

PERSPECTIVES

STIMULATING THE DEMAND FOR INSURANCE

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ABSTRACT

This article acts as a review and also a guide to policymakers who are interested in understanding the determinants of insurance demand and how it affects general economic development. By providing a synopsis and evaluation of existing empirical research on the development of insurance markets, this article provides a discussion of the factors that promote insurance market development. This article then highlights certain issues that both insurance companies and policymakers can utilize further in their own markets to design future policies that can be geared to promote insurance market development.

INTRODUCTION

From an economic viewpoint, traditional neoclassical growth theory suggests that without technological development economies can only grow at a steady rate. This conclusion implies little scope for government involvement in trying to further stimulate economic growth. However, and in response to this scenario, alternative theories have developed which suggest this does not necessarily have to be the case. In particular, endogenous growth theorists have highlighted how investment and growth in one sector of an economy can provide positive externalities for other areas of the economy. Therefore, economic growth within these models can potentially accelerate beyond a steady state if regulation is successful in helping and promoting industries that generate positive externalities for the rest of the economy. But what sectors should policymakers develop? Recent research tends to indicate that financial services, and its various components, including insurance and banking, have substantial potential for spreading positive externalities throughout the commercial sector of an economy.

Within this research agenda, interest in the role of financial development in economic growth has moved to the fore of economic analysis, with a large and growing body of the

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literature supporting the link between financial growth and economic growth.¹ These findings are not surprising given that well-functioning financial institutions should improve the efficiency of capital allocation, encourage savings, and develop capital formation, ultimately leading to a more productive, growing economy.

Consistent with these findings, specific evidence for the role of insurance market development in economic growth is provided by Outreville (1990b) and Ward and Zurbruegg (2002). These studies suggest that the insurance industry through risk transfer, financial intermediation, and employment can generate positive externalities and economic growth.

Not surprisingly, with the link between financial development and economic growth established, research efforts have moved onto understanding the underlying factors that encourage development in financial services. By identifying factors that promote the demand for financial services, it becomes possible to highlight those factors that actually aid financial development, and ultimately economic growth. For example, recent empirical research on insurance markets by Browne et al. (2000), Ward and Zurbruegg (2002), Beck and Webb (2003), and Esho et al. (2004) have shown that the level of insurance demand within an economy can be influenced by a number of particular variables, including economic, legal, political, and social factors.

Despite these existing results, there has been little guidance presented to policymakers on which specific factors they should foster to aid financial, or insurance market development. To address this problem, the objective of this article is to present a synopsis of the existing literature, relating to the demand for insurance; and in so doing provide guidance for policymakers on how to promote insurance market demand. This focus upon demand clearly neglects the importance of the supply side of the market. However, our singular concern with demand is intended to promote greater clarity in understanding the determinants of the consumption of insurance products. Readers interested in the supply of insurance are encouraged to read the studies by UNCTAD (1982, 1994) and Outreville (2000), which investigate the role of reinsurance in the development of insurance sectors. Furthermore, readers may also wish to consider the work of Kindleberger (1974) and Moshirian (1993, 1994) which have examined sources of comparative advantage in insurance services, and Li, Sim, and Moshirian (2003) which examined the determinants of intra industry insurance trade between the United States and 22 major trading partners.

The remainder of this article is organized as follows. In the next section, an overview of the insurance industry is given. The third section outlines the determinants of life and property-casualty insurance demand that have been tested in the existing literature. Section four discusses the aforementioned factors in more depth to provide a basis for guidance to policymakers and insurance companies in stimulating insurance demand. Section five offers concluding remarks.

THE GLOBAL INSURANCE INDUSTRY

The insurance industry forms an integral part of the global financial market, with insurance companies being significant institutional investors. In recent decades, the insurance

¹ See Levine and Zervos (1998), Levine (1999), Levine et al. (2000), King and Levine (1993a,b), Wachtel and Rousseau's (1995), and Beck et al. (2000).

TABLE 1

Global Premium Volume (Million US\$) and Market Share (Percent) in 1984, 1994, and 2001

Sector	1984		1994		2001	
	Volume (Million US\$)	Share (Percent)	Volume (Million US\$)	Share (Percent)	Volume (Million US\$)	Share (Percent)
Total	498,000	100	1,967,786	100	2,408,252	100
Life	216,500	43.47	1,121,186	56.98	1,439,177	59.76
Property–Casualty	281,500	56.53	846,600	43.02	969,074	40.24

Source: Swiss Reinsurance Company, Sigma Publications (1986, 1996, 2002b).

sector, like other financial services, has grown in economic importance. This growth can be attributed to a number of factors including, but not exclusively: (i) rising income and demand for insurance, (ii) rising insurance sector employment, and (iii) increasing financial intermediary services for policyholders, particularly in the pension business (see Ward and Zurbruegg, 2002).

Expanding on the link between GDP and insurance market development, it must be remembered that the insurance industry's primary function is to supply individuals and businesses with coverage against specified contingencies, by redistributing losses among the pool of policyholders. Insurance companies, therefore, engage in underwriting, managing, and financing risks. According to Sigma (2001) the largest insurance sectors are to be found in the United States and Japan, which together generate more than 50 percent of global premium income, followed by the United Kingdom, Germany, France, and Italy. Furthermore, during the last four decades the global insurance sector has on average outpaced global economic growth. Between 1984 and 2001, the global insurance industry grew with an annual growth rate of 9.7 percent (roughly comprised of 11.8 percent from the life insurance sector, and 7.5 percent from the property–casualty sector).

Over the last few years, growth in the global property–casualty market has significantly slowed down and has only grown in line with general economic growth (Sigma, 2001). This development is mainly due to the sustained downward trend in commercial business experienced until recently, the economic and financial crisis in Asia, particularly in Japan, and the deregulation of the European market resulting in appreciable price decreases. This is in contrast to the life insurance sector, which has continued to grow at around 5.4 percent across the world since 2000. The increase in the life insurance business is mainly attributable to the increased demand for private pension provisions in the United States and Western Europe and the soaring demand for unit-linked products. Measured in total premiums, OECD countries accounted for 95.52 percent and 93.99 percent of the life insurance business, and 91.19 percent and 92.50 percent of property–casualty premium volume in 1994 and 2001, respectively.

A more recent development has been the strengthening of global market share among emerging economies, with premium growth rates inside such economies often reaching

double-digit figures. Furthermore, insurance markets within the OECD countries have faced falling premium income, reduced capital market yields, and low interest rates, all of which have put insurers under some pressure (Sigma, 2002a). Also, the growing importance of the insurance industry in emerging markets is reflected in growing insurance density and insurance penetration of the non-OECD insurance markets (Sigma, 1996, 2001). Nevertheless, emerging markets still have some way to go before matching the relative sizes and importance that the insurance industry has in industrialized countries.²

THE DETERMINANTS OF INSURANCE DEMAND

The theoretical and empirical research to date has suggested that, on average, an overwhelming positive relationship between financial development and economic growth is evident and that a well-developed financial sector contributes to economic growth. However, on a single country-by-country basis, Ward and Zurbruegg (2000) have shown that differences in the causal relationship between insurance market development and economic growth do exist.³ Research efforts have, therefore, moved on to examining the factors that encourage the development of financial institutions. By identifying the determinants that encourage insurance demand, policymakers are able to aid financial development, thereby positively influencing economic growth. The main areas of investigation have been economic, political/legal, and social factors. Each are considered in turn below.

Economic Factors

Life Insurance. Considering life insurance first, the relative importance of an insurance market to an economy is likely to depend upon economic development, since with a greater rate of economic growth the consumption of insurance products should increase. Early theoretical studies highlighted that the demand for life insurance, as a long-term consumption decision, should be positively related to anticipated income, or permanent rather than current income (see Yaari (1965), Hakansson (1969), Fortune (1973), Fisher (1973), and Lewis (1989)). While these models are micro based, empirical tests have primarily used aggregate market and economy level data. Income has generally been measured as a variant of current GDP, or GDP per capita, which can be weakly presumed to provide a proxy for permanent income.

Using this approach, support for a link between income and life insurance consumption has been confirmed by the cross-country studies of Beenstock et al. (1986), Truett and Truett (1990), Browne and Kim (1993), and Outreville (1996). Ward and Zurbruegg (2002) and Beck and Webb (2003) verify these findings when applying income per capita

² In broad terms, emerging markets can be defined as those countries which have started to grow but yet have to reach a mature stage of development and are still subject to unexpected economic and political upheaval. Examples are China, Indonesia, Hungary, and Brazil.

³ Ward and Zurbruegg (2000) highlight that causal relationships between insurance market development and economic growth can vary among countries due to country specific factors. In some countries, such as the United Kingdom and United States, no statistical relationship was found. In other markets, there is some evidence of a positive relationship between real premiums and real GDP, suggesting that growth within the insurance sector leads to growth in the economy at large.

as a proxy.⁴ Ward and Zurbruegg (2002) also extend these findings further by comparing modern OECD economies with the emerging economies of Asia. An interesting finding is that in countries with higher levels of income per capita, insurance consumption becomes less sensitive to income growth. These results are in line with the S-curve hypothesis by Enz (2000), which states that at higher levels of income per capita insurance consumption becomes less sensitive to income growth as insurance product saturation is reached. The main reason for this phenomenon is that at high-income levels, consumers become so wealthy that they can afford to retain risks within their current financial portfolios. Moreover, Ward and Zurbruegg (2002) highlight that the consumption of life insurance products in OECD countries is three times less sensitive to changes in income than it is in Asia. This is consistent with Enz's (2000) findings, which shows that, on average, Asians spend more on life insurance than in the developed economies of the world. Additionally, Ward and Zurbruegg (2002) reveal that income elasticity in the Asian 'tiger' economies is much higher than in the rest of Asia and OECD countries.⁵

Property-Casualty Insurance. Turning to the impact of national income on property-casualty insurance demand, Beenstock et al. (1988) indicate a positive relationship exists between national income in industrialized countries and spending on property-liability insurance. Browne et al. (2000) extend the literature by analyzing motor vehicle and liability insurance in OECD countries and find a positive and statistically significant relationship between premium density and GNP per capita.⁶ However, the income elasticity of demand was found to be greater for motor vehicle insurance. While both liability and motor insurance tend to be compulsory, motor vehicle insurance may be more directly related to rising incomes, through a general increase in car purchases.⁷ Esho et al. (2004) also test the impact of national income on property-casualty insurance by analyzing data from developed and developing nations from 1984 to 1998. Again, a strong positive relationship between national income and property-casualty insurance was found. The World Bank confirms these findings and states that property-casualty insurance can be regarded as a normal good, implying that insurance demand rises as income increases (Lester, 2002). Moreover, Ma and Pope (2003) show that countries with higher GDP, used as a proxy for insurance demand, tend to show more international insurer involvement, indicating higher national incomes also encourages more insurer interest.

⁴ In the literature, both national income and GNP have been used to measure income. In contrast to national income, GNP per capita has the advantage of controlling for the size of the population. It needs however to be acknowledged that results can be skewed by inequitable distribution of income.

⁵ In this article, the 'Asian Tiger economies' are categorized as consisting of Hong Kong, South Korea, Malaysia, Singapore, Taiwan, and Thailand.

⁶ Insurance density is equivalent to premiums per capita (see Sigma reports).

⁷ Income elasticity is defined as the ratio of the percentage change in demand for a product to the percentage change in income. It therefore measures the degree of responsiveness of the quantity demanded of a product to changes in income. An income elasticity of greater than one implies that insurance demand rises by a greater proportion than income whereas an income elasticity smaller than one implies the opposite.

Life Insurance and Price. In exploring additional economic factors, Greene (1954), Fortune (1973), Browne and Kim (1993), and Beck and Webb (2003) examine the impact of the expected inflation rate on life insurance demand. Since a rising inflation rate leads to a devaluation of the future benefits from purchasing life insurance, inflationary expectations would seem to dampen insurance demand. The findings from these studies indicate that inflation is indeed statistically significant and negatively related to life insurance. Moreover, Babbel (1979, 1981) highlights that anticipated inflation coupled with government regulations can lead to higher perceived costs of life insurance, even when policies are index linked. This is verified by Babbel (1981), using empirical data from Brazil that provides evidence that inflation is negatively related to net real per capita life insurance both before and after indexation. Ward and Zurbruegg (2002) provide a further insight into the influence of inflation by pointing out that the impact of inflation and economic uncertainty on insurance demand is not the same everywhere in the world. Specifically, they show inflation is around two and a half times more important for insurance demand in Asian economies, than it is for general OECD countries. This points to the fact that, as with national income, the weighting and impact of inflationary factors on insurance demand can differ between countries.

Another obvious and potential determinant of insurance demand is its price. Measuring the impact of price on the demand for insurance is, however, difficult due to the problem of actually determining the price. To overcome this problem, studies have used various proxies. Outreville (1996), for example, argues that life expectancy reflects the actuarially fair price for life insurance. This is based on the premise that the longer people are going to live the more premium payments will be made. Outreville (1996) finds a significant positive relationship between life expectancy and life insurance demand in developing countries. Browne and Kim (1993) use the ratio of total expenditure on life insurance premiums to the amount of life insurance in force, and find that price is negatively related to life insurance consumption, with an estimated price elasticity of -0.24 , suggesting that demand is price inelastic.

Property-Casualty Insurance and Price. In another study, and in order to test the impact of price demand for property-casualty insurance, Browne et al. (2000) use the market share of foreign insurers in a country as a proxy for price. They find that the relationship between the proportion of foreign insurance companies and motor vehicle premium density is negative and statistically significant. This might be due to the fact that a highly competitive internal insurance market, with low prices, is not attractive for foreign firms. They also find that the relationship between general liability and foreign insurance market share is positive and significant, implying that the increased presence of foreign insurance companies fosters a highly competitive domestic market, which results in lower prices and increased insurance consumption. Browne et al. (2000) state that the difference in the findings between the two product lines might be due to the different skills needed to write the two types of insurance products and the different levels of competition among domestic insurers in both markets, with motor vehicle insurance competition being likely to be much stronger in many countries than competition among domestic general liability insurance companies. As a result insurance companies may be more likely to enter foreign markets to pursue profits from general liability insurance, rather than motor insurance.

However, it is important to acknowledge that the number of foreign insurance companies in a market may only capture the degree of openness within the market and may not necessarily reflect the efficiency associated with the insurance business. To avoid this problem Esho et al. (2004) use the inverse of the loss ratio to approximate the price of property–casualty insurance. Despite choosing a different measure to proxy price, they too find a significant negative price effect on property–casualty insurance demand, indicating that price does obviously play an important role.

Furthermore, Outreville (1996) analyzes the monopolistic market structure and presence of foreign companies using both life and property–casualty insurance market data from a number of developing countries. The results show that monopolistic markets are significantly less developed than competitive markets, which is in line with Kim (1992) which points out that the exclusion of competitive foreign firms from a market typically results in lower-quality products and higher prices. Despite the increasing internationalization of the life insurance industry, there is no direct evidence that foreign involvement has a significant impact on insurance market growth. However, regarding the impact of foreign involvement on the demand for property–liability insurance, Outreville (1990b) finds the relationship to be negative but insignificant.

Beck and Webb (2003) show that banking development is positively correlated with life insurance consumption. This might be due to the fact that well functioning banks may increase the confidence of consumers in other financial institutions. This is also in line with Outreville (1996) which finds a significant positive relationship between financial development and life insurance penetration.

Life Insurance and Social Welfare. Finally, the impact of social welfare provisions on life insurance demand has been tested by Browne and Kim (1993), Ward and Zurbruegg (2002), and Beck and Webb (2003). It has been shown that the need for individuals to make private provisions for lengthening life expectancies, or early death via life insurance, are reduced when government spending on social security is increased. Ward and Zurbruegg (2002) highlight that the impact of average social welfare expenditures on life insurance demand is insignificant in Asia, which provides little support for the argument that life insurance consumption in Asia is driven in part by the low public sector provision of social insurance. On the other hand, they also show that in OECD countries social welfare provision has a significant impact on the consumption of life insurance, which could be due to the worsening age structure and the anticipated inability of governments to sustain social welfare systems in the future.

Political and Legal Factors

Some of the most influential papers on this topic are from La Porta et al. (1997, 2000) and Levine (1998, 1999) which show that legal environments which provide good investor protection tend to encourage a higher degree of financial intermediation, as well as economic growth. These papers tend to test the significance of legal and political variables, usually measured from constructed indices. A good example is from Knack and Keefer (1995, 2000) which use an index of governance constructed from five International Country Risk Guide (ICRG) variables that reflect the security of private property and the enforceability of contracts: ‘Corruption in Government,’ the ‘Rule of Law,’ ‘Expropriation

Risk,' 'Repudiation of Contracts by Government,' and 'Quality of the Bureaucracy.' Using regression analysis Knack and Keefer (1995, 2000) show that a higher index score for legal and political governance is associated with higher economic growth rates.

Levine et al. (2000) highlight that countries with better creditor rights, more rigorous law enforcement and better accounting information tend to have more highly developed financial intermediaries. This is particularly relevant to the insurance industry where consumers can be at risk of opportunistic behavior by insurance companies. For example, this could include companies refusing to pay claims, or alternatively reducing the investment returns due on a policy. It is argued that a legal system which places a greater emphasis on the efficient payment of debts to creditors (English-based systems), as opposed to a system which provides debtors with protection from creditors (French-based system), will improve the value of an insurance contract to a policyholder, thereby increasing demand for insurance (for more information about the impact of different legal systems see Merryman [1985], La Porta et al. [1997, 1998], or Beck and Webb [2003]). Furthermore, a legal system which is effective at identifying and enforcing property rights will facilitate the indemnity function of insurance—with policyholders being able to prove ownership of an asset and insurance companies being able to pursue negligent third parties for losses created against their policyholders.

Life Insurance and the Legal Environment. Clearly then, the functioning of a working legal system and the protection it may afford policyholders is a major determinant of insurance market development. In particular, once the investment component of some life policies are analyzed, the scope for opportunistic behavior by life insurance companies becomes more apparent. Life insurance companies, on behalf of their shareholders, might be building investment portfolios which have far greater risk than less diversified policyholders may find desirable. Moreover, in the case of some participating policies, bonus rates are often set at the discretion of managers, leading to a potential reduction in the financial returns to policyholders. In the case of the United Kingdom, such managerial discretion was challenged in the courts, leading in 2000 to the collapse of a major life insurance company, The Equitable Life Assurance Company.

More specifically, recent work by Ward and Zurbrugg (2002) examined the impact of legal and political determinants on life insurance consumption within Asia and OECD countries. They highlight that in Asia an improvement in the legal system⁸ has a significant and positive impact on life insurance demand, with a 10 percent improvement in the functioning of the legal system generating a 5.5 percent increase in life insurance demand. An improvement in the legal system here would relate to better enforcement and legal representation for individuals. Undoubtedly, if there is little enforcement of contractual arrangements between businesses and individuals, the impetus to take out life insurance would diminish. However, in the OECD countries the functioning of the legal system was found to be insignificant, which might be due to the fact that legal systems do not vary significantly across these economies and have already reached a

⁸ In their article, an improvement in the legal system indicates an improvement in the rule of law, personal autonomy, and economic rights that captures the functioning of the legal system, the enforcement of property rights and the ability to contract for commercial services, as they relate to individuals.

relatively high standard. Nevertheless, Ward and Zurbruegg (2002) show that after controlling for political and legal effects the income elasticity measure for insurance in Asia decreases dramatically and appears to be inelastic. This suggests that the link between economic development and insurance market development is much lower than might have been previously anticipated, while the role of legal and political factors cannot be ignored.

Property–Casualty Insurance and the Legal Environment. Another aspect of the legal system, with direct relevance to property–casualty insurance, is the protection and enforcement of property rights. Where there is ample protection of property rights and the enforcement of contractual agreements by the legal system, the value attributed to insurance services should rise. The enforcement of property rights in fact creates an incentive to acquire and insure property since government and legal enforcement of property rights help to protect individuals from loss or damage to the asset. Esho et al. (2004) show a strong positive relationship between the protection of property rights and property–casualty insurance consumption.

In order to examine the insurance sector, Esho et al. (2004) follow the banking sector work of La Porta et al. (1997) and Levine et al. (2000) and test the effect of legal origin of a country on property and casualty insurance demand. They are unable to provide evidence that a country's legal origin influences the development of insurance markets and instead highlight that legal origin has no significant impact on insurance consumption. This is particularly interesting, as La Porta et al. (1998) show that the origin of a country's legal system is related to the level of legal protection and enforcement provided to external creditors and shareholders. Also, Levine (1998) and Levine et al. (2000) find that the development of banking and financial intermediation is significantly greater in countries with German-based legal systems.

Life Insurance and the Political Environment. The political environment is, however, found to be a positive and significant determinant of life insurance consumption in OECD countries, with a 10 percent improvement in the political process generating a 0.4 percent improvement in life insurance consumption (Ward and Zurbruegg, 2002). This is probably due to the fact that a stable political environment leads to stronger legal enforcement across political and legal institutions.⁹ This is also in line with the work by Barro (1991) which shows that political instability, measured by the average number of revolutions and coups per year, is strongly associated with inflation and monetary instability. Furthermore, Alesina and Perotti (1996), analyzing the relationship between income inequality and investment by using a sample of 71 countries over the period 1960–1985, find by applying a variety of robustness tests that income inequality stirs social discontent

⁹ In order to evaluate the impact of the political environment on life insurance consumption Ward and Zurbruegg (2000) use two measures: CHECKS (number of individuals with a veto within the political apparatus of a country) and CO (extent to which government control is vested in one or more political parties). A higher number of checks in a political system should promote the effective running of a political system whereas government control centered around one party should promote greater stability and enforcement across political and legal institutions both ultimately resulting in an improved political process.

which in turn promotes socio-political instability, creating uncertainty in the political and economic environment and ultimately reducing investments. Finally, Outreville (1999) shows, when conducting a cross sectional analysis of 57 developing countries, that human capital and socio-political stability are important factors in explaining the level of financial development of these markets.

Social Factors

Insurance can also be seen as a product that is valued subjectively by its consumer. In fact Hofstede (1995) points out that the level of insurance within an economy depends on the national culture and the willingness of individuals to use insurance as a means of dealing with risk. It is not surprising that Douglas and Wildavsky (1982) show that the demand for life insurance in a country may be affected by the unique culture of the country to the extent that culture affects the degree of risk aversion. Using education and the uncertainty avoidance index to approximate the level of risk aversion Esho et al. (2004) confirm that risk aversion has a significant impact on demand for property-casualty insurance. Outreville (1996) observes similar findings emphasizing that education promotes an understanding of risk and hence aids insurance demand. However, in the case of property-casualty insurance, Esho et al. (2004) highlight that the demand for insurance is in the main unaffected by cultural factors. This is in line with Park et al. (2002), who fails to identify that national culture has a significant impact on insurance pervasiveness in any specific country.

Another social aspect analyzed by Zelizer (1979) is religion. He noted that historically religion has provided a strong source of cultural opposition to life insurance with some religious groups believing that a reliance on insurance represents a distrust of God's protective care. In some Muslim dominated countries, the religious beliefs inhibit those forms of insurance that facilitate speculation of future events, thereby discouraging growth of the insurance sector. Wasaw and Hill (1986), Browne and Kim (1993), Enz (2000), and Ward and Zurbruegg (2002) test whether countries with a strong Islamic background have a reduced demand for life insurance consumption. Their results generally do confirm that consumers in Islamic nations purchase less life insurance policies, which is reflected in the below global average life insurance penetration in Muslim dominated countries, such as the United Arab Emirates, Qatar, and Kuwait.

With reference to life insurance, empirical studies by Hammond et al. (1967), Drucker (1969), and Berekson (1972) also reveal that one of the main purposes of life insurance is to protect dependants against financial hardship, following the premature death of the dominant age earner. Consistent with these earlier findings Burnett and Palmer (1984), Beenstock et al. (1986), Truett and Truett (1990), and Browne and Kim (1993) provide empirical evidence that the consumption of life insurance and the number of dependants is significantly and positively related. Beck and Webb (2003) on the other hand find, when analyzing the determinants of life insurance consumption in a panel of 68 economies from 1961 to 2000, that the young dependency ratio has no significant impact on life insurance consumption across countries. Interestingly they also show that the older the population and the lower the inflation rate the more people will select life insurance over other forms of saving. However, as private agents save more, the share of life insurance in their portfolios declines.

Another social measure is life expectancy. Generally, it is assumed that the longer people expect to live the greater their demand will be for life insurance. This is confirmed by Beenstock et al. (1986), Browne and Kim (1993), Outreville (1996), and Ward and Zurbruegg (2002) which find a positive and significant relationship between life expectancy and life insurance demand. Moreover, it can be suggested that a country whose life expectancy (low or high) is increasing over time is also more attractive for insurance companies because it demonstrates that conditions are improving in that country.¹⁰ However, examining life expectancy in its social context can be problematic, as it is also highly correlated and related to a nation's wealth and national income. Therefore, whether one can conclude that it is life expectancy or greater wealth that leads to increased demand for insurance, is uncertain.

Finally, some studies have argued that the level of education, measured by the literacy rate of a country (or the average years of schooling in a population) is related to insurance demand. Under this view, perceptions of risks increase with education. However, evidence suggests that education is not particularly significant as a promoter of life insurance demand (Beenstock et al., 1986; Beck and Webb, 2003). This is despite the fact that literacy is often seen as a key indicator of economic and social development.¹¹ Browne and Kim (1993) even find inconsistent results in their models preventing them to draw any firm conclusions.

IMPLICATIONS FOR POLICYMAKERS

The review of the empirical literature highlights that policymakers can take advantage of three triggers, (i) economic, (ii) legal/political, and (iii) social factors, to stimulate insurance demand. The earlier findings also emphasize that promoting economic development stimulates both life and property-casualty consumption. However, it needs to be recognized that although economic development, in the form of national income, has a positive effect on insurance demand, the impact on insurance can vary across product lines and geographic regions. Also, national income seems to have a stronger impact on life insurance consumption in Asia, than on the OECD markets. Policymakers should, however, not overvalue these results, as the more recent literature highlights that after controlling for legal and political factors the effect of national income on insurance demand decreases enormously. The empirical results generally suggest that economic stability, conditioned on political and legal stability, appears to be more crucial for long-run success than economic development alone.

These findings are also reflected in the impact of national income on the demand for life insurance in the Asian tiger economies. After controlling for legal and political factors, income elasticities tend to be smaller. While economic development may occur at faster rates in Asia, the link to insurance market development does not appear to be as strong. The above findings also emphasize that anticipated income growth rates are not necessarily the crucial trigger for policymakers to stimulate insurance demand, but that the political and legal situation in a country can be seen as a key structural determinant for both developed and emerging economies. These findings are confirmed when looking

¹⁰ We thank an anonymous referee for highlighting this matter.

¹¹ Some studies have also examined the proportion of the population that is involved in agriculture or which live rurally (percentage of urbanized population).

at the political and legal situation Indonesia faced before and after the Asian financial crisis in 1997. The Indonesian economy suffered significantly during the Asian financial crisis. When looking at the governance indicators published by Kaufmann et al. (2003) it becomes evident that Indonesia, in contrast to the other countries in the region, had the lowest score in political stability and rule of law before and after the crisis, emphasizing the fact that the political and legal situation is a key determinant of economic and financial stability. Not surprisingly, the Indonesian insurance market was heavily impacted by the 1997 financial crisis, with the insurance market suffering a 55 percent drop in total insurance premiums between 1997 and 1998 (Sigma, 1999a,b).¹² This corresponded with a general rise in insolvencies and withdrawal of capital in all financial sectors, including the insurance industry.

Many of the measures of legal and political governance, especially those developed by Knack and Keefer (1995, 2000) and Kaufman et al. (2003), have been created under the auspices of the World Bank. World Bank staff and country level policymakers can use these governance indices to benchmark a country against its peers and develop governance enhancing initiatives along the dimensions of private property security, the enforceability of contracts, corruption in government, and the repudiation of contracts by government.

Not surprisingly, the Asian Development Bank has now placed legal reform at the heart of its policy initiatives, providing significant funding for economies that seek to reform legal and judicial procedures in an attempt to combat poverty. In order to improve regulation, monitoring and the law as it applies to financial services institutions, Indonesia has received US\$250m of funding from the Asian Development Bank, while for a project with similar purposes, the Philippines has received US\$150m. With a particular focus on the development of an insurance and pensions industry Bangladesh has received US\$600m to spend on establishing and strengthening the legal framework and building institutional capacity to regulate and supervise the insurance and pension sectors.¹³

Reflecting the theme of legal and financial development, Thailand has a 5-year plan for improving the structural elements of its insurance industry, including enhanced monitoring of insurer solvency, promoting freer competition, enabling mergers, and developing code of best conduct toward policyholders (PriceWaterhouseCoopers, 2003). In Singapore, changes in solvency regulations have moved the emphasis from an audit assessment of the balance sheet, toward a more advanced risk-based supervisory framework, with insurers assessed according to their current financial strength and the future risks that they may face. Moreover, policyholders' prior contractual rights have been bolstered by the introduction of the financial advisers framework. The framework seeks to improve adviser training and improve the flow of product, company and commissions based information to policyholders, with higher levels of disclosure to be undertaken by advisers (Monetary Authority of Singapore, 2003).

¹² For life insurance, there was a drop from total premium values of \$1248 million a year in 1997 to \$588 million in 1998. For the non-life market, there was a corresponding drop from \$1384 million to \$607 million between 1997 and 1998.

¹³ Funding figures taken from the Asian Development Bank's Website, <http://www.adb.org>.

These changes are analogous and appear to reflect the successes of the 1986 U.K. Financial Services Act, which coincided with the development of investor protection by the U.K. Financial Services Authority. Finally, in Cambodia, following a long-term strategic development of the entire legal system, the first Insurance Act came into being in 2000, with the express aim of protecting the legitimate rights of the parties to the insurance contract, to strengthen the control of the industry and contribute to the development of the industry (Ministry of Commerce-Cambodia, 2001). What is clear across all these examples is that the legal aspect of financial services and insurance in particular is a key policy consideration for governments and regional development bodies with a dual emphasis on the financial integrity of financial institutions and the protection of policyholders' rights.

The insurance sectors of many emerging economies are highly attractive to foreign insurance companies. Mindful of the available empirical evidence, international insurance companies should not overestimate the growth potential of emerging markets. As financial crises in the past have shown, emerging markets are vulnerable to external shocks to their financial system, which often results in a drop in insurance demand. Therefore, an ability to design products that can withstand market turbulence, such as shorter contract periods and inflation indexing, will aid insurance companies. However, policymakers also need to be aware that despite the increased phenomenon of insurance companies extending their business activities into the emerging markets, empirical evidence provides no support for these companies having a significant impact on insurance market growth (see Outreville, 1996). For example, Sigma (2003) stated that for China, although foreign companies make up as much as 40 percent of all non-life companies, they currently only account for 10 percent of non-life premiums.

Political, legal, and economic stability, the culture of a country, the dependency ratio, and the life expectancy of the population have all been shown to have a significant impact on life insurance demand. Insurance companies intending to expand their business activities abroad should consider these factors when choosing which markets they should, or should not enter. In the case of the property-casualty sector empirical findings highlight that the linkage between insurance demand and the legal environment is focused on one single issue of enforcing property rights, indicating that the effectiveness of the judiciary in enforcing contracts is of paramount importance to the development of the insurance market. However, in contrast to the life insurance industry, existing research highlights that the property and casualty business is, in the main, unaffected by cultural and institutional factors. In fact, Esho et al. (2004) state that the development of property and casualty insurance is 'technically rather than culturally located,' indicating the importance of the legal and regulatory environment.

This finding could be a particularly important consideration for policymakers involved in the liberalization of China's insurance market. Liberalization has occurred through amendments to the *Insurance Law 1995*, with a deregulation of underwriting rates and business lines; and the opening up of China's insurance market to foreign companies. However, as Sun (2003) notes, prior to China's accession to the WTO, liberalization and competition in the Chinese life sector have been greater than in the property-casualty sector. Therefore, with future liberalization emanating from the property-casualty sector, with its greater product line offerings, increased entry by foreign insurers and broader risk underwriting, the development of this sector is likely to be conditioned by the

development of complementary laws and regulations. As seen in the case of Indonesia, without the ability to identify and enforce property rights, and similarly without political and judicial willingness to intervene in insurance-related contractual disputes, the development of the insurance industry falters. Therefore, the Chinese authorities in enabling greater competition need to recognize the common concerns linked to solvency and enhanced competitive environments, but they also need to examine how contracts will be honored and confidence amongst potential policyholders can be enhanced.

Moreover, theoretical literature suggests that taxation has a potentially large impact on household portfolio selection and allocation (see for example Feldstein [1976], King and Leape [1998], Poterba [2001], and Poterba and Samwick [2003]). In line with what Walliser and Winter (1998) highlight, using data from the German consumer expenditure survey, that tax advantages and bequest motives have a positive impact on life insurance demand in Germany. By encouraging tax exemption on insurance products, policymakers might therefore be able to stimulate insurance consumption. So for example, policymakers could follow the example of the United States where the existing law excludes the premiums from taxable income that employers pay for employees' group term life insurance. Excluding life insurance premiums from taxation is likely to have a positive effect on life insurance demand as the tax exclusion creates an incentive that induces employees to purchase more life insurance than they would if they had to pay the full cost themselves. Furthermore, excluding premiums from taxation allows employees whose employers purchase life insurance for them to pay less tax than employees who have the same total compensation but must purchase insurance on their own. Another efficient way of encouraging consumers to buy life insurance might be to extend the favorable tax treatment to all purchasers and avoid favoring only people with insurance provided by employers. Jappelli and Pistaferri (2003), however, show that when analyzing the effect of cancellation of tax incentives in Italian life insurance contracts that the tax reforms had no effect on the decision to invest in life insurance or the amount invested. There was no evidence that investors respond to tax changes by adjusting their portfolio. Jappelli and Pistaferri (2003) state that the likely reasons for this are the lack of information and the lack of commitment in long-term insurance, stressing the importance of transparency of regulations.

Turning to regulation, the empirical evidence suggests competitive insurance market structures enhance both life and property-casualty demand, as it usually results in higher quality products and lower prices for insurance policies. This is important to highlight given the growing interest in the emerging insurance markets where state monopolies are still evident.

Existing empirical research discusses the importance of middle-income earners in stimulating insurance demand and highlights that above a certain level of income, saturation sets in, and individuals switch from insurance to alternative risk financing mechanisms, such as mutual funds, shares, and property ownership. However, there is still a need to evaluate the provision of financial and insurance services for low-income groups. It needs to be recognized that low-income groups are still excluded from financial services, even in high-income countries such as the United Kingdom (Kempson and Whyley, 1999).¹⁴ These low-income groups participate in few, if any, financial services.

¹⁴ Kempson and Whyley (1999) cite that in the United Kingdom 1.5 million households lack even the most basic of financial products such as current accounts. A further 4.4 million households

This phenomenon could be due to low-income groups being deterred from financial services by price considerations, such as the high cost of credit sources, or unaffordably high insurance premiums. It is, therefore, not surprising that the World Bank shows that, on average, life insurance is seen as a luxury good.

Despite the weaker than expected effect of income on insurance demand, after controlling for legal and political factors, by finding innovative ways of providing financial services to those low-income groups, which currently use hardly any financial services, policymakers will be able to further stimulate insurance demand. In the United States a series of fair lending laws, in particular the 1977 'Community Reinvestment Act,' revised in 1995, has helped the banking sector to address the under-served markets on a profitable basis. As a result of the CRA, national banks' investment in community development has increased by 800 percent from 1995 (Collin et al., 2001). Even though this might not be the ideal solution for the insurance industry, strategies need to be identified and adopted which will not only provide currently excluded consumers some sort of insurance coverage, but at the same time have a long-term positive overall impact on society.

Beck and Webb (2003) highlight that the older the population and the lower the inflation rate, the more people will select life insurance over other forms of savings. However, as private agents save more, the share of life insurance in their portfolios declines, even though they invest some of their additional savings in life insurance policies. With a growing pensions funding gap in many economies across the world, the need to develop the demand for insurance-based products, including pensions, is strong.

To conclude, considering the established link between insurance demand, financial development, and economic growth, it becomes evident that by fostering a sound and well-functioning legal, economic, and political system, policymakers possess a major capability to aid financial development within the insurance sector. However, analysts should not forget that on a country level the relationship between insurance demand, financial development, and economic growth varies. Moreover, insurance companies when expanding abroad should focus on these same characteristics when determining whether to enter a market or not. Insurance companies need to be aware that certain preconditions for expanding into new markets need to be fulfilled. New markets need to have a stable and sound macro environment, an adequate human resource base, adequate regulatory requirements (without stifling competition), strong supervisory institutions, safety nets to pick up losers, as well as strong prudential standards in order to achieve and sustain long-term success (Outreville, 1990a).

CONCLUSION

In recent decades, considerable debate has taken place regarding the role of financial institutions in the promotion of economic growth. The literature has confirmed that a sound national insurance market is an essential characteristic of economic growth. This is not surprising as the insurance industry forms a major component of an economy by virtue of the amount of premiums it collects, the scale of its investment and, more

are in the margins of financial service provision, mostly possessing only current accounts and hardly any insurance cover.

fundamentally, the essential social and economic role it plays by covering personal and business risks. By encouraging these factors that promote insurance demand and aid financial development, policymakers possess a strong tool to stimulate economic growth.

The main implication that follows from this study is that policymakers are actually able to instigate the promotion of insurance growth. Three categories of insurance determinants have been identified for this purpose; economic, legal/political, and social factors. In particular, the empirical findings show that a strong, well-functioning legal system and a stable political environment seem to be most crucial for fostering insurance demand and should be regarded as a top priority for policymakers. This is further accompanied by other economic variables that explain insurance consumption, such as national income, an aging population, increased financial development, and low rates of inflation. Property-casualty demand can be similarly stimulated by high national income, financial development, and the enforcement of property rights. However, the impact of these determinants can vary across lines of coverage and geographical regions.

To conclude, and to provide some insights for future research, recent literature has mostly analyzed the demand side of financial institutions, neglecting the supply side. In the future more attention should also be placed on the supply side of insurance industries, by analyzing and identifying factors that cause different degrees of cost and profit efficiencies across countries. This may further highlight factors that promote sound insurance growth. This would also give policymakers a more diverse range of tools on how to aid financial development and thereby foster economic growth.

APPENDIX

TABLE A1

Overview of Economic Factors

Insurance Determinants	Life Insurance			Property-Casualty Insurance		
	OECD	Rest of the Globe	Existing Research	OECD	Rest of the Globe	Existing Research
Income	+	+	Hakansson (1969), Fisher (1973), Fortune (1973), Beenstock et al. (1986), Lewis (1989), Truett and Truett (1990), Browne and Kim (1993), Enz (2000), Ward and Zurbruegg (2002), Beck and Webb (2003)	+	+	Beenstock et al. (1988), Outreville (1990b), Browne et al. (2000), Esho et al. (2004)

(Continued)

TABLE A1
(Continued)

Insurance Determinants	Life Insurance			Property-Casualty Insurance		
	OECD	Rest of the Globe	Existing Research	OECD	Rest of the Globe	Existing Research
Banking		+	Beck and Webb (2003)			
Expected inflation rate	-	-	Greene (1954), Fortune (1973), Babel (1979, 1981), Browne and Kim (1993), Outreville (1996), Ward and Zurbruegg (2002), Beck and Webb (2003)			
Price of insurance	±	±	Browne and Kim (1993), Outreville (1996)	-*/-		Outreville (1990b), Browne et al. (2000), Esho et al. (2004)
Monopolistic market structure	-		Outreville (1996)		-	Outreville (1990b)
Presence of foreign companies	-		Outreville (1996)	+*/-		Browne et al. (2000)

The table above provides a list of the most common variables that were utilized to determine insurance demand. Positive and negative signs indicate the hypothesized direction of the relationship between the variable and insurance consumption. A * indicates the variable was found to be significant to at least the 10 percent critical level.

TABLE A2
Overview of Legal and Political Factors

Insurance Determinants	Life Insurance			Property-Casualty Insurance		
	OECD	Rest of the Globe	Existing Research	OECD	Rest of the Globe	Existing Research
Legal origin	?		Ward and Zurbruegg (2002)	+		Browne et al. (2000) Esho et al. (2004)
Political environment	+	+	Ward and Zurbruegg (2002)			
Enforcement of property rights				+	+	Esho et al. (2004)

The table above provides a list of the most common variables that were utilized to determine insurance demand. The positive signs indicate the hypothesized direction of the relationship between the variable and insurance consumption. A * indicates the variable was found to be significant to at least the 10 percent critical level.

TABLE A3

Overview of Social Factors

Insurance Determinants	Life Insurance			Property-Casualty Insurance		
	OECD	Rest of the Globe	Existing Research	OECD	Rest of the Globe	Existing Research
Risk aversion				+/-*	+	Szipiro (1985), Browne et al. (2000), Esho et al. (2004)
Religion	-	-	Zelizer (1979), Douglas and Wildavsky (1982), Wasaw and Hill (1986), Browne and Kim (1993), Enz (2000), Ward and Zurbruegg (2002)			
Social welfare expenditure	-*	-	Beenstock et al. (1986), Browne and Kim (1993), Ward and Zurbruegg (2002)			
Dependency ratio	+*	+*	Hammond et al. (1967), Drucker (1969), Berekson (1972), Burnett and Palmer (1984), Beenstock et al. (1986), Truett and Truett (1990), Browne and Kim (1993), Beck and Webb (2003)			
Life expectancy	+*	+*	Beenstock et al. (1986), Browne and Kim (1993), Outreville (1996), Ward and Zurbruegg (2002), Beck and Webb (2003)			
Education	-		Beenstock et al. (1986), Outreville (1996), Beck and Webb (2003)	+*	-/+*	Outreville (1990b), Esho et al. (2004)

The table above provides a list of the most common variables that were utilized to determine insurance demand. Positive and negative signs indicate the hypothesized direction of the relationship between the variable and insurance consumption. A * indicates the variable was found to be significant to at least the 10 percent critical level.

REFERENCES

- Alesina, A., and R. Perotti, 1996, Income Distribution, Political Instability, and Investment, *European Economic Review*, 40(6): 1203-1228.
- Babbel, D. F., 1979, Inflation's Impact on Life Insurance Costs: Brazilian Indexed and Nonindexed Policies, *Journal of Risk and Insurance*, 46(4): 652-671.
- Babbel, D. F., 1981, Inflation, Indexation, and Life Insurance Sales in Brazil, *Journal of Risk and Insurance*, 48(1): 115-135.

- Barro, R. J., 1991, Economic Growth in a Cross Section of Countries, *Quarterly Journal of Economics*, 106: 407-443.
- Beck, T., A. Demirgüç-Kunt, and R. Levine, 2000, A New Database on the Structure and Development of the Financial Sector, *World Bank Economic Review*, 14(3): 597-605.
- Beck, T., R. Levine, and N. Loayza, 2000, Finance and the Sources of Growth, *Journal of Financial Economics*, 58(1-2): 261-300.
- Beck, T., and I. Webb, 2003, Economic Demographic, and Institutional Determinants of Life Insurance Consumption Across Countries, *World Bank Economic Review*, 17(1): 51-88.
- Beenstock, M., G. Dickinson, and S. Khajuria, 1986, The Determination of Life Premiums: An International Cross Section Analysis 1970-81, *Insurance: Mathematics and Economics*, 5: 261-270.
- Beenstock, M., G. Dickinson, and S. Khajuria, 1988, The Relationship Between Property-Liability Insurance Premiums and Income: An International Analysis, *Journal of Risk and Insurance*, 55(2): 259-272.
- Berekson, L. L., 1972, Birth Order, Anxiety, Affiliation, and the Purchase of Life Insurance, *Journal of Risk and Insurance*, 39: 93-108.
- Browne, M. J., J. Chung, and E. W. Frees, 2000, International Property-Liability Insurance Consumption, *Journal of Risk and Insurance*, 67(1): 73-90.
- Browne, M. J., and K. Kim, 1993, An International Analysis of Life Insurance Demand, *Journal of Risk and Insurance*, 60(4): 616-34.
- Burnett, J. J., and B. A. Palmer, 1984, Examining Life Insurance Ownership Through Demographic and Psychographic Characteristics, *Journal of Risk and Insurance*, 51: 453-467.
- Collin, S., T. Fisher, E. Mayo, A. Mullineux, and D. Sattar, 2001, *The State of Community Development Finance* (London: New Economics Foundation).
- Cummins, J. D., M. Rubio-Misas, and H. Zi, 2003, The Effects of Organizational Structure on Efficiency: Evidence from the Spanish Insurance Industry, Working paper, Wharton Financial Institution Centre, University of Pennsylvania, Philadelphia.
- Douglas, M., and A. Wildavsky, 1982, *Risk and Culture* (Berkeley: University of California Press).
- Drucker, J. M., 1969, Expenditures for Life Insurance Among Working-Wife Families, *Journal of Risk and Insurance*, 36: 525-533.
- Efron, B., 1979, Bootstrap Methods: Another Look at the Jackknife, *Annual Statistics*, 7: 1-26.
- Enz, R., 2000, The S-Curve Relation Between Per-Capita Income and Insurance Penetration, *Geneva Papers on Risk and Insurance: Issues and Practice*, 25(3): 396-406.
- Esho, N., A. Kirievsky, D. Ward, and R. Zurbrugg, 2004, Law and the Determinants of Property-Casualty Insurance, *Journal of Risk and Insurance*, 71(2): 265-283.
- Feldstein, M. S., 1976, Personal Taxation and Portfolio Composition: An Econometric Analysis, *Econometrica*, 44(4): 631-650.
- Fischer, S., 1973, A Life Cycle Model of Life Insurance Purchases, *International Economic Review*, 14(1): 132-152.

- Fortune, P., 1973, A Theory of Optimal Life Insurance: Development and Tests, *Journal of Finance*, 28: 587-600.
- Greene, M. R., 1954, Life Insurance Buying in Inflation, *Journal of the American Association of University Teachers of Insurance*, 21: 99-113.
- Hakansson, N. H., 1969, Optimal Investment and Consumption Strategies Under Risk, An Uncertain Lifetime, and Insurance, *International Economic Review*, 10(3): 443-466.
- Hammond, J. D., D. B. Houston, and E. R. Melander, 1967, Determinants of Household Life Insurance Premium Expenditure: An Empirical Investigation, *Journal of Risk and Insurance*, 34: 397-408.
- Hofstede, G., 1995, Insurance as a Product of National Values, *Geneva Papers on Risk and Insurance: Issues and Practice*, 20(77): 423-429.
- International Monetary Fund, 1999, *International Financial Statistics Yearbook* (Washington: International Monetary Fund).
- Jappelli, T., and L. Pistaferri, 2003, Tax Incentives and the Demand for Life Insurance: Evidence from Italy, *Journal of Public Economics*, 87(7-8): 1779-1799.
- Kaufmann, D., A. Kraay, and M. Mastruzzi, 2003, Governance Matters III: Governance Indicators for 1996-2002, World Bank Working Paper.
- Kempson, E., and C. Whyley, 1999, *Kept Out or Opted Out? Understanding and Combating Financial Exclusion* (Bristol: The Policy Press).
- Kim, K., 1992, International Analysis of Life Insurance Consumption, Unpublished Ph.D. Dissertation, University of Georgia.
- Kindleberger, C., 1974, *The Formation of Financial Centers: A Study in Comparative Economic History*, Princeton Studies in International Finance, No. 36 (Princeton, NJ: Princeton University Press).
- King, M. A., and J. I. Leape, 1998, Wealth and Portfolio Composition: Theory and Evidence, *Journal of Public Economics*, 69(2): 155-193.
- King, R. G., and R. Levine, 1993a, Finance and Growth: Schumpeter Might Be Right, *Quarterly Journal of Economics*, 108: 717-737.
- King, R. G., and R. Levine, 1993b, Finance, Entrepreneurship, and Growth: Theory and Evidence, *Journal of Monetary Economics*, 32: 513-542.
- Knack, S., and P. Keefer, 1995, Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures, *Economic and Politics*, 7(3): 207-227.
- Knack, S., and P. Keefer, 2000, Polarization, Politics, and Property Rights. Links Between Inequality and Growth, Policy Research Working Paper #2418, World Bank.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 1997, Legal Determinants of External Finance, *Journal of Finance*, 52(3): 1131-1150.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 1998, Law and Finance, *Journal of Political Economy*, 106: 1133-1155.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny, 2000, Investor Protection and Corporate Governance, *Journal of Financial Economics*, 58(1-2): 3-27.
- Lester, R., 2002, *Presentation: Insurance the WTO Challenge*, NBFi Conference, Bangkok.
- Levine, R., 1998, The Legal Environment, Banks, and Long-Run Economic Growth, *Journal of Money, Credit and Banking*, 30(3): 596-620.

- Levine, R., 1999, Law, Finance, and Economic Growth, *Journal of Financial Intermediation*, 8(12): 8-35.
- Levine, R., N. Loayza, and T. Beck, 2000, Financial Intermediation and Growth: Causality and Causes, *Journal of Monetary Economics*, 46(1): 31-77.
- Levine, R., and S. Zervos, 1998, Stock Markets, Banks, and Economic Growth, *American Economic Review*, 88(2): 537-558.
- Lewis, F. D., 1989, Dependants and the Demand for Life Insurance, *American Economic Review*, 79: 452-467.
- Li, D., A.-B. Sim, and F. Moshirian, 2003, The Determinants of Intra-Industry Trade in Insurance Services, *Journal of Risk and Insurance*, 70(2): 269-287.
- Ma, Y.-L., and N. Pope, 2003, Determinants of International Insurers' Participation in Foreign Non-Life Markets, *Journal of Risk and Insurance*, 70(2): 235-248.
- Merryman, J. H., 1985, *The Civil Law Tradition: An Introduction to the Legal Systems of Western Europe and Latin America* (Stanford, CA: Stanford University Press).
- Ministry of Commerce-Cambodia, 2001, *Legal and Judicial Reform Strategy for Cambodia* (Cambodia: Ministry of Commerce).
- Monetary Authority of Singapore, 2003, *Insurance Report*, Singapore.
- Moshirian, F., 1993, Determinants of International Financial Services, *Journal of Banking and Finance*, 17(1): 7-18.
- Moshirian, F., 1994, What Determines the Supply of International Financial Services, *Journal of Banking and Finance*, 18(3): 495-504.
- Outreville, J. F., 1990a, The Relationship Between Insurance, Financial Development and Market Structure in Developing Countries: An International Cross-Section Study, *UNCTAD Review*, 53-69.
- Outreville, J. F., 1990b, The Economic Significance of Insurance Markets in Developing Countries, *Journal of Risk and Insurance*, 18(3): 487-498.
- Outreville, J. F., 1996, Life Insurance Markets in Developing Countries, *Journal of Risk and Insurance*, 63(2): 263-278.
- Outreville, J. F., 1999, Financial Development, Human Capital and Political Stability, UNCTAD Discussion Paper (No. 142).
- Outreville, J. F., 2000, The Retention Capacity of Insurance Markets in Developing Countries, In: G. Dionne, ed., *Handbook of Insurance* (Boston: Kluwer), pp. 749-766.
- Park, H., S. F. Borde, and Y. Choi, 2002, Determinants of Insurance Pervasiveness: A Cross-National Analysis, *International Business Review*, 11(1): 79-96.
- Poterba, J. M., 2001, Taxation and Portfolio Structure: Issues and Implications, Working paper (No. 8223), National Bureau of Economic Research, Cambridge, Massachusetts.
- Poterba, J. M., and A. A. Samwick, 2003, Taxation and Household Portfolio Composition: US Evidence From the 1980s and 1990s, *Journal of Public Economics*, 87(1): 5-38.
- PriceWaterhouseCoopers, 2003, *Country Profile: Thailand's Insurance Industry—Responding to the Impact of the Economic Crisis* (London: Price Waterhouse Coopers).
- Sigma, 1986, *Weltversicherung 1984* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).

- Sigma, 1996, *World Insurance in 1994: Clear Slowdown in Premium Growth in North America and Japan, Reduced Momentum in Europe* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sigma, 1999a, *World Insurances in 1997: Booming Life Business, but Stagnating Non-Life Business* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sigma, 1999b, *World Insurances in 1998: Deregulation, Overcapacity, and Financial Crisis Curb Premium Growth* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sigma, 2001, *World Insurance in 2000: Another Boom Year for Life Insurance; Return to Normal Growth for Non-Life Insurance* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sigma, 2002a, *Bancassurance Developments in Asia—Shifting Into a Higher Gear* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sigma, 2002b, *World Insurance in 2001: Turbulent Financial Markets and High Claims Burden Impact Premium Growth* (Zurich: Swiss Reinsurance Company Economic Research & Consulting).
- Sun, Q., 2003, The Impact of WTO Accession on China's Insurance Industry, *Risk Management and Insurance Review*, 6(1): 27-35.
- Szipiro, G. G., 1985, Optimal Insurance Coverage, *Journal of Risk and Insurance*, 52: 705-710.
- Truett, D. B., and L. J. Truett, 1990, The Demand for Life Insurance in Mexico and the United States: A Comparative Study, *Journal of Risk and Insurance*, 57(2): 321-328.
- UNCTAD, 1982, *The Promotion of Life Insurance in Developing Countries*, TD.B.C3/177 (Geneva: United Nations).
- UNCTAD, 1994, *Statistical Survey on Insurance and Reinsurance Operations in Developing Countries* (New York: United Nations).
- Walliser, J., and J. K. Winter, 1998, Tax Incentives, Bequest Motives and the Demand for Life Insurance: Evidence from Germany, Working article No. 99-28 Sonderforschungsbereich 504, University of Mannheim, Germany.
- Ward, D., and R. Zurbruegg, 2000, Does Insurance Promote Economic Growth?: Evidence From OECD Countries, *Journal of Risk and Insurance*, 67(4): 489-507.
- Wasaw, B., and R. D. Hill, 1986, *The Insurance Industry in Economic Development* (New York: New York University Press).
- Yaari, M., 1965, Uncertain Lifetime, Life Insurance and the Theory of the Consumer, *Review of Economic Studies*, 32: 137-150.
- Zelizer, V. R., 1979, *Morals and Markets: The Development of Life Insurance in the United States* (New York: Columbia University Press).