurance groups within the 25 large EU insurance groups

Category	2000	2001	2002	2003	2004	2005
European	1. Allianz 2. Axa 3. Generali 5. Aviva 6. Zürich Financial Services 13. Winterthur 14. Skandia 17. Fortis	1. Allianz 2. Axa 3. Generali 5. Aviva 6. Zürich Financial Services 13. Winterthur 14. Skandia 17. Fortis	1. Allianz 2. Axa 3. Generali 6. Zürich Financial Services 13. Winterthur 14. Skandia 17. Fortis	1. Allianz 2. Axa 3. Generali 6. Zürich Financial Services 13. Winterthur 14. Skandia 9. Swiss Life 17. Fortis 19. Royal & Sunalliance	1. Allianz 2. Axa 3. Generali 6. Zürich Financial Services 13. Winterthur 14. Skandia 9. Swiss Life 17. Fortis 19. Royal & Sunalliance	1. Allianz 2. Axa 3. Generali 5. Aviva 6. Zürich Financial Services 13. Winterthur 14. Skandia 9. Swiss Life 17. Fortis 19. Royal & Sunalliance
Global	4. ING 11. Aegon 19. Royal & Sunalliance	4. ING 8. Prudential 11. Aegon 19. Royal & Sunalliance	4. ING 8. Prudential 11. Aegon 19. Royal & Sunalliance	4. ING 8. Prudential 11. Aegon	4. ING 8. Prudential 11. Aegon	4. ING 8. Prudential 11. Aegon

Source: Table 1

Table 3 Sensitivity analysis of EU insurance groups

	Relaxation of criteria	2000	2001	2002	2003	2004	2005
Number of European insurance groups	10%	9	9	9	11	10	11
	20%	10	11	10	11	11	11
Insurance groups added to the set of European insurance groups	10%	16. Swiss Life	16. Swiss Life	5. Aviva 16. Swiss Life	5. Aviva 18. BNP Paribas	5. Aviva	18. BNP Paribas
	20%	18. BNP Paribas	18. BNP Paribas 23. Eureko	18. BNP Paribas	-	18. BNP Paribas	

Source: Table 1