Chapter 2

Literature Review

2.1 Introduction

Issues about asymmetric information and adverse selection have been widely studied to investigate the behavior of the market and its consequences.

2.2 Asymmetry Information In Non-Insurance Markets

In the paper by Arkelof (1970) argued that in a situation where samples of a product might vary in quality and where the consumers at the time of purchase was unable to tell the quality of the particular sample he was buying, there might be a tendency for bad products to drive out the good, possibly to a point where there was no market at all for the good product.

The results that bad products drive out good products may not always be valid: to be precise, in a dynamic context it is valid only if traders are sufficiently shortsighted, in the sense of discounting future benefits at a sufficiently high rate (Heal ; 1976).

Informational disadvantage also causes loss of benefits to a firm. In the paper by Edlin and Stiglitz (1995), managers often utilize this large asymmetry information between him and board of directors to derive higher rents. Two critical factors that may influence the management team's position in the company are team's productivity relative to that of

rival's and the wages the rivals demand. Managers may either increase her own productivity or decrease the threat from the rival management team or takeover artists. The paper showed manager will opt to invest in projects he can manage better than his rivals regardless of its profitability. The incumbent management team will reduce the effectiveness of rivals by shifting some of the investment into the noisier projects (unobservable investment), he will not generally choose the first best investments.

Asymmetry information also reduces competition in the market when rival's price is unknown. In a imperfect market competition (Bertrand Competition), it is required that firm sets price slightly below or to invest slightly more than the higher cost rivals. But when firm's price is unobservable, a firm's competitiveness is eliminated. In the short run, with market structure fixed, asymmetry information will reduce competition, and the winning firms are earning higher profits. Thus the conclusion of the Bertrand model of competition is substantially altered by the presence of informational disadvantage (Spulber ; 1995).

Informational disadvantage will also influence firm's boundary. Vertically integrated firms can manufacture the components they need, but they face a relatively high cost of governance. Specialized firms can produce at lower cost, but search for partners is costly, and input suppliers face a potential holdup problem Grossman and Helpman ; 2002).

2.3 Asymmetry Information In Insurance Markets

The problems of asymmetry information will result consumers with low risk type are paying higher premium when purchasing larger than usual polices. The analogue of this problem is investigated by Wolinsky (1983) in exchange market; where consumers only observe the price as signal to the quality of the product. The poorer information received by the consumers, the producers will have incentive to mark up the price of the good. The analysis focuses on product which can be produced with different quality levels, and consumers have imperfect information of the quality of the good. Just as in insurance market, insurers can only observe the consumption or quantity purchased as an only source of information to tell which category the buyer is from. Usually high risk individuals value larger insurance policy than that purchased by low risk individuals. Thus larger policies are usually charged with higher loadings or premiums.

In the paper by Beliveau (1984) found the positive function between coverage and unit price, and positive covariance between coverage according to age and unit price in life insurance market (for non participating policy). The paper tests the hypothesis of adverse selection model in insurance market; if the theory of the asymmetry information is true, then the insurance policies issued to the observable homogeneous consumers will exhibit increasing unit prices as the amount of coverage purchased rises. The author hypothesized that individuals purchasing unusually larger amounts of protection, relative to their observably characteristics (i.e. income, age, marital status etc) are more likely to be of higher risk than other consumers. Therefore, to avoid adverse selection, insurers will adjust for this with larger loading factors. The author then regressed the gross premium to the characteristics of consumers (e.g income, age etc) and quantity of the coverage to

investigate the hypothesis. The result suggested that pricing schedule by insurers are compatible with the coverage (as insurers perceived riskier consumers demand larger policy). Therefore the good risk consumers are paying higher price or are excluded from the market.

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An empirical examination on asymmetric information as barriers to trade was not presence in US life insurance market. In the paper by Cawley and Philipson (1999), informational disadvantage does not thwart insurers from underwriting as long as gains from trade dominates underwriting cost. In this paper, the authors reported that the findings are difficult to reconcile with the conventional theory of insurance under asymmetry information. The findings, are not only based on correlation between quantity and price alone, but also between self perceived and actual risk with quantity demanded. The results are; there is evidence of bulk discounts, multiple contracting and negative covariance between risk and quantity consumed. Each of these contradicts the theory of asymmetry information.

One of the explanations offered by the authors for negative covariance between risk and quantity is that insures can distinguish risk through underwriting and it can observe the risk type from systematic patterns in claims over time, and then limit the coverage to the high risk individuals rather than to the low risk types as advocated in the separating equilibrium. In other words, producers can overcome the problem of informational disadvantage. In this paper, declining prices with coverage are inconsistent with the risk-sorting in the separating equilibrium under asymmetry information.

The prevalence of non-optimality in insurance market warrants government intervention for compulsory public insurance. In the paper by Mark V Paulky (1974) the advantage of public provision lies in its ability to generate a particular kind of information which was not observable by insurers. If this information were to be made available to private firms, an optimal market outcome may occur.

If individuals were willing or able to reveal their information, everybody could be better off. This is because high risk individuals cause externalities; the low risk individuals are worse off than they would be in the absence of the high risk individuals. However, the high risk individuals are no better off than they would be in the absence of low risk individuals. The point was made by Rothschild and Stiglitz (1976).

The presence of asymmetry information was tested on French automobile insurance industry by Chiappori and Salahie (2000). The relationship between coverage and accidents was tested to investigate the hypothesis.

Another test on asymmetry information was done by Dionne and Doherty (1994). The study examined the problem of adverse selection can be solved by semipooling in the first period and separating equilibria in the second period. This is done through offering a menu of contracts designed to induce the insureds to reveal his identity by contract selection.

Responses of insurers to adverse selection by separating the policy according to risk types is also investigated by Puelz and Snow (1994) in automobile insurance. This paper presents market signaling by both low and high risk individuals and the policy

offered is according to the risk type. Firms respond to the asymmetry information and adverse selection externality by screening, categorizing and sorting. It engages screening activities by assigning each applicant to a particular risk category on the basis of some observable traits. Insurers offer policy with premium deductible appropriate to the applicant's risk category. Faced with these choices, insureds will choose a policy with most appropriate deductibles to him base on the traits that cannot be observed by the insurers. Low risk individuals will have an incentive to signal their risk type by selecting high deductibles. Thus equilibrium in adverse selection is achieved when each risk category chooses their deductibles; low risk will opt for high deductibles and high risk types will choose low deductibles and are charged with higher price. Those with high deductibles are associated with lower than average prices for coverage. This findings is consistent with theory of asymmetry information; equilibrium in the market of adverse selection results in separation of policy, nonlinear pricing, and no cross subsidization between low and high risk types.

The nonlinearity of prices; larger amount of policy purchased will be charged at higher prices. This is assumed that high risk individuals value more insurance than the low risk types do. Thus there must be separating policies for the different risk category. In the paper by Eric and Crocker (1991) indicated that ex ante screening of insurance applicants into risk categories, and interim self sorting of insurance applicants themselves according to risk type are characteristics of efficient contracting in insurance market with adverse selection. In the paper, firms classify risk on the basis of insured's voluntary consumption of products that are correlated with underlying loss propensities. The observed consumption levels of such correlative products provide information to the potential

insurers that may mitigate the moral hazard and adverse selection inherent in insurance with private information.