Voluntary health insurance in Vietnam: a theoretical and empirical exploration

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Abstract

This thesis presents new evidence regarding voluntary health insurance in Vietnam. At present, the evidence base from which policy-makers in low-income countries can draw, is dominated by the experience of high-income countries, despite the very different institutional environment within which health insurance functions.

In theory, health insurance can protect and improve access to health services, by pooling individual risks, whilst raising additional funds from private sources. However, incentive problems, in particular adverse selection and moral hazard, can lead to greater inefficiencies. These theoretical predictions are tested empirically in this thesis using data from a household survey of 2,751 individuals in Vietnam.

Community structure, which is used to develop new conceptual insights into current economic frameworks of analysis, is shown to be relevant to the development of formal health insurance. In terms of demand for health insurance, the thesis shows that adverse selection is a significant problem. Economic status, however, has no statistically significant effect on uptake. This finding, together with evidence that being insured reduces out-of-pocket expenditures significantly, and more so for poorer individuals, implies that income-related inequalities in financial access to health services has reduced, as a direct result of health insurance.

In-depth interviews with insured patients reveals that many are dissatisfied with the quality of care they receive. Providers appear to discriminate against insured patients depending on how much income they bring to a facility, which impacts negatively on the intention of many to purchase insurance in the future. Insured patients trade-off these negative effects with expected benefits, when deciding whether to use insurance or pay full charges. Finally, this thesis demonstrates how drawing on frameworks from other disciplines, in particular sociology and development economics, can enrich current thinking about the development of health insurance in low-income countries.

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Preface

Health insurance schemes are being introduced in a large number of low and middle-income countries. Frequently, health insurance is wrongly seen as a panacea for the development of financially sustainable health systems that protect access to health services. Whilst the literature is rich with evidence of the problems facing health insurance (e.g. adverse selection and moral hazard) in richer economies, the evidence base for poorer countries is very limited. This thesis contributes to the literature by presenting the findings of an evaluation of a national voluntary health insurance scheme in Vietnam.

Extending insurance beyond those in salaried employment is a major policy issue for governments concerned with protecting access to health services. In the final paragraph of an article discussing rural health financing in Thailand, published as part of the proceedings of a World Bank conference, the author writes:

> "But certain preconditions must be in place for such a scheme (Health Insurance Card Scheme) to get off the ground. The most important of these preconditions is sufficient social capital." (Khoman 1997)

This statement raises a large number of questions, not least what social capital actually is. Khoman had not mentioned social capital previously in the article, yet suggested it was necessary for rural risk-sharing in the health sector, and a key to its success. Several years since the concept became popular in the sociological literature, an increasing number of texts state the importance of social capital for health financing, but usually in a superficial way. This thesis attempts to disentangle the social capital literature, concluding that there are serious definitional problems with the term. It does draw, however, health economists towards a rich literature that is not usually considered.

Acknowledgements

Author's declaration

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Much of the general background description of the scheme, presented in Part 1.3, was published as Discussion Paper No. 167 of the Centre for Health Economics, University of York, and entitled *"Paying for health care in Vietnam: extending voluntary health insurance coverage"*. The paper was co-authored with Robin Thompson.

Chapter 5 is a revised version of a paper presented at the HESG Conference in Newcastle in January 2000, and is the result of analysis conducted jointly with Dr. Peter Martinsson. The results were also incorporated into the World Bank's review of the health sector, *'Growing Healthy'*, published in 2001.

An article entitled: *"Do informal risk sharing networks crowd out public voluntary health insurance? Evidence from Vietnam"* on which I am the sole author, is published in Applied Economics Vol. 35 pp. 1-9. This paper draws, in particular, from Part 2.3, Part 3.2, and Part 5.2.

Part 6.2 of Chapter 6 is published in Social Science and Medicine Vol. 56(2) pp. 333-342, and entitled *"The impact of public voluntary health insurance on private health expenditures in Vietnam"*, jointly authored with Mr. Nguyen Duc Vinh and Dr. Paul Contoyannis.

Part 1

Background, Literature Review and Methods

Chapter 1: Introduction

1.1 Motivation

Health financing policy has become, over the past fifteen years, central to the development of financially sustainable health systems, which also strive to ensure access to essential health interventions for all citizens. Increased attention to the financial aspects of health systems has been driven partly by better information on flows of financial resources, which, for example, frequently exposes the dominance of out-of-pocket health expenditures in many low-income countries. By implication, ill-health represents a considerable risk to individuals and households, given that use of health services is largely determined by ability to pay. As a result, there is concern amongst policy-makers that attempts to improve the financial sustainability of health systems, for example through the introduction of user charges, have damaged access to health services for poorer households.

One strategy being widely adopted by governments is to strengthen the role of insurance within health systems. The central objective of this thesis is to evaluate one such attempt in Vietnam, where the government introduced both compulsory and voluntary health insurance schemes, in 1992. Given the lack of experience, and hence empirical evidence from low-income countries, decisions to establish health insurance schemes are based principally on the theoretical merits of risk-pooling. The report of the Commission on Macroeconomics and Health also encourages governments in low-income countries to promote community-financing schemes in order to facilitate risk-pooling amongst poor households (Sachs 2001). This advice reflects the lack of formal mechanisms that currently exists for households to protect themselves against the risks associated with ill-health. Most households in low-income countries operate in the informal economy, relying on a range of informal risk-sharing arrangements to maintain expenditures on essential goods and services, such as food, health, and education.

The results presented in Chapters 5-7 are based on analysis of an original dataset, collected in three provinces of Vietnam, using both a household survey and in-depth interviews. New knowledge relates to two key issues. First, what factors, at both the individual and community level, determine the purchase of voluntary health insurance? Secondly, what has the impact of the scheme been, for example on access to health services?

Several issues central to the theory of health insurance are tested empirically, offering new evidence, in the context of a low-income country. Explaining the results in a country such as Vietnam, however, requires an understanding of the very different structure of its economy, legal and regulatory framework, and culture. Chapter 1 presents this societal context together with an overview of the health system and health insurance scheme. This information is used, together with a review of theory and evidence in Chapter 2, to develop specific research questions in Chapter 3. It is also used when interpreting the results.

Two aspects of the research represent new approaches to analysing traditional questions regarding health insurance. First, the relevance of social structure to the development of health insurance is examined in detail. Many articles refer to the importance of social capital, a term now widely used by sociologists and political scientists. Substantial space is devoted to this issue, particularly in the context of demand for health insurance, in an attempt to disentangle a concept that cannot be easily defined, and as a result is often used somewhat superficially. Despite this constraint, many related terms such as social cohesion, are useful in their own right.

Secondly, this thesis is motivated by a desire to understand the way in which formal health insurance interacts with private systems of risk-sharing, an issue not previously examined. Most households do not benefit from national social security schemes, in contrast to informal systems, which have often existed for generations. An insight into this issue may prove useful in understanding why individuals in certain communities are more likely to purchase health insurance than are others. Empirical evidence is also produced on several other issues on which little evidence currently exists, including the impact of insurance on patient satisfaction, and private out-of-pocket health expenditures. The context and structure of the thesis are presented in detail in the next section.

1.2   Context and structure

Figure 1.1 presents the conceptual model within which the thesis is placed, both in terms of theoretical, and policy concerns. It does not aim to be comprehensive, but rather to reflect those relationships that have particular importance to this thesis; arrows represent expected causal relationships. The figure provides a contextual framework for the analysis that follows, and is referred to throughout the thesis.
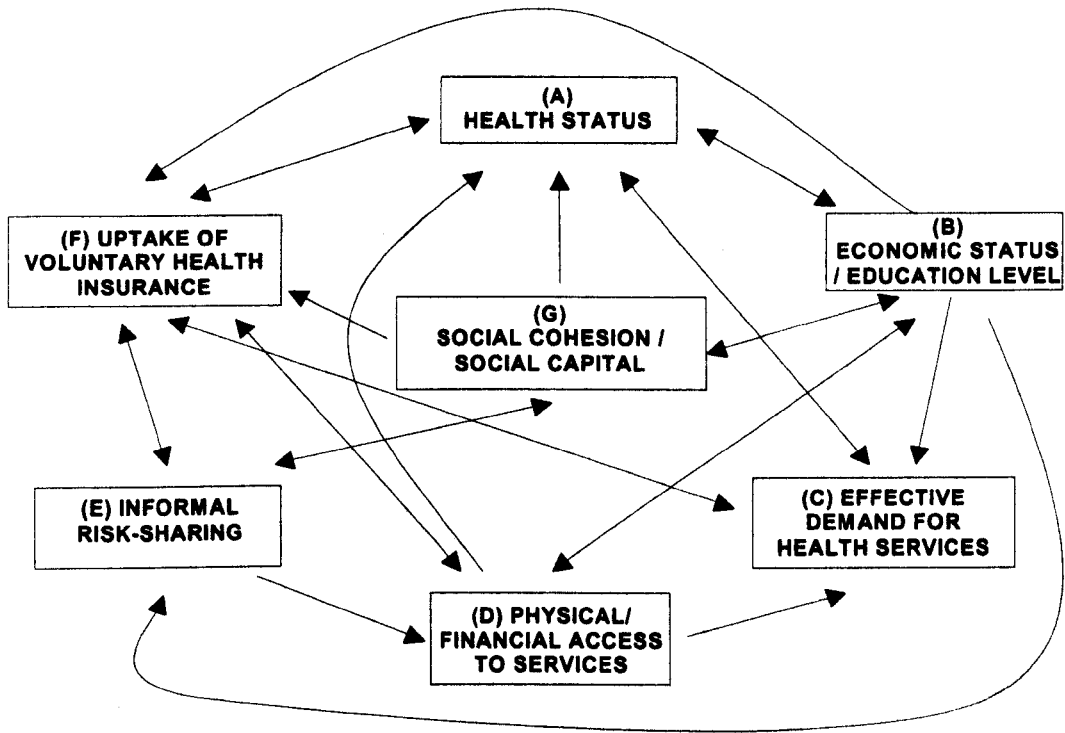
FIGURE 1.1: CONTEXT OF THE THESIS

Health status, the ultimate concern of health financing policy, is the starting point for discussion[1]. Normand (1999) stresses that the policy objectives of health insurance cannot be divorced from broader health policy goals, in particular access to, and quality of, health services, and the importance of appropriate incentives to ensure efficient service provision and cost control.

Health status is determined by a wide range of factors, many of which are not easily influenced by health policy makers. For example, Grossman (1972a) highlights the important role of education, which improves the efficiency with which individuals *produce* their own health. In a recent review, Grossman and Kaestner (1997) present evidence that the number of years of formal schooling explains more variation in individual health status, than either income or occupation.

Whilst there is now considerable support for the effect of absolute income on health status (e.g. Gravelle 1998), attention has grown on the importance of relative income. Proponents of the relative income hypothesis, such as Kawachi et al. (1997b) and Wilkinson (1996), suggest that inequalities in health are explained not only by variations in absolute income, but also by the degree of income inequality, independent of an individual's absolute level of income. The central argument is that as income inequality increases within a community, so do levels of mortality. Kawachi proposes that the causal link is disinvestment in social capital, which he equates with social cohesion, stating "...there has been a renaissance in the notion of community cohesiveness". He also notes that Robert D. Putnam[2], in his study of democracy in Italy, "...sought to measure the strength of social cohesion - what he terms 'social capital' - within regions of Italy" (Kawachi and Kennedy 1997: 1037)[3]. Wagstaff and van Doorslaer summarise the debate as follows:

> "The relevant individual-level studies to date, all on U.S. population data, provide strong support for the "absolute-income hypothesis," no support for the "relative-income hypothesis," and little or no support for the "income-inequality hypothesis." (Wagstaff and van Doorslaer 2000: 1).

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[1] Conceptually, the figure has no central or starting point.
[2] Putnam is the author of one of the seminal texts on social capital, discussed in Chapter 2.
[3] Chapter 2 reviews the social capital literature and highlights the problems involved in defining the concept.

Analysis by Deaton suggests that increasing income inequality doesn't directly influence levels of mortality, but that as income inequality increases, income has an important protective effect against mortality. If this is the case, then policies to reduce income inequality will not necessarily have any effect on aggregate (or even individual) mortality. Deaton continues that

> "When the ratio of between-group to within-group inequality changes, any given income group has a different mix of high status and low status individuals, and it is the change in this mix that changes health conditional on income, not any change in health". (Deaton 1999: 29)

Examining inequalities in health status is not, however, a central research question for this thesis, although the issue is referred to during discussion of the results. Health status is also influenced by the extent to which individuals demand health services, which in turn is a function of several factors, including the supply of services (physical access), and the way in which health services are financed (financial access). Again, education has an important influence on perceptions of the need for, and uptake of, health services provided by health professionals as opposed to practitioners without formal training. Finally, health status is also likely to have a bearing on demand for health insurance, which, as discussed later in Part 2.1, is derived from a demand for health services and, ultimately, a demand for health. Whilst the impact of insurance on health status is not a focus of the thesis, the health status of individuals is an important explanatory factor incorporated into the econometric analysis.

(B)   *Economic status and level of education*, the latter measured in terms of the number of years of formal schooling completed, are included in Figure 1.1 as two important characteristics of individuals that influence their demand for health, health services, and health insurance. As such, both variables are incorporated into the analysis presented in Chapters 5-7, as explanatory variables. In addition, there is some evidence that social capital increases income (see Part 2.2.3), and a suggestion that as communities become wealthier, social capital is likely to decrease, an idea closely linked to the debate on the relationship between levels of income within a community, and the extent to which informal risk-sharing arrangements exist (see Part 2.3.2).

Several factors influence levels of *effective demand for health services* (C), low levels of which are a concern for policy-makers in many low-income countries, given high levels of unmet health needs. These include physical access (quantity of supply),

financial access (the cost to the individual), and perceptions of quality (which in turn influences perceived value for money). Economics uses the concept of price elasticity of demand, to measure how demand changes in response to variations in price; as the price of a normal good or service increases, demand will fall, and *vice versa*. Even where the price of a health service is officially zero at the point of delivery, effective demand is rationed by the indirect costs (e.g. transportation), and opportunity costs (e.g. time), involved with obtaining services, particularly in rural communities where the supply of services tends to be inadequate. Unofficial user charges, which are widespread in low-income countries, also increase the cost of accessing health care, and are likely to reduce the *protective* effective of insurance, although this is an under-researched issue. Levels of effective demand for health services will also be influenced by the presence and structure of health insurance, within a health system, an issue discussed in detail in Part 2.1.

The financial sustainability of health systems in low-income countries dominated the policy agenda during the late 1980s and throughout the 1990s, in part due to the expansion of primary level health facilities in many countries following the Alma Ata declaration, and fiscal problems resulting from the 'debt crisis'. In Vietnam, public spending was tightly controlled throughout this period, in an attempt to improve macro-economic stability. At the same time, alternative sources of financing for public health services were promoted. An economic justification for the introduction of user charges was made by the World Bank (Akin 1987), and UNICEF launched the Bamako Initiative, which stressed the need for greater community financing and ownership of health services. Since then, certain international agencies, such as WHO (2000) have stated clearly that they consider prepayment schemes, including mandatory health insurance, to be the best form of health financing.

Concern that direct charges for health services led to lower levels of service usage amongst high need population groups, despite the presence of exemption mechanisms, grew during the late 1980s and early 1990s. Several authors, including Enyimayew and Waddington (1989), Creese (1991), Enyimayew and Waddington (1989), and Gilson (1997), produced evidence that poor households were increasingly turning towards self-treatment, and low-cost health services, provided by unregulated private practitioners. The central policy concern was one of *financial access to health services* **(D)**.

Risk-sharing mechanisms aim to improve financial access to health services whereas physical access is largely determined by the quantity of supply. Increased access to, and effective demand for health services, can have an important influence on health status, as demonstrated by reductions in the burden of disease from communicable diseases in many countries, particularly as a result of improved access to immunisation services. As governments introduce direct user charges for health services, in order to improve the financial sustainability of health systems, protecting and improving access to health services has become a major policy concern (see in particular Figure 1.2 later in this chapter). New knowledge regarding the impact of voluntary health insurance in Vietnam, on both financial and physical access to health services, is presented in Part 6.2 and Chapter 7 respectively.

The relevance of *informal risk-sharing* mechanisms (**E**), to formal health insurance schemes in low and middle-income countries, has received little attention in the literature or by policy-makers to date. Considerable research into risk has, however, been conducted by development economists, and this literature is drawn on in the development of the research questions presented in Part 3.2.2 (also see Part 2.3.2). One of the aims of this thesis is to draw on these ideas to enrich thinking about the development of health insurance. Formal risk-sharing can be defined as an agreement between individuals to which a money price is attached. Private financial networks, the basis of informal risk-sharing, are often important where formal, institutional mechanisms for risk-sharing are absent or weak and, possibly, where there is little trust in those institutions that do exist. The recent sociological literature suggests that the level of social capital in a community also has an important influence. As already noted, the way in which formal and informal systems interact is, potentially, an important issue for policy-makers and is addressed as part of *Research Question 6* (again see Part 3.2.2).

Understanding *demand for health insurance* (**F**) in low-income countries is important for the development of voluntary schemes, given the limits that exist to extending compulsory social insurance beyond workers in salaried employment. Drawing on the experience of Latin America, Ensor (1999) estimates the likelihood of achieving universal coverage in a range of countries, including Vietnam. The ease of registering individuals, assessing income levels, and collecting contributions is estimated based on several factors, which reflect the structure of economy and society. These include per capita income levels, population density, the degree of urbanisation, and the percentage of the labour force working in industry. In summary, Ensor predicts that

Vietnam, which scores low on each measure apart from population density, faces significant constraints to extending compulsory health insurance nationally. Due to these limitations, attention has turned to the role of voluntary health insurance mechanisms, although almost ten years' ago, Brian Abel-Smith seriously questioned the potential of such schemes, saying that:

> 'It has still to be shown that voluntary local prepayment schemes can make a major contribution to health financing, except perhaps in a coercive political system.' (Abel-Smith 1994: 174)

Elements of coercion have been reported within the insurance scheme in Vietnam, particularly with respect to the enrolment of schoolchildren (see Part 1.3.2). Political culture in Vietnam is the product of a variety of influences, including Confucianism, Communism, and more recently corruption, which, in turn, are likely to affect both the way in which insurance is organised and delivered, and consumer attitudes towards government and its schemes.

Several ideas and concepts have developed around voluntary health insurance, including micro-insurance (Dror and Jacquier 1999), community-based health insurance (Chabot et al. 1991; Ron and Kupferman 1996), and mutual health organisations (Atim 1998; Criel and Van Dormael 1999). Bennett et al. (1998) and Preker et al. (2001) highlight the need to increase access to health services amongst low-income rural populations and workers in the informal sector. They suggest that community financing is a necessary but insufficient first step to achieving this. Current evidence regarding the uptake and impact of voluntary health insurance is based primarily on the experience of rich economies, however, which is reviewed later in this chapter. It is debatable how useful this evidence is in terms of policy lessons for low-income countries, given the very different structure of health systems, and this is an issue discussed throughout the thesis.

A range of factors is likely to influence uptake of health insurance. Part 2.1 discusses economic models of demand for health insurance, which stress the importance of risk-aversion, and quality of service. Empirical studies focus on the effect of individual levels of income, education, and health status. Demand for health insurance in the context of Vietnam is tested empirically, in Chapter 5. A theoretical insight developed in this thesis is that uptake is also influenced by the extent of informal risk-sharing in a given community (see Part 3.2). It has also been suggested that by facilitating

collective action, social capital **(G)** is important for the development of health insurance, an idea explored in some detail in Chapters 2 and 3. In the literature, social capital is increasingly referred to as important for the development of health insurance. To date this idea has been used in a peripheral sense, however, but it is addressed in detail in this thesis.

Briefly, social capital refers to the level of trust or social cohesion within a community and, whilst measured at the individual level (i.e. the links and ties an individual has with other individuals), tends to be analysed at the community level to represent the institutions, relationships, networks, and social norms that shape the quantity and quality of a community's, or society's, social interactions. After examining the roots of this concept and its suggested links with health insurance, an alternative hypothesis is presented, in which social cohesion, the measure of social structure used in this thesis, has the opposite effect, by resisting uptake of, and effectively substituting for, health insurance (see Part 3.2.2)[4].

Whilst a major emphasis of this thesis is an analysis of demand for health insurance and health services, as reflected in Figure 1.1, the way in which health services are supplied will have also a significant effect. For example, Normand and Weber (1994) note that without good administration, many of the advantages of health insurance may be lost. Where an insurance agency is a purchaser of health services, its effectiveness will, to a large extent, determine whether health insurance has a positive impact on policy goals such as equity in access to health services, and efficiency in their delivery. Kutzin and Barnum (1992a, 1992b) stress the importance of organising the entry of consumers, and of removing incentives for providers, to increase both the volume and the cost of health services. Despite the importance of supply-side issues, they are not the major focus of this thesis.

The remainder of this chapter is organised into several parts. Part 1.3 provides an overview of current health financing policy in Vietnam, and details the health insurance scheme in question. Part 1.4 describes the Vietnamese health system more generally, with a focus on trends in health status and the supply of health services, whilst Part 1.5 profiles Vietnamese society. In socio-economic terms, north and south Vietnam are quite different. A brief history of Vietnam is presented, together with an

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[4] Chapter 2 discusses the problems in defining social capital.

overview of Vietnamese culture, and of the economy. The way in which government is structured, and a discussion of whether or not Vietnam can be said to have a civil society, an important dimension of the institutional environment within which health services and health insurance exist, are issues discussed in Part 1.5.

1.3   Health financing policy in Vietnam

1.3.1   Overview

The way in which health services are financed is important for the achievement of health system outputs and, ultimately, health outcomes. Wagstaff and van Doorslaer (1992) review several different approaches, and conclude that in OECD countries, tax financing tends to be proportional or mildly progressive, social insurance systems regressive, and private systems even more regressive. The study concludes that out-of-pocket payments, which dominate financing in low-income countries, are an especially regressive means of raising revenues for health services.

Out-of-pocket payments are typically introduced as a tool to *manage demand*, in particular when consumption is considered excessive, or funds are simply insufficient to provide services free-of-charge. In most low-income countries, however, user charges have been seen principally as a way of raising additional funds for cash-starved public services. However, when faced with substantial out-of-pocket payments in order to access health services, many patients alter their health and treatment-seeking behaviour. Much of the evidence from low-income countries shows that out-of-pocket payments have reduced the consumption of health services disproportionately amongst poorer households (Creese and Kutzin 1995; Gilson and Mills 1995; Gilson and Russell 1995).

In Vietnam, households account for the majority of spending on health services: in 1998, out-of-pocket expenditures accounted for 81% of total spending, an increase from 71% in 1993 (see Table 1.1). As a result, Vietnam has the lowest public sector share in aggregate health spending in the region, after Cambodia, reflecting the extent of out-of-pocket payments for both public and private health services. In terms of exemptions from user charges, following a Government Decree in Vietnam in 1995, health services for children under the age of six years are provided free of charge. Other categories exempt from charges include those with mental illness, patients with

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epilepsy, leprosy or tuberculosis, and those living in New Economic Areas. The very poor are also exempt.

Based on regression analysis of Living Standards Survey data in Vietnam (VLSS), Trivedi (2002) concludes that being married, and female, has a statistically significant and positive effect on demand for health services. Unexpectedly, age is negatively related to outpatient use but positively related to the use of inpatient services. Trivedi also finds that Commune Health Centres are not widely used by wealthier and better-educated groups, which reflects both their inferior quality, and the different preferences of wealthier individuals. In a separate study, which uses household survey data from northern Vietnam, Ensor and San (1996) find that the poorest households spend 19.3% of annual income on health services compared with an overall average of 7.1%. Wagstaff and van Doorslaer (2001) analyse the impact of private expenditures on household poverty in Vietnam using data from 1998 (see Figure 1.2).

Using a Pen's Parade analysis, Figure 1.2 presents 'before and after' scenarios, in which each vertical line represents the drop in income, or shock to consumption expenditures, resulting directly from out-of-pocket health expenditures. The top of each vertical line represents level of household consumption before health expenditures are incurred, whilst the bottom point represents the post-payment state. On average, for example, households at consumption point 2,995,000 Vietnamese Dong (VND) on the horizontal axis were above the food poverty line before incurring out-of-pocket health expenditures, but below it after payment. The food poverty line is defined as the cost of producing or obtaining enough food to achieve an intake of 2,100 calories per day. The overall poverty line includes some non-food expenditure, and hence is higher (Wagstaff and van Doorslaer 2001). The chart provides evidence that out-of-pocket health expenditures constitute a considerable risk to Vietnamese households, and are frequently a direct cause of poverty.

The food poverty line is estimated to be 1,286,833 VND per annum per capita, whereas the overall poverty line is 1,790,000 VND. The way in which providers are paid determines the incentives, which in turn affect the way in which health services are supplied. Supplier-induced demand for health services is widely observed under systems that reimburse providers for each consultation, or operation conducted, and is a major theme in the health economics literature (see Newhouse and Culyer, 2000). The way in which provider reimbursement takes place under health insurance in Vietnam is discussed in Part 1.3.3.

Indicator	1993	1998
GDP per capita	US$ 170	US$ 330
Health expenditure as %GDP	5.2%	8.0%
Per capita health spending (total)	US$ 9.67	US$ 27.41
Per capita health spending (public)	US$ 2.71	US$ 5.21
Private health expenditures as % of total	71%	81%

TABLE 1.1: HEALTH EXPENDITURES IN VIETNAM[5]

	Expenditures on health via health insurance[6]	As % total public health expenditures
1993	64,619	2.66%
1994	150,080	5.29%
1995	236,158	6.9%
1996	359,904	10.02%
1997	383,528	9.32%
1998	442,812	10.77%

TABLE 1.2: THE FINANCIAL CONTRIBUTION OF HEALTH INSURANCE

[5] Source: World Bank (2001)
[6] Millions of constant 1994 VND - adapted from Dunlop (1999)
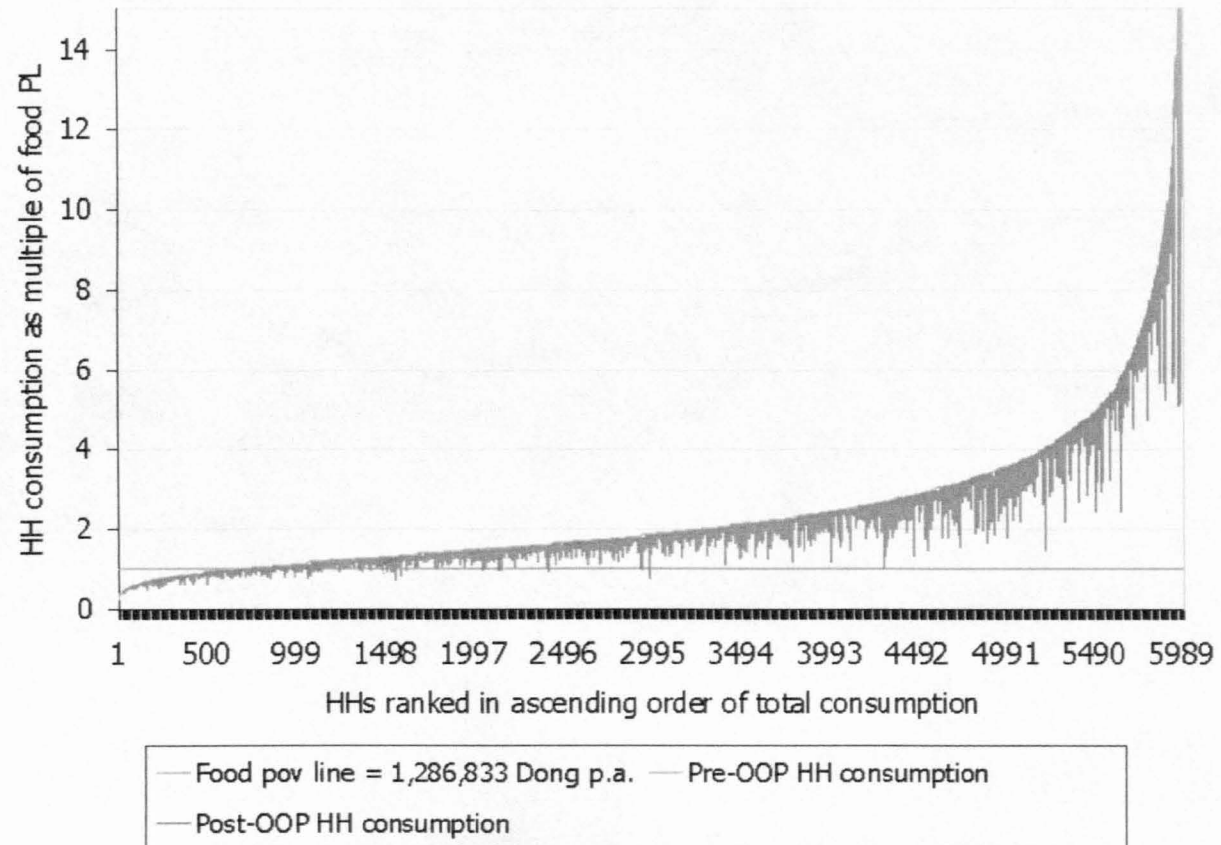
FIGURE 1.2: PRIVATE HEALTH EXPENDITURES AND POVERTY (VIETNAM 1998)

1.3.2 Insurance: target groups, premia, legislation, and policy objectives

Most of the information presented in the remainder of this chapter is a summary of work presented in a number of published documents. These include Bennett et al. (1998), Dunlop (1999), Ensor (1995), Ron (1998), Ron et al. (1998) and World Bank (2001). Bao Hiem Y Te, or Vietnamese Health Insurance, was formally launched in August 1992, following the issuing of the National Health Insurance Decree (Ministerial Decision No. 299/HDBT), which called for compulsory health insurance for salaried workers in both public and private sectors (the latter for companies with over ten employees). A pilot scheme had earlier been initiated in Hai Phong Province in 1989 with technical support from both the World Health Organisation and the International Labour Organisation (Carrin et al. 1993).

The stated goals of the scheme include raising extra resources, assisting in poverty alleviation efforts (particularly for special merit groups), and increasing financial protection against future uncertain health care expenditures (Solon and Tien 1997). Table 1.2 shows the increasing importance of health insurance as a financing mechanism for public health services, increasing from below 3% of total expenditure in 1993, to almost 11% in 1997.

Figure 1.3 summarises the structure of Vietnamese health insurance in terms of target groups. Compulsory insurance is exclusively for state employees and employees of large organisations, who contribute 1% of their salaried income, with employers contributing a further 2%. An estimated 85% of the approximately seven million people eligible for this scheme are currently enrolled (Ensor 1995; Jowett and Thompson 1999). Enrolment levels for each component of health insurance at the end of 1997, the most recent information available at the time of the research, are presented in Appendix 1.

In the initial years after the launch of the scheme, there was considerable under-reporting of average wages, which effectively reduced total contributions. At the same time, retired workers, a relatively high-risk group in terms of health, were entitled to the benefits of insurance despite not contributing. This group comprised 50% of all individuals insured in the first two years and was a significant drain on resources. The ratio then dropped, to 30% in 1998, and is expected to fall further in the coming years. Total coverage is now dependent on strengthening compliance in the private sector. Only individual workers are covered under the compulsory scheme with their
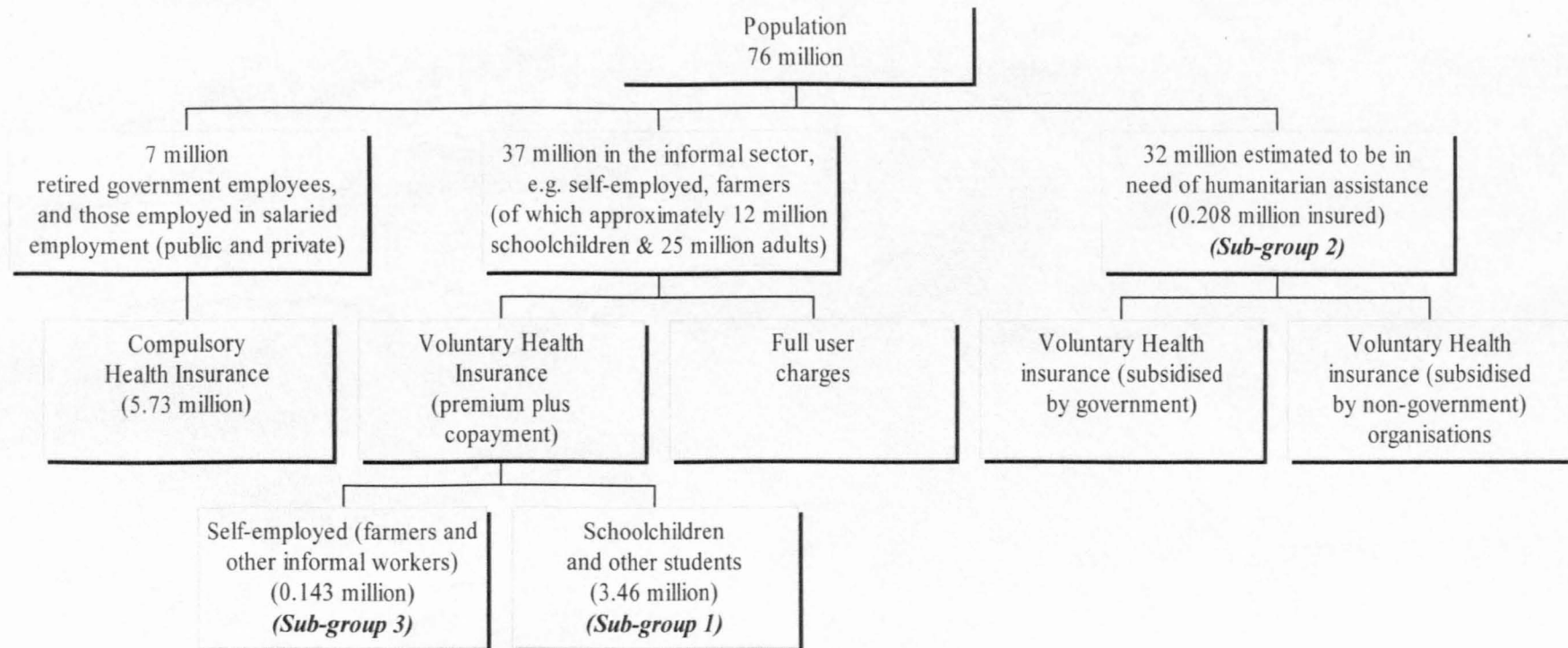
FIGURE 1.3: TARGET GROUPS FOR HEALTH INSURANCE IN VIETNAM (1997)

dependants encouraged to join the voluntary scheme.

All those individuals not eligible for compulsory health insurance are encouraged to insure themselves on a voluntary basis. Initially, the intention was that the voluntary scheme would encourage rural farmers and the self-employed to enrol. In practice, membership falls into three distinct sub-groups: i) schoolchildren and students; ii) members of households eligible for humanitarian assistance to whom insurance is freely provided; and iii) others, including the self-employed (including farmers and service workers), employees of small enterprises, and dependants of those insured under the compulsory scheme. During fieldwork in Dong Thap Province (see Appendix 2), it was evident that government employees at the commune level are also incorporated into the voluntary scheme. This was not the case in the other provinces and the extent to which this approach applies nationally is unclear. State industries for rubber, oil, coalmining, gas etc. have established independent schemes.

Despite this intended approach, in practice, schoolchildren and students in higher education were the primary focus in the initial years with between 20-30% of this group enrolled by the end of 1998 (Carrin et al. 1999a). This scheme is often referred to as *soft compulsory*, given the reported pressure on schools from local authorities to enrol all of their students i.e. entire classes. In return, teachers receive a commission for collecting contributions once a year, and in many cases a large part of the funds goes to maintain a school medicine chest which, it has been reported, often contains adult drugs, such as hypotensives, for the teachers themselves (Ron 1998). In many provinces the Vietnam Insurance Corporation, Bao Viet (the state company for liability insurance for property, cars and other general areas), also insures schoolchildren for private health expenditures under a general insurance policy.

Over 99% of those low-income individuals eligible for free health insurance, the second of the three sub-groups, are not yet covered by health insurance i.e. they still await allocations from poverty alleviation funds or non-governmental organisations such as the Red Cross. Enrolment in this group is only likely to increase substantially if sufficient funds are available and politicians make the issue a priority. The third group comprises farmers and workers in the informal sector. Uptake amongst this group has been extremely low to date.

Several reasons have been suggested for the low uptake of voluntary insurance amongst adults. One is a lack of institutional capacity at provincial and district levels to develop mechanisms that facilitate their enrolment. For example, monthly contributions would allow those who cannot afford to pay the full annual premium in one go, to still contribute. Furthermore, few measures have been taken to encourage the enrolment of very low-income

or non-economically active individuals, with provinces only encouraged to support high-need groups through local government funds, and by approaching national and international agencies.

Similarly, no regulations exist concerning how premia should be set under voluntary insurance e.g. linking to local income levels, or limiting the frequency of premium increases. Provincial funds propose a contribution level to the Provincial People's Committees, who give the final approval. Premia are fixed within provinces, but vary between them, and are typically in the region of US$ 2-10 for an annual policy. Fixed premia are likely to lead to problems of adverse selection (see Part 2.1.3). Whilst the National Directorate of the Voluntary Health Insurance Agency (VHIA) has undertaken costing studies, premia appear to be based on estimates, possibly informal, of willingness and ability to pay at the provincial level.

One measure taken by central government was to establish a ceiling on a patient's annual out-of-pocket health expenditures, equivalent to half the minimum annual salary, approximately 860,000 VND (Solon and Tien 1997). This applies to both individuals paying full user charges and to those making co-payments under health insurance. Co-payments were introduced as part of Article 7, Decree 58/1998, to limit excessive use of health services (see Part 2.1.2). Under this measure, insured patients are obliged to make a co-payment of 20% of the full user charges applicable, for the services they receive. This move was partly a response to the rapid growth in reimbursements in many provincial schemes. In 1996, expenditures (reimbursements) exceeded revenues in almost one quarter of provincial funds, falling to around 10% in 1997 (Dunlop 1999). At the time of the survey, membership was based around individuals, rather than families, under both compulsory and voluntary schemes, although some moves are being made to promote family-based membership. Further details of the design of the scheme are presented in the next section.

1.3.3 Insurance: benefits, provider payments and institutional design

Under the initial decree of 1992, benefits under compulsory insurance were defined as including medical examinations, diagnostic tests, drugs, and diagnostic and treatment operations. Two types of policy are offered under the voluntary scheme, one covering only inpatient services, and a second covering both inpatient and outpatient services, with the benefits also covering consultation fees, diagnostic tests and medicines. At the time of purchasing an insurance policy, individuals must designate one public health facility at which benefits can be obtained which, in most cases, is a District Hospital. Members were

thus unable, at the time of the research, to use the insurance policy at private or non-designated public facilities. A recent Government Decree states, however, that insured patients in some urban centres can access outpatient services at any facility, including private providers.

Health insurance essentially offers financial benefits (i.e. an 80% reduction in user charges), rather than coverage for additional health services, or service provision in a separate facility. During the research, it became clear that in some provinces separate consultation rooms and wards are made available, with ceiling fans, as well as tea-making facilities. However, in many cases these benefits appear to be only for those with compulsory insurance, which highlights the lack of clarity on this issue.

Certain policy measures exist to limit excessive adverse selection (see Part 2.1.3), which results when individuals with a high probability of requiring health services, dominate membership of a scheme. The main approach is to limit access to benefits until one month after the purchase of insurance. A recent decree, announced since the research, extended this period to three months. Furthermore, maternity benefits are restricted to a couple's first two children.

Health facilities are reimbursed by provincial health insurance funds for the services they provide to insured patients. Reimbursements are made on a fee-for-service basis, which generally includes a flat fee for accommodation, and a standard fee for medical tests and procedures. In the early years of the scheme the average rate of reimbursement to facilities nationally, increased dramatically, partly due to the inclusion of referral services, which are typically more specialised and expensive. A Ministry of Health Circular in October 1995 revised the approach to reimbursing providers from a fixed in-patient day payment to a fee-for-service basis. This approach, which often encourages supplier-induced demand (see Part 2.1.2), is reported to be a major cause of the financial debt in many provincial funds, with an estimated 75-80% of reimbursements made for medicines.

In practice, reimbursement amounts are decided by provincial funds. Certain provinces have set a cap on reimbursements: in the case of Ben Tre The Province, this is VND 102,000 per inpatient case. Nationally, discussions have taken place on the possibility of introducing capitation payments to counter problems of debt. An additional change introduced by the October 1995 Circular was that a consultation fee would be applied to outpatient services, and that 30% of revenue could be used for staff bonus payments; health worker salaries continue to be paid through central government funds (i.e. not through the insurance fund).

The National VHIA Directorate was established as an operational unit within the MoH, and controls overall policy, information systems, and training. Provincial funds are responsible for registering members, setting contribution levels, collecting premia, and organising claims and reimbursement procedures. Each Province has a department staffed by medical professionals, who scrutinise claims in terms of the diagnosis and treatment provided, as a mechanism to limit supplier-induced demand. In addition, an accounting department verifies the standard payment to be made. The National Directorate monitors the implementation of these various activities.

With respect to the marketing of voluntary health insurance, little information on the specific strategies used, their intensity, or their effectiveness, was readily available from official sources, although some information was collected as part of the household survey. It is reported that in Hai Phong Province, opinion polls are conducted in target communes, to establish the number of residents intending to purchase health insurance. Policies are only sold when this figure reaches 50%, a strategy that aims to reduce problems of adverse selection. Interestingly, in response to the financial problems discussed earlier, provincial health insurance funds were placed under the direct control of VHIA in 1999, and a tightening of guidelines concerning the control and use of funds took place.

In terms of the use of revenues, 0.5% goes to the National Directorate in Hanoi, 1.5% towards a national reinsurance fund to facilitate risk-sharing across provinces, 8% for administration and 90% for health services. An important point is that whilst a mechanism exists for some risk-sharing across provincial funds, there is an expectation that funds will, as far as is possible, cover the cost of treating insured patients within their province.

Unlike schemes in other countries, there is little or no community involvement in the voluntary health insurance scheme in Vietnam, which is directed and managed entirely by the government. One advantage of this is that voluntary insurance has been established with a national perspective, which in the medium to long term may make the introduction of compulsion more feasible, and increase the efficiency of risk-sharing. In other respects, however, the lack of local involvement may limit interest in joining the scheme, and fail to take advantage of local monitoring, for example, which has the potential to limit the development of wasteful over-consumption of health services.

Whilst institutional arrangements are an important consideration when interpreting the results presented in Chapters 5-7, the lack of good data regarding the way in which both health services and health insurance are supplied across Vietnam, limits the ability to draw

general conclusions, for example with respect to moral hazard (see Part 7.3 and 8.3.3). There may be aspects of the way in which the promotion of health insurance is organised which influence attitudes towards uptake, and issues around the reimbursement of providers, which create incentives that affect provider behaviour. Both are examples of influences that might partially explain some of the findings.

1.4   Health and health services in Vietnam

1.4.1   Health status

Vietnam has achieved considerable improvements in the health of its population since 1945 (see Table 1.3), the end of the Second World War, relative to its level of national income. It performs well on a range of indicators such as life expectancy and infant mortality, achieving levels equivalent to countries with income levels five times greater, such as Ecuador and Morocco. Using purchasing power parity (PPP) data, in 1995 Vietnam had a per capita income of US$ 240 and an infant mortality rate of 45 per 1,000 live births, compared for example with a US$ 1,110 per capita income and 55 infant deaths per 1,000 live births in Morocco.

Life expectancy at birth in Vietnam is high for income levels: 64.7 years for males, and 68.8 years for women, in 1999 (WHO 2000). Disability-adjusted life expectancy (DALE) figures for Vietnam estimated lower figures, with 56.7 years for males and 59.6 years for females (WHO 2000), ranking Vietnam 117 out of 191 countries, between Egypt and Nicaragua. Malnutrition rates are high compared to other countries in the region, however, standing at 39% of all under-5 year olds[7]. The country also performs poorly on emerging diseases, such as lung cancer, and has the highest prevalence of smoking globally (World Bank 2001). As a cause of overall mortality, communicable diseases fell from 52% in 1986 to 27% in 1997, yet they remain a major public health problem for the sector. Non-communicable diseases currently account for around 52% of all mortality, with the remaining 22% caused by accidents, injuries and poisoning.

Table 1.4 highlights regional variations in infant mortality rates, which are highest in the Central Highlands. Rates are substantially higher in the Mekong River Delta than in the Red River Delta, the two regions in which fieldwork took place for this thesis. It is also estimated

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[7] This figure is based on a measure of weight-for-age, reducing to 34% when the height-for-age measure is used.

INDICATOR	1945	1975	1998
Life expectancy at birth	34	58	68
Infant mortality rate (per 1,000 live births)	300	83	35
Maternal mortality rate (per 100,000 live births)	200	-	105

TABLE 1.3: HEALTH STATUS IN VIETNAM[8]

REGION	1989	1994	% change
Northern Uplands	45.4	62.2	37.0
Red River Delta	37.0	35.2	-4.6
North Central	46.5	37.7	-18.9
Central Coast	47.5	37.2	-21.7
Central Highlands	56.4	71.6	27.0
Southeast	33.9	31.2	-8.0
Mekong River Delta	44.1	48.2	9.3
Vietnam	45.0	45.1	0.2

TABLE 1.4: INFANT MORTALITY RATES BY REGION[9]

REGION	CHCs	Beds in CHCs	Population per CHC
Northern Uplands	2,520	10,101	4,969
Red River Delta	1,927	8,193	7,654
North Central	1,743	8,020	5,850
Central Coast	921	3,404	8,629
Central Highlands	557	2,365	5,951
Southeast	727	2,347	13,507
Mekong River Delta	1,311	6,753	12,677

TABLE 1.5: POPULATION PER COMMUNE HEALTH CENTRE 1997[10]

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[8] Source: Guldner (1995) and World Bank (1998b)
[9] Source: World Bank (2001: 8)
[10] Source: World Bank (2001: 68)

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that mortality rates in rural communities are 80% higher than in urban areas, with the suggestion that disparities in access to health facilities and general living standards are the main causes (World Bank 2001). This contextual information is used in the interpretation of results presented in Chapters 5-7.

1.4.2   Supply of health services

Following independence from France in 1954, the government of the Socialist Republic of Vietnam rapidly expanded its network of health facilities, in particular at the commune, or primary, level, and in the north of the country. The health system is based on a four-tier pyramid, with the Ministry of Health at the head developing and directing health policy, together with Provincial, District and Commune People's Committees. Sixty-one Provincial Health Bureaux form the second tier, serving between 0.25-5 million population through Provincial Hospitals, each with around 200-1,000 beds. The third tier is the District Health Centre, which manages services for an entire district. Finally, each Commune Health Centres (CHC) serves a population of between 2,000-10,000 at the sub-district level.

Following reunification between north and south Vietnam, in 1975 (see Part 1.5.1), strengthening the network of primary facilities in the south of the country was a priority. Due to financial constraints on public spending during this period, however, coverage in terms of population per CHC remains considerably higher in the north (see Table 1.5). Vietnam currently has 170 health centres per million people, compared with only 63 in China, the country with which Vietnam has most in common politically, socially and economically. In terms of doctors, Vietnam has 0.84 per 1,000 inhabitants, more than any other country in the region (Gertler and Litvack 1998).

Private provision of health services was legalised in 1986 under *doi moi* reforms, in part justified by the need to harness the labour of many retired health workers. Detailed information about the extent of this sector has only recently started to emerge (see Gertler and Litvack 1998, and World Bank 2001). One estimate puts the number of licensed private personnel at 25,698, around one-half of which are government workers practicing privately out-of-hours (Gertler and Litvack 1998). Of this number, around 37% are physicians, whilst pharmacists and drug vendors comprise a further 24%. Most private care is provided through clinics, of which only four existed in 1998, rather than hospitals. An estimated 70% of these facilities are located in urban areas.

The average number of consultations in public health facilities was 1.0 per person in 1993, falling considerably from 2.1 in 1987, but increasing to 1.7 in 1998, still below the average of 2.5 contacts in public facilities in low-income countries (Gertler and Litvack 1998). The number of in-patient days per capita increased by almost 50% between 1993 and 1998, with only Japan and Singapore having higher rates in Asia. One reason for the initial decline was the end of subsidised pharmaceuticals from the former Soviet Union, and the general breakdown in the Vietnamese health system in the early 1980s, as a result of economic depression.

The growth in the number of private providers, together with reports that individual financial arrangements between users and health providers in the public sector have increased, may also have contributed to this downward trend. According to Vietnamese Living Standards Survey (VLSS) data, around 15% of all contacts were with private providers in 1998, ranging from 24% in the highest consumption quartile to 10% in the lowest (World Bank 2001).

As part of the process of economic transition, the Vietnamese government deregulated the pharmaceutical market, resulting in an estimated fall in the real price of medicines of more than 30% between 1993 and 1998. This has had two major effects: first out-of-pocket expenditures on medicines fell in real terms for all income groups and, secondly, self-treatment with medicines has increased dramatically, raising fears both for the quality of treatment and growth in drug resistance, particularly of antibiotics.

Whilst this section provides a broad overview of the supply of health services in Vietnam, it does not present a detailed comparative analysis, for example of the quality of health services, in the various provinces and districts included in the household survey (see Part 4.2). Detailed analysis of health service delivery in the local context, whilst potentially important to enhance an understanding of varying patterns of demand for health services and health insurance, could not be collected as part of this research. Economic transition in Vietnam has also brought with it a movement towards the decentralised management of health facilities. For example, Bloom comments that:

> "China and Vietnam.....both countries have been liberalising their economies
> for a number of years. Partly as a result of these changes health facilities have
> become increasingly dependent on user charges, and they have gained
> considerable independence from political or bureaucratic control." (Bloom
> 1998: 233)

Drawing on experience from China, Bloom and Gu (1997) note that decentralised institutional arrangements and financing systems, prompted partly by economic transition, have led to growing inequalities in access to health services, cost escalation and, in some cases, lower quality health services. The reason, they propose, is the inadequate attention given by policy-makers to those factors influencing provider behaviour. With respect to the re-emergence of pre-payment systems in China, Bloom and Shenglan (1999) caution that without the involvement of a range of actors at the local level, including politicians, health officials, and patient groups, these schemes are likely to collapse.

1.5   Profile of Vietnam

1.5.1   Geography, climate and history

Vietnam lies on a north-south axis extending from China in the north to the Gulf of Siam in the south (see Appendix 2), and has two densely populated areas, both located on river deltas. In the north, the capital city Hanoi is located on the Red River, with Ho Chi Minh City, the main commercial centre, on the Mekong River in the south. Connecting these two deltas is a long band of coastal plains along the South China Sea. Highlands are found both in the central region and in the north-west of the country. The northern point lies at 23° latitude whilst, some 1,800 kilometres to the south, the southern point lies at 8° latitude. The north of the country is on the edge of the tropical climatic zone, with a winter season between December and April. In the south of the country, temperatures are generally higher all year around. A recent review of the health sector notes the importance of climate for health:

> "The disease pattern in Vietnam is strongly related to geography, climate and
> socio-economic characteristics. For instance, malaria is most serious in the
> Central Highlands and mountainous districts of the Central Coast provinces; the
> prevalence of dengue fever is highest in the Mekong River Delta; bubonic
> plague often appears in the Central provinces and Central Highlands; and
> Japanese encephalitis mainly occurs in the North during the wet season. Malaria
> is often serious in the remote disadvantaged areas, while dengue fever typically
> breaks out in crowded urban and delta areas." (World Bank 2001: 12-13)

Details of health status in Vietnam were presented in part 1.4.1. The history of modern-day Vietnam began in the north of the country. Austronesians, remote relatives of the peoples of islands in the Pacific and Southeast Asia, inhabited the area until four to five thousand years

ago, when people flowed into northern Vietnam from what is now southern China. Vietnamese culture today is primarily a mixture of these influences, although the north of the country maintains the strongest cultural similarities with China.

In 208 B.C., northern Vietnam was conquered by the Chinese Nam Viet Kingdom, leading to the inclusion of the Red River region into a unified China. Chinese control and influence remained until 939 A.D., at which point northern Vietnam comprised a mixture of indigenous tradition, and a political and administrative system based primarily on the Chinese system. The Ly Dynasty (1009-1225) was the first to establish a distinct Vietnam, in terms of people and place, during which time the capital city was moved to Hanoi. During this period Buddhism flourished, and northern Vietnam remained at threat from Chinese invaders throughout the decades that followed, eventually coming under their control again in 1407, until 1428.

The French conquest of Vietnam began in 1858 with an attack on what is now the city of Danang, in the central region of Vietnam, leading to the official incorporation of Vietnam into the French Empire in 1884. The Communist movement, led by Ho Chi Minh, became the main anti-colonial force in Vietnam, with the declaration of the Socialist Republic of Vietnam on the 2nd September 1945, following the removal of French and Japanese forces at the end of the Second World War. With the arrival of Allied Forces, however, the newly declared government was forced to discuss the future of the country with the French. As tensions mounted between communist and non-communist elements, the latter group based in the south, hostilities eventually broke out.

Following eight-years of war, the French Government signed the 'Agreement on the Cessation of Hostilities in Vietnam' on the 20th July 1954. As part of this agreement, the country was partitioned into two separate administrations, north and south, at approximately the 17th Parallel. Communist forces in the north began infiltrating villages in the south soon afterwards, and made sufficient inroads to convince U.S. President J.F. Kennedy to offer military support to the southern Vietnamese administration in 1961. The Vietnam War (or American War as it is referred to in Vietnam) followed, ending in victory for northern, Communist forces, over the capitalist southern regime, and the reunification of Vietnam at the end of 1975. The Vietnamese Communist Party continues to govern the country today.

1.5.2 Population and culture

Vietnam is the thirteenth most populous country in the world, with an estimated 76.7 million inhabitants according to the National Census of 1999, and a growth rate of 1.8% per annum. In terms of age structure, Figure 1.4, juxtaposes population pyramids for 2000 and 2030, and shows that almost half of the population is currently under the age of 19 years, but ageing rapidly due to sharp reductions in fertility rates over the past two decades. Whilst the total population is expected to increase by approximately 31% over the next 25 years, the number of people aged 60 years and over will grow by 118%, and the population aged below 15 years is projected to decline by 14%. Morbidity rates and the prevalence of diseases afflicting the elderly (e.g. diabetes and coronary disease) are thus expected to increase in the coming decades.

In the 12th and 13th Centuries Buddhism flourished, as did two further influences on Vietnamese culture and religion, Taoism and Confucianism, both of which are also central to modern Chinese culture. The former is best known through the concepts of yin and yang, a system of balance between opposing forces, which is commonly applied to male and female roles and relationships, but also to any relationship, between individuals or institutions, benevolent and malign forces. The concepts are also used to represent good and bad health.

Ethnic Vietnamese comprise between 85-90% of the total population, the remainder including people of Chinese, Hmong, Thai, Khmer, Cham, origin, as well as indigenous mountain-based populations. The Vietnamese language is Mon-Khmer, which is related to Cambodian, although Tai influence (which forms the basis of Thai and Laotian languages) is reflected in the tonal dimension of Vietnamese. Confucian doctrine has provided Vietnamese society with much of its hierarchical social structure, including the notion of subservience to state structures, and of children to parents. The concept of duty within such relationships originates from the teachings of Confucius. Figure 1.5 provides a further insight into the effect of Confucianism on Vietnamese culture, in particular the importance of duty within a variety of relationships.

Tønnesson (2000) provides a useful analysis of Vietnamese culture and society, which, he suggests, is made up of six separate layers. First, the Confucian layer, which refers to the period 1802-1863 and influenced all of Vietnam, was a period during which harmony was secured and order maintained through the promotion of values such as dignity, social harmony, virtuous behaviour, and education. These lay behind Ho Chi Minh's revolutionary ethics of humanity, a sense of duty, knowledge, courage, and integrity. To some extent this period cemented cultural differences between northern and southern Vietnam: the north

2000

FEMALE   MALES

80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4

Age group

15.0%   10.0%   5.0%   0.0%   5.0%   10.0%   15.0%

% total population

2030

FEMALE   MALES

80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4

Age group

15.0%   10.0%   5.0%   0.0%   5.0%   10.0%   15.0%

% total population
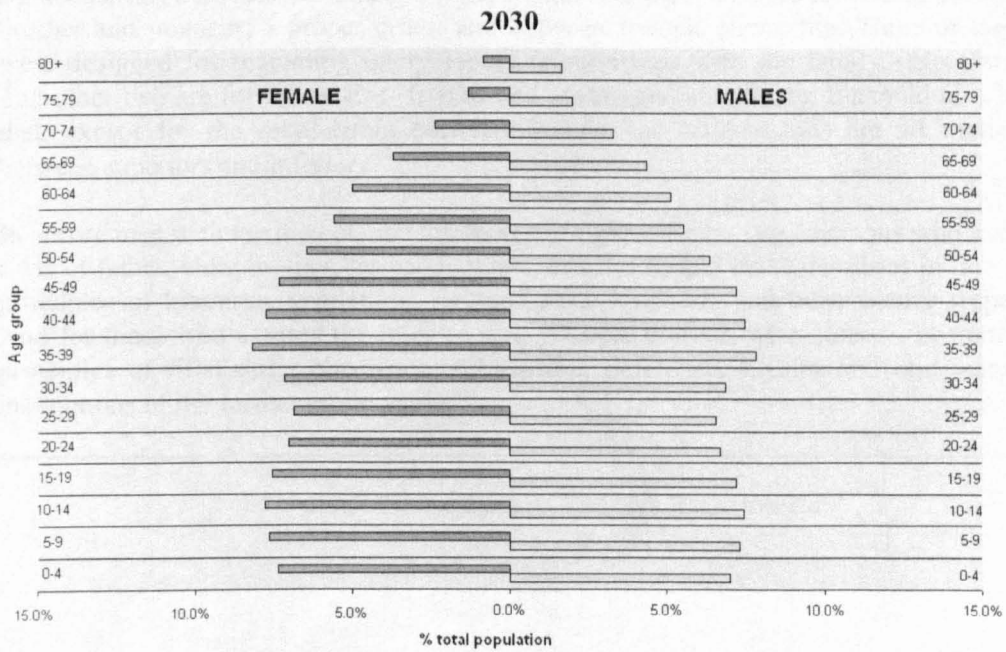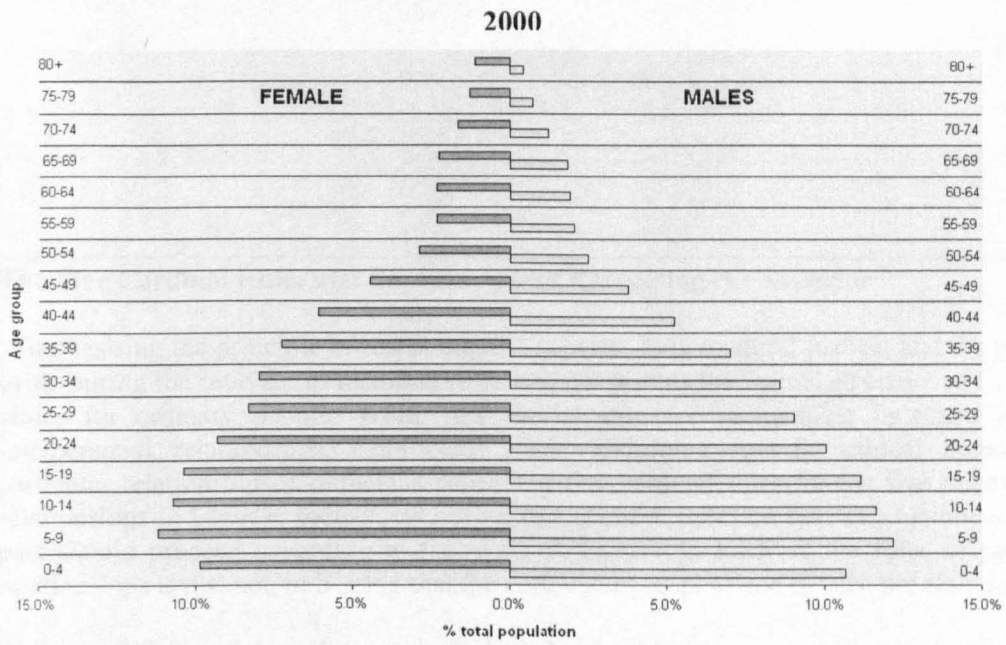
FIGURE 1.4: POPULATION PYRAMIDS 2000 AND 2030

The Five Cardinal Rules and the Principle of Respecting the Superior

"Emphasising the principle of respecting the superior in procedural justice, and the principle of favouring the intimate in distributive justice constitutes the formal structure of Confucian ethics for ordinary people. While this formal structure is manifest in many types of interpersonal relationships, Confucians made additional specific ethical demands on particular relationships. Confucians conceived five cardinal rules for the five major dyadic relationships in Chinese society, proposing that social interaction between members of each pair should proceed according to the Way of Humanity. Each of the roles in these five relationships is distinct, indicating that the core values emphasised in each are also different:

Between father and son, there should be affection; between sovereign and subordinate, righteousness; between husband and wife, attention to their separate functions; between elder brother and younger, a proper order; and between friends, friendship. Three of these rules were designed for regulating interpersonal relationships with the family (expressive ties). The other two are for mixed ties--friends and sovereign/subordinate. It should also be noted that, except for the relationship between friends, the relationships are all vertical ones between superiors and inferiors.

In accordance with the idea of "the ten things of righteousness (*yi*)," persons who assume the roles of father, elder brother, husband, elders, or ruler should make decisions in line with the principles of kindness, gentleness, righteousness, kindness, and benevolence respectively. And for those who assume the roles of son, younger brother, wife, juniors, or minister, the principles of filial duty, obedience, submission, deference, loyalty and obedience to the instructions of the former group apply."

FIGURE 1.5: CONFUCIANISM - THE FIVE RELATIONSHIPS[11]

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[11] This quote was taken from the website of Academica Sinica, a prominent Chinese academic institution based in Taiwan. At the time of submission it could be found at the following webpage: http://www.sinica.edu.tw/~kuoshu/people/kkhuang/relation4.htm

which is close to China, is the traditional heartland of the Viet people, whilst in the south a greater mixture of Viet, Khmer, Cham, and Chinese exists. This heterogeneity allowed greater openness with other south-east Asian cultures. The north was also the base for government administration, whilst a commercial elite evolved in the south.

Next came the colonial layer, during which period a police force was introduced. This police force still reports to government officials today on a variety of aspects of social, cultural, and political life, and has had a lasting effect on political culture. Thirdly, the Viet Minh layer represents the establishment formed as part of the National Liberation State with its goal of global revolution. Today this influence exists primarily within the elderly elite, which continues to venerate Ho Chi Minh, and still fundamentally opposes transition to a market economy. The author also notes that during this period an elaborate network of voluntary associations was established, with the task of mobilising popular support for the state. He continues that the process:

> "...started during World War II as a system of 'national salvation organisations' which together formed the Viet Minh Front. Before the war with France the Front was broadened to become the Lien Viet, and today it is the Viet Nam Fatherland Front which serves the function of co-opting all such associations that do not need to be repressed, thus blocking the emergence of a civil society outside the state." (Tønnesson 2000: 244)

The three final layers include the South Vietnamese layer, created by counter-revolutionary French forces and the US-sponsored Southern Vietnamese State, between 1946 and 1975. The fifth, centralised planning layer is embodied in a militarised, subsidised, and centralised planning state, nominally based on the Soviet model. Crisis in maintaining this system led to the market-oriented layer, which began in the late 1970s, culminating in 1986 with *doi moi*, the economic reforms announced at the Sixth Party Congress.

1.5.3   Government, mass organisations, and civil society

There are three components to the political system in Vietnam: the Communist Party, government and, as noted above, mass organisations, which are given the task of taking government campaigns to the village level. Government is organised into three main administrative units including the Province, of which there are currently sixty-one, which in turn are subdivided into Districts and Communes. Sub-Communes also exist but are less important as an administrative unit within government. A new constitution was approved in

April 1992, leading to a major restructuring of government, whilst reaffirming the role of the Communist Party as the leading force of State and society. In summary, the National Assembly, designated as the highest representative body of the people and the only body with legislative powers, was granted an increase in its power through further independence, and for the first time non-party members were permitted to stand for election.

Gray (1999) provides one of the few published analyses of civil society, and the role of non-governmental organisations (NGOs) in Vietnam, concluding that those currently in existence do not fit any definition of civil society, which stresses independence from the state, and opposition to state ideology. Indeed, most NGOs in Vietnam today are a construct of the state, which sets the parameters within which they operate. Gray considers that civil society manifests itself through non-state public sphere activities, and notes the confusion on the ground in Vietnam relating to this issue, as a result of institutions having to adapt to the uncertainties of economic and, increasingly, social transition.

Whilst many Directors of NGOs in Vietnam have themselves been long-time state employees, and many are still members of the Communist Party, Gray accepts that they do indeed form part of a contested realm that itself constitutes civil society, with competing sets of obligations, responsibilities, and ideals pulling them in different directions. Although mass organisations remain fundamentally an extension of government, some have begun to distance themselves from state control. Gray (1999: 703) notes that "...it is misleading to see mass organisations such as the Women's Union as being locked in stasis, incapable of reform, and representing only state interests." He continues that many are in a "....state of readiness towards taking on new approaches to the traditional work that they do."

As a political issue, corruption amongst government officials has increased substantially during the 1990s, although little information is published on this matter. Tønnesson (1997) refers to the rampant corruption under the present combination of market economy and privileged state sector, labelling it as the 'marketisation of the state'. A detailed review of modern Vietnamese society is provided by Templer (1998), who devotes considerable space to the issue of corruption in government, and provides some interesting insights:

> "Members of the National Assembly were asking when the government was going to stop talking and start acting against corruption, a problem that had become 'a national disaster' in the words of Prime Minister Vo Van Kiet. Pham The Duyet, former head of the Hanoi Party Committee, berated cadres at a meeting saying that one in five of the city's party officials had been disciplined

for corruption. Statements like these raised the question of whether anyone in the government was clean." (Templer 1998: 132)

Corruption also appears to be widespread in the health sector: "Health ministry officials stole donated contraceptives and sold them in Russia" (Templer 1998: 133). He continues:

"The list of corrupt officials seems depressingly endless. There is little that remains untouched by the blight. If you are sick, you have to pay extra for even the most basic medical treatment whether or not you are covered by government insurance." (Templer 1998: 133)

The author sees corruption as something that removes whatever faith the public has in government and legal institutions, and these excerpts give some idea of the extent of the problem. Another indication of the severity of the situation is the decision by the government to execute several high-ranking officials found guilty of stealing public funds. Further information on this issue can be found from newspaper excerpts, and websites that monitor the use of the death penalty. In one case in 1998, three senior officials were sentenced to death, after one official was convicted of siphoning off US$26 million from a State Owned Enterprise[12]. Recent newspaper reports suggest that this problem remains critical (see The Economist 2002), and Vietnam was recently ranked 75th out of the 91 countries surveyed by Transparency International (see Hodess et al 2001)[13].

From the perspective of this thesis, perceptions of corruption within government may well influence attitudes towards uptake of voluntary health insurance, given that the fund is managed entirely by government officials with little community involvement. This issue is developed further in Part 3.2.2 and is used in the development of *Research Question 6.*

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[12] Details of this case were available on the Internet at the time of submission at the following website: http://legalminds.lp.findlaw.com

[13] The Transparency International report notes that: "The anti-corruption campaign in Vietnam began on a high note in November 1999 with the dismissal of then deputy Prime Minister Ngo Xuan Loc. His return to a key government post six months later was a blow to public enthusiasm, however, and rural villagers, angry at Ngo's apparent impunity, came out in force. The new leaders of the Communist Party promised more action, but political instability and the bottlenecks created by a corrupt bureaucracy in Vietnam continue to deter foreign investors."

1.5.4   Economy

The decade following reunification (1975 to 1985) was marked by economic stagnation to which, critics argue, central planning was unable to effectively respond. The subsequent process of economic transition involved dismantling agricultural cooperatives, which had previously been the mainstay of economic production, allowing people to work their own plots, start businesses, and seek wage-paying jobs. Price and interest rate controls were eased and foreign trade and investment liberalised.

Individual incomes have increased substantially from around US$ 100 in 1986, to US$ 330 in 1998, and US$ 390 in 2000. In 1998 GDP growth stood at 3% (World Bank 1998a), increasing to 5.5% in 2000, and 4.8% in 2001 (World Bank 2002). Figure 1.6 presents data using per capita purchasing power parity dollars. Despite this rapid growth, Vietnam remains one of the poorest countries in Southeast Asia with an income level below the average of US$ 420 for all low-income countries. Growth faltered during the South-East Asian economic crisis, during which time demand for Vietnamese exports, in particular rice, oil products, and textiles and footwear, reduced substantially in Vietnam's major trading partners, Japan, Singapore and China.

Agriculture remains the primary form of employment, for around 85% of the population, but contributes less than one-quarter of gross domestic product (GDP). Industry and construction accounted for 34% of GDP in 1998 (in particular food processing, textiles, cement, chemical fertilisers, steel, electric power), with the service sector comprising 42.5% of GDP. Government revenue comes primarily from profit and turnover taxes on State Owned Enterprises (SOE) and the non-agricultural non-State sector. Current reforms aim to decrease dependence on oil revenues given recent falls and general volatility in oil prices. Progress has been made in this area with the share of total revenue from oil SOEs reducing from almost 50% in the early 1990s to less than 25% at present. Strengthening the design and collection procedures for Value Added Tax is also a priority.

Informal economic activity increased dramatically following *doi moi*, with private transfers playing an important role in maintaining household welfare. Le Minh Tam and Vinh (1999) estimate that almost a quarter of households in Vietnam receive remittances i.e. income transfers from family and friends, for whom this income constitutes an average of 38% of annual household expenditures. Vietnamese society has a long tradition of community and family spirit, strengthened by decades of war and separation due to migration. Intra-familial transfers are clearly of great importance for Vietnamese households to mitigate risks, and
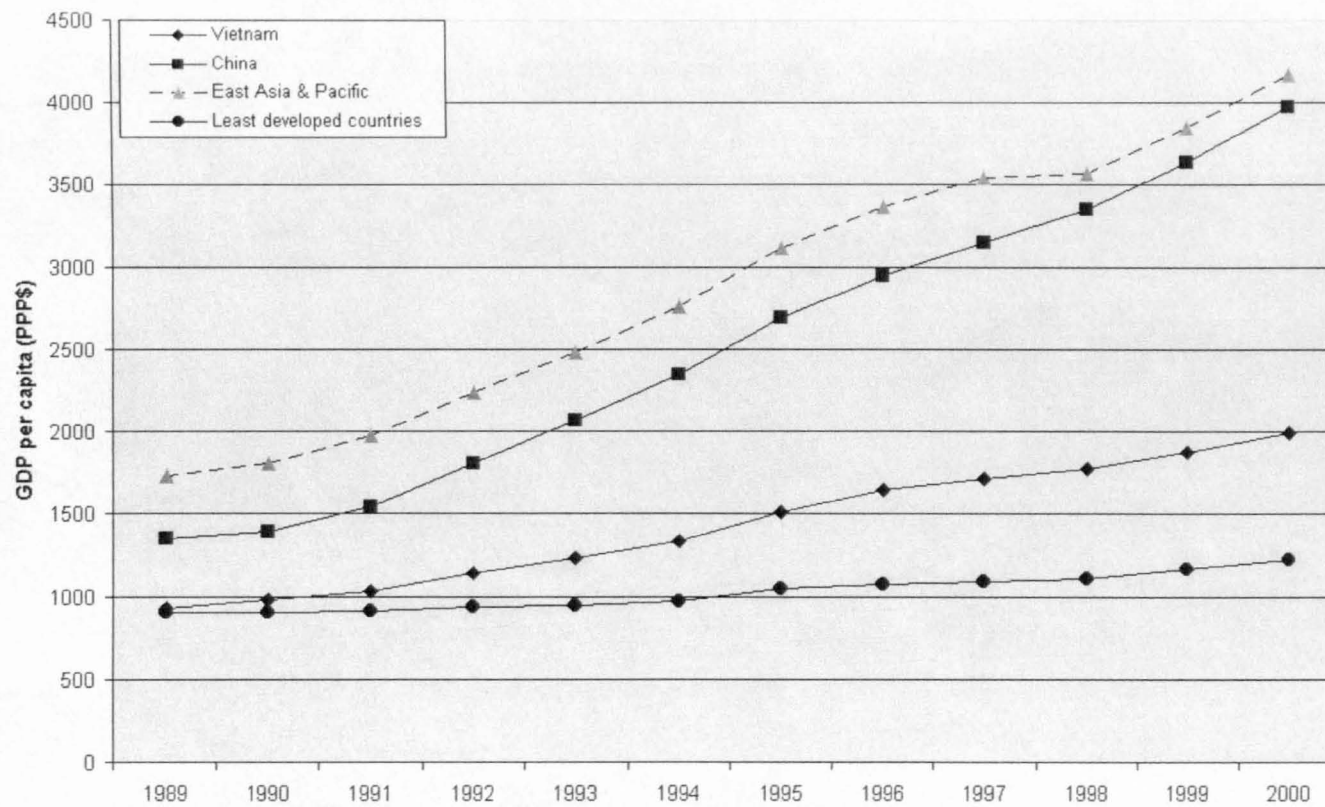
FIGURE 1.6: ECONOMIC GROWTH TRENDS (PPP $)

Source: World Development Indicators (2002)

promote business, and are discussed further in Part 2.3.2 in the context of informal risk-sharing.

Kumssa and Jones (1999) consider the slower approach to reforms in China and Vietnam to be preferable to the shock-tactics used in Eastern Europe. Whilst it is difficult to measure the socio-economic costs of transitional reforms, it is safe to assume that there has been a general shift of risk from state institutions to individuals and households.

A report by the World Bank (1999) notes that, despite a modest increase in income inequality between 1993 and 1998, Vietnam remains a moderately egalitarian society by international standards. Its level of inequality, as measured by the Gini coefficient, is 0.35, lower than most other countries in Southeast Asia. In terms of poverty, whereas in 1993 58% of the population was defined as below the total poverty line, and 25% below the food poverty line, these figures had reduced to 37% and 15% respectively by 1998. Adger (1999) explains growing income inequalities in terms of the non-agricultural income opportunities available to a community, such as aquaculture, a sector that has grown rapidly in rural coastal areas.

Wolz (1997) discusses the transformation of rural financial systems under *doi moi*, and the rapid increase in levels of production that followed, turning the country into the world's third largest exporter of rice. Interestingly, he attributes this growth to informal financial networks in rural areas, claiming that such income growth would not have been possible on the back of the chaotic formal financial sector, and that a lack of credit remains a limiting factor for continued growth in rural communities. Izumida and Duong (2002) show that formal financial institutions tend to specialize in lending for production purposes, whereas the informal sector finances more diverse and flexible activities.

1.6 Concluding remarks

This chapter presents the central objective of this thesis, which is to evaluate the system of voluntary health insurance introduced by the Government of Vietnam in 1992, and is motivated by the current lack of empirical evidence from low-income countries to inform policy-makers. Health insurance was launched, and has developed, during a period of economic transition, in a country with a unique political and social culture, strongly influenced by both Confucian and Communist doctrines. In addition

to the social, economic, and cultural context, the theoretical frameworks reviewed in detail in the following chapter, are interpreted in the light of the structure of the health system, and the health insurance system, and used to develop a series of research questions presented in Chapter 3.

Figure 1.1 provides the conceptual framework, within which the thesis is rooted, including several inter-linked policy goals and expected causal relationships. As part of the overview of health financing, it is clear that in Vietnam today, out-of-pocket health expenditures is a common cause of poverty for households. Whilst this thesis does not directly assess the impact of health insurance on poverty, it does provide new evidence on the extent to which, *ceteris paribus*, health insurance reduces out-of-pocket health expenditures (see Chapter 6).

In addition to the central focus on health insurance in this thesis, particular attention is give to the importance of social structure: an issue explored theoretically, and tested empirically, in the following chapters. For example, it has been suggested that, given the constraints in extending compulsory health insurance nationwide, the sharing of risks in terms of health expenditures is only achievable if communities organise themselves into voluntary risk-sharing arrangements. For such collective action to occur, it has been argued, communities must have a sufficient level of social capital. Given the increasing number of references to social capital in the context of health financing in low-income countries, the following chapter gives substantial attention to disentangling the social capital literature.

The following chapters are organised as follows: Chapter 2 presents a review of theoretical models and empirical evidence which, together with the contextual information detailed in this chapter, are translated into a series of research questions in Chapter 3. The research methods used to collect data and address the research questions, including a large household survey and in-depth interviews, are presented in Chapter 4. The study thus focuses principally on the demand-side, rather than the supply-side, although a better understanding of the latter would enhance the interpretation of certain findings. Chapters 5-7 test the research questions through empirical analysis. Finally, Chapter 8 draws and presents conclusions, policy implications, and highlights ways in which the research might have been conducted differently. Issues for future research are also proposed.

Chapter 2: Theoretical models and existing evidence

A substantial theoretical and empirical literature exists on the development and functioning of health insurance schemes, in particular those in richer economies. Given the relatively recent introduction of health insurance schemes in many low and middle-income countries, from which policy-makers can draw, the evidence base for decision-making is limited. The main aim of this chapter is to begin the development of research questions, by examining the predictions of theoretical models, together with empirical evidence, and interpret these in the unique context of Vietnam. Theoretical frameworks of health insurance markets are reviewed first. Several predictions of existing models, such as adverse selection and the increased consumption of health services, are tested empirically using household survey data.

A detailed review of the social capital literature follows in Part 2.2. Given that the concept is used as the basis of original conceptual analysis, substantial room is given to this section. Many of the ideas presented in the sociological literature led the author to review those studies by development economists concerned with informal systems of risk-sharing, (see in particular Part 2.3.2). Part 2.3 brings together these different sets of literature, which are used to develop new conceptual insights, formalised as two research questions in Part 3.2.

Several approaches were used to collect the materials reviewed in this chapter. For theoretical writings on health insurance, the Handbook in Health Economics (Newhouse and Culyer 2000) was an essential text, each chapter reviewing seminal works in the specific sub-field. Several other textbooks, widely recommended on Health Economics courses, were also used. For empirical literature, relevant journal articles were identified through searches on bibliographic databases, in particular EconLit (the American Economic Association's electronic bibliography of economics literature), and the various databases provided by both the Joint Information Steering Committee (JISC), and the ISI Web of Science Service for U.K. Education. Unpublished material was collected through personal contacts established during the research, for example with members of the joint World Health Organisation and International Labour Organisation team, which has offered technical assistance to the Vietnamese Health Insurance Agency since the late 1980s. For literature on social capital, a useful starting point was the World Bank's website, which suggests key readings. The World Bank has also produced a series of working papers on the issue, and hosts an email-based discussion group, which proved particularly useful in the

early stages of the research.

Searches were also conducted on the bibliographic databases referred to earlier, as well as Sociological Abstracts (two examples of searches are presented in Appendix 6). The literature on this issue is young and growing rapidly, and some of the ideas prevalent at the onset of the thesis are already out of date, as discussed in this chapter. Finally, general Internet searches were used to locate unpublished papers and information on the health insurance market in Vietnam, for example. The thesis supervisors also directed the author to additional useful texts.

2.1   Health insurance: theory and evidence

Why does demand for health insurance exist? Besley (1989) provides a theoretical framework to analyse the structure of demand for health insurance, drawing on the work of several authors, including Grossman (1972b). Whilst health insurance leads to gains through risk-sharing, problems may arise as a result of the information asymmetry inherent in insurance markets, most notably adverse selection and moral hazard. These issues are discussed in detail later in this section. First, however, two definitions of insurance are presented:

> 'The use of contracts to reduce and redistribute risk. In health insurance the event insured against is medical expenses and/or loss of earnings through ill-health. Without insurance there is a small chance of a large loss; with insurance there is a small certain loss, that is the premium. The insurer makes the reverse exchange, accepting a new risk for the sake of the premium. Insurers may be risk-neutral or at least less risk-averse than the people they are insuring.' (Black 1997: 208-9)

> 'The reduction or elimination of the uncertain risk of loss for the individual or household by combining a larger number of similarly exposed individuals or households who are included in a common fund that makes good the loss caused to any one member'. (ILO 1996: 282)

Insurance may be achieved in three main ways. Solidarity based systems redistribute income by pooling financial contributions typically based on ability to pay (e.g. through progressive direct income tax, as well as indirect taxation). The National Health Service in the U.K. is an example of this. Income pooling also takes place

informally, often through family and kin networks, and particularly in low-income countries. The relevance of informal systems of insurance are discussed in some details in Part 2.3.2 (see also Part 2.2.3.4).

More recently, interest has grown in another variant of insurance, known as medical or health savings accounts, which have been implemented in Singapore. Under the scheme, citizens are obliged to save around 3% of their monthly salary into a special account, to which matching contributions are made by employers. Under this approach, funds are not pooled, and hence there is no cross-subsidisation between the rich and the poor, the old and the young, the sick and the healthy. This approach demonstrates that some of the uncertainty around ill-health, and its implications, can to some extent be dealt with without the sharing of risks between individuals. A medical savings scheme is in contrast to a typical health insurance scheme, such as the one addressed in this thesis, which brings together individuals with different risks of falling ill (i.e. sick and healthy individuals). The following discussion focuses on this type of scheme.

In an insurance scheme in which individual risks are pooled, the aim is to reduce uncertainty over future private, or out-of-pocket, health expenditures. Uncertainty and risk are, theoretically, different concepts. Risk refers to an event, which may or may not occur, but its probability of occurring is known. Uncertainty refers to a similar situation but one in which the probability of the event occurring cannot be estimated. For example, the probability of a particular individual having a car accident can be estimated using data on their history of accidents, or of people of similar age and other characteristics, with a similar type of car etc. Such events are insurable provided they are not close to certain i.e. with a probability close to one, such as the likelihood of an older person falling ill. An uncertain situation may exist during the emergence of a new communicable disease, where little knowledge of its epidemiology exists, making it impossible to estimate the probability of an individual becoming infected. In the economics literature, however, the terms risk and uncertainty are used interchangeably.

A range of mechanisms exists that provides an insurance function. Ensor and Witter (1997) offer a typology of the various formal risk-sharing mechanisms used in the health sector, categorised in terms of the basis for contributions, whether or not these are earmarked for health services, and whether contributions determine entitlements (see Table 2.1). Five types of health insurance arrangements are defined: general

taxation (e.g. the funding base for the National Health Service in the U.K.); earmarked taxation (increasingly adopted as a means of financing public health services e.g. tax revenues from cigarette purchases used to fund health services); social insurance (i.e. the compulsory Bismarkian model widely adopted in Western Europe); voluntary community insurance (found mostly in low-income countries); and, finally, health insurance schemes which set premia according to actuarially-based risk.

Whereas the last three mechanisms provide an explicit insurance function, the first two provide insurance implicitly. Publicly provided voluntary health insurance in Vietnam is closest to voluntary community insurance, although premia are not set according to average risk and, as noted earlier, the institutional design of the scheme is top-down, with very little community involvement.

2.1.1 Derived demand: health, health care and health insurance

In Vietnam, demand for voluntary health insurance amongst adults not eligible for a freely provided insurance policy, has been extremely low to date. In order to increase uptake, a better understanding of factors motivating insurance purchase is required. The root of theoretical considerations of demand for health insurance is individual demand for health. Assuming health itself is a valued good there will be a demand for health. In turn, given that health services are important for the production and maintenance of health, demand for health services can be considered as derived from demand for health, an insight originally made by Grossman (1972a). Grossman also removed the traditional separation of consumption and production, central to standard economic models, developing in its place a model of household production of health.

Given that health services can be expensive and that, for most people, illness and its timing is a random, or uncertain, event, demand for health insurance is likely to exist. Hence, just as demand for health services is derived from a demand for health, demand for health insurance can be considered as derived from a demand for health services. In Besley's (1991) theoretical framework, demand for health, health services and health insurance all build ultimately on demand theory. Following this approach, health is a commodity traded-off against other goods (e.g. smoking) and, as such, individual demand for health can be elicited through an analysis of tastes or preferences.

	General taxation	Earmarked tax	Social insurance	Voluntary community insurance	Private insurance
Are contributions risk, community or income rated?	Income/ Expenditure	Income	Income	Community	Risk
Are contributions earmarked for the health sector?	No	Yes	Yes	Yes	Yes
Do contributions determine entitlement?	No	No	Yes	Yes	Yes

TABLE 2.1: A TYPOLOGY OF HEALTH INSURANCE SCHEMES

Besley continues that individuals maximise their utility within budget constraints, health being one of the many goods contributing to utility. Better health is achieved by investing in goods that improve health, which in turn leads to both a consumption gain (i.e. being healthy enables a range of activities to be achieved), and an investment gain (i.e. better health increases lifetime earnings). In terms of demand for health services, in addition to the influence of income, education, and health status, the importance of which is represented in Figure 1.1, other characteristics such as age, aversion to receiving health care, and the availability of health-related information, will each influence individual, or private, demand for health services. Many of these factors are not easily observed, however.

Conventional models of demand assume that individuals maximise expected utility, within a budget constraint, and according to their preferences. However, in the health sector these assumptions do not hold, for the reason that information is subject to asymmetry. For individuals, uncertainty over the quantity and type of care required, and the need to consult a third party (i.e. a physician), significantly erodes their sovereignty over the consumption decision. This uncertainty is the basis of the principal-agent relationship within health care markets. Not only is it difficult for individuals to assess the quality of the good or health service before receiving it, which is true of many products, but it is also difficult for them to assess its quality retrospectively.

The importance of physician agency in the decision about the amount and type of health services consumed is further discussed later in this chapter, in relation to moral hazard under insurance. McGuire A. et al. (1992) note that as a product, health insurance is more amenable to demand analysis based on expected utility theory, than demand for health services, given that the former covers the risk of the costs of ill-health, rather than ill-health itself. In this sense, health insurance acts as a form of income maintenance.

Propper (1989) also presents a framework of demand for health insurance based on expected utility theory. In essence, the decision to purchase a health insurance policy is based on a comparison of expected utility with, and without, health insurance. In turn, this assessment is a function of the expected future distribution of states of ill-health, and the costs and benefits of treatment in the public and private sectors under each. The cost of an insurance policy will also be important. In a separate paper, Propper (1993) suggests that individuals have restricted choice-sets: for example, in

the U.K. certain people do not consider private health insurance to be part of their choice-set, due to their political beliefs. This idea is relevant to Vietnam, given that in certain provinces many individuals have not heard of health insurance, and hence it is not part of their choice-sets. In Chapter 5, models of demand for health insurance are only estimated for individuals who are aware of the scheme.

The presence of insurance within health care markets will also influence patterns of demand for health services, although the direction and magnitude of the effect depends on the structure of the insurance contract. For example, in the U.K. National Health Service, the state plays the role of implicit insurer with no observable link between contributions (the payment of taxes) and benefits (the consumption of health services). In most private health insurance schemes, however, the contract explicitly specifies the benefits available. Transactions take place between insured patients and approved providers, and a third-party insurer reimburses the provider, or in some cases the consumer. Each of these contract structures creates different incentives to providers and consumers of health services, and hence influences demand in different ways, the latter typically creating greater pressures for cost-escalation.

Risk, as a concept, is widely used in economics to analyse consumption decisions under uncertainty (a number of texts cover this issue including Folland et al. 1997, Gravelle and Rees 1992, and Sloman 1991). The payment of user charges for health services, at the point of service, constitutes a considerable risk for many individuals in low-income countries. In Vietnam, user charges represent a considerable shock to the ability of many households to maintain consumption levels of essential goods and services. Whether they decide to incur a relatively small additional expenditure i.e. purchase health insurance in order to reduce this risk, depends on several factors including their attitude towards risk. These various influences are discussed in Part 3.1 and Part 3.2, and tested empirically in Chapter 5.

Individual attitudes towards risk and uncertainty help to explain whether or not insurance will be purchased and, if so, at what price. Whilst some individuals are risk-attracted, or risk-lovers (i.e. they will accept an actuarially unfair gamble), others are risk-averse (i.e. they will only accept a gamble with odds that are favourable to them). Risk-averse individuals gain more utility from the reduction in risk provided by insurance, than do risk-loving individuals.

Individual attitudes to risk can be represented in terms of the amount an individual will pay to obtain a greater degree of certainty over the future. This is referred to in the insurance literature as the *certainty equivalent* or, more commonly, as the insurance premium. Economists use utility of income theory to assess whether an individual is risk-averse. This theory predicts that, *ceteris paribus*, as an individual's income increases, they become less risk-averse. Warneryd (1996) reviews experimental approaches to the measurement of risk, such as lottery choice games, and draws attention to the paradox that individuals often purchase insurance, but also gamble[14]. Another approach, commonly used in agricultural economics, is to elicit preferences using pair-wise choice questions, in which respondents are invited to choose between a low-risk low-return gamble, and a high-risk high-return gamble, for example when deciding which crop to produce. Such techniques have not to date been developed in the context of health services.

Where demand for health insurance exists in a market economy, a supply-side response is expected i.e. private firms will offer insurance products. However, the probability of certain individuals requiring health services (e.g. women requiring maternity services) is close to one, and hence not insurable. The result is market failure in the form of incomplete insurance coverage. Secondly, whilst risk-sharing leads to welfare gains, the associated incentive problems can lead to greater inefficiency, as discussed by Manning and Marquis (1996). The two main incentive problems in insurance markets result from hidden actions, more commonly known as moral hazard, and adverse selection. The trade-off between risk-sharing and the inefficiencies that can arise as a result of these incentives, is central to health insurance schemes in which membership is voluntary. Market failure, manifested through unacceptable gaps in insurance coverage, for example, is frequently used to justify public intervention in insurance markets. Compulsory social insurance, or a tax-based system, are examples of such intervention. Current thinking with respect to moral hazard and adverse selection is presented next.

2.1.2 Moral hazard and principal-agent problems

One objective of this thesis is to establish the effect of voluntary health insurance on the decision to consume, or use, health services. As discussed in this section, previous

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[14] However, whilst many people gamble for entertainment, few will risk losing a major asset such as a house.

studies have been unable to separate out the effect of the voluntary scheme from the compulsory scheme. There are several reasons why the two components may have different effects, including different premium levels, the different socio-economic composition of membership, and other factors such as quality, and perceptions of quality, of the health services provided.

Moral hazard refers to the tendency for insured individuals to increase their consumption of health care. Arrow (1985) refers to the less judgmental, and more informative, term, *hidden action*. Early work into moral hazard was conducted by Arrow (1963), Cutler and Zeckhauser (2000), Pauly (1968), and Pauly (1974). Cutler and Zeckhauser (2000) provide a comprehensive overview of the topic, a central theme of which is the conflict between moral hazard and risk-sharing. One of the conclusions is that measures are required to monitor, and if necessary punish, inappropriate behaviour by certain consumers. One criticism of this theoretical literature, however, is that it takes little account of the context of most low-income countries, in which levels of unmet health needs are significant. In this context, increased consumption resulting from insurance may be beneficial, and the conflict central to much of the theoretical literature, of less significance.

On the demand side, two types of behavioural change may result from health insurance. Ex-ante moral hazard refers to the reduced consumption of preventive care, or changes in lifestyle, that result when an individual is insured, increasing the probability that they will fall ill and require health services. For example, if as a result of being insured, an individual feels less worried about the financial implications of falling ill, then they may decide to forego certain preventive, health-improving actions. Reducing consumption of immunisations, for example, would significantly increase the risk of illness.

In practice, ex-ante moral hazard is not considered a major problem in the literature, given that the full costs of not taking care of one's own health can never be fully compensated for by an insurance scheme (e.g. in the case of death, or disability). As Cutler and Zeckhauser (2000) point out, however, ex ante moral hazard does exist to some extent. They provide the example of cigarette consumption, which, they expect, would fall if individuals faced the full cost of smoking in higher out-of-pocket medical payments. Whereas ex-ante moral hazard refers to the situation prior to an illness occurring, ex-post moral hazard refers to the increased consumption of health services once an individual has fallen ill.

In private health insurance markets, the marginal cost to the patient of accessing care is lower than the marginal cost to the provider of supplying care. The insurer pays the provider a price, which is sufficient to cover the marginal cost. The extent to which the reduced price to the patient of accessing care, actually leads to additional consumption, depends on the way in which they respond to changes in price. Empirical research into price elasticity of demand for health services is reviewed later in this section. In some circumstances, patients may also be able to influence the cost of care received, for example by demanding the best quality of treatment available. Where increased consumption is considered a problem, insurers typically respond by shifting part of the cost of care back on to the patient, for example through co-payments or deductibles.

Given the principal-agent relationship within health care markets described earlier, and the presence of an insurance fund, or agency, as a third-party payer, the provider may also influence the amount of health care consumed, and hence the level of reimbursements received. In some cases, providers may wish to do this in order to boost their own income. Pohlmeier and Ulrich (1995) note that: "The decision to contact a physician and the decision about how often to contact a physician are determined by different decision-makers". The authors motivate a two-part model to reflect what they recognise as two distinct and independent behavioural processes which is discussed further in Part 7.2.1.

Referred to in the literature as supplier-induced demand providers may, for example, conduct more diagnostic tests on a patient than might be considered necessary. In many low and middle-income countries, where the decentralisation process has increased the autonomy of individual health facilities, the authority exists to raise and retain income directly from patients (either in the form of user charges or co-payments under insurance). In such cases, supplier-induced demand is likely to be a problem. In higher income countries, one response to this problem has been to remove the third-party payer, and integrate the insurance and provision functions.

With respect to voluntary health insurance in Vietnam, *Research Question 9*, developed in Part 3.3.3, focuses on the effect of being insured on the decision to seek health services as well as the type of provider contacted. Chapter 7 tests this question empirically, using both univariate and bivariate probit estimators, using data collected as part of the household survey. A dummy variable representing whether or not the respondent has health insurance is used to estimate its effect.

Whilst much of the literature focuses on the detrimental effect of insurance on efficiency in health care markets, Zweifel and Manning point out that moral hazard can have positive effects:

> "..... some amount of moral hazard may be deemed beneficial for two reasons. First, to the extent that physicians wield a collective monopoly, the quantity of medical care consumed falls short of the optimum. The increase in quantity caused by the moral hazard effect of insurance can be efficiency-enhancing in this situation. Secondly, moral hazard may encourage the use of a more cost-effective medical service at the expense of a less cost-effective one within an insurance scheme. Thus the optimal amount of moral hazard is positive rather than zero." (Zweifel and Manning 2000: 413-4)

Nyman (1999) offers a slightly different view, arguing that health insurance purchase is often motivated by a desire to access otherwise unaffordable services, and partly explains greater consumption of services by insured patients. The implication is that the additional care consumed is not necessarily inappropriate or wasteful. He argues that this issue has been overlooked in the literature and that, whilst reducing the risk of financial loss from falling ill remains an important motivation (i.e. risk aversion), individuals also purchase insurance to access otherwise unaffordable care. In most low-income countries unmet health needs are substantial, largely due to the inadequate supply of health services, price sensitivity, and the associated opportunity costs of accessing care for under-served rural communities, all of which effectively ration demand. In this context, Nyman's argument appears particularly relevant, although careful analysis is required to establish whether or not the additional care consumed actually meets unmet needs, or is consumed by those who already have good access to health services.

The most comprehensive analysis of a health insurance scheme to date is the RAND Health Insurance Experiment, conducted between 1974 and 1982, and based on data collected from 2,005 families in six locations across the USA. In the study, families were randomly assigned to fourteen different experimental insurance plans, which helped to avoid any bias resulting from self-selection by participants. One of the plans provided free access to services and the others a varying degree of cost-sharing. The study concluded that as the rate of cost-sharing fell, per capita out-of-pocket payments

increased, and calculated a price elasticity of demand of -0.2 for outpatient services (Manning et al. 1987).

Cutler and Zeckhauser (2000) summarise several further studies in the USA, and find that price elasticity of demand ranges from -1.5 to -0.14. Using data from Australia, Cameron et al. (1988) find evidence of moral hazard, whilst in Germany Geil et al. (1997) conclude that other factors, rather than the economic incentives resulting from insurance, explain rapid increases in demand for inpatient services. Finally, Cameron et al. (1988) model demand for health care and health insurance in Australia, where joining a private insurance scheme obliges individuals to opt-out of the public insurance system. He concludes that health status is more important in determining utilisation levels than choice of insurance plan.

In terms of the impact of health insurance on medical expenditures, Newhouse (1993) finds, as part of the RAND experiment, that when health insurance coverage is complete, private health expenditures increase by almost 50% relative to those insurance policies combined with a large deductible. A similar effect is found by Rubin and Koelln (1993) in the USA, which they consider evidence of moral hazard. Using data from the Republic of Ireland, Harmon and Nolan (2001) find that being insured under the Voluntary Health Insurance scheme (which is supplementary to public insurance) increases the probability of being admitted to hospital by 3%, relative to those without insurance. The authors refer only to 'changes in utilisation' rather than the term moral hazard. Expenditures and treatment-seeking behaviour are analysed separately in this thesis.

Few studies examine the effect of health insurance on health expenditures in low-income countries, despite the importance of such information for policy-makers. There is, however, a substantial literature on the effect of user charges on demand for health services. Given that demand for health insurance is to some extent derived from demand for health services, this literature is relevant and hence examined first.

In Peru and Cote d'Ivoire, Gertler and van der Gaag (1990b) conduct detailed analyses using World Bank Living Standards Survey data. Arc price elasticities of demand are calculated separately for adults and children. Similar patterns are found in each model, with a high negative elasticity for individuals in the lowest-income quartile, and inelastic results for those in the high-income quartile. In Peru, where indirect costs are low relative to direct monetary costs, arc travel time elasticities for adults are

significantly less than in Cote d'Ivoire[15]. As the authors note, however, the data do not account for variations in service quality. In this context, the effect of health insurance on consumer demand for health services is a function of expected reductions in the total cost of accessing care and, secondly, their sensitivity to changes in price.

In Vietnam, econometric analysis of VLSS data by Trivedi (2002), concludes that health insurance has a strong positive effect on the use of outpatient services at public hospitals, and that income elasticity of demand is 0.4. The analysis is unable to distinguish between compulsory and voluntary insured patients, however. Waters (1999) provides a comprehensive analysis of the impact of health insurance in Ecuador, including the General Health Insurance scheme for formal sector workers, and a separate scheme for agricultural workers in rural communities. Using both univariate and bivariate probit estimators, and correcting for the effect of clustering in the sampling framework (i.e. heteroscedasticity), as well as selection bias resulting from adverse selection and other factors, he finds that being insured has a strong, positive, and highly statistically significant effect on the use of curative services, but no statistically significant effect on the use of preventive services. He also concludes that the scheme increases access to health care for its members but has a negative impact on equity across society overall. The primary reason for this is that insurance coverage tends to be for those already in employment, and for whom access is already relatively good.

Finally, Yip and Berman (2001) analyse the Egyptian School Health Insurance Programme (SHIP), which aims to increase access and equity in access to health services. Using a logit model and data from a survey of over 10,000 households, insured children are found to have a higher probability of seeking outpatient care than the uninsured, in particular those in the lowest income quintile. On average, those children enrolled in the scheme are 34% more likely to visit a provider than children not in school, and 9% more likely than those in school but uninsured are. School Health Insurance is found to reduce out-of-pocket health expenditures by one half for the middle-income group, but only marginally for low and high-income groups. One weakness of the study is that the effect of illness severity is not controlled for within the regression analysis.

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[15] Gertler and van der Gaag (1990a) calculate time elasticity of demand for adults in rural Peru to be -0.09 compared with -0.85 in Cote d'Ivoire.

Amongst other empirical evidence not based on econometric analysis, Ron (1999) finds some evidence that health care became more affordable for rural families with low and unstable incomes, as a result of joining a community health insurance scheme. In China, Carrin et al. (1999b) evaluate the extent to which health insurance reduced the risk of paying health care bills that would otherwise have been a burden on families. The study concludes that the burden of health care costs on families was reduced, but that, in general, this reduction has been modest.

In Bangladesh, Desmet et al. (1999) highlight the natural link between health insurance, as a means of spreading the risk of incurring treatment costs, and credit programmes as a means of decreasing the impact of illness on household income. The authors suggest that the credit schemes in which many individuals are already involved may provide the entry point for health insurance. Atim's (1999) study in sub-Saharan Africa concludes that the *social movement* dimension has little impact on the performance of two community-based insurance schemes measured in terms of general organisational efficiency, impact on equity in and access to health services, and financial performance. Kutzin and Barnum (1992b) review insurance schemes in four countries, concluding that their impact, in terms of equity and efficiency, has been limited. Institutional weakness limits the ability to mitigate incentive problems within insurance schemes, often leading to greater income-related inequalities in access to health services.

Jack (1999) summarises the three types of information asymmetry in health insurance markets. First, hidden action moral hazard refers to actions taken by insured individuals that alter the probability that they will suffer a loss, or its size. Secondly, hidden information moral hazard occurs when the insurer cannot verify whether a loss, or its size, has actually occurred. The third type of asymmetry, adverse selection, is discussed in the next section.

2.1.3   Health insurance markets and adverse selection

In Vietnam, as in many other countries, a primary motivation for introducing voluntary health insurance is to provide greater financial protection for the population against future uncertain health care expenditures (see Part 1.3.2). Insurance achieves this by pooling, and hence spreading risks, across individuals.

For health insurance markets to spread risks efficiently, several conditions must hold true. First, the probability that insured individuals will fall ill must be known to allow the insurer to make reasonably accurate predictions about the number and size of claims in a given time period. Secondly, these risks must be largely independent of each other. If an event occurs in which all members, or a significant proportion of them, simultaneously suffer an insured loss, the scope for sharing risks is severely limited, and the insurance function may collapse. Examples of such situations include earthquakes, tropical storms, epidemics, and major crop failures. The third condition is that the probability of an individual requiring medical treatment must be significantly lower than one (i.e. certainty). For example, elderly patients often face problems purchasing health insurance, as the probability of their falling ill is close to one.

Fulfilling the first and third conditions is a common problem given that insurers are often unable to accurately establish the probability that an individual will require health services. When this is the case, the health insurance market will 'unravel'. Akerlof (1970) formalised this phenomenon using the example of second-hand car markets, in which sellers hold more information about the quality of a car, than potential buyers. Consequently, the buyer cannot easily distinguish between good and bad cars, and prices move towards the average quality of cars in the market. In response, owners of good quality cars remove theirs from the market, leaving poorer quality cars to dominate. Prices fall further to reflect lower average quality, pushing out more good quality cars, until only low quality cars are traded.

In health insurance markets, the problem is essentially the same, although it is the consumer (patient), rather than the seller (insurer), that holds more accurate information, in this case about the *quality* of their own health. If each new customer provides information to the insurer, which is biased towards better health, then the actual number of claims and payouts will be higher than predicted. In order to protect profits the insurance agency will adjust premia upwards in response. Indeed, where the insurer expects new customers to provide biased information, the premium offered may already be loaded, or upwardly adjusted. In both cases, individuals in relatively good health may leave the market, increasing the average risk of those remaining in the pool. Premia will rise further in response, increasing the incentive for high-risk individuals to provide biased information about their health in order to lower the premium offered to them, and for better risks to leave the pool. A vicious circle of increasing average risk within the pool, and increasing premia, ensues. This process of *unravelling* describes the process of adverse selection - as the average risk of the pool

moves towards one, the third condition for efficient risk-sharing is violated, and the insurance market is likely to fail, manifested in terms of incomplete coverage.

The extent to which adverse selection is a problem is also influenced by the way in which the insurance premium is set, for which there are two common approaches. Profit-maximising insurers set premia according to an individual's health status, effectively making an adjustment for the likelihood that they will require care, and make a claim. In contrast, non-profit schemes typically offer the same premium to all members, for example based on the average risk of the group. In this case, those individuals in poor health are not excluded, or discriminated against, through a higher premium. This approach is consistent with the policy objective of protecting access to health services, in particular for the poor. Adverse selection is likely to be more of a problem, however, when all consumers in a market face the same price. Whereas for high-risk individuals a premium based on average risk is low, relative to a risk-rated premium, for healthy individuals the average premium is relatively high. Individuals with poor health are thus more likely to purchase insurance and, where possible, more of it. This further highlights the trade-off between adverse-selection and gaps in coverage, and the importance of this problem from the perspective of financial sustainability. The design of the Vietnamese scheme, presented in Part 1.3.2, suggests that adverse selection is likely to be a problem.

To summarise, adverse selection tends to exist in all health insurance schemes with voluntary membership, whether motivated by profit or social concerns. In a private market, the insurer may eventually go out of business if adverse selection is not adequately dealt with, whereas in the public sector schemes fall into debt and require additional public subsidy to survive.

A number of studies estimate determinants of demand for health insurance in developed countries. In most cases, health insurance covers supplementary services, e.g. financial coverage for services such as dental care that are not financed through general taxation or compulsory insurance. Another common benefit is for services provided in a separate health facility or ward. Using a probability model, Besley et al. (1999) find that as waiting lists in the U.K. National Health Service increase, demand for private health insurance also increases. Perceived service quality, typically measured in terms of waiting times and the hotel aspects of health services, are important factors motivating the purchase of health insurance. Harmon and Nolan (2001) find similar results in Ireland, where insurance purchase is motivated by a

demand for service quality, timely access, as well as reductions in out-of-pocket expenditures. These studies suggest that health insurance purchase is driven more by a taste for quality than aversion to risk.

In Australia, Cameron et al. (1988) jointly model demand for health care and health insurance, the latter using a probit model, and concludes that income is a better predictor of health insurance purchase than health status. Cameron and Trivedi (1991) provide further evidence that income and price are more important than health status in explaining choice of insurance plan. Evidence from the U.K. also supports the positive influence of income (see Propper 1989, 1993), with political beliefs and health status having some, but a less significant, impact.

Other research, concerned predominantly with supplementary health insurance in the USA, focuses on the responsiveness of demand to cuts in tax subsidies (see Farley and Monheit 1985, Keeler et al. 1977, Marquis and Phelps 1985, and Marquis and Phelps 1987). The general finding is that whilst demand tends to reduce slightly it is, overall, price inelastic. Marquis (1992) finds that price has a statistically significant effect on uptake, on the basis that adverse selection is substantially reduced when premia vary according to demographic factors, which provide a rough proxy of health needs.

Further evidence of adverse selection is found by Hopkins and Kidd (1996), in their analysis of the Medicare insurance scheme in Australia; Marquis and Phelps (1987), who analyse demand for supplementary health insurance in the USA; and by Wolfe and Goddeeris (1991), who conclude that the magnitude of adverse selection is unlikely to create serious efficiency problems. Rubin and Koelln (1993) also produce evidence of adverse selection using data from the USA, as does Browne (1992). A few studies, however, find that health status does not have a statistically significant influence on the purchase decision, including Cameron and Trivedi (1991), Harmon and Nolan (2001), and Propper (1989). Harmon and Nolan (2001) conclude, unexpectedly, that good health status is positively associated with probability of purchase, the opposite of theoretical predictions. The authors suggest that further analysis and better data on health status are required. In most cases, the test for adverse selection is based on the estimation of a demand function that includes health status as an explanatory variable.

Few studies have tested empirically for adverse selection in health insurance schemes in low-income countries. Two studies examine willingness to pay using contingent

valuation techniques. In Ghana, willingness to pay for social health insurance increases with income, as well as in households with high recent health expenditures and difficulties in making payments, (a possible indication of adverse selection). Better education and being male also increases the amount people say they are willing to pay (AsensoOkyere et al. 1997). In India rural health insurance is linked to private providers, and willingness to pay is found to be a function of consumer perceptions of greater inaccessibility, and lower quality of government services (Mathiyazhagan 1998).

In certain social contexts, information asymmetry within insurance markets may be mitigated, without recourse to the collection of large quantities of data. Evidence of this is available from group lending schemes and informal insurance mechanisms such as rotating savings and credit associations, in which members tend to have good information about each others actions. This is particularly the case in traditional, pre-industrial societies, and is an issue investigated by Wydick (1999), who asks whether social cohesion repairs market failure (i.e. moral hazard) in a group lending scheme in Guatemala (see Part 2.3.2). A similar concept, social capital, has been put forward as critical to the development of voluntary health insurance, and is discussed in the next section.

2.2   Social capital: theory and evidence

A growing number of studies refer, although often briefly, to the relevance of social capital to the development of health insurance in low-income countries (see, for example, Preker et al. 2001, Preker et al. 2002, and Ensor and Witter 2001). In the final paragraph of an earlier paper, Khoman (1997) argues that social capital is important for the development of rural health financing schemes in Thailand:

> 'But certain preconditions must be in place for such a scheme (Health Insurance Card Scheme) to get off the ground. The most important of these preconditions is sufficient social capital. The concept of social capital stems from the recognition that social actions and the development of social organisations - such as a community health scheme - depend on expected mutual benefits that are affected by social norms and obligations within a community. Moreover, social structures that are well endowed with social capital are more amenable to collective action. Yet the small number of members required for community trust and

cohesiveness - the building blocks of social capital - is less conducive to risk pooling, which requires a large number of members.' (Khoman 1997: 192)

However, none of these studies addresses the issue of social capital in any depth. Indeed, the fact that social capital remains somewhat peripheral to the mainstream debate on health financing is a reflection of the definitional problems it faces. Clearly, however, there is some appeal in the idea that the social structure of a community is relevant to the development of health insurance. In order to assess the conceptual basis for this increasingly popular idea, substantial space is given here to reviewing the relevant literature.

The idea of social capital has grown out of a belief amongst sociologists, and political scientists, that economic models under-represent the extent to which individual behaviour is influenced by social context, in particular social norms of behaviour. Economists argue, however, that rather than making unrealistic assumptions, the discipline attempts to identify solutions that could be reached if, for example, better information is made available within markets, and hence provides a clear direction for policy-makers. Furthermore, the assumption that rational individuals maximise personal welfare is, to some extent, dealt with through the concept of *bounded rationality*, in which an individual *satisfices*, choosing tolerable rather than best possible courses of action. Neither of these responses fully deals with the criticism that economics under-socialises human behaviour, however. Fukuyama suggests that:

'We can think of neo-classical economics as being, say, eighty percent correct: it has uncovered important truths about the nature of money and markets because its fundamental model of rational, self-interested behaviour is correct about eighty percent of the time. But there is a missing twenty percent of human behaviour about which neo-classical economics can only give a poor account. As Adam Smith well understood, economic life is deeply embedded in social life, and it cannot be understood apart from the customs, morals, and habits of the society in which it occurs. In short, it cannot be divorced from culture'. (Fukuyama 1995: 13)

A review of the literature reveals that social capital has been used in explanations of a wide range of social phenomena. Table 2.2 offers a sense of this, by presenting a

selection of articles, together with the journal in which each is published. To the uninitiated reader, it might appear that social capital is a panacea for social policy makers. However, serious doubts about the concept's originality have been voiced by sociologists themselves[16] and, in the literature, considerable confusion remains about what social capital actually is. The remainder of this section attempts to disentangle the various arguments.

2.2.1 Defining social capital

French sociologist Pierre Bourdieu, is generally credited with producing the first contemporary analysis of social capital, which he defines as:

> "...the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectively-owned capital, a 'credential' which entitles them to credit, in the various senses of the word." (Bourdieu 1985: 248-9)

Using this definition, social capital can be decomposed into two elements. The first is the social relationship that allows individuals to access resources owned by their associates, whilst the second is the amount and quality of those relationships. Most of the studies listed in Table 2.2, however, cite not the work of Bourdieu, but those of James S. Coleman, and Robert D. Putnam. Coleman began writing about social capital in the late 1980s (Coleman 1987, 1988), culminating in a chapter dedicated to the concept in 'Foundations of Social Theory' (Coleman 1990). His theoretical framework is motivated by a belief that the individualism, upon which the philosophy of natural rights and neo-classical economic theory is based, is inadequate. The key issue for Coleman is that individuals do not make decisions independently of the social norms and trust that is intrinsic to their various social relations.

In developing his thesis, Coleman draws on the work of another sociologist, Granovetter (1985), who uses the concept of *embeddedness* to formalise the idea that social and organisational relations have an independent effect on individual behaviour. Economic transactions are, he claims, embedded in social relations, generate trust,

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[16] See in particular the argument made by (Portes and Landolt 1996) discussed in Part 2.2.1.

Social / economic phenomenon	Author	Journal
Health status Health inequalities	Kawachi and Kennedy (1997) Kawachi et al. (1997a) Kawachi et al. (1997b) Kawachi and Kennedy (1999)	British Medical Journal The American Prospect American Journal of Public Health Health Services Research
Welfare Poverty	Bird (1999) Grootaert (1999) Kawachi et al. (1999) Moser and Holland (1997) Narayan and Pritchett (1997)	Rationality and Society World Bank Working Paper Social Science & Medicine Book World Bank Working Paper
Individual income National income	Helliwell (1996) Woolcock (1998) Knack and Keefer (1997)	NBER Working Paper Theory and Society Quarterly Journal of Economics
Transaction costs	Bhatt and Tang (1998) Collier (1998) DePoint (1998) Woolcock (1998)	World Development World Bank Working Paper PhD thesis Theory and Society
Performance of public institutions	Cusack (1999) Putnam (1993a) Widner and Mundt (1998)	European Journal of Political Research Book Africa
Political and civic behaviour	Smith (1999)	Political Psychology
Educational performance Rate of school dropouts	Teachman et al. (1997) Coleman (1988)	Social Forces American Journal of Sociology
Divorce rates	Hetherington (1999)	Minnesota Symposia On Child Psychology
Success of development/ community projects (e.g. watershed and waste management	Mullen and Allison (1999)	Journal of the American Water Resources Association
Crime rates	Kawachi et al. (1999)	Social Science and Medicine

TABLE 2.2: RANGE OF DISCIPLINES USING SOCIAL CAPITAL

create expectations, and enforce behavioural norms. Coleman sees relationships as a productive capital asset, enabling individuals to achieve goals that would otherwise be unobtainable, or only at a greater cost. Hence, social capital provides an additional resource for individuals to draw upon in order to achieve their personal goals. Whilst this point is motivated by a concern that economics, and its assumptions are inadequate, it appears to be entirely consistent with the concept of a utility-maximising individual.

Coleman attributes the first use of the term social capital not to Bourdieu, but to Loury (1987), who used it to describe the social endowments that children receive from their parents. In the context of low-income families and income inequalities in the USA, Loury believes that social capital is important for the creation of human capital in children and young adults, describing it as a non-transferable asset that inheres in family relations and community social organisation. In fact, Loury only refers to the term once in his article, and only then in passing, neither defining nor expanding on it.

Rather than defining social capital in terms of networks and membership in groups, Coleman offers the following, slightly more vague definition:

"Social capital is defined by its function. It is not a single entity, but a variety of different entities having two things in common: they all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure." (Coleman 1990: 302).

However, Coleman does offer a useful analogy with physical and human capital. Whereas physical capital results from changed material form (e.g. turning raw metals into machines and tools), and human capital is created by investing in education and training, social capital is created by investing in inter-personal relationships that facilitate productive activity. Thinking of individuals as a set of nodes in society, human capital exists within each node, whereas social capital exists in the links between them. These links are relationships, which Coleman categorises variously as based on trust, norms and authority, the latter implying hierarchy and vertical relationships. In contrast, Putnam, whose work is detailed later in this section, defines social capital in terms of civil society, which he measures in terms of the density of horizontal networks in a community. This focus on membership in social groups is also central to Bourdieu's definition. One conflict in much of the social capital

literature is whether value (in terms of measuring social capital) should be given only to horizontal networks or also to vertical ones.

Portes (1998), and Portes and Landolt (1996), criticise the early writings of Coleman and Putnam for assuming that social capital has only positive effects, and redress this imbalance by highlighting the downside of social capital. Criticising the vagueness of its definition, they claim that the way is left open for a number of different and even contradictory processes, to be relabelled as social capital. They comment that "...the point is approaching at which social capital comes to be applied to so many events and in so many different contexts as to lose any distinct meaning" (Portes 1998: 1). Examples of the negative effects or costs of social capital are presented by Woolcock (1998), who cites the existence of organised crime such as the Mafia which, it could be argued, possesses a high level of internal trust and social capital.

Portes criticises Coleman for including in his definition some of the mechanisms that generate social capital, such as reciprocity, expectations and group enforcement of norms, and some of its consequences, such as better information. He continues that equating social capital with the resources acquired through it leads to tautological or circular statements. Saying, for example, that a student has social capital because he obtained access to a large tuition loan from his family, but that another student does not because she failed to do so, simply neglects the possibility that the second student's network is equally, or more motivated to come to her aid, but simply lacks the means to do so. Defining social capital as being equivalent to the resources obtained through it is tantamount to saying that the successful succeed.

Problems with defining social capital continue to plague the literature, although this is not immediately apparent, given the number of articles employing the term (without challenging it). Woolcock (1998) criticises it for trying to explain too much with too little - the antithesis of a good theory. Others, such as Fine (1999a, 1999b), are concerned that recent interest in social capital is indicative of the extent to which economics is colonising other sub-disciplines within the social sciences.

In reviewing the social capital literature, Woolcock (1998) believes that a definition should focus on sources rather than consequences, and considers trust, norms of reciprocity, fairness and cooperation as the benefits of social capital. He notes, however, that in practice it is conceptually difficult to separate the sources of social capital from its consequences.

A further example of confusion in the literature is evident in Putnam's (1993a) seminal work (see next paragraph) in which voluntary participation in clubs, societies, and other social networks, are not only considered to be a consequence of social capital, but also an additional investment. In this virtuous circle, trust promotes cooperation, and cooperation promotes trust. If this is the case then, as Thomas (1996) and others suggest, it is an asset with the unique quality of appreciating rather than depreciating with use, counteracting the economic law of diminishing returns. Indeed, the asset may actually deplete when not used. Whilst there is a logic to this circularity this feature of social capital is the principal cause of its definitional problems[17].

Putnam's (1993a) analysis of the relative performance of regional government in Italy is, together with Coleman's work, the text most credited with developing a theoretical framework for social capital. In attempting to explain variations in institutional performance, the book examines a variety of societal structures, including the notion of a civic community, in which social solidarity, inter-personal trust, tolerance and cooperation are widespread. Putnam argues that "Citizens in the civic community are not required to be altruists. In the civic community, however, citizens pursue.....self-interest that is "enlightened rather than "myopic", self-interest that is alive to the interests of others" (Putnam 1993a: 88).

Putnam defines social capital as a stock of '...norms of reciprocity and networks of civic engagement' (Putnam 1993a: 167), and hypothesises that participation in civic organisations instils skills of cooperation, as well as a sense of shared responsibility for collective endeavours. Fukuyama (1999) points out that norms range from the reciprocity that exists between two individuals, to complex doctrines such as Christianity, and Confucianism, which suggest considerable complexity in its measurement.

Measures of civic behaviour used by Putnam aim to capture what he terms the *vibrancy of associational life*. These include the extent of newspaper readership, and turnout for referenda, measures used to construct an index of *civicness*. A strong

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[17] It might be argued that an inability to agree on a precise definition of social capital should not prevent the use of a concept that has clearly captured the imagination of a wide range of academic disciplines. However, the lack of a definition leads to problems when attempting to measure social capital, as discussed in Part 2.2.4. Furthermore, many concepts, which apparently constitute social capital, have substantial value in their own right without making

positive relationship is found between this index and regional government performance, which in turn is based on twelve separate measures, including internal stability, responsiveness to public requests, the provision of information, and legislative activity. Putnam thus equates social capital with civic behaviour, defined in terms of the networks, norms, and trust, which facilitate cooperative action for mutual benefit:

"Working together is easier in a community blessed with a substantial stock of social capital. In practice, this stock is equated with the level of associational involvement and participatory behaviour in a community and is measured by such indicators as newspaper reading, membership in voluntary associations, and expressions of trust in political authorities." (Putnam 1993b: 1)

Putnam's emphasis on social capital as horizontal linkages in a community, rather than vertical ones, is evident in his observation that Catholicism tends to substitute for civic community, with vertical bonds of authority presiding over horizontal bonds of fellowship. Each indicator of religiosity used in Putnam's study, such as attendance at Mass and rejection of divorce, is negatively correlated with behaviour that typifies civic engagement. He also provides a useful historical analysis of the dominance of vertical authority relationships in the southern Italian feudal Kingdoms, in contrast to the civic republicanism that emerged in northern cities.

Furthermore, in a chapter entitled 'Tracing Civic Roots', Putnam highlights the inter-dependence of communal republicanism, civic institutions such as guilds, trust, the growth of credit, and mercantilism. In summary, he notes that "A vertical network, no matter how dense and no matter how important to its participants, cannot sustain social trust and cooperation" (Putnam 1993a: 174). In a subsequent and oft quoted paper, Putnam (1995) describes the decline of participation in group activities across the USA which, he argues, reflects a decline in social capital, and constitutes a threat to the quality of democracy and the quality of life.

Theoretically, social capital has a variety of meanings to different disciplines, as described by Woolcock (1998):

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what is often a conceptual jump to the notion of social capital. In this thesis, social cohesion is used as a measure of social structure, without being labelled as social capital.

"Rational choice theorists.....regard social capital as an informational resource emerging as a result of interaction between rational agents needing to co-ordinate for mutual benefit. Durkheimians however, perennially at odds with Utilitarians claim that social capital in the form of normative non-contractual elements of contract, is in fact what makes possible any commitment to action, rational or otherwise.....For network theorists, social capital is simply one's non-rational social ties. If social capital can be rational, pre-rational, or even non-rational, what is it not?" (Woolcock 1998: 155-156)

Most published works consider social capital to be a public good given its indivisibility i.e. social capital cannot be the private property of an individual. Neither can social capital be exchanged, having value only when employed. According to economic theory, private investment in social capital will thus be sub-optimal, justifying public intervention either through direct provision or financing.

Fukuyama (1999) rejects this idea, however, arguing that as cooperation is critical in order to achieve most selfish ends, social capital will be produced in adequate quantities as a private good. He also introduces the useful idea of a *radius of trust* to explain the fact that group solidarity is often achieved at the price of hostility to outsiders. This concept neatly encapsulates the potential for both positive and negative externalities of social actions. When the social capital of a particular group, for example its set of cooperative norms, produces positive externalities, then the radius of trust will be wider than the group itself. However, when a group's social capital is restricted only to its members, who are hostile to outsiders, the radius of trust will be narrow.

Fukuyama defines social capital as "....a capability that arises from the prevalence of trust in a society or in certain parts of it" (Fukuyama 1995: 26), which suggests that trust is a source of *capability*. Seminal work by Sen (1999) is also relevant here. Pereira (1993), in a review of equity concepts in the health sector, stresses the importance of Sen's work in drawing attention to the importance of the capability of an individual to transform the commodities they have control over, into human functionings such as enjoying good health. Pereira also refers to the work of Rawls (1972), whose theory of the *maximin* suggests that society should seek to maximise the position of the least well-off.

Much of the discussion presented so far is somewhat convincing, in that social networks, norms of behaviour, social cohesion, and a range of other concepts, are each likely to have an influence on individual behaviour. The problem arises, however, in the conceptual shift from each of these individual ideas to the composite notion of social capital, which in some respects adds confusion. Philosophy offers some useful ideas with respect to phenomena that are widely understood but not easily defined, frequently giving the example of a 'game'. Using the idea of a *cluster concept*, there are various phenomena, which are not identical, but resemble each other, and are thought of as games. These phenomena have what might be termed a *family resemblance*. There may be some room for the application of this idea to current thinking on social capital. Perhaps the greatest value of the idea, however, is to draw economists to a range of useful ideas and frameworks from the sociological literature.

Given these definitional problems, in this thesis the various phenomena suggested in the literature as constituting social capital, are used in their own right, rather than as the composite term social capital. Despite this, social capital has led to a useful exchange of ideas between disciplines and for this reason, the discussion and the debate surrounding the concept continues below.

Whether or not social capital merits the label *capital* is another issue of debate. Economics defines capital as an input to the production process, which can also be used as collateral. Essentially, capital augments income, but is not totally consumed in the process. For sociologists, capital is seen more generally as a resource. Whilst certain studies show that social capital can increase individual incomes, most notably Knack and Keefer (1997), and Narayan and Pritchett (1997)), the majority are not concerned directly with increases in income (see Table 2.1). Collier (1998) attempts to settle the issue by proposing that only those social interactions that have persistent economic effects merit being labelled as capital. Unfortunately, few studies adopt or discuss this potentially useful condition.

Definitions of social capital overlap considerably with a number of other concepts, several of which are listed in Table 2.3. For example, when one person does a favour for another, they may do so because they trust the other person to return that favour in the future. Whilst Fukuyama (1995) equates social capital with trust, and *vice versa*, Sobel (2002) offers a more precise definition: the willingness to accept a decision that affects one's welfare to be made by someone else. Such trust may be based on a belief that the other person is altruistic, or follows a set of moral principles. Alternatively, it

Concept	Studies	Definition / measure	Benefits/Conclusions
Social collateral	Besley and Coate (1995) Conning (1997)	Replacement for physical collateral particularly in poorer communities. Similar to reputational collateral.	Social collateral can be harnessed to reduce the negative effects of group lending e.g. where a group defaults despite the fact that some members could have repaid. Fear of loss of social collateral within a close-knit community, for example through social penalties / sanctions may thus lead to increased rates of group repayment.
Reputational collateral	Haller (1992)	Widely used concept in theory of repeated games. Similar to social collateral.	Can be used to secure resources (such as financial credit) in the absence of physical collateral.
Social cohesion	Wydick (1999)	Three measures: pre-existing social ties, existence of peer monitoring, and evidence of group pressure within the borrowing group.	Examines whether social cohesion can effectively repair market failure by overcoming asymmetric information in credit markets. Finds that better repayment performance results not from stronger social ties between members, but primarily from peer monitoring, the use of sanctions against poor performers, and intra-group insurance, which assists borrowers who are victims of an unavoidable mishap.
Solidarity	Criel and Van Dormael (1999) Atim (1999) Desmet et al. (1999)	A union of interests, purposes, or sympathies among members of a group; a fellowship of responsibilities and interests.	Literature suggests that collective action embodied in voluntary mutual organisations, for example, is more likely to occur in communities with high levels of social capital. Solidarity is an important factor in both the evolution, and the functioning, of mutual aid associations for health in West Africa.

TABLE 2.3: SOCIAL CONCEPTS USED IN THE LITERATURE

Concept	Studies	Definition / measure	Benefits/Conclusions
Altruism	Bernheim and Stark (1988)	Unselfish concern for the welfare of others.	Worse outcomes may arise if altruists are reluctant to enforce agreements and punish betrayals amongst other members of group e.g. within group lending/borrowing schemes.
	Foster and Rosenzweig (2001)	A situation where individual action is entirely unselfish i.e. not linked with any expected return, or reciprocal arrangement. Examples include giving money to charity, or volunteering.	Whilst imperfect commitment substantially constrains informal transfer arrangements, whether kin-based or not, there is evidence that altruism plays an important role in ameliorating commitment constraints and hence in increasing gains from income pooling.
Reciprocity	Criel (1998)	A mutual or cooperative interchange of favours or privileges between self-interested individuals.	Reciprocity is one of the benefits of social capital (also trust and cooperation) and shouldn't be confused with social capital itself, or a source of it.
	Coate and Ravallion (1993)	Theoretical paper concerned with informal insurance, in which it is argued that balanced reciprocity is at play when one individual performs a favour, and expects an equivalent one in return.	
	Woolcock (1998)	A situation in which an individual performs an initial action and expects an action of an approximately equal value in return.	
Social networks	Marwell et al. (1988)	Internal dynamic and structure of social networks influences likelihood of collective action occurring. Measures the cost of communicating and coordinating actions within networks.	Overall, density of ties in a group improves the prospects of collective action. Unexpectedly, the centralisation of network ties always has a positive effect on collective action.

TABLE 2.3: SOCIAL CONCEPTS USED IN THE LITERATURE

may be based on a belief that the other person will return the favour through a desire to maintain a reciprocal relationship.

This idea has similarities with that of reputational collateral, used in the economics literature to explain why individuals enter unenforceable contracts. Social collateral, another concept used in the development economics literature, may also enable individuals without physical assets to access loans, e.g. through entering a reciprocal, risk-sharing arrangement. This argument is similar to that used by van Bastelaer (1999) in the context of social capital (see the discussion on informal systems of risk-sharing later in this chapter).

This brief overview suggests that many of the ideas that tend to be bundled together into the notion of social capital are not original. Conceptually, it is unclear whether social capital offers an original insight, although there are some useful ideas relevant to the development of health insurance schemes in low-income countries. These are presented in the remainder of this chapter.

2.2.2 Sources of social capital

In the same way that social capital is defined in a number of different ways, a variety of sources are proposed in the literature. First, in attempting to explain why social capital emerges in some communities and not others, Hsiao (1995) stresses the importance of *closure* within social networks for the emergence of obligations, expectations, and social norms. This idea draws directly from the work of Coleman (1990). *Closure* describes a situation, in which each member of a network knows the other, which Hsiao (1995) suggests is similar to stability within social structure, social proximity[18], social integration, or social cohesion. These terms are, essentially, synonymous.

The relevance of community structure becomes clearer in the context of *negative* behaviour. If, for example, one person conducts an action that imposes negative externalities on two other individuals, neither of whom knows the other, then their ability to combine forces to constrain the first person's actions is limited. Social norms of behaviour, which Coleman equates to social capital, can only emerge in closed networks. The aim of behavioural norms, he suggests, is to encourage positive social

actions and to curtail negative ones. Whilst the process of urbanisation is often associated with a breakdown in *closed* networks, in some cases, such as the Jewish diamond trading community in New York, closure is maintained. *Closure* is one of the more useful insights in the social capital literature, offering a logical explanation for the development of social norms of behaviour. As already noted, the problem arises in the conceptual leap from this very clear idea to that of social capital.

Conceptually, closure has similarities to the *persistent relationships* suggested by Collier (1998), and *repeated interactions* or *iterations* in the economics literature on game theory. The latter is important to overcome selfish or opportunistic behaviour that may be in a person's short-term, but not medium or long-term, interest - when relationships are perceived to be more permanent than transient, then cooperative behaviour is likely to yield greater utility for the individual concerned.

In addition to social closure, behavioural norms may be produced in other ways. Fukuyama (1999) notes the importance of authority structures, in particular major religions such as Buddhism, Hinduism, Christianity and Islam, which lay down codes of conduct and expect obedience to them. This viewpoint directly contradicts that of Putnam, who considers that the authority relations laid down by the Catholic Church effectively destroy social capital and prevent the development of civic behaviour.

This issue further exposes the contradictions in the literature. Whilst many authors define social capital as social norms, which often result from hierarchical social systems, most studies do not give those vertical relationships any positive value in terms of social capital. Indeed, where social relations are based primarily on authority, social capital is considered weak, at least if Putnam's definition of social capital as civic community is followed. Similarly, the argument that social capital is important for collective action is contradicted by empirical evidence that leadership and authority within social systems is often necessary for collective action to occur. Collective action refers to the voluntary agreement between two or more individuals to cooperate i.e. to carry out a particular individual action in the future (see, for example, the work of network analysts discussed later in this chapter). In the same way that early writings on social capital neglected to acknowledge the presence of negative

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[18] Coleman uses this term to describe the close relations between children at school.

consequences, many texts over-emphasise the importance of horizontal ties, at the expense of vertical relationships.

A second related weakness in the social capital literature is whether heterogeneous or homogenous group composition increases the quality of social capital. On the one hand, Putnam sees value in networks that cut across social and economic groups, which, he argues, are the foundations of a civil society. Several studies that measure social capital follow this approach, giving a higher value to membership in groups with heterogeneous membership[19]. However, it appears intuitive that collective action is more likely to occur in homogenous groups where strong bonds of trust exist between the members. This is an additional argument supporting the suggestion that certain vertical networks should be credited with positive value.

Given the importance of collective action in the social capital literature (see further discussion in Part 2.2.3.4), it is useful at this point to examine the approach taken by other disciplines. For example, development economists such as Fafchamps (1992), offer a different explanation for the emergence of collective action and solidarity in pre-industrial societies. The author believes that mutual insurance mechanisms spring primarily from scarcity and need, and that whilst altruism may be a catalyst for such solidarity networks, they are essentially motivated by economic concerns. Similarly, Platteau (1997) sees the formation of many social groupings, based on kinship, lineage, neighbourhood, consanguinity, and ultimately trust, as serving an economic function. He notes that:

> "It is scarcity not sufficiency that makes people generous, since everybody is thereby insured against hunger....in a community where everyone is likely to find himself in difficulties from time to time.....he who is in need today receives help from him who may be in like need tomorrow". (Platteau 1997: 764-5)

Fafchamps follows a similar line of thought, expecting that:

> "...solidarity mechanisms should emerge quite naturally in societies that are vulnerable to starvation and in which idiosyncratic risk is large.

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[19] See, for example, Grootaert (1999), and Narayan and Pritchett (1997).

Economic prosperity on the other hand undermines solidarity to the extent that it reduces individual risk of starvation." (Fafchamps 1992: 150)

The flip side of need and scarcity is affluence, another factor that Coleman considers important. He argues that where individuals can meet their own needs through self-sufficiency, or through support from official sources e.g. government social security schemes, there is less need to incur an obligation by asking a favour of another person. For Coleman, asking favours and creating obligations effectively creates social capital, with the implication that affluence destroys social capital. On this issue, sociology has a similar view to economics. Part 2.1.1 showed how economic theory predicts that aversion to risk falls as individual income increases.

Whilst Coleman stresses closure in social networks, and Platteau and Fafchamps stress scarcity and need, several authors explain the emergence of social organisations for collective action in terms of altruism. Ethics, based on a set of moral principles, may provide the intrinsic motivation to do something for its own sake. In the case of the welfare state in the U.K., Taylor-Gooby (2000) believes the foundations must remain at least partly altruistic, rather than simply incentive-based. If not, he argues, the patterns of citizenship obligation, which are fundamental to both civil society and the success of public organisations such as the NHS, which incidentally he considers a highly efficient organisation, would be undermined.

In contrast, some economists such as Bernheim and Stark (1988), suggest that altruism may be bad for the development of institutions for collective action. They argue that whilst altruists should enhance the efficiency of resource allocation by internalizing externalities, worse outcomes may arise through a reluctance to enforce agreements and punish betrayals. Not punishing betrayals may limit an altruist's ability to enter cooperative agreements in which each individual depends on the actions of others in order for members of the group to achieve mutual benefits.

On a more positive note, Foster and Rosenzweig (2001) analyse whether altruism can facilitate informal risk-sharing in the context of unenforceable contracts. Using consumption expenditure data from village communities in India and Pakistan, to assess the extent of informal risk-sharing, they conclude that whilst imperfect commitment problems constrain informal transfer arrangements, altruism has an

important role in mitigating these constraints, allowing some income pooling to take place.

To summarise at this point, a non-profit health insurance scheme, as an institution that embodies collective action, may gain political support through a sense of solidarity in society, as suggested by Ostrom (1990). Institutions for collective action are not a new phenomenon, however, and a historical insight into the emergence of, for example, the Friendly Societies in 19th century England, and the credit cooperative movement of 19th century Germany, may be relevant. These are discussed in further detail later in this chapter.

The debate on the genesis of collective action is summarised in a review by Besley (1995b). On the one hand, such institutions can be explained through altruistic motivations, the basis of the idea of a *moral economy*, as proposed by Thompson (1971). Alternatively, such institutions can be explained in terms of reciprocal arrangements between self-interested individuals, which allow risk-sharing to be sustained. Interestingly, this debate has been particularly fierce amongst anthropologists, with Scott (1976) suggesting that notions of altruism, and an ethic of mutual assistance, enable such arrangements to evolve. In contrast, Popkin (1979) argues that Scott's analysis of peasant culture in Vietnam romanticises village life.

Essentially, the debate is a philosophical one about the nature of man. Economists typically fall back on models of reciprocity between self-interested individuals to predict situations in which collective action is expected to occur i.e. where cooperation brings mutual benefits to individuals who would otherwise incur greater costs. Two well-known examples, the prisoner's dilemma and the tragedy of the commons, demonstrate such situations theoretically. Economics is much weaker, however, when it comes to explaining why, when collective action or cooperation is expected to occur, it actually does in certain communities but not in others. Sociological concepts such as network closure are more useful in explaining such phenomena.

What causes social capital to arise? In summary, sociologists highlight the importance of closure in social structures, which allows behavioural norms to emerge, in turn promoting positive cooperative behaviour, rather than selfish opportunistic actions. Secondly, authority structures are important sources of behavioural norms, despite the contradiction in many studies, which only give value to horizontal networks. Thirdly, economists consider scarcity and need as the primary motivation for individuals to

enter mutual support arrangements, which, as individuals become increasingly self-sufficient, will fade away. This idea is further complicated, however, by evidence that informal risk-sharing is more prevalent amongst groups of wealthier individuals. Finally, altruism, based on moral principles and ethical codes, may also facilitate cooperative behaviour, although it is claimed that in certain circumstances such behaviour may actually be detrimental. In the following section, attention turns to the consequences of social capital.

2.2.3 Consequences of social capital

Many of the outcomes attributed to social capital in the literature are closely interlinked. Table 2.1 presented a selection of studies that employ the concept, illustrating the wide range of social and economic phenomena, to which its relevance is claimed. Studies considered of direct importance to this thesis are reviewed in detail.

2.2.3.1 Health status

Portes 1998) refers to Durkheim's seminal study into suicide, in which he emphasises the importance of group life, as an antidote to anomie and self-destruction. The positive consequences of participation in groups on health status, and the links between emotional and physical health, are well documented (see Editorial 1998). However, the literature is not conclusive. Seeman (1996) reviews papers cited on MEDLINE since the 1970s, and concludes that whilst social integration leads to a reduced risk of mortality, and fewer mental health problems, there is no conclusive evidence of its influence on physical health outcomes.

In a study of health status in Russia, Rose (2000) finds, using regression analysis, that social capital, measured in terms of social integration, is more important than human capital in increasing physical and emotional health. He estimates that both together can raise an individual's self-reported health status from just below the average on a five-point Likert scale to approaching good health. Several studies by Kawachi and Kennedy (1997), Kawachi et al. (1997a), and Kawachi et al. (1997b), referred to in the context of health status in Figure 1.1, present data in support of the hypothesis that social capital reduces health inequalities. Wilkinson (1996) proposes a similar theoretical argument, which hinges on the causal relationships between income inequality, disinvestment in social capital, and increases in mortality. Gravelle (1998),

however, suggests that this relationship may simply be a statistical artefact, resulting from the use of aggregate data[20].

2.2.3.2 Economic status

Grootaert (1998) analyses linkages between social capital and economic performance at the macro or national level, and suggests that the concept provides the *missing link*, explaining how economic actors interact with each other and organise themselves. Social capital provides an informal framework that facilitates the interaction and co-ordination of different actors in the following ways:

- increased *information sharing* (thus mitigating the negative outcomes resulting from uncertainty)
- improved *co-ordination* of activities and collective decision making
- *peer-monitoring* (through a common set of norms and local level sanctions)
- the provision of a framework of mechanisms to *enforce agreements*
- the reduction of *contracting costs*

Two further papers, produced as part of the World Bank's Social Capital Initiative, develop thinking around the economic benefits of social capital. One way in which social capital affects income is through the facilitation and enhancement of collective action Grootaert (1998). A second way is through the creation of other capital items such as human capital. For example, where residents of a rural village club together to purchase a school bus, which increases access to formal schooling, greater levels of human capital will result in the medium term, and are likely to lead to economic benefits. If the stream of returns resulting from collective action is intrinsically persistent, Grootaert claims, then it can be converted into a present value and meaningfully valued as the social *capital* of the community concerned.

In Tanzania, Narayan and Pritchett (1997) analyse the relationship between social capital and income levels at the community level. The authors define social capital as the quantity and quality of associational life, and related social norms, which are used to create a village level index[21]. The authors propose five ways in which social capital can augment income, each sharing the characteristic that pure non-cooperative action would lead to an inferior outcome. Again, the central argument is that social capital

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[20] Income-inequalities in health status are not examined in any detail in this thesis.
[21] The authors construct a multiplicative index rather than using principal components analysis (see Part 2.2.4).

facilitates cooperation. The results suggest that social capital increases income by 20-30%, equal to an equivalent increase in non-farming assets, or a tripling of the number of years of formal education. More specifically, they conclude that a one standard deviation increase in the village social capital index, achievable if half a village joined one additional group with average characteristics, would increase per capita consumption expenditures by approximately 20-30%.

Woolcock (1998) illustrates the benefits of social capital using the example of a new arrival in an immigrant community. Whilst the individual may in the earlier months of her arrival have little physical capital (e.g. money or assets), or human capital (e.g. language, education), she may be able to make a living by drawing on social capital e.g. finding employment through existing networks and relationships. At a later point in time, however, it may be difficult for her to move beyond this community and operate in mainstream society, in particular where obligations to the immigrant community are great. Hence, the optimum amount of social capital either for efficient economic exchange, or for individual welfare, may not simply equate to the maximum amount available. Rather, the optimal amount will differ for each transaction and, as such, Woolcock concludes that there are different types, levels and dimensions of social capital, with different combinations giving different outcomes, facilitated by different conditions.

2.2.3.3 Information and transaction costs

Collier (1998) suggests that social capital facilitates information sharing through increased social interaction. When this information translates into knowledge the effect is intrinsically durable. The value of greater knowledge at the margin depends on pre-existing levels in a community, and the availability of substitutes such as newspapers, and formal education. Information is also required to assess the reliability of other agents, with repeated interactions allowing the generation of reputation. Collier defines reputation as the pooling of information on promise-trust relationships, with mechanisms such as gossip used to assign, and update reputations.

Information is central to economic theory and its imperfection a common cause of market failure. Hence, any mechanism that can increase the availability of information is of interest to economic theorists, in that it may allow for improved resource allocation decisions, and reduced transaction costs.

Narayan and Pritchett (1997) also find that social capital has a positive effect on the adoption of improved seed varieties, fertilisers and agrochemical products, implying that social capital is important for the diffusion of innovations. Such insights are not altogether new, however. Network analysts examine the importance of social networks for the diffusion of innovations. For example, Valente (1996) develops a threshold model based on different types of individuals within a social network, labelling some as early adopters and others as laggards. Sobel (2002) analyses the efficiency of information flow through social networks, to assess the structural characteristics of social networks, such as global density, local density, diameter, and the number of bridges. Sobel (2002) sees one of the few positive aspects of social capital as drawing attention to the role of networks, as well as the idea of *bridging* and *bonding* relationships, the former creating larger networks where *structural holes* previously existed, and the latter denser networks. This idea is also used in the recently developed Social Capital Assessment Tool discussed later in this chapter.

2.2.3.4 Cooperation and collective action

As noted earlier, a range of institutions exists that facilitates cooperation or collective actions, allowing mutual gains to be achieved by participating individuals. The earliest recorded statute for a guild, one of the earliest such institutions, is from Verona in 1303, although Guinnane (1992) lists similar mutual arrangements in other Italian associations at the end of the twelfth century. In mid-19th century Germany, credit cooperatives for workers such as artisans and shopkeepers in urban centres were initiated by Schulze-Delitzch.

Around the same time, Raiffeisen established an alternative scheme, motivated by a desire to assist poor rural farmers and labourers (Guinnane 1992). Similar schemes subsequently cropped up throughout much of Western Europe, although not always successfully. Guinnane (1994) puts the failed attempt to transplant Raiffesein's scheme in Ireland down to a range of factors, including poor management, competition for deposits from a well-entrenched savings bank system, and social problems that reduced the effectiveness of local monitoring. This last point is essentially the same as peer monitoring, discussed earlier in Part 2.1, and can be important in mitigating the moral hazard problem inherent in insurance markets.

Rotating saving and credit associations (ROSCAs), widespread in low and middle-income countries, are examples of informal risk-sharing institutions in which individuals come together to pool financial resources. Putnam (1993a) is particularly

interested in ROSCAs, which, he claims, represent something more than social entertainment or altruism. He argues that a powerful system of behavioural norms, together with a dense network of reciprocal arrangements, creates both a sense of cooperation, and effective sanctions against defaulting on repayments. In small, *closed* communities, members of such schemes are usually selected on the basis of reputation for honesty and reliability. In contrast, generalised reciprocity and mutual trust are more important in urban communities, with members having to trust the judgement of other members when accepting new applicants. For Putnam, trust is a mechanism that draws on social capital to overcome the dilemmas involved with collective action. Coleman argues that social capital emerges where closure exists within networks.

Theoretical arguments presented by Coleman also draw on the existence of ROSCAs, on the assumption that such arrangements would not evolve, and could not function, without high levels of internal trust or social capital. Woolcock (1998) also notes that ROSCAs, and other group-based micro-finance institutions, use peer groups as collateral for the extension of credit. It does not logically follow, however, that communities without ROSCAs do not possess social capital. Trust and social cohesion may still exist but the perceived need for such informal arrangements may be limited, for example where income levels are higher. In addition, alternatives such as government schemes may exist which may substitute for formal institutions.

Despite the suggestion that social capital is important for collective action, there is little distinction in the literature between formal or informal institutions. For example, whilst countries such as Pakistan could be argued to have high levels of social capital at the community level, formal institutions for risk-sharing at the national level remain extremely weak[22]. If social capital is important for the development of institutions for collective action, it seems likely that it is a necessary, but insufficient condition. This is a further issue, which the social capital literature needs to consider in more detail, in order to develop a more coherent theoretical framework.

One institution that has attracted considerable attention from a range of academic disciplines, is the Grameen Bank in Bangladesh, which relies on peer monitoring, and is also a response to the failure of the traditional banking system to provide credit to poor households. Rather than lending to individuals, loans are made to groups, who

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[22] This point is made in the NGO Resource Centre Journal (Volume 1, Issue 3, 2002). NGORC is funded by the Aga Khan Foundation.

face joint liability for a single loan. Conning (1997) points out that the scheme relies on social, rather than physical collateral, harnessing the substantial monitoring and enforcement advantages of such groups relative to outside monitoring intermediaries. Stiglitz (1990) makes a similar point, crediting effective peer monitoring with the success of the Grameen Bank, by enabling the enforcement of unwritten contracts.

As with the Grameen Bank in Bangladesh, Hollis and Sweetman (1998) explain the emergence of hundreds of loan fund societies across Ireland in the mid-nineteenth century, which offered micro-credit to the poor with no physical collateral, as a response to the gap left by formal financial institutions. In contrast to Guinnane's (1994) analysis of the failure of credit cooperatives, Hollis and Sweetman (1998) view loan funds as a success. In both cases, a demand for credit existed among the poor, which was not met by the formal banking sector. As such, informal risk-sharing institutions represented an innovative response to the failure of market institutions. Why such institutions evolve in certain communities, but not in others, is discussed in the remainder of this section, and is of direct relevance to *Research Question 6* presented in Part 3.2.2.

Grootaert (1998) stresses the importance of collective decision-making in facilitating the provision of public goods and the management of negative externalities. In a seminal article by Garrett (1968) entitled 'The Tragedy of the Commons', the problems arising from the unorganised public use of a common property resource is clearly demonstrated. For each individual, the benefits of adding one more head of cattle to graze on the common land far outweighs the negative effects to them of overgrazing, until a point is reached where the resource becomes of no use to anyone. Whilst one solution is to privatise the resource i.e. allocate separate plots for each individual, leading to an increase in productivity and efficiency, but pricing some individuals out of the market altogether, an alternative is for users to join forces and cooperate in its management. The prevalence of such problems in the real world, from global warming to large-scale ocean fishing, is another reason for current interest in social capital.

Political scientist Eleanor Ostrom (1998) stresses the need for a broader range of rational choice models to explain such dilemmas and proposes a behavioural theory of collective action. She discusses two empirical examples in which conditions of reciprocity, reputation, and trust, overcome the temptations of short-run self-interest, and achieve results that are *better than rational*. Coleman's notion of closure is

relevant here, but at the micro-level, in that cooperative action is more likely to result when opportunistic behaviour reduces, possibly from a desire to maintain reputation in the local community and to avoid social sanctions. In this sense, social capital may help to ensure that self-interested actions are foregone in the interests of a wider community, in the absence of formal contracts. Whether spontaneous or informal co-ordinated action occurs will also depend on the presence of substitutes such as government agencies and firms.

In addition to work on transaction costs, network analysts have also examined the importance of network structure, for collective action. For example, Gould (1993) predicts that network density and size will influence collective action outcomes differently, depending on the position that those making unconditional contributions hold within the network. Marwell et al. (1988) also argue that the overall density or frequency of ties within a group is critical in determining the potential for individuals to cooperate, in order to overcome the problem of free-riders. Other factors include the nature of social ties, in particular the extent to which they are centralised in a few individuals, and the costs of communicating and co-ordinating actions.

Flache and Macy (1996) suggest that the situation is more complex, and that bilateral exchange may surmount multilateral exchange, resulting in the failure of broader collective action even in a highly cohesive group. Most of the arguments relating to collective action in the social capital literature remain at a more general level and rarely discuss the internal structure and dynamic of groups in such detail. This brief review suggests that the work of network analysts has much to offer current thinking on social capital, and exposes the somewhat superficial analysis presented in many articles.

As discussed earlier, the debate in the literature over whether cooperative action results from reciprocity between individuals, or from an ethic of mutual assistance driven by altruism, is essentially a philosophical one. Figure 2.1 summarises the range of factors, proposed by different academic disciplines, used to explain the evolution of risk-sharing institutions. Coleman suggests that collective action will result when a system of norms and trust is already constructed. In this case, further social interaction creates further norms. He also points out that for cooperative behaviour to occur, conscious decisions often require initiating and, in turn, tend to depend on the presence of an accepted hierarchy and set of rules. As noted earlier, a major defect in
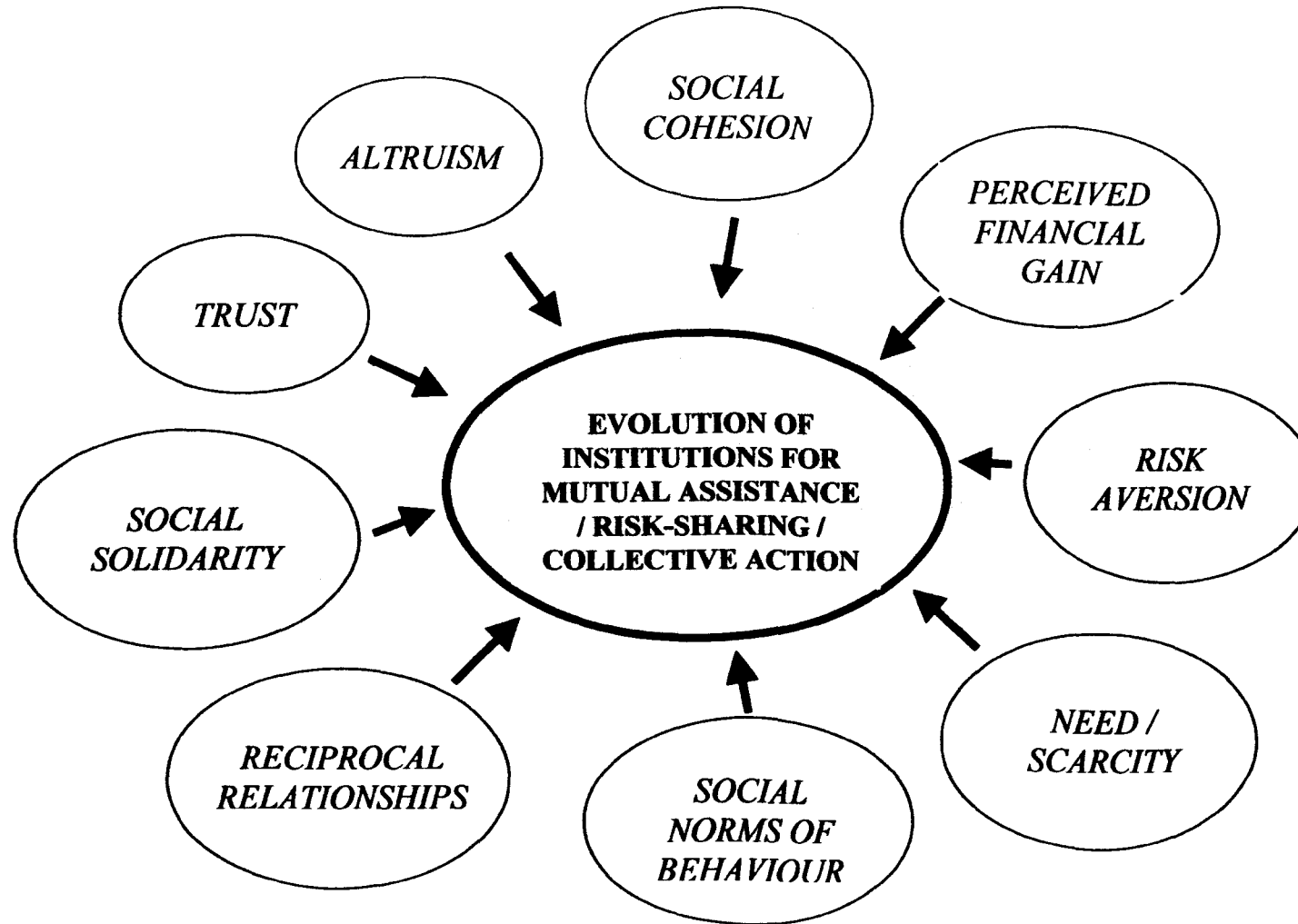
FIGURE 2.1: THE EVOLUTION OF RISK-SHARING ARRANGEMENTS

the social capital literature is that, until recently, no positive value has been given to such hierarchical relationships.

Those studies that do include vertical relationships, for example through a measure of trust in government institutions, include Brehm and Rahn (1997), and Narayan and Pritchett (1997) (see next sub-section). Interestingly, whilst closure within social structure is considered critical for social capital to emerge, few studies attempt to measure this feature of a community directly. Indeed social network analysts examine network structure in considerably more detail than most studies about social capital. Norms of behaviour, which many studies argue actually constitute social capital, are also rarely measured.

This section has highlighted a number of consequences of social capital, mostly positive, based on a review of the literature. In doing so, an attempt has been made to show the considerable overlap with other disciplines, including development economics and network analysis. Furthermore, the wide range of consequences proposed in the social capital literature, only some of which are presented here, partly reflects the lack of a clear definition, and can lead to conflicting arguments. For example, if social capital does increase income, then it is questionable whether it will also facilitate risk-sharing through collective action. Despite these problems, the next section devotes more space to the concept, reviewing two studies that use household surveys to measure social capital.

2.2.4 Measuring social capital: previous surveys

Just as the theoretical basis of the concept remains in its early stages, so are attempts to measure it, with many studies defining social capital in terms of its sources or consequences, often without any acknowledgement of the ongoing debate. This reflects the circular dimension of the concept discussed earlier. One widely used approach is to measure levels of inter-personal trust within a defined community or society. A second is to capture the density of networks, measured, for example, through membership in voluntary associations. This approach extends from Putnam's original study of regional government performance in Italy, in which he defines social capital in terms of civic behaviour. Putnam uses measures such as the density of cooperatives, membership in mutual aid societies, and the number of local associations. This approach is also consistent with Bourdieu's (1985) thinking, which stresses the importance of membership in a group. Recent studies have attempted to

measure not only the quantity of associations an individual has, but also their quality i.e. their relative contribution to social capital[23]. However, as stressed earlier in this chapter, one criticism of many studies is the lack of value given to vertical linkages within groups, despite their importance for collective action to occur.

The remainder of this section presents, in detail, two studies that measure social capital. Narayan and Pritchett (1997) use data from the Social Capital and Poverty Survey in Tanzania, which collected information on three dimensions of network density, including membership in voluntary associations (using four categories: 0, 1, 2, 3+), characteristics of those associations in which households were a member, and levels of trust in various institutions, from the family to national government bodies. Finally, perceptions of social cohesion in the local community were also collected. With respect to voluntary membership in local associations or groups, several additional pieces of qualitative information were collected. First, the name of each group was recorded, and respondents were then asked to identify the most important group to them i.e. the group they would join if they could join only one.

Further questions were then asked regarding the characteristics of this group, using five categories, with the aim of identifying the group's contribution to social capital. This approach draws heavily on Putnam's idea that the more heterogeneous the composition of a group is, the more it contributes to social capital. Narayan and Pritchett (1997) thus also collected data on the following group dimensions:

a) *whether membership of the group is voluntary*

b) *kin heterogeneity* of membership (using four alternative responses representing increasing degrees of heterogeneity)

c) *income heterogeneity* of membership (using two questions, the first concerning all members, and the second only group leaders or officials. The aim was to establish whether members are from the same economic group).

d) *group functioning* (based on two questions: the first measuring the respondent's perceptions of general group functioning using a five-point scale. The second measure relates to action taken in the event of a fee not being paid, using three alternative responses with no specific ranking).

e) *mechanisms employed for group decision-making* (used as a proxy for the extent to which internal procedures are democratic).

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[23] Again, see Grootaert (1999), and Narayan and Pritchett (1997).

This information was then combined into a single numerical, multiplicative index of social capital at the village level. As each variable was collected on a different scale, a re-scaling exercise was performed, effectively assuming that social capital increases in groups with greater kin heterogeneity (dimension b), more inclusiveness (it is not clear which dimension is used but presumably d), and which function in a more democratic way (dimension e). These three characteristics are used to create an equally weighted index, representing each group's contribution to social capital.

In a separate study using data from Indonesia, Grootaert (1999) estimates the relative effect of human and social capital on household welfare and poverty, and on access to social services in general, using multivariate analysis. He takes a similar approach, quantifying household membership in local voluntary associations, together with six dimensions of quality:

- *density of associations / membership:* measured in terms of the number of memberships per household.

- *internal homogeneity of associations:* the three most important associations in each household were identified. For each, qualitative data were collected regarding internal homogeneity or heterogeneity using eight criteria (neighbourhood; kin group; occupation; economic status; religion; gender; age; level of education). A score was then constructed for each association ranging from 0 to 8. A value of eight is applied where, for example, "....members were mostly from different kin groups, economic groups etc." The score for three associations was averaged for each household and the resulting index re-scaled from 0 to 100. This approach hence follows the heterogeneity approach advocated by Putnam.

- *attendance at meetings:* an index was constructed based on the average number of times someone from the household attended meetings. This was then normalised for the number of memberships of each household over a three-month period.

- *participation in decision-making:* the aim of this question was to assess the extent to which internal decision-making is democratic. A scale ranging from 0 to 2 was used, depending on how involved in the decision-making process respondents saw themselves as being. The results were averaged for the three most important groups and re-scaled from 0 to 100.

- *payment of dues:* a simple yes or no response was used.

- *the community orientation of associations:* it is unclear exactly what the author means by this particular dimension, but it possibly refers to whether or

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not organisations were initiated by the community or imposed or organised by an outside agency.

Each of the six dimensions is then entered both as an individual variable, and within a single combined index, into a regression model. The index is additive, and based on the number of memberships and the index of active participation, unlike the multiplicative index of Grootaert (1999), and Narayan and Pritchett (1997). A multiplicative index assumes that individual components interact with each other e.g. the effect of the internal functioning of a group on the dependent variable may differ as the density of associations changes. If the various dimensions are expected to act independently, however, the effects are included in an additive fashion.

Generating indices can be useful when handling a large amount of data, although the effect of each individual component is, necessarily, lost. It can be agued that, in the case of social capital, the development of an index is further undermined by the lack of a clear definition and understanding of what the index is to represent, as well as the questionable assumption that only heterogeneous groups contribute positively to social capital. As the literature on social capital grows, so do approaches to its measurement. Harpham et al. (2002) describe the recently developed Social Capital Assessment Tool (ASCAT), in which both structural (what people do), and cognitive (what people feel) aspects of social capital are measured, each based on a large number of indicators.

Several studies have used principal components analysis to measure social capital, effectively identifying a single factor that underlies a cluster of different variables. Narayan and Pritchett (1997) consider this approach but find several problems with it. First, as the inter-correlation amongst the various dimensions were not particularly high (the first principal component only explained 35% of the total variation), the principal components methodology was not considered appropriate. Secondly, the results on the first principal component alone were not robust when extended to other data, and variables. In this thesis, rather than attempting to measure social capital, a simple measure of social cohesion is used to represent social structure at the commune level (see Part 4.2.3).

To summarise, current measures of social capital are highly varied, in part due to the lack of a clear theoretical basis for the concept. Using Fukuyama's idea of a radius of trust, it could be argued that Putnam's approach to social capital based on civic

community, and Coleman's emphasis on closure in social networks, represent diametrically opposite social structures.

Another overriding criticism is that whilst each individual measure employed in the various studies (see Table 2.4) has considerable value in its own right, the conceptual leap from each to the notion of social capital is less than convincing. For this reason, in the empirical analysis presented in Chapter 5 and Chapter 7, the discussion refers only to social cohesion, which is not equated with social capital. Another aspect of social structure, membership in mass organisations, is also measured (see Part 3.2.1 and Part 4.2.3 for further discussion).

2.3   Health insurance and social capital

In the literature, few attempts have been made to link aspects of community structure to the development of health insurance. Those that do are summarised below. This section aims to strengthen existing conceptual frameworks of demand for health insurance by bringing together ideas from a broad literature across the social sciences. Studies that refer to social capital and health insurance hint at the willingness of certain communities to share risks. Risk, and how individuals and households deal with it, is an issue analysed by development economics - the relevant literature is reviewed in this section. Whilst not concerned specifically with the health sector, many of the ideas presented offer theoretical frameworks and empirical evidence, which are useful in developing the conceptual framework.

2.3.1   Willingness to join a health insurance scheme

Only one unpublished paper, by Hsiao (1995), attempts to develop a theoretical framework around social capital and risk-sharing for health. Combining Coleman's (1990) framework of social capital with standard economic theory of expected utility, Hsiao considers the re-establishment of cooperative health care organisations (CHC) in China as an empirical phenomenon searching for a theory. The theory aims to predict the conditions under which such schemes will evolve, the central argument resting on the importance of the dual motivations of self-interested economic gain and a willingness to share risks, the latter resulting from social norms and high levels of inter-personal trust.

Study	Measure/proxy for social capital	Data source
Putnam (1993a)	'Civil society' including measures such as newspaper readership, turnout for referenda, density of co-operatives, membership in mutual aid societies, number of local associations.	Specially designed survey.
Coleman (1990)	Aspects of social structure, in particular social norms of behaviour and closure. Includes obligations and expectations, and the presence of voluntary organisations.	Not measured.
Knack and Keefer (1997)	Generalised trust ("Can most people be trusted") and norms of civic cooperation (views on a range of behaviour e.g. whether avoiding fares on public transport, is justifiable).	World Values Survey
Kawachi et al. (1997b)	Per capita density of membership in voluntary groups and levels of social trust, gauged by the proportion of residents in each state who believe that people could be trusted.	General Social Survey (U.S.A.)
Brehm and Rahn (1997)	Civic engagement (membership in voluntary groups, newspaper readership), interpersonal trust, confidence in government (Federal Government, Congress, Supreme Court).	General Social Survey (U.S.A.)
Rose (2000)	Social integration: individual's cumulative use of formal and informal networks to obtain food, housing, employment, protection against crime etc. Also generalised trust.	New Russia Barometer Survey
Teachman et al. (1997)	Attending a catholic school; family structure; number of times student has changed school. Network closure (e.g. whether a parent knows the parents of their child's best friend).	Specially designed survey.
Narayan and Pritchett (1997)	Trust in government institutions; group membership, including heterogeneous membership.	Tanzania Social Capital and Poverty Survey

TABLE 2.4: MEASURES OF SOCIAL CAPITAL IN THE LITERATURE

Hsiao considers social capital to be a precondition for the pooling of resources in this context, and notes the trade-off between increasing group size for effective risk-sharing[24], and maintaining small groups to preserve the internal trust which forms the basis of social capital. In the context of risk-sharing, the greater the number of members in a community financing scheme, the more predictable is the demand for health care, and hence insurance claims, allowing premia to be set more accurately. As the number of individuals in a scheme increases, it thus also tends to become more financially stable.

The central argument is that where an individual perceives there to be gains from risk-sharing, and this group exhibits a high degree of internal trust, they will more readily enter a cooperative arrangement. Cause and effect are linked through the proposition that social capital facilitates collective action. Hsiao's paper is theoretical, however, and does not attempt to measure social capital, which would allow its independent effect on the formation of CHCs to be estimated. Hsiao assumes, interestingly, that in Chinese society levels of social capital are high, given the prevalence of shared values and virtues, the importance of the family in Confucian doctrine, and empirical evidence of support for CHCs amongst the population. On the same issue, Woolcock (1998) believes that communism and socialism in China have led to an over-bureaucratic system of government, not enough civil society, and low levels of social capital. These two opposing views again reflect the lack of precision and consensus in current thinking on social capital.

Without referring specifically to social capital, several papers examine the importance of social movements for the development and functioning of health insurance schemes. Atim (1999) considers the role of voluntary, non-profit health insurance schemes in West and Central Africa. The Mutual Health Organisations considered are not dissimilar in design to the CHCs described by Hsiao: both have voluntary membership and are driven by social rather than profit motives, and focus exclusively on local health services. Atim measures the extent to which a scheme represents a *social movement dynamic* using four indicators: the rate of participation in meetings; the rate of payment of membership dues; the number and type of solidarity bonds linking the members; and the ratio of volunteers to paid staff.

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[24] The 'law of large numbers' states that the average behaviour of a group of individuals is more predictable than that of a single individual (Black 1997). In other words, the tendency to behave more systematically and predictably increases with the size of a group.

For Atim, participation and internal democracy are key dimensions of how 'social' a scheme is, and as such the evaluation focuses on institutional design. No detail is given about the questions used to assess solidarity bonds, although reference is made to members *inhabiting the same district*, or being *members of the same ethnic group*, possibly similar to Coleman's idea of *closure in social networks*. The Babouantou Family Mutual Aid Association in Cameroon is referred to as an autonomous social movement, given its democratic accountability, high levels of participation, and sense of ownership amongst its members. In contrast, the Nkoranza community-financing scheme in Ghana scores poorly on most of the measures used. Whilst factors such as management arrangements and contract design have an important influence on performance, the extent to which a scheme is based on a social movement is only found to have a significant bearing on how accountable it is to the community.

Support for social solidarity mechanisms are generally considered a precondition for the successful introduction of a risk-sharing mechanism. For example, in a guide for the development of social health insurance, Normand and Weber (1994) stress the importance of popular support for the risk-sharing and cross-subsidisation central to a compulsory health insurance scheme. Chapter 1 highlighted the importance of the institutional design of an insurance scheme for its success (Kutzin and Barnum 1992b), whilst Liu et al. (1995) suggest that in China, community participation in and control of local health financing schemes, is essential for the development of a sustainable rural health system.

Criel (1998) offers additional insights into voluntary health insurance in sub-Saharan Africa. Such schemes are, he states, built on self-interest or economic risk-aversion - people will leave a scheme when they consider the returns from it to be too low. Wealthy individuals have the option to self-insure and, whilst individuals strive for a fair transaction, perceptions of what is fair are culturally bound. Whilst systems of compulsory insurance attempt to institutionalise solidarity, which he defines as the awareness of unity and willingness to bear its consequences, he also claims that:

> "......the distinction between reciprocity and insurance is conceptually
> artificial but helps to point to different expectations and time perspectives
> in terms of return. In the case of reciprocity, inputs and expected outputs
> are equivalent. In the case of insurance this is not necessarily so: the
> equivalence of return is mitigated by a varying degree of solidarity".
> (Criel 1998: 60)

A further reason for accepting non-equivalent financial returns discussed at the beginning of this chapter, is the utility derived from reduced uncertainty, which is central to insurance theory. As discussed earlier in Part 2.2.2, Fafchamps and Platteau both stress the importance of scarcity and need, for individuals to enter cooperative or reciprocal arrangements. However, in a review of the literature, Morduch (1999) provides some evidence that informal risk-sharing is actually more likely to occur between richer individuals (see next section). One possible explanation for this apparent contradiction is that the perceived risk involved in joining an informal risk-sharing arrangement is lower when other members are wealthy i.e. they are seen as less likely to renege on an agreement, or less likely to default.

2.3.2   Informal systems of risk-sharing

Many of the ideas in the social capital literature, for example the suggested linkages with ROSCAs, are not original. In addition to ROSCAs, the general issue of risk, which is highly relevant to insurance, is a major theme in the development economics literature. The focus is typically on the mechanisms used by individuals, households and communities to cope with risk. Indeed, human illness is frequently cited as one of the greatest idiosyncratic risks faced by the rural poor.

Economists measure risk in terms of shocks to (i.e. reductions in) consumption expenditures, given their importance for the maintenance and enhancement of welfare e.g. ensuring adequate food and education. In this context, any strategy that smoothes or maintains consumption in the face of risk can be said to play an insurance function. In the context of low-income countries, where universal social security schemes rarely exist, much attention has been given to the role of financial systems based on informal social networks. Anthropologists have also long recognised the importance of informal, or non-market, arrangements in the village economy, which continues to typify much of the poor world today[25].

Rosenzweig (1988) equates consumption smoothing with insurance, although he notes that in a true and fair insurance contract, resources must flow out of households during the *good* times. In a separate analysis, Townsend (1995) refers to credit as consumption insurance. Academics and policy-makers concerned with the provision of micro-credit, the role of which is also to smooth consumption patterns and is

especially important in poor households, have similar concerns to those involved with the development of health insurance schemes. The common objective is to avoid welfare-damaging reductions in essential consumption expenditures.

Besley (1995b) also suggests that risk-sharing and credit are closely linked, particularly in traditional rural communities, given that credit tends to substitute for insurance when market opportunities are limited. For example, an individual may borrow in lieu of an insurance payment, and lenders frequently relent on part of a repayment in the event of an unforeseeable shock to the borrower. Townsend (1995) notes that insurance mechanisms may be implicit or explicit, a useful conceptual separation given the wide range of actions that fit into the framework of consumption smoothing, or risk-reduction. Insurance is implicit in a number of possible actions that individuals might take. This broader definition of insurance is consistent with the typology presented in Table 2.1, which incorporates tax-financed health services such as the U.K.'s National Health Service, as an example of implicit insurance.

Several studies published in the early 1990s, examine informal risk-sharing in detail, in an attempt to identify reasons for their success. Stiglitz (1990) explains the success of the Grameen Bank in terms of effective peer monitoring, which allows unwritten contracts to be enforced. Furthermore, when groups of individuals are jointly liable for a loan, there is a strong incentive not to misuse funds, given that the penalty falls on the entire group.

Stiglitz argues that borrowed funds are more likely to be used productively when such incentives are applied. Whilst not explicitly referring to social capital, Stiglitz recognises the importance of the quality of relationships and trust between individuals, and shows how these can lead to efficiency improvements and welfare gains. As Arnott and Stiglitz (1991) suggest in a theoretical paper, when such groups use peer monitoring effectively, they can mitigate moral hazard. The key to success is often the threat of social sanctions on defaulting individuals, as Varian (1990) also points out.

Norms of behaviour tend to be more prevalent in smaller communities, and are important for group formation, a central idea in Coleman's framework of social

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[25] See in particular Popkin (1979) and Scott (1976).

capital. Dufwenberg and Lundholm (2001) formalise this idea in terms of a *per capita externality* and, interestingly, refer to Coleman's work:

> "Coleman (1990) connects social rewards to externalities in decision making. Of course, the smaller is a risk sharing community the larger is the externality that an individual's decision has on any given other individual. Hence if the size of a risk-sharing community increases over time, and if social sanctions are related to 'per capita externalities', this could be a reason why social sanctions against opportunistic behaviour loses power over time". (Dufwenberg and Lundholm 2001: 521)

The authors suggest that reductions in per capita externality, during transition to a modern economy and the establishment of national institutions for risk-sharing, may be the reason why social sanctions against opportunistic behaviour start to lose power. Unenforceable contracts are a defining feature of informal risk-sharing. These studies, together with earlier references in Part 2.2.1, and Part 2.2.2, explain the evolution of unenforceable contracts in terms of the social structure of the concerned community.

Where a high degree of internal connectedness, or closure, exists within a group, social sanctions offer a powerful incentive device to influence the behaviour its members. As well as incurring the wrath of fellow members, social penalties may include being removed from the group, reducing the individual's future access to credit, and increasing their chance of not receiving assistance in a time of need. In economies where contracts are difficult to enforce, and banks have weak sanctions against defaulting borrowers, the ability of informal groups to impose social sanctions, and enforce loan repayment, offers a real alternative to formal contracts.

Fafchamps (1992) points out that incentive problems also existed in informal insurance arrangements, in pre-industrial societies, consistent with theoretical frameworks concerning the effect of incentives under insurance (see Part 2.1.2):

> "People may seek to hide, dissimulate, or misrepresent their situation of need or affordability. They also may be tempted to work less and rely on the mutual insurance system for their subsistence." (Fafchamps 1992: 149)

Wydick (1999) attributes the success of group-lending schemes to their ability to mitigate asymmetric information problems and tests empirically whether social cohesion can overcome market failures. Using data from Guatemala, he finds that better repayment performance results not from greater social cohesion (measured in terms of pre-existing social ties between members), but from effective peer monitoring and the use of sanctions against poor performers. Another factor influencing repayment performance was the evolution of intra-group insurance to cover unavoidable problems faced by certain members. Finally, Wydick suggests that pre-existing social ties, which social capitalists would label as social capital, may actually reduce willingness to use the social sanctions required to mitigate moral hazard. A similar point is made by Bernheim and Stark (1988) with respect to altruists[26].

Besley and Coate (1995) analyse repayment rates in the Grameen Bank, and conclude that joint-liability can result in both positive and negative outcomes. First, successful group members may have an incentive to repay the loans of other members in their group, whose projects have yielded insufficient returns. Where such intra-group insurance exists, the lender will still receive the necessary repayment whereas, under a system of individual loans, certain people would have defaulted and the lender would have lost out. Conversely, however, there may be circumstances when a whole group defaults, leaving the lenders particularly badly off, whereas under individual lending, some members would have made repayments.

Besley and Coate (1995) refer to this feature of groups as social collateral, which, by ensuring that repayments are made, enables individuals with little or no physical collateral to access loans. Small-scale local funds have serious disadvantages, however. These are highlighted by Hollis and Sweetman (1998) with reference to micro-credit in 19th century Ireland. For example, the possibility of a severe negative shock correlated across borrowers, such as poor weather or crop disease (as in the Great Famine of Ireland 1846-1848), would lead to bankruptcy[27]. Hollis and Sweetman (1998) also highlight the dishonesty and incompetence that plagued many schemes. In the case of Germany, such problems were mitigated through the election of the scheme's manager by its members and, given that the implementers lived as part of the local community, reputation and norms of behaviour also had an important

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[26] See Table 2.3 and the more detailed discussion in Part 2.2.2.

influence. One further point of particular interest is that loan funds in Ireland were intended to be reproductive (i.e. for capital investments), as well as for insurance or consumption-smoothing purposes, for those who became ill or experienced a poor harvest. Whilst it is acknowledged that such dual functions are not always compatible, the observation adds weight to the fact that, in practice, credit often acts as a form of insurance.

Local risk-sharing arrangements have informational advantages over distant market institutions, in that they reduce the transaction costs involved in monitoring and enforcing contractual arrangements, giving these communities the potential to mitigate incentive problems. These advantages are frequently eroded, however, during transition to a modern economy, which is typically accompanied by urbanisation and changes in social structure.

Taiwan is an example of a country, which, despite rapid economic growth since the 1970s, has a relatively underdeveloped and over-regulated formal financial sector. Besley and Levenson (1996) and Levenson and Besley (1996), conclude that informal institutions such as ROSCAs continue to persist due to the failings of the formal financial sector. Interestingly, one of the study's conclusions is that ROSCAs are less prevalent in older, traditional households. Rather, participation is concentrated in younger households, which have reached the life-cycle stage where the acquisition of consumer durables typically peaks. One possible explanation put forward by the authors is that informal mechanisms provide a cheaper method of financing the purchase of consumer durables. The study presents a rare insight into the evolution of risk-sharing mechanisms in a transitional economy.

In the context of India, Rosenzweig (1988) finds that geographical diversity does not usually present a problem for informal risk-sharing arrangements. Whilst networks based on family and friends are often spatially diverse, they can still be effective at maintaining the information flows critical to sustaining the insurance function across space and time. Using data from Karnataka State, the study reports that 87% of relatives providing support through remittances lived outside the recipient's village. In

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[27] Note that this is consistent with the conditions required for insurance markets to operate efficiently (i.e. that the probabilities of illness amongst members of an insurance scheme must be largely independent of each other).

summary, Rosenzweig considers credit markets and inter-household transfers as substitutes, providing alternative mechanisms that smooth fluctuations in income.

Informal credit flows within networks of families and friends are essentially what Cox et al. (1998) analyse using data from the Vietnam Living Standards Survey 1992-3, concluding that as private transfers tend to flow into poorer households, in a similar way to means-tested public transfers, there is a possibility that the two are substitutes, and that the former is crowded out by the latter. They add that, as private transfers are widespread in Vietnam, the scope for such crowding-out is substantial. In an earlier paper, Cox and Jimenez (1991) categorise private transfers into those that are motivated by altruism, and those motivated by exchange.

An insight into how formal and informal risk-sharing arrangements might interact can be gained from a reading of the development economics literature. In a review of evidence, Dercon and Krishnan (2002) conclude that informal risk-sharing arrangements provide only limited protection for households, especially for the poor. Morduch (1999) makes a similar point, in his assessment of whether informal insurance can fill the gaps in public safety nets, suggesting that informal arrangements typically offer inadequate protection.

Despite this, Attanasio and Rios-Rull (2000), Albarran and Attanasio (2002), and Attanasio and Rios-Bull (2000) are concerned that simplistic government interventions may crowd out private insurance arrangements, to the extent that welfare levels actually decrease. Morduch (1999) enters the debate by suggesting that by contributing to informal schemes households may actually retard their income growth and social mobility. He claims that overall, despite the crowding-out of informal networks, communities tend to benefit from government schemes. Furthermore, he argues, some crowding-out of informal networks may be necessary to reach the most vulnerable sections within a community.

Several further points of interest are made in Morduch's paper: households with more friends (especially richer ones) have greater ability to use informal insurance; public transfers pool risks more efficiently than local private arrangements; reciprocal transfer systems work best when people have more money; the family is the most stable unit for informal insurance (especially in the context of urbanisation etc.); and micro-finance programmes directly operated by governments often fail in terms of

compliance. Under government schemes, Morduch notes, borrowers are also more likely to default, and governments less likely to enforce penalties.

The idea that informal and formal risk-sharing arrangements may be substitutes is not considered in any of the studies that attempt to draw a link between social capital and health insurance, and is a major conceptual omission. This insight from development economics raises an important question for this thesis with respect to uptake of health insurance, an issue tested empirically in Chapter 5. Do cohesive social networks lead to the formation of informal financial networks that are preferable to formal risk-sharing mechanisms promoted by the government? The question seems particularly valid where membership in a formal health insurance scheme is voluntary, and an annual premium must be paid.

Interestingly, Rosenzweig (1988) analyses the insurance function played by family in India, and finds that households often perceive credit arrangements as inferior to familial transfers and self-insurance, implying that crowding out can work in both directions. If this is the case, then community structure may have an important effect on demand for government provided voluntary health insurance, but not in the way suggested in previous papers. Part 3.2.2 develops this argument further.

2.4   Concluding remarks

Both theoretical frameworks and empirical evidence have been reviewed in this chapter. Previous analyses of demand for health insurance draw on utility theory, which assumes that individuals compare expected levels of utility with and without insurance, and on this basis decide whether to purchase. The predicted effect of income is ambiguous: on the one hand theoretical models expect richer individuals to be less risk-averse, and hence to gain less utility from being insured. If this is the case, then income will have a negative effect on insurance purchase. However, richer individuals typically demand higher quality health services, and where health insurance is linked to better quality, income is expected to have a positive effect.

Empirical studies find that in high-income countries, individual levels of income tend to have a positive effect on the probability of health insurance purchase, reflecting the view amongst consumers that there is a link between private health insurance and better service quality. Almost no evidence is available from low-income countries on this issue, although two willingness-to-pay studies conclude that income has a positive

effect. Further investigation is required to establish whether this reflects a demand for quality.

Also in the context of low-income countries, it has been proposed that health insurance schemes are more likely to develop in communities rich in social capital, on the assumption that they are, as a result, more likely to act collectively for mutual gain. Given that to date this idea has been used only superficially, and is largely unexplored (except for one paper by Hsiao, 1995), this chapter has given substantial space to reviewing the relevant literature. Several weaknesses are apparent in the social capital literature. For example, the existence of institutions that share risks, such as rotating savings and credit associations, may arise for several reasons, not only social capital, as is argued in several seminal texts. In addition, many studies implicitly reject the idea of vertical social capital, and give positive value to heterogeneity within groups, rather than homogeneity, despite the fact that the latter is often essential for collective action to occur. In summary, social capital is a concept more easily understood than defined and measured, and requires greater clarity if it is to move into mainstream policy debates.

One way to deal with this lack of clarity in definition is not to use the term at all, but rather to use the individual measures, which, it is claimed, constitute social capital (e.g. social cohesion). Nevertheless, social capital continues to hold some appeal in that, as Sobel notes, it ".....is useful insofar as it draws our attention to those particular institutions serving economic life that might otherwise go unnoted" (Sobel 2002: 145). The reaction that social capital has provoked in the literature certainly suggests that it merits further consideration.

This thesis suggests socially cohesive communities may create private financial networks, which actually resist the development, (i.e. uptake) of health insurance, by acting as a substitute. This idea is developed in light of the development economics literature concerned with informal risk-sharing systems in low-income countries. An important feature of the work presented here is the use of ideas, theoretical frameworks, and empirical evidence, from both sociology and development economics, to address what is a mainstream topic in the field of health economics. It is argued that this approach enriches the framework traditionally used to analyse demand for health insurance. Chapter 1 set out the theoretical and policy context for the thesis, and described the health insurance system in Vietnam. Together with this chapter, a

rigorous basis has been provided for the development of research questions, which are presented in the following chapter.

Chapter 3: Research questions

This chapter presents ten research questions that are tested empirically in Chapters 5-7. These questions are either of theoretical interest, or of direct relevance to policy-makers concerned with the development of voluntary health insurance schemes. In both cases, the questions are the product of the specific context of health insurance in Vietnam (Chapter 1), the predictions of theoretical models, and empirical evidence from health insurance schemes in other countries (Chapter 2).

There are several reasons for focusing on the voluntary, rather than compulsory, component of Vietnamese Health Insurance. First, substantial increases in formal risk-sharing within the health sector in Vietnam, can only be achieved through greater uptake of voluntary insurance, given almost complete coverage in the compulsory scheme. Secondly, an analysis of demand for insurance is not appropriate when membership is compulsory. Such analysis is, however, critical in a voluntary scheme in order to inform its development, and to mitigate adverse selection. Thirdly, previous analysis of health insurance in Vietnam is unable to distinguish between the compulsory and voluntary components of the scheme.

In principle, health insurance offers the potential to raise additional funds for health services whilst also protecting access to these services, in particular for poor households. In practice, however, the introduction of a new scheme, such as health insurance, may not have the effect expected at the design stage. (Ensor and Witter 2001) argue that the presence of unofficial markets, and poor regulation of service providers, are two examples of why this might be the case. One further reason for health insurance having unexpected effects, not previously suggested, is the presence of an underlying system of informal risk-sharing arrangements. This insight is developed in Part 3.2.2 of this chapter.

If health insurance is not having the impact expected i.e. financial protection against the cost of accessing health services has not improved, then the additional costs of administering health insurance are not justifiable, particularly in a low-income country such as Vietnam where levels of public health spending are relatively low (see Table 1.1). Several research questions relating to the impact of the scheme, are presented in this chapter.

3.1 Demand for health insurance: individual influences

Why do some individuals decide to purchase health insurance and others not? How can the uptake of voluntary health insurance, promoted by the Government of Vietnam, be increased in a way that is financially sustainable, and improves the efficiency of risk-sharing? If adverse selection is a problem, the financial sustainability of the scheme will be questioned. An understanding of factors influencing demand is thus of particular importance for the development of the scheme. Theoretical economic models make some predictions about who will purchase health insurance based on expected utility theory. Most of the studies reviewed in Part 2.1.3 specify models, in which a range of individual characteristics, (e.g. health status, economic status, level of education), are used as explanatory factors.

Conceptual frameworks have been developed principally in the context of health insurance systems in rich economies built on assumptions, both explicit and implicit, that may not hold true in a predominantly informal economy. Where formal market institutions are underdeveloped, and fail to meet consumer demand for products that reduce risk, then informal risk-sharing arrangements are likely to develop. The extent to which such informal schemes develop is also likely to depend on the social structure of a particular community, which may in turn influence levels of uptake of formal health insurance. This is one of the questions examined in this thesis.

The framework for analysing demand for health insurance is similar to that presented by (Propper 1989). Whilst Propper assumes that all individuals in the dataset have heard of private health insurance, which is presumably appropriate in the context of the U.K., in Vietnam this is not necessarily the case. Hence, the regression analysis presented in Chapter 5 is estimated only for those individuals who are aware of the scheme[28]. Propper's framework is followed, in which individuals face two possible courses of action or prospects. Under the first, health insurance is purchased and, in the event of feeling ill, health services are accessed with an 80% reduction in user charges. Under the second, health insurance is not purchased, and patients seek no care, self-treat, visit a private provider, or pay full user charges at a government health facility. Under both scenarios, individuals may also draw on informal, private

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[28] Limiting estimations to those individuals in Vietnam who are aware of the health insurance scheme is consistent with Propper's (1993) idea of constrained choice-sets.

financial networks, to cover the cost of accessing health services, and hence smooth consumption expenditures. Individuals will choose between these two prospects, and any factor that increases expected utility under insurance relative to being uninsured, increases the probability of purchase. Several such influences are examined in detail below.

3.1.1   Health status and adverse selection

Given the relationship between demand for health, health services, and health insurance, discussed in Part 2.1.1 (see also Figure 1.1), individual health status is expected to influence the probability of insurance purchase. Asymmetries in information about health status held by the insurer, and the insured, is a fundamental driving force behind adverse selection, a central concept in health insurance theory, and discussed in Part 2.1.3. Establishing whether adverse selection is present in the scheme is important for several reasons, but primarily to establish whether, and if so to what extent, financial problems will develop in the future. Indeed, there is evidence that certain provincial funds in Vietnam are already in financial debt.

In the Vietnamese scheme, membership is voluntary and based on individuals, rather than families or other groups of individuals. Given that fixed, or flat, premia have been set within provinces, and those in poor health are not excluded, except for a brief waiting-period before accessing benefits, theoretical models predict that adverse selection will be a problem. One strategy in response to adverse selection is to adjust premia according to individual health status. Most non-profit health insurance schemes, however, on principle do not discriminate against patients by varying premia according to health status. As a result, adverse selection is far more likely to be a problem. For individuals with poor health status, a premium based on average risk probably represents good value for money, in turn increasing the likelihood that they will purchase insurance. The opposite is true for individuals with good health status. Given that age and health status tend to be closely linked, and that health service usage typically increases with age, the impact of age on the probability of insurance purchase is also an indication of adverse selection.

Substantial empirical evidence of adverse selection in health insurance schemes exists, although mostly from high-income countries such as the USA and Australia. In order to establish whether or not adverse selection is present in the Vietnamese scheme, a model of health insurance purchase is estimated in Chapter 5, and allowed to depend

on, amongst other factors, health status. If good health status reduces the probability of insurance purchase to a statistically significant degree, this is considered evidence of adverse selection. Given the approach to setting premia in Vietnam, outlined in part 1.3.2, adverse selection is expected to be a problem. However, there may be some variations across provinces, depending on local supply-side initiatives to limit adverse selection.

Research Question 1: *Does voluntary health insurance in Vietnam suffer from adverse selection?*

3.1.2 Attitudes towards risk

Theory predicts that an individual for whom utility declines for each extra unit of income received will, in general, prefer a certain option to a risky or uncertain one (see Part 2.1.1). Since the introduction of direct user charges for government health services in 1989, uncertainty over future health expenditures has created a demand for health insurance. For many, reducing the risk of significant financial loss due to ill-health, is motivated to purchase health insurance. In turn, many factors will influence expectations of future health expenditures, particularly an individual's current health status. The greater the utility an individual gains from the increased certainty that insurance brings, the greater the probability that they will purchase health insurance.

Few studies have analysed attitudes towards risk empirically in the context of expected health expenditures. In the literature, it is generally assumed that individuals are risk-averse and will adjust their behaviour accordingly, as shown by Picone et al. (1998). One such adjustment is to purchase health insurance. Economic measures of aversion to risk typically involve experimental methods such as lottery or pair-wise choice techniques in which, for example, a respondent is invited to choose between a low-risk, low-return, gamble, and a high-risk, high-return, gamble. The choice gives some indication of attitudes towards risk.

Sociological studies of risk tend to focus on broader developments in society. In the U.K., for example, Taylor-Gooby (2000) notes the paradox of growing perceptions of uncertainty at a time of unparalleled levels of material wealth. One explanation is that whilst life expectancy is increasing, traditional social security systems designed to deal with risk, are perceived as being in a state of decay. The author also notes that

risk is increasingly concentrated amongst the weakest groups in an increasingly unequal society.

Whilst the Vietnamese context is quite different from the U.K. some parallels can be drawn. For many Vietnamese households, economic transition is resulting in substantial increases in income. At the same time, however, social security mechanisms such as free health care have been eroded. The introduction of user fees in government health facilities is only one example - official tuition fees for public schools were also introduced nationally in 1989. Economic reforms have thus pushed financial risk onto individuals and households, which, overall, is likely to have created a greater sense of uncertainty over future household expenditures. Economic crisis in the region in the late 1990s can only have increased feelings of uncertainty for many Vietnamese, an observation made by Kumssa and Jones (1999), and discussed in Chapter 1.

The extent to which culture influences attitudes towards risk is an interesting one, although there is little evidence on this issue. Southern Vietnam was subject to western influence throughout the 1960s and early 1970s, and remains the economic hub of the country today. At a time when northern Vietnam was under communist control, whether or not exposure to capitalist values in the south influenced attitudes to risk merits further investigation. Levels of generalised inter-personal trust probably influence attitudes towards informal risk-sharing, whilst trust in government is likely to influence willingness to share risks through a formal scheme, managed and operated by government. Research questions that develop these ideas are presented in Part 3.2.

Although attitudes to risk in the context of health expenditures were not collected as part of the household survey, data were collected regarding *worry about future health status* (see questions b35 and b36 in Appendix 4). These data are incorporated into the demand function estimated in Chapter 5. However, this measure of *worry* is expected to partially capture current health status, providing further evidence of adverse selection. Clearly, this variable is not a rigorous measure of risk aversion. However, it is felt that it may partially reflect aversion to risk, in addition to picking up an individual's recent health status, and hence the results are interpreted accordingly.

Research Question 2:   Do levels of worry about future health status influence the probability of health insurance purchase?

3.1.3   Economic status

Theoretically, the effect of an increase in individual income, or economic status on demand for health insurance[29], depends on two relationships, the first of which is the relationship between income and risk aversion. Part 2.1.1 summarised the theory, which expects individuals to become less risk-averse as their income increases, principally due to their ability to self-insure through savings. Hence, demand for health insurance might be expected to fall as income increases. Secondly, the relationship between income and taste (or preference) for quality will influence demand for health insurance, assuming that insurance provides access to better quality services. This link with service quality is an important one and drives much of the demand for private insurance in rich economies. In Vietnam, however, the benefits of being insured are purely in terms of cash reductions, rather than better quality services[30]. However, given the close links between demand for health services and demand for health insurance, noted in Part 2.1.1, service quality is likely to be important for the development of health insurance. In this thesis, rather than attempting to measure aspects of service delivery in any detailed way, which was not feasible due to time and monetary constraints, the focus is on obtaining the view of patients, in terms of their satisfaction with services received.

Part 2.4 reviewed empirical studies of demand for health insurance, most of which evaluate insurance schemes in high-income economies. Understandably, findings are mixed, given the range of insurance schemes evaluated. Wolfe and Goddeeris (1991) estimate a positive wealth effect on demand for supplementary Medicare insurance, and Marquis and Long (1995) estimate demand for private health insurance in the non-group sector in the USA to be income-inelastic. This issue is under-researched in low-income countries. Two studies, in Ghana and India respectively, examine willingness to pay for health insurance and both conclude that income has a positive effect.

Whether or not economic status explains the probability of entering an informal risk-sharing arrangement is also ambiguous. In theory, wealthier individuals are more

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[29] The terms 'economic status', 'income' and 'consumption expenditures' are used synonymously in this thesis. Economists routinely use estimates of consumption expenditure, rather than income, as a proxy for economics status, for reasons discussed in Part 4.4.2.

[30] There is some limited evidence, collected as part of the household survey, that service quality is better under insurance, in terms of separate rooms for inpatients, tea-making facilities

likely to self-insure, whereas there is some evidence (see previous chapter) that participation in risk-sharing schemes increases with income. In addition, richer individuals may prefer to self-insure rather than participate in a formal insurance mechanism, particularly if they are not confident of the scheme's management, or do not trust it. Overall, income is not expected to have a major influence on demand for health insurance in the Vietnamese context. If economic status is positively associated with insurance purchase, income-related inequalities in access to health services may be exacerbated (see evidence presented by Waters 2000, and Yip and Berman 2001).

Research Question 3:   Does individual economic status influence the probability of health insurance purchase?

Given that premia do not vary within provinces, it is not possible to estimate the effect of price on the probability of insurance purchase. The effect of variations in premia across provinces is captured in province-level dummy variables. However, these dummies capture a wide range of province level effects, making it impossible to disentangle the specific premium effect.

3.1.4   Other influences

Several other individual characteristics are expected to influence the probability of insurance uptake. An understanding of these issues is useful for the development of health insurance in Vietnam. Whilst many studies acknowledge the importance of education on health status, and on health-seeking behaviour, few estimate its effect on insurance purchase. Given the close links between demand for health services and health insurance outlined in Chapter 2, however, education is expected to have a positive effect on insurance purchase. This is supported by both Harmon and Nolan (2001), and Besley et al. (1999), who find education to have a statistically significant and positive influence on insurance purchase. Essentially this is an indirect effect, due to the expected positive effect of education on awareness of health problems, and recognition of the need for professional medical advice.

Research Question 4:   Do educational levels influence the probability of health insurance purchase?

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etc. However, this is not national policy, and information is incomplete for the communes in which the survey was conducted. It is thus not possible to control for this possible influence.

A common approach adopted by provincial insurance directorates is to promote and sell insurance policies through marketing campaigns at the commune level. Unfortunately, information on the frequency and duration of such campaigns, and the specific strategies adopted, was unavailable. As campaigns at the commune level are generally organised by district health insurance offices, district dummy variables are used to control for supply-side effects in province-level models. Several other characteristics, including occupation, religion, sex, marital status, whether a couple has children, and distance from a facility (reflecting private time and indirect financial costs), are also included as explanatory variables. Further details are presented in Part 5.2.2.

Finally, the sociological literature on uptake of benefits in the U.K. offers a threshold framework of beliefs and feelings, which may offer some insight into the uptake of health insurance in Vietnam. Kerr's psychosocial model presented in Corden (1999) presents a hierarchy of conditions that individuals satisfy to themselves before deciding to claim social security benefits. These are perceived need, a basic understanding of the benefits, perceived eligibility and utility, beliefs and feelings, and perceived stability of personal circumstances. A further model incorporates the impact of stigma, and the interventions by friends and relatives in triggering claims. Health insurance in Vietnam is somewhat different in that individuals must decide whether to purchase insurance, rather than take-up freely available benefits. Nevertheless, such influences may be important. In-depth research is used to interpret the econometric results presented in Chapter 5, taking into account this alternative framework of uptake.

3.2   Demand for health insurance: commune level influences

In addition to the characteristics of individuals, community structure may also influence the probability of health insurance purchase. Sobel makes the point that 'When people decide how to behave, they take into account the social, economic, and legal implications of their actions. These implications depend on the environment in which people make their choices' (Sobel 2002: 146).

Chapter 2 highlighted a range of influences that may possibly influence the decision in question, as presented in the literature. Hsiao (1995) suggests that closure in social networks facilitates collective action and, by extension, the development of local health insurance schemes. The review of development economics literature raises the

possibility that informal financial networks may also influence demand for formal insurance, the argument for which is developed later in this chapter. The main question is whether social cohesion increases the willingness, and hence probability, that an individual will enter a risk-sharing arrangement. Hsiao (1995) proposition that the social capital of a community has an independent and positive effect on the individual decision to enter a risk-sharing mechanism is discussed first. Whilst this thesis does not consider that social cohesion can automatically be defined as social capital, the arguments put forward in the social capital literature are, nevertheless, relevant. An alternative interpretation of the effect of social cohesion is then discussed, presenting a new theoretical insight into the development of voluntary health insurance.

3.2.1 Collective action hypothesis

The two hypotheses detailed in this and the next section, draw on ideas in the sociological and development economics literature, presented in Chapter 2, which are synthesised to offer a new insight into demand for voluntary health insurance. Recent ideas regarding the importance of social capital for the development of health insurance provided the starting point. However, many of the arguments presented in this literature, overlap with work in other disciplines. For example, social network analysts have looked in detail at the internal structure of networks and their impact on the existence of collective action. Furthermore, development economists have been studying systems of informal insurance in low-income countries for several decades.

Seminal theoretical writings on social capital claim that it provides an explanation for the emergence of informal risk-sharing mechanisms in certain communities. Two texts, one authored by Coleman (1990) and the other by Putnam (1993a), argue that the various informal financial networks widely observed in low and middle-income countries are evidence of social capital. Generically referred to as ROSCAs, and discussed in Chapter 2, both authors argue that such arrangements could not exist without spontaneous social solidarity, which can only occur in high-trust communities. Social capital, it is argued, is an essential ingredient in the evolution of institutions for collective action. Interestingly, Besley (1995a), in a review of the literature, points out that previous attempts to explain the evolution of informal risk-sharing institutions typically ignore the level of social capital in the host community. As with many other studies, however, this argument is not developed in any detail.

Hsiao draws heavily on Coleman's work in extending this general idea to community-based health insurance. In doing so, he develops what he refers to as a socio-economic theory, which combines expected utility theory and social theory. Hsiao argues that, *ceteris paribus*, levels of social capital can be used to predict whether risk-sharing for health will take place voluntarily. In other words, cohesive communities will recognise the mutual benefits of pooling, and be more likely to 'pull together' to make a health insurance scheme work. By implication, less cohesive communities will fail to find solutions to the dilemmas of collective action required for voluntary risk-sharing to succeed. In the same way that Putnam sees ROSCAs as a manifestation of spontaneous risk-sharing in high-trust communities, and evidence of collective action, Hsiao views the re-emergence of cooperative health care organisations in rural China as further evidence of social capital.

In Hsiao's initial exploration, the mechanisms through which cohesive communities are more prone to collective action are not discussed in detail and, as with Coleman's discussion of ROSCAs, the argument relies on assumptions about the effect of community level trust on individual willingness to share risks. The wide-ranging literature reviewed earlier provides some insights, however, in suggesting that inter-personal trust may facilitate voluntary risk-sharing by increasing the availability of information regarding the behaviour of other individuals.

To the extent that entering a risk-sharing alliance constitutes a risk, and assuming most individuals are risk-averse, trust may be important in mitigating perceptions of risk. Put simply, if a person is asked to join a risk-sharing arrangement, but does not fully trust the others involved and their default would have negative implications for her, then she is unlikely to consider pooling money with them. Better information about the reputation of others can thus have an important influence on willingness to enter an unenforceable, informal risk-sharing agreement. Other factors may also influence the probability of entering such an agreement, such as altruism, and a desire to maintain reputation. It is questionable whether this argument also holds when risk-pooling is not local, but takes place at the provincial or national level, as in Vietnam, particularly given the hierarchical, top-down, and government-dominated nature of management arrangements (see Part 1.3.3).

In terms of empirical evidence, a small number of studies from development economics examine the importance of community structure for informal risk-sharing, and generally find positive results. Rosenzweig (1988) stresses the importance of

kinship ties in sustaining information flows, which are crucial to maintaining insurance-based private transfer arrangements across space and time. Grimard (1997) provides similar evidence from Cote d'Ivoire, and recent work by Foster and Rosenzweig (2001) concludes that altruism within families facilitates risk-sharing by overcoming problems of imperfect commitment and unenforceable contracts. None of these studies refers specifically to social capital.

In the context of Vietnam the collective action hypothesis is unconvincing. Purchasing a voluntary health insurance policy cannot be considered *collective action* in the same way that Hsiao proposes in the context of China. The main argument is that given the institutional design of the scheme, which has little community control or involvement, local levels of social cohesion are largely irrelevant. It might be possible, however, to argue that individual attitudes towards national schemes that embody social solidarity may have an influence. Whilst the sociological literature may well classify feelings of national solidarity as social capital, this thesis argues that the two are not synonymous. However, building on the idea in the social capital literature that membership in voluntary organisations is a feature of civic society, which facilitates collective action, data were collected on individual membership in mass organisations. Whilst mass organisations are not considered an expression of civil society in the Vietnamese context (see Part 1.5.3), their effect (both at the individual and commune levels) on private demand for insurance is still examined. The principal reason is to produce new evidence on this under-researched feature of Vietnamese society.

Research Question 5: *Does membership in a mass organisation influence the probability of health insurance purchase?*

In conclusion, whilst Part 2.3.1 reviewed the literature, which argues social capital has a positive effect on the development of voluntary risk-sharing, this idea is not supported in the context of Vietnam. Previous studies have measured social capital by quantifying an individuals membership in various social groups. The assumption is that these groupings are a fundamental dimension of civil society. This cannot, however, be considered true in the case of mass organisations in Vietnam.

As Sobel (2002) notes, however, the social capital literature, which was used as the starting point in developing this research question, has proved useful in drawing attention to a broad multi-disciplinary literature. In this section, the review of research into informal risk-sharing systems presented in Part 2.3.2, has also been used in

thinking about this particular question. This idea is developed further in the following section. The effect of membership in a mass organisation, about which little information is currently known, is examined empirically in Chapter 5.

3.2.2 Substitute hypothesis - a framework of risk-reducing strategies

The research question presented below takes the thinking prompted by the social capital literature a stage further. In doing so, the work of development economists, summarised in Chapter 2, is particularly useful. Development economists conceptualise risk in terms of *expenditure shocks*, whether they result from the cost of treating an unexpected illness, a poor harvest, or any number of events. Interestingly, much of the literature concerned with risk in low-income countries uses the example of ill-health, as one of the major risks facing individuals and households.

To the extent that different types of risk have similar consequences on consumption, similar strategies may be used to mitigate risk, whatever its cause. Faced with user charges in order to obtain health services, households will adopt one, or possibly several, of the risk-reducing strategies available to them. Clearly, some households will have more options available to them than others. Voluntary health insurance promoted by government is, from the perspective of the consumer, one more strategy to deal with risk. Viewing demand for health insurance in this way allows it to be placed in a more holistic context, in turn enabling the development of a more comprehensive, analytical framework of demand for health insurance.

Table 3.1 builds on this idea, which is consistent with the broad definition of insurance discussed earlier, presenting a range of options, or strategies, available to deal with risk. Whilst not comprehensive, placed at one end are examples of strategies that do not require collective action i.e. voluntary cooperation between individuals. At the other end, are examples of actions based on formal, or institutionalised, cooperation such as traditional government social security schemes.

Some options involve collective action in an informal way. Formal collective action is defined as that which is institutionalised i.e. some form of official membership is required to access benefits (for example, joining a mass organisation, or a government health insurance scheme). Deaton refers to the latter as anonymous risk-sharing (Deaton 1997: 373). Informal collective action thus refers to arrangements between individuals that are not anonymous, and require no official membership in an

Strategy	Details	References	*Informal*
Self-insurance	**NO COLLECTIVE ACTION** Self-insurance for those with sufficient income or savings. In Vietnam, future health costs are the primary motivation for saving amongst survey respondents.	Levin (1995) Rosenzweig (2001)	↑
Unofficial commercial lending / loan sharks	**NO COLLECTIVE ACTION** Widely reported in rural communities in low-income countries. May form the only source of credit at short notice, and tends to be expensive i.e. high interest rates. Known as 'vay lai' in parts of Vietnam.	Besley (1995b)	
Private transfers	**INFORMAL COLLECTIVE ACTION** Particularly important in low-income countries. Primarily intra/inter household/familial transfers, but also between friends. Can be both financial and non-financial (e.g. food, clothing, durables, favours). Remittances are an example, and are important in Vietnam, particularly in the south. May be motivated by altruism or self-interested exchange.	Cox et al. (1998) Cox and Jimenez (1991) Rosenzweig (1988) Morduch (1999)	
Informal credit and insurance schemes	**INFORMAL COLLECTIVE ACTION** Informal credit is most commonly found in the form of rotating savings and credit associations (ROSCAs). Credit performs an insurance function by allowing consumption to remain smooth in the face of 'shocks'.	Besley et al. (1993; Bouman (1995) Calomiris and Rajaraman (1998) Morduch (1999)	
Guilds / loan funds / credit cooperatives / credit unions	**FORMAL COLLECTIVE ACTION** Range of institutions from guilds in 14th century Europe, to credit cooperatives in mid-19th century Germany, and loan funds in Ireland around the same time. Micro-credit organisations can be found in most low-income countries today e.g. the Grameen Bank. In many rich countries, such as Ireland, the popularity of credit unions is increasing, again in response to the failure of banks to provide credit to poorer individuals. Member organisations of the Irish League of Credit Union, for example, tend to have a common bond e.g. living in the same community, having a common profession.	Putnam (1993a) Hollis and Sweetman (1998) Besley and Coate (1995) Guinnane (2000)	
Public insurance (both compulsory and voluntary)	**FORMAL COLLECTIVE ACTION** Range from public safety net programmes (e.g. cash or food transfers) to community based schemes.	Dercon and Krishnan (2002)	
Development banks	**FORMAL COLLECTIVE ACTION** Provide loans / credit at relatively low interest rates. Examples include Agricultural Banks such as those in Europe in the mid-19th century. Also widespread in agrarian economies. The World Bank is one example.	Besley and Coate (1995) Besley et al. (1994) Coleman (1990; Putnam (1993a)	
Commercial bank loans	**FORMAL COLLECTIVE ACTION** Commercial banks, charging higher interest rates than development banks. Tend to be a feature of industrialising economies. Generally underdeveloped in poorer countries.	n/a	↓ *Formal*

TABLE 3.1: A FRAMEWORK OF RISK-REDUCING STRATEGIES

organisation[31]. At one end of the spectrum, individuals self-insure with savings. If an individual's level of income, or savings, is sufficient to self-insure e.g. to pay full user charges for health services, then the need to enter reciprocal or similar arrangements with other individuals diminishes. Expectations that collective action is less pervasive in wealthier communities are based on this observation, even if empirical evidence is mixed.

At the opposite end of the spectrum are commercial bank loans, a common arrangement in wealthier, modern economies. Whilst borrowing from a commercial bank is a form of collective action, in that one individual makes an agreement with another individual or, in this case, an institution, this is a formal arrangement. As with development banks and compulsory insurance schemes, community structure is largely irrelevant with respect to whether an individual is eligible to enter such an agreement. It is argued, however, that social structure is important for the development of risk-sharing based on informal collective action, and helps to explain why such institutions emerge in certain communities but not others. One consistent theme in the literature is that favours, private transfers, and the various ROSCA type organisations cited by various authors, tend to flourish in communities with a strong degree of network closure. For individuals living in such a community, it is likely that the number of risk-mitigating options available to them will be greater, *ceteris paribus*, than for individuals living within non-closed networks.

Evidence of the way in which formal and informal risk-sharing mechanisms interact, reviewed in Part 2.3.2, raises the question whether individuals living in more socially cohesive communities may be less likely to purchase health insurance. Assuming, *ceteris paribus*, that social cohesion facilitates informal risk-sharing, then expected utility under government health insurance (formal collective action) which must be purchased, may be lower than under private financial networks (informal collective action). Expected utility under formal health insurance may reduce, for example, as the number of alternative risk-reducing strategies available increases. The specific question is, do informal financial networks crowd-out demand for formal health insurance?

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[31] This is similar to the distinction between informal and formal risk-sharing in which the latter is defined as an agreement with a money price.

An individual who considers others in her community to be trustworthy, possibly altruistic, or with whom she has reciprocal relationships, may feel informal support networks to be reliable, and immediately available in a time of need. Furthermore, such arrangements may be preferable to purchasing government-provided insurance, in which there is no accountability to the community. Several factors will influence preferences in this context, including perceptions of corruption amongst government officials, and feelings of duty to the government, aspects of Vietnamese society discussed in Chapter 1. An alternative view is that formal and informal risk-sharing arrangements are complements rather than substitutes.

Bringing together these various ideas, Figure 3.1 shows the range of possible outcomes when formal health insurance is introduced into a highly socially cohesive community, with a dense network of informal risk-sharing. The figure incorporates the expected effect of perceived corruption amongst government officials, and a sense of duty to the State. Uptake of insurance is expected to be relatively high in communities which perceive there to be substantial benefits from joining a formal health insurance scheme, have trust in government, and have a sense of duty to the State (represented by the extreme left-hand side of the diagram). In contrast, where the benefits of the scheme are perceived to be low, government officials are seen as corrupt, and there is little sense of duty to the State, then uptake will be relatively low (represented by the extreme right-hand side of the diagram).

The six outcomes between the two extremes are a function of the interplay between perceptions of corruption and duty to schemes implemented by government. Where both are negative, or positive, then a definite outcome is expected. However, where one is positive but the other negative, the outcome is ambiguous – the one exception is where benefits are perceived and there is trust in government. By incorporating duty into the framework, a fundamental concept in Confucian doctrine, the model of expected utility can be extended. Rather than predicting purchase of health insurance only if expected utility is greater than under informal risk-sharing arrangements, duty may generate demand even where the perceived benefits are low, or where there is little trust in government. The relationship between duty and trust, however, requires further research.
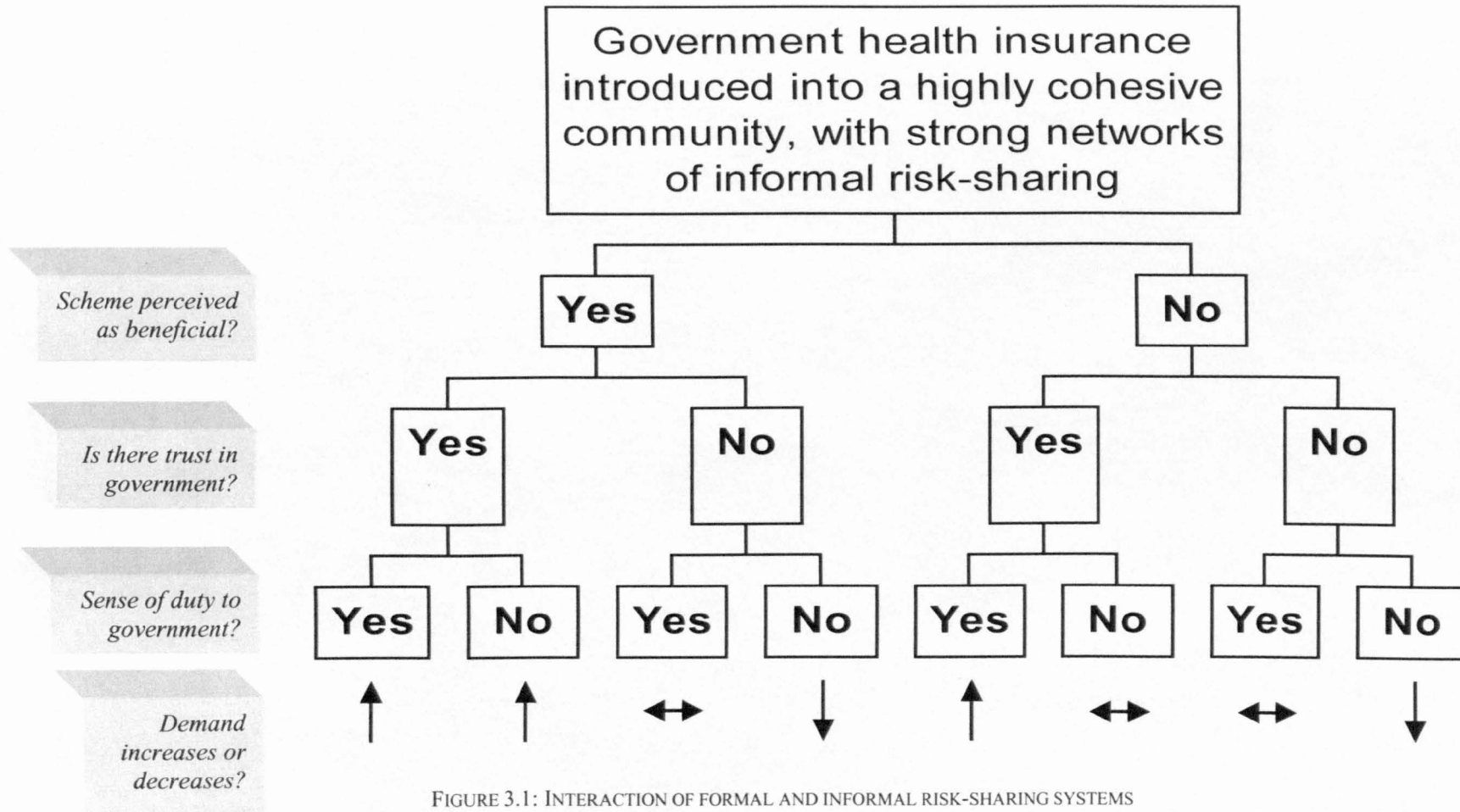
FIGURE 3.1: INTERACTION OF FORMAL AND INFORMAL RISK-SHARING SYSTEMS

Most empirical studies conclude that informal risk-sharing is only partial and, hence, inefficient (see Cox and Jimenez 1992, Grimard 1997, and Ligon 2001), a factor which will influence expected utility under formal insurance. This evidence is based, however, on evaluations of freely available safety net programmes such as direct cash transfers and food aid. In contrast, the decision facing individuals in Vietnam, is whether to *purchase* health insurance. Morduch (1999) argues that, despite the fact that many public schemes crowd-out informal risk-sharing networks, communities typically experience a net gain, with greater proportions of household resources freed up for productive activities. The way in which informal and formal insurance mechanisms interact is thus of considerable importance, not only for welfare, but also for expected utility under each.

Support for the idea that informal financial networks may actually crowd out formal insurance, the opposite to most predictions, is provided by Rosenzweig (1988), who reports that in India formal credit is seen as inferior to familial transfers and self-insurance. There is however, little evidence of this effect from elsewhere, possibly because this is an under-researched issue. It is unlikely that formal insurance will completely crowd out informal insurance, or vice versa - the most probable outcome lies between these two positions, with formal and informal mechanisms co-existing, and the balance between them shifting over time. Levenson and Besley (1996) provide some evidence from Taiwan to support this (see Part 2.3.2), and can also be represented in terms of individuals moving up and down the continuum presented in Table 3.1 across time.

Research Question 6: Does social cohesion increase or decrease the probability of health insurance purchase?

With respect to corruption, and perceptions of corruption in government institutions, there is substantial evidence that this is widespread and growing in many low-income countries, including Vietnam (see the discussion in Part 1.5.3). As Hsiao (1995) points out, one reason for the collapse of the cooperative health system in China, was excessive patronage and corruption. Relatives of officials were frequently included on the payroll of health facilities, despite having no qualifications, or indeed not actually working there. Hsiao rightly poses the question, why should communities pay voluntarily to maintain a corrupt system?

In summary, the purchase decision of a risk-averse individual, in a low-income country such as Vietnam, will be influenced by the availability of alternative risk-sharing mechanisms, and the expected utility under each. High levels of social cohesion may increase the portfolio of options available, through a willingness to trust others and enter risk-sharing arrangements. Hence, individuals living in cohesive communities will, *ceteris paribus*, probably have a broader set of risk-sharing strategies on which they can draw. Finally, perceptions of corruption, and a sense of duty to the State, may also influence an individual's decision to purchase health insurance.

Figure 3.2 combines ideas from Figure 2.1 and Figure 3.1, incorporating the possible influences of duty and perceived corruption on demand for voluntary health insurance. Due to a lack of data however, the effect of duty and corruption are not examined empirically.

3.3 Impact of health insurance

3.3.1 Patient satisfaction

In richer economies, private health insurance products tend to be marketed, and purchased, on the basis that insured patients gain access to higher quality services. In Vietnam, however, insured patients receive only reductions in user charges, with care provided in the same facility and from the same doctors, as for uninsured patients. In some respects it is more appropriate to compare the scheme with publicly funded systems, such as the NHS, which are low-cost but also long-wait. For this reason, health insurance is expected to make little difference in terms of patient satisfaction, except that related to the lower cost of accessing health services (i.e. value for money).

Few studies have examined patient satisfaction in the context of health insurance in low-income countries. In Thailand, Tangcharoensathien et al. (1999) compare satisfaction with in-patient and outpatient services, in hospitals of different ownership. Patients rate non-profit hospitals the highest for both types of care. The authors also find that patients covered by the Social Security Scheme (under which hospitals are reimbursed on a capitation basis), consistently gave lower ratings in terms of satisfaction with outpatient care, than other patients.
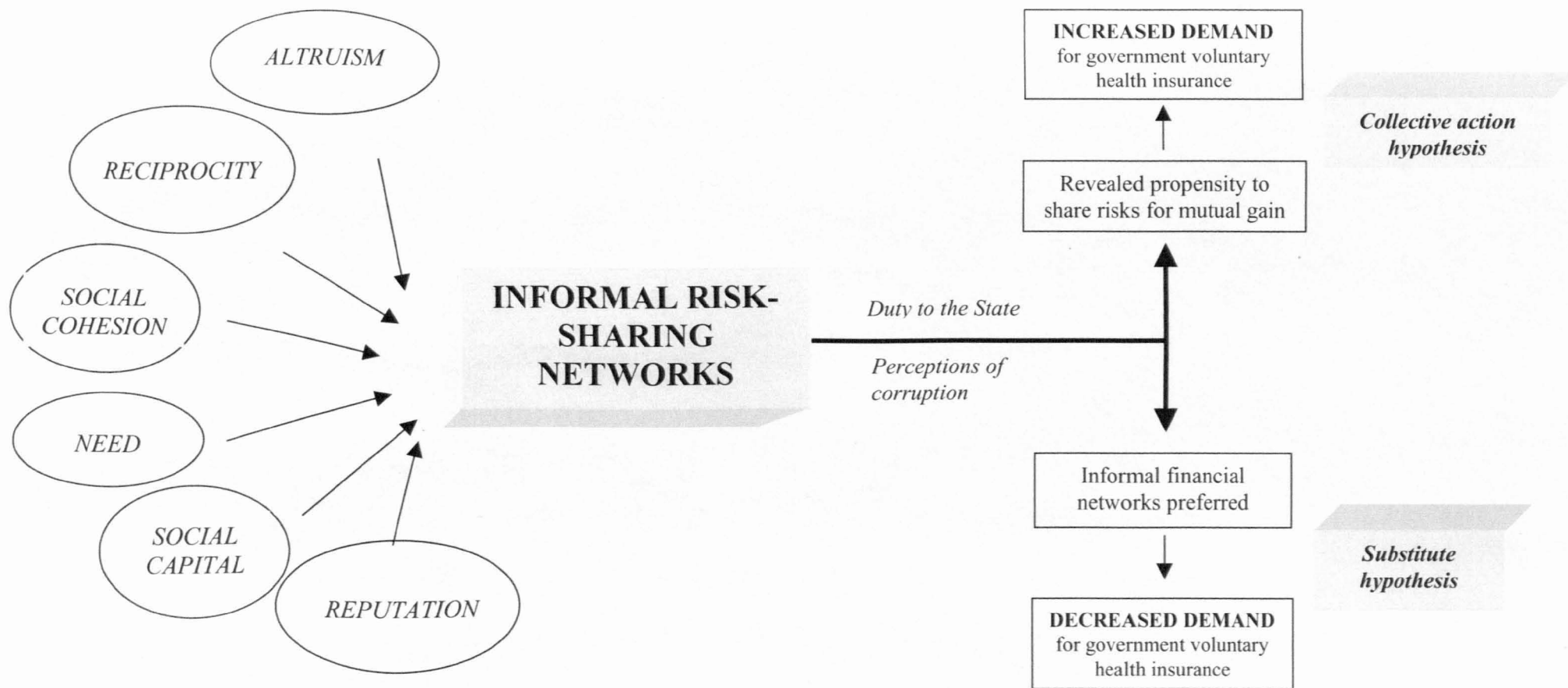
FIGURE 3.2 INFORMAL RISK-SHARING AND DEMAND FOR HEALTH INSURANCE

In Tanzania, Gilson et al. (1994) conducted research into service quality, finding that structural factors (e.g. the supply of medicines), and inter-personal skills, to be important determinants of perceived service quality. Given the increasing dependence of public health facilities in Vietnam on private payments, since *doi moi*, as noted by Bloom (1998) in Chapter 1, combined with reports of corruption amongst government health workers, the effect of insurance on patient satisfaction in the Vietnamese context is somewhat ambiguous.

Research Question 7:   ***What is the impact of voluntary health insurance on patient satisfaction?***

3.3.2   Private out-of-pocket health expenditures

Evidence of the effect of insurance on out-of-pocket health expenditures is critical for policy-makers to establish whether the scheme reduces the shocks to consumption highlighted by Wagstaff and van Doorslaer (2001) in Figure 1.2. If out-of-pocket expenditures are lower amongst insured patients, *ceteris paribus*, then it is reasonable to assume that financial access to health services has increased. This issue is tested empirically in Chapter 6, through the estimation of a model of health expenditures, which is allowed to depend on insurance status as well as a battery of other explanatory variables.

Given that the principal benefit of voluntary health insurance is to reduce user fees by 80%, insured patients are expected to spend less out-of-pocket, *ceteris paribus*, than uninsured patients. Evidence that demand for health care is price elastic complicates this picture however. Recently, Nyman (1999) has suggested that insurance purchase is partly motivated by the increased access it provides i.e. that consumers wait until they have insurance in order to access care that would otherwise be unaffordable. If this is the case, then out-of-pocket expenditures amongst insured patients may be significantly greater than 20% of those payments made by the uninsured.

Empirical evidence on this issue from other countries is mixed. Rubin and Koelln (1993) found that insured households have significantly higher out-of pocket expenditures than uninsured households. The authors explain the finding in terms of a moral hazard effect. The RAND Health Insurance Experiment also found that per capita out-of-pocket expenditures increased as the rate of co-payment fell (see Part 2.1.2), confirming that demand is sensitive to changes in price.

Induced demand by health professionals, in order to boost their own income, may also explain increased consumption amongst insured patients. This in turn will lead to increases in out-of-pocket payments. One study examining this issue in a low-income country setting is by Carrin et al. (1999b), who confirms that whilst the Chinese rural cooperative medical systems reduced the burden of health care costs on families, the reduction was modest. A recent review of the health sector (World Bank 2001) analyses out-of-pocket expenditures using data from the Vietnamese Living Standards Survey for 1998. Comparing expenditures per visit to a public hospital, the review estimates the cost of a visit for an insured patient to be, on average, only 30-60% of the out-of-pocket expenditure incurred by an uninsured patient, as opposed to 80%. However, this analysis does not distinguish between those individuals insured under the compulsory schemes, and those under the voluntarily scheme. Finally, perceptions of quality are also likely to influence the desire to incur out-of-pocket expenditures, whether official or unofficial.

Research Question 8: *What is the effect of being insured on total out-of-pocket health expenditures?*

3.3.3 Utilisation of health services

3.3.3.1 Increased consumption (moral hazard)

Part 2.1.2 discussed the issue of moral hazard under insurance, which results from both the reduced price of accessing health services to patients (i.e. price elasticity), but also behavioural changes linked to risk-taking behaviour amongst the insured. The central research question is whether, *ceteris paribus*, individuals who feel sick, and are insured, are more likely to seek care than uninsured individuals who feel sick. There is considerable empirical evidence that insurance leads to the increased consumption of health services, mostly from the USA and other high-income economies.

One interesting question is whether such evidence holds any real message for health insurance in Vietnam given the very different nature of the health system and the society within which it functions. For example, the non-price cost of accessing health services, such as transport and time costs, can be substantial in rural communities, and is likely to have a rationing effect on the consumption of health services. Given that demand for health insurance is derived from a demand for health services, the greater the non-price costs for a sick individual, the lower the effect of health insurance in terms of total cost reduction. In this sense, one would expect moral hazard to be less of

a problem in predominantly rural societies. Furthermore, insured patients in Vietnam are obliged to pay 20% of the cost of services used as a co-payment, a strategy commonly used to counter moral hazard problems.

Several aspects of health care consumption are examined in Chapter 7, each relating to consumer decisions to seek health services when feeling ill[32]. First, the impact of being insured on the probability of seeking the advice of any trained health professional (i.e. in the public or private sector) is estimated. This gives an idea of the impact of the voluntary component of the scheme on the overall access to, and consumption of, health services. Secondly, given that the scheme only insures those services provided in the public sector, its impact on the probability of seeking government health services is examined. Finally, the effect of insurance on the probability of self-treating is tested empirically. A more detailed discussion is provided in the motivation of each model in Part 7.2.1.

Increased consumption of health services can be interpreted in two ways. As noted in Part 2.1.2, it may be positive, particularly in the context of a country with high levels of unmet health needs. However, valid concerns exist that greater consumption is driven primarily by unnecessary over-supply by doctors, or the decision to seek advice for minor health problems. Such concern is particularly understandable in a resource-poor health system. Overall, some evidence of ex-post moral hazard is expected.

Finally, two additional issues are not controlled for in the following analysis, but which may influence the results, and are hence issues for future research. The first is behavioural change, which could result from the purchase of insurance and result in an individuals probability of falling ill increasing. Secondly, service quality also influences the consumption of health services, and may provide a partial explanation for any variations in observed behaviour.

Research Question 9: What is the effect of being insured on treatment-seeking behaviour?

In terms of supplier-induced demand, the shift from fixed in-patient day payments to providers, to a fee-for-service basis, increases the incentive for providers to supply more services. Given that each Province sets its own level of user charges, as well as

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[32] Genier (1998) finds, for example, that health insurance in France affects only the consumer decision to seek health care, and not the quantity of care consumed per episode.

reimbursement rates to providers, the extent to which supplier-induced demand is a problem may be influenced by the income an insured patient brings to the health facility relative to an uninsured patient. Little detailed information is available on this issue, however, and hence it is not tested empirically in this thesis.

3.3.3.2 Social cohesion and moral hazard

If moral hazard is a problem, and harnessing social cohesion offers a possible solution to mitigate it, policy-makers may decide to introduce local management and monitoring mechanisms to reap the benefits, as was the case in the credit cooperative movement in 19th century Germany.

In cohesive communities where there is considerable closure in social networks, the information asymmetry, which limits the ability of formal institutions to monitor contracts, may be overcome. For this reason peer monitoring is part of many lending schemes, such as the Grameen Bank in Bangladesh, whose clients typically have insufficient physical collateral to secure loans from traditional banks. Arnott and Stiglitz (1991) find evidence that peer monitoring mitigates moral hazard, as do Besley and Coate (1995). Wydick (1999) shows that social ties among members have a statistically insignificant effect on moral hazard, however. The second key advantage of informal institutional arrangements lies in their ability to enforce contracts through the threat and use of social sanctions, for example by banning an individual who reneges on an agreement, from future risk-sharing alliances (Besley and Coate 1995).

Dufwenberg and Lundholm's (2001) idea of a *per capita externality* is useful here. Where an insurance scheme is locally organised, in terms of fund pooling and management, the per capita externality of another person reneging on their contract is relatively high. In the case of voluntary health insurance in Vietnam, management and policy decisions are relatively centralised, and risk-sharing takes place at the provincial level. Under this scenario, the per capita externality of another person's inappropriate behaviour is very low. In other words, it is unlikely that one member would view what she thought to be the inappropriate use of health services by another member, as having a negative consequence for herself. If, however, the per capita externality of misuse by another is perceived to be considerable, or if such behaviour is deemed immoral, then highly cohesive communities may be less likely to suffer from moral hazard problems under insurance.

Research Question 10:   Does social cohesion mitigate moral hazard?

3.4   Concluding remarks

A range of research questions is presented in this chapter. In summary, the first five relate to factors that are expected to have a significant influence on demand for voluntary health insurance in Vietnam. Drawing on the first two chapters, research questions are formulated based on both the predictions of theoretical models, evaluations of other schemes, and the specific context of Vietnam. The first examines the effect of health status, and hence examines a classic issue in insurance theory, namely adverse selection, in the context of a low-income country. Research questions two, three and four, examine the influence of worry about future health status, economic status, and levels of education respectively.

Research questions five and six also address demand for health insurance, but analyse the effect of community level characteristics. The fifth question aims to generate knowledge on an under-researched issue, mass organisations, whilst the sixth incorporates ideas from sociology, political science, and development economics, and addresses the effect of levels of social cohesion on demand for formal health insurance. Perceptions of corruption in government, and a sense of duty to the State, a central concept in Confucianism, are also considered in the development of this particular hypothesis. A framework of risk-reducing strategies is proposed, in which government health insurance constitutes only one of a range of risk-reducing strategies for households.

Research Questions 7 to *10* address the impact of health insurance on a variety of policy objectives. These include patient satisfaction, out-of-pocket expenditures, treatment-seeking behaviour, and the effect of social cohesion on moral hazard. Each question is tested empirically, in Chapters 5-7, using data from a household survey and in-depth interviews, which are discussed next.

Research Question	
1	Does voluntary health insurance in Vietnam suffer from adverse selection?
2	Do levels of worry about future health status influence probabilities of health insurance purchase?
3	Does individual economic status influence the probability of health insurance purchase?
4	Do educational levels influence the probability of health insurance purchase?
5	Does membership of a mass organisation influence the probability of health insurance purchase?
6	Does social cohesion increase or decrease the probability of health insurance purchase?
7	What is the impact of voluntary health insurance on patient satisfaction?
8	What is the effect of being insured on total out-of-pocket health expenditures?
9	What is the effect of being insured on treatment-seeking behaviour?
10	Does social cohesion mitigate moral hazard?

TABLE 3.2: SUMMARY OF RESEARCH QUESTIONS

Chapter 4: Research methods

4.1   General approach

The research questions posed in the previous chapter are tested empirically using primary data collected through both a household survey of 2,751 individuals, and in-depth interviews with fifty-one individuals. Data were collected in partnership with researchers from the Institute of Sociology (IOS) in Hanoi (see both the Authors Declaration and Acknowledgements at the beginning of this thesis). Depending on the specific research question, different instruments for data collection are appropriate. For example, when evaluating the impact of insurance on patient satisfaction, which includes personal opinions and perceptions about the quality of health services, qualitative data are generally considered more accurate. In the case of data collected on out-of-pocket expenditures, respondents provided estimates as part of a structured interview, and the data analysed using statistical techniques. In addition, data regarding unofficial payments, a more sensitive issue, were collected through in-depth interviews. The rationale for adopting both techniques was a concern that the interviewee would not disclosure certain information during the more formal, less relaxed environment, of the structured interview.

Chapter 2 summarised the main findings of relevant previous studies, including attempts to measure social capital. Given the focus of this thesis on voluntary health insurance, a choice-based sampling approach is used, in which both members and eligible non-members of the Vietnamese scheme are interviewed. Uninsured individuals thus form the control group, allowing the impact of health insurance on various aspects of the health system to be evaluated. It was argued in Chapter 1 that further enrolment into the compulsory scheme, will be determined as much by broader economic development, as by policy measures designed to ensure compliance. Whilst compulsory schemes do not suffer from problems of adverse selection, moral hazard remains a potential problem. Bärnighausen and Sauerborn (2002) stress the need for voluntary schemes to gradually introduce compulsion as soon as is feasible.

Of the three sub-groups eligible for voluntary health insurance (see Figure 1.3), only two, schoolchildren/students (sub-group 1), self-employed, farmers, and other informal workers (sub-group 3) must purchase a policy. Greater coverage amongst the other group, those in need of humanitarian assistance (i.e. those living below the poverty line - sub-group 2), is dependent on both the level of funds available with government, as well as the expenditure priority given to this group. Increases in

coverage for BPL families will not result from a better understanding of demand for health insurance; hence this group is also excluded from the survey[33]. As noted in the previous chapter, substantial increases in risk-sharing across the Vietnamese population at current levels of economic development will, in the future, be achievable principally through the greater coverage of adults under the voluntary scheme, the majority of whom are farmers, and self-employed workers in the informal sector. Data analysis is conducted in two ways[34]. First, econometric techniques are used to test hypotheses using data collected through a household survey. Secondly, qualitative data were collected on sensitive issues (e.g. unofficial payments) and those relating to opinions (e.g. perceptions of service quality). These data also help to add meaning and understanding to coefficients generated through statistical analysis.

At the design stage of the research, several different approaches were considered. Initially, the intention was to conduct two household surveys approximately eighteen months apart, giving a temporal dimension to the data, and allowing changes over time to be assessed. This approach was changed, however, to only one, cross-sectional survey, primarily due to the fact that the household questionnaire took longer to design than anticipated, due to the complexities of the scheme which it was necessary to understand in order to produce a questionnaire of adequate quality. To achieve this, a range of interviews, field trips, and pre-testing of the questionnaire were conducted (see Part 4.2.2).

Any sample-based research aiming to draw conclusions about a larger population will be subject to error or bias. First, error may result when the sample is not representative of the larger population, making any statistical inference invalid. In order to prevent, or limit the possibility of drawing an unrepresentative sample, two techniques are commonly used. The first is to draw a random sample and the second to draw a sufficiently large sample. Both approaches are adopted in this study (see Part 4.2.1). Despite this, any sample will still include a degree of random error, which must be accounted for during statistical analysis.

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[33] Due to the relatively low coverage of families defined as below the poverty line (BPL) in the voluntary health insurance scheme, individuals in BPL households may consider it worthwhile to purchase insurance. Based on the figures presented in Part 1.3.1, however, very few observations in the sample fall below either poverty line definition.

[34] Deaton (1997) was an invaluable text, regularly consulted during research design and data analysis.

A second potential source of error, which is frequently problematic, is sampling bias, which refers to the tendency to systematically favour the selection of individuals with a particular characteristic, even when a sample is randomly drawn. A common cause of such bias is the self-selection of individuals into the programme intervention being evaluated, or a characteristic that consistently influences whether or not an individual agrees to be interviewed. In many cases, such bias can be prevented, for example through the timing of a survey. Otherwise, sample selection bias must be handled at the analysis stage, using statistical techniques such as the Mills Ratio[35]. From an econometric perspective, sample selection is the major issue for this thesis, given that entry into the insurance scheme is voluntary. Sample selection bias is dealt with using statistical techniques in Chapters 6 and 7, and is discussed in detail later in this chapter.

Error may also result from the inaccurate measurement of variables, as well as from respondent, and interviewer bias. For example, the emphasis or intonation used by the interviewer when asking a question has the potential to alter the response. Bias may also occur from a respondent effect, for example, when opinions on a sensitive issue are being sought e.g. matters that the respondent considers personal, or those that are politically controversial. The well-documented Hawthorne effect results when respondents alter their behaviour in the knowledge that they are being studied. In the original study, it was found that the research intervention itself had a psychological effect on workers, which directly led to an increase in their productivity. Techniques such as double-blind trials have been developed to prevent such bias. The following section provides more details of the sampling approach used in this thesis.

Finally, it is important to stress at this point, that better information on the way in which the delivery of health services varies across the survey sites, would enhance the research presented here, which has a strong demand side focus. Whilst Chapter 1 provides an overview of issues such as the setting of premia, reimbursement of providers, detailed information on local variations, would allow the findings to be interpreted with fuller information and hence accuracy.

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[35] This selection correction approach was developed by Heckman (1979), and is widely used in econometrics to deal with the problem of sample selection bias within survey data.

4.2   Household survey

This section describes both the sampling framework and questionnaire used for the household survey. A copy of the questionnaire can be found in Appendix 4. Household survey interviews were conducted between April and June 1999.

4.2.1   Sampling design

A two-stage approach to sampling was used. In the first stage, clusters of sampling units were selected, based on the administrative unit of communes, and in the second stage, individuals within each unit were randomly selected for interview. Only those provinces with a functioning voluntary health insurance scheme were included in the sampling frame for the selection of communes, amounting to fifty-five out of sixty-one provinces at the time of the survey. Secondly, given the focus on adults and children who must pay for health insurance (as opposed to those who are eligible for compulsory, or fully subsidised voluntary health insurance), provinces without any such members were also removed from the sampling frame. In many provinces, only school health insurance has been developed and no paying adult members exist – this was the case in thirty-six provinces (see Appendix 1). Following background reading, and discussions with Vietnamese colleagues, it was also considered important for the survey to capture the significant socio-economic and cultural differences existing between communities in north and south Vietnam, discussed in Part 1.3 of this thesis. Such differences may influence attitudes towards risk or indeed towards government programmes.

Initially, based on membership information provided by the Vietnamese Health Insurance Agency (VHIA) in Hanoi, two provinces were selected for fieldwork. These were Ninh Binh Province, and Dong Thap Province, in north and south Vietnam respectively. These provinces were considered typical of their region i.e. predominantly rural, but also had a functioning voluntary health insurance scheme. Further discussions were held with the Director of the VHIA, who requested that Hai Phong Province also be included as a second province in the north, in order to analyse the situation in a more advanced scheme, with relatively high levels of awareness and membership. This would also allow comparisons to be made with the less developed schemes in Ninh Binh and Dong Thap Provinces. An alternative approach would have been to select one province with a functioning scheme, and one without as the control, but it was felt that there would be too many area effects to account for in the econometric analysis, under such an approach.

Following discussions, it was agreed to include Hai Phong Province, but with a smaller sample size due to time and cost constraints. Within each province, districts were first categorised as either urban or rural. One urban and two rural districts were then randomly selected in each province, to broadly reflect the predominantly rural population structure of Vietnam. In each district, three communes, referred to as wards in urban areas, were randomly selected, giving a total of eleven districts and twenty-seven communes included in the survey (see Appendix 3). Lists were supplied by the respective provincial VHIA offices containing the names of all members of the scheme in those communes selected, together with contact details.

The second stage of the sampling process was to select the names of individuals within communes for interview. A stratified random sampling approach was used i.e. the population to which inferences are made were stratified into two sub-groups within sample clusters (i.e. communes), and a random sample drawn independently from each. In the econometrics literature this approach is termed choice-based, or endogenous sampling, following Manski and Lerman (1977), wherein a sequence of chosen alternatives are drawn and the characteristics of the decision-makers observed i.e. observations are drawn based on the values of the variable endogenous to the model in question. In the dataset used here, the choice alternative is a binary one i.e. whether or not an individual has purchased voluntary health insurance. In contrast, exogenous sampling does the reverse i.e. a sample of decision-makers is drawn, and their characteristics and behaviour observed.

Rather than creating two separate lists, one for adults and another for children, and drawing separate samples, which would have been extremely time consuming, it was decided to draw a sample of adults only. During the interview, adults were then asked whether any children between the age of 6-17 years were living in the household. If so, a separate interview was completed for each child. Sub-groups of the sampled population can be defined as follows:

- adult members (aged at least 18 years; currently a member, or has bought voluntary health insurance post January 1st 1997)
- eligible adult non-members (aged at least 18 years; never been a member, or has not bought voluntary health insurance post January 1st 1997)
- child members (aged 6-17 years; currently a member, or has bought voluntary health insurance post January 1st 1997)
- child non-members (aged 6-17 years - in Vietnam, children generally begin school at age 6 years.)

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As a result of issues arising during sampling, it was necessary to use two different definitions of 'being insured' depending on the specific research question being analysed, for data analysis (see discussion later in this section). Given the importance of sample size for statistical inference, insured individuals were deliberately over-sampled. At the time of the survey, data on membership of the scheme nationally were only available for 1997 (see Tables 4.1-4.3 and Appendix 1). Manski and Lerman (1977: 1978) continue that, in a probabilistic choice model (such as the probit model presented in Chapter 5), "...it is assumed that the analyst knows the fraction of the decision-making population selecting each alternative." This information is available separately for each of the three provinces included in the survey (see Tables 4.1 to 4.3). Studenmund (1997) also points out with respect to a logit model, which is similar to a probit model, that:

> "It's also important that a logit sample contains a reasonable representation of both alternative choices.....It turns out that using different sampling rates for subgroups within the sample does not cause bias in the slope coefficients of a logit model even if it does in a linear regression." (Studenmund 1997: 512)

Previous studies of demand for private health insurance follow the choice-based sampling approach. For example, Propper (1989) selects samples independently from insured and uninsured to ensure sufficient observations in each, for the estimation of a probit model. Propper (1989: 782-3) discusses the most efficient size of the proportions of the two groups, drawing on the work of Amemiya (1985) and Cosslett (1981). They estimate that a 50%-50% split, on the binary dependent variable, minimises the ratio of asymptotic variance under the chosen sampling scheme to the variance under exogenous sampling, and is hence the ideal sampling ratio between the two groups.

Asymptotic efficiency refers to estimates with minimum variance, whereas asymptotically unbiased means that for large samples one expects to get the true value on average. Under choice-based sampling, however, the probability of an insured individual being sampled is far higher than for an uninsured individual, which does not reflect the true situation. This problem is overcome by weighting the data (see Part 4.4.2). The uninsured sample was selected from comprehensive lists of all residents in each commune, provided by the local Commune People's Committee, and is defined as individuals who are eligible for voluntary insurance but have not yet bought it (or

		Hai Phong		Ninh Binh		Dong Thap	
		Insured	Uninsured	Insured	Uninsured	Insured	Uninsured
Children	*Population*	294,600	177,186	100,800	148,516	65,000	376,330
	Sample	185	34	324	94	262	202
Adults	*Population*	61,500	467,069	1,055	363,517	870	708,047
	Sample	184	137	289	373	322	345
All	*Population*	356,100	644,255	101,855	512,033	65,870	1,084,377
	Sample	369	171	613	467	584	547

TABLE 4.1: SAMPLING RATIOS

Province	Hai Phong		Ninh Binh		Dong Thap		Total	
Target population	356,100		101,855		65,870		523,835	
Confidence level	95%	99%	95%	99%	95%	99%	95%	99%
Required sample[36]	*150*	*260*	*150*	*259*	*150*	*259*	*150*	*260*
Actual sample (adults insured at time of survey)	158		28		192		378	
Actual sample (adults and children insured at time of survey)	210		33		300		543	
Actual sample (adults insured since 01/01/1997)	184		289		322		795	
Actual sample (adults and children insured since 01/01/1997)	369		613		584		1,566	

TABLE 4.2: SAMPLE SIZE: INSURED POPULATION[37]

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[36] This assumes a confidence interval of eight percentage points.
[37] This definition thus includes adults and children, but excludes those with compulsory or humanitarian insurance.

Province	Hai Phong		Ninh Binh		Dong Thap		Total	
Target population	644,255		512,033		1,084,377		2,240,665	
Confidence level	95%	99%	95%	99%	94%	99%	95%	99%
Required sample[36]	*150*	*260*	*150*	*260*	*150*	*260*	*150*	*260*
Actual sample (adults uninsured at time of survey)	163		634		475		1,272	
Actual sample (adults and children uninsured at time of survey)	330		1047		831		2,208	
Actual sample (adults uninsured since 01/01/1997)	137		373		345		855	
Actual sample (adults and children uninsured since 01/01/1997)	171		467		547		1,185	

TABLE 4.3: SAMPLE SIZE: UNINSURED POPULATION

not since January 1st 1997). The questionnaire consisted of two parts. The *household section* collected data on three separate issues; socio-economic information about all individuals living in the household (Section A of the questionnaire in Appendix 4), data on the respondent's local community, including perceptions of social cohesion, and membership in local organisations (Section B), and thirdly information regarding physical access to health facilities (Section C).

Sections D to G of the questionnaire constitutes the *individual section*, in which data unique to the sampled individual were collected on the following issues: health seeking behaviour, utilisation of health services (frequency and type of facility), private expenditures during the most recent contact with a health provider, satisfaction with various aspects of health services, and several questions regarding their experience of, and opinions about, the health insurance scheme. The content of the individual questionnaire varied slightly, depending on whether the respondent was insured. Reducing the number of filters minimised mistakes during interviews[38]. With respect to interviews concerning children, a parent or guardian, was questioned on their behalf.

At the beginning of the interview, the respondent was asked a series of screening questions to cross-check their insurance status i.e. that individuals in the member sample were neither a member of the compulsory scheme (this was the case for seventy-one respondents), nor a recipient of free health insurance through humanitarian assistance (the case for eighteen respondents). In such cases, the interview was terminated and apologies made to the interviewee. Screening allowed errors in the sampling frame to be removed. Quotas were also set to ensure that the 50%-50% ratio of interviews with members and non-members was broadly maintained. The approach to sampling is summarised in Figure 4.1, and the characteristics of the overall sample presented in Tables 4.1 to 4.3.

Several issues arose during fieldwork. First, and most problematic, was the discovery that the sale of policies to adults in Ninh Binh Province had been suspended during the previous twelve months. This information became known during discussions with the Director of VHIA in Ninh Binh Province. There was no previous indication of this problem, which was apparently due to growing financial debt. The extremely low

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[38] In other words where, depending on the response given to a certain question, subsequent irrelevant questions were skipped.
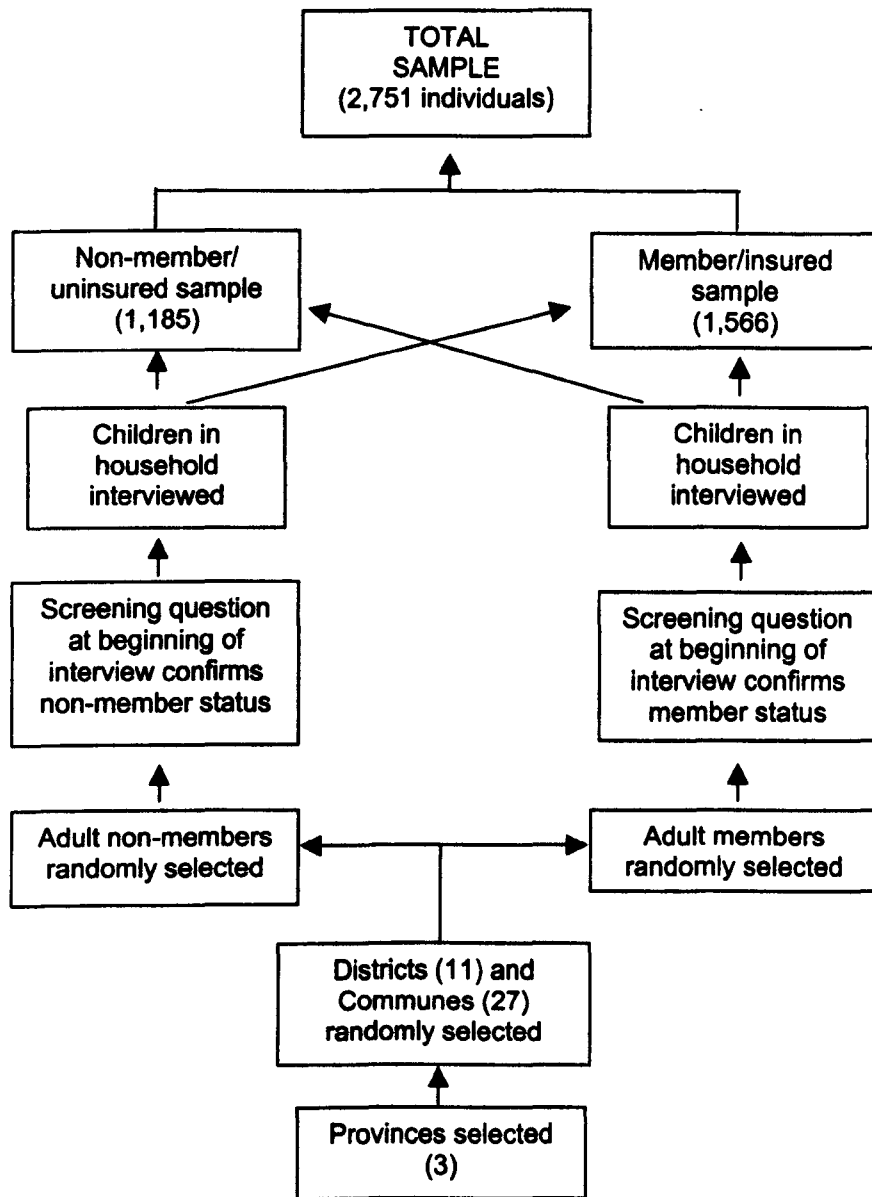
FIGURE 4.1: PROCESS OF SELECTING INDIVIDUALS FOR SURVEY

Sub-Category	Number of interviews
Households	1,663
Individuals	2,751
Adults	1,650 (60%)
Children	1,101 (40%)
Males	1,409 (51%)
Females	1,342 (49%)
Urban residents	917 (33%)
Rural residents	1,834 (67%)
Members of voluntary scheme / insured	1,566 (57%)
Non-members of voluntary scheme / uninsured	1,185 (43%)
Insured adults	795
Insured children	771
Resident of Hai Phong Province	540 (20%)
Resident of Ninh Binh Province	1,080 (39%)
Resident of Dong Thap Province	1,131 (41%)

TABLE 4.4: SUMMARY OF SAMPLE CHARACTERISTICS

number of current members in the scheme posed a problem for sample size. One solution considered was to select a new province to replace Ninh Binh. However, it was felt that, due to time constraints, and the possibility of further uncertainties in a newly selected province, that fieldwork would continue in Ninh Binh. Following discussions with local officials, it was decided to boost the insured sample by including all individuals who had purchased voluntary health insurance since 1st January 1997. This definition was subsequently used in each of the three provinces to ensure consistency in sample definition.

However, a retrospective definition of *being insured* raises issues for data analysis e.g. establishing the causal impact of health insurance on out-of-pocket health expenditures. For such questions, data are typically limited to the most recent illness e.g. within the previous month, or three months, in order to minimise recall bias. Specific questions were thus included in the questionnaire to establish whether the respondent was insured at the time of the interview, allowing two definitions of *being insured* to be used depending on the specific research question being addressed. The actual definition used is discussed in each of the results chapters. In the final sample, only 5% of insured respondents in Ninh Binh were members at the time of the interview, compared with 57% Hai Phong and 51% in Dong Thap.

Further problems arose in Ninh Binh Province regarding the quality of membership information supplied by the Provincial Health Insurance Office. The approach was for fieldwork supervisors from the Institute of Sociology to contact local commune leaders to discuss the research project, and to request their assistance in locating the residence of sampled individuals. However, in the three selected urban wards of Ninh Binh Town, a large number of the names supplied were not correct or locatable.

To overcome this problem, around one hundred local co-operators in each ward and street were asked to help locate the selected individuals. Furthermore, in order to reach the quota of insured respondents in this urban district, it was necessary to include all five wards rather than the three initially selected. The final split was as follows: Hai Phong (two urban wards and four rural communes), Ninh Binh (six urban wards and six rural communes), and Dong Thap (three urban wards and six rural communes).

Thirdly, initial data analysis showed that there was a considerable number of missing values on questions regarding distance to a health facility (see Section C of the questionnaire). If non-responses to a particular question are systematically driven by

an underlying factor, and for a substantial number of respondents, then an unobserved factor is influencing and biasing the results. This issue is commonly referred to in econometrics as *unobserved heterogeneity*. For example, if individuals who have never visited a health facility are significantly less likely to respond to questions regarding distance, then a hidden or unobserved effect is at play, which results in correlation between the error term and the dependent variable. Such bias must be corrected during analysis. Regressors representing insurance status, where membership is voluntary, are also prone to self-selection bias and unobserved heterogeneity, an issue discussed further in Part 4.4.2.

With respect to non-responses to questions regarding distance to health facilities, it was decided to recollect the information by telephoning local commune officials from Hanoi. Officials were asked to estimate the average distance from the main government building in their commune to a variety of health facilities. However, some of this additional data was also incomplete. At the province level, contextual information was available in the Health Statistics Yearbook 1999[39], whilst data concerning local health problems and health infrastructure were obtained both through interviews with leaders of Provincial VHIA, and local government officials in each of the respective communes. This information is summarised in Appendix 3.

4.2.2 Household questionnaire

The structured household questionnaire was developed over a period of nine months, following a literature review, discussions with national and provincial directors of the VHIA, and preliminary in-depth discussions with members and non-members of the scheme. This was an iterative process, in which field trips were conducted to familiarise the author with the Vietnamese health and health insurance system, and to pilot the questionnaire.

Linguistic and cultural differences between the author as researcher and Vietnamese colleagues increased the potential for error during the research, for example through measurement error, resulting from misunderstood concepts or objectives. However, as the survey was conducted as part of a wider research project funded by the U.K. Government's Department for International Development, funds were available to

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[39] This document is produced by the Health Statistics and Informatic Division of the Ministry of Health.

employ Vietnamese researchers with whom a relationship was developed, allowing a mutual understanding about the project to evolve. This was critical given the supervisory role played by the author in data collection. The collaboration with researchers from the Institute of Sociology (IOS) in Hanoi, many of whom spoke good English, enabled many issues to be discussed, at length and in detail.

Initially, the household questionnaire and topic guides for in-depth interviews were developed in English, and discussed with colleagues at the University of York. Researchers from the IOS then translated the questionnaires into Vietnamese. In order to reduce to a minimum, errors and misinterpretations resulting from the translation process, an independent Vietnamese researcher fluent in written and spoken English, was employed to back-translate the questionnaire from Vietnamese into English, allowing this version to be cross-checked with the original English version. This researcher worked only from the Vietnamese version, and had not seen the original questionnaire in English. Further issues concerning data reliability, and measures taken to ensure its quality, are discussed in Part 4.4.

Interviews were conducted by local teachers who were paid for their work. For example, in Dong Thap Province thirteen interviewers were recruited from the School of Politics in Sa Dec Town. Training sessions were held to sensitise interviewers about the objectives of the research project, to ensure both familiarity with the questionnaire, and that essential interviewer techniques were followed. Close supervision was maintained throughout the fieldwork. As local residents, teachers were also helpful in obtaining the assistance of commune leaders to help in locating households.

4.2.3   Measuring contextual variables

Part 2.3 highlighted the contradictory assumptions made by different authors about whether social capital is high or low in Chinese society, according to varying interpretations of the influences of Confucianism and Communism, two features also common to Vietnamese society. The main measure of community structure used in this thesis is the level of social cohesion at the commune level. This approach has been used by several authors to represent social capital, for example Narayan and Pritchett (1997) (see Part 2.2.4). However, this thesis does not equate social cohesion with social capital.

One of the more convincing arguments in the social capital literature, however, is the idea of closure within social networks, which is arguably an important determinant of levels of social cohesion. Following discussions with Vietnamese colleagues, and given limitations of space within the questionnaire, it was felt that a direct question to respondents regarding their perception of social cohesion in the community in which they live, would be satisfactory. Social cohesion is also a concept that is easily translated into Vietnamese, and its meaning is widely understood. Data on perceptions of social cohesion were collected using two different instruments. First, as part of the structured questionnaire, a direct question was put to respondents about their perceptions of social cohesion within the local community, with responses ranked against a simple five-point scale (see question b33). Secondly, information was collected through in-depth interviews, arguably a more valid instrument for the collection of data on such an issue.

It should be stressed that this measure captures individual *perceptions* of cohesion. Social cohesion cannot by definition, exist at the individual level, and hence this measure alone is not reliable as a measure of levels of social cohesion within a community. Despite this, individual perceptions may have an important influence on the individual insurance purchase decision (see in particular the *substitute hypothesis* presented in Part 3.2.2). The effect of individual perceptions is hence also included as a separate explanatory variable in the analysis presented in Chapter 5.

When individual perceptions are aggregated at the commune level, however, the results represent more than individual perceptions and arguably embody a valid measure of how cohesive a commune is. If, for example, a large number of individuals within the same community all say that they perceive their local community to be a highly cohesive one, then this is likely to reflect actual social cohesion. The variable is analysed in further detail in the next chapter. Qualitative data are also used to interpret the results for this coefficient.

As discussed in Part 1.5, membership in a mass organisation is not considered a true expression of civil society[40]. Drawing on ideas in the social capital literature, however, they probably still play an important role in facilitating collective action. This issue exposes one of the weaknesses of the social capital literature. Whilst Putnam stresses

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[40] See in particular Putnam's (1993a) work on Catholicism and civic behaviour in Italy discussed in Part 2.2.

civil society, Coleman stresses closures and social cohesion – it could be argued, using Fukuyama's idea of a radius of trust, that these two definitions actually reflect diametrically opposed community structures.

With respect to mass organisations, further research is clearly required to improve understanding of the way in which they function. However, data on membership in a range of mass organisations, together with some qualitative data, were collected as part of the survey. This was justified on the basis of their potential importance for various other aspects of the research; first, mass organisations often offer savings and insurance mechanisms for their members; secondly, group membership is an important mechanism to mitigate adverse selection problems in voluntary health insurance schemes; and thirdly, as noted above, mass organisations are an under-researched phenomenon, particularly during the current period of economic transition. Hence, it was felt that further investigation might lead to useful theoretical and empirical insights. In the analysis presented in Chapter 5, this variable is included at both the individual and the commune level, the latter reflecting, to some extent, network density.

The questions posed to respondents in the household survey questionnaire are adapted from the work of both Narayan and Pritchett (1997) and Grootaert (1999) described earlier (see Section B of the questionnaire in Appendix 4). Respondents were presented with a list of names of common mass organisations in Vietnam, and asked whether or not they were a member (see questions b23 and b24 in Appendix 4). The organisations included were the Farmers Union, the Women's Union and the Veteran's Union (which were considered to be the most closely aligned with the Government of Vietnam), the Elderly Union, the Peer Union, the Longevity Union and Funeral Groups, defined following discussions with the Institute of Sociology. Additional information was collected on various qualitative aspects of the organisation identified as the most important to the respondent, following the approach of Narayan and Pritchett (1997). It was later decided, however, not to use this data given the conceptual uncertainty over the value of heterogeneous versus homogenous membership structure.

4.3   In-depth interviews

Qualitative information can be collected using a variety of instruments (see for example Marshall and Rossman (1999). First, participation, or *participant-*

observation, involves the researcher conducting the activity being researched themselves, and is a technique used extensively by anthropologists. Under the *observation* approach, the researcher records information whilst observing the activity being studied. A third technique is *in-depth interviews*, which may include informal conversations, the use of broad interview guides (or topic guides), or open-ended interviews.

Qualitative data were collected for two purposes. The first was to confirm the validity of the research questions in the early preparatory stages, and to identify other issues for inclusion. A small number of informal discussions and in-depth interviews were conducted with members and eligible non-members of the insurance scheme. Secondly, several research questions required information to be collected about, for example, perceptions of social cohesion in the local community, pooling funds for risk-sharing, health seeking behaviour, the quality of health services provided by health professionals, and satisfaction with health insurance.

In-depth interviewers allow a more in-depth understanding of the issues being researched. Information is collected in order to understand the local situation, without pre-determined ideas, and conversations are allowed to flow naturally, rather than being structured with pre-determined questions as in the household questionnaire (Walker 1985). Interviews were conducted with fifty-one individuals who had already completed full structured interviews. In order to focus the discussion, interviewers were provided with Topic Guides (see Appendix 5). Fieldwork for the main in-depth interviews was conducted in September and November 1999, with both members and non-members of health insurance selected from the original random sample. One district in each of the three study provinces was selected for fieldwork, together with a mixture of rural and urban communes within each.

On average, six interviews were conducted in each selected commune or ward, three defined as members and three as non-members. Quotas were set to ensure a balanced mix of interviews with males and females, people of different age groups, and economic status. Each interview was tape-recorded with the interviewee's permission. All information was transcribed into an Excel spreadsheet file, and then imported into the Access database programme to allow keyword searches and analysis by sub-category of respondent to be easily conducted. Verbatim quotes are integrated in the discussion of econometric results in the three following chapters.

Greenhalgh and Taylor (1997) stress the importance of qualitative research in terms of its validity (closeness to the truth), rather than reliability (repeatability), which is a feature of quantitative analysis. They continue, that qualitative analysis should touch upon the core of what is going on, rather than skimming the surface. One potential pitfall, when using qualitative data, is to use isolated, interesting quotes, which may be slightly misleading to the reader. In this study, the author ensured a familiarity with the data, in order to avoid any such misrepresentation. Hence, clusters of verbatim quotations are used in the results chapters, to reflect an underlying them in the data.

Combining quantitative and qualitative methodologies is increasingly commonplace in social science research, each complementing and enhancing the other (see for example Casley and Kumar (1988), and Walker (1985). Interestingly, Harriss (2002) argues that qualitative research can be rigorous, and that sophisticated mathematical modelling can actually be very *soft*, because of the simplistic or occasionally false assumptions on which it rests. The two approaches are brought together in this thesis in the interpretation of regression analysis. Without additional qualitative data, regression coefficients can often be interpreted in several often contradictory ways. Figure 4.2 summarises the research tools used.

4.4 Data issues

Once household interviews were completed, paper questionnaires were taken to the IOS offices in Hanoi. Responses from each of the 2,751 questionnaires were then entered manually, under close supervision, into the SPSS statistical software package, by a local company with experience of such work. A separate variable was created for each question, defined as either numeric or non-numeric, and labelled to ensure ease of recognition during data analysis. Two separate SPSS files were created, one containing information from the *household* section of the questionnaire (i.e. 1,663 observations), and the other information from the *individual* questionnaire (i.e. 2,751 observations). The two SPSS files were then merged on the basis of unique province, commune, and household codes. Where more than one individual questionnaire was completed within the same household, each observation thus has identical values for the household section of the questionnaire. The dataset was later converted into the STATA statistical software package, for data analysis. This is a more flexible software package for econometric modelling and features a user forum for discussion on technical issues.

Sub-sample of respondents selected, for in-depth interviews (51 in total) using Topic Guides.

↑

Structured interviews with a representative sample of insured (1,566 = 57%) and uninsured (1,185 = 43%) in 11 districts and 27 communes.

↑

Questionnaire finalised and back-translated from Vietnamese into English to remove translation error

↑

Household questionnaire translated into Vietnamese and field-tested

↑

Initial in-depth interviews and group discussions conducted to ensure validity of research questions

↑

Structured questionnaire drafted in English following literature review and discussion with colleagues

FIGURE 4.2: INSTRUMENTS USED FOR DATA COLLECTION

Data-entry is a potential source of non-sampling error, which, if extensive, can lead to inaccurate statistical inference. Several steps were taken to limit such problems. First, each completed questionnaire was checked immediately after the interview for errors or other problems by one of the supervisors, minimising coding error. Secondly, at the data analysis stage, the data entry form in SPSS incorporated controls for skip questions (i.e. filter questions, where a respondent misses out several irrelevant questions when a particular response is given[41]), range (e.g. where don't know responses are coded as 99, or 999), and was used to ensure internal inconsistency. Most human error in the coding of questionnaires was thus identified during data entry, e.g. an interviewee coded both as male and pregnant. In such a case, cross-checks were made using sampling information or other responses to the same questionnaire, in order to establish the true sex of the respondent. As a final check, after data entry 10% of the paper questionnaires were randomly selected, and cross-checked with the electronic data files.

4.4.1 Reliability of the data

Extreme values are commonly caused by errors in data collection or entry. Given that many extreme values occur naturally and are valid, however, outliers require investigation rather than immediate elimination[42]. One example in the dataset was an outlying observation on a question regarding out-of-pocket expenditures, where one observation was recorded as having incurred a total expenditure of VND 40 million. This was detected during descriptive data analysis, the next highest value being VND 9 million, with an overall mean value of VND 255,000 across the sample.

After further investigation, the value was found to be valid. The respondent was an elderly male with a long-standing heart condition had remained in a provincial hospital for over one month. Of this amount, VND 30 million was spent on consultation costs and medicines, despite the patient being insured, VND 5 million on accommodation for the patient and relatives, VND 1 million in extra payments or gifts, and VND 4 million in other costs. Initial sensitivity analysis was conducted to assess the impact of this single value on the results, particularly during sub-group

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[41] For example, if the response to question d38, which asks whether respondents have been ill in the previous three months, is zero, there should be no response to the following question about how many times a health worker was contacted. Rather, the respondent is filtered to either d40, or d42, depending on whether or not they are insured.

analysis when sample sizes became low. In this particular case, whilst mean values were sensitive to this outlier, the overall conclusions were not. Whilst the observation was valid it was omitted from the analysis presented in Chapter 6 for other reasons[43].

Missing data, usually due to non-responses to certain questions, are also common in interview-based surveys. For example, a poorly defined or unclear question is likely to lead to non-responses, as is poor quality interviewing e.g. where a question is routinely skipped in order to speed up an interview. If non-responses are random across the dataset i.e. data are randomly missing, then estimations will remain unbiased. If, however, some underlying factor is driving or causing non-responses i.e. data on one particular variable is missing, conditional on the value of another variable, then ignoring this fact will lead to biased estimates. Assuming it is not feasible to re-collect data on the variable in question, missing values can be dealt with in three ways. First, the entire observation can be dropped, secondly, a new value can be imputed, or thirdly a proxy variable may be used.

As noted earlier in Part 4.2.1, there were substantial numbers of missing values on the question about distance to a health facility (question c37). It was, however, possible to recollect the data from another source, although problems still existed with the data. In this particular case a dummy variable representing whether the respondent lives in an urban or a rural community was used, although a substantial amount of precision is lost by using this proxy.

4.4.2 Common issues in data analysis

In each of Chapters 5-7, econometric analysis is presented, and qualitative data used to enrich the interpretation of the estimated coefficients. The motivation for each model is set out in the respective chapter. Many of the issues that must be dealt with during the analysis are common, for example the problem of sample selection bias in Chapters 6 and 7. Many of the explanatory variables are common across models. One such variable, health status, is discussed later. Economic status is commonly proxied by per capita annual consumption expenditure in econometric studies. The reason for this is that survey responses about household expenditures are considered more

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[42] In other words, data quality is achieved by removing outliers only when they are the result of error.

reliable than those about income, and secondly that consumption expenditures tends to be smoother across seasons than income, particularly in agricultural communities: subsistent farmers form almost 42% of the adult sample. Perhaps most importantly, consumption expenditures are more important than income in determining levels of welfare, or standard of living. All financial data were collected in Vietnamese Dong (VND); at the time of the survey, US$1 was equal to VND 13,500.

4.4.2.1 Weighting

As a result of the choice-based sampling approach adopted, the probability of an insured individual being sampled is far higher than it is for an uninsured individual. As noted by Deaton (1997), over-sampling of certain groups, in this case insured individuals, is often necessary in order to enhance the precision of estimates in regression analysis[44]. However, in order to mirror the true ratio of insured to uninsured individuals in the population, to which inferences are made, the data require weighting.

In the sample, insured respondents constitute 56.9% of the total, although the proportion varies depending on the specific sample definition used to analyse each research question. For example, when only adults are used to analyse a question, members represent a lower 48.2% of the sample. Furthermore, the probability of being selected is not random between provinces, and hence data for each province are treated as a separate stratum and weights are applied separately for each province except where the data are pooled.

For descriptive analysis, such as sample means, data are weighted using the *aweight* command in the STATA statistical software package. For regressions, the *pweight* sampling command is used, weights represent the inverse of the probability of the observation being chosen. Population data are taken from the National Census of 1999 and are as follows: Hai Phong 1.673 million, Ninh Binh 0.884 million and Dong Thap 1.565 million.

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[43] The observation was dropped as the respondent concerned had fallen ill more than three months prior to the interview, the cut-off point used in order to minimise recall bias.
[44] In the case of Chapter 5, where the dependent variable is a dummy representing insurance status, the over-sampling of insured individuals minimises asymptotic variance relative to fully randomised, or experimental data.

4.4.2.2 Clustering and heteroscedasticity

As in most surveys, sampling units were selected along the lines of pre-existing administrative units. In this study, individuals were selected within a limited number of communes. Hence, selected individuals are not randomly distributed over space, but are geographically grouped. Deaton (1997) notes that the advantage of this approach is that it allows data to be collected cost-effectively.

However, selecting individuals within clusters leads to the possibility of intra-commune correlation i.e. individuals from the same commune are more likely to behave similarly, than are individuals from different communes. If this is the case then non-zero correlation of responses between observations within communes may occur. Such correlation is problematic for statistical inference, biasing standard errors downwards, and allowing the null hypothesis to be rejected too frequently. Standard errors must thus be corrected, which is easily achieved in STATA for example by using either the *svy*, or *robust* commands[45].

Biased standard errors may also result from non-constant variation in the error term across observations, is common in panel or time-series datasets, and violates the assumption of constant error terms, which is required for the production of unbiased and consistent estimations. Water's discusses this issue in the context of the univariate and bivariate probit models he uses to estimate the effect of being insured on service utilisation, using data from Ecuador, and notes that "These techniques are subject to bias from heteroscedasticity, or non-constant variance" (Waters 1999). He continues that corrections must be made for the fact that error terms for individuals in the same household are likely to be correlated.

Liao (1994) also points out that heteroscedasticity is a feature of limited dependent variable models, and has a similar effect to clustering, in that as explanatory variables are correlated across observations, so the regression residuals will also be correlated across observations. Again, further details are provided in each of the subsequent chapters. The *robust* command hence deals with both the problem of sample clusters

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[45] It is unclear whether the 'svy' command can be used when estimating models that correct for sample selection, as presented in Chapter 6 and Chapter 7. The *robust* command was thus used which, according to STATA "...computes a robust variance estimator....for ordinary data (each observation independent), clustered data (data not independent within groups, but independent across groups), and complex survey data with stratified cluster sampling." For further information, refer to the help function within the STATA software version 6.0.

within survey data, and heteroscedasticity resulting in part from the use of limited dependent variables.

4.4.2.3 Sample selection, unobserved heterogeneity, endogeneity

As mentioned earlier in this chapter, unobserved heterogeneity is a common problem in econometric analysis, particularly when evaluating the effect of a programme intervention where participation is voluntary. Significantly, Jones (2000) uses the example of self-selection in insurance schemes, to illustrate this general problem:

> "The problem is to identify the effect of a 'treatment', for example, whether the individual has health insurance or not, on the outcome....The pure causal effect cannot be identified from empirical data because the 'counterfactual' can never be observed....One response is to measure the average causal effect and attempt to estimate it with sample data......The problem for inference arise if a set of observed covariates and unobserved covariates are correlated and, in particular, if there are unobserved factors that influence whether an individual is selected in to the treatment group or how they respond to the treatment." (Jones 2000: 269)

Mullahy (1997) discusses the issue in the context of count data models, and also uses the example of insurance status as a variable that is prone to self-selection bias. In one further example, Trivedi (2002), in a recent analysis of Vietnamese Living Standards Survey data from 1997-98, notes that when modelling the effect of being compulsorily insured on service utilisation, the insurance status variable can be treated as exogenous. For those who are voluntarily enrolled, however, individual choice plays an important role, which is an argument for treating the variable as endogenous, analogous to sample selection bias. However, Trivedi was unable to identify whether respondents were enrolled under the compulsory or voluntary scheme, and hence insurance status is treated as exogenous.

Whilst in sample surveys certain characteristics of an individual will always be unobserved, this is a particularly important factor in voluntary health insurance schemes, as noted in the previous paragraphs. As there is likely to be a range of factors influencing the decision to purchase to health insurance, it is quite possible that some of these unobserved variables also influence utilisation behaviour (see Chapter 7), and private out-of-pocket expenditures on health (see part 6.2). For example, environmental and community-level factors may influence health status and, in turn,

demand for health insurance and patterns of service usage. Attitudes towards risk and treatment seeking are characteristics of each individual that may be unobserved, but influence both purchase of health insurance, and other behaviour processes such as the decision to seek care when feeling ill. Empirical analysis of *Research Questions 6* to *9* considers this problem, which is commonly referred to as unobserved heterogeneity.

Different approaches exist to control, or correct for, unobserved heterogeneity, which results when self-selection into a voluntary health insurance is non-random. For example, the Heckman selection correction technique, widely used in econometric analysis, generates an Inverse Mills Ratio (IMR) based on insurance status, which is then included in the particular model being estimated e.g. out-of-pocket expenditures. For example, Street et al. (1999) use the IMR to deal with the possibility that responses to questions on drug expenditures are systematically related to unobserved variables. The IMR approach is used as part of the dummy endogenous variable model presented in Chapter 6, which estimates the impact of being insured on out-of-pocket health expenditures. In Chapter 7, the effect of insurance on the decision to seek care is estimated using a bivariate probit model with sample selection, following the approach of Waters (1999) amongst others.

Selection bias and endogeneity are often used synonymously in the literature (see in particular comments by Waters (1999: 475). However, the two can be interpreted quite differently. Whilst sample selection bias refers to influences not captured within an equation, endogeneity typically refers to variables, or regressors, that are included, but which have a recursive relationship with the dependent variable, violating the assumption that causality runs in only one direction, rather than two (see Studenmund 1997: 529-530).

A potentially endogenous explanatory variable used in the following analysis is health status. Respondents were asked to rate their own health status over the twelve months preceding the survey using a five-point scale, and to identify whether or not they suffered from a long-standing limiting illness. In the case of demand for health insurance, for which the retrospective definition of being insured is used, in order to boost the sample size, endogeneity is more likely to be a problem[46]. However, it is

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[46] For example, an individual's health status may improve as a result of being insured, in which case reported health status at the time of the survey reflects an ex-post, rather than ex-ante, state., with respect to the purchase of health insurance.

argued that the core motivations for health insurance purchase are less subject to recall bias than responses to many other questions (e.g. those related to a particular experience at a health facility), and also that the fundamental socio-economic characteristics of respondents, which might influence this decision are, in the majority of cases, unlikely to have changed significantly across this period of time.

4.5   Concluding remarks

Two approaches are used to address the research questions defined in Chapter 3. The first is essentially deductive, with predictions made on the basis of existing theoretical models built on a series of assumptions, and tested using data collected from a representative population sample, which allows statistical inferences to be made. Logic underpins the cause and effect relationships inherent in these models, from the general to the specific situation of Vietnam, based on data collected through a structured questionnaire with predetermined questions and responses. However, drawing on empirical evidence from a range of countries, predictions are in some cases modified. By drawing a representative sample for insured and uninsured respondents in the survey provinces, inferences are made through hypothesis testing. Qualitative data are also collected, partly through open-ended responses to certain questions in the structured questionnaire, but primarily through in-depth interviews. This approach is inductive i.e. open-ended. Hence, overall, the research moves from the inductive (preliminary conversations and in-depth interviews), to the deductive (household questionnaire), and back to the inductive (in-depth interviews).

The extent to which the results are generalisable to schemes in other provinces in Vietnam depends largely on the design of the sampling framework, which was discussed in the previous section. Given that the sample is randomised by choice, or within two stratified groups i.e. insured and uninsured populations, the data can be considered as representative of insured and eligible uninsured individuals in the three provinces where fieldwork took place, and to a large extent, generalisable to other provinces. Making generalisations to health insurance schemes in other countries is a more complicated matter, requiring assessment on a case-by-case basis. The key issue is the extent to which the health system and economy of another country, together with culture and other societal characteristics, differ from Vietnam. Further discussion of this issue is presented in the concluding chapter.

Part 2

Results and Conclusions

Chapter 5: Private demand for health insurance

This chapter empirically tests *Research Questions* 1 to 5, by estimating of a model of demand for voluntary health insurance in Vietnam, using household survey data. Predictions based on theoretical models, and empirical evidence from health insurance schemes in other countries, were presented in Part 2.1. To summarise, demand for health insurance is, to a considerable degree, a function of demand for health care and, ultimately, a demand for health. In addition to the usual battery of individual socio-economic characteristics, attitudes towards risk, which economics tackles using marginal utility of income theory, is an important part of existing frameworks. Empirical analysis of demand for health insurance, which is dominated by experience in high-income countries, is varied. This is perhaps not surprising, given the range of insurance products evaluated (e.g. whether or not they supplement or substitute for public insurance), variations in benefit packages, and differences in the price and quality elasticity of demand for health services across societies. Adverse selection and moral hazard, two issues central to the theory of health insurance, are analysed empirically in this chapter, to add to the currently limited evidence base from low-income countries.

Research Question 6, which asks whether social cohesion increases or decreases the probability of health insurance purchase, represents a new conceptual advance. Whilst there are now frequent references in the literature to the importance of social capital for the development of voluntary health insurance, most of the analysis is somewhat superficial, without discussing the definitional problems facing the concept. Only Hsiao (1995) attempts to develop a detailed framework, extending directly from (Coleman 1990) work on social capital, and its implications for collective action. Part 2.2 attempts to unpick the social capital literature, arguing that due to definitional problems, the focus should remain on individual components of social structure (in this case social cohesion). Part 2.3 reviews Hsiao's proposition in the light of evidence from development economics, and presents an alternative hypothesis in which social cohesion, via informal risk-sharing networks, substitutes for formal health insurance. This proposition also incorporates the potential influence of perceptions of corruption, and duty to the State.

Using data collected from a representative sample, of insured and uninsured individuals, inferences are made about factors driving insurance purchase.

Characteristics of both individuals and their communities are used to specify the demand function, with coefficients representing marginal effects on the probability of purchase. Qualitative data, based on in-depth interviews, are also incorporated into the analysis to enrich the interpretation of statistical results.

5.1   Background and descriptive analysis

5.1.1   Sample definition

As discussed in Part 4.2, the definition of *being insured* was retrospectively extended to include all those who had bought a policy since 1st January 1997, in order to boost the sample of insured individuals[47]. Whilst this extended period creates a possible recall problem, it is argued that the core motivations for buying health insurance are less subject to recall bias than responses to many other questions. It is further argued that the fundamental socio-economic characteristics of respondents that might influence this decision are, in the majority of cases, unlikely to have changed significantly across this period[48]. However, the health status reported by individuals who had bought insurance more than one year before the survey (the period to which self-reported health status relates) might reflect improvements as a result of improved access to health services under insurance. If this were the case then adverse selection, the subject of *Research Question 1*, would not be captured[49].

Secondly, the purchase decision is only modelled for adults, for several reasons. The decision to purchase school health insurance is made by a parent or guardian for their child i.e. an agent makes the decision. The agency problem is common in health care markets, best known for the role played by physicians, in determining the health services consumed by a patient. As discussed in Part 2.1.2, previous studies have motivated a two-part model to deal with physician-agency (e.g. Pohlmeier and Ulrich 1995), in which the initial contact decision is made by the patient, and modelled first, followed by a second model estimating decisions regarding the type and amount of services consumed, which is heavily influenced by the physician (and related to

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[47] In other words, up to a maximum of just over two years prior to the survey.
[48] For example, in the majority of cases the health status and economic status of respondents, is unlikely to have fundamentally changed.

supplier-induced demand). In the case of an adult purchasing health insurance for a child, however, it is conceptually less easy to motivate a two-part model, although it might be argued that parents attempt to act as perfect agents on behalf of their children. However, given that strategies to extend risk-sharing in the future depend to a large degree on increasing uptake amongst adults, understanding demand amongst this group is of particular importance, and the analysis discounts children.

Finally, models are estimated only for individuals who have heard of voluntary health insurance, which ensures that results reflect the decisions of those individuals for whom insurance forms part of the choice-set, over which consumption decisions are made (i.e. subject to budget constraints and personal tastes). In an earlier version of this analysis, a two-part model with sample selection was estimated, the first part modelling awareness of the insurance scheme, and the second purchase, conditional on awareness. Further discussion of this alternative approach issue is presented later in this chapter.

5.1.2 Descriptive analysis

As part of the household survey, respondents were asked their reasons for buying health insurance, and for intending to buy it in the future[50]. The results are disaggregated by province and presented in Figure 5.1[51]. Interestingly, in each province the most important reason stated is that insurance provides security, suggesting that aversion to risk is a key factor in the decision to buy health insurance, and also reflects the increase in out-of-pocket expenditures as a result of health financing reforms under *doi moi*. The effect is strongest in Dong Thap Province, where 74% of respondents gave this reason. Advertising and propaganda are the next most important reason given in each province, with the strongest effect in Ninh Binh Province[52].

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[49] In other words, certain individuals may report good health status in the survey, when at the time of purchase their health status was worse. This limitation of the dataset is taken into consideration when interpreting the data.

[50] See questions g68, g88, g89 and g90 in the household questionnaire in Appendix 4.

[51] This chart is based on responses to question g68 in Appendix 4.

[52] In comparison with adults, purchase of insurance for schoolchildren and students was motivated less by 'greater security', and more by 'advertising and propaganda'. Interestingly, 'following other people' was also more important, a finding consistent with reports that there is pressure for all children within a class to enrol.
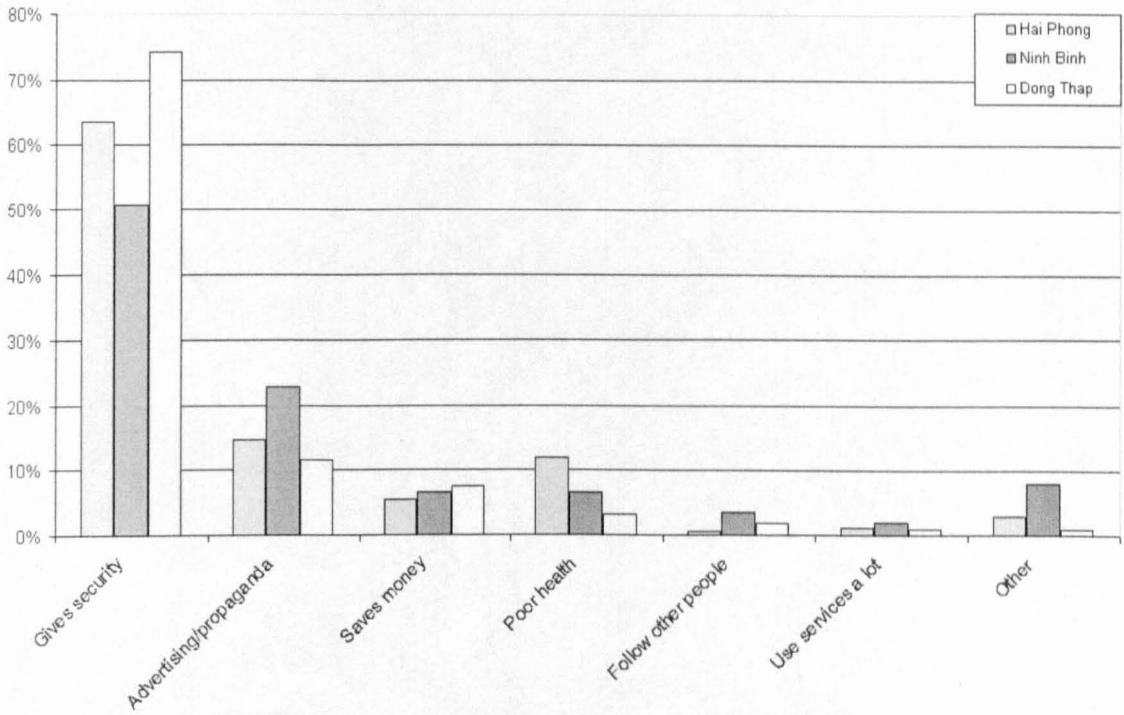
FIGURE 5.1: REASON FOR PURCHASING HEALTH INSURANCE
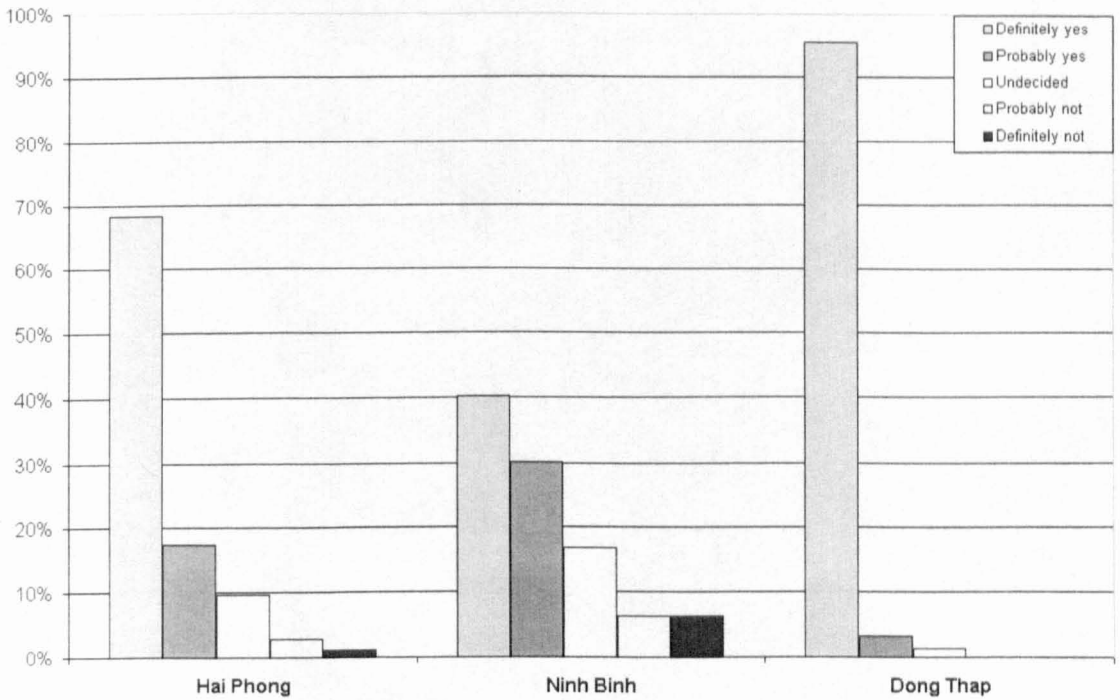
FIGURE 5.2: INTENTION TO PURCHASE IN FUTURE (BY PROVINCE)

Figure 5.2 shows provincial variations in the intention of adults to purchase voluntary health insurance in the future. Overall, respondents are positive about the scheme, particularly in Dong Thap Province, where 95% say they will definitely buy a policy in the future. Support is also very strong in Hai Phong Province, but weaker in Ninh Binh Province, where only 40% respondents say they will definitely buy an insurance card in the future. In Dong Thap Province, one-third of respondents are local government employees[53], who are more likely to be loyal to a government promoted scheme, which would at least partially explain the strength of the finding there[54]. Indeed, further analysis shows that, overall, government employees are almost twice as likely as other occupations to say they definitely intend to purchase insurance in the future.

Responses amongst insured and uninsured respondents are shown in Figure 5.3. A clear difference is evident, with 65% of those who have previously bought a policy saying they definitely intend to buy another. In contrast, only 22% of the uninsured give a similar response, with almost one-third saying they are undecided. Overall, almost half give a positive response. Motivations for future purchase are again dominated by 'greater certainty', with 70-80% respondents giving this reply in each province (see Figure 5.4). Again, this finding suggests that many individuals are risk-averse, and value greater certainty over future health expenditures. This effect is weaker in Ninh Binh Province, where 'poor health' and 'saving money' are stated as the next most important factors.

Amongst adults who said they would not buy health insurance in the future, a follow-up question was posed, asking the main reasons. The results, disaggregated by insurance status, are summarised in Figure 5.5. When combined, financial concerns such as 'waiting until I have a job', 'lack of money' and 'financial difficulties' are the primary reason given by 43% of non-members, followed by 20% who said the reason was that they were 'still healthy'. For members however, the results are quite different, with 'don't trust the scheme' the most stated response at 23%, followed by 'financial reasons' (16%) and 'bad staff attitudes' (15%). These responses were

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[53] As noted earlier, the inclusion of government workers in the voluntary scheme was an anomaly, which appears to be a local feature of the Dong Thap scheme, rather than national policy.
[54] The notion of loyalty has some similarity to that of duty, and is a possible influence on insurance purchase, discussed in Figure 3.2 and associated text.
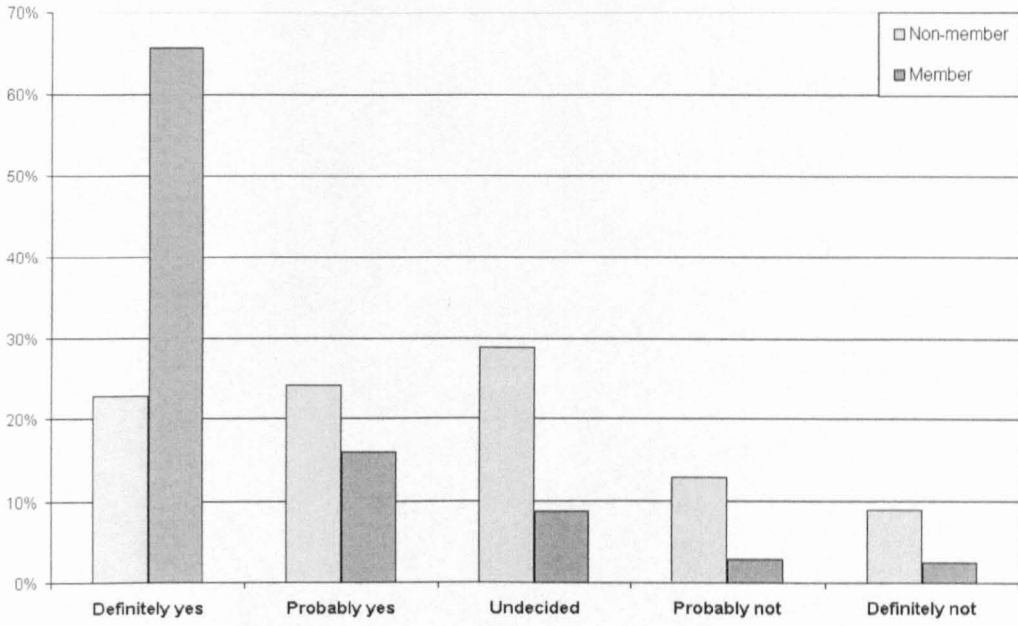
FIGURE 5.3: INTENTION TO PURCHASE IN FUTURE (BY INSURANCE STATUS)
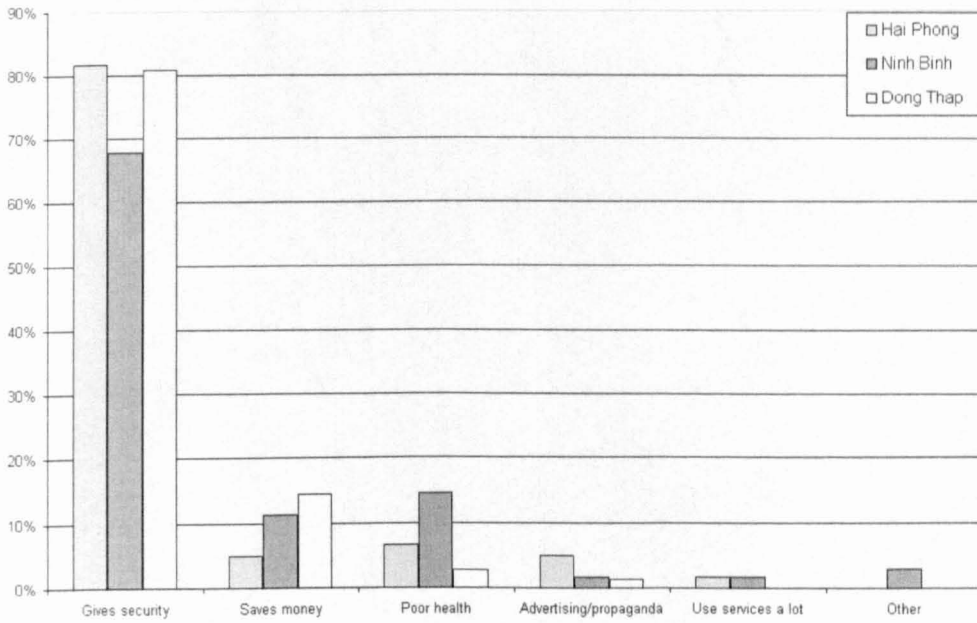
FIGURE 5.4: REASON FOR INTENDING TO PURCHASE (BY PROVINCE)
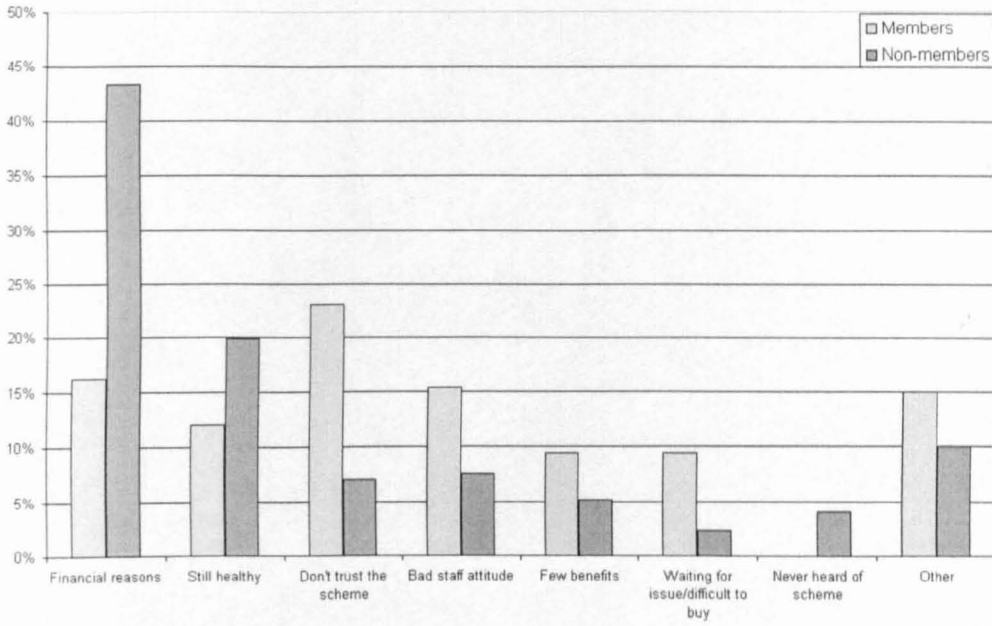
FIGURE 5.5: REASON FOR NOT INTENDING TO PURCHASE INSURANCE
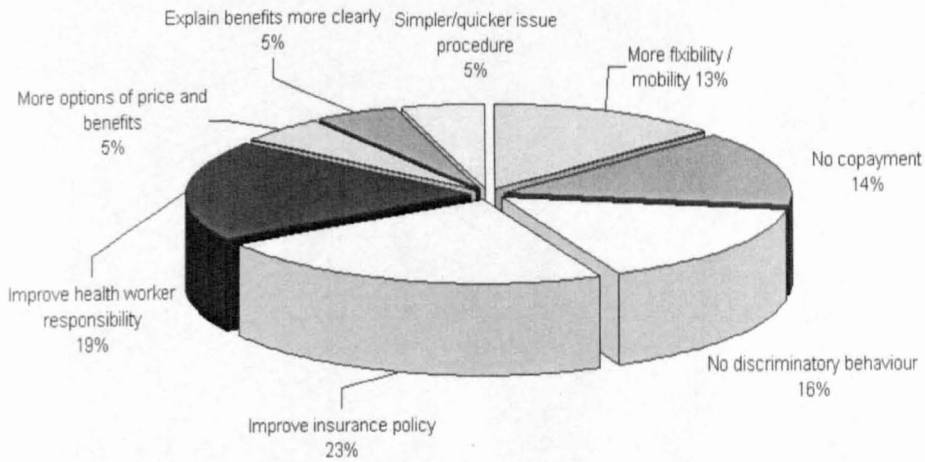
FIGURE 5.6: COMMENTS TO THE VIETNAM HEALTH INSURANCE AGENCY (ADULTS)

unexpected, and although only the opinion of a minority, present an important insight into the impact of the scheme, and the way in which certain members view it. Further discussion on this finding is presented later in this chapter, and also in the first section of Chapter 6, which examines patient satisfaction.

5.2 Econometric analysis

Several models are presented in this section. First, a model of health insurance purchase is estimated using pooled data from the three provinces. Separate models are then presented for each province. The first approach maximises sample size allowing more accurate statistical inferences to be made. Essentially, as the size of a random sample increases, the sample variance reduces, and coefficient estimates converge on the true parameter values. Separate models for each province provide results that are more sensitive to the local context, and allow qualitative data to be used more effectively.

5.2.1 The model

Given that respondents have either purchased voluntary health insurance, or not, the dependent variable takes a binary form. Limited dependent variables such as this are common in research and evaluation, and appropriate models have been developed to handle such data. One example is the probit model, which is similar to the logit model, both of which are probabilistic. The probit model is used by both Propper (1989)[55], and Besley et al. (1999), both of whom analyse data from England. Harmon and Nolan (2001) also apply a probit model to data from the Republic of Ireland[56]. This approach is followed in the analysis presented below.

Probit and logit models are based on a variant of the cumulative logistic function rather than a linear distribution. In the latter, which is the basis of the ordinary least squares (OLS) estimator, the distribution is unbounded, and hence inappropriate for a

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[55] Propper notes that either the probit, or the logit maximum likelihood estimator, can be used to address this question, and that the two are virtually indistinguishable (see Propper 1989: 782). However, Propper argues that the probit is preferable, given that the tail approaches extreme values more rapidly than the tobit model. This is a useful property, given that the error related to calculating expected utility with and without insurance once a year, is likely to be large.

[56] The results of these three studies were presented and discussed in Part 2.1.2 and Part 2.1.3.

limited dependent variable, which is bounded at 0 and 1[57]. Ordinary Least Squares (OLS) thus results in problems of heteroscedasticity and non-normality in the distribution of the error term. Both these effects lead to biased standard errors, increasing the chance that a coefficient is deemed statistically significant when in fact it is not (see Part 4.4.2.2 for a detailed discussion).

An alternative approach is to estimate the model using the maximum likelihood technique. Rather than choosing the coefficient with least variance, this approach uses iteration to identify coefficients that maximise the log of the probability, of observing the particular set of values of the dependent variable. For a linear equation, however, maximum likelihood (ML) and OLS estimates are identical. Biased coefficients may result for several additional reasons. For example, mass media campaigns may create greater awareness amongst better-educated individuals, whilst campaigns conducted at health facilities are more likely to reach individuals with poorer health status. This raises the issue of the validity of modelling the decision to purchase health insurance if an individual is not aware of it. Conceptually this is similar to the idea of consumption choice-sets elaborated by Propper (1993), also in the context of health insurance purchase, discussed earlier in Part 2.1.

There are two ways to deal with the problem of non-awareness of the scheme. First, and simplest, is to estimate models only for those respondents who have heard of the voluntary health insurance scheme. This is the approach followed in this chapter. Awareness was established through a direct question to respondents (see question g68 in the 'non-member' section of the questionnaire presented in Appendix 4). An alternative approach is to estimate a two-part model, in which an awareness equation is first estimated, followed by a model of insurance purchase conditional on awareness[58]. However, this approach is more complex, and less easily motivated. Finally, a weighted likelihood function is used to correct for the endogenous sampling

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[57] Further discussion is provided in various textbooks. Studenmund (1997: 509-513) provides a clear explanation.

[58] An earlier version of the analysis estimated demand using a two-part model. In this approach, awareness of the scheme is modelled first in order to establish whether insurance is part of the respondent's consumption choice-set. The demand equation is then estimated conditional on awareness. Awareness may reflect a desire to seek out health insurance, in which case the awareness model captures part of the purchase decision, and the two models are inter-dependent. If this is the case, the condition of independence between the models, required for the production of unbiased estimates, is violated. It was decided, however, to follow previous papers and to use the simpler probit model. One weakness of the selection model, for example, is that the instrument used is often of poor quality.

approach used, and the *robust* command (in STATA) was used to produce heteroscedasticity-corrected standard errors. This is required in order to deal with the effect of clustering inherent in the sampling design (see Part 4.4.2).

5.2.2 Characteristics of individuals

Details of the independent or explanatory variables used to specify the models, are discussed first, followed by a description of the estimator. Tables 5.1 to 5.4 summarise the data used for each of the provincial models, which are also disaggregated by the following sub-groups: those individuals who have not heard of insurance, those who have heard of insurance but have not purchased it, and those who have both heard of the insurance scheme and purchased a card. This allows an analysis of how awareness varies between individuals of different characteristics. Table 5.5 presents a correlation matrix of a selection of the variables.

Adverse selection is a major theme in the insurance literature, given its policy implications. A theoretical discussion of the issue, which is one of the consequences of information asymmetry within health insurance markets, was presented in Part 2.1.3. In the development of *Research Question 1* (*does voluntary health insurance in Vietnam suffer from adverse selection?*) it was argued that, given the design of the voluntary component of the health insurance scheme, and following the predictions of theoretical models, adverse selection is expected to be a problem. The principal reason for this is that flat premia are offered to all those who wish to purchase insurance irrespective of their health status. Furthermore, no barriers to joining the scheme exist. However, due to a lack of information regarding the policy measures that each province has taken, if any, to limit this problem, the extent of adverse selection may vary in the provincial models.

Respondent's health status is self-reported, in response to a direct question in the household survey, and relates to the twelve-month period preceding the interview. Based on these responses, two dummy variables are created representing good and fair health, and entered as explanatory variables within the probability model presented below. Note that estimated beta coefficients represent the marginal effect of health status on the probability of an individual purchasing health insurance, which is used to assess the presence of adverse selection. Respondents in poor health thus form the reference group. The estimated beta coefficients are used to make conclusions about

whether or not adverse selection is a problem and, if so, the magnitude of the effect. Health status is also considered exogenous to insurance purchase, given the structure of the data (see both Part 4.4.2.3 and the discussion related to sample definition at the beginning of this chapter). In Hai Phong Province, 87.5% of respondents who have not heard of the scheme are in good health, compared with 17.4% of those who have.

Whilst this is an expected trend, in Ninh Binh Province the ratio is roughly equal in each sub-group (see Table 5.3), whereas in Dong Thap 51.9% of those with insurance are in good health, compared with 31.4% of those who have not heard of it. Where those in good health are a minority within the scheme, adverse selection is expected to be a problem. Overall, Table 5.1 suggests that there is little difference in health status between insured and uninsured respondents across all adults in the sample. Of insured respondents, 36.2% report health status as good, compared with a slightly lower figure of 32.6% of uninsured respondents. Varying patterns are evident in Tables 5.2 to 5.3, however.

Whereas in Hai Phong Province, only 17.4% of those with insurance report good health status, the figure stands at 23.2% in Ninh Binh Province, and 51.9% in Dong Thap Province. Proportions of those reporting fair health status, and a long-standing limiting illness, are similar across the provinces. Good health is significantly, and positively correlated, with economic status, education, and low worry about future health, and significantly and negatively correlated with being a farmer, being older, and worrying a lot about future health.

Aversion to risk is central to health insurance theory, an issue discussed in Part 2.1. Although no detailed measure of risk aversion was used, respondents were asked how worried they felt about the future health status of themselves and their families, with responses coded against a five-point Likert scale (see questions b35 and b36). Responses to this question are used to address *Research Question 2* (*Do levels of worry about future health status influence the probability of health insurance purchase?*). Whilst answers are expected to capture attitudes to risk, however, they are also expected to strongly reflect current health status, and hence to some extent can be considered an indicator of adverse selection.

Figures 5.7 and 5.8 summarise the responses for each province. Interestingly, there is a substantial difference between north and south, with the latter appearing to *worry*

Explanatory variables	Insured respondents			Uninsured respondents		
	Mean	*Minimum*	*Maximum*	*Mean*	*Minimum*	*Maximum*
Good health status	0.362	0	1	0.326	0	1
Fair health status	0.457	0	1	0.467	0	1
Long standing limiting illness	0.079	0	1	0.099	0	1
Very worried about future health	0.658	0	1	0.572	0	1
Medium worry about future health	0.189	0	1	0.212	0	1
Economic status (thousand VND)	3,157	455	30,550	2,834	311	32,280
Farmer	0.275	0	1	0.540	0	1
Government employee	0.363	0	1	0.022	0	1
Hired worker	0.119	0	1	0.096	0	1
Service worker	0.143	0	1	0.163	0	1
Years of schooling	8.829	0	16	6.738	0	16
Age	40.147	17	88	41.362	17	85
Female	0.364	0	1	0.536	0	1
Has child/children	0.764	0	1	0.766	0	1
Number of children	1.399	0	6	1.652	0	6
Resident of a rural community	0.524	0	1	0.717	0	1
Perceived social cohesion (individual level)	0.345	1	0	0.275	1	0
Social cohesion (commune)	0.332	0.049	0.750	0.301	0.049	0.656
Membership in mass organisation (individual level)	0.635	0	1	0.384	0	1
Membership in mass organisation (average commune score)	1.194	0.343	4.276	0.897	0.343	4.276
Number of observations	748	-	-	809	-	-

TABLE 5.1: DEMAND FOR HEALTH INSURANCE - DESCRIPTION OF THE VARIABLES

Explanatory variables	Not heard of voluntary health insurance		Heard of voluntary health insurance but not purchased		Purchased voluntary health insurance	
	Mean	*Std dev.*	*Mean*	*Std dev.*	*Mean*	*Std dev.*
Good health status	0.875	0.354	0.388	0.489	0.174	0.380
Fair health status	0	0	0.504	0.502	0.488	0.501
Long standing limiting illness	0.125	0.354	0.049	0.218	0.139	0.348
Very worried about future health	0.625	0.518	0.562	0.498	0.767	0.424
Medium worry about future health	0.250	0.463	0.298	0.459	0.151	0.359
Economic status (thousand VND)	2,424	614	2,260	933	2,934	1,855
Farmer	0.5	0.535	0.702	0.459	0.535	0.500
Government employee	0	0	0.025	0.156	0.029	0.168
Hired worker	0	0	0.058	0.234	0.047	0.211
Service worker	0.250	0.462	0.099	0.464	0.285	0.453
Years of schooling	9.500	2.268	8.306	3.111	8.227	3.309
Age	31.625	8.141	41.215	13.702	44.889	13.682
Female	0.750	0.463	0.512	0.502	0.569	0.497
Has child/children	0.875	0.354	0.793	0.407	0.762	0.427
Number of children	1.375	0.916	1.661	1.187	1.407	1.086
Kien Anh District (District 1)	0.375	0.517	0.223	0.418	0.401	0.492
Thung Nguyen District (District 2)	0.500	0.534	0.397	0.491	0.267	0.444
An Lao District	0.125	0.354	0.380	0.487	0.331	0.472
Resident of a rural community	0.625	0.518	0.776	0.418	0.599	0.492
Perceived social cohesion (individual level)	0	0	0.298	0.459	0.291	0.455
Social cohesion (commune average)	0.259	0.061	0.300	0.068	0.282	0.073
Membership in mass organisation (individual level)	0.375	0.518	0.554	0.499	0.669	0.472
Membership in mass organisation (commune average)	1.017	0.221	1.098	0.182	1.025	0.199
Number of observations	8	-	121	-	172	-

TABLE 5.2: DESCRIPTION OF THE VARIABLES (HAI PHONG PROVINCE)

Explanatory variables	Not heard of voluntary health insurance		Heard of voluntary health insurance but not purchased		Purchased voluntary health insurance	
	Mean	Std dev.	Mean	Std dev.	Mean	Std dev.
Good health status	0.226	0.421	0.286	0.453	0.232	0.423
Fair health status	0.474	0.502	0.440	0.497	0.526	0.500
Long standing limiting illness	0.155	0.363	0.234	0.424	0.191	0.394
Very worried about future health	0.659	0.476	0.667	0.472	0.763	0.426
Medium worry about future health	0.186	0.391	0.139	0.347	0.149	0.356
Economic status (thousand VND)	2,509	1,537	3,128	2,476	3.054	2,115
Farmer	0.526	0.502	0.595	0.492	0.339	0.475
Government employee	0.021	0.142	0.024	0.153	0.084	0.278
Hired worker	0.041	0.199	0.032	0.176	0.019	0.137
Service worker	0.175	0.382	0.230	0.422	0.286	0.453
Years of schooling	6.804	3.519	8.440	2.998	9.256	0.313
Age	45.381	19.529	41.254	14.518	44.859	16.601
Female	0.691	0.465	0.567	0.496	0.629	0.484
Has child/children	0.629	0.486	0.833	0.373	0.767	0.423
Number of children	1.216	1.139	1.825	1.247	1.542	1.264
Kim Son District (District 1)	0.361	0.483	0.329	0.471	0.309	0.463
Hoa Lu District (District 2)	0.351	0.479	0.321	0.468	0.328	0.470
Ninh Binh Town	0.289	0.455	0.349	0.478	0.347	0.477
Resident of a rural community	0.711	0.455	0.651	0.478	0.443	0.498
Perceived social cohesion (individual level)	0.371	0.485	0.444	0.498	0.366	0.483
Social cohesion (commune average)	0.425	0.151	0.417	0.146	0.425	0.168
Membership in mass organisation (individual level)	0.485	0.502	0.611	0.488	0.664	0.473
Membership in mass organisation (commune average)	0.959	0.330	0.986	0.338	1.203	0.396
Number of observations	97	-	252	-	262	-

TABLE 5.3: DESCRIPTION OF THE VARIABLES (NINH BINH PROVINCE)

Explanatory variables	Not heard of voluntary insurance		Heard of voluntary insurance but not purchased		Bought voluntary health insurance	
	Mean	*Std dev.*	*Mean*	*Std dev.*	*Mean*	*Std dev.*
Good health status	0.314	0.465	0.343	0.478	0.519	0.500
Fair health status	0.485	0.501	0.433	0.499	0.411	0.493
Long standing limiting illness	0.053	0.225	0.045	0.208	0	0
Very worried about future health	0.519	0.501	0.522	0.503	0.554	0.498
Medium worry about future health	0.189	0.393	0.194	0.398	0.226	0.419
Economic status (thousand VND)	2,767	2,432	3,910	4,142	3,322	2,955
Farmer	0.439	0.497	0.522	0.503	0.105	0.307
Government employee	0.008	0.087	0.075	0.265	0.662	0.474
Hired worker	0.167	0.373	0.089	0.288	0.201	0.401
Service worker	0.144	0.352	0.194	0.398	0.006	0.079
Years of schooling	5.023	3.196	6.448	3.649	8.981	2.958
Age	41.333	16.004	39.940	14.012	35.583	10.535
Female	0.523	0.500	0.418	0.497	0.140	0.348
Has child/children	0.746	0.436	0.746	0.438	0.764	0.425
Number of children	1.640	1.361	1.701	1.446	1.334	1.066
Sa Dec Town (District 1)	0.330	0.471	0.239	0.430	0.430	0.496
Lai Vung District (District 2)	0.375	0.485	0.296	0.461	0.513	0.501
Hong Nu District	0.295	0.457	0.462	0.502	0.057	0.233
Resident of a rural community	0.697	0.460	0.836	0.373	0.516	0.501
Perceived social cohesion (individual level)	0.189	0.393	0.164	0.373	0.366	0.483
Social cohesion (commune average)	0.234	0.159	0.228	0.148	0.322	0.175
Membership in mass organisation (individual level)	0.174	0.380	0.328	0.473	0.605	0.489
Membership in mass organisation (commune average)	0.805	1.030	0.620	0.662	1.282	1.491
Number of observations	264	-	67	-	314	-

TABLE 5.4: DESCRIPTION OF THE VARIABLES (DONG THAP PROVINCE)

EXPLANATORY VARIABLES	Insured	Social cohesion	Member mass org.	Good health	Economic status	Farmer	Years of schooling	Age	Number children	High worry
Insured	1									
Social cohesion	0.011	1								
Member of mass org.	0.359	0.128***	1							
Good health	0.006	-0.059***	-0.065***	1						
Economic status	0.009	0.024	0.020	0.031	1					
Farmer	-0.0371	0.166***	0.094***	-0.009	-0.085***	1				
Years of schooling	0.041	0.066***	0.057**	0.222***	0.102***	-0.011	1			
Age	-0.018	0.078**	0.242***	-0.252***	-0.025	-0.020	-0.419***	1		
Number of children	-0.014	0.089***	0.009	-0.009	-0.128***	0.149***	0.012	-0.144***	1	
Very worried	0.012	0.129***	0.106***	-0.086***	0.063***	0.103***	0.021	0.056**	-0.019	1
Medium worry	-0.004	-0.056**	0.006	0.009	-0.028	-0.034	-0.128***	0.050**	-0.039	-0.601***

TABLE 5.5: CORRELATION MATRIX FOR SELECTED EXPLANATORY VARIABLES

* Statistically significant (10%)   ** Statistically significant (5%)   *** Statistically significant (1%)

considerably less about future health overall. Only 17% of respondents in the south say they are *very worried*, compared with 41% in Ninh Binh and 32% in Hai Phong. Overall, Table 5.1 shows that 65.8% of insured respondents say they are very worried, compared with 57.2% of the uninsured. Disaggregated data, presented in Tables 5.2 to 5.4, indicate that around three-quarters of insured respondents in the two northern provinces are very worried, compared with just over half in Dong Thap Province.

As noted in the previous paragraph, the correlation matrix presented in Table 5.5, shows that very worried individuals also tend to be in poor health. Hence, the variable does appear to reflect health status, although in overall epidemiological terms, health status is worse in Dong Thap than in the two northern provinces (see Table 1.3), raising questions for further research. Worry is also positively associated with social cohesion, being a farmer, and being older. In the econometric analysis two dummy variables are created, one representing *high worry* and one *medium worry*, with *low worry* forming the reference category. Interestingly, whereas utility of income theory predicts that risk-aversion falls with income, Table 5.5 shows that being very worried increases with income.

Research Question 3 is concerned with the effect of individual economic status on the probability of insurance purchase. On average, economic status is more than 11% higher for insured than uninsured individuals (see Table 5.1), with no significant association evident in the correlation matrix. Overall, mean values are highest in the southern province of Dong Thap at VND 3.15 million per annum (equivalent to US$ 233.70), followed by VND 2.99 million (equivalent to US$ 221.48) in Ninh Binh, and surprisingly the lowest in Ninh Binh, the most urbanised province, at VND 2.65 million (equivalent to US$ 196.29). The sub-group with the highest economic status is those individuals in Dong Thap who have heard of the insurance scheme but not purchased it. Given the poverty lines defined in Part 1.3.1, the sample used here cannot be considered as poor. No clear pattern emerges from the disaggregated data presented in Tables 5.2 to 5.4, which supports the ambiguous effect of income expected by theoretical models[59]. Per capita annual consumption expenditure in the respondent's household is entered as a continuous variable in the model.

[59] This issue was discussed in Part 3.1.3, in which wealthier individuals are expected to be less risk-averse, given their ability to self-insure, but may demand health insurance where it allows access to better quality services.
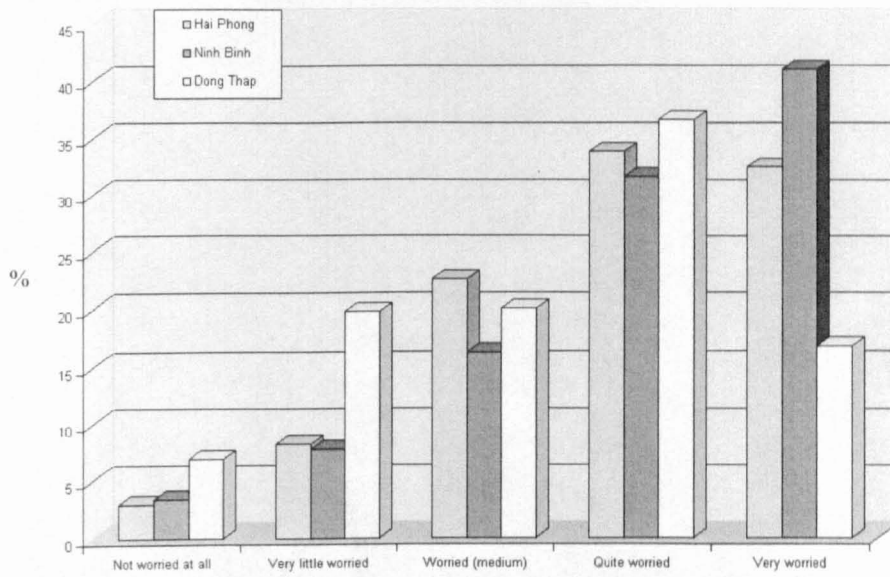
FIGURE 5.7: WORRY ABOUT FUTURE HEALTH
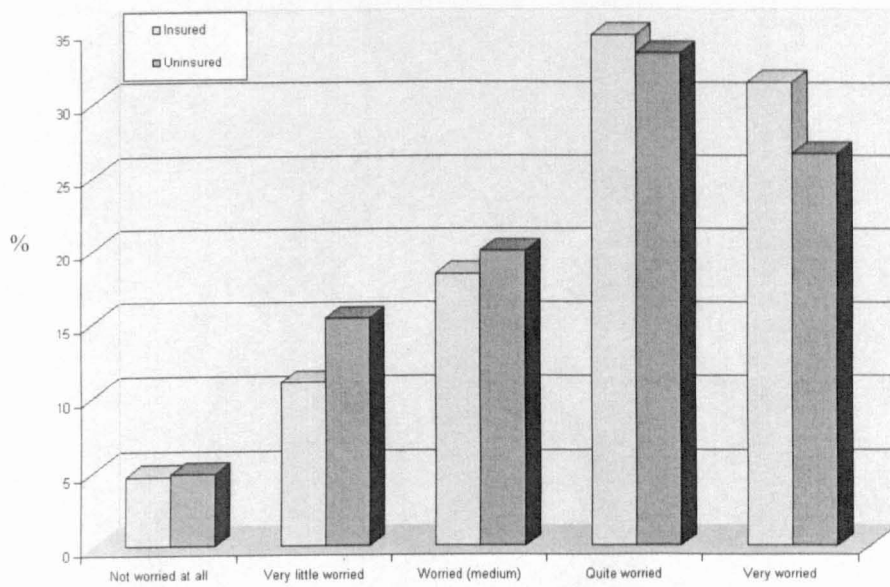
FIGURE 5.8: WORRY ABOUT FUTURE HEALTH (BY INSURANCE STATUS)

The effect of education, measured in terms of the number of years of schooling, is the subject of *Research Question 4*, and is expected to have a positive effect on purchase[60]. This is supported by the data presented in Table 5.1 with, on average, years of formal schooling higher amongst insured respondents than uninsured respondents. The positive relationship is supported by the data in Ninh Binh Province (Table 5.3) and Dong Thap Province (Table 5.4), but not in Hai Phong Province (see Table 5.2).

Given that the initial focus for the VHIA has been the development of compulsory social insurance for those in salaried employment, and insurance for schoolchildren and other students, it cannot be assumed that all adults are aware that voluntary health insurance is available for purchase. To analyse this issue in detail, better information on the promotional activities of the respective provincial VHIA offices is required than was available for this research. A high degree of non-awareness of voluntary health insurance may reflect low quality marketing strategies, or a low intensity of marketing activity. As expected, all insured respondents are aware of the scheme, compared with a level of 54.4% amongst the uninsured. Overall, awareness is highest in Hai Phong (97.3%), compared with 84.1% in Ninh Binh Province, and 59.1% in Dong Thap Province. This pattern is not unexpected, given that Hai Phong Province was the focus of pilot projects, and has received substantial technical assistance (see Part 1.3.2, and Part 4.2.1).

In Hai Phong Province, where public health insurance was first introduced, almost all non-members have heard of the voluntary scheme, which may reflect effective marketing activity, or that across time, marketing strategies complemented by informal communication e.g. word of mouth, are highly effective. In addition, Hai Phong is the most urbanised of the provinces, which may have some bearing on the results in that it is generally easier to raise awareness in urban populations. In Ninh Binh Province, also in northern Vietnam, a similar pattern emerges, although one-third of surveyed individuals is unaware of the scheme.

In the southern province of Dong Thap, the level of awareness amongst the uninsured is very low, which explains a considerable amount of non-purchase. Intra-provincial differences in levels of awareness are likely to results from different approaches to

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[60] A positive effect is expected given that demand for health insurance is derived from demand for health services and health, and evidence that education positively affects the latter.

marketing, and differing levels of intensity of activity across districts. As noted earlier, dummy variables for districts are used to capture and hence control for these supply-side effects, on which detailed data are not available.

Table 5.6 summarises how respondents first heard about the insurance scheme, disaggregated by members and non-members, and by province. Overall, commune leaders are the most important medium for information flow, followed by mass media (e.g. newspaper, radio, television), health facilities, and relatives and friends. Interestingly, the role of the commune leader is the most important source of information in Dong Thap, accounting for 46% of responses, compared with 29% in Hai Phong and 16% in Ninh Binh. Relative to other provinces, health facilities, and relatives and friends are more important in Ninh Binh.

A clear finding from in-depth interviews in Ninh Binh, is that considerable confusion exists about the specific details of health insurance, which may be a reflection of the initial period of establishing the scheme, during which time there are often many changes, in terms of premium levels and benefits for example. One male farmer said:

> "I get confused. For the previous health insurance card (HIC), people said that it can be used even in Hanoi Hospital. But the card we are now buying, people say that it is limited only for treatment at the provincial hospital? For the previous card and this one, the prices are the same, 60,000 Dongs. Someone explained to me that I have to go to the district hospital (Phat Diem), then they will refer me to the provincial hospital in Ninh Binh where my card is valid. Others say that I have to go to Phat Diem hospital, then get a referral to Ninh Binh, and then to Hanoi; in that way my card is valid for all places." *(Male, farmer, aged 58 years, insured, Kim Son District, Ninh Binh Province).*

Another interview with a farmer, also in Ninh Binh Province, also demonstrates the need for more and better information, as well as ensuring the physical supply of cards:

> "Some people say that having a health insurance card (HIC) has benefits for hospital bed-fees, and one does not worry about one's health when he gets sick. But others said that people having HIC are a little bit disregarded. Patients have to pay for everything except hospital bed. Besides, I thought that HIC price is fixed by the government but the

	Hai Phong Province		Ninh Binh Province		Dong Thap Province		%
	Uninsured	*Insured*	*Uninsured*	*Insured*	*Uninsured*	*Insured*	
Communal leader	34	55	36	53	6	172	28.8%
Mass media	38	43	79	53	23	79	25.5%
Health facility	6	23	18	119	1	7	14.1%
Relatives or friends	16	12	74	28	11	4	11.7%
School	15	4	44	7	20	1	7.4%
Health insurance worker	4	20	1	12	1	13	4.1%
Women's Union	5	8	2	2	0	0	1.4%
Other	8	12	6	7	2	44	6.4%
Don't know	0	0	4	2	1	1	0.6%
TOTAL=	126	177	264	283	65	321	

TABLE 5.6: FIRST SOURCE OF INFORMATION ABOUT HEALTH INSURANCE

prices of HIC are varied, this makes me confused. Before it was 30,000, now 60,000. Truly, farmers do not understand well about HIC.......So I did not buy HIC for two reasons: first I am confident given my age, and second I have heard so many different stories so I have doubts.....Many people want to have HIC but they do not know, it was informed about HIC only one or two times.....I had a niece who suffers from the kidney-stone and she wanted to buy a HIC, once she heard about a selling term, when she went there, it was out." *(Female, aged 31 years, farmer, uninsured, Ninh My Commune, Ninh Binh Province)*

Several other characteristics of individuals are discussed next. Employment type is measured in terms of an individual's main occupation, and represented by a series of dummy variables. Whilst, in principle, government employees should enrol in the compulsory scheme in some provinces they are enrolled under the voluntary scheme[61]. This is particularly the case in Dong Thap Province, where exactly one third of adult respondents are government employees. In contrast, the figure is 2.7% in Hai Phong Province, and 4.9% in Ninh Binh Province[62]. Age is entered as a continuous variable[63]. In Hai Phong, the average age of those with insurance is higher than the uninsured (see Table 5.2), whilst the opposite is true in Dong Thap - no clear pattern emerges in Ninh Binh. Overall, insured respondents tend to have fewer children than the uninsured, although this pattern is less strong in Hai Phong Province.

One limitation of the dataset is the lack of information on both the price and quality of health services, two factors likely to influence both demand for health services, and health insurance purchase. The effect of these variables is captured through the district dummy variables in provincial models. A range of other factors which are likely to influences the purchase decision, such as the intensity of marketing activity, the use of different media e.g. newspapers or radio, and environmental conditions, is also captured in this dummy variable[64]. Many respondents report problems purchasing an

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[61] To some extent, this reflects the relatively weak legal and policy framework covering the voluntary component of the scheme, relative to the compulsory scheme, an issue discussed in Part 1.3.2.

[62] High levels of government employees within the voluntary scheme in Dong Thap are likely to have an impact on the results (see Figure 3.2). This is discussed later in the chapter.

[63] During the analysis, age was also entered in different ways, for example as a squared term, and as a series of dummy variables representing different age groups.

[64] It is thus impossible to disentangle the independent effect of each.

insurance policy outside campaign periods, a further supply-side issue captured by this variable[65].

Finally, whilst data on distance to various health facilities were recollected by telephone from commune officials, there were still a considerable number of non-responses. However, looking at the available distance data, dispersion appears to be low[66]. Given the doubts over the reliability of this variable a dummy representing whether the respondent lives in a rural community is used as a proxy for distance.

5.2.3 Characteristics of communities

Two explanatory variables are used to represent the social structure of the commune within which respondents live, following the discussion in Part 2.3 and Part 3.2. Each is based on a direct question posed to respondents during the household survey.

5.2.3.1 Membership in mass organisations

Membership in voluntary associations is, for Putnam (1993a), a measure of civic engagement, which he sees as central to the creation of social capital. In Vietnam, however, the only voluntary organisations are mass organisations, which cannot be considered a proxy for civil society (see the argument presented in Part 1.5.3). Nevertheless, membership of state-organised mass organisations in Vietnam is voluntary, and hence data were collected for the reasons discussed earlier, and are used to address *Research Question 5*.

Almost half of the adult sample is not a member of any mass organisation. Table 5.7 presents mean scores by provinces, which are considerably higher amongst the insured. The lowest and highest scores are in Dong Thap for the insured and uninsured respectively. As with the social cohesion variable, membership of a mass organisation is entered as an explanatory variable in the econometric analysis, both at individual and commune levels. This variable is also treated as exogenous with health insurance purchase. At the individual level a dummy variable is created, in which a score of one is applied if the respondent is a member of at least one mass organisation, and zero otherwise. This captures the membership effect, given that a relatively small percentage of respondents are a member of more than one mass organisation. The

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[65] As noted in Chapter 4, this is another issue requiring further research.

[66] For example, 80% of respondents live within two kilometres of a commune health centre.

Mean score	Insured	Uninsured
Hai Phong	1.078	0.892
Ninh Binh	1.180	0.876
Dong Thap	1.406	0.344
Overall mean	1.257	0.584

TABLE 5.7: MEMBERSHIP IN MASS ORGANISATIONS

Social cohesion	Hai Phong	Ninh Binh	Dong Thap	Total
(Low)				
1	0.65%	0%	0.15%	0.19%
2	1.96%	2.44%	1.08%	1.79%
3	25.16%	14.29%	16.10%	17.16%
4	43.79%	43.34%	55.42%	48.41%
5	28.43%	39.94%	27.24%	32.46%
(High)				
Observations	306	616	646	1568
Mean	3.984	4.260	4.085	4.112

TABLE 5.8: SOCIAL COHESION IN LOCAL COMMUNITY

	Hai Phong	Ninh Binh	Dong Thap
Urban	3.832	4.111	3.893
Rural	4.030	4.335	3.972

TABLE 5.9: MEAN SOCIAL COHESION AT THE COMMUNE LEVEL (URBAN-RURAL)

Province/ Commune	Observations	Mean	Standard Deviation	Variance within commune lower than across total sample?
Hai Phong Province				
Phu Lien	78	3.999	0.585	Yes
Tran Thanh Ngo	79	3.667	0.946	No
Kien Bai	87	4.000	0.711	Yes
Thien Huong	82	3.969	0.711	Yes
Tan Vien	89	4.002	0.849	No
Tan Dan	87	4.289	0.855	No
Ninh Binh Province				
Van Hai	128	4.437	0.684	Yes
Dien Hoa	57	4.464	0.775	No
Quang Thien	96	4.323	0.739	No
Ninh Hai	78	4.229	0.747	No
Ninh Khang	102	4.346	0.689	Yes
Ninh My	167	4.415	0.659	Yes
Phuc Thanh	68	4.327	0.478	Yes
Tan Thanh	65	4.218	0.604	Yes
Thanh Binh	44	4.224	0.795	No
Phat Diem	51	4.294	0.944	No
Nho Quan	4	4.750	0.500	Yes
Van Giang	149	3.925	0.701	No
Dong Thap Province				
Ward I	118	3.543	0.614	Yes
Ward III	104	3.899	0.614	Yes
Tan Phu Dong	112	4.352	0.624	Yes
Lai Vung Town	102	4.438	0.791	No
Tan Duong	149	4.237	0.674	Yes
Tan Thanh	253	3.755	0.705	Yes
An Binh A	74	3.955	0.559	Yes
Long Khanh A	93	3.838	0.525	Yes
Thuong Phuoc I	69	3.922	0.626	Yes
Total sample	2,585	4.046	0.734	-

TABLE 5.10: WITHIN-COMMUNE VARIATIONS IN SOCIAL COHESION

mean score at the commune level is also entered in order to represent the density of membership in mass organisations in the respondent's local community.

5.2.3.2 Social cohesion

Research Question 6 represents a conceptual advance by considering whether demand for formal health insurance is influenced by the presence of existing networks of informal financial networks in a community. Theoretical predictions are ambiguous, extending from both propositions in the social capital literature, and the work of development economists. Social capital frameworks suggest that informal risk-sharing mechanisms, such as ROSCAs, are evidence of a high trust, socially cohesive community, which demonstrates a propensity to act collectively for mutual gain. Building on evidence from the development economics literature, however, this attribute of community structure may result in strong informal financial networks, which, in certain circumstances, crowd out demand for formal health insurance[67].

Based on question b34 in the household survey, which asks individuals how socially cohesive they consider their local community to be, data are analysed at both the individual and commune level and summarised in Table 5.8. Overall, 81% of respondents give a score of either 4 or 5, i.e. social cohesion is generally perceived to be high. Mean commune scores are highest in Ninh Binh Province, followed by Dong Thap Province and Hai Phong Province. The latter is the most urbanised of the three provinces, which may partly explain the results.

The suggestion in the literature that closure within social groupings is important for the generation of social cohesion is validated by the data, assuming that social cohesion is an indication of social closure[68]. A rural-urban differential is evident within each of the provinces (see Table 5.9). Table 5.5 suggests that individuals who perceive their community to be socially cohesive, are significantly more likely to be a

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[67] The extent to which individuals rely on informal risk sharing networks was estimated using responses to a question in the household survey, in which respondents were asked whether they had borrowed money in the previous twelve months (overall, 41% of respondents stated that they had borrowed either money or rice in the previous year), and if so from which source. Responses ranged from formal (e.g. the bank) to informal sources (e.g. family and friends), and ranked on an ordinal scale from 1 to 7. Those borrowing from relatives score high, whilst those borrowing from commercial banks score low. Mean values were calculated at the commune level to give an indication of the strength of informal financial networks. This measure is somewhat crude, however, due to the limitations of the data set. Whilst it does provide an indication of whether respondents turn to informal or formal networks when in need of funds, the variable is not used in the econometric analysis.

member of a mass organisation, a farmer, older and, as noted earlier, very worried about future health status. Interestingly, social cohesion is strongest amongst those individuals in Ninh Binh Province who have not heard of voluntary health insurance[69].

Table 5.10 presents mean social cohesion scores by commune. The variance, measured in terms of the standard deviation as a proportion of the mean, is lower than the overall variance in two-thirds of the communes. If social cohesion truly exists locally, then one would expect the variance to be lower within communes, relative to the total sample. Two dummy variables are generated to represent social cohesion, one at the individual level, and the other at the commune level. Given that responses are clustered at the high end of the scale (see Table 5.8), those respondents giving a score of five are coded as one, and those giving a score of less than five are coded as zero. Social cohesion at commune level is the mean value across responses from individuals living in the same commune. This score thus represents the structure of the local community within which the individual respondent lives.

Where joining an insurance scheme is a demonstration of solidarity with others in the same commune, social cohesion is likely to be endogenous to health insurance purchase. However, this is only likely to be the case where a scheme is truly community-based i.e. there is local control over such scheme, and risk-sharing takes place within relatively small groups, such as in the cooperative health care schemes described by Hsiao (1995). In Vietnam, however, the voluntary health insurance scheme was launched nationally by central government, and is organised at the provincial level - local involvement or control is non-existent. As such, it is assumed that purchasing insurance has little investment value in terms of increasing a sense of social cohesion in the commune – the variable is thus treated as exogenous to the purchase decision.

5.3   Results

The results of econometric analysis are presented in Tables 5.11 to 5.14. Qualitative data, collected through in-depth interviews, are used to strengthen the interpretation of

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[68] See Part 2.2.2.
[69] This is one of several issues that merits further research.

results[70]. Four models are presented, one using pooled data, the others using data for individual provinces. Within each model four specifications are presented. The basic model is referred to as *Probit v1*. In the second specification (*Probit v2*), two additional variables are included, one representing perceptions of social cohesion, and the second membership in a mass organisation, both at the individual level. *Probit v3* includes two further variables representing average social cohesion, and average group membership, at the commune level. Finally, *Probit v4* is a reduced version, which omits those variables showing little statistically significant effect in *Probit v3*. In certain models variables that perfectly predict the outcome are automatically dropped[71].

5.3.1   Individual level influences

Coefficients representing individual health status are used to test for the presence of adverse selection (*Research Question 1*). If good health status has a statistically significant and negative effect, on the probability of insurance purchase, this is an indication of adverse selection. Overall, there is strong evidence of adverse selection (see Table 5.11), with individuals reporting good health having a 41% lower probability of purchasing insurance, compared with those reporting poor health (which forms the reference category). This finding is robust across the four specifications, rising to almost 50% in *Probit v3*. In the provincial models, adverse selection is evident in Hai Phong and Dong Thap, but not in Ninh Binh. As noted in Part 3.1.1 if older people are more likely to purchase insurance this also indicates adverse selection. Whilst there is limited evidence of this in the econometric analysis, in-depth interviews revealed that elderly people are often more likely to buy insurance:

> "I want to buy voluntary health insurance all the time now I am old. Now
> they do not sell voluntary health insurance cards people are dissatisfied.
> Old people say that if there is no voluntary health insurance card they

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[70] Qualitative data collection focused on several issues, including the way in which informal and formal risk-sharing mechanisms interact, attitudes towards risk, and satisfaction with health insurance. Questions were also asked on other issues, such as levels of general understanding of the scheme e.g. specific benefits offered. The questions used to guide the discussions are presented in Topic Guide 1 in Appendix 5.

[71] In several cases, the variable representing long-standing limiting illness is dropped for this reason. In other models, district dummy variables are dropped, suggesting that policies have not been sold in certain communes.

will suffer disease and die because they have no money for the hospital."

(Female, aged 79 years, insured, Phat Diem Town, Ninh Binh Province)

Those who have fallen ill are more likely to appreciate the value of health insurance and become a real advocate for the principle of sharing risks:

> "If a person has a severe disease, it is so difficult for his family to cover the cost of treatment, for example, a few millions dongs. If many healthy people contribute to the fund, it will ease the costs. So health insurance is mutual support for each other, contributing to each other; to show mutual affection to each other. We understand this. But other people may not understand because they haven't experienced a serious sickness. We have a saying "unbroken leaves protect the ragged ones." *(Male, aged 52 years, farmer, insured, Van Hai Commune, Ninh Binh Province)*

With respect to the fixed (flat-rate) premium, which is a primary cause of adverse selection, one farmer has a suggestion for the scheme's administrators:

> "It would be better if there are several prices for health insurance cards (HIC). Because in rural areas income levels are not equal, there are rich and poor. Many families have economic difficulties. With different prices, it is suitable for farmers, different people can afford to buy HIC."
> *(Male, farmer, uninsured, Van Hai Commune, Ninh Binh Province),*

Lowering the premium for poorer individuals is unlikely to solve the problem of adverse selection, however. The coefficient for the 'long standing limiting illness' variable appears counterintuitive at first, with sufferers less likely to purchase insurance. As discussed in Part 1.3.1, however, patients with chronic diseases such as epilepsy, leprosy or tuberculosis, are eligible for free health services, which explains this finding.

Part 5.1.2 presented some initial responses from the household survey, which indicated that there is widespread value given to the 'security' or 'certainty' aspect of insurance, rather than it simply being considered a mechanism to save money, although the two issues are linked. Lack of information, and in some cases a lack of health insurance cards, were also highlighted as factors preventing some interested individuals from purchasing insurance. As expected, comments about being worried

Explanatory variables	Probit v1		Probit v2		Probit v3		Probit v4	
	Coefficient	*Robust S.E.*	*Coefficient*	*Robust S.E.*	*Coefficient*	*Robust S.E.*	*Coefficient*	*Robust S.E.*
Good health status	-0.405***	0.131	-0.399***	0.139	-0.493***	0.140	-0.493***	0.136
Fair health status	-0.201*	0.122	-0.203	0.131	-0.257**	0.126	-0.268**	0.121
Long standing limiting illness	-0.347**	0.163	-0.482***	0.177	-0.514***	0.171	-0.505***	0.164
Very worried about future health	0.376***	0.119	0.485***	0.136	0.419***	0.136	0.367***	0.110
Medium worry about future health	0.134	0.142	0.214	0.154	0.131	0.159	-	-
Economic status (thousand VND)	-0.000	-0.000	-0.000	0.000	-0.000	0.000	-	-
Farmer	0.132	0.128	0.079	0.131	0.118	0.139	-	-
Government employee	1.303***	0.207	1.254***	0.197	1.352***	0.196	1.354***	0.163
Hired worker	0.368**	0.182	0.223	0.185	0.162	0.223	-	-
Service worker	-0.031	0.119	-0.074	0.124	0.004	0.154	-	-
Years of schooling	0.015	0.014	0.029**	0.015	0.025*	0.154	-	-
Age	0.004	0.004	0.004	0.004	0.004	0.004	-	-
Female	-0.092	0.079	-0.138	0.084	-0.109	0.087	-0.152*	0.084
Has child/children	-0.012	0.133	0.060	0.140	0.099	0.140	-	-
Number of children	-0.022	0.042	-0.033	0.044	-0.026	0.043	-	-
Hai Phong Province	-0.377***	0.124	-0.423***	0.124	-0.383***	0.128	-0.288***	0.117
Ninh Binh Province	-0.561***	0.112	-0.619***	0.118	-0.702***	0.142	-0.615***	0.125
Resident of a rural community	-0.629***	0.117	-0.646***	0.114	-0.734***	0.126	-0.697***	0.102
Perceived social cohesion (individual level)	-	-	-0.059	0.058	-0.096	0.058	-0.094	0.059
Social cohesion (average for commune)	-	-	-	-	0.497	0.285	0.515**	0.263
Membership in mass organisation (individual level)	-	-	0.129***	0.022	0.107***	0.024	0.102***	0.024
Membership in mass organisation (commune average)	-	-	-	-	0.222**	0.095	0.227**	0.103
Observations =	1,187	-	1,187	-	1,187	-	1,187	-
Wald test (p-value of chi-squared) =	156.92***	-	209.80***	-	209.67***	-	193.25***	-
Pseudo R2 =	0.178	-	0.205	-	0.222	-	0.217	-

TABLE 5.11: PROBIT MODEL OF DEMAND FOR HEALTH INSURANCE[72]

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[72] * Statistically significant (10%)   ** Statistically significant (5%)   *** Statistically significant (1%)

Explanatory variables	Probit v1		Probit v2		Probit v3		Probit v4	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Good health status	-0.903***	0.248	-0.990***	0.255	-1.016***	0.262	-0.867***	0.214
Fair health status	-0.547***	0.206	-0.566***	0.204	-0.595***	0.215	-0.454***	0.179
Long standing limiting illness	-0.143	0.294	-0.221	0.313	-0.209	0.314	-	-
Very worried about future health	0.406*	0.224	0.475**	0.233	0.455**	0.241	0.607***	0.188
Medium worry about future health	-0.268	0.245	-0.286	0.254	-0.281	0.257	-	-
Economic status (thousand VND)	0.000***	0.000	0.000***	0.000	0.000***	0.000	0.000***	0.000
Farmer	0.110	0.239	0.194	0.248	0.184	0.253	0.105	0.203
Government employee	0.355	0.423	0.510	0.463	0.545	0.465	-	-
Hired worker	-0.052	0.307	0.063	0.319	0.081	0.322	-	-
Service worker	0.662***	0.257	0.662***	0.259	0.666***	0.262	0.614	0.231
Years of schooling	0.017	0.023	0.022	0.023	0.022	0.023	0.027	0.242
Age	0.007	0.006	0.009	0.006	0.009	0.006	0.010	0.006
Female	0.074	0.129	0.082	0.131	0.082	0.131	-	-
Has child/children	0.471	0.245	0.465*	0.247	0.437*	0.252	0.438	0.252
Number of children	-0.189**	0.093	-0.171*	0.092	-0.161*	0.094	-0.164*	0.091
Kien An District (District 21)	0.425**	0.213	0.459**	0.222	0.380	0.328	0.485***	0.322
Thuy Nguyen District (District 22)	0.081	0.152	0.095	0.153	0.154	0.209	0.132	0.195
Perceived social cohesion (individual level)	-	-	-0.137	0.085	-0.129	0.087	-0.086	0.082
Social cohesion (average for commune)	-	-	-	-	0.267	0.913	0.205	0.888
Membership in mass organisation (individual level)	-	-	-0.021	0.047	-0.020	0.047	-0.019	0.047
Membership in mass organisation (commune average)	-	-	-	-	-0.497	0.928	-0.421	0.879
Observations =	293	-	293	-	293	-	293	-
Wald test (p-value of chi-squared) =	57.46***	-	58.53***	-	58.54***	-	52.81***	-
Pseudo R2 =	0.133	-	0.138	-	0.138	-	0.071	-

TABLE 5.12: PROBIT MODEL - HAI PHONG PROVINCE

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Explanatory variables	Probit v1		Probit v2		Probit v3		Probit v4	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Good health status	-0.070	0.185	-0.050	0.189	0.067	0.232	0.084	0.133
Fair health status	-0.010	0.169	0.032	0.177	0.099	0.215	-	0.107
Long standing limiting illness	-0.176	0.179	-0.199	0.183	-0.169	0.224	-	
Very worried about future health	0.279**	0.122	0.382***	0.126	0.370***	0.146	0.359***	0.107
Medium worry about future health	0.034	0.137	0.016	0.147	-0.050	0.166	-	-
Economic status (thousand VND)	-0.000	0.000	-0.000	0.000	-0.000	0.000	-0.000	0.000
Farmer	-0.287***	0.118	-0.249**	0.126	-0.394***	0.143	-0.338***	0.109
Government employee	0.158	0.237	0.177	0.239	0.329	0.253	-	-
Hired worker	-0.354	0.263	-0.344	0.271	-0.222	0.274	-	-
Service worker	-0.254**	0.131	-0.264*	0.133	-0.215	0.151	-	-
Years of schooling	0.054***	0.018	0.057***	0.018	0.024	0.021	0.032*	0.019
Age	0.007**	0.004	0.008**	0.004	0.008*	0.004	0.009**	0.004
Female	0.101	0.078	0.063	0.087	0.054	0.092	-	-
Has child/children	-0.118	0.145	-0.074	0.145	-0.032	0.179	-	-
Number of children	0.006	0.043	0.013	0.043	0.040	0.057	-	-
Resident of a rural community	-0.255***	0.108	-0.253**	0.110	-0.487***	0.158	-0.439***	0.143
Perceived social cohesion (individual level)	-	-	-0.195***	0.085	-0.258***	0.071	-0.240***	0.067
Social cohesion (average for commune)	-	-	-	-	0.523	0.355	0.679	0.338
Membership in mass organisation (individual level)	-	-	0.065***	0.094	0.037	0.031	0.039	0.028
Membership in mass organisation (commune average)	-	-	-	-	0.795***	0.152	0.725***	0.142
Observations =	514	-	514	-	514	-	514	-
Wald test (p-value of chi-squared) =	49.47***	-	55.63***	-	83.73***	-	81.25***	-
Pseudo R2 =	0.056	-	0.071	-	0.116	-	0.105	-

TABLE 5.13: PROBIT MODEL - NINH BINH PROVINCE

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Explanatory variables	Probit v1		Probit v2		Probit v3		Probit v4	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Good health status	-0.339	0.265	-1.057***	0.357	-1.015***	0.385	-0.494**	0.238
Fair health status	-0.088	0.256	-0.598*	0.348	-0.386	0.306	-	-
Very worried about future health	0.284	0.270	0.713***	0.266	0.774***	0.261	0.395*	0.239
Medium worry about future health	0.550*	0.303	0.654*	0.376	0.494	0.344	-	-
Economic status (thousand VND)	0.000	0.000	0.000	0.000	0.000**	0.000	-0.000	0.000
Farmer	1.260**	0.600	0.669	0.688	1.204	0.847	1.595***	0.571
Government employee	2.997***	0.613	2.903***	0.713	3.457***	0.887	3.735***	0.583
Hired worker	0.952	0.668	1.019	0.761	1.398*	0.819	1.776***	0.521
Service worker	-0.905	0.629	-1.141*	0.681	-1.421**	0.739	-1.227**	0.583
Years of schooling	-0.037	0.042	0.087*	0.049	0.112***	0.046	0.080*	0.047
Age	0.002	0.011	0.005	0.017	-0.000	0.016	0.002	0.012
Female	-0.773***	0.277	-0.733**	0.333	-0.624**	0.302	-0.353	0.306
Has child/children	0.027	0.379	-0.600	0.451	-0.565	0.428	-	-
Number of children	-0.085	0.109	0.011	0.155	0.050	0.138	-	-
Resident of a rural community	-2.059***	0.316	-1.930***	0.331	-1.945***	0.339	-1.800***	0.344
Perceived social cohesion (individual level)	-	-	0.725***	0.177	0.750***	0.158	0.691***	0.144
Social cohesion (average for commune)	-	-	-	-	-1.408**	0.683	-1.486**	0.662
Membership in mass organisation (individual level)	-	-	0.212***	0.066	0.152***	0.063	0.101*	0.059
Membership in mass organisation (commune average)	-	-	-	-	0.223	0.144	0.343	0.139
Observations =	377	-	377	-	377	-	377	-
Wald test (p-value of chi-squared) =	181.66***	-	222.89***	-	224.78***	-	210.73***	-
Pseudo R2 =	0.446	-	0.544	-	0.546	-	0.552	-

TABLE 5.14: PROBIT MODEL - DONG THAP PROVINCE

about the future are bundled with comments about poor current health status.

In the econometric analysis, the coefficient representing high levels of worry about one's own and one's family's future health status, has a highly significant effect, robust across the four specifications of the model (see Table 5.11), with worried respondents being 31-40% more likely to purchase insurance. This variable is used to address *Research Question 2*. This effect is consistent across specifications in Hai Phong and Dong Thap, but less so in Ninh Binh Province. Indeed the variable is one of the most consistent predictors of insurance purchase across all the models presented, even more so than health status, suggesting that it does capture a strong element of risk aversion. The data presented earlier in this chapter support this view.

Economic status, the subject of *Research Question 3*, has no significant effect in Table 5.11. This is the case in all the provinces except for Hai Phong where richer individuals are more likely to purchase insurance. Part 3.1.3 discussed theoretical predictions that the probability of insurance uptake will reduce, as income rises, except where it is linked to better service quality. The results raise the question of whether the health insurance scheme in this province, which is considered the most advanced nationally, is perceived as leading to better quality health services? The following quote, from Ninh Binh Province, reveals that many see the scheme as a mechanism to help the poor:

> "HIC is for poor people. Rich people have money and they can go to any
> hospital they like. We are poor people - we trust in hospital treatment and
> we hope to get help from government to cover the cost of treatment."
> *(Male, farmer, insured, Phat Diem Town, Ninh Binh Province).*

Despite this, the following comment from one official, the Vice-Chairman of the Farmer's Union in a rural commune in the Mekong River Delta (Dong Thap Province), sees it as the duty of wealthier individuals to purchase insurance:

> "The rich people definitely should buy HIC in order to help the poor. If
> rich people do not want to buy HIC we encourage them to do so - we
> should propaganda them about the meaning and policy of health
> insurance, how they can help the poor people; for example, if I am still
> healthy, I do not get any sickness but I buy HIC so I can support for ill
> people. If sick people go for treatment, health insurance will take care of

them.....so even though I do not get sick I still buy HIC in order to support other people". *(Male, aged 57 years, Vice-Chairman of Farmer's Union, insured, Tan Duong Commune, Dong Thap Province).*

The following insight suggests that it is the richer families that have the means to share-risks more than poorer families (see the debate on this issue in the final paragraph of Part 2.3.1):

"It is for sure that large family with better earning members will help each other easier. If my relatives are as poor as I am, it's hard for them to help. Only people outside can help by lending money for interest. Here the interest rate is about 3%. I borrowed in an emergency. Neighbours can lend a few ten thousand dong, but more than that, say a few hundred thousands, one has to pay interest rates. In the case of sickness, neighbours visit quite a lot, mainly for sympathy, for materially mainly the family has to bear. For serious sickness, members of the Farmer's Associations, the Elderly Group, Women's Union, come and bring gifts like sugar." *(Male, aged 49 years, farmer, insured, Tan Dan Commune, Hai Phong Province).*

There is some evidence that education has a positive effect on the probability of insurance purchase *(Research Question 4)*. *Probit v2* and *Probit v3* suggest that each additional year of formal schooling increases the probability of insurance purchase by 2.5% to 2.9%. Evidence of this relationship, partially derived from the importance of education for demand for health services, is also evident in Ninh Binh and Dong Thap, but not in Hai Phong Province.

In terms of the respondent's main occupation, as expected, being a government employee has a strong positive effect overall, an effect almost entirely driven by the results in Dong Thap Province. Farmers, who constitute perhaps the major target group for voluntary insurance, are no more or less likely to purchase insurance than those in the reference group (i.e. not working). Despite this overall effect, in Ninh Binh Province, farmers are significantly less likely to purchase insurance, whilst the opposite is true in Dong Thap, which may simply reflect differing approaches to the development of the voluntary scheme by the respective provincial administration. Ninh Binh has had a particularly strong focus on developing the scheme amongst schoolchildren, for example. These results show the value of disaggregating data to

the province level. One consistent effect across provinces is that rural residents are far less likely to purchase insurance than urban residents. The magnitude of this effect on the probability of purchase ranges from 25-205%.

Perhaps the main other result of note is the significance of province dummies in the pooled model, and district dummies in the provincial models (in particular Ninh Binh and Dong Thap). Given the large number of factors captured by this variable, including a variety of supply-side issues, this is not surprising. In Hai Phong Province, residents of Kien Anh, a smaller district close to the capital city, are more likely to have purchased insurance than both residents of Thuy Hguyen, a large rural district, and An Lao District, a smaller rural district further away from the provincial capital.

In Ninh Binh Province, residents of the main town are less likely to have purchased insurance than Kim Son, a rural district. Finally, in Dong Thap Province, individuals living in Sa Dec Town and Lai Vung District, are more likely to purchase insurance than are those living in Hong Nu District, which lies at the far north-western corner of the province[73]. The latter finding may simply reflect low availability and marketing of insurance in rural areas. A weakness of this research is the lack of good information on the location and intensity of promotional campaigns. Such information is likely to explain the strong effect of these area dummies allowing, in turn, an improved specification of the model.

5.3.2 Commune level influences

Research Questions 5 and *6* are examined in this section. The effect of membership in a mass organisation is tested at both the individual and commune level (the latter representing a form of network density). Both measures have a positive and significant effect on insurance purchase across the various models with the exception of Hai Phong Province. As noted earlier, this variable is not considered a proxy for civil society. It may reflect, however, a sense of duty to the State or national solidarity. If this is the case, then the results offer some support for the *collective action* hypothesis. Motivation for joining a mass organisation is an issue that is not currently well understood, and is a topic for future research. Mass organisations clearly play an

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[73] In both Ninh Binh and Dong Thap Provinces, district dummies are not reported as they perfectly predict insurance purchase.

important role in a range of areas, including social support, education and cultural activities at the commune level, as pointed out by one official:

"For cultural activities, we have the Front of Motherland which is integrated with the Women's Union, Youth Union, Farmer's Association, Veteran Association.....to conduct cultural activities to build up educated families. Propaganda for friendly communities, happy couples, educated families, contributions for the community, public obligation etc. is organised by these associations." *(Male, aged 57 years, Vice-Chairman of Farmer's Union, insured, Tan Duong Commune, Dong Thap Province).*

The following quotation, from a farmer in Ninh Binh Province, demonstrates the support function played by mass organisations, which may have an influence on the effectiveness of measures to promote voluntary health insurance:

"Mass organisations, such as the Farmer's, Women's, Veteran's group work well. Each unit has its own contributions - the amount depends on each unit. The fund is used mainly for meetings, activities and visiting sick members, the amount is small, just fruit, sugar, milk. The other part of the fund is used for loans. For the promotion of HICs, it's best to integrate the activities of different mass organisations, because member of Farmer's association is the husband, and Women's Union is wife - it needs to combine." *(Male, aged 52 years, farmer, insured, Van Hai Commune, Ninh Binh Province).*

The idea that purchasing a voluntary health insurance card is an expression of social solidarity is voiced by several farmers:

"We buy the Health Insurance Card (HIC) to ensure treatment, but if we are lucky not to be sick, that money would go for the treatment of poor people. That's the mutual support in society. Health insurance needs to be maintained but it also needs that people should be honest, and have good will." *(Male, farmer, insured, Phat Diem Town, Ninh Binh Province)*

"My family has five HICs but only I have used my card. I do not feel loss, however, because we go for examination and treatment only if we

have disease. Besides, I consider it as involvement in the social movement. We buy HIC not for getting sick, but for taking precaution only - if not sick, it is a contribution for others." *(Male, aged 39 years, farmer, insured, Tan Dan Commune, Hai Phong Province)*

"Government covers a millions dongs for some patients, and only a few thousand dongs for others - I think they take from the majority to serve a minority. Many healthy people serve a sick person but it doesn't matter. But if a person is sick long term in years, the government suffers losses, and other people buy HIC for 5-7 years but do not go to hospital –if you think carefully it's not so fair. But it is humanitarian job that the government does, what the government does is right." *(Male, aged 70 years, farmer, uninsured, Ninh My Commune, Ninh Binh Province).*

The following quote from Dong Thap Province shows how a sense of solidarity has a role to play in mitigating adverse selection:

"A person should not buy voluntary health insurance only when he is sick because that benefits only himself and not others. It is not fair to other people who buy voluntary health insurance when they are healthy." *(Female, Office secretary, member, Lai Vung Town, Dong Thap Province).*

Overall, whilst the theoretical basis for including this variable is somewhat underdeveloped, being a member of a mass organisation is one of the more powerful explanatory variables in the demand function. One possible mechanism through which membership may influence the probability of insurance purchase is duty to the State and the schemes it promotes. Duty is a central concept in Confucian philosophy (discussed in Part 1.5.2 and Part 3.2), but a greater understanding of how widespread this feeling is, and how it might impact on insurance purchase, is required. A sense of societal solidarity may also be important here, as may some more obvious factors, such as cheaper premia due to membership through such groups.

Research Question 6 is tested by estimating the effect of both individual perceptions of social cohesion, and average social cohesion at the commune level, on the probability of insurance purchase. In the pooled model the only significant effect is at the commune level in *Probit v4*, suggesting that for every additional unit increase in

social cohesion, individuals are 50% more likely to purchase insurance. This finding offers support to the collective action hypothesis. However, the effect is inconsistent across provinces. In Hai Phong the variable has no effect, whilst in Ninh Binh there is a strong negative effect, in particular at the individual level, which supports the substitute hypothesis. In Dong Thap Province, there is a strong positive effect at the individual level, but a strong negative effect at the commune level.

Central to the argument in Part 3.2.2, that social cohesion may substitute for formal insurance, is that socially cohesive communities are more likely to develop strong networks of informal risk-sharing. In-depth interviews were used to probe respondents about their attitudes towards private risk-sharing networks. The following quotation, from Ninh Binh Province, stresses the importance of neighbours for financial support, whilst noting its limitations:

> "It is possible to ask help from neighbours or relatives but I think having voluntary health insurance is better. You can ask for help only up to a certain level. Having voluntary health insurance to reduce the cost of treatment plus relative's help in addition is necessary for us. Having voluntary health insurance is like having a good neighbour." *(Male, age 31 years, farmer/small business, uninsured, Van Hai Commune, Ninh Binh Province).*

The idea that individuals and households draw on a portfolio of strategies to deal with the risk of consumption shocks, of which health insurance is only one, is supported by this quote. In the next quotation, from Ninh Binh Province, the importance of financial support through close family networks is highlighted, particularly given that other sources of funds are usually restricted for directly productive activities, such as agriculture:

> "Borrowing money is little bit hard here. You can borrow paddy or rice, it's OK. There is no cash lending here. Because people here do not have cash people raise pigs and sell - there is no other source for cash. People doing small business borrow money from the bank. The Women's Union provides funds for poor families. I borrowed two million dongs for eighteen months with an interest rate of 0.8%. I borrowed to raise pigs. For health treatment we rely on close relatives and family - we can borrow within close relatives. We can also borrow from neighbours but

mainly from our close relatives." *(Female, aged 33 years, farmer, uninsured, Tan Dan Commune, Hai Phong Province)*.

In-depth interviews highlight the considerable range of options open to individuals, in terms of borrowing funds. Many of these are government institutions (e.g. Bank for the Poor, Agriculture Bank, People's Credit Fund), as well as mass organisations such as the Women's Union. However, funds accessed from these sources are often restricted to productive activities, in particular farming, which backs up the observations of Wolz (1997) and Izumida and Duong (2002) discussed in the opening chapter, that informal networks still have an important role to play. For example:

"In urgent need people can "hot borrow" from neighbours. Then they can sell paddy or get help from brothers, or sisters, to return the debts. Such lending is non-profit, for help. There is the Bank for the Poor, interest rate of 0.6% and the People's Credit Fund - 1.5%. Bank for the Poor is only for poor families, so they can pay the interest rate and the loan. Credit Fund is for people who want to invest more for production. The Agriculture Bank gives loan with low interest rate (0.7%) to members of the Farmer's Association, and only to members who can pay the loan, for the term of two years. One can borrow money for health treatment but not much. People mainly rely on help from their relatives in the family and family lineage." *(Female, age 31, farmer, uninsured, Ninh Binh Province)*.

"My family was in the list of poor ones. Actually, I can borrow from the Fund for the Poor, but this year the policy is to lend to poor women. But my wife cannot borrow because she hasn't pay the Women's Union fees. In the last two years I was lent 1 million but the term is for 1 year with interest rate of 1.2% - how could we pay back only in one year?" *(Male, aged 58 years, bicycle repair-man, uninsured, Phat Diem Town, Ninh Binh Province)*.

These comments suggest that people regularly fall back on private networks to fund access to health services. Where there is confusion about the scheme, many individuals may consider private networks more reliable. In addition, the extent to which official corruption is perceived as a problem locally, could influence individual preferences with respect to which risk-mitigating strategy to adopt:

"I do not trust. They serve members worse than they serve people coming for extra service. People who come for *extra service* are given the best treatment because they have money. For farmers, we do not have money to go for extra services." *(Female, aged 36 years, farmer, insured, Ninh My Commune, Ninh Binh Province).*

Government health insurance might displace informal risk-sharing networks, or co-exist alongside them, for a range of reasons. In addition to risk aversion, income levels, health status, and a range of other individual characteristics, the effectiveness of government marketing techniques will also be important, as will levels of trust in government. Further insights into the way in which informal and formal risk-sharing networks may interact, from in-depth interviews, are presented from Dong Thap Province below:

"I can borrow from people but for short time only. In the case of urgent need I can borrow from the "hot loan" lender with high interest rate, for instance, if I borrow 100,000 VND, I have to pay in total 120,000 VND in 12 days, daily pay of 10,000 VND. Poor people are very hard if they have to borrow money. I have to work hard, if I could not earn enough in a day, my husband should work hard to earn money to pay back debts. I have to work hard to earn money for my children to pay school fee." *(Female, aged 34 years, hired worker, uninsured, Lai Vung Town, Dong Thap Province).*

"No one here borrows money with paying interest for health treatment. How would it be if the case is so serious and the patient spends all money and cannot pay back even interest. People only lend money for investment. Private lender takes high interest rate of 6.7% up to 10%." *(Female, aged 35 years, Three colours uniform collaborator[74], uninsured, Lai Vung Town, Dong Thap Province).*

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[74] Three colour uniform collaborators help to organise family planning, primary health care, and child nutrition programs at the commune level.

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5.4   Concluding remarks

New empirical evidence is presented in this chapter regarding demand for voluntary health insurance in Vietnam. *Research Questions 1* to *4* are concerned with the effect of various individual characteristics based on issues central to the theory of health insurance. The main findings are summarised below.

Voluntary health insurance suffers from adverse selection (*Research Question 1*), with individuals in poor health around 40% more likely, on average, to purchase voluntary health insurance. This finding supports the predictions of theoretical models and is consistent with findings from other countries reviewed in Chapter 2. The data support and demonstrate the trade-off between a fixed premium under voluntary membership and adverse selection. The magnitude of this effect varies across provinces, however, with little evidence of the problem in Ninh Binh Province. More detailed information on supply-side arrangements in each province is required to understand these varying patterns. Adverse selection constitutes a threat to the longer-term financial sustainability of the scheme, unless greater public subsidy is made available, an issue discussed further in the concluding chapter.

Research Question 2 examines the importance of risk aversion, a concept central to theoretical frameworks of health insurance. Worry about future health status has a significant and positive effect on the probability of insurance purchase. Whilst closely linked to health status, this constitutes an independent effect, which is remarkably robust across the models. Further research into attitudes towards risk, in the specific context of the health sector, would be useful given the current proliferation of health insurance schemes in low-income countries.

With respect to *Research Question 3*, individual economic status has little significant effect on the probability of insurance purchase, overall. This offers some support to predictions that wealthier individuals are more likely to self-insure although further investigation is necessary on this point. From the perspective of income-related inequalities in access to health services, this is a positive finding, given evidence from certain countries that if income has a positive effect of uptake, income-inequalities in access to health services would widen as a result. The positive effect of income in Hai Phong Province suggests that a quality effect may be at play, and is another supply-side factor that requires further investigation. Statistically significant district dummy variables also support this assertion.

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An original aspect of this research is the inclusion of two variables representing community structure. The first, membership in a mass organisation (*Research Question 5*), has a remarkably robust, positive effect, on insurance purchase. Whilst the theoretical basis for the variables inclusion requires further development and refinement, the findings shed new light on an under-researched, but significant aspect of Vietnamese society and culture. Earlier chapters discussed the possibility that membership in a mass organisation may reflect a sense of duty to the State, or even a feeling of solidarity with others in society. Again, further research is required both into reasons for joining a mass organisation, and the way in which they function as institutions.

The second variable representing community structure, and perceptions of community structure, is used to examine *Research Question 6*. Whereas some commentators suggest that cohesive communities (often equated with high social capital), are more likely to join a health insurance scheme voluntarily, Part 3.2.2 argues that the effect could also be negative, with informal networks crowding out formal insurance. Overall, in the pooled model, there is some support for the collective action hypothesis. In the provincial models, the results are highly significant, but not robust. For example, in Ninh Binh Province there is a strong negative and statistically significant effect, supporting the substitute hypothesis, whilst in Dong Thap the coefficient moves in opposite directions at individual and commune levels.

One interpretation of these findings is that social cohesion is important, but that it's causal effects are complex, depending on broad range of local factors, which in turn are shaped by history and culture. For example, understanding the way in which social cohesion and informal financial networks interact would be particularly useful in this context. Cohesive communities may also be more likely to support initiatives that express national solidarity, but not necessarily so. Solidarity with society in a broad sense is often considered a pre-requisite for the development of national risk-sharing schemes, but is not necessarily important for local community-based schemes.

The model specified in this chapter, together with the results, demonstrates the value of integrating frameworks and ideas from other disciplines (in this case sociology and development economics), in particular when the institutional environment in low-income countries is very different to those in which theoretical models have been developed.

As mentioned earlier, however, there is a lack of detailed information on the way in which institutional arrangements differ across survey locations. For example, both the quality of the health services that are insured, and the marketing strategies used to promote health insurance, are likely to influence levels of uptake. This imperfect understanding limits the interpretation of the findings and hence the extent to which they are generalisable.

Chapter 6: Patient satisfaction and private expenditures

Whereas Chapter 5 focused on the issue of demand for health insurance, this chapter and the next empirically test *Research Questions 7-10*, which address the impact of the scheme on various aspects of the health system. Figure 1.1 represents important elements of the broader health system relevant to this thesis. *Research Question 7* asks whether using insurance when contacting a health provider affects satisfaction with the service. Evaluation is based on patient perceptions of service quality, or patient satisfaction, which arguably has a more important influence on the decision to purchase health insurance than actual clinical quality. Given that responses reflect individual opinions, the following analysis is based on responses to both structured and in-depth interviews.

The growing dependence of health facilities on locally generated income, since the process of economic transition began in Vietnam in 1986, was discussed in Chapter 1. Whether this factor has increased or decreased satisfaction levels is difficult to predict. This is the subject of *Research Question 7 (What is the impact of voluntary health insurance on patient satisfaction?)*. On the other hand, the incentives inherent in a fee-for-service physician reimbursement mechanism are expected to increase the supply of health services, which may lead to an increase in patient satisfaction.

The second question addressed in this chapter is whether, overall, insured patients spend less on health services, *ceteris paribus*, than uninsured patients (*Research Question 8*). Improving financial access to health services is a major objective of the scheme, as with most non-profit insurance schemes, but little evidence on this issue from elsewhere currently exists, except in the USA where there is evidence that out-of-pocket expenditures increase as the rate of cost-sharing falls (see Part 2.1.2). The effect of a dummy variable representing insurance status on total out-of-pocket health expenditures during the most recent contact with health services is used to test this question. As noted in Part 3.4.2, insured patients are expected, *ceteris paribus*, to have lower out-of-pocket expenditures than the uninsured. However, to the extent that demand for health services increases in response to reductions in price, consumption may increase, increasing expenditures and tempering the effect of insurance.

6.1   Patient satisfaction with health services

6.1.1   Descriptive analysis

Part 5.1.2 presented some evidence of the different ways in which insured and uninsured respondents view voluntary health insurance, and gave an initial insight into perceptions of service quality. Opinions of health insurance are inextricably linked with an individual's experience of using health services. For this reason, questions regarding satisfaction with several specific aspects of health services were posed to respondents as part of the household questionnaire. Preliminary analysis of these data is presented in Table 6.1. The remaining analysis is primarily qualitative in nature and based on responses made during in-depth interviews.

Information collected as part of the household survey is discussed first. When insured adults were asked if they wanted to make any comments to the Vietnam Health Insurance Agency about the scheme 65% declined to do so. The results from those who did respond were presented earlier in Figure 5.6. Whilst satisfied overall, probing on this issue revealed dissatisfaction over certain issues. Of those who replied, one quarter make the general point that there should be improvements in the insurance policy, which together with comments about the need for a better quality of service, dominated the responses. Specific issues mentioned include *a lack of trust, bad staff attitude, discriminatory behaviour by medical staff,* and the *urgent need for health workers to be made more responsible.* Many insured patients clearly feel that they receive poor treatment relative to uninsured patients. Overall, 16% of insured adults compared with 7% of uninsured adults cited the *bad attitude of the staff* as the main reason for not intending to purchase insurance in the future.

Almost a quarter of insured adults not intending to renew their card say this is because they do not trust the scheme. In terms of provincial variations, the highest level of likely non-renewals is in Ninh Binh Province, where 29% of current and previous members say they won't buy another policy (21% due to a lack of trust, and 19% due to bad staff attitudes). Next, 13% of members in Hai Phong Province say they will not buy another insurance card (of which 30% say they *don't trust the scheme* and 9% blame bad staff attitudes). Finally, in Dong Thap Province in southern Vietnam, the picture is quite different, with only 1.2% of respondents saying they wouldn't renew their policy.

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Drawing on questions posed in the household questionnaire, concerning various dimensions of patient satisfaction (see Section F in Appendix 4), Table 6.1 compares weighted mean scores for insured and uninsured respondents. Respondents were first asked to state whether they were satisfied with service quality, at different types of health facility, using a simple five-point Likert scale. On average, uninsured patients are more satisfied with service quality at each level of health facility. Additional analysis of this data could be conducted, for example using econometric techniques, in which the dependent variable is one dimension of patient satisfaction. The ordered probit model would be a relevant estimator in this case.

6.1.2   Results of in-depth interviews

Insured respondents were asked whether they received a better service when using health insurance. In a separate question, both uninsured and insured respondents were asked whether they thought health workers treated them differently, compared with the other group. In Hai Phong Province, the reduced cost of accessing care with insurance was the primary difference reported, although this has a knock-on effect to the quality of care received, as discussed earlier in this chapter. One insured farmer said that:

> "Examination is the same for members and non-members. The different thing is that non-members of voluntary health insurance have to pay for services which brings benefit to the hospital - voluntary health insurance is the government's work. So the quality of service for voluntary health insurance member is limited because the staff cannot collect money. Direct and immediate money is different to the money given to government. Despite having no voluntary insurance if you have money you can get quicker treatment than people with health insurance....we have voluntary health insurance - they will examine us but it takes a long time." *(Male, farmer, aged 55 years, insured, Tan Dan Commune, Hai Phong Province)*

Another male insured respondent, in Tan Dan Commune, stresses the importance of unofficial payments, saying that:

> "...for member and non-members....I think service quality is the same, the difference is only reimbursement. When you have health insurance

Dimension of patient satisfaction[75]	Mean scores	
	Insured	Uninsured
Satisfaction with commune health centre	1.983 (n=194)	2.397 (n=523)
Satisfaction with district hospital	2.177 (n=213)	2.536 (n=525)
Satisfaction with provincial hospital	1.772 (n=105)	2.405 (n=579)
Satisfied with waiting time	2.398 (n=360)	2.521 (n=1,034)
Satisfied with advice of health worker	2.557 (n=322)	2.459 (n=1,004)
Satisfied with official payments	2.599 (n=212)	2.601 (n=823)

TABLE 6.1: DIMENSIONS OF PATIENT SATISFACTION

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[75] Based on a five-point scale in which five indicates a high level of satisfaction.

the workers dislike because they cannot "gain profit". They "gain" more from people with no health insurance. So when I go to hospital I say to them that I do not have health insurance card until I have to pay - then I show my card. People say that it is not good to present health insurance card in advance." *(Male, insured, Tan Dan Commune, Hai Phong Province)*

One theme that comes out strongly from these responses is that many health workers give preferential treatment to uninsured patients, possibly in terms of waiting times, but also the way in which patients are treated. The quotations also show the importance of user charges as a source of revenue for hospitals, suggesting that the amount of money patients bring to the facility influences the way they are treated.

Interestingly, the insurance premium is seen as *money for the government*, but user charges are not, despite the fact that both comments refer to services received in a public health facility. Responses also suggest that income from user charges is greater than from insurance reimbursements, and possibly quicker and less bureaucratic to obtain. Furthermore, the incentive effect of fee-for-service physician reimbursement appears not to be as significant as expected. The second quotation above, from Tan Dan Commune, highlights the unpredictability of service quality, which depends on the attitude of the particular health worker consulted. Relevant to this issue, the following comments were made by a female farmer, also in Hai Phong Province:

"My sister in-law just returned from hospital - she has health insurance card but the service was not as good as for others without health insurance - they receive medicines. She told that patients with money can give gifts or something like that, and they can get medicines and careful examination. The person with health insurance just lies there. My sister in-law said we pay money to the insurance office, which takes our money, and give us a health insurance card. But people in hospital are the ones who have power. How can the insurance office know how the hospital provides treatment and what kind of medicines are given to insured patients?" *(Female, farmer, aged 50 years, uninsured, Phu Lien Commune, Ninh Binh Province)*

These comments suggest an element of resignation that the government cannot control or regulate the actions of health workers, consistent with the idea that health facilities

are increasingly operating outside bureaucratic control in this period of economic transition. Patients also report pretending not to have health insurance, until the time to pay arrives, in order to get the best of both worlds i.e. quick and pleasant treatment and price reductions. In Ninh Binh Province, a similar theme comes out of the interviews, with the bureaucracy faced by insured patients at health facilities leading to much longer waiting times.

Several respondents suggest that quality of service is systematically different for insured and uninsured patients. This might, to some extent, be a function of higher expectations amongst insured patients. Further evidence that members frequently do not use their insurance policy when accessing care, depending on how much of a hurry they are in, and whether or not they have money, is provided by one elderly insured farmer:

> "Examination with and without a health insurance card is the same, but because it takes a long time for members to wait for examination, we did not use the health insurance card.....to get a quicker examination. It means that it's convenient to use money - for example, I need an X-ray - I gave money directly in the X-ray room so I can get my X-ray quicker. It's quick. When using the health insurance card it takes time, going here and there - it doesn't cost any money but it takes time. Now if you have money you go there directly and they do things for you quickly." *(Male, aged 70 years, farmer, insured, Ninh My Commune, Ninh Binh Province)*

For example, one male farmer comments that:

> "The amount to pay for health insurance is small, VND 60,000, just enough to buy some drinks. If someone has a serious disease and gets the high costs of care covered, and another has a minor disease and low costs of care covered, it's really fair. The main thing lies in the quality of treatment which needs to be fair to all patients." *(Male, age 53 years, insured, Van Hai Commune, Ninh Binh Province)*.

This view is reinforced by a younger female respondent who reports that:

> "With health insurance you do not have to pay fees. But the service attitudes of health workers are not so good. They serve members of

insurance not so warmly. So I think it is still bureaucratic, and procedure is quite troublesome, not like treatment for non-members. It is more administratively complicated for members than non-members." *(Female, aged 36 years, farmer, insured, Ninh My Commune, Ninh Binh Province)*

Finally, the response from an uninsured female farmer in another commune, suggests that the way insured patients are treated differs across facilities:

"Patients with health insurance get better care. I do not have health insurance but my brothers and my children have a card. I used to go to hospital to take care of them so I know. The health worker asked in detail about everything. Even the room is different. Insurance members stay in a different room - there is even an electric fan in the room." *(Female, aged 50 years, Van Hai Commune, Ninh Binh Province)*

In Dong Thap Province, health insurance appears to function quite differently, with few complaints that uninsured patients are treated preferentially. Indeed, there is a perception that insured patients receive a better service. For example, one young female with health insurance, reports that:

"If I do not have a health insurance card the health service is not as good as for those with health insurance. One example is shorter waiting time. In the CHC, those with health insurance are served the same as non-members, but members do not have to pay, that's the only difference." *(Female, aged 37 years, member of Women's Union, insured, Tan Duong Commune, Dong Thap Province)*

If the quality of care in Dong Thap is the same, irrespective of the patient's insurance status, satisfaction will be driven by the reduced cost of treatment rather than perceived quality. As in Ninh Binh, there is evidence that the bureaucracy involved in using health insurance means that many patients decide to pay full charges for minor health problems. A range of responses on this issue are presented next:

"There is no discrimination in treatment for patients, but sometimes people have to wait for a long time for an examination, it may take the whole morning for a person to get examined at hospital. Therefore, our staff feels reluctant to go for examination. Compulsory and voluntary

members are treated in the same way. Secondly, the procedure is complicated. The doctor examines, then he gives a receipt to the accountant, then you have to go here and there to pay - the procedure has several steps. In general, if my health is below 50% I'll go to the health facility for examination. If I only have a minor problem such as a cough, running nose, or minor aches, I seldom go for examination - other colleagues do the same as me. We go to pharmacies to buy medicines." *(Male, Chief of the People's Committee Office, insured, Tan Thanh Commune, Dong Thap Province)*

The following quotes are from uninsured respondents in Dong Thap Province, and suggest strongly that the only difference between being an insured patient is one of access costs, rather than quality of service:

"I think having health insurance should give more benefit for examination or medicines. Members of health insurance should benefit more than non-members because they pay money for the card. I never heard about discrimination in treatment between members and non-members of health insurance." *(Male, farmer, uninsured, Tan Thanh Commune, Dong Thap Province)*

"Treatment for members is the same as for non-members. Because now people have the opportunity to complain and give their opinion about health services. If health workers do not follow the hospital regulations people will reflect this to the manager. So the situation in hospital is better now. The different thing is that members of health insurance get the cost of treatment reduced." *(Male, Chief of the People's Committee Office, uninsured, Lai Vung Town, Dong Thap Province)*

"Sometimes I think that health insurance member may get better services, but in the end, if I do not have health insurance card they also give me treatment. If I have health insurance, I may get the treatment's expenses reduced. Doctors here treat patients well." *(Female, farmer, uninsured, Lai Vung Town, Dong Thap Province)*

Overall, the qualitative data presented here provide a very different insight to that from the household questionnaire. The responses expose the way in which health

insurance influences the experience of patients when they contact a facility, through a variety of incentives and disincentives to providers. It is worth reminding the reader that, overall, insured individuals are satisfied with the scheme, with most intending to renew their policy. Overall satisfaction is driven primarily by reductions in the cost of accessing care, which is expected, given that this is the primary benefit of insurance. However, amongst those respondents not prepared to renew their policy, poor quality of care is a major factor. Using insurance frequently means sacrificing the quality of service received, in terms of both longer waiting times, and poorer staff attitudes. To some extent, however, lower satisfaction may be a function of higher expectations.

The suggestion that many health workers treat patients according to the revenue they bring to the facility backs up the suggestion in Part 1.4.2 that economic liberalisation has resulted in reduced regulation of health facilities. In addition, facilities have become increasingly dependent on user fees. This theme is strongest in the two northern provinces of Hai Phong and Ninh Binh. The implication, interestingly, is that whilst supplier-induced demand may well be a significant problem, health insurance is probably not the cause. Responses also suggest that insured patients are more likely to use their card when expected financial gains are substantial. Hence, for minor health problems, insured patients often prefer to pay full user charges and obtain faster treatment, rather than use their insurance card and wait. The findings show clearly that patients trade-off service quality with expected financial and time savings.

6.2   Private out-of-pocket health expenditures

A central objective of health insurance is to reduce the risk to individuals and households of incurring substantial out-of-pocket expenditures due to illness. Evidence presented in Part 1.3 shows that out-of-pocket expenditures on health services push many households into poverty, implying that substantial financial sacrifices are made to access health services to the extent that welfare is put at risk. The analysis that follows addresses *Research Question 8 (What is the effect of being insured on total out-of-pocket health expenditures?)*.

Given that mitigating risk is an important objective of health insurance, the following analysis assesses total out-of-pocket health expenditures, rather than only those incurred at government health facilities. If only the latter were examined then the effect of health insurance may be overestimated. Data collected on out-of-pocket

expenditures include official user charges (or co-payments for the insured), as well as indirect and unofficial payments made during the respondent's most recent contact with a health facility[76]. Both adults and children are included in the analysis. Insured respondents are defined as those with health insurance at the time of the survey (as opposed to the retrospective definition used in Chapter 5). The design of the sample allows the effect of insurance to be estimated, given that uninsured patients are not eligible for free health services, and have hence paid full user charges.

6.2.1 Background and descriptive analysis

Respondents were asked whether they had been ill in the three months preceding the survey. For those who had, data were collected on whether they had sought professional medical advice, and if so whether inpatient services were required. In terms of health expenditures, patients were asked to recall both indirect (i.e. travel costs), and direct payments (i.e. user fees for consultations, diagnostic tests and medicines), as well any unofficial payments made.

Insured individuals were asked how much they paid for their insurance policy. However, there were substantial non-responses on this question, possibly for the reason that many individuals purchased their policy several months before the survey. In order to incorporate the premium amount into the calculation of average payments, it would be necessary to establish how many times the policy is used during its lifetime (i.e. both past and present usage). For example, the contribution of the premium to average health expenditures per contact will fall as total usage of the policy across its lifetime increases. Given the difficulty in accurately establishing this figure the premium is not included in estimations of health expenditures for the insured. Whilst a downward bias in estimates will result, the underestimation is unlikely to be substantial, given the low level of premia relative to average health expenditures amongst insured patients.

Out of 2,751 respondents in the household survey 45% reported feeling ill during the three months preceding the survey. Of this group 87.5% sought medical assistance from a professional health worker either at a facility, or through a home visit[77]. On average, insured patients spent substantially less than uninsured patients for inpatient

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[76] Based on responses to question e56 and e61.
[77] This figure is based on question d39.

care (VND 310,198 or US$ 22.98, compared with VND 911,701 or US$ 67.53). All data refer to the most recent contact with a health provider. For outpatient services, there is also a substantial difference (VND 25,551 or US$ 1.89 compared with VND 137,908 or US$ 10.21). Table 6.2 reports total expenditures by consumption quartile, which is the aggregate of payments for transport, consultations, diagnostic tests (e.g. X-ray), medicines, and any extra or unofficial fees.

Across the sample, average out-of-pocket expenditures rise with economic status. Those in the richest consumption quartile spend, on average, 135% more than individuals in the poorest quartile. As expected, uninsured patients tend to spend more than the insured, ranging from a multiple of three to eleven. The overall average is VND 66,673 (US$ 4.94) and VND 211,577 (US$ 15.67) respectively. In consumption quartile 3, insured patients pay around double what insured patients pay, an unexpected finding that may reflect extreme adverse selection in this group.

In Table 6.3, health expenditure data (i.e. the total cost of the most recent contact with a provider) are analysed as a percentage of annual consumption expenditure, and again by consumption quartile and insurance status. These figures indicate the extent to which health expenditures are a burden on an individual's budget, or in other words the financial sacrifice made to obtain health services. For an individual living in a household in the poorest quartile 1, health expenditures during the last visit were on average 14.5% of total annual consumption expenditures, compared with 4.2% in high-income households. This confirms the pattern found in previous studies, that richer households sacrifice substantially less financially, in order to access health services (see, for example, Fabricant et al. 1999, and Pannarunothai and Mills 1997).

These figures are, however, substantially lower than those reported in the Vietnam Living Standards Survey 1998, which estimates that households in the poorest group spend on average 22% of discretionary expenditure on health services. The difference probably results from the different sample definition used. The poorest households in Vietnam are not included in this sample, given that in principle they are eligible for fully subsidised health insurance. When expenditure data for insured and uninsured patients are compared, within consumption quartiles, a similar pattern emerges. In the poorest quartile, the uninsured paid on average 14.9% of their annual income during their last visit, compared with 1.6% for members.

Consumption quartile	Insured	Uninsured	Total
1 (311,000 to 1,844,999 VND)	24,061	113,500	110,681
2 (1,845,000 to 2,454,999 VND)	17,338	187,864	184,191
3 (2,455,000 to 3,485,999 VND)	668,893	316,115	310,143
4 (3,486,000 to 32,280,000 VND)	95,313	279,037	259,912
Average =	66,673	211,577	192,312

TABLE 6.2: AVERAGE OUT-OF-POCKET EXPENDITURE (CONSUMPTION QUARTILE)

Consumption quartile	Insured	Uninsured	Total
1 (311,000 to 1,844,999 VND)	1.63 %	14.96 %	14.53 %
2 (1,845,000 to 2,454,999 VND)	0.81 %	8.65 %	8.48 %
3 (2,455,000 to 3,485,999 VND)	22.34 %	11.13 %	10.92 %
4 (3,486,000 to 32,280,000 VND)	1.69 %	4.54 %	4.24 %
Average =	1.65 %	10.35 %	8.4 %

TABLE 6.3: AVERAGE OUT-OF-POCKET EXPENDITURE AS % ANNUAL CONSUMPTION

Within richer quartiles, health expenditures amongst the uninsured tend to represent a higher proportion of annual consumption expenditures. The descriptive analysis suggests that overall, having insurance reduces health expenditures. In quartile 3, however, the findings are counterintuitive. Whilst the number of observations is very low for insured patients, it is also possible that insured individuals have, on average, poorer health status than uninsured individuals. This would explain why, even with insurance, that health expenditures are considerably higher for this group.

6.2.2 Econometric analysis

A range of factors influences the level of health expenditures incurred by ill individuals, for example illness severity. However, when using descriptive analysis, confounding variables may cloud the effect of being insured on out-of-pocket health expenditures. In order to estimate the true insurance effect, rather than an effect resulting only partly from insurance, household survey data are also analysed using regression analysis. Provided explanatory variables are exogenous to health expenditures, and the specification of the model is satisfactory, regression analysis allows the independent effect of each variable on health expenditures to be estimated.

First, an ordinary least squares (OLS) model is used to estimate the effect of insurance, which assumes that conditional on observable characteristics of each observation, membership of the scheme is independent of unobservable factors that influence health expenditures. OLS models thus control only for observable factors that may be correlated with the insurance decision. As noted in earlier chapters however, it is likely that self-selection into the voluntary insurance scheme is influenced by unobservable factors, which in turn influences the magnitude of health expenditures incurred. If this effect is not controlled for, coefficient estimates will be biased and inconsistent[78].

To deal with this problem an alternative model is used to control for any sample selection bias that may be present. This is achieved by allowing unobserved factors, which influence the decision to purchase voluntary health insurance, to be related to unobserved factors that also partially determine health expenditures. Health seeking behaviour influenced by a unique local culture, or specific to an individual, is one

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[78] Consistent estimates are those that approach the true beta values when the sample is large (see Studenmund 1997: 536).

such possible influence. Following Heckman's (1979) sample selection correction technique, the model used can be described as an endogenous, dummy variable model.

The effect of controlling for unobservable effects is highlighted in Table 6.5. A dummy variable representing insurance status is included to measure its effect on health expenditures. Economic status is measured by the natural logarithm of per capita annual income consumption expenditure in the respondent's household, during the twelve months preceding the survey. The dependent variable is defined as the natural logarithm of total health expenditures, which is commonly used in such analysis (see Newhouse 1977). The coefficient on the log of consumption expenditures (economic status) can thus be interpreted as the income elasticity of health expenditures.

Two dummy variables representing province of residence are included with Dong Thap defined as the reference province. A dummy variable is also used to represent whether or not the respondent lives in a rural area, which acts as a proxy for distance to a health facility. Distance is expected to have a negative effect on demand for health services, and hence demand for health insurance, given that one is derived from the other (see Besley 1991, and the discussion in Part 2.1.1). Two dummy variables are included to represent good and fair health. Illness severity, which is expected to significantly increase health expenditures, is controlled using a dummy variable representing the use of inpatient services (the dataset was limited in terms of detailed information on the type of illness and its severity). Level of education is represented through a continuous variable based on total years of formal schooling. Age is included as both a linear and non-linear (squared) term. Finally, dummy variables are included to represent the respondent's occupation, whether the respondent is an adult or a child, and whether male or female.

One issue analysed in detail, in the following chapter, is that being insured may influence whether or not an individual seeks care when ill, in turn influencing out-of-pocket expenditures. In the analysis presented here, health expenditures are only analysed for those with positive out-of-pocket health expenditures i.e. only those who decided to seek care. In other words, if uninsured individuals are less likely to seek medical care when feeling ill, and hence incur zero expenditure, they are excluded from the sample. Not reflecting this insurance effect limits the findings to a partial interpretation of the causal impact of health insurance on total health care expenditures.

The non-inclusion of zeros is justified on several grounds. First, the proportion of sick individuals not seeking care is low, at 12.5%, and hence almost all the insurance effect is captured through an analysis of positive health expenditures. Secondly, whilst insurance status is positively correlated with the probability of an individual seeking medical advice, the relationship is weak (r=0.0586). Furthermore, the following chapter provides a detailed analysis of the effect of insurance on the decision to seek care. Finally, due to non-responses to certain questions used as explanatory variables, only 980 observations are used to estimate the models.

6.2.3 Results

Table 6.4 describes the explanatory variables used whilst 6.5 summarises the results of regression analysis. First, an OLS model is estimated in which the coefficient representing insurance status indicates that, for those who sought medical care when last ill, insured patients spent on average 50.6% less than the uninsured, statistically significant at the 1% level. Several other explanatory variables are also statistically significant.

For example, economic status has a strong positive influence on health expenditures with a coefficient of 0.499. This implies that for a 10% increase in annual income an individual will, on average, increase health expenditures by 4.99% confirming the results of previous studies, that at the individual level health expenditures are income inelastic (see Part 2.4.2). As expected, those with good and fair health status spend significantly less than those with poor health, with those using inpatient services spending significantly more than outpatients, by over 250%. The model passes the Ramsey RESET test of model specification, or omitted variables (p=0.229), and returns an R^2 value of 0.354.

The second model is an endogenous dummy variable model, referred to as 'Heckman (version 1)', which uses the same explanatory variables but tests and corrects for selection bias through the inclusion of the Inverse Mills Ratio (IMR). The IMR effectively captures unobservable effects that determine insurance purchase, and hence correct for any selectivity bias (see Deaton 1997: 104-5). A t-test of the null hypothesis, that the coefficient on this variable is zero, indicates whether a correlation exists between insurance status and health care expenditures. Whilst the IMR is not significant, it still generates a consistent estimator of the effect of insurance status

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Total health expenditures (thousand VND)	980	205.22	641.44	1	6,500
Insurance status	980	0.004	0.062	0	1
Annual income/consumption expenditure (thousand VND)	980	3,000.87	2,688	311.11	30,550
Resident of Ninh Binh	980	0.275	0.447	0	1
Resident of Hai Phong	980	0.065	0.246	0	1
Resident of rural area	980	0.825	0.380	0	1
Good health status in previous 12 months	980	0.185	0.388	0	1
Fair health status in previous 12 months	980	0.527	0.499	0	1
Used inpatient services	980	0.097	0.297	0	1
Education level (years of schooling)	980	5.165	3.556	0	16
Adult	980	0.715	0.451	0	1
Female	980	0.565	0.496	0	1
Age	980	35.924	21.049	6	83
Occupation - retired	980	0.074	0.262	0	1
Occupation - government worker	980	0.010	0.099	0	1
Occupation - service sector	980	0.112	0.314	0	1
Occupation – other	980	0.608	0.488	0	1

TABLE 6.4: PRIVATE HEALTH EXPENDITURES - DESCRIPTION OF THE VARIABLES

Variable	OLS model		Heckman (version 1)		Heckman (version 2)		Heckman (version 3)	
	Coefficient (Standard error)	*p-value*	*Coefficient (Standard error)*	*p-value*	*Coefficient (Standard error)*	*p-value*	*Coefficient (Standard error)*	*p-value*
Constant	0.506 (11.02)	0.623	-0.875 (1.084)	0.420	-0.404 (0.996)	0.685	-0.751 (11.009)	0.457
Member of voluntary health insurance scheme	-0.971 (0.284)	0.001	-2.015 (1.027)	0.050	-0.948 (0.890)	0.287	4.524 (2.238)	0.043
Log of annual income/ consumption expenditure ('000s VND)	0.499 (0.123)	0.000	0.548 (0.138)	0.000	0.512 (0.137)	0.000	0.572 (0.135)	0.000
Resident of Ninh Binh	0.211 (0.163)	0.198	0.084 (0.212)	0.690	0.266 (0.159)	0.224	0.259 (0.147)	0.079
Resident of Hai Phong	0.366 (0.246)	0.137	0.681 (0.393)	0.084	0.462 (0.399)	0.000	0.447 (0.337)	0.185
Resident of rural area	0.223 (0.178)	0.212	0.245 (0.183)	0.180	0.214 (0.162)	0.273	0.062 (0.153)	0.686
Good health status in last 12 months	-0.609 (0.231)	0.008	-0.530 (0.248)	0.033	-0.653 (0.240)	0.000	-0.647 (0.234)	0.006
Fair health status in last 12 months	-1.004 (0.165)	0.000	-1.046 (0.169)	0.000	-1.032 (0.165)	0.000	-1.002 (0.163)	0.000
Used in-patient services	2.495 (0.224)	0.000	2.513 (0.226)	0.000	2.509 (0.219)	0.000	2.485 (0.221)	0.000
Education level (years of schooling)	-0.014 (0.018)	0.507	0.029 (0.028)	0.315	-	-	-	-
Adult	- -	-	-0.326 (0.345)	0.344	0.146 (0.165)	0.006	0.180 (0.161)	0.262
Female	0.080 (0.138)	0.561	0.056 (0.137)	0.685	0.063 (0.132)	0.612	0.091 (0.133)	0.495
Age	0.007 (0.017)	0.690	0.019 (0.026)	0.467	-	-	-	-
Age-squared	-0.000 (0.000)	0.948	-0.000 (0.000)	0.692	-	-	-	-

TABLE 6.5: PRIVATE HEALTH EXPENDITURES - ECONOMETRIC RESULTS

Occupation - service sector	0.416 (0.245)	0.090	0.444 (0.247)	0.072	0.462 (0.226)	0.318	-	-
Occupation - retired	-0.179 (0.275)	0.516	-0.192 (0.278)	0.490	-	-	-	-
Occupation - other	-0.007 (0.193)	0.970	0.032 (0.192)	0.867	-	-	-	-
Inverse Mills Ratio	-	-	0.599 (0.563)	0.287	0.003 (0.499)	0.013	-0.016 (0.346)	0.963
Interaction term: income and insurance status	-	-	-	-	-	-	-0.665 (0.281)	0.018
Number of observations	980	-	980	-	980	-	980	-
RESET test (prob >F)	0.229	-	0.091	-	0.220	-	0.108	-
R^2	0.354	-	0.356	-	0.351	-	0.348	-

TABLE 6.5: PRIVATE HEALTH EXPENDITURES - ECONOMETRIC RESULTS

on positive health expenditures[79].

Uninsured patients spent on average considerably more than insured patients, and by a far greater magnitude than estimated by the OLS model. Income elasticity of health expenditures is substantially greater at a value of 0.54, but remains inelastic. Coefficients on most other variables remain stable i.e. similar to the OLS model, in terms of both direction and level of statistical significance. This model just passes the RESET test (assuming a 5% threshold) with a p-value of 0.091, and has an R^2 value of 0.356.

In order to improve identification of the independent effect of insurance, a third model, referred to as 'Heckman (version 2)', is a refined version of 'Heckman (version 1)' in which several statistically insignificant variables are dropped. These include level of education, both the age and age squared terms, and individuals defined as being retired or in the 'other occupation' category. Insured individuals still spend considerably less than the uninsured (94.8%), and income elasticity of expenditure similar at 0.512. Only the coefficient representing adults (compared with children) gains statistical significance over the previous version of the model. The R^2 value of 0.351 is almost identical to previous models. The model comfortable passes the Ramsey RESET test (p=0.220).

Finally, an interaction term combining insurance status and economic status is incorporated into a second version of the Heckman model, referred to as 'Heckman (version 3)'. This term allows the effect of insurance status on health expenditures to be estimated as an individual's economic status changes. The resulting coefficient, - 0.665, is statistically significant at the 1% level, indicating that patients with higher incomes have less dramatic reductions in out-of-pocket expenditures as a result of insurance than do poorer patients. In other words, insurance reduces expenditure more

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[79] An alternative version of the model was estimated without weighting, in which the sign and statistical significance of most coefficients were similar, but the Inverse Mills Ratio was highly significant, indicating a sample selection problem. There is some discussion in the literature over the need for weighting in regression analysis. Deaton says: "A weighted regression provides a consistent estimate of the population regression function.....Of course if we are trying to estimate behavioural models, and if those models are different in different parts of the population, the classic econometric argument is correct, and weighting is at best useless." Deaton 1997: 71. However, Manski and Lerman (1997), discuss the need to create a Weighted Exogenous Sampling Maximum Likelihood (WESML) Estimator when estimating coefficients from data based on choice-based sampling.

for the poor than the rich[80]. This model also passes the Ramsey RESET test (p=0.108) with a similar R^2 value of 0.348. In terms of unofficial payments for health services, little quantitative data were collected as part of the household survey. Hence, this issue was an important focus of discussion during in-depth interviews. Several quotations are listed below to give a sense of how important these payments are, particularly in order to improve the quality of care received. First, insured patients:

> "My son gave "extra money" not me, but I believe that if I do not give money I would get the services, but I am not sure that I would get medicines in time. I have to recognise medicines are available right after "money. Money makes things easier. I cannot prevent that. The whole society is like that and I have to follow. Everyone likes money. If you have money you can even buy a fairy". (*Male, Hai Phong, 50 years, farmer, insured*)

This first quote supports reports by Transparency International and other observers, that corruption is widespread in Vietnam. For the poor, however, and those with chronic diseases, exemptions do often apply although, again, often at the cost of quality:

> "My husband had a chronic disease for years and my family is poor, so we did not have to pay anything. But it is true that if you have money you will get better treatment. If you have voluntary health insurance, they don't dare take any money. If you don't have voluntary health insurance you should have cash". (*Female, Hai Phong, 44 years, farmer, insured*)

In Dong Thap Province, there is clearly flexibilty in the timing of payments, which also plays a role in protecting access to services:

> "In this area, extra payment to health workers does not exist. Even when you do not have money to pay for treatment, you can pay later. Giving extra money for treatment is not right. I'm poor, even I cannot have

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[80] Note that when insurance status is represented in a regression model both as an independent variable, and as one of the variables in an interaction variable, only the interaction term should be interpreted. The marginal effect of the independent insurance variable is no longer the coefficient on the dummy variable.

enough money to pay for treatment, how can I have money to give for extra payment?" *(Female, age 41, Dong Thap, farmer, uninsured)*

An interesting comment in the quote above is that staff dare not take money, from those with voluntary insurance, which is consistent with the findings presented earlier in this chapter. It also supports the insight that insured patients do not *bring money* to health facilities and, as a result are not valued in the same way by health workers. The following quotes give a further idea of the experience of insured patients when they visit a health facility:

"I have a voluntary health insurance card but I seldom use it. I am tired frankly. Having voluntary health insurance makes easier access to hospital, but for better service, you need money. Although we have health insurance card, the service is not as good as people who do not have it. If you have a card but you give "extra money" they are more happy. People giving money can get examination first, although I have health insurance card I sit and wait there. They do not need to queue, they pay for the fee and they can get examination quickly." *(Female, Ninh Binh, farmer, insured)*

"And in reality, if you stay in hospital and you rely only on your health insurance card you wait for the end of your life, frankly you have to give "extra money", otherwise, your life is like " an egg on a stick".....why, when you and I stay in the same hospital, you get better services than me? Because you have a "relationship" with doctors. You "take care" of the doctor and the doctor "takes care" of you - it's a personal feeling. It's like you create favourable conditions for them and they do favour for you. You give "extra money" to make sure that things go well. Other people do that, you have to follow." *(Male, age 70, Ninh Binh, insured)*

"In my thinking when people give extra money to doctors, they want to show their own feelings.....but if you have a voluntary health insurance card you don't have to give extra money." *(Female, Dong Thap, Vice-Chairman of Women's Union, insured)*

This final comment suggests, as with responses regarding patient satisfaction that in Dong Thap the situation is quite different. Generally, respondents are more positive

about health services and health insurance, which may partly reflect the high number of government officials incorporated into the scheme in this province. The following responses are from patients without health insurance:

> "Voluntary health insurance is beneficial but you still have to give gifts to get quick treatment. Many patients with voluntary health insurance should give extra money, otherwise they will never get as good treatment as those without insurance. In case of my sister who got eye operation, my mother told that she gave each nurse only few tens of thousands, totally about 200,000. They did not ask us to do like that, but my mother said that she did that to make sure that the service for my sister be adequate and quick. It's just to give some money for them for drink. It's depends on individual affection to health workers - they do not require anything." *(Female, Hai Phong, farmer, uninsured)*

> "People give money as gifts to doctors and nurses, hoping that they will take good care of their sick relative. If no gift-money is given the health staff will give treatment, the same medicines or injection, but less quantity or time than to those who give money." *(Male, Dong Thap, farmer, uninsured)*

> "For treatment at hospital, my mother with health insurance care got good treatment and care. But people say if I have insurance I should also give some "extra gift" for health workers for them to work hard at night shift, or operation. Having something for them in order to get more careful services. Among 5 people, 4 of them said that if there is no " extra money" to them, they just fulfil their responsibility, for example, they came for injection at the injection time, and next day you get care only in examination time. If someone feel badly in the afternoon outside the time, he wants to invite health workers, they may not come to you. I heard that from people returned from hospital. This becomes a social problem. This is not right thing to do but everyone does the same. If we did not do that we cannot quickly cure our diseases. No one likes it but still does it. The government policy is right but implementers do wrong. We believe the government but we do not trust implementation." *(Female, age 30, Ninh Binh, farmer, uninsured)*

Interestingly, this last respondent perceives doctors in government hospitals as being outside government, or at least outside government control. This backs up the idea that since *doi moi*, health facilities have become increasingly independent from regulation, and dependent on direct income from patients. Some suggest, however, that these payments are principally gifts:

> "I heard about extra payment but I did not witness it. I think doctor provides services accordingly to their responsibility. It depends on the patient's family. People giving extra payment because of their gratitude to doctor, they give voluntarily, some tea or tobacco." (*Male, Ninh Binh, farmer, uninsured*)

> "The doctors themselves do not ask for extra money. It comes from the patients who want to give money to get affection." *(Female, Dong Thap, tailor, uninsured)*

6.3 Concluding remarks

The first part of this chapter presents evidence that, overall, insured patients are satisfied with health insurance. Patient satisfaction reflects two aspects of the scheme, value from the increased certainty that insurance provides, and expected financial savings. When insured patients are questioned in more detail as part of in-depth interviews, it becomes clear that many consider the quality of care they receive to be inferior, to that received by fee-paying patients. Dissatisfaction was expressed principally in terms of staff attitudes, and waiting times, and in many cases is of sufficient magnitude that insured patients often decide not to use their card. The answer to *Research Question 7* is very clearly that health insurance reduces the perceived quality of health services.

Expected benefits from using insurance when accessing health services, clearly extend beyond cost reduction, although this is one of the most important factor for patients. Depending on the severity of the health problem (and expected financial gains under insurance), and expected quality of service under insurance, insured patients make a decision whether to use their health insurance card or to pay full user charges. For those who are time-sensitive, and not particularly price sensitive, then for relatively minor health problems the insurance card may not be used. Some patients, however,

aim to *maximise* i.e. get the best of both worlds, by pretending not to be insured until the time of payment.

Research Question 8, concerned with the effect of being insured on total out-of-pocket health expenditures, is also empirically examined in this chapter. After controlling for a range of possibly confounding factors, it is estimated that insured patients spent, on average, substantially less than uninsured patients, during their most recent contact with a health provider. Two types of model are used to analyse this effect. First, an ordinary least squares (OLS) model which assumes that membership of the insurance scheme is distributed randomly across individuals, and secondly a model which tests and corrects for selection bias following Heckman (1978). Selection bias is a central econometric issue when analysing the impact of a voluntary health insurance scheme, and was discussed in Part 4.4.2.3. From a methodological perspective, those results which corrected for selection bias are a more accurate reflection of the true insurance effect. The results are highly statistically significant, and provide strong evidence that health insurance reduces the financial burden to households, incurred when accessing health services.

Several explanatory factors are robust across model specifications. Economic status, proxied by an individual's annual consumption expenditure, shows a positive and highly significant effect, although overall is income inelastic. This finding suggests that ability to pay remains an important determinant of health expenditures even for patients with insurance, and is consistent with the results of in-depth research concerning patient satisfaction. Extra payments are still seen as necessary by insured patients, in order to obtain a better quality, and more timely service. This finding is particularly strong in the two northern provinces. Whilst additional payments are also made in Dong Thap Province, comments indicate that these are less critical to ensure good treatment.

Individuals in good and fair health status also spend significantly less, out-of-pocket, than those in poor health, a second finding consistent across model specifications. This finding is not unexpected, but points to the fact that policy makers must remain vigilant in ensuring that financial access to necessary health care is maintained for poorer individuals. Finally, respondents living in Hai Phong Province tend to spend significantly more than those living in Dong Thap in the Mekong River Delta, which is slightly surprising given the worse health status overall in the south (see Table 1.4). One possible explanation for this finding is differences in unofficial expenditures

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between the provinces. Further analysis of the data shows that, on average, such payments were 50-100% higher in the northern Provinces.

As noted in earlier chapters, the extent to which these findings are generalisable is limited by a lack of information on the supply side. For example, differing levels of bureaucratic control of health workers, and unofficial payments, are likely to influence both perceived service quality and out-of-pocket expenditures, the two issues addressed in this chapter. Better information on the way in which health services are delivered, and the way health workers respond to health insurance, would allow the model to be better specified, and would enhance the analysis. The next chapter examines the impact of health insurance on treatment-seeking behaviour, which is closely linked to the analysis presented here.

Chapter 7: Utilisation of health services

7.1 Background and descriptive analysis

7.1.1 Background

A major issue in the health insurance literature is the way in which insurance changes the consumption of health services. As discussed in some detail in Part 2.1.2, this issue is covered by the literature on moral hazard, which explains increased consumption amongst insured patients in terms of behavioural changes amongst both consumers and providers. First, economic theory predicts that patients will consume more health services when the price of those services falls i.e. demand is sensitive to changes in price. Furthermore, there is evidence that as an individual's income falls, they become more sensitive to changes in price (for example, Sauerborn et al. 1994 provide evidence from Burkina Faso). This is consistent with evidence that poorer households have been worst affected by the introduction of user charges in many low-income countries.

Secondly, insurance may lead to changes in the behaviour of both consumers and provider. In the case of consumers, there is concern that insurance encourages more 'risky' behaviour, which in turn increases the probability of that individual requiring medical treatment. In the case of providers, their role as an agent may also lead to increased consumption by insured patients. This is particularly likely when providers are reimbursed on a per-case basis by an insurance fund, as in Vietnam, and is commonly referred to as supplier-induced demand. This issue, however, is not tested empirically in this thesis. Somewhat unexpectedly, the results presented in the previous chapter suggest that supplier-induced demand is not a major problem, at least not as a result of the incentives produced by health insurance. It appears that insured patients bring less money to health facilities and, hence, often have to wait longer to receive treatment, and are in many ways considered *less important*.

Research Question 9 focuses on treatment-seeking behaviour i.e. the effect of being insured on the probability that an individual feeling ill seeks treatment. As discussed in Chapter 2, increased consumption can be interpreted either positively or negatively. Indeed, there are strong theoretical arguments to support the idea that moral hazard, or increased consumption, is beneficial (see in particular Nyman 1999, and

Cutler and Zeckhauser 2000). Unmet health needs are substantial in most low-income countries, principally due to the inadequate supply of health services and associated opportunity costs (see Gertler and van der Gaag 1990a), but increasingly as a result of financial barriers.

The suggestion that health insurance leads to the wasteful over-consumption of health services, implicit in much of the literature concerned with western health systems, is less convincing in low-income countries. Rather, a major concern since the introduction of direct user charges in government facilities in 1989, is that unmet health needs have actually increased (see the discussion in Part 1.3.1). By focusing on the behaviour of patients reporting an illness, the analysis begins to focus in on real health needs. However, differing perceptions of need, will also drive the decision to seek treatment. In an attempt to deal with such influences, which are not easily observed, appropriate identification techniques have been developed and are used in the econometric analysis that follows. A second aspect to the analysis presented in this chapter, is the effect of insurance on the first action taken (e.g. choice of provider). Finally, *Research Question 10 (Does social cohesion mitigate moral hazard?)* addresses the role of community structure in overcoming information asymmetry within a health insurance scheme.

7.1.2 Sample definition and descriptive analysis

In terms of the 'member' sample, only those respondents who had health insurance at the time of the survey are included in the following analysis. In Ninh Binh Province, only thirty-one respondents were insured at the time of survey (see Table 4.2 and associated text), and are hence combined with Hai Phong Province. A dummy variable representing 'northern province' is thus included, as an explanatory variable, with Dong Thap Province in the south of Vietnam forming the reference province. The sample includes both adults and children.

As part of the household survey, respondents were asked whether they had felt ill in the previous three months (question d38), and if so what their first action was (question d46). Responses indicate whether or not care was sought, and if so with which provider (e.g. government, private, or traditional healer). Evidence from Vietnam other low-income countries, reviewed in Part 2.1.2, concludes overall that insured patients are more likely to contact a provider for curative care than uninsured patients.

Overall, 45% respondents reported feeling ill in the previous three months with, slightly surprisingly, more uninsured (46.1%) than insured (36.7%). Of this group, 87.5% said they either visited a health facility or called a health worker to their house[81]. In this analysis, however, the focus is whether the individual's first action was to seek advice from a health professional (question d46), which produces a much lower figure of 30.9% (see Table 7.1). Using this question, seeking medical advice includes any care sought from a government health facility, or a private health worker, but excludes the purchase of medicines from a pharmacist or contact with a traditional healer.

Insured individuals are more likely to seek professional advice overall, (51% compared with 37%), and with respect to seeking care from a government health facility (47% compared with 23%)[82]. Figure 7.1 looks at the initial treatment-seeking behaviour in more detail, and suggests that insured individuals are less likely to self-treat with medicines (37%), compared with uninsured respondents (52%). After self-treatment, the uninsured are more likely than the insured to visit a private practitioner as their first action, or a Provincial Hospital, and less likely to visit a Commune Health Centre (CHC) or a District Hospital. This picture suggests that insured individuals are more likely to use lower levels of the health system first. From a broad perspective, insurance thus appears to alter treatment-seeking behaviour in a positive way.

At the provincial level, this pattern is also evident in Dong Thap Province (Figure 7.2) where over 70% of the uninsured say they self-treat first, compared with 40% of insured individuals. After self-treatment first, the next most likely first action for the insured is to contact a CHC (38%), a District Hospital (18%), and finally a Provincial Hospital (4%). The opposite is true of the uninsured - whilst self-treatment is very high (72%) and is the most likely first course of action, the next most likely first action is to visit a Provincial Hospital (11%), a private practitioner (8%), a District Hospital (9%) and a CHC (7%).

A different pattern emerges in the two northern provinces (see Figure 7.3), however. Whilst self-treatment as the first action is lower than in the south, the difference

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[81] This figure is based on question d39.
[82] Weighted sample means are presented in Table 7.1
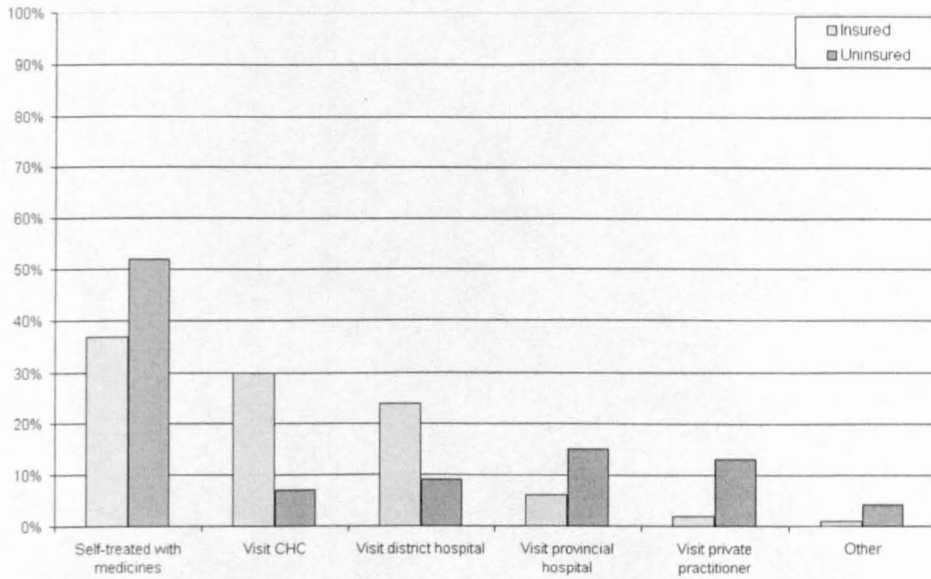
FIGURE 7.1: FIRST ACTION WHEN FELT ILL (ALL RESPONDENTS)
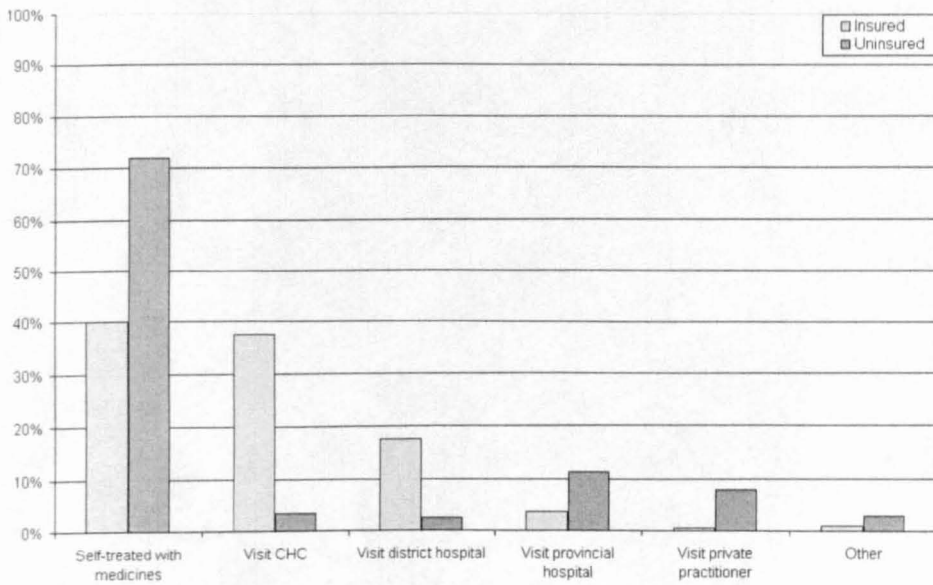
FIGURE 7.2: FIRST ACTION WHEN FELT ILL (DONG THAP PROVINCE)
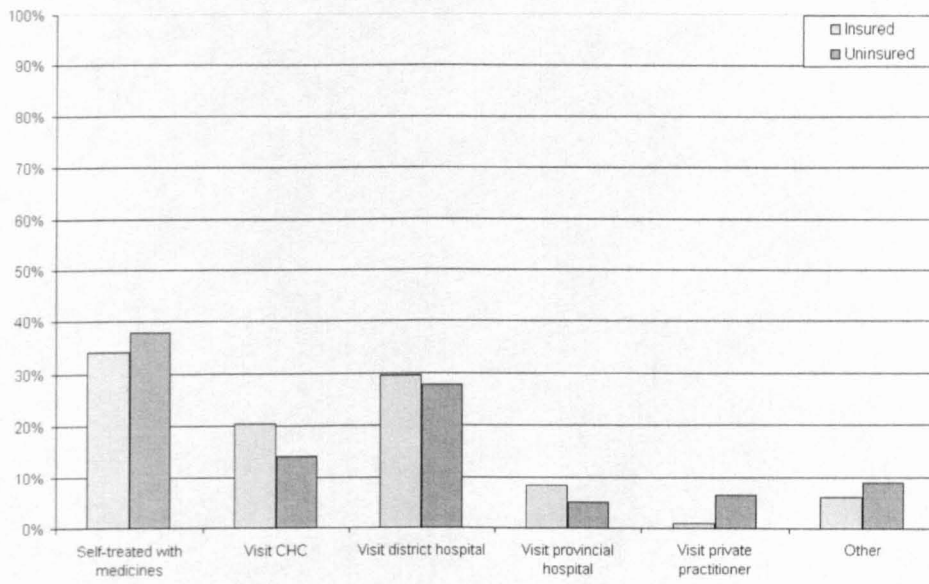
FIGURE 7.3: FIRST ACTION WHEN FELT ILL (NORTHERN PROVINCES)

between insured and uninsured individuals is marginal. Insurance also appears to encourage first contact at a higher point in the health system e.g. district hospital, rather than the primary level Commune Health Centre. From a broad health system perspective, this suggests that insurance is having a negative effect by *pulling* patients up to higher levels of the system, rather than encouraging contact with lower levels of the health system first.

In Topic Guide 2 used for in-depth interviews (see Part 4.3 and Appendix 5), two questions were put to respondents relevant to the research questions addressed in this chapter. The first question is "Would you say you sometimes use health services because you have a card, when you might not if you didn't have one?" The second question reads "Do you think that overall you use health services more than if you didn't have health insurance?" Responses are incorporated into the text to enrich the interpretation of econometric analysis.

7.2 Econometric analysis

Whilst descriptive data provides a useful starting point, it is not possible to establish whether patterns are driven by health insurance, or other factors, such as different perceptions of illness severity. The effect of factors that are easily observed and measured, can be controlled within regression analysis, in turn allowing the independent effect of health insurance on treatment-seeking behaviour to be estimated. However, where unobserved factors influence both the probability of being insured and the use of health services, the estimated effect of insurance is likely to be biased. In addition to perceptions of illness severity, features of a community and the environment in which an individual lives, may also be important. This effect, referred to in the econometrics literature as unobserved heterogeneity, is of particular importance when analysing the impact of an insurance scheme in which membership is voluntary (see the discussion in Part 4.4.2.3).

Pohlmeier and Ulrich (1995) recognise the two distinct behavioural processes that drive demand for, or consumption of, health services (see Part 2.1.2). They motivate a two-part model, which first addresses the contact decision by the patient, i.e. a binary outcome. It is assumed that any contact other than the first is initiated by the physician and, in the second part of their model, this is estimated using a count data model. Using the moral hazard terminology, the first stage may be referred to as *consumer moral hazard*, closely linked to price elasticity of demand, and the second, *provider*

moral hazard, otherwise known as supplier-induced demand. The focus of the following analysis in this chapter is the effect of health insurance on the first stage i.e. the contact decision.

7.2.1 Univariate and bivariate probit models

Given the strong possibility that unobserved factors influence both the purchase of health insurance, and the utilisation of health services, then estimated beta coefficients would be biased if this effect were not controlled. Several previous studies have addressed this issue, including Harmon and Nolan (2001), who use a bivariate probit model to model data from Ireland, and Holly et al. (1998) who also use the bivariate probit to analyse data from Switzerland. More recently, Trujillo (2002) applies a trivariate model to analyse the effect of compulsory and private insurance on service utilisation, using data from Colombia. Waters (1999) presents the results of both univariate and bivariate estimators, to data from Ecuador, and is the approach followed in this chapter.

Waters (1999) notes that selection bias is likely to be a problem when the choice to insure is voluntary (see Part 2.4). In this case, certain independent variables may be correlated with unobservable factors whose effect is relegated to the error term, or hidden within other coefficients. The bivariate probit is a two-equation model in which both dependent variables are binary, in this case one model representing insurance status, and the other whether health services were sought. Maximum-likelihood is used to estimate the two models simultaneously, which allows for correlation between the corresponding error terms, and hence produces consistent beta coefficients (Jones 2000).

In most cases, using econometric techniques to correct for non-random self-selection into a health insurance scheme significantly alters the effect of insurance. In the case of Ireland, the effect of insurance approximately doubles when treated as endogenous, whereas in Colombia the effect reduces. In Ecuador, the effect works in opposite directions for preventive and curative care. An understanding of the specific design and context of each scheme is required to explain these differing effects of selection bias.

Following Waters (1999), both univariate and probit models are presented for each of the specifications, which address *Research Question 9*. First, the probability of

seeking care from any health professional, whether in the public or private sector is estimated, and reflects a more holistic view of access to professional health care, rather than a specific provider. In the second model, the probability of seeking care from a government facility is analysed. In this case, the effect of insurance on utilisation rates in public facilities is estimated, and gives some sense of whether insurance, which links benefits specifically to public facilities, effectively pulls patients into the public sector. If this is the case, and at the expense of regulated private providers, the effect may not be entirely desirable, at least from a perspective of the overall financial sustainability of the health system.

However, where greater use of public facilities is at the expense of self-treatment or contact with a traditional healer, as suggested in Figure 7.1 and 7.2, then the effect may have real benefits to the system. For example, the proliferation of self-treatment with medicines resulting from price reductions under economic transition, has dramatically increased growth in drug resistance, and raised fears for the quality of treatment received (see Part 1.4.2). If insurance reduces self-treatment then its effect on the pattern of consumption of health services would in this respect be beneficial.

The third model addresses this issue more directly, by estimating the probability of self-treatment or use of a traditional healer, as the first course of action. Self-treatment is defined as using home-made medicines, buying medicines directly from an unlicensed or a licensed seller, visiting a traditional healer, or carrying on as normal (i.e. doing nothing). In each model, the dependent variable reflects a binary choice. Models are only estimated for individuals reporting an illness in the three months prior to the survey.

In each model, the marginal effect of insurance is assessed through a dummy variable, which represents the respondent's insurance status at the time of the survey. If this coefficient is positive and statistically significant then, *ceteris paribus*, health insurance increases the probability of a sick individual seeking professional medical advice, or self-treating, depending on the model in question. The insurance and treatment-seeking models within the bivariate probit are specified differently, which is preferable in order to identify the selection effect more accurately.

Finally, in the fourth model, a simple probit model is used to analyse the effect of social cohesion on the decision to seek government services amongst insured patients, (see further details of the research question in Part 3.3.3.2). This specification

addresses *Research Question 10*, which asks whether socially cohesive communities overcome the information asymmetry that leads to moral hazard. Given the institutional arrangements of the scheme, however, social cohesion is not expected to have any statistically significant effect.

7.2.2 Results

Table 7.1 describes the variables and the four models are presented in Tables 7.2 to 7.5. In each case, only the treatment-seeking model is presented i.e. the insurance equation used to identify the effect of self-selection is omitted. In the first model, presented in Table 7.2, the univariate probit model estimates that insured individuals are more likely to seek professional medical care when they feel ill, whether in the public or private sector. When unobservable factors are controlled for using the bivariate probit estimator, however, this effect disappears. This suggests that unobservable factors were driving the insurance effect evident in the simple univariate probit – the significance of the Wald test of correlation between the models confirms this.

Furthermore, the direction of the selection effect, or correlation, is positive, suggesting that individuals who seek professional care for unobservable reasons are also more likely to be insured. Aversion to risk is likely to be one such reason. In a separate specification of the model, a dummy variable was included representing whether or not the respondent is very worried about future health status. Whilst the results were similar, the statistical significance of the Wald test of correlation disappeared, suggesting that this is indeed an important factor.

Whilst overall there is little difference between insured and uninsured individuals, in-depth analysis shows some uninsured individuals expect insurance to make a significant difference:

> "I think if I bought voluntary health insurance I would get better treatment. But I am poor and don't have any money. Sometimes when I get sick, I am reluctant to look for health services. If I had a voluntary health insurance card I wouldn't hesitate to go for an examination.'
> *(Female, Dong Thap, aged 41 years, farmer, uninsured)*

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Seek care from any medical professional (either public or private practitioner)	1,122	0.309	0.462	0	1
Seek care from government facility	1,122	0.159	0.366	0	1
Self-treat (purchase medicines without prescription or do nothing)	1,122	0.709	0.454	0	1
Insurance status	1,122	0.046	0.209	0	1
Good health status in previous 12 months	1,122	0.203	0.402	0	1
Fair health status in previous 12 months	1,122	0.521	0.499	0	1
Long-standing limiting illness	1,122	0.119	0.324		
Economic status (thousand VND)	1,122	3,038	2,962	311	32,280
Farmer	1,122	0.417	0.493	0	1
Government employee	1,122	0.010	0.100	0	1
Hired worker	1,122	0.069	0.255	0	1
Service worker	1,122	0.109	0.312	0	1
Years of schooling	1,122	5.304	3.568	0	16
Age	1,122	35.391	20.837	6	83
Female	1,122	0.551	0.498	0	1
Northern Province (Hai Phong and Ninh Binh)	1,122	0.364	0.481	0	1
Resident of rural community	1,122	0.829	0.377	0	1

TABLE 7.1: TREATMENT SEEKING BEHAVIOUR - DESCRIPTION OF THE VARIABLES

Variables	Univariate Probit		Bivariate Probit	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Insurance status	0.559*	0.313	-0.481	0.371
Good health status in previous 12 months	-0.009	0.021	-0.066	0.245
Fair health status in previous 12 months	0.126	0.204	0.136	0.200
Long-standing limiting illness	0.189	0.237	0.192	0.233
Economic status (thousand VND)	0.000	0.000	0.000	0.000
Farmer	-0.024	0.164	-0.127	0.166
Government employee	-0.513	0.481	-0.491	0.488
Hired worker	0.175	0.266	0.046	0.267
Service worker	0.140	0.237	0.034	0.235
Years of schooling	0.009	0.021	0.018	0.021
Age	0.004	0.004	0.002	0.004
Female	-0.013	0.129	0.001	0.128
Northern Province (Hai Phong and Ninh Binh)	0.953***	0.141	0.875***	0.143
Resident of rural community	0.229	0.206	0.273	0.203
Constant	-1.467***	0.384	-1.399***	0.378
Observations =	1,121	-	1,121	-
Pseudo R^2 =	0.112	-	n/a	-
Wald test of correlation (p-value of Chi^2) =	n/a	-	0.707***	-

TABLE 7.2: INSURANCE AND CONTACTING ANY HEALTH PROFESSIONAL

* Statistically significant (10%)   ** Statistically significant (5%)   *** Statistically significant (1%)

Variables	Univariate Probit		Bivariate Probit	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Insurance status	0.778**	0.337	-0.094	0.547
Good health status in previous 12 months	0.077	0.307	0.086	0.300
Fair health status in previous 12 months	0.066	0.255	0.070	0.251
Long-standing limiting illness	-0.116	0.272	-0.112	0.268
Economic status (thousand VND)	-0.000	0.000	-0.000	0.000
Farmer	-0.128	0.169	-0.238	0.184
Government employee	-0.766**	0.366	-0.709*	0.396
Hired worker	0.423	0.318	0.284	0.336
Service worker	0.138	0.264	0.035	0.266
Years of schooling	0.032	0.024	0.041*	0.025
Age	0.004	0.004	0.003	0.004
Female	-0.029	0.149	-0.008	0.145
Northern Province (Hai Phong and Ninh Binh)	1.215***	0.169	1.121***	0.191
Resident of rural community	0.363	0.253	0.406	0.244
Constant	-2.227***	0.519	-2.154***	0.528
Observations =	1,121	-	1,121	-
Pseudo R^2 =	0.168	-	n/a	-
Wald test of correlation (p-value of Chi^2) =	n/a	-	0.623	-

TABLE 7.3: INSURANCE AND CONTACTING A GOVERNMENT HEALTH FACILITY

Variables	Univariate Probit		Bivariate Probit	
	Coefficient	Robust S.E.	Coefficient	Robust S.E.
Insurance status	-0.559*	0.313	0.381	0.428
Good health status in previous 12 months	0.009	0.021	0.054	0.241
Fair health status in previous 12 months	-0.126	0.204	-0.135	0.198
Long-standing limiting illness	-0.189	0.237	-0.194	0.232
Economic status (thousand VND)	-0.000	0.000	-0.000	0.000
Farmer	0.024	0.164	0.127	0.168
Government employee	0.513	0.481	0.479	0.481
Hired worker	-0.175	0.266	-0.042	0.268
Service worker	-0.140	0.237	-0.036	0.235
Years of schooling	-0.009	0.021	-0.018	0.021
Age	-0.004	0.004	-0.002	0.004
Female	0.013	0.129	-0.000	0.127
Northern Province (Hai Phong and Ninh Binh)	-0.953***	0.141	-0.871***	0.146
Resident of rural community	-0.229	0.206	-0.273	0.203
Constant	1.467***	0.384	1.389***	0.373
Observations =	1,121	-	1,121	-
Pseudo R^2 =	0.112	-	n/a	-
Wald test of correlation (p-value of Chi^2) =	n/a	-	-0.707***	-

TABLE 7.4: INSURANCE AND SELF-TREATMENT OR VISITING A TRADITIONAL HEALER

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> "When I did not have a health insurance card, I also went for examination when I got headache or running nose, but it cost me more money then. Here many people go to CHC, but there are also many private practitioners.....Rich people often go to private doctors." *(Female, aged 40 years, Vice-Chairman of Women's Union, insured, Tan Duong Commune, Dong Thap Province)*

The first quotation is consistent with the different findings in this southern province presented in the previous chapter, but not revealed in the econometric analysis. Another point, highlighted in the second quote, is that for minor illnesses, visiting government facilities can be more expensive, even with health insurance.

In Table 7.3, the effect of insurance on contacting a government facility is estimated, and a similar pattern emerges. Under the univariate probit, insured individuals are more likely to seek government services as their first action when feeling ill, and the results are statistically significant at the 5% level. In terms of direction and magnitude, the effect is again positive, and the estimated probability is 78% higher for insured individuals. Once the effect of unobservable influences is controlled for, using the bivariate probit estimator, this effect again disappears[83]. On one level, these results are surprising, given that they suggest that the decision to seek government services is not sensitive to price, at least not in any statistically significant way. In several alternative specifications, the logarithm of per capita consumption expenditures was used rather than a simple per capita figure, which allows income elasticity of demand to be estimated. The results were robust across models and again showed no statistically significant effect.

Focusing on contact with government providers brings several other factors into consideration. Given that at the time of the survey benefits were restricted to one designated public facility, typically a hospital, indirect costs are likely to play a more significant part in the decision to seek care. The importance of non-price costs in rationing demand was discussed earlier in both Part 1.2 and Part 2.1.2. Two quotations from respondents collected during in-depth interviews are presented below. They

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[83] This finding is consistent across different model specifications, for example, when the dependent variable is defined specifically as contact with a government hospital, rather than a facility at the primary level.

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highlight the importance of distance to a facility when deciding whether to seek care, and which type of provider to contact:

> "If my child is so sick he gets a high fever I go out and buy some medicines for him. I do not bring him to hospital because the hospital for health insurance is quite far, at Duon, in the district, which is about 5 km away. I have no time to bring him there, so I go and by medicines for him, I do not use his health insurance card". *(Female, aged 33 years, Hai Phong, farmer, insured)*

Despite the finding that insured respondents are less likely to self-treat overall, (although not as a direct result of insurance), some respondents are clearly time-sensitive, and prefer convenience even when health insurance reduces the direct cost of health services. This observation supports the theoretical framework of utility, presented in Part 2.1.1, in which individuals compare the relative utility overall of health insurance. In this case, however, the calculation is not whether purchasing health insurance yields higher utility, but whether actually using it (when an individual has already bought it) does. Two further quotations on this theme are presented next:

> "Frankly, my children are ready to buy a health insurance card for me, but the benefit of the card is not much, you can have a card but use it only sometime a year or once in a few year, and each time you get only few medicines then go home, you use all the received medicines and it is not cured and you have to buy more medicines. Besides, health services at the village are very convenient, near the house and prices are reasonable." *(Male, aged 70 years, farmer, uninsured, Ninh My Commune, Ninh Binh Province)*

> "I get mainly minor diseases, such as headaches, or common flu, so I use traditional herbal exhaling, or take some medicines for relief. Therefore, I seldom go to the Commune Health Centre or hospital. I went to the CHC last time I got diarrhoea". *(Male, aged 70 years, Chairman of Farmers Association, insured, Dong Thap Province)*

These quotations stress the importance of local health services, such as drug vendors, for which limited information was available in the communes where fieldwork was conducted. Better information on the quantity and quality of supply in the private

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sector would improve the specification of the models presented in Table 7.2 and Table 7.3. Perceptions of the severity of a health problem are also important in the decision about which type of provider to contact, and hence whether or not health insurance is used, which is consistent with the findings presented in Chapter 6 regarding patient satisfaction.

Insured respondents are, on average, 56% less likely to self-treat, or contact a traditional healthier as their first course of action, than uninsured individuals. This finding, which is statistically significant at the 10% level, is based on the univariate probit estimator, and is consistent with the descriptive data presented in Figure 7.1. Again, the insurance effect disappears when unobservable effects are controlled for, using the bivariate probit estimator. As expected, the direction of unobservable effects is negative, unlike the two previous models. The implication is that individuals who self-treat for unobservable reasons are also less likely to purchase voluntary health insurance. Attitudes towards health and health-related issues are likely to be important here.

In the final, fourth model, *Research Question 10* is addressed and the results presented in Table 7.5. The arguments used to develop this specific research question build on the insights of Stiglitz (1990) and others (see Part 3.3.3.2). In order to assess whether social cohesion has a mitigating effect on the increased consumption of health services expected under insurance, the model and sample are defined differently. The dependent variable is defined as seeking government health services, given that insurance benefits are linked specifically to them. At the time of the survey, no incentive effect existed under the insurance scheme, for individuals to seek more health services in the private sector.

Only respondents insured at the time of the survey, and reporting feeling ill in the three months prior to the survey are included in the analysis, amounting to a total of 234 respondents. The main finding is that social cohesion (at both the individual and the commune level) has no statistically significant effect on the probability of seeking government services. This result is expected, given that no mechanisms exist to harness local peer monitoring within the scheme, and the perceived per capita externality of the inappropriate behaviour of others is likely to be low.

Variables	Univariate Probit	
	Coefficient	*Robust S.E.*
Perceived cohesion (individual level)	0.068	0.224
Social cohesion (commune level)	0.029	1.088
Good health status in previous 12 months	-0.603	0.699
Fair health status in previous 12 months	-0.466	0.754
Long-standing limiting illness	-0.757	0.809
Economic status (thousand VND)	-0.000	0.000
Farmer	-0.052	0.819
Government employee	-0.583	0.778
Hired worker	-0.727	0.813
Service worker	-0.346	0.626
Years of schooling	-0.027	0.064
Age	0.039**	0.019
Female	0.299	0.426
Northern Province (Hai Phong and Ninh Binh)	-0.133	0.464
Resident of rural community	-0.189	0.336
Constant	-0.551	4.606
Observations =	528	-
Pseudo R^2 =	0.134	-

TABLE 7.5: SOCIAL COHESION AND CONTACT WITH A GOVERNMENT FACILITY

7.3   Concluding remarks

This chapter presents clear evidence that individuals with health insurance are far more likely to seek contact with a government health facility (or indeed any health professional), as their first action when feeling ill, than are uninsured individuals. Similarly, insured individuals are significantly less likely to self-treat with medicines, or to contact a traditional healer. However, this effect does not appear to be a direct result of insurance itself, but rather unobserved factors which both influence the decision to purchase health insurance and treatment-seeking decisions when an individual feels ill. Juxtaposing univariate and bivariate probit models demonstrates the importance of using an appropriate estimator when estimating the impact of voluntary health insurance. One factor, which may be driving the results, is variation in individual attitudes towards health-related risk. Although an attempt has been made to proxy for risk aversion, more detailed research into this issue is required.

Despite the fact that many of the effects presented in univariate models are only indirectly related to insurance purchase (i.e. the effects disappear in the bivaraite model), they are nevertheless important from the perspective of the dynamic of the health system overall. For example, the finding that insured patients are only slightly more likely to contact a professional health worker, an effect which is much stronger with respect to government providers, suggests that a substitution effect is occurring. In principle, the univariate model is inappropriate given that it does not control for a selection bias, which is clearly present, it does raise some interesting issues in terms of interpreting the data. If, as seems to be the case, health insurance is effectively strengthening a process in which patients are favouring public providers over private ones (both formal and informal), then in the medium to long-term this may have a positive effect on population health. The argument, in one sense, is that observed changes in the consumption of health services would not have occurred without the existence of the scheme, and is an issue that needs further development.

The assumption here, however, is that the clinical quality of care is better in government facilities, which at least for hospital care is certainly the case, given the almost non-existent supply by the private sector. Furthermore, health insurance may indirectly be helping to mitigate the growing resistance to antibiotics and other medicines, such as anti-malarial drugs, which is fuelled in part by inappropriate self-treatment with pharmaceuticals.

One other trend in the data, of which policy-makers should be aware, is that in some provinces insurance may be unnecessarily *pulling* patients up the system, in terms of their first contact when feeling ill. Rather than making their first contact at the primary level, the expected financial gain of health insurance may encourage first contact with a hospital, where quality of care is often perceived as superior. This is more likely to be the case in urban communes, where the non-price cost of accessing hospital care is relatively low. Given that this analysis is based on cross-sectional analysis, however, ongoing monitoring of the situation is required to validate the findings presented here.

Chapter 8: Conclusions

This final chapter summarises the main theoretical insights and empirical findings generated by this thesis. Implications for current policy regarding health insurance in Vietnam are discussed, as is the extent to which the results can be generalised, together with the identification of important issues for further research. Chapter 3 detailed ten research questions. Six concern factors that drive demand for voluntary health insurance, whilst the other four address the impact of the scheme on various health system outcomes.

Whilst overall this thesis has a strong demand side focus, the findings are interpreted in the context of a dynamic health system, as represented in Figure 1.1, and have implications for the way in which health services are delivered. A central message, from a conceptual perspective, is the importance of the institutional environment within which health insurance, and the broader health system, functions. In most low-income countries, the institutional environment is very different to that in high-income countries, in which most theoretical frameworks and their related assumptions have evolved.

New knowledge is based on an evaluation of voluntary health insurance in Vietnam seven years after its introduction by the government. Interest in risk-sharing mechanisms in the health sector has grown rapidly over the past decade. One reason for this trend is that insurance offers the potential to raise extra finance for health services, whilst simultaneously protecting access to health services for the poor. In addition to these theoretical merits, however, insurance brings with it many well-documented problems, notably the incentive for patients to consume more care, and for providers to supply more care, than may be required. At present, however, little evidence exists on the extent to which expected incentive problems are also a feature of health insurance schemes in low-income countries. Without such evidence, policy-makers must rely on the experience of rich economies.

When a country's economy is structured principally around informal activity, universal compulsory health insurance is unlikely to be feasible. This argument is developed by Ensor (1999) amongst others. For this reason, a better understanding of individual and community level factors that influence the voluntary purchase of health insurance, is critical for the development of policies that successfully promote and extend risk-sharing.

Bringing ideas and evidence together from several sub-disciplines in the social sciences is an important feature of this thesis. Whilst health insurance is a mainstream topic within health economics, literature from political science, sociology, and development economics, offers a wealth of frameworks and evidence that adds considerably to current thinking. For example, the suggestion that social capital is critical for the emergence of community-based health insurance schemes was the catalyst for much of the literature reviewed in Chapter 2.

Methodologically, econometric analysis of household survey data is combined with verbatim quotations, collected through in-depth interviews. Research methods used here thus move from the inductive (preliminary qualitative data collection), to the deductive (household questionnaire), and back to the inductive (in-depth interviews). Both the power of statistical inference, and revealing insights from in-depth interviews, are the basis for the results and conclusions. The use of cross-sectional data, however, limits the analysis in terms of understanding the dynamic of a health system across time.

Many of the new ideas and evidence presented are generalisable to other low-income countries in terms of the structure of the economy and the institutional environment. For example, informal risk-sharing and unofficial economic activity, are common features of many poor countries. Furthermore, policies towards health financing have tended to develop in a similar way, moving, for example, from free care at the point of service, to the introduction of user charges, followed by an attempt to develop greater risk-sharing through health insurance (see the arguments motivating this thesis in Part 1.1). Many of the ideas and results are, however, not generalisable to other countries, particularly those which to a large degree reflect the particular culture of Vietnamese society. Each of the findings discussed in the remainder of this chapter is also considered in terms of its generalisability i.e. the extent to which the finding is a feature of Vietnam, of health insurance, or of both.

8.1   Demand for health insurance - theoretical insights

Most theoretical work into health insurance has been generated in the context of rich economies, in which universal health and social security systems are common, and government institutions are well-established and *strong* (for example in their role as regulators). The institutional environment in Vietnam, and many other low-income countries, is very different. For example, government regulation of provider behaviour

is often weak, evident in Vietnam from the widespread reports of corruption discussed in Part 1.5.3.

Nevertheless, insights by authors such as Akerlof (1970), Arrow (1963), and Pauly (1968), regarding the structure of information and incentives in health insurance markets, remain highly relevant to health insurance schemes in a variety of institutional settings. For example, the self-interested individual who maximises expected utility, provides a solid foundation for the analysis of private demand for health insurance. In essence, individuals will purchase health insurance if they expect to be better of with it, than without it.

Research Question 1 addresses one of the classic features of health insurance markets, adverse selection, and tests empirically whether or not this is a problem in the voluntary component of Vietnamese Health Insurance. Adverse selection, which describes a situation in which individuals in poor health dominate an insurance scheme, is one example of market failure, resulting from non-perfect, or asymmetrical information. Consequently, health risks are not shared efficiently, and it is questionable whether the fund in question is able to sustain itself financially beyond the short-term. Adverse selection is thus a major concern for all those who direct and manage such schemes.

Under certain conditions, however, the market failures that underpin adverse selection can be overcome, allowing risk-sharing to occur. Economists and other social scientists often use repeated games to represent such conditions, in which cooperation may be preferable to selfish behaviour, even if an individual incurs a loss in the short run. In repeated games, reputation is important, and reflects the reality today in pre-industrial communities in which social networks are largely *closed*, and social structure highly cohesive. Living within such a social structure, a person may decide to cooperate with others in part to maintain their own reputation, but also to ensure the welfare of his offspring. Informal risk-sharing may occur voluntarily as a result.

Drawing on the work of Coleman (1990), who suggests that voluntary cooperation between two or more individuals is a function of the level of social capital in the community in which they live, Hsiao (1995) extends this idea to the development of risk-sharing in the health sector. Essentially, the argument is that individuals who trust each other are more likely to voluntarily enter a risk-sharing agreement, which is not backed up by an enforceable written contract. In contrast, the economic literature

stresses the importance of better information, and the preservation of reputation, when explaining the development of such contracts. The review of the social capital literature in Chapter 2, highlights the current lack of an agreed definition, and the conceptual leap often made from ideas such as network closure, and social cohesion, to social capital. In this thesis, social structure is represented through a measure of social cohesion, which previous economic studies have also used in the analysis of information asymmetry within group-lending schemes (see in particular Wydick 1999).

Hsiao's central argument is that individuals who are part of a group that is socially cohesive, are more likely to trust one another, and hence be more willing to share risks. In the context of voluntary, as opposed to compulsory insurance, this may be of importance (see *Research Question 6*). For example, trust can facilitate endeavours requiring collective action, which have the potential to produce mutual benefits for participating individuals. Hsiao suggests that voluntary health insurance is one such example. This hypothesis does not appear relevant, however, in the context of health insurance in Vietnam, due to the total dominance of government in the scheme's organisation and management (see Part 8.2). In contrast, Hsiao's idea was developed in the context of community-based health insurance in China.

In examining the social capital concept, an extensive review of the political science, sociological, and development economics literature was conducted and presented in Part 2.2 and Part 2.3. For example, current work by development economists, into the interaction between public safety-net programmes and systems of informal risk-sharing was particularly useful to enrich current frameworks used to analyse health insurance. The general conclusion of this body of literature is that government safety-net interventions crowd-out pre-existing informal risk-sharing networks in low-income countries. Such information cannot be ignored when thinking about the development of formal health insurance, particularly give widespread evidence of private transfers in Vietnam, which indicate informal risk-sharing.

With this insight, it is suggested that Hsiao's initial idea may unfold in a different way. If socially cohesive communities develop strong networks of informal risk-sharing, it is possible that they may actually resist or substitute for formal health insurance, especially where perceptions of corruption amongst government officials are widespread. Cultural factors such as duty to the State may also influence the

decision whether or not to purchase health insurance, and hence complicate the picture further.

Part 3.2.2 brings these various ideas together, placing formal health insurance within a broad framework of risk-reducing strategies. Using this framework, voluntary health insurance is only one of a range of risk-reducing strategies, available to individuals and households. These strategies may be formal or informal, involving risk-sharing or not, and may or may not require collective action. Furthermore, different individuals and households will have access to a different range of options. For example, individuals living in urban communities may have a more restricted choice-set. If this is the case, they may be more likely to rely on formal strategies that do not require collective action. Finally, the idea that formal and informal risk-sharing are pure substitutes is unlikely to be unrealistic, with individuals and households more likely to draw on several strategies at any one point in time. Adopting a broader perspective, such as the one presented here, would be a considerable shift for policy-makers, and indeed many researchers, concerned with understanding the development of health insurance. This particular insight can be generalised to any society in which there is a large informal economy, and where universal social security mechanisms do not exist.

The observations of, amongst others, Arrow, and more recently Fukuyama (see Part 2.2), that behaviour can only be explained within an understanding of the customs, morals, and habits of the society in which it occurs, seem particular relevant here. For example, the teaching of Confucian doctrine that a subject should be subordinate to the ruler i.e. the State, may affect the way in which individuals respond to government propaganda regarding health insurance. Indeed, in-depth interviews reveal that during government campaigns, propaganda often appeals to a sense of public obligation and duty to society, in an attempt to encourage insurance purchase. Again, this point stresses the value in extending and revising the assumptions of standard economic frameworks, in the light of cultural and other features of the society in question. Furthermore, it makes some of the findings less generalisable, in the sense that they are influenced, at least in part, by a particular feature of Vietnamese culture and society.

In summary, the decision to purchase formal insurance is influenced by a range of factors. Individual characteristics, such as educational levels, are likely to have a direct bearing, as will various supply-side factors. Understanding and explaining demand for insurance in low-income countries, also requires a consideration of the very different

structure of the health system, economy, and society in general, in particular the extensive role of informal social security mechanisms. Furthermore, perceptions of corruption in government institutions are widespread in Vietnam, and may lead individuals to rely more on self-insurance or local, informal, risk-sharing networks. These are the major conceptual insights presented in this thesis.

8.2   Demand for health insurance - new empirical knowledge

This section summarises the findings of Chapter 5, and discusses whether the assumptions and predictions of theoretical frameworks, reviewed in Part 2.1, hold true in the context of voluntary health insurance in Vietnam. Implications for policy are also discussed.

A central issue in health insurance theory is the trade-off between the gains from risk-sharing, and the incentive problems arising from information asymmetry between the insurer, and the insured. *Research Question 1* addresses one such issue (*Does voluntary health insurance in Vietnam suffer from adverse selection?*). Overall, individuals reporting good health have a 41% to 55% lower probability of purchasing insurance, a finding that is robust across several model specifications. The findings thus support the predictions of theory. In the provincial models, adverse selection is evident in Hai Phong Province and Dong Thap Province, but not in Ninh Binh Province. Indeed, those who have fallen ill are more likely to appreciate the value of health insurance, and become a real advocate for it. Overall, the findings support the expected trade-off between financial stability and offering a fixed premium in a scheme with voluntary scheme, and no exclusions to entry. This finding is consistent with evidence from higher-income countries, and appears to be generalisable across a range of contexts i.e. levels of income, and the extent to which institutions are transparent and effectively regulated.

Appropriate policy responses to adverse selection need to be found, given the importance of the scheme's poverty alleviation focus, and its non-profit nature. One option is to set premia according to individual risk, as suggested by Cutler and Zeckhauser (1997), but this strategy would be unacceptable in that uptake by individuals in poor health is likely to reduce. However, the limited separation of risks may be worth considering in order to attract low-risk individuals into the scheme, especially given that the poorest in society are eligible for free insurance. For example, offering several policies, one of which has a relatively low premium and a

high co-payment, and another with a higher premium and a low co-payment, would lead to a better balance of risks within a fund. If adverse selection is not dealt with, it is debatable whether the current system is financially sustainable.

Another option is to make the scheme compulsory, although as discussed earlier, such a strategy is not feasible given the current structure of the Vietnamese economy. One further strategy is to structure membership around groups rather than individuals, for example through contracts with entire communes, or the mass organisations that are widespread in rural Vietnam. This approach would mitigate adverse selection considerably. Bärnighausen and Sauerborn (2002) draw lessons for low and middle-income countries, from the development of social health insurance in Germany, and recommend the introduction of compulsion as early as possible.

Ensuring that health insurance is part of a person's consumption choice-set is a pre-requisite for extending the scheme in rural areas. A first step in this process is to ensure that people are aware of the scheme and have some basic information about it. This is the primary objective of propaganda, or information campaigns, conducted by the government. Given the significant variation of awareness across districts, detailed information regarding current propaganda strategies e.g. the type of information provided, the focus of the message, and the relative intensity of campaigns across provinces and districts, would have strengthened this research. Despite this, valuable information was collected during the survey, about when and where individuals first heard about the scheme, for policy-makers to use.

Research Question 2 asks 'Do levels of worry about future health status influence the probability of health insurance purchase?'. Whilst individual aversion to risk was not measured in detail, both the household survey and in-depth interviews reveal that 'greater security' is the primary motivation for buying insurance. This finding suggests that current information campaigns are effective in promoting a conceptual understanding of insurance, presumably aided by high levels of literacy in Vietnam. Chapter 5 presents clear evidence that 'worry about future health status', has a highly significant and positive effect on the probability of insurance purchase, which is robust across the four specifications of the model (see Table 5.11).

To the extent that 'worry' is a proxy for aversion to risk, the findings support theoretical predictions. Indeed, this effect is one of the most consistent explanatory factors across the various model specifications in Hai Phong and Dong Thap, and is

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one that policy-makers should take into account when promoting health insurance. To a large extent, risk-averse individuals will seek out health insurance themselves, implying that government strategies should identify and focus on risk-loving individuals. Cultural differences between north and south Vietnam may also be important here, and is an issue area worthy of further research. Generalising these results beyond Vietnam is somewhat problematic, however. The question posed to respondents may be interpreted differently across cultures and societies, as evident from the results presented here, which differ significantly between north and south Vietnam. The high statistical significance of the results suggest, however, that further research into measuring worry and attitudes towards risk is merited.

Economic status has no significant effect on the probability of an individual buying health insurance, which is a positive finding, in that access to health insurance, which improves financial access to health services, is not captured only by the wealthy. Addressing *Research Question 3* (*Does individual economic status influence the probability of health insurance purchase?*), this finding lends some support to predictions that wealthier individuals are more likely to self-insure. If poorer individuals dominate the scheme then risk-sharing across income groups is limited. The finding is also consistent with the current design of benefits, which focuses on reductions in user charges, rather than better service quality. With respect to *Research Question 4* (*Do educational levels influence the probability of health insurance purchase?*), there is some support for the prediction that education has a positive effect on insurance purchase. Again, this information should help policy-makers to target promotional campaigns accordingly, for example by developing special messages for those of a lower educational standard.

Research Questions 5 and *6* empirically test the new theoretical insights developed in this thesis. With respect to the first (*Does membership in a mass organisation influence the probability of health insurance purchase?*), there is considerable evidence that where dense networks of mass organisations exist at the commune level, the probability of insurance purchase is significantly higher. Whilst the theoretical basis for this particular question is underdeveloped, the results are highly significant and remarkably robust across models. As discussed earlier, whilst this variable is not considered a proxy for civil society, it may reflect a sense of duty to the State, or national solidarity, and hence offers some support for the collective action hypothesis. The results suggest that promoting insurance purchase through voluntary mass

organisations may be a fruitful approach to the extension of membership, for example to farmers in rural areas.

Mass organisations are a peculiar feature of communist political systems, and hence the findings may have some relevance to other south-east Asian countries, such as China, Cambodia or Laos. However, the extent to which a sense of duty to the State in the current period of economic and social transition in many countries affects attitudes towards mass organisations, complicates the picture and will affect the generalisability of the results. To some extent, these results may simply be a feature of Vietnamese society rather than the health insurance scheme itself. Clearly, however, the principle of marketing health insurance through organised groups of individuals, such as dairy cooperatives in India, is widely valid.

With respect to *Research Question 6 (Does social cohesion increase or decrease the probability of health insurance purchase?)*, the *collective action* hypothesis was presented in Part 3.2.1, and the *substitute* hypothesis developed and presented in Part 3.2.2, following a wide review of literature from several disciplines. Econometric results of the pooled sample offer some support for the *collective action* hypothesis. In the provincial models, however, in particular in Ninh Binh Province, much stronger support for the *substitute* hypothesis exists. This may be the result of a combination of influences, including strong informal risk-sharing arrangements at the commune level, and a preference for these networks over government schemes.

The significance of these results raises the question of their generalisability to other countries and settings. Raising the potential importance of informal risk-sharing networks for the development of formal risk-sharing schemes, is valid in most low-income countries, and many middle-income countries, in particular where universal social security mechanisms are weak. However, as discussed in the development of this particular research question (see Part 3.2), local perceptions of corruption amongst the institution, often government, responsible for organising the scheme in question, and cultural influences regarding duty to the State for example, are likely to influence the generalisability of the results. Indeed, this thesis demonstrates the importance of local social structure, and other and cultural factors, in understanding the way in which health insurance in a low-income country develops.

Finally, there was interesting feedback from respondents with respect to their intention not to purchase insurance in the future. These include, for uninsured individuals and in

rank order, 'bad staff attitude', 'don't trust the scheme', and 'being healthy'. For existing members who do not intend to renew their policy, financial reasons are the primary reason, followed by 'being healthy' and 'don't trust the scheme'. The importance of trust as a factor motivating the purchase decision was not foreseen, and is closely linked to the findings regarding service quality, presented in the next section. For policy-makers concerned with designing strategies that increase uptake of insurance, the message is that greater regulation of service provision is required, in particular with respect to the reported importance of unofficial payments for service quality.

8.3 Impact of health insurance - new knowledge

Two theoretical insights are made with respect to the impact of health insurance, in the context of Vietnam. First, the conflict implicit in much of the literature, between risk-sharing and increased consumption, is less self-evident in the context of high unmet health needs. Secondly, if increased consumption under insurance is considered unnecessary then, drawing on the work of development economists, socially cohesive communities may be able to overcome the information asymmetry driving such behaviour. This idea was developed following a reading of evidence provided by economists such as Wydick (1999).

A further insight, which runs repeatedly throughout this thesis, is the importance of the different institutional environment in low-income countries, which has an important bearing on how health systems, and health insurance systems, function. Furthermore, the assumptions on which many theoretical models are built, may need to be revised as a result. The following paragraphs further highlight this issue.

8.3.1 Patient satisfaction

There is little in the way of theoretical predictions concerning the effect of health insurance on service quality and patient satisfaction, the subject of *Research Question 7 (What is the impact of voluntary health insurance on patient satisfaction?)*. Part 3.3.1 highlights the fact that in richer economies, private health insurance tends to be directly linked to improved service quality, whereas in Vietnam the only benefit is an 80% reduction in user charges. Overall, health insurance is expected to have little impact on patient satisfaction, except that which is related to the lower cost of accessing care. The scheme is, in many respects, more comparable to publicly funded

systems in which demand is rationed through longer waiting times rather than through increased access costs.

Overall, however, most insured individuals are very satisfied with voluntary health insurance. When further questioning was made as part of in-depth interviews, many people actually reported dissatisfaction with service quality. Two main reasons for this emerged. The first is a lack of trust in the scheme and, the second, the poor attitude of health workers. Dissatisfaction was principally voiced in terms of relative quality i.e. in comparison with uninsured patients who pay full user charges. An unexpected finding of the research was that many insured individuals report receiving an inferior quality of service, a response voiced most strongly in Ninh Binh Province in northern Vietnam. The strength of feeling amongst many respondents was not anticipated, and may hinder the development of the scheme in the longer-run. It is thus an issue which policy makers need to investigate further and address.

Feelings that health workers cannot be trusted are driven principally by reports that unofficial payments are important to obtain quality service. There is strong evidence that the amount of money a patient brings to the facility has a significant bearing on the attitudes of staff towards them. This finding is consistent with the observations highlighted in Part 1.4, that under economic transition, health facilities have become increasingly independent from bureaucratic and political control. Furthermore, the findings also support reports that corruption within government is widespread and increasing. These observations provide an example of the need to adapt theoretical frameworks and their assumptions, to the reality of the Vietnamese health system. This particular finding is likely to be generalisable to other low-income countries given that corruption and unofficial activity is a feature of many societies without the institutions to regulate provider behaviour.

Despite some dissatisfaction with service quality, insured patients report trading these off, against the benefits of expected financial savings. This insight sheds new light on the way in which health insurance has altered patterns of treatment-seeking behaviour, and adds to current understanding of the impact the health insurance scheme has had on the dynamic of the health system. In-depth interviews revealed that many insured patients pick-and-choose when to use their insurance card, commonly paying full fees when a health problem is minor. When a health problem is perceived as serious, however, and the expected cost of treatment is substantial, insured patients consider it worthwhile to accept the downside of insurance in terms of longer waiting times and

inferior service quality. In some cases, patients try to have the best of both worlds, pretending not to be insured during treatment, but producing their insurance card at the time of payment. This is a further finding, which enhances understanding of the way in which supply and demand in the health system interacts, essential for the development of future policy.

From a policy perspective, health insurance may be important in mitigating, or preventing the development of, supplier-induced demand. Whilst not examined in detail in the thesis, supplier-induced demand was expected to be a problem, given the reimbursement mechanism used. However, if as indicated by insured patients, they are perceived by health workers to bring less money to a facility, there appears to be no incentive for providers to increase the quantity of care that insured patients consume. By implication, the reimbursement mechanism plays an important role in influencing the quality of services provided, an insight not previously made in the literature.

On the one hand, and with the benefit of hindsight, it is not surprising that service quality is poorer under insurance. If the scheme provided both better quality, and substantially cheaper care to the patient, it is unlikely that uptake would be as low as it currently is. However, poor quality may hamper the development of the scheme, particularly in terms of attracting healthier and wealthier individuals into the scheme, which is critical to counter problems of adverse selection. If, for example, premia were to increase without parallel improvements in service quality, the perceived balance between benefits and negative effects will shift towards the latter, effectively reducing expected utility under insurance. If the extent to which the scheme is considered good value for money, which it currently is, is eroded, this may lead to problems in terms of extending the scheme and ensuring its financial sustainability.

To summarise, the reimbursement of providers under health insurance, service quality, and demand for health insurance, are interdependent, an important fact for policy-makers to recognise, and one that has not previously been emphasised. Improving the quality of care for insured patients would help both to retain existing members and to attract healthier individuals into the scheme, an important objective for the scheme at present. However, this interdependence also creates a dilemma, as increasing the reimbursement rate to improve provider behaviour and hence service quality, may also create pressures for supplier-induced demand. This suggests that stronger regulation of provider behaviour is probably the best next step.

8.3.2   Protecting financial access to health care

Once user charges exist at the point of service delivery, as in Vietnam, a market for insurance is expected to evolve. In most cases, a central motivation for introducing insurance is to protect patients against uncertain, and potentially welfare-damaging, out-of-pocket expenditures, evidence of which exists in Vietnam (see Figure 1.2). Given substantial evidence that exemption mechanisms tend to be an ineffective tool for protecting the poor against user charges, principally due to the weakness of institutional capacity, as well as strong incentives for providers to collect user fees, policy-makers in many countries have turned to health insurance.

The expected impact of health insurance on out-of-pocket expenditures (*Research Question 8*), was discussed in Part 3.3.2. Insurance offers an 80% reduction in user charges, and hence private expenditures are expected to be lower for insured patients. However, assuming that demand for services is sensitive to changes in price, the effect may not be as strong as expected. Evidence from the USA and elsewhere shows that as the rate of cost-sharing decreases, out-of-pocket expenditures tend to increase, although the extent to which these findings are relevant to health systems in low-income countries is debatable, for example given the greater importance of non-price rationing costs.

Evidence presented in Chapter 6, using econometric analysis that controls for sample selection bias, supports these predictions, concluding that, *ceteris paribus*, voluntary health insurance reduces out-of-pocket expenditures, and substantially so. On average, private expenditures by insured individuals are 97%-200% less than those incurred by uninsured patients. This finding provides strong evidence that health insurance can be effective in ensuring financial access to health services, and no similar effect has been reported elsewhere in the literature. Despite this finding, there is evidence that economic status remains an important determinant of total out-of-pocket expenditures. This finding is consistent with reports that unofficial payments, which are included in these estimates, are widespread in Vietnam. Unofficial payments are important to receive care that is both timely, and of better quality, at least in terms of staff attitudes. Overall, however, health insurance reduces private expenditures proportionately more for poorer patients, than for richer patients, an important finding given the policy goals of the scheme.

The results provide strong evidence that health insurance improves equity in health financing by equalising expenditures between insured patients of different economic

status. Given that, overall, demand for health insurance is not sensitive to individual economic status, it can be concluded that equity in access to health services has improved for society as a whole. Were the wealthier more likely to purchase insurance, then income-inequalities in access would have been exacerbated. There is, however, evidence that income drives insurance purchase in Hai Phong Province (see Part 5.3.1), which requires closer analysis by policy-makers. Furthermore, if reduced out-of-pocket expenditures have resulted in greater use of health services, and assuming that this additional use is not unnecessary, then it is possible to conclude that previously unmet health needs are now being met, directly as a result of health insurance.

8.3.3 Treatment-seeking behaviour

As with user charges, the introduction of insurance into a health system is likely to alter patterns of treatment seeking behaviour and service utilisation, both in terms of who uses health services, with which type of provider, and how often. Chapter 7 addresses this broad issue (*Research Question 9: What is the effect of being insured on treatment-seeking behaviour?*).

Relevant theory, reviewed in Part 2.1.2, predicts that insured individuals have a tendency, *ceteris paribus*, to consume more health services than uninsured individuals. Dealt with in the literature on moral hazard, this prediction depends on demand being sensitive to changes in price. In low-income countries, whilst insurance may reduce the direct cost of accessing health services, unofficial payments and high indirect costs may reduce the extent to which health insurance reduces the total access costs.

Several aspects of treatment-seeking behaviour were considered in this research. In summary, using a simple probit analysis, insurance patients who feel ill are significantly more likely to seek care from a health professional, whether in the public or private sector, and are significantly less likely to self-treat. These findings support theoretical predictions. However, when bias resulting from non-random self-selection into the scheme is corrected using the bivariate probit estimator, which jointly estimates models of insurance and treatment-seeking behaviour, the direct effect of insurance disappears. This suggests that unobservable factors are simultaneously driving both the purchase of health insurance and treatment-seeking behaviour. One possible factor is different attitudes towards ill-health, related to health-related risk-aversion. Whilst this thesis presents findings related to 'worry' about future health

status, which appears to capture something more that current health status, it is acknowledged that a better understanding of attitudes towards risk and health is required through further research.

Even if the effect of insurance on treatment-seeking behaviour is only an indirect one, there are some clear messages for policy-makers. Health insurance may lead to improved population health through two main effects. First, if health care received in government facilities is of a higher clinical quality than self-medication, or compared to that received in private facilities, then patients will receive better treatment for their health problems. Secondly and similarly, more appropriate use of medicines should help to counteract the rapid growth in resistance to many communicable diseases, in particular typhoid and tuberculosis, which have become major public health concerns for the Vietnamese Government in recent years.

Finally, with respect to *Research Question 10 (Does social cohesion mitigate moral hazard?)*, the finding that social cohesion has no impact on the probability of seeking government services amongst insured patients is expected, but has ambiguous implications. If the increased consumption of health services is appropriate i.e. meets previously unmet health needs, then the findings are not problematic. However, if some of the increased consumption is wasteful, then the current institutional design is missing the opportunity to harness local monitoring mechanisms, which may be effective at countering these incentive problems. Questioning current institutional arrangements, and considering alternatives, when developing the policy framework around health insurance, could have a significant impact on the financial sustainability of the scheme in the future.

8.4   Agenda for further research

A number of issues for further research have been raised during this thesis. Perhaps the most important is to strengthen understanding of the way in which health insurance is organised i.e. the supply-side. This thesis has focussed, through the collection of data directly from individuals, on demand side issues i.e. the system as viewed by the consumer. However, many of the results presented in Chapter 5, for example the highly significant signs on dummy coefficients representing provinces (and districts), might be explained with a better understanding of the different ways in which Provincial Health Insurance Offices promote the scheme. For example, the significant variation of awareness across districts may simply be explained through a

better understanding of propaganda strategies. The content of information provided, the focus of the message, and the relative intensity of campaigns across provinces and districts, are all factors likely to explain varying levels of awareness and purchase of health insurance.

Further research into attitudes towards risk, in the specific context of the health sector, would be useful given the current proliferation of health insurance schemes in low-income countries. In the specific context of Vietnam, exposure to capitalist values in the south of the country, at a time when northern Vietnam was under communist control, may have influenced attitudes to risk. Results presented in Chapter 5 (see Figure 5.7) suggest that worry about future health is substantially lower in the southern province of Dong Thap Province (in the Mekong River Delta). This is despite the fact that overall health status is worse here relative to the Red River Delta, the location of the two northern provinces surveyed (See Table 1.4).

The introduction of social structure into the analysis raises several further questions. For example, how deep are public perceptions of corruption in government institutions, how do they vary geographically, and how do these perceptions influence demand for health insurance? With respect to mass organisations, little is understood about the way in which these organisations function, despite the very important role they play in Vietnamese society. Furthermore, what motivates an individual to join a mass organisation? The results to these questions may be useful in informing strategies that enable the extension of health insurance into rural areas and to workers in the informal economy.

The finding that insured patients are seen as bringing less money to health facilities, often have to wait longer to receive treatment, and are generally considered to be *less important* than fee-paying patients, raises a number of important issues for policy-makers. A better understanding of the dynamic at play here, in terms of the supply of health services, for example through in-depth facility surveys and in-depth interviews with providers would be extremely beneficial in this regard. Finally, this thesis has not specifically addressed the overall financial sustainability of the scheme, a critical area for government policy-makers to have a detailed knowledge of.

8.5 Final thoughts

Voluntary health insurance is a fundamental part of the Vietnamese Government's strategy to develop a financially sustainable health system that provides universal access to health services. Having successfully enrolled the majority of formal sector workers into the compulsory scheme, and a substantial number of children through school health insurance, the key to achieving this goal is to increase voluntary entry into the scheme. Extending voluntary risk-sharing scheme in a predominantly informal economy, whilst also limiting the incentive problems that can undermine such schemes financially, is a serious challenge for Vietnam. Any country that manages to chart a successful course through these dilemmas will have the attention of policy makers around the world.

One clear message from this thesis is that good policy design is no guarantee of successful outcomes. This is the case in any health system, but particularly when government policies are implemented in an economy undergoing economic transition, a health sector which is liberalising, and where regulation and bureaucratic control of service provision is weak. It is particularly difficult, in this context, to make accurate assumptions about a range of provider and consumer behaviour. Data collected through household surveys thus provide one of the more effective ways of understanding how an intervention such as health insurance, impacts on issues such as treatment seeking behaviour and access to health services (see Figure 1.1).

As noted in Chapter 1, 'It has still to be shown that voluntary local prepayment schemes can make a major contribution to health financing, except perhaps in a coercive political system' (Abel-Smith 1994). Extending insurance is a difficult task, but one which may be achievable in Vietnam, given its particular culture. For example, the strong networks of mass organisations at the community level could be harnessed to help extend health insurance to rural farming communities. In addition, where there is a strong sense of duty to the State, and its programmes, the probability that individuals will join a government health insurance scheme may increase. These factors are, however, particular features of Vietnamese society, and hence limit their generalisability to other countries.

Theoretically, the findings presented in this thesis add to the small body of evidence that welfare based government interventions in particular those requiring voluntary participation, are influenced by the informal networks within which an individual functions. For policy makers, this is an additional factor for consideration when

designing a scheme, and may explain some of the lack of progress made in extending health insurance in certain provinces, districts and communes.

Overall, the introduction of voluntary health insurance has had many positive effects with respect to health system outcomes. Financial access to health services has improved, and more so for poorer patients. This finding is particularly positive given that economic status is not a significant determinant of health insurance purchase. By implication, rather then exacerbating income-related inequalities in access to services, health insurance has probably had a direct effect in terms of reducing these inequalities. For many households, reductions in private health expenditures bring comfort and security, especially during the current period of economic transition. This finding suggests that, overall, the scheme has had a positive impact in term of health policy outcomes, and that policy-makers should continue to develop the scheme. Continual monitoring and evaluation is, however, clearly required.

One interesting finding of this study is the importance of perceived service quality, which forms a link between the way in which providers are reimbursed and levels of demand for health insurance. Patients paying full user charges appear to be valued more than those with insurance, by health workers, and seems to reflect the amount of money they bring to a facility. The inferior quality of services many that insured patients receive has a negative impact on their satisfaction with the insurance scheme. This should be a priority issue for health policy-makers in Vietnam given its potentially destabilising effect, and low levels of enrolment overall. Rather than increasing reimbursement rates to compete with income from user charges, which would create incentives for providers to induce consumption of health services, stronger bureaucratic control is probably the best next step.

This thesis has attempted to demonstrate how, by drawing on frameworks from disciplines such as sociology and development economics, current thinking about the development of voluntary health insurance in low-income countries can be enriched. Indeed, this is probably true for health economics as a whole. In many cases it is a question of emphasis: for example the discussion relating to the crowding out of informal insurance networks by formal ones, and vice versa, fits within existing theory regarding competition. Other issues, however, such as those relating to the role of duty, and social norms of behaviour, are not adequately dealt with at present by economics frameworks. Finally, whilst voluntary health insurance in Vietnam has many positive aspects, significant challenges remain to ensure that its members

continue to consider it to be, as one respondent commented, like having a good neighbour.

Appendix 1: Enrolment in health insurance (1997)

		ALL HEALTH INSURANCE			PUBLIC VOLUNTARY HEALTH INSURANCE		
		TOTAL	Compulsory	Voluntary	School children	Adults (paying)	Humanitarian
1	Viet Nam	164,197	164,197	0	0	0	0
2	Chi Nhanh	148,636	148,636	0	0	0	0
3	Ha Noi	596,000	376,000	220,000	150,000	0	70,000
4	Tp.Hcminh	1,123,352	421,160	702,192	696,194	0	5,998
5	Hai Phong	649,100	231,000	418,100	294,600	61,500	62,000
6	Ha Giang	37,760	29,910	7,850	7,850	0	0
7	T/Quang	64,967	49,317	15,650	12,864	2,786	0
8	Cao Bang	43,240	41,930	1,310	1,310	0	0
9	Lang Son	70,202	44,402	25,800	25,000	500	300
10	Lai Chau	40,549	29,549	11,000	10,000	1,000	0
11	Yen Bai	66,190	59,190	7,000	7,000	0	0
12	Lao Cai	44,557	37,470	7,087	6,655	422	0
13	Thai Nguyen	234,900	108,200	126,700	125,000	1,700	0
14	Son La	53,400	53,400	0	0	0	0
15	Phu Tho	196,807	123,387	73,420	71,095	2,239	86
16	Bac Giang	88,000	88,000	0	0	0	0
17	Q/Ninh	259,918	116,370	143,548	138,823	0	4,725
18	Hoa Binh	64,301	53,563	10,738	9,200	1,500	38
19	Ha Tay	167,420	164,064	3,356	2,867	0	489
20	Hai Duong	159,594	142,648	16,946	16,700	60	186
21	Thai Binh	283,655	158,440	125,215	118,998	6,000	217
22	Nam Dinh	315,358	174,599	140,759	133,119	7,640	0
23	Ninh Binh	229,127	91,347	137,780	100,800	1,055	35,925
24	Than Hoa	368,458	255,690	112,768	98,000	13,703	1,065
25	Nghe An	336,879	233,179	103,700	95,000	1,500	7,200
26	Ha Tinh	117,426	106,345	11,081	11,024	0	57
27	Q/Binh	85,173	65,964	19,209	19,191	0	13
28	Quang Tri	66,929	45,050	21,879	19,414	2,396	9
29	TT Hue	193,288	64,400	128,888	125,000	1,300	2,583
30	TP Da Nang	122,898	74,250	48,648	48,638	0	10
31	Q/Ngai	98,594	65,594	33,000	33,000	0	0
32	Binh Dinh	228,215	79,880	148,335	145,000	200	3,135
33	Kh/Hoa	80,695	57,106	23,589	14,493	0	9,096
34	Ninh Thuan	56,695	18,429	38,266	38,090	0	176
35	Binh Thuan	120,500	40,500	80,000	80,000	0	0
36	Phu Yen	52,901	34,432	18,469	17,691	618	160
37	Gia Lai	57,775	57,500	275	275	0	0
38	Kontum	20,712	20,641	71	71	0	0
39	Daklak	136,889	86,889	50,000	50,000	0	0

40	Lam Dong	80,431	43,600	36,831	35,000	1,822	9
41	Binh Duong	125,500	55,500	70,000	70,000	0	0
42	Tay Ninh	37,966	37,966	0	0	0	0
43	Dong Nai	124,468	114,189	10,279	9,000	0	1,279
44	Long An	162,701	63,894	98,807	98,165	642	0
45	Dong Thap	109,748	43,850	65,898	65,000	870	28
46	An Giang	92,451	48,800	43,651	40,000	3,169	482
47	Tien Giang	101,051	69,420	31,631	31,631	0	0
48	Ben Tre	71,209	64,157	7,052	7,052	0	0
49	Vinh Long	67,821	36,367	31,454	30,927	463	64
50	Tra Vinh	38,552	38,552	0	0	0	0
51	Can Tho	98,999	68,497	30,502	29,950	250	302
52	Soc Trang	47,040	35,605	11,435	10,000	591	844
53	Kien Giang	76,670	46,050	30,620	30,000	600	20
54	Ca Mau	49,241	48,497	744	0	0	744
55	Br-Vtau	95,431	45,337	50,094	50,000	0	94
56	Gia Thong/ Transport	115,480	111,480	4,000	3,000	0	1,000
57	Dau Khi/ Petroleum	12,500	12,120	380	380	0	0
58	Cao Su/Rubber	93,740	74,400	19,340	0	19,340	0
59	Than/ Coal-Energy	69,086	63,584	5,502	4,098	1,404	0
60	Bac Can	25,164	17,402	7,762	7,762	0	0
61	Bac Ninh	108,300	63,300	45,000	40,000	5,000	0
62	Hung Yen	73,252	73,252	0	0	0	0
63	Bac Lieu	67,198	28,770	38,428	36,220	2,051	157
64	Ha Nam	96,008	48,300	47,708	47,708	0	0
65	Quang Nam	141,800	87,500	54,300	54,000	0	300
66	Binh Phuoc	41,200	16,200	25,000	25,000	0	0
67	Vinh Phuc	80,265	67,013	13,252	12,615	637	0
	TOTAL	9,548,529	5,736,230	3,812,299	3,460,470	142,958	208,791

Appendix 2: Survey provinces (maps)

NINH BÌNH BẢN ĐỒ HÀNH CHÍNH

TỶ LỆ 1:125.000

ĐỒNG THÁP
BẢN ĐỒ HÀNH CHÍNH

TỶ LỆ : 1 : 200.000

CAM PU CHIA

LONG AN

TIỀN GIANG

AN GIANG

CẦN THƠ

VĨNH LONG

Appendix 3: Survey provinces and sampling units

HAI PHONG PROVINCE			
Sampling Units			

Province	District	Commune / Ward	Sub-commune
Hai Phong	Kien An	Phu Lien	Go Cong 1
			Go Cong 2
			Phu Lien
			Quy Tuc
Hai Phong	Kien An	Tran Thanh Ngo	To 1, Tay Son
			To 1, Cum 1
			To 1, Cum 2
			Dong Son
Hai Phong	Thuy Nguyen	Kien Bai	Doi 3
			Doi 5
			Doi 6
Hai Phong	Thuy Nguyen	Thien Huong	Doi 1
			Doi 5
			Doi 6
			Doi 8
			Doi 9
Hai Phong	An Lao	Tan Vien	Luong Cau
			Kinh Dien
			Du Vien
Hai Phong	An Lao	Tan Dan	Kinh Xuyen
			Vi Xuyen
			Lai Thuong

Province	District	Commune / Ward	Sub-commune
NINH BINH PROVINCE			
Sampling Units			
Ninh Binh	Kim Son	Van Hai	Trung Chinh
			Tay Bac
			Dong Tho
Ninh Binh	Kim Son	Dinh Hoa	Xom 2
			Xom 5
			Xom 8
Ninh Binh	Kim Son	Quang Thien	Xom 5
			Xom 11
			Xom 16
Ninh Binh	Hoa Lu	Ninh Hai	Khe Ngoai
			Coi Khe
Ninh Binh	Hoa Lu	Ninh Khang	Phu Gia
			Kim Phu, La Phu
			Phan Trung, Bach Cu
			Dai Phu
Ninh Binh	Hoa Lu	Ninh My	My Lo
			Dong Dinh
			Tay Dinh
			Dong Nam
			Tay Nam
			Tay Bac
			Nhan Ly
			Quan Dong
			Xom Benh vien HL
			Xom Nam Chiem
			Vinh Vien
			Thach Tac
Ninh Binh	Ninh Binh Town	Phuc Thanh	Phuc Thai
			Phuc Tan
			Ly Thuong Kiet
			Ngo Gia Tu
			Hai Thuong Lan Ong
			Phuc Trung
			Tran Hung Dao
			Nguyen Dinh Chieu
			Tran Dang Ninh
			Le Quy Don
			Kim Dong
			Phan Chu Trinh
			Tran Phu
			Phuc Nam
			Phuc Hung
			Tran Binh Trong
Ninh Binh	Ninh Binh Town	Tan Thanh	Dau Long
			Dau Bac
			Quy Tan
Ninh Binh	Ninh Binh Town	Thanh Binh	Tran Kien 1
			Tran Kien 2

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Ninh Binh	Kim Son	Phat Diem	Phu Vinh
			Tuong Kiem
			Hung Tien
			Kien Tuy
			Dong Huong
			Kien Thai
			Phat Diem Nam
Ninh Binh	Nho Quan	Nho Quan	Nghe Thi
			Hoe Thi
Ninh Binh	Ninh Binh Town	Van Giang	To 3, Pho 2
			Duong 3, Pho 2
			To 3, Pho 3
			Duong Tran Hung Dao
			To 6, Pho 3
			To 7, Pho 3
			Duong 10, Phuong Bich Dao
			Duong 4, Pho 2
			To 1
			Pho 3
			Duong Pham Hong Thai

DONG THAP PROVINCE

Sampling Units

Province	District	Commune / Ward	Sub-commune
Dong Thap	Sa Dec Town	Ward I	Khom 1
-	-	-	Khom 2
-	-	-	Khom 3
-	-	-	Khom 4
Dong Thap	Sa Dec Town	Ward III	Khom 1
-	-	-	Khom 2
-	-	-	Khom 3
Dong Thap	Sa Dec Town	Tan Phu Dong	Ap Phu Hoa
-	-	-	Ap Phu Thuan
-	-	-	Ap Phu Long
Dong Thap	Lai Vung	Lai Vung Town	Khom 1
-	-	-	Khom 2
-	-	-	Khom 3
-	-	-	Khom 4
-	-	-	Khom 5
Dong Thap	Lai Vung	Tan Duong	Ap. Than Thuan
-	-	-	Ap Tan Duong
-	-	-	Ap Hau Thanh
-	-	-	Ap Tan Loc
Dong Thap	Lai Vung	Tan Thanh	Ap Tan Hung
-	-	-	Ap Tan Loc
-	-	-	Ap Tan Loi
Dong Thap	Hong Ngu	Anh Binh A	Ap An Loi
-	-	-	Ap An Hoa
-	-	-	Ap An Loc
Dong Thap	Hong Ngu	Thuong Phuoc I	Ap 1
-	-	-	Ap 2
-	-	-	Ap 3
Dong Thap	Hong Ngu	Long Khanh A	Ap Long Phuoc
-	-	-	Ap Long Thach B
-	-	-	Ap Long Ta
-	-	-	Ap Long Huu
-	-	-	Ap Long Chau CKB
-	-	-	Ap Long Binh CKB
-	-	-	Ap Long Thai CKB
-	-	-	Ap Long Hau

Appendix 4: Household survey questionnaire

RESPONDENT INFORMATION (Adult member sample)

Individual ID: ☐☐ ☐☐☐ ☐☐   *Interviewer code:* ☐☐
                                     Supervisor code: ☐☐

i) Name of respondent: _____

ii) Interviewee category

Non-member	1
Former insurance member 1997/8	2
Current member - adult	3
Current member - schoolchild	4
Current member - humanitarian/welfare	5
Other (WRITE IN)_____	6

iii) Year of birth: ☐☐☐☐   *iv)*   *Male* ☐
                                           Female ☐

v) HOME ADDRESS

*Province*_____   *District*_____
*Commune/Ward*_____

vi)   *Urban* ☐
       Rural

vii) Insurance details:

           d d m m y y
Card expiry date: ☐☐☐☐☐☐

*Nominated health facility:*_____

viii) Other details:

           d d m m y y
Date of interview: ☐☐☐☐☐☐   *Time interview begins:* ☐☐☐☐

                                     Time interview ends: ☐☐☐☐

ix)   Visit record

	Date (1)	Available (2)	Not present / unavailable (3)	Dead (4)	Appointment date and time (5)	Refusal (6)	Other notes (7)
Visit 1							
Visit 2							
Visit 3							

INTRODUCTION

Locate respondent and say...

I am from the Institute of Sociology in Hanoi and we are undertaking a research project in partnership with the University of York in England. The research is investigating how much people use and spend on health care, and what they think about the health insurance system. The aim of the research is to provide information to Vietnamese Health Insurance and the Ministry of Health. The survey will provide vital information to help improve the health services that you use. We are not trying to sell you health insurance. We would like to ask you some questions about a variety of issues and ask you to be as honest as possible. All the answers you give will be treated confidentially and no-one apart from key members of the research team will be able to trace them back to you. We expect the interview to last less than one hour. Are you available?

If NO then fill in details on cover page making an appointment if possible.
If YES then ask:

a) Do you currently have a health insurance card?

Yes	1	
No	2	
Don't know/can't remember	3	go to c)

b) Which health insurance scheme are you a member of?

State compulsory health insurance	1	go to e)
State voluntary health insurance	2	
Bao Viet	3	
Bao Minh	4	go to Q1
Local community health insurance scheme	5	
Other (WRITE IN)	6	

---

c) Have you ever had a state voluntary health insurance card, that is the government health insurance scheme for farmers and other self-employed people?

Yes	1	
No	2	end interview
Don't know/can't remember	3	end interview

d) When did your last insurance card expire ?

Before 1st January 1997	1	
On or after 1st January 1997	2	go to Q1
Don't know/can't remember	9	

e) Do you have any children between 5 and 17 years who live in the household ?

Yes	1	go to Q1
No	2	end interview
Don't know/can't remember	3	end interview

IF YES COMPLETE THE HOUSEHOLD QUESTIONNAIRE AND THEN ONE INDIVIDUAL QUESTIONNAIRE FOR EACH CHILD

RESPONDENT INFORMATION (Commune Peoples Committee sample)

Individual ID: ☐☐ ☐☐☐ ☐☐   *Interviewer code:* ☐☐
                                      Supervisor code: ☐☐

i) Name of respondent: _____

ii) Interviewee category

Non-member	1
Former insurance member 1997/8	2
Current member - adult	3
Current member - schoolchild	4
Current member - humanitarian/welfare	5
Other (WRITE IN)_____	6

iii) Year of birth: ☐☐☐☐   *iv)*   *Male* ☐
                                       Female ☐

v) HOME ADDRESS

*Province*_____   *District*_____
*Commune/Ward*_____

vi)   *Urban* ☐
        Rural ☐

vii) Insurance details

d d m m y y
Card expiry date: ☐☐☐☐☐☐

*Nominated health facility:*_____

viii) Other details:

d d m m y y
Date of interview: ☐☐☐☐☐☐   *Time interview begins:* ☐☐☐
                                      Time interview ends: ☐☐☐

ix)   Visit record

	Date (1)	Available (2)	Not present / unavailable (3)	Dead (4)	Appointment date and time (5)	Refusal (6)	Other notes (7)
Visit 1							
Visit 2							
Visit 3							

INTRODUCTION

I am from the Institute of Sociology in Hanoi and we are undertaking a research project in partnership with the University of York in England. The research is investigating how much people use and spend on health care, and what they think about the health insurance system. The aim of the research is to provide information to Vietnamese Health Insurance and the Ministry of Health. The survey will provide vital information to help improve the health services that you use. We are not trying to sell you health insurance. We would like to ask you some questions about a variety of issues and ask you to be as honest as possible. All the answers you give will be treated confidentially and no-one apart from key members of the research team will be able to trace them back to you. We expect the interview to last less than one hour. Are you available?

a) Do you currently have a health insurance card?

Yes	1
No	2
Don't know/can't remember	3	go to c)

b) Which health insurance scheme are you a member of?

State compulsory health insurance	1	go to e)
State voluntary health insurance	2	end interview
Bao Viet	3	
Bao Minh	4	go to Q1
Local community health insurance scheme	5	
Other (WRITE IN)	6	

c) Have you ever had a voluntary health insurance card, that is the government health insurance scheme for farmers and other self-employed people?

Yes	1
No	2
Don't know/can't remember	3	go to Q1

d) When did your last insurance card expire ?

Before 1st January 1997	1	go to Q1
On or after 1st January 1997	2	end interview
Don't know/can't remember	9	end interview

e) Do any children between 5 and 17 years live in the household ?

Yes	1	go to Q1
No	2	end interview
Don't know/can't remember	3	end interview

Part 1: Household Questionnaire

Household ID ☐ ☐ ☐☐☐

A) HOUSEHOLD SOCIO-ECONOMIC CHARACTERISTICS

I'd now like to ask you a few questions about the people that live in the household?
(IF NECESSARY ASK ABOUT ALL THOSE PEOPLE THAT YOU USUALLY SHARE AN EVENING MEAL WITH)

1. Please, tell me about the people who live in your household:

	Common name	Relation to head of household	Age	Year of birth	Sex	Marital Status	Current main occupation (WRITE IN)	Other jobs/ ways of making money	Religion
1	RESPONDENT								
2									
3									
4									
5									
6									
7									
8									
9									

Coding:

MARITAL STATUS

1	Single
2	Married
3	Separated/Divorced
4	Widowed

MAIN OCCUPATION

1	Farmer
2	Service/trader
3	State employee
4	Hired labour
5	Army/Police

6	Student
7	Unemployed
8	Retired/houseworker
9	Other

RELIGION

1	Buddhist
2	Catholic
3	None
4	Other

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Part 1: Household Questionnaire

1. (continued). Please, tell me about the people who live in your household:

	Common name (identify subject)	Level of education	Health insurance member	Health status in last 12 months	Details of long-term illness if relevant (WRITE IN)	Pregnant (Yes / No)
1	RESPONDENT					
2						
3						
4						
5						
6						
7						
8						
9						

EDUCATION

1	Primary
2	Lower secondary
3	Upper secondary
4	Vocational training
5	Middle school

6	College/ University
7	Post-graduate

HEALTH INSURANCE

1	Compulsory
2	Voluntary
3	Bao Viet / Minh
4	Other
5	None

HEALTH STATUS

1	Good
2	Fairly good
3	Fairly bad
4	Long term illness/disability

2. NOW CODE THE TYPE OF HOUSE

Apartment	1
Villa	2
Permanent house (1 floor)	3
Permanent house (2 or more floors)	4
Tiled roof, brick wall	5
Thatch roof, brick wall	6
Thatch roof, wood/mud wall	7
Other_____	8
Don't know	9

3. What type of latrine do you have in your house?

Primitive latrine	1
Private - 2 tank system	2
Private – flush system	3
Shared toilet	4
No latrine	5
Other_____	6
Don't know	9

4. What is your main source of drinking water from?

Piped water	1
Rain water	2
Well/pump well	3
Lake/pond/river	4
Other_____	5
Don't know	9

5. Which of the following does your household have in working order ? (READ OUT AND TICK EITHER YES OR NO BOX AS APPROPRIATE)

ITEMS	YES	NO	NOTES
a) Motorbike			
b) Car / van / lorry / motor boat			
c) Video			
d) Colour TV			
e) Refrigerator / washing machine			
f) Telephone			
g) Agricultural machine			
h) Air conditioner			
i) Electric water pump (bought themselves)			
j) Salon / bed			
k) Other luxury item			

SKIP FOLLOWING QUESTION IF NOT RELEVANT (e.g in urban areas)

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6. For each of the following items can you tell me how many you have, or have produced, and how much income you made from selling each during the last 12 months.....(READ OUT)

ITEM	UNIT	VALUE ('000s Dong)
a) Crop 1		
b) Crop 2		
c) Crop 3		
d) Cereal 1		
e) Cereal 2		
f) Animal 1		
g) Animal 2		
h) Animal 3		
i) Animal 4		
	TOTAL=	

I'd now like to ask you a few more questions about the income of the household...

7. Approximately how much income did the household make in the last month, in **VND** from the following. (READ OUT)

	PERSON 1	PERSON 2	PERSON 3	PERSON 4	TOTAL
a) Salary from main occupation					
b) Bonuses					
c) Earnings from extra jobs					
d) Pension					
e) Remittances / support from family					
f) Interest on savings					
e) Other (specify)					
TOTAL=					
				TOTAL FOR 12 MONTHS =	

SUPERVISOR TO COMPLETE NEXT QUESTION

8. ADD THE INCOME TOTALS FROM Q6 and Q7 AND WRITE IN BELOW

_____VND

Now thinking about household expenditure:

9. Approximately how much does the household spend each day on **food and drink**, including food you have grown?

_____VND   Total for 12 months = ☐

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10. Approximately how much did the household spend on **electricity** last month?

_____VND   Total for 12 months =

11. About how much did the household spend on **education** in the last 12 months / for one school year?

	CHILD 1	CHILD 2	CHILD 3	CHILD 4	ALL CHILDREN
a) Annual fee					
b) Other fee (e.g. extra lessons)					
c) Other (e.g. text books, repairs, hygiene, gifts)					
TOTAL =					

12. Approximately how much did the household spend on **health services** in the last 12 months ?

	PERSON 1	PERSON 2	PERSON 3	PERSON 4	PERSON 5	TOTAL
a) 1st visit						
b) 2nd visit						
c) 3rd visit						
TOTAL=						

13. How much did the household spend on **production and investment** in the last 12 months? (E.g. machinery, fertiliser for farmers; furniture, computers for urban residents).

TOTAL   _____VND

14. In the last 12 months how much did the household spend on **ceremonies**?

TOTAL   _____VND

15. In the last 12 months how much did the household spend **paying off regular debts**? (READ OUT)

_____VND

SUPERVISOR TO COMPLETE NEXT QUESTION

16. ADD THE TOTALS FROM Q9 to Q15 INCLUSIVE AND WRITE IN BELOW. MAKE SURE TO MULTIPLY APPROPRIATE DATA TO GIVE 12 MONTHS ESTIMATES.

_____VND

Part 1: Household Questionnaire

Household ID: ☐ ☐ ☐☐☐

I'd now like to ask you a few questions about savings and credit ....

17. In the last 12 months what methods did the household use to **save money**, and how much was set aside with each method ? (READ OUT)

	YES	NO	AMOUNT SAVED '000s VND
a) Money pooling circle	1	2	
b) Credit book at bank	1	2	
c) Community fund (local official scheme)	1	2	
d) Secret place	1	2	
e) Make a special purchase/investment (e.g. gold)	1	2	
f) Other	1	2	
TOTAL=	-	-	

18. What was your **main reason** for setting money aside? (CIRCLE ONLY THE MAIN REASON)

In case of bad harvest	1
To pay for children's education	2
To pay future health fees	3
To repay debt	4
To help relatives	5
To help buy extra land/extend house	6
Save for household item	7
To invest in production	8
Other (specify)_____	9
Don't know	99

19. In the last 12 months, did the household have to borrow or loan money/paddy?

Yes	1	
No	2	go to Q21
Don't know	3	go to Q21

20. FILL IN FOLLOWING TABLE (3 MAIN REASONS)

What was the money borrowed for? (WRITE IN)	How much money was borrowed? ('000s VND)	Where was the money borrowed from ? (WRITE IN)
a)		
b)		
c)		
TOTAL=		

1	Production	4	Health/medicines
2	Ceremonies	5	Holiday/entertainment
3	Education	6	Other

1	Family/relative	4	Informal savings scheme
2	Friend	5	Moneylender
3	Formal savings scheme	6	Bank

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21. How do you feel your household compares economically to other households in the commune?

Much poorer than average	1
A little poorer than average	2
About average	3
A little better off than average	4
Much better off than average	5
Don't know	9

22. SUPERVISOR TO FILL IN THE FOLLOWING BOX AT END OF QUESTIONNAIRE IF NECESSARY

	VND
TOTAL FROM Q8 PLUS Q20 = (INCOME PLUS BORROWINGS)	
TOTAL FROM Q16 PLUS Q17 = (EXPENDITURE PLUS SAVINGS)	

B) RISK ATTITUDES, RESOURCE POOLING AND SOCIAL CAPITAL

I'd now like to ask you some questions about your local community. First of all......

23. Which of the following organisations, if any, are you a member of? (READ OUT)

GROUP / ORGANISATION	YES	NO
a) Farmers Union	1	2
b) Women's Union	1	2
c) Veterans Union	1	2
d) Bao Viet / Bao Minh	1	2
e) Other (WRITE IN)	1	2
....	1	2

24. And which of the following groups, if any, are you a member of? (READ OUT)

GROUP / ORGANISATION	YES	NO
a) Peer Organisation	1	2
b) Longevity Union	1	2
c) Elderly group	1	2
d) Funeral group	1	2
e) Savings / credit / money-pooling scheme	1	2
f) Other (WRITE IN)	1	2
....	1	2

IF NONE GO TO Q34

25. If you could join only one group which one would it be; which group is the most important in your life ?

a) Farmers Union	1
b) Women's Union	2
c) Veterans organisation	5
d) Bao Viet / Bao Minh	6
e) Peer Organisation	7
f) Longevity Union	8
g) Elderly group	9
h) Funeral group	10
i) Savings / credit / money-pooling scheme	11

26. Which of the groups involve credit, savings or money-pooling programmes, or types of social support mechanisms ?

	POOLING ETC SCHEMES	VISITING SCHEMES
a) Farmers Union	1	2
b) Women's Union	1	2
c) Veterans organisation	1	2
d) Bao Viet / Bao Minh	1	2
e) Peer Organisation	1	2
f) Longevity Union	1	2
g) Elderly group	1	2
h) Funeral group	1	2
i) Savings / credit / money-pooling scheme	1	2

27. Which of the pooling/credit/savings schemes is the most important to you ? (CODE ONLY ONE)

None/not applicable	1 **go to Q34**
Farmers Union	2
Women's Union	3
Veterans organisation	4
Bao Viet / Bao Minh	5
Peer Organisation	6
Longevity Union	7
Elderly group	8
Funeral group	9
Savings / credit / money-pooling scheme	10

28. Can you tell me what the purpose of the group is ? For example can you use the scheme to raise money for health services, or must it be used for another purpose ?

_____

_____

29. Who are the group's members? Are they..........(READ OUT)

a) Close relatives	1
b) Close friends	2
c) Business partners	3
d) People from local community	4
e) Other (WRITE IN)	5
f) Don't know	9

30. Are all members from the same economic group?

a) All are the same	1
b) Most are the same	2
c) Mixture	3
f) Other (WRITE IN)	4
g) Don't know	9

31. If a new person wants to join the group, what conditions should they meet ?

a) Must be friend/relative	1
b) Must be from same commune	2
c) Must be recommended	3
d) Pay a fee	4
e) Other (WRITE IN)	5
f) No conditions	8
g) Don't know	9

32. Overall, how would you rate the functioning of the group?

a) Very poorly functioning	1
b) Poorly/weakly	2
c) Average	3
d) Good	4
e) Excellent	5
f) Don't know	9

33. Why don't you put this money in the bank instead ?

_____

_____

34. SHOW THE FOLLOWING SCALE TO THE RESPONDENT

In general how cohesive would you say the community you live in is ? Circle the number you think is closest.

VERY LOW   VERY HIGH
COHESION   COHESION

◄——— 0 ——————— 1 ——————— 2 ——————— 3 ——————— 4 ——————— 5 ———►

35. In general how would you say you think about the future in terms of your health and your family's health? IF NECESSARY PROMPT: For example would you say that in general you worry about the future or do you take each day as it comes ?

_____

_____

36. Please circle the number you think is closest to your attitude.

DON'T WORRY   WORRY
AT ALL   A LOT

◄——— 0 ——————— 1 ——————— 2 ——————— 3 ——————— 4 ——————— 5 ———►

C) ACCESS TO HEALTH SERVICES

I'd now like to ask you some questions about health facilities. First of all.......

37. How far is it from your home to each of the following health facilities, how would you usually travel there and about how long would it take?

	KMS	Method of transport (WRITE IN)	<15 minutes	15-30 minutes	31-59 minutes	1 hour or more	Don't know/ never been
a) Commune health centre			1	2	3	4	9
b) Inter-communal polyclinic			1	2	3	4	9
c) District Hospital			1	2	3	4	9
d) Provincial Hospital			1	2	3	4	9
e) Traditional / spiritual healer			1	2	3	4	9
f) Private health worker			1	2	3	4	9
g) State pharmacy			1	2	3	4	9
h) Private pharmacy			1	2	3	4	9
i) Drug seller (unlicensed)			1	2	3	4	9
j) Other (WRITE IN)			1	2	3	4	9

CODES

1	Car
2	Motorbike
3	Bicycle
4	Cyclo
5	Bus
6	Taxi

D)   UTILISATION OF HEALTH SERVICES

I'd now like to ask you some questions about your visit to health workers, for personal health issues. First of all:

38. How many times have you been ill in the last 3 months?   (CIRCLE ONLY ONE RESPONSE)

Once	1
Twice	2
Three times	3
Four times	4
Five or more times	5
None	6 go Q40 if member /Q42 if not
Don't know/can't remember	9

39. How many times did you visit a health facility or call a health worker to your house ?

Never	1
Once	2
Twice	3
Three times	4
Four times	5
Five or more times	6
Don't know/can't remember	9

FOR PEOPLE WITH INSURANCE CARDS NOW OR SINCE JANUARY 1997 ASK Q41. FOR NON-MEMBERS GO TO Q42.

40. When was the last time you used the health insurance card?

Never	0
1994	1
1995	2
1996	3
1997	4
1998	5
1999	6
Don't know/can't remember	9

NOW IDENTIFY THE MONTH USING THE FOLLOWING CALENDAR

JAN	**Tet**							**National Day**			*DEC*
1	2	3	4	5	6	7	8	9	10	11	12

IF USED CARD SINCE 1997 GO TO **Q43**

41. Why didn't you use your health insurance card since 1997?

_____

_____

_____

go Q68

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42. When was the last time you visited a health facility or called a health worker to your house? (CIRCLE ONLY ONE RESPONSE)

One month or less ago	1
2-6 months ago	2
7-12 months ago	3
1 - 2 years ago	5
Over 2 years ago	6
Never	7 **go Q68**
Don't know/Can't remember	8

43. Why did you look for medical advice the last time?

Routine preventive care/ante-natal care	1
Felt ill	2
Chronic illness / long-term care	3
Accident	4
Other (please specify)_____	5 **go Q45**
Don't know	8
No answer	9

44. Thinking about the last time you were ill and got medical advice, what was the reason? (UP TO FOUR MAY BE CODED)

Felt ill	1
Chronic illness / long-term care	2
Accident	3
Other (please specify)_____	4
Never	7 **go Q68**
Don't know	8
No answer	9

45. How long did you have to stop normal activities for?

Not at all	1
Less than one day	2
2-7 days	3
1-2 weeks	4
3-4 weeks	5
2-6 months	6
Over 6 months	7
Don't know/Can't remember	9

46. What did you do when you started to feel ill ? (UP TO FOUR ACTIONS MAY BE CODED - CODE CHRONOLOGICALLY)

	First	Second	Third	Fourth
a) Used home-made medicine	1	1	1	1
b) Bought drugs from drug-seller (unlicensed)	2	2	2	2
c) Bought drugs from private pharmacy	3	3	3	3
d) Bought drugs from state pharmacy	4	4	4	4
e) Visited commune health centre / CHW at home	5	5	5	5
f) Visited inter-communal polyclinic	6	6	6	6
g) Visited district hospital	7	7	7	7
h) Visited provincial hospital	8	8	8	8
i) Visited private health worker	9	9	9	9
j) Visited traditional / spiritual healer	10	10	10	10
k) Other (please specify).......	11	11	11	11
l) Carried on as normal	98	98	98	98
m) Don't know / can't remember	99	99	99	99

47. How long was it between when you felt ill to when you.........(READ OUT)

	BOUGHT DRUGS	CONTACT WITH HEALTH PROFESSIONAL	
a) Less than one day			**Go Q49**
b) 2 - 7 days			
c) 1 - 2 weeks			
d) 3 - 4 weeks			
e) 2 - 6 months			
f) Over 6 months			
g) Don't know/can't remember			

48. Why did you delay going to the health facility when you felt ill?

Thought it might go away/wait and see   1
Too much work   2
Charges too expensive   3
Too far away   4
Wait until market day   5
Other (WRITE IN)_____   6

_____

Don't know/can't remember   9

49. Did you need in-patient services?

Yes   1
No   2 go Q51
Don't know/can't remember   3 go Q51

50. How long did you spend in hospital?

< 3 days   1
3 - 7 days   2
8 - 14 days   3
15 - 30 days   4
Over one month (WRITE IN)_____   5

_____

Don't know/can't remember   9

51. About how long would you say you spent in total at health facilities waiting to see and being treated by health workers for this illness episode?   (CIRCLE ONLY ONE RESPONSE)

Less than 30 minutes   1
30 - 59 minutes   2
1 - 2 hours   3
Over 2 hours but less than 4 hours   4
Over 4 hours but less than 6 hours   5
Over 6 hours   6
Don't know/can't remember   9

52. Did you have difficulties getting an examination when you arrived at the health facility?

Yes (WRITE IN DETAILS)   1

_____

_____

No   8
Don't know/can't remember   9

E)   HEALTH EXPENDITURES

Thinking about your last visit(s) to the health facility, I'd like to ask you some questions about how much you had to spend overall......

53. Did you have to spend any money during your last visit to a health facility?

Yes	1	**go to Q55**
No	2	
Don't know/can't remember	9	**go to Q61**

54. Why didn't you need to make any payment?

No fee required for consultation	1	
No medicines received	2	
Exempt - poor	3	
Exempt - other	4	**go to Q61**
Covered under health insurance	5	
Received credit / delayed payment	6	
Other _____	7	
Don't know/can't remember	9	

55. Can you estimate how much in Dong you had to pay for each of the following items?
(IF PAYMENT NOT MADE IN CASH ASK FOR EQUIVALENT CASH AMOUNT AND WRITE IN)
(IF MORE THAN ONE FACILITY VISITED COLLECT AMOUNT IN TOTAL)

	VND '000s
a) Bill for treatment and medicines	
b) Food for patient/carer	
c) Extra payment/gift	
d) Other (WRITE IN)	
TOTAL=	

56. IF A GIFT OR ADDITIONAL PAYMENT WAS MADE ASK THIS QUESTION. OTHERS GO TO Q61.
Thinking about the extra payment/gift you made, who did you make it to ?

	VND '000s
a) Doctor / doctor assistant	
b) Nurse / midwife	
c) Receptionist	
d) Manager/administrator	
e) Other (WRITE IN)	
f) Don't know/can't remember	

57. Why did you make this extra payment/gift ?

To get better treatment	1
To get quicker treatment	2
To get better treatment next time	3
Custom / workers expect it	4
To say thank-you / gift from the heart	5
Other (WRITE IN)_____	6

Don't know/can't remember   9

58. Where did you get the gift / the money for the gift from? (CIRCLE MAIN REASON ONLY)

	YES	NO	DON'T KNOW
a) Readily available cash / savings	1	2	3
b) Reduce spending on food	1	2	3
c) Reduce spending on non-essentials	1	2	3
d) Sell personal belongings/animals	1	2	3
e) Borrow money	1	2	3
f) Other (WRITE IN)	1	2	3

59. ASK MEMBERS ONLY - OTHERS GO TO Q61
Can I just check that even though you had a health insurance card you still had to make additional payments. Is that correct ?

Yes	1	
No	2	go to Q61
Don't know/can't remember	9	go to Q61

60. Why did you have to make this payment ?

_____

_____

61. About how much did you **pay in total for transportation** travelling to and from that health facility?
(IF PARENT WENT WITH CHILD ASK FOR TOTAL COST FOR BOTH)

_____ ('000s VND)

(WRITE IN IF NECESSARY) _____

F) PATIENT SATISFACTION

I'd now like to ask you some questions about the quality of health services and how satisfied you are with them. Thinking again about the last time you visited a government health facility......

62. How satisfied were you overall with the quality of service you received last time at the GOVERNMENT health facility, or from a government worker at home? (CODE FOR ONLY THOSE FACILITIES VISITED)

	Very satisfied	Quite satisfied	Neither satisfied not dissatisfied	Quite dissatisfied	Very dissatisfied	Never been
a) Commune health centre/CHW at home	1	2	3	4	5	9
	1	2	3	4	5	9
b) Inter-communal polyclinic	1	2	3	4	5	9
c) Government district hospital	1	2	3	4	5	9
d) Government provincial hospital	1	2	3	4	5	9
e) Other gov. facility (WRITE IN)						

63. Thinking about the service you received the last time you visited a GOVERNMENT facility, would you say that in terms of...(READ OUT CATEGORIES)...you were...(READ OUT SATISFACTION SCALE)

READ OUT BELOW	Very satisfied	Quite satisfied	Neither satisfied nor dissatisfied	Quite dissatisfied	Very dissatisfied	Not applicable
a) Waiting time	1	2	3	4	5	9
b) Attitude of health workers	1	2	3	4	5	9
c) Skill of health workers	1	2	3	4	5	9
d) Official bill payment	1	2	3	4	5	9
e) Extra payment	1	2	3	4	5	9
f) Bureaucracy using card	1	2	3	4	5	9

64. Do you have any (other) comments about the GOVERNMENT health service?

_____

_____

65. Thinking now about PRIVATE health professionals, how satisfactory do you think the services they provide are in general ? (CODE FOR EACH FACILITY EVER VISITED)

	Very satisfied	Quite satisfied	Neither satisfied nor dissatisfied	Quite dissatisfied	Very dissatisfied	Never visited
a) Drug-seller (unlicensed)	1	2	3	4	5	9
b) Private pharmacy	1	2	3	4	5	9
c) Private doctor/nurse/midwife/CHW	1	2	3	4	5	9
d) Other private facility (WRITE IN)	1	2	3	4	5	9

66. Thinking about the different aspects of the service from PRIVATE health professionals, how satisfactory would you say that the following are ? (READ OUT CATEGORIES and SATISFACTION SCALE)

Categories	Very satisfied	Quite satisfied	Neither satisfied nor dissatisfied	Quite dissatisfied	Very dissatisfied	Not applicable
a) Waiting time	1	2	3	4	5	9
b) Attitude of health workers	1	2	3	4	5	9
c) Skill of health workers	1	2	3	4	5	9
d) State of repair of building / equipment	1	2	3	4	5	9
e) Official bill payment	1	2	3	4	5	9
f) Extra payment	1	2	3	4	5	9

67. Do you have any other comments about the service at PRIVATE health facilities?

_____

_____

_____

G)   HEALTH INSURANCE

Finally I'd like to ask you some questions about the Vietnamese voluntary health insurance scheme whereby individuals can buy insurance cards and get a reduction in the cost of care at government hospitals......

68. First of all have you ever heard of the Vietnamese state voluntary health insurance scheme?
IF YES ASK THE NAME OF IT

Yes	1	
No	2	go to Q71
Don't know/can't remember	9	go to Q71

69. How did you hear about the scheme?

Newspaper / radio / TV	1
Family / friends /neighbours	2
VHI office representative	3
Commune Peoples Committee	4
School	5
Health facility	6
Women's Union	7
Other (WRITE IN)_____	8
Don't know/can't remember	99

70. Do you know what health services benefits the health insurance card covers?

Treatment in emergencies	1
Examination	2
Medicines	3
In-patient services	4
Other (WRITE IN)_____	5
Don't know/can't remember	9

71. I'd now like to do a short exercise with you, in order to find out what you think about different aspects of the state voluntary health insurance scheme. Under the scheme you buy a card for yourself only, which then lasts for one year. Once you become a member of the scheme you get certain benefits. For example if you need health care at the hospital you can receive it without paying anything extra for consultations, drugs or inpatient care.

The following list shows a hypothetical list of different health insurance schemes you could join. Each option specifies a different level of benefits available in terms of the health facility, and the total amount of money you would have to pay for a ONE year insurance policy. Which level of health insurance do you prefer? CIRCLE ONE OPTION ONLY

A =	Commune/Ward health clinic	**40,000 VND**
B =	District hospital + Commune/Ward health clinic	**60,000 VND**
C =	Provincial/city hospital + District + Commune/ward	**90,000 VND**
D =	National hospital + Provincial/city + District + Commune/ward	**120,000 VND**

72. You have the option to make one full payment, as listed above, or make several payments across the year. However, the more times you pay, the more money you have to pay in total. Please consider the options below and tell me which you prefer. CIRCLE ONE OPTION ONLY

A = ONE time, paying right at the rate selected above
B = TWO times, paying at the rate selected above add 10%
C = FOUR times, paying at the rate selected above add 20%

73. Would you consider buying an insurance card for yourself or one of your family ?

Yes	1 go to Q75
No	2
Don't know	9 end Interview

74. Why wouldn't you buy a health insurance card?

Never heard of it	1	
Wait until have job	2	
Don't need it / healthy	3	
Very few benefits	4	
Too expensive	5	
Bad attitude of staff	6	
Hospital too far away	7	end interview
Don't trust scheme	8	
Already pay taxes	9	
Other (WRITE IN)_____	10	
_____		
Don't know	99	

75. What would be your main reason for buying a health insurance card ?

Saves money	1
Sick person in household	2
Gives security/certainty	3
Currently use services a lot	4
Little/no choice - have to buy	5
Other (WRITE IN)_____	6
_____	
Don't know/can't remember	9

76. Where would you get the money from to pay for the insurance card ?

Readily available cash	1
From household savings	2
Household work longer hours	3
Reduce expenditure on essentials	4
Reduce expenditure on non-essential items	5
Sell personal belongings	6
Sell livestock	7
Borrow from friend or relative	8
Borrow from money lender	9
Other (WRITE IN)_____	10
_____	
Don't know	98
No answer	99

Thank the respondent for their time and stress that all the information is confidential. End interview.

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G) HEALTH INSURANCE

I'd now like to ask you some questions about your health insurance card:

68. What was your **main reason** for buying the card? (CODE ONE ANSWER ONLY)

Reduces cost of health care	1
Sick person in household	2
Don't worry so much/more certainty	3
Currently use services a lot	4
Little/no choice - have to buy	5
Other (WRITE IN)_____	6
DID NOT BUY CARD / GOT FOR FREE	98
Don't know/can't remember	99

69. How did you first hear about the scheme?

Newspaper / radio / TV	1
Family / friends /neighbours	2
VHI office representative	3
Commune Peoples Committee	4
School	5
Health facility	6
Women's Union	7
Other_____	8
Don't know/can't remember	99

70. Where did you get your health insurance card from ?

Bought from VHI office / travelling representative	1
Bought from school	2
Bought from local health centre (WRITE IN NAME)	3
Provided free by CPC	4
Provided free by NGO	5
Other (WRITE IN)_____	6
	go to Q77
Don't know/can't remember	9

71. How long was it from when you first heard about the scheme, to when you bought the card?

Less than 3 months	1 go to Q73
3-6 months	2
7-12 months	3
Over one year	4
Don't know/can't remember	9 go to Q73

72. Why did you wait before buying your card ?

Scheme not operating in district	1
Lack of finances	2
Complicated application procedure	3
Healthy / no need	4
Other (WRITE IN)_____	5
Don't know/can't remember	9

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73. How long was it between when you wanted to buy the card, and when you actually bought it?

Less than 1 month	1
1-2 months	2
3-6 months	3
7-12 months	4
Over one year	5
Don't know/can't remember	9

74. Did you have any difficulties in getting the card ?

No	1
Yes (WRITE IN)	2

_____

_____

75. Who paid for your card ?

Myself	1
Parent	2
Child	3
(WRITE IN)......................................	4
Don't know/can't remember	9

76. Where did you / the person get the money from to pay for the card ?

Readily available cash	1
Savings	2
Sale of assets	3
Borrowed / credit	4
Other (WRITE IN)_____	5

_____

Don't know/can't remember	9

77. Did you receive any written or verbal information about the benefits of the card ?

Yes	1
No	2
Don't know/can't remember	9

78. Which health service benefits were covered with your health insurance card?

Treatment in emergencies	1
Examination only	2
Medicines only	3
In-patient services	4
Other (WRITE IN)_____	5

_____

Don't know/can't remember	9

79. Did you ever use your health insurance card?

Yes	1	go to Q81
No	2	
Don't know/can't remember	9	go to Q84

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80. You say you had a card but have never used it. Why is this? (WRITE IN)

_____

_____   **go to Q84**

81. Did you use the card for inpatient services, outpatient services or both? If so how many times have you used the card for each?

Outpatient only_____   1

Both inpatient and outpatient_____   2

Don't know/can't remember   9

82. Did you use a facility other than that named on your card? (IF YES ASK WHY AND WHERE)

No   1
Yes (WRITE IN)   2

_____

_____

83. How long was it between when you bought your most recent card and first used it? (WRITE IN)

Less than 3 months   1
3-6 months   2
7-12 months   3
Over one year   4
Don't know/can't remember   9

84. Did you hear of anybody in the commune lending their card to someone else, or borrow someone else's card?

Yes   1
No   2
Don't know/can't remember   9

85. What comments would you make to Vietnamese Health Insurance about improving the scheme?

_____

_____

86. I'd now like to do a short exercise with you, in order to find out what you think about different aspects of the state voluntary health insurance scheme. Under the scheme you buy a card for yourself only, which then lasts for one year. Once you become a member of the scheme you get certain benefits. For example if you need health care at the hospital you can receive it without paying anything extra for consultations, drugs or inpatient care.

The following list shows a hypothetical list of different health insurance schemes you could join. Each option specifies a different level of benefits available in terms of the health facility, and the total amount of money you would have to pay for a ONE year insurance policy. Which level of health insurance do you prefer? CIRCLE ONE OPTION ONLY

A = Commune/Ward health clinic   **40,000 VND**

B = District hospital + Commune/Ward health clinic   **60,000 VND**

C = Provincial/city hospital + District + Commune/ward   **90,000 VND**

D = National hospital + Provincial/city + District + Commune/ward   **120,000 VND**

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87. You have the option to make one full payment, as listed above, or make several payments across the year. However, the more times you pay, the more money you have to pay in total. Please consider the options below and tell me which you prefer. CIRCLE ONE OPTION ONLY

A = ONE time, paying right at the rate selected above

B = TWO times, paying at the rate selected above add 10%

C = FOUR times, paying at the rate selected above add 20%

88. Would you consider buying another health insurance card ?

Definitely yes	1
Probably yes	2
Undecided / it depends	3
Probably not	4 } go to Q90
Definitely not	5
GET FOR FREE	6 end interview
Don't know	9 end interview

89. Where would you get the money from to pay for the insurance?

Readily available cash	1
From household savings	2
Household work longer hours	3
Reduce expenditure on essentials	4
Reduce expenditure on non-essentials	5
Sell personal belongings	6 end interview
Sell livestock	7
Borrow from friend or relative	8
Borrow from money-lender	9
Other (WRITE IN)_____	10
Don't know	99

90. Why not?

Never used it	1
Too expensive	2
Not good value for money	3
Treated badly by staff	4 } end interview
Other_____	5
Don't know/can't remember 99	

I'd now like to ask about some questions about your children and the last time they were sick......

(NOW COMPLETE A SEPARATE INDIVIDUAL QUESTSIONNAIRE FOR UP TO THREE CHILDREN)

Appendix 5: In-depth interviews (topic guides)

The dates of interviews for the in-depth interviews were as follows:

1. *Hai Phong Province*: from 25/11/1999 to 30/11/1999 in commune Tan Dan and Tan Vien (An Lao district) and Phu Lien ward (Kien An district)

2. *Ninh Binh Province*: interviews conducted from 9/11/1999 to 14/11/1999 in communes an Hai and Phat Diem Town in Kim Son district, and commune Ninh My in Hoa Lu district.

3. *Dong Thap Province*: interviews conducted from 24/9/1999 to 30/9/1999 in two rural communes, Tan Thanh and Tan Duong, Lai Vung District and urban Lai Vung Town.

Interviewer information:

Household ID number: ☐☐ ☐☐☐ ☐☐ ☐☐   Name of respondent:_____ ☐☐☐
YOB:

Province Commune Sub-comme Hhld

Date of interview: ☐☐ ☐☐ ☐☐   Time interview begins: ☐☐☐☐   Time interview ends: ☐☐☐☐
d d *mm* *yy*

Name of interviewer:_____

Health insurance status: member ☐   non member ☐   Occupation: _____

Location of interview:_____

Introduction:

Do you remember the questions we asked you about health insurance? I'd now like to ask you about a few more of those issues in more detail. Again I'd like to confirm that we are from the University of York in England and the Institute of Sociology in Hanoi. We select all interviewees randomly, and all the information is confidential and anonymous. It will be used to try and improve the organisation and design of the voluntary health insurance scheme. First of all I'd like to ask you a few questions about the health insurance:

TOPIC GUIDE 1: HEALTH INSURANCE SCHEME AND UNDERSTANDING OF RISK-SHARING

Key issues
What do people understand by the concept of insurance and risk-sharing. What do they think about the idea of sharing risks?

Questions	Key responses
➤ How many different health insurance schemes do you know? ➤ Why do you think that the government set up the health insurance scheme for schoolchildren and farmers?	
➤ When people talk about health insurance **what do you understand** by this? Who do you think benefits most from using the HIC?	
➤ What do you think is the **main reason** for buying a health insurance card? ➤ Why did you buy / did you not buy a health insurance card?	
➤ Many people who join health insurance schemes voluntarily do so because it **reduces the risk** of losing large amounts of money from expensive hospital bills. What do you think about this?	
➤ Many health insurance schemes aim to **share the risk** of large financial loss from expensive treatment. For example, healthy people in the scheme will support sick people, wealthier people will support poorer people. What do you think of this idea?	

TOPIC GUIDE 2: HEALTH-SEEKING BEHAVIOUR AND QUALITY OF CARE

Key issues
Does health insurance card make a difference to decisions about seeking health care, how often people decide to go to a health facility, and their experience of health care.
Whether or not health insurance had reduced the amount of money paid for health services?

Questions	Key responses
➢ How would you describe the relationship between people in your community? ➢ How would you describe your kinship relationships within the community?	
➢ Do you visit your neighbours often? Do you help each other out often? How? ➢ How would you say things have changed over the past 10-15 years in your community? ➢ For example would you say you can trust people in the community? In what ways do people trust each other? What about the role of older people and head of family line?	
➢ Are you a member of any organisation or association? (PROMPT e.g. Farmers Union, Women's Union, Church). What about informal groups (peer groups, pooling groups)? ➢ Which one is the most important to you and why? ➢ Which type of group, formal or informal has more influence on your family life? ➢ Do you think these organisations and the type of people that join them are changing? Why is this?	
➢ If you needed to borrow money, for example for health services, who would you borrow this money from? What sort of arrangement do you have? ➢ Do you think some people would rather borrow money from family, friends, or an association they are a member of, for health expenditures rather than buy voluntary health insurance? Why?	
➢ Would you say you sometimes use health services because you have a card, when you might not if you didn't have one? ➢ Do you think that overall you use health services more than if you didn't have health insurance?	

Questions	Key responses
➤ Can you use your card at any health facility? ➤ Do you think you receive a better quality of service when you use the HIC compared with if you didn't use it? Does it make a difference? What are the differences between treatment for cardholders and health treatment for people without a card? What benefits do you receive with the card?	
➤ Do you think that overall the health insurance card has reduced the total amount of money you pay for health services or hasn't it made any difference? Do they know of people who sell important assets, or borrow money to pay for health services? ➤ What do you think about the introduction of co-payments? Why do you think the government introduced them? ➤ Have you ever made, or heard of people making unofficial payments for health services? Who is the money usually given to and why do you think this happens? Do people still have to make these payments even if they have a health insurance card? Why?	
➤ Some people say they do not trust the health insurance cards in term of getting better treatment, or getting cheaper treatment? Do you agree with this point of view? Why?	

Appendix 6: Bibliographic database searches

Examples of two literature searches are presented below, which were conducted on bibliographic databases for articles on social capital. Similar searches were repeated periodically throughout the thesis.

1)   EconLit

No.	Records	Request
1	43935	Social
2	59974	capital
3	122	social capital
4	208049	theory
5	8	#3 near #4
6	18322	Health
7	21	#6 and #3
8	18322	Health
9	5758	Health in ti,ab
10	5	#9 and #3
11	18322	Health
12	35328	Production
13	2232	Health production in developing countries
14	1	#3 and #13

2)   Sociological Abstracts 1986-1999/06

No.	Records	Request
1	354257	Social
2	9042	capital
3	354257	Social
4	11212	Cohesion
5	354257	Social
6	7956	Networks
7	12378	Social capital or social cohesion
8	61469	Health
9	122398	Theory
10	177554	health or theory
11	70	#7 near #10

Bibliography

1. Abel-Smith, B. 1994 *An Introduction to Health Policy, Planning & Financing*: Longman.

2. Adger, W.N. (1999) Exploring Income Inequality in Rural, Coastal Viet Nam, *Journal of Development Studies* 35 (5) 96-119.

3. Akerlof, G.A. (1970) The Market for 'Lemons': Quality Uncertainty and the Market Mechanism, *Quarterly Journal of Economics* 84 (3) 488-500.

4. Akin, J. (1987) *Financing Health Services in Developing Countries: An Agenda for Reform*, World Bank.

5. Albarran, P. and Attanasio, O. (2002) *Do Public Transfers Crowd Out Private Transfers? Evidence from a Randomized Experiment in Mexico: Discussion Paper No. 2002/6*, World Institute for Development Economics Research, Helsinki.

6. Amemiya, T. 1985 *Advanced Econometrics* Oxford: Basil Blackwell.

7. Arnott, R. and Stiglitz, J.E. (1991) Moral Hazard and Nonmarket Institutions: Dysfunctional Crowding Out of Peer Monitoring?, *The American Economic Review* 81 (1) 179-190.

8. Arrow, K.J. (1963) Uncertainty and the Welfare Economics of Medical Care, *The American Economic Review* 53 (5) 941-967.

9. Arrow, K.J. 1985 *The Economics of Agency*, in Principals and Agents: The Structure of Business. Pratt, J.W. and Zeckhauser, R.J. (Editors), Harvard Business School Press, Harvard Business School Research Colloquium series, Boston, pp. 37-51.

10. AsensoOkyere, W.K., OseiAkoto, I., Anum, A. and Appiah, E.N. (1997) Willingness to pay for health insurance in a developing economy. A pilot study of the informal sector of Ghana using contingent valuation, *Health Policy* 42 (3) 223-237.

11. Atim, C. (1998) *The Contribution of Mutual Health Organisations to Financing, Delivery, and Access to Health Care in West and Central Africa: Synthesis of Research in Nine Countries*, Abt Associates Inc. (Partnerships for Health Reform).

12. Atim, C. (1999) Social movements and health insurance: a critical evaluation of voluntary, non-profit insurance schemes with case studies from Ghana and Cameroon, *Social Science & Medicine* 48 (7) 881-896.

13. Attanasio, O. and Rios-Bull, J.V. (2000) Consumption Smoothing and Extended Families, *Mimeo, University of Pennsylvania*.

14. Attanasio, O. and Rios-Rull, J.V. (2000) Consumption smoothing in island economies: Can public insurance reduce welfare?, *European Economic Review* 44 (7) 1225-1258.

15. Bärnighausen, T. and Sauerbom, R. (2002) One hundred and eighteen years of the German health insurance system: are there any lessons for middle and low-income countries?, *Social Science & Medicine* 54 1559-1587.

16. Bennett, S., Creese, A. and Monasch, R. (1998) *Health Insurance Schemes for People Outside Formal Sector Employment*, World Health Organisation, Geneva.

17. Bernheim, B.D. and Stark, O. (1988) Altruism within the Family Reconsidered - Do Nice Guys Finish Last, *American Economic Review* 78 (5) 1034-1045.

18. Besley, T. (1989) The Demand for Health Care and Health Insurance, *Oxford Review of Economic Policy* 5 (1) 21-33.

19. Besley, T. 1991 *The Demand for Health Care and Health Insurance*, in Providing health care: The economics of alternative systems of finance and delivery. Paperback reprint. McGuire, A., Fenn, P. and Mayhew, K. (Editors), Oxford University Press, Oxford and New York, pp. 46-64.

20. Besley, T. (1995a) Nonmarket Institutions for Credit and Risk Sharing in Low-Income Countries, *Journal of Economic Perspectives* 9 (3) 115-127.

21. Besley, T. 1995b *Savings, Credit and Insurance*, in Handbook of Development Economics. J Behrman and Srinivasan, T. (Editors), Elsevier Science BV, pp. 2125-2201.

22. Besley, T. and Coate, S. (1995) Group Lending, Repayment Incentives and Social Collateral, *Journal of Development Economics* 46 (1) 1-18.

23. Besley, T., Coate, S. and Loury, G. (1993) The Economics of Rotating Savings and Credit Associations, *American Economic Review* 83 (4) 792-810.

24. Besley, T., Coate, S. and Loury, G. (1994) Rotating Savings and Credit Associations, Credit Markets and Efficiency, *Review of Economic Studies* 61 (4) 701-19.

25. Besley, T., Hall, J. and Preston, I. (1999) The demand for private health insurance: do waiting lists matter?, *Journal of Public Economics* 72 (2) 155-181.

26. Besley, T. and Levenson, A.R. (1996) The role of informal finance in household capital accumulation: Evidence from Taiwan, *Economic Journal* 106 (434) 39-59.

27. Bhatt, N. and Tang, S.Y. (1998) The Problem of Transaction Costs in Group-Based Microlending: An Institutional Perspective, *World Development* 26 (4) 623-37.

28. Bird, E.J. (1999) Can welfare policy make use of social norms?, *Rationality and Society* 11 (3) 343-365.

29. Black, J. 1997 *Oxford Dictionary of Economics* Oxford: OUP.

30. Bloom, G. (1998) Primary health care meets the market in China and Vietnam, *Health Policy* 44 (3) 233-252.

31. Bloom, G. and Gu, X.Y. (1997) Health sector reform: Lessons from China, *Social Science & Medicine* 45 (3) 351-360.

32. Bloom, G. and Shenglan, T. (1999) Rural health prepayment schemes in China: towards a more active role for government, *Social Science & Medicine* 48 (7) 951-960.

33. Bouman, F.J.A. (1995) Rotating and Accumulating Savings and Credit Associations: A Development Perspective, *World Development* 23 (3) 371-84.

34. Bourdieu, P. 1985 *The Forms of Capital*, in Handbook of Theory and Research for the Sociology of Education. Richardson, J.G. (Editor), Greenwood Press, New York, pp. 241-258.

35. Brehm, J. and Rahn, W. (1997) Individual-Level Evidence for the Causes and Consequences of Social Capital, *American Journal of Political Science* 41 (3) 999-1023.

36. Browne, M.J. (1992) Evidence of Adverse Selection in the Individual Health Insurance Market, *Journal of Risk and Insurance* 59 (1) 13-33.

37. Calomiris, C.W. and Rajaraman, I. (1998) The role of ROSCAs: lumpy durables or event insurance?, *Journal of Development Economics* 56 (1) 207-216.

38. Cameron, A.C., Trivedi P. K., Milne, F. and Piggott, J. (1988) A Microeconometric Model of the Demand for Health Care and Health Insurance in Australia, *Review of Economic Studies* 55 (1) 85-106.

39. Cameron, A.C. and Trivedi, P.K. (1991) The Role of Income and Health Risk in the Choice of Health Insurance: Evidence from Australia, *Journal of Public Economics* 45 (1) 1-28.

40. Carrin, G., Hollmeyer, H., Jones, J., Everard, M., Ron, A., Savioli, L. and Sen-Hai, Y. (1999a) *School health insurance as a vehicle for Health-Promoting Schools: Recent Experience in Vietnam*, WHO/HSD/HID.99.1, World Health Organisation, Geneva.

41. Carrin, G., Ron, A., Yang, H., Wang, H., Zhang, T.H., Zhang, L.C., Zhang, S., Ye, Y.D., Chen, J.Y., Jiang, Q.C., Zhang, Z.Y., Yu, J. and Li, X.S. (1999b) The reform of the rural cooperative medical system in the People's Republic of China: interim experience in 14 pilot counties, *Social Science & Medicine* 48 (7) 961-972.

42. Carrin, G., Sergent, F. and Murray, M. (1993) *Towards a framework for health insurance development in Hai Phong.*, Technical Paper 12, World Health Organisation, Geneva.

43. Casley, D.J. and Kumar, K. 1988 *The Collection, Analysis and Use of Monitoring and Evaluation Data* Baltimore and London: A World Bank Publication: The John Hopkins University Press.

44. Chabot, J., Boal, M. and da Silva, A. (1991) National community health insurance at village level: the case from Guinea Bissau., *Health Policy and Planning* 6 46-54.

45. Coate, S. and Ravallion, M. (1993) Reciprocity without Commitment: Characterization and Performance of Informal Insurance Arrangements, *Journal of Development Economics* 40 (1) 1-24.

46. Coleman, J.S. 1987 *Norms as Social Capital*, in Economic imperialism: The economic approach applied outside the field of economics. Radnitzky, G. and Bernholz, P. (Editors), Paragon House, Professors World Peace Academy Book series, New York, pp. 133-55.

47. Coleman, J.S. (1988) Social Capital in the Creation of Human Capital, *American Journal of Sociology* 94 (SS) S95-S120.

48. Coleman, J.S. 1990 *Foundations of Social Theory* Cambridge, Mass. and London: Belknap Press of Harvard University University Press.

49. Collier, P. (1998) *Social Capital and Poverty*, 4, World Bank, Washington D.C.

50. Conning, J. (1997) Pret de groupe, alea moral et creation d'une garantie sociale. (Group Lending, Moral Hazard, and the Creation of Social Collateral. With English summary.), *Revue d'Economie du Developpement* 0 (2) 65-101.

51. Corden, A. 1999 *Claiming entitlements: Take-up of benefits*, in Introduction to Social Policy: Policies, benefits and poverty. Ditch, J. (Editor), Routledge, Taylor & Francis Group, London and New York, pp. 134-155.

52. Cosslett, S. 1981 *Efficient estimation of discrete choice models*, in Structural Analysis of Discrete Data with Econometric Applications. Manski, C.F. and McFadden, D. (Editors), MIT Press, Cambridge.

53. Cox, D., Fetzer, J. and Jimenez, E. 1998 *Private Transfers in Vietnam*, in Household Welfare and Vietnam's Transition. Dollar, D., Glewwe, P. and Litvack, J. (Editors), World Bank, Washington DC., pp. 175-200.

54. Cox, D. and Jimenez, E. (1991) Achieving Social Objectives through Private Transfers: A Review, *World Bank Research Observer* 5 (2) 205-18.

55. Cox, D. and Jimenez, E. (1992) Social Security and Private Transfers in Developing Countries: the Case of Peru, *World Bank Economic Review* 6 (1) 115-169.

56. Creese, A. (1991) User charges for health care: a review of recent experience, *Health Policy & Planning* 6 (4) 309-319.

57. Creese, A. and Kutzin, J. (1995) *Lessons from cost-recovery in health*, Forum on Health Sector Reform, World Health Organisation, Geneva.

58. Criel, B. (1998) District-based Health Insurance in sub-Saharan Africa. Part I: From Theory to Practice, *Studies in Health Services Organisation & Policy* 9.

59. Criel, B. and Van Dormael, M. (1999) Mutual Health Organizations in Africa and social health insurance systems: will European history repeat itself?, *Tropical Medicine & International Health* 4 (3) 155-159.

60. Cusack, T.R. (1999) Social capital, institutional structures, and democratic performance: A comparative study of German local governments, *European Journal of Political Research* 35 (1) 1-34.

61. Cutler, D.M. and Zeckhauser, R.J. 1997 *Adverse Selection in Health Insurance*, in, Harvard University and the National Bureau of Economic Research.

62. Cutler, D.M. and Zeckhauser, R.J. 2000 *The Anatomy of Health Insurance*, in Handbook in Health Economics, North Holland Handbooks in Economics. A.J. Culyer and Newhouse, J.P. (Editors), Elsevier Science B.V., North Holland.

63. Deaton, A. 1997 *The analysis of household surveys: a microeconometric approach to development policy* Baltimore: Published for the World Bank by John Hopkins University Press.

64. Deaton, A. (1999) Inequalities in income and inequalities in health, *Mimeo, Research Program in Development Studies, Princeton University* (Prepared for the conference on "Increasing inequality in America" March 12-13 1999).

65. DePoint, M.S. (1998) Volunteerism and Social Capital: Public Goods, Transaction Costs, and Religious Institutions, *Claremont Graduate University, Ph.D.*

66. Dercon, S. and Krishnan, P. (2002) Income risk, coping strategies and safety nets, *World Bank Research Observer* 17 141-166.

67. Desmet, M., Chowdhury, A.Q. and Islam, M.K. (1999) The potential for social mobilisation in Bangladesh: the organisation and functioning of two health insurance schemes, *Social Science & Medicine* 48 (7) 925-938.

68. Dror, D. and Jacquier, C. (1999) Micro-insurance: Extending health insurance to the excluded, *International Social Security Review* 52 (1) 71-97.

69. Dufwenberg, M. and Lundholm, M. (2001) Social norms and moral hazard, *Economic Journal* 111 (473) 506-525.

70. Dunlop, D.W. (1999) *Health Sector Studies: Health Financing and Health Insurance*, Rural Health Project TA No. 3077-VIE, Asian Development Team, Hanoi.

71. Editorial (1998) Emotional wellbeing and its relation to health: Physical disease may well result from emotional distress, *BMJ* 317 1608-1609.

72. Ensor, T. (1995) Introducing Health Insurance in Vietnam, *Health Policy and Planning* 10 (2) 154-163.

73. Ensor, T. (1999) Developing health insurance in transitional Asia, *Social Science & Medicine* 48 (7) 871-879.

74. Ensor, T. and San, P.B. (1996) Access and payment for health care: The poor of northern Vietnam, *International Journal of Health Planning and Management* 11 (1) 69-83.

75. Ensor, T. and Witter, S. 1997 *An Introduction to Health Economics: For Eastern Europe and the Former Soviet Union* Chichester, UK: John Wiley & Sons.

76. Ensor, T. and Witter, S. (2001) Health economics in low income countries: adapting to the reality of the unofficial economy, *Health Policy* 57 (1) 1-13.

77. Enyimayew, K. and Waddington, C. (1989) A Price to Pay: the impact of user-charges in Ashanti-Akim District, Ghana, *International Journal of Health Planning & Management* 4 17-47.

78. Fabricant, S.J., Kamara, C.W. and Mills, A. (1999) Why the poor pay more: Household curative expenditures in rural Sierra Leone, *International Journal of Health Planning and Management* 14 (3) 179-199.

79. Fafchamps, M. (1992) Solidarity Networks in Preindustrial Societies: Rational Peasants with a Moral Economy, *Economic Development and Cultural Change* 41 (1) 147-74.

80. Farley, P.J. and Monheit, A.C. 1985 *Selectivity in the Demand for Health Insurance and Health Care*, in Advances in Health Economics and Health

Services Research. Volume 6. Biased Selection in Health Care Markets. Scheffler, R.M. and Rossiter, L.F. (Editors), JAI Press, A Research Annual, Greenwich, Conn., and London, pp. 231-48.

81. Fine, B. (1999a) The developmental state is dead - Long live social capital?, *Development and Change* 30 (1) 1-19.

82. Fine, B. (1999b) A question of economics: is it colonizing the social sciences?, *Economy and Society* 28 (3) 403-425.

83. Flache, A. and Macy, M.W. (1996) The weakness of strong ties: Collective action failure in a highly cohesive group, *Journal of Mathematical Sociology* 21 (1-2) 3-28.

84. Folland, S., Goodman, A.C. and Stano, M. 1997 *The economics of health and health care (Second Edition)* Upper Saddle River, N.J.: Prentice Hall.

85. Foster, A.D. and Rosenzweig, M.R. (2001) Imperfect commitment, altruism, and the family: Evidence from transfer behavior in low-income rural areas, *Review of Economics and Statistics* 83 (3) 389-407.

86. Fukuyama, F. 1995 *Trust: The Social Virtues and the Creation of Prosperity* London: Penguin.

87. Fukuyama, F. (1999) Social Capital and Civil Society, *Presentation at IMF Conference on Second Generation Reforms.*

88. Garrett, H. (1968) The Tragedy of the Commons, *Science* 162 1243-1248.

89. Geil, P., Million, A., Rotte, R. and Zimmermann, K.F. (1997) Economic Incentives and Hospitalization in Germany, *Journal of Applied Econometrics* 12 (3) 295-311.

90. Genier, P. (1998) Insurance and health care: A micro-econometric analysis based on the 1991-92 French Health Survey, *Revue Economique* 49 (3) 809-819.

91. Gertler, P. and Litvack, J. 1998 *Access to Health Care during Transition: The Role of the Private Sector in Vietnam*, in Household Welfare and Vietnam's Transition. Dollar, D., Glewwe, P. and Litvack, J. (Editors), World Bank, Washington DC., pp. 235-254.

92. Gertler, P. and van der Gaag, J. 1990a *Modeling the Demand for Health Care*, in The Willingness to Pay for Medical Care, World Bank, Washington D.C.

93. Gertler, P. and van der Gaag, J. 1990b *The Willingness to Pay for Medical Care* Washington D.C.: World Bank.

94. Gilson, L. (1997) The lessons of user fee experience in Africa, *Health Policy and Planning* 12 (4) 273-285.

95. Gilson, L., Alilio, M. and Heggenhougen, K. (1994) Community Satisfaction With Primary Health-Care Services - an Evaluation Undertaken in the Morogoro Region of Tanzania, *Social Science & Medicine* 39 (6) 767-780.

96. Gilson, L. and Mills, A. (1995) Health Sector Reforms in sub-Saharan Africa: lessons of the last 10 years, *Health Policy* 32 215-243.

97. Gilson, L. and Russell, S. (1995) *User Fees at Government Health Services: Is Equity Being Considered? PHP Departmental Publications No. 15*, London School of Hygiene & Tropical Medicine, London.

98. Gould, R.V. (1993) Collective Action and Network Structure, *American Sociological Review* 58 (2) 182-196.

99. Granovetter, M. (1985) Economic-Action and Social-Structure - the Problem of Embeddedness, *American Journal of Sociology* 91 (3) 481-510.

100. Gravelle, H. (1998) How much of the relation between population mortality and unequal distribution of income is a statistical artefact?, *BMJ* 316 (7128) 382-5.

101. Gravelle, H. and Rees, R. 1992 *Microeconomics* Harlow, Essex: Longman Group UK Ltd.

102. Gray, M.L. (1999) Creating Civil Society? The Emergence of NGOs in Vietnam, *Development and Change* 30 (4) 693-713.

103. Greenhalgh, T. and Taylor, R. (1997) How to read a paper: Papers that go beyond numbers (qualitative research), *BMJ* 315 740-3.

104. Grimard, F. (1997) Household consumption smoothing through ethnic ties: evidence from Cote d'Ivoire, *Journal of Development Economics* 53 (2) 391-422.

105. Grootaert, C. (1998) *Social Capital: The Missing Link? Social Capital Initiative Working Paper 3*, World Bank, Washington D.C.

106. Grootaert, C. (1999) *Social Capital, Household Welfare, and Poverty in Indonesia: Working Paper 2148*, World Bank, Washington D.C.

107. Grossman, M. 1972a *The demand for health - a theoretical and empirical investigation* New York: Columbia University Press.

108. Grossman, M. (1972b) On the Concept of Health Capital and the Demand for Health, *Journal of Political Economy* 80 (2) 223-55.

109. Grossman, M. and Kaestner, R. 1997 *Effects of education on health*, in The Social Benefits of Education. Behrman, J.R. and Stacey, N. (Editors), University of Michigan Press, Ann Arbor, MI, pp. 69-123.

110. Guinnane, T. (1992) Financial intermediation for poor borrowers: the case of German credit cooperatives 1894-1914, *Typescript*.

111.   Guinnane, T. (1994) A Failed Institutional Transplant: Raiffesein's Credit Cooperatives in Ireland 1894-1914, *Explorations in Economic History* 31 33-69.

112.   Guinnane, T. (2000) Credit Cooperatives, *Typescript.*

113.   Guldner, M. (1995) Health care in transition in Vietnam: Equity and sustainability, *Health Policy and Planning* 10 (SS) 49-62.

114.   Haller, H. (1992) Mutual Insurance and Reputational Collateral, *Empirica* 19 (1) 19-35.

115.   Harmon, C. and Nolan, B. (2001) Health insurance and health services utilization in Ireland, *Health Economics* 10 (2) 135-145.

116.   Harpham, T., Grant, E. and Thomas, E. (2002) Measuring social capital within health surveys: key issues, *Health Policy & Planning* 17 (1) 106-11.

117.   Harriss, J. (2002) The Case for Cross-Disciplinary Approaches in International Development, *World Development* 30 (3) 487-496.

118.   Heckman, J.J. (1978) Dummy Endogenous Variables in a Simultaneous Equation System, *Econometrica* 46 (4) 931-59.

119.   Heckman, J.J. (1979) Sample Selection Bias as a Specification Error, *Econometrica* 47 (1) 153-61.

120.   Helliwell, J.F. (1996) *Economic Growth and Social Capital in Asia*, Working Paper 5470, National Bureau of Economic Research, Cambridge, MA.

121.   Hetherington, E.M. (1999) Social capital and the development of youth from nondivorced, divorced, and remarried families, *Minnesota Symposia On Child Psychology* 30 177-209.

122.   Hodess, R. with Jessie Banfield and Toby Wolfe (editors). (2001) *Global Corruption Report 2001*, Transparency International, Berlin.

123.   Hollis, A. and Sweetman, A. (1998) Microcredit in Prefamine Ireland, *Explorations in Economic History* 35 347-380.

124.   Holly, A., Gardiol, L., Domenighetti, G. and Bisig, B. (1998) An econometric model of health care utilization and health insurance in Switzerland, *European Economic Review* 42 513-522.

125.   Hopkins, S. and Kidd, M.P. (1996) The determinants of the demand for private health insurance under Medicare, *Applied Economics* 28 (12) 1623-1632.

126.   Hsiao, W. (1995) Cooperative Financing for Rural Chinese Health Services, *Mimeo, Harvard University School of Public Health, Cambridge, M.A.*

127.   ILO (1996) *World Employment Report 1996/1997*, International Labour Office, Geneva.

128.   Izumida, Y. and Duong, P.B. (2002) Rural Development Finance in Vietnam: A Microeconometric Analysis of Household Surveys, *World Development* 30 (2) 319-335.

129.   Jack, W. 1999 *Insurance*, in Principles of Health Economics for Developing Countries, WBI Development Studies, World Bank Institute, Washington D.C., pp. 91-117.

130.   Jones, A. 2000 *Health Econometrics*, in Handbook in Health Economics. Newhouse, J.P. and Culyer, A.J. (Editors), Elsevier Science B.V., North Holland.

131.   Jowett, M. and Thompson, R. (1999) *Paying for health care in Vietnam: extending voluntary health insurance coverage*, Discussion Paper No. 167, Centre for Health Economics, University of York, York.

132.   Kawachi, I. and Kennedy, B.P. (1997) Socioeconomic determinants of health: Health and social cohesion: Why care about income inequality?, *British Medical Journal* 314 (7086) 1037-1040.

133.   Kawachi, I. and Kennedy, B.P. (1999) Income Inequality and Health: Pathways and Mechanisms, *Health Services Research* 34 (1) 215-27.

134.   Kawachi, I., Kennedy, B.P. and Lochner, K. (1997a) Long Live Community: Social Capital as Public Health, *The American Prospect* 35 (0) 56-59.

135.   Kawachi, I., Kennedy, B.P., Lochner, K. and Prothrow-Stith, D. (1997b) Social Capital, Income Inequality and Mortality, *American Journal of Public Health* 87 (9) 1491-1498.

136.   Kawachi, I., Kennedy, B.P. and Wilkinson, R.G. (1999) Crime: Social disorganization and relative deprivation, *Social Science and Medicine* 48 (6) 719-731.

137.   Keeler, E.B., Morrow, D.T. and Newhouse, J.P. (1977) The Demand for Supplementary Health Insurance, or Do Deductibles Matter?, *Journal of Political Economy* 85 (4) 789-801.

138.   Khoman, S., 1997. Rural Health Care Financing in Thailand. In: Schieber, G.J. (Editor) Innovations in Health Care Financing. World Bank Discussion Paper 365, Washington D.C., pp. 192.

139.   Knack, S. and Keefer, P. (1997) Does social capital have an economic payoff? A cross-country investigation, *Quarterly Journal of Economics* 112 (4) 1251-1288.

140.   Kumssa, A. and Jones, J.F. (1999) The Social Consequences of Reform in Transitional Economies, *International Journal of Social Economics* 26 (1-2-3) 194-210.

141.   Kutzin, J. and Barnum, H. (1992a) *How Health Insurance Affects the Delivery of Health Care in Developing Countries*, World Bank, Washington.

142.   Kutzin, J. and Barnum, H. (1992b) Institutional Features of Health Insurance Programs and Their Effects on Developing Country Health Systems, *International Journal of Health Planning and Management* 7 51-72.

143.   Le Minh Tam and Vinh, N.D. 1999 *Remittances and the Distribution of Income*, in Health and Wealth in Vietnam: An Analysis of Household Living Standards. Dominique Haughton, J.H., Sarah Bales, Truong Thi Kim Chuyen, and Nguyen Nguyet Nga (Editor), Institute of South-East Asian Studies, Singapore.

144.   Levenson, A.R. and Besley, T. (1996) The anatomy of an informal financial market: Rosca participation in Taiwan, *Journal of Development Economics* 51 (1) 45-68.

145.   Levin, L. (1995) Demand for Health Insurance and Precautionary Motives for Savings among the Elderly, *Journal of Public Economics* 57 (3) 337-67.

146.   Liao, T.F. 1994 *Interpreting Probability Models: Logit, Probit and Other Generalised Linear Models*, Quantitative Applications in the Social Sciences: Sage University Paper 07-101.

147.   Ligon, E. (2001) *Targeting and informal insurance*, World Institute for Development Economics Research (Research Project 3.2: Insurance Against Poverty), Helsinki.

148.   Liu, Y.L., Hsiao, W.C.L., Li, Q., Liu, X.Z. and Ren, M.H. (1995) Transformation of China's Rural Health Care Financing, *Social Science & Medicine* 41 (8) 1085-1093.

149.   Loury, G. (1987) Why should we care about group inequality?, *Social Philosophy and Policy* 5 249-271.

150.   Manning, W., Newhouse, J., Duan, N., Keeler, E., Liebowitz, A. and Marquis, M. (1987) Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment, *American Economic Review* 77 (3) 251-77.

151.   Manning, W.G. and Marquis, M.S. (1996) Health Insurance: The Tradeoff between Risk Pooling and Moral Hazard, *Journal of Health Economics* 15 (5) 609-39.

152.   Manski, C.F. and Lerman, S.R. (1977) The Estimation of Choice Probabilities from Choice Based Samples, *Econometrica* 45 (8) 1977-88.

153.   Marquis, M.S. (1992) Adverse Selection with a Multiple Choice among Health Insurance Plans: A Simulation Analysis, *Journal of Health Economics* 11 (2) 129-51.

154.   Marquis, M.S. and Long, S.H. (1995) Worker Demand for Health Insurance in the Non-group Market, *Journal of Health Economics* 14 (1) 47-63.

155.   Marquis, M.S. and Phelps, C.E. (1985) *Demand for Supplementary Health Insurance*, Rand Organisation, Santa Monica.

156.   Marquis, M.S. and Phelps, C.E. (1987) Price Elasticity and Adverse Selection in the Demand for Supplementary Health Insurance, *Economic Inquiry* 25 (2) 299-313.

157.   Marshall, C. and Rossman, G.B. 1999 *Designing Qualitative Research: 3rd Edition* London: Sage Publications Inc.

158.   Marwell, G., Oliver, P.E. and Prahl, R. (1988) Social Networks and Collective Action - a Theory of the Critical Mass. III, *American Journal of Sociology* 94 (3) 502-534.

159.   Mathiyazhagan, K. (1998) Willingness to pay for rural health insurance through community participation in India, *International Journal of Health Planning and Management* 13 (1) 47-67.

160.   McGuire A., Henderson JB. and H., M.G. 1992 *The Economics of Health Care: An Introductory Text* London and New York: Routledge.

161.   Morduch, J. (1999) Between the state and the market: Can informal insurance patch the safety net?, *World Bank Research Observer* 14 (2) 187-207.

162.   Moser, C. and Holland, J. 1997 *Household responses to poverty and vulnerability. Volume 4. Confronting crisis in Chawama, Lusaka, Zambia*, UNDP/UNCHS (Habitat) World Bank Urban Management Programme series, vol. 24 Washington, D.C.: World Bank for the Urban Management Programme.

163.   Mullahy, J. (1997) Instrumental Variable Estimation of Count Data Models: Applications to Models of Cigarette Smoking Behavior, *Review of Economics and Statistics* 79 (4) 586-93.

164.   Mullen, M.W. and Allison, B.E. (1999) Stakeholder involvement and social capital: Keys to watershed management success in Alabama, *Journal of the American Water Resources Association* 35 (3) 655-662.

165.   Narayan, D. and Pritchett, L. (1997) *Cents and Sociability: Household Income and Social Capital in Rural Tanzania: Policy Research Working Paper 1796*, World Bank, Washington D.C.

166.   Newhouse, J.P. (1977) Medical-Care Expenditure: A Cross-National Survey, *Journal of Human Resources* 12 (1) 115-25.

167.   Newhouse, J.P. and Culyer, A.J. 2000 *Handbook in Health Economics*, Handbook in Economics North Holland: Elsevier Science B.V.

168.   Newhouse, J.P. and the Insurance Experiment Group. 1993 *Free for all? Lessons from the RAND Health Insurance Experiment.* 12 Cambridge and London: Harvard University Press.

169.   Normand, C. (1999) Using social health insurance to meet policy goals, *Social Science & Medicine* 48 (7) 865-869.

170.   Normand, C. and Weber, A. (1994) *Social health insurance: a guidebook for planning*, World Health Organisation, Geneva.

171.   Nyman, J.A. (1999) The Value of Health Insurance: The Access Motive, *Journal of Health Economics* 18 (2) 141-52.

172.   Ostrom, E. 1990 *Governing the commons: the evolution of institutions for collective action* Cambridge: Cambridge University Press.

173.   Ostrom, E. (1998) A behavioral approach to the rational choice theory of collective action, *American Political Science Review* 92 (1) 1-22.

174.   Pannarunothai, S. and Mills, A. (1997) The poor pay more: Health-related inequality in Thailand, *Social Science & Medicine* 44 (12) 1781-1790.

175.   Pauly, M. (1968) The Economics of Moral Hazard: Comment, *American Economic Review* 58 531-37.

176.   Pauly, M.V. (1974) Overinsurance and Public Provision of Insurance: The Roles of Moral Hazard and Adverse Selection, *Quarterly Journal of Economics* 88 (1) 44-62.

177.   Pereira, J. (1993) What does equity in health mean?, *Journal of Social Policy* 22 19-48.

178.   Picone, G., Uribe, M. and Wilson, R.M. (1998) The Effect of Uncertainty on the Demand for Medical Care, Health Capital and Wealth, *Journal of Health Economics* 17 (2) 171-85.

179.   Platteau, J.P. (1997) Mutual Insurance as an Elusive Concept in Traditional Rural Communities, *Journal of Development Studies* 33 (6) 764-96.

180.   Pohlmeier, W. and Ulrich, V. (1995) An Econometric Model of the Two-Part Decisionmaking Process in the Demand for Health Care, *Journal of Human Resources* 30 (2) 339-61.

181.   Popkin, S.L. 1979 *The Rational Peasant: The Political Economy of Rural Society in Vietnam* Berkeley and Los Angeles: University of California Press.

182.   Portes, A. (1998) Social Capital: Its origins and applications in modern sociology, *Annual Review of Sociology* 24 1-24.

183.   Portes, A. and Landolt, P. (1996) The Downside of Social Capital, *American Prospect* 0 (26) 18-21, 94.

184.   Preker, A.S., Carrin, G., Dror, D., Jakab, M., Hsiao, W. and Arhin-Tenkorang, D. (2001) *A Synthesis Report on the Role of Communities in Resource Mobilization and Risk Sharing.*

185.   Preker, A.S., Carrin, G., Dror, D., Jakab, M., Hsiao, W. and Arhin-Tenkorang, D. (2002) Effectiveness of community health financing in meeting the cost of illness, *Bulletin of the World Health Organization* 80 (2) 143-150.

186.   Propper, C. (1989) An Econometric Analysis of the Demand for Private Health Insurance in England and Wales, *Applied Economics* 21 (6) 777-92.

187.   Propper, C. (1993) Constrained Choice Sets in the UK Demand For Private Medical Insurance, *Journal of Public Economics* 51 (3) 287-307.

188.   Putnam, R. 1993a *Making Democracy Work: Civic Traditions in Modern Italy* Princeton: Princeton University Press.

189.   Putnam, R. (1993b) The Prosperous Community: Social Capital and Public Life, *The American Prospect* 13 1-8.

190.   Putnam, R.D. (1995) Bowling Alone: America's Declining Social Capital, *Journal of Democracy* 6 65-78.

191.   Rawls, J. 1972 *A Theory of Justice* Oxford: Oxford University Press.

192.   Ron, A., 1998. Personal Communication.

193.   Ron, A. (1999) NGOs in community health insurance schemes: examples from Guatemala and the Philippines, *Social Science & Medicine* 48 (7) 939-950.

194.   Ron, A., Carrin, G. and Tien, T. (1998) Viet Nam: The development of national health insurance, *International Social Security Review* 51 (3) 89-103.

195.   Ron, A. and Kupferman, A. (1996) *A community health insurance scheme in the Philippines: extension of a community-based integration project*, Technical Paper No. 19, World Health Organisation, Geneva.

196.   Rose, R. (2000) How much does social capital add to individual health? A survey study of Russians, *Social Science & Medicine* 51 (9) 1421-1435.

197.   Rosenzweig, M.R. (1988) Risk, Implicit Contracts and the Family in Rural Areas of Low-Income Countries, *The Economic Journal* 98 (December) 1148-1170.

198.   Rosenzweig, M.R. (2001) Savings behaviour in low-income countries, *Oxford Review of Economic Policy* 17 (1) 40-54.

199.   Rubin, R.M. and Koelln, K. (1993) Determinants of Household Out-of-Pocket Health Expenditures, *Social Science Quarterly* 74 (4) 721-35.

200.   Sachs, J. (2001) *Macroeconomics and Health: Investing in Health for Economic Development*, Commission on Macroeconomics and Health, World Health Organisation, Geneva.

201.   Sauerborn, R., Nougtara, A. and Latimer, E. (1994) The Elasticity of Demand For Health-Care in Burkina-Faso - Differences Across Age and Income Groups, *Health Policy and Planning* 9 (2) 185-192.

202.   Scott, J.C. 1976 *The Moral Economy of the Peasant* New Haven: Yale University Press.

203.   Seeman, T.E. (1996) Social ties and health: The benefits of social integration, *Annals of Epidemiology* 6 (5) 442-451.

204.   Sen, A. 1999 (Third Impression) *Commodities and Capabilities* New Delhi: Oxford India Paperbacks.

205.   Sloman, J. 1991 *Economics* Hemel Hempstead: Harvester Wheatsheaf - Prentice Hall.

206.   Smith, E.S. (1999) The effects of investments in the social capital of youth on political and civic behavior in young adulthood: A longitudinal analysis, *Political Psychology* 20 (3) 553-580.

207.   Sobel, J. (2002) Can we trust social capital?, *Journal of Economic Literature* 40 (1) 139-154.

208. Solon, O. and Tien, T.V. (1997) *The Challenges of the Vietnam Health Insurance Program*, Vietnam Health Insurance Agency, Hanoi, Vietnam.

209. Stiglitz, J.E. (1990) Peer Monitoring and Credit Markets, *World Bank Economic Review* 4 (3) 351-66.

210. Street, A., Jones, A. and Furuta, A. (1999) Cost-sharing and pharmaceutical utilisation and expenditure in Russia, *Journal of Health Economics* 18 (4) 459-472.

211. Studenmund, A.H. 1997 *Using Econometrics: A Practical Guide* Reading, Massachusetts: Addison-Wesley Educational Publishers.

212. Tangcharoensathien, V., Bennett, S., Khongswatt, S., Supacutikul, A. and Mills, A. (1999) Patient satisfaction in Bangkok: the impact of hospital ownership and patient payment status, *International Journal for Quality in Health Care* 11 (4) 309-317.

213. Taylor-Gooby, P. 2000 *Risk and Welfare*, in Risk, Trust and Welfare. Taylor-Gooby, P. (Editor), MacMillan Press Ltd., Basingstoke and London, pp. 1-20.

214. Teachman, J., Paasch, K. and Carver, K. (1997) Social Capital and the Generation of Human Capital, *Social Forces* 75 (4) 1343-59.

215. Templer, R. 1998 *Shadows and Wind: A View of Modern Vietnam* London: Little, Brown and Company.

216. The Economist, 2002. Corruption Abounding: The issue that could undermine the government. The Economist (September 14th-20th), London, pp. 28.

217. Thomas, C. (1996) Capital Markets, Financial Markets and Social Capital (An Essay on Economic Theory and Economic Ideas), *Social and Economic Studies* 45 (2&3 Special Issue) 1-23.

218. Thompson, E.P. (1971) The Moral Economy of the English Crowd in the Eighteenth Century, *Past and Present* 50 76-136.

219. Tønnesson, S. (1997) State and virtue in economic growth - The case of Vietnam, *Internasjonal Politikk* 55 (2) 253-264.

220. Tønnesson, S. 2000 *The Layered State of Vietnam*, in State Capacity in East Asia: China, Taiwan, Vietnam, and Japan. Brødsgaard, K.E. and Young, S. (Editors), Oxford University Press, Oxford, pp. 236-268.

221. Townsend, R.M. (1995) Consumption Insurance - an Evaluation of Risk-Bearing Systems in Low-Income Economies, *Journal of Economic Perspectives* 9 (3) 83-102.

222.   Trivedi, P.K. (2002) *Patterns of Health Care Utilization in Vietnam: Analysis of 1997-98 Vietnam Living Standards Survey Data*, Department of Economics, Wylie Hall, Indiana University, Bloomington, Indiana.

223.   Trujillo, A.J. (2002) Medical care use and selection in a social health insurance with an equalization fund: evidence from Colombia, *Health Economics* 12 (3) 231-256.

224.   Valente, T.W. (1996) Social network thresholds in the diffusion of innovations, *Social Networks* 18 (1) 69-89.

225.   van Bastelaer, T. (1999) *Does Social Capital Facilitate the Poor's Access to Credit? A Review of the Microeconomic Literature*, 8, World Bank, Washington D.C.

226.   Varian, H.R. (1990) Monitoring Agents with Other Agents, *Journal of Institutional and Theoretical Economics-Zeitschrift Fur Die Gesamte Staatswissenschaft* 146 (1) 153-174.

227.   Wagstaff, A. and van Doorslaer, E. (1992) Equity in the Finance of Health Care: Some International Comparisons, *Journal of Health Economics* 11 (4) 361-87.

228.   Wagstaff, A. and van Doorslaer, E. (2000) Income inequality and health: What does the literature tell us?, *Annual Review of Public Health* 21 543-567.

229.   Wagstaff, A. and van Doorslaer, E. (2001) *Paying for Health Care: Quantifying Fairness, Catastrophe, and Impoverishment, with Applications to Vietnam, 1993-1998.*

230.   Walker, R.L. 1985 *Applied Qualitative Research* Aldershot: Gower Publishing.

231.   Warneryd, K.E. (1996) Risk Attitudes and Risky Behavior, *Journal of Economic Psychology* 17 (6) 749-70.

232.   Waters, H.R. (1999) Measuring the impact of health insurance with a correction for selection bias - A case study of Ecuador, *Health Economics* 8 (5) 473-483.

233.   Waters, H.R. (2000) Measuring equity in access to health care, *Social Science & Medicine* 51 (4) 599-612.

234.   WHO (2000) *World Health Report 2000: Health Systems: Improving Performance*, World Health Organisation, Geneva.

235.   Widner, J. and Mundt, A. (1998) Researching social capital in Africa, *Africa* 68 (1) 1-24.

236.   Wilkinson, R.G. 1996 *Unhealthy societies: the afflictions of inequality* London: Routledge.

237.   Wolfe, J.R. and Goddeeris, J.H. (1991) Adverse Selection, Moral Hazard, and Wealth Effects in the Medigap Insurance Market, *Journal of Health Economics* 10 (4) 433-59.

238.   Wolz, A. (1997) *The Transformation of Rural Finance Systems in Vietnam*, University of Heidelberg, Heidelberg.

239.   Woolcock, M. (1998) Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework, *Theory and Society* 27 151-208.

240.   World Bank (1998a) *East Asia: The Road to Recovery*, World Bank, Washington D.C.

241.   World Bank (1998b) *Social Indicators of Development*, World Bank, Washington D.C.

242.   World Bank (1999) *Attacking Poverty*, Poverty Working Group, Hanoi.

243.   World Bank (2001) *Growing Healthy: A Review of Vietnam's Health Sector*, Report No. 22210-VN, World Bank, Washington D.C.

244.   World Bank, 2002. Vietnam Economic Monitor (Spring 2002).

245.   Wydick, B. (1999) Can Social Cohesion Be Harnessed to Repair Market Failures? Evidence from Group Lending in Guatemala, *Economic Journal* 109 (457) 463-75.

246.   Yip, W. and Berman, P. (2001) Targeted health insurance in a low income country and its impact on access and equity in access: Egypt's school health insurance, *Health Economics* 10 (3) 207-220.

247.   Zweifel, P. and Manning, W.G. 2000 *Moral Hazard and Consumer Incentives in Health Care*, in Handbook in Health Economics. Newhouse, J.P. and Culyer, A.J. (Editors), Elsevier Science B.V., North Holland, pp. 409-459.