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THE SOCIAL PURPOSE OF INSURANCE AND WHY IT MATTERS



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Synopsis:

The insurance industry, while it is one of the core parts of the modern economic system, endures a rather low public image, and miserable reputation. Customers view it as a dreadful necessity. We believe the main reason is misrepresentation of insurance as providing protection. We show that on the social scale the role of insurance is to increase rational risk taking in the society, not protect from risk.

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Abstract

The insurance industry, while it is one of the core parts of the modern economic system, endures a rather low public image, and miserable reputation. Customers view it as a dreadful necessity, especially when insurance is a legal requirement, where customers are required by law to purchase it.

The industry presents itself as providing protection. This is really an euphemism, as the industry simply pays money to its customers when customers suffer a loss, which is typically a painful event. And the money is not a gift of any type, it does come from the premiums paid collectively by customers. The industry merely redistributes it, acting as an operator of an unlucky lottery. Presenting this process as “protection” does not enhance the reputation.

In this paper, we reexamine the social purpose of insurance. We note that the industry misrepresents itself in the way it views its role in the society. We show that while protection may be viewed as an individual purpose of insurance, on the social scale the role of insurance is to increase rational risk taking in the society. In other words, insurance is supposed to increase risk, not protect from it, and this *increase in risk taking* is its proper social mission.

We then show how this perspective has significant implications on the role of insurance industry. In particular we note that insurance pricing is a very important incentive mechanism for rational risk taking, and mis-pricing of insurance has always significant negative consequences for the society, especially in the case of making insurance too cheap. We also note that insurance is uniquely positioned to address societal issues that are otherwise extremely difficult to tackle, such as externalities or long-term hidden costs.

Introduction

The insurance industry, while it is one of the core parts of the modern economic system, endures a rather low public image, and miserable reputation. In a recent survey published by Indeed.com, in 2016, for employers in the United States, not a single insurance company was listed among the ten more attractive employers in the U.S. by young prospective employees. In general, customers view insurance as a dreadful necessity, which is unreasonably costly. This is especially unpleasant for the customers when insurance is a legal requirement, i.e., customers are required by law to purchase it.

The industry presents itself as providing protection. This is really an euphemism, as the industry simply pays money to its customers when the customers suffer a loss, which is typically a painful event. The customer is not “protected”, the customer is *compensated* for the loss. And the money is not a gift of any type, it does come from the premiums paid collectively by customers. The industry merely redistributes it, acting as an operator of unlucky lottery. Presenting this process as “protection” does not help the insurance industry’s image. It should be noted that not all of the money collected by insurance companies in premiums is paid back to the customers: A significant portion of the funds is spent on expenses of the company, wages of its employees, and profits, leaving only somewhere between 65% to 85% for the payments to the customers.

In this work, we reexamine the social purpose of insurance. We propose that the industry misrepresents its social purpose, and, as a result, harms its own reputation, and the mission it has. We propose the proper social purpose of insurance.

We also analyze implications of this reexamination on the role and proper functioning of the insurance industry.

What is insurance?

Encyclopedia Britannica (2017) defines *insurance* as “a system under which the insurer, for a consideration usually agreed upon in advance, promises to reimburse the insured or to render services to the insured in the event that certain accidental occurrences result in losses during a given period. It thus is a method of coping with risk. Its primary function is to substitute certainty for uncertainty as regards the economic cost of loss-producing events.” On the other hand, Wikipedia (2017) defines insurance as “a means of protection from financial loss (...), a form of risk management primarily used to hedge against the risk of a contingent, uncertain loss.”

The phrasing used in the Wikipedia definition is the most commonly used one: Insurance is about *protection*. If we define insurance is a *contract providing protection from certain financial losses defined in the contract*, in exchange for an agreed upon payment made upfront, that is the most standard presentation of what insurance is, combining the approach of the definitions from Encyclopedia Britannica and from Wikipedia. This sounds reasonable, but let us rephrase the question: What is the social role of insurance? Individually, insurance provides protection for an individual, a family, or a business organization, against the risk of loss from the insured event. But on the social scale, any payments to the insured persons and firms come from premium payments made by those insured entities to the insurance company. The net effect on the insured entities is not protection, not any form of generosity from the insurance firm expressed in claims and benefits payments. The net effect on the insured entities appears to be, in the aggregate, and on the average, detrimental to them, as the insurance

companies return only a fraction (65% to 85%) of all premiums paid to the customers, and keeps the rest for its expenses, and for profits (which are, in a sense, expenses as well, as they pay the cost of capital invested in the insurance firm). Why would then anyone purchase insurance if it is clear that, on the average, customers lose in this deal?

The traditional argument for insurance is that customers are better off with insurance than without it, as measured by a *utility function* of the customer. The utility function (see e.g., Gerber and Pafum, 1998) is a quantitative expression of an economic decision maker's value assigned to a financial resource, typically an increasing function of wealth with a decreasing derivative. Given customer preferences, expressed in a utility function, customer may find himself/herself better off by paying a premium with certainty and avoiding or limiting a random loss that the insurance contract covers. This happens because customer's utility function while increasing with wealth, is increasing at a decreasing rate (this is termed *diminished marginal utility of wealth*, a standard property of a utility function, assumed in the model, because this is consistently observed in human behavior). On the other hand, the insurance firm is assumed to have a greater risk appetite than the customer, i.e., be willing to take on more risk, and additionally, an insurance firm may, by combining many policies from independent risks, diversify the pool of risks, thus decreasing the amount of risk per unit insured. The most common reason for such a situation is a result of the Central Limit Theorem: The theorem states that a sum of independent, identically distributed random variables, in the limit, approximates a normally distributed random variable. This practically means that an insurance firm that promises to pay losses suffered by its customers, if those customers are independent, and have losses of similar nature, has an opportunity to operate within a reasonably defined framework of dealing with approximately normally distributed aggregate losses. A sufficiently large and well-capitalized insurance company can even be assumed to be risk-neutral, i.e., being indifferent between a fixed endowment of wealth and receiving the same expected value of random wealth. This implies that the insurance firm is better equipped to assume the risk than a customer, and a mutually beneficial trade can be made – a customer feels better off with insurance than without it, while an insurance firm is able to earn a profit, while successfully managing the increased risk it assumes.

An analogous argument, although a weaker one, can be made for a firm purchasing insurance. The reason why the argument is weaker for a firm is that a firm is likely to have more financial resources than an individual, thus be more willing to assume risk and more able to diversify risks. But an insurance company still may have the ability to move those risks to a larger and more diversified pool, thus creating circumstances where the purchase of insurance may make sense for a firm. Furthermore, an insurance firm is more likely to possess insurance expertise that not every firm of other type may have.

The above arguments underlie the structure of insurance regulation. There are two key components to the insurance transaction, according to what we have presented:

- The consumer must be able understand the contract, to fully assess his/her utility of wealth with and without the contract, and to benefit from the transaction.
- The insurer must be able to deliver on the promise of payment in case of random loss.

And these are the reasons for the existing structure of insurance regulation:

- Regulators provide a framework of consumer protection against potential abuse by insurers who are the ones that write and design the contracts (insurance contract is a *contract of adhesion*, meaning that one side, the insurance firm, writes it, while the other side, the insurer, either accepts it or rejects it), and
- Regulators require certain minimum amount of capital from insurers, and work to assure that insurance firms are solvent and able to deliver on the promises they made to their customers.

But let us note that the argument for insurance provided above is a static argument. It assumes that the transaction of purchase of insurance does not change the behavior of customer and the insurance firm. On the other hand, the core argument for existence of financial instruments, not just insurance, but other complex financial assets, including derivative securities, from theoretical finance is the one in the Modigliani-Miller Theorem, which in its most abstract form says that, *in the absence of taxes, bankruptcy costs and agency costs, a method of financing of a firm is irrelevant for the value of the firm*. Insurance is typically presented as a product. It is, of course, a financial product. To the customers, insurance contract is a financial assets. And that means that for the individuals and firms insured it is a method of financing, i.e., a rearrangement of cash flows, both deterministic and contingent. How does insurance create value then? According to Modigliani-Miller Theorem, if value is created for the customer, it must be through tax savings, reduction in the cost of bankruptcy, and through lowering of agency costs. Indeed, many insurance products are designed as tax-saving devices, and insurance form firms subject to progressive income tax automatically lowers their expected tax bill by stabilizing income, as the expected value of tax on random income is greater than or equal to the tax on expected value of random income, by the Jensen's Inequality. Thus, insurance may provide value by lowering, on average, tax liabilities of the insured. Furthermore, the core purchase of insurance purchase is to avoid bankruptcy, or lower its probability, for the insurance customer. Thus, insurance does provide value in this way, as well.

Does insurance lower the agency cost? In other words, do insurance buyers and sellers act as better guardians of property as a result of entering into an insurance transaction? The answer we would like to propose is: If the insurance markets are working properly, yes, but if they are not working properly, then no. The ironies of insurance, and abuses, including abuses as perceived by customers, refer to situations when changes in behavior produced by an insurance contract resulted in a net loss of value.

The social purpose of insurance

What is the social purpose of insurance then? On the level of an individual contract, insurance protects the insured against a random loss. But we would like to ask that question at the social level. What does the insurance industry do for the society as a whole? After all, the negative image the industry has results from its purported damage to the society as a whole. In order to answer this question, let us first ask what insurance does for the whole society? What is the effect on the entire society of having an insurance industry, when compared with the same society without an insurance industry? Baranoff (2011) discusses something of an unintended social experiment that actually happened in

Australia: the failure of the HIH insurance company in March 2001. HIH was a major insurer of construction companies, in a country with high level of home ownership (close to 70%). Following the HIH demise, home construction in Australia ground to a halt, although only temporarily. Faced with a situation where they could not obtain insurance for construction, or where they could not afford such insurance due to higher premiums asked by the remaining solvent insurance companies, Australia's construction firms found it difficult to buy insurance and abruptly stopped many construction projects for a while. The situation was eventually resolved, but it illustrates well the significance of the insurance industry for the real economy: Insurance enables undertaking of risky projects.

A similar story can be told about the American real economy. A hundred years ago, Americans used a joking statement, something like "I will sell you some land in Florida", to indicate how undesirable buying land in Florida was in the early 1900s (and even more so in the 1800s). Now Florida is the state that has more people moving in than any other state in the United States: According to *Governing* magazine web site, Florida is the state with the largest migration into the state in the last two years, while Illinois was the state with the largest outflow. What caused such change? The reason why Florida was an undesirable location hundred years ago was rather plain to see: It is mostly a swamp, with frequent hurricanes that can destroy real estate completely and pose a deadly threat, especially in the case of homes built without a basement – which, unfortunately, is a necessity in a swamp. But now Americans built homes in Florida, in large numbers. What happened? The answer is: Development and wide availability of homeowners' insurance. Americans now can have a home on a beach, or near a beach and Florida, and have it insured. And while there is an intense debate about the price of that homeowners' insurance, with those supposedly greedy insurance companies wanting a lot of money in premium payments, insurance is available widely. There is substantial government intervention in the market because of perceived high expense of insurance coverage, but the market is generally functioning and homes do get built in Florida, with generally satisfied customers moving to the beaches of Florida.

And let us also illustrate this social mission of insurance with the simplest possible example. Imagine a world without automobile insurance. In such an alternative world, would people drive more or less? Obviously, they would drive less. This means that the social purpose of car insurance is to get people to drive more. And, similarly, the social purpose of business insurance is for businesses, such as construction business in Australia, to undertake more activities. The purpose of homeowners insurance is for people to own more homes, and be able to live in homes located in dangerous locations, such as the beaches of Florida. This is the social purpose, the actual net social result of having an insurance industry, as opposed to not having one. In radically simpler words: *The mission of the insurance industry is to get people to do more crazy stuff!* (Ostaszewski, 2016). And yes, this is a noble mission. Without risk taking, economic decision makers would undertake significantly fewer projects, and the economy would likely stagnate into a dreary monotony.

Ericson, Doyle, and Barry (2003), in an extensive monograph *Insurance and Governance* note increased risk taking resulting from insurance and call it "ironic". But increased risk taking resulting from insurance is not "ironic", but rather it is central to the mission of the industry. If that increased risk taking brings about in greater wealth of the insured through increased business activities, especially if such increased wealth exceeds

the cost of insurance, the net effect of existence of insurance is not just increased psychological well-being of the insured (measured ostensibly by the utility function), but an increased real material well-being. Insurance is often viewed as dreadfully expensive and often even perceived as unnecessary expense. But insurance can earn its keep, by fulfilling its core mission, and that mission is to facilitate increased risk taking.

The key is, of course, that to earn its keep, insurance must facilitate productive risk taking, and punish, with high premiums, and other discouragement to coverage, such as high deductibles, exclusions, strict standards of proof for claims, and everything public so dislikes, all risk taking that is unproductive. Thus buying life insurance by a parent who must work, but wants his/her children protected in case of untimely death, is encouraged and facilitated. Buying life insurance for example for bungee jumping for pure fun is typically excluded from any regular life insurance policy, because of such activity not resulting in increased wealth or productivity.

Insurance helps people do crazy stuff, but at a proper price

In our modern society, we practice widespread risk-taking because we have widespread insurance. We drive automobiles, we fly planes, we undertake large construction projects with significant social and environmental impact, and we can only do most of these potentially deadly or extremely destructive activities because some of the financial consequences of these activities are assumed by the insurance industry.

The risk taking by the clients of insurance companies may not at first look to be *increased* risk taking, but almost all risk taking that is insured is, by economic standard of opportunity cost, increased risk taking. Because it would have not taken place in the absence of insurance. If it were not for car insurance, not only would customers drive less, they would also likely buy significantly fewer cars. The standard of comparison is versus the world without insurance, and as the bankruptcy of HIH in Australia illustrated, that world can be dramatically different than what we consider our standard, commonplace reality.

Insurance is embedded in all of our daily activities. The buildings where we live, and the buildings where we work, are insured. Activities that we perform at work are insured. Our commute to work takes places in vehicles that are insured. Our lives are insured. Our machinery at work and at home is insured. Production of television shows and films that we entertain ourselves with is insured. To paraphrase Ericson, Doyle, and Barry's (2003) book title *Insurance as Governance*, all of our daily activities are governed by insurance.

The key contention we propose in this paper is that the insurance industry misrepresents itself to the public. It presents itself as a protector. But the insurance industry does not protect in the sense of preventing random losses, and it does not protect at the societal scale. It only protects (to a degree, only financially) at the individual contract level. At the societal level, it first and foremost enables risk-taking. Insurance firms cannot protect their customers from hurricanes, they have no power to stop hurricanes or reduce their ferocity. But insurance firms can allow their customers to enter a contract that will provide the customer with funds needed to restore a home destroyed by the hurricane.

And insurance firms can do more:

- They can inform the customers of cost of coverage depending on the location of the home, thus directing customers to build their homes in areas less prone to hurricanes.
- They can inform customers of the features of their homes that help the building withstand fires or hurricanes, and thus suffer less damage.
- They can also lower the premium for insurance coverage by inviting the customer to share in the risk through deductibles, exclusions, etc., thus directing the customer towards reducing the moral hazard and better understanding the nature of risk they are facing.

Again, the key point is that insurance contracts encourage risk-taking. This phenomenon is known in the insurance industry as *moral hazard*. The term is somewhat derogatory, implying that it is an undesirable and often unexpected consequence of insurance coverage. We propose instead that it is a natural consequence of placing insurance coverage on a risk. Insurance industry decries moral hazard, as it necessitates subsequent increases in premium charged to customers. Customers also decry such premium increases. In fact, high cost of insurance is invariably the main cause of reputational challenge that insurance industry faces. Everyone proclaims that they would like the cost of insurance to come down, from the industry, to its regulators and consumer advocates. But insurance price is determined, in the long run, not by anyone's desires, but by cost of claims and benefits paid under insurance coverage issued, as well as expenses of insurance companies, including wages of their workers (cost of labor) and profits of their owners (cost of capital). Faced with these, supposedly high, costs, governments, especially insurance regulators, often act to lower insurance cost to consumer, through subsidies, or even government undertaking insurance enterprise upon itself (especially in the form of *social insurance*, which is a universal scheme of insurance, generally covering all people in a country, or substantial population portion, administered by government, for which the premiums and benefits are not set by markets, but prescribed by law).

Why insurance should be expensive

The main and most common complaint about the operations of the insurance industry is the expense of insurance coverage. Not only nobody complains that insurance coverage is too cheap, complaints about insurance being too expensive are commonplace and usually accompanied by strong emotions and demands for government intervention. The perspective of those complaints assumes that insurance provides protection, and if the customers cannot afford the protection, what is the point of having the industry providing it?

But insurance is not about protection, insurance is about convincing people to take on more risk and pursuing risky but profitable activities. Given limited resources available in the society for pursuit of various possible economic projects, a natural question of choosing the best, the most optimal, projects arises. One method of choosing is to allocate resources to projects that provide the highest rates of return, or expected rates of return, as actual returns are uncertain. But such criterion gives unfair advantage to riskier projects, which tend to have higher rates of return. We can respond to this by evaluating expected return and risk simultaneously, as two different dimensions of the same project. But insurance provides a much simpler and direct solution: It assigns a cost to the risk, in the form of insurance premium, and the decision about choosing projects is then returned to a simpler, one-dimensional choice based on an estimate of return (with such an estimate including the cost of the insurance premium).

A common response to using insurance for such measurement is that firms and individuals can, instead of buying insurance, engage in the process of risk management on their own. We believe such approach to be misguided. It disregards the market price of risk, as expressed by the cost of insurance, and proposes that an economic decision maker who specializes in activities other than pricing of risk can outperform those economic agents who are engaged in pricing of risk specifically (i.e., insurance companies) in the area of risk management. This is extremely unlikely. Economic agents who pursue projects that are within their expertise (in fact, within their sphere of passion) tend to concentrate on their area of expertise (or even more so, passion), while paying less attention to other areas. The veracity of this assessment is confirmed by the universal condemnation of insurance as being too expensive by all economic agents who are *not* engaged in risk pricing. Individual insurance companies, on the other hand, who believe the market prices of insurance to be excessive, can prove their assessment by entering the market for expensive insurance coverage and offering lower prices for the same coverage. This process does, indeed, happen, but never to the degree that government, regulators, or consumer advocates, demand. Functioning and profitable insurance companies always face complaints that their products are too expensive.

And, we propose, this is the way things should be. When facing a choice between insurance coverage that is, in relation to the cost of claims/benefits, cost of labor and cost of capital, too cheap or too expensive, which one (too cheap, or too expensive?) is socially desirable?

Of course, individually, as a consumer, one naturally chooses a coverage that is too cheap, or unreasonably cheap. But what are the effects of such insurance coverages prevailing in the marketplace for the entire society? This situation means that risk is, generally speaking, underpriced. Thus economic decision makers will undertake significantly more economic projects and, due to unrealistically low pricing of risk, many of those projects will appear profitable at first, but will, in the future, as claims and benefits costs materialize, turn out to be unprofitable, possibly really bad money losers. Thus, the society will invest its limited resources in projects that destroy previously accumulated capital. One of the striking features of the 2008 Credit Crisis was the fact that during the crisis, all investment banks in the United States turned out to be insolvent. All of them. They pursued high risk projects, and enjoyed an expectation of protection (free insurance, really) created of prior government and central bank's bailouts of financial institutions during previous crises (e.g., the 1998 Long Term Capital Management debacle, or the 1984 Continental Illinois National Bank and Trust Company bailout, which gave rise to the phrase "too big to fail"). Government-run bank deposit insurance schemes have, throughout history, encouraged excessive risk taking by banks managers, and brought about subsequent costly bailouts, because of banks pursuing projects that eventually turned out to be grossly unprofitable. At the same time, attempts to increase premiums for such schemes always encounter political opposition.

Insurance that is too cheap brings about capital destruction, often realized too late for anything to be done about it. If such insurance is offered to a small group of customers with limited financial resources, the damage is limited. But once the principle of free, cheap, or subsidized insurance is established, economic decision makers with substantial resources are able to enter the lobbying game and secure the benefits for themselves, subsequently creating exposures to much, much larger risks. By some

estimates, U.S. investment banks lost more in the 2008 Credit Crisis than their profits for the previous 100 years. And then they were bailed out, as they expected. But the bailout was done with funds borrowed by the government, or created out of nothing by central bank, while their accumulated capital from century-long business activities disappeared “like the socks in the dryer”, to use the immortal phrase of Canadian singer Nancy White (1990).

On the other hand, what happens when insurance is too expensive? This means that economic decision makers face high cost of insurance, and this high cost reduces the number of economic projects funded by them. There is a societal cost to this: It is the resulting lower economic activity. But all projects that are funded, even if facing uncertainty of their eventual profitability, are far more likely to be profitable. Instead of being destroyed, capital is accumulated. And a possibility of financial crisis is averted. Even just the phrase “high prices of insurance” brings about intuitive association with the so called “gnomes of Zurich”, and conservative tradition of insurance and banking in Switzerland, where traditionally high risk schemes were shunned and financial services, especially insurance, were expensive. The German phrase for the world of expensive insurance is “langsam aber deutlich”.

Let us also note that insurance pricing provides a valuable market signal to consumers about their risk-taking patterns. There exists a common misperception of insurance contract being effectively activated after the fact, after a loss already happened or when benefit needs to be paid. This is incorrect. By pricing the risk, the insurance firm tells the customer what the costs of various risk taking behaviors and decisions are, what risks are acceptable and what risks are discouraged. This modifies the behavior and decision making of the customers starting from the moment when the contract is signed, or even before that. Prices of insurance matter, and buyers of insurance seek lower pricing not just by shopping from among various providers, but also by modifying their behavior, modifying cars that they drive, or how they build their homes, or what kind of doors they have in their homes, and what kind of industrial buildings are built by them. Insurance pricing is a vital market signal about risk taking by insurance buyers.

Practical aspects of increased risk taking in various forms of insurance

If we believe that the social purpose of insurance is to facilitate increased risk taking, then all forms of insurance coverage should be viewed not from the perspective of not what risks they protect against, but what risk taking they encourage. Once we adopt this approach, we see more clearly what the effects of the insurance industry on the society is.

Automobile insurance

Automobile insurance, as we had already mentioned, encourages more driving. And a car is a dangerous machine, with its deadly toll on the society being higher than we commonly acknowledge (car crashes deaths tend to be among leading causes of death in the most developed economies, where most consumers own cars). In fact, current debate on the effects of carbon dioxide emissions may also indicate that not all risks of car driving are fully accounted for.

Homeowners insurance

Homeowners' insurance encourages building and ownership of homes. This especially includes building in areas that are risky for placement of buildings, but desirable for other reasons (such as the beaches of Florida). Again, there is a distinct possibility that the risky activity encouraged imposes additional external costs on the society, and the insurance industry faces a challenge of pricing such risks, in addition to standard risks of home ownership.

Business insurance

Again, we had already noted that business insurance encourages business activity. This creates not just profits for owners of enterprises, but also employment of workers, and may actually have positive external effects on the society.

Life insurance and life annuity

In the case of life insurance coverages, rarely is the question of what risk taking is encouraged by the coverage provided, asked. Yet it should be. In the case of life annuity, the answer is simpler: Life annuity encourages the insured person to leave the labor force (Ostaszewski, 2016). In the words of Oscar Wilde: "It is far better to have permanent income than to be fascinating." If one has permanent income in the form of life annuity, there is no need to work. But leaving the labor force is risky – after being gone from it for several years, one loses expertise and is no longer acquainted with the current technology. We are all aware of the risks of leaving the labor force by observing other groups that have to leave it, such as the unemployed or the disabled.

Life insurance is, in many ways, the opposite of life annuity. Life insurance is typically purchased when the customer has dependents, such as children, and is concerned about their fate in case of premature death. But of course the risk of premature death can be dramatically limited if one drastically limits activities, especially risky activities, and spends all time at home with those dependents. Yet parents of young children typically pursue employment. This is an economic necessity, of course, but it is also a result of life insurance product providing a line of defense for the family that allows bold stepping out into the world by the breadwinner of the family. Life insurance encourages employment of young parents. This is, after all, a risky step, as those parents may have to place their loved ones under care of other people, and limit their contacts with the loved ones. In the extreme case of, for example, a military or police employment, with significant risk of death, life insurance allows the parent to be able to pursue those necessary, yet possibly deadly employment activities.

Health insurance

Health insurance is somewhat of an anomaly. It pays costs of doctor visits or hospital stays, or health care in general, and health expenses are often routine, and not a result of random event, such as a fire or a car accident. In the United States, health insurance developed as an employment benefit, when wage increases were limited during World War II. In many ways, one can argue that in most situations, health insurance acts more like a welfare benefit than insurance coverage. Only a catastrophic health insurance, covering unexpected and catastrophically high medical expenses, resembles regular insurance policies. And in such a case, health insurance does encourage putting oneself in a position of facing catastrophically expensive insurance treatments. How can one do

this? By undertaking very risky physical activities, by living a very risky lifestyle, including very unhealthy lifestyles. If not priced according to risk, health insurance actually encourages smoking, unhealthy foods, or unhealthy lifestyles. The market response to those behavior would be to impose significantly higher premiums, but the regulatory and tax framework of the U.S. health insurance system make it difficult. On the other hand, to a limited degree, such pricing incentives do exist in other countries with private insurance markets, such as Germany, Switzerland, or Netherlands, and consumers in those countries are known for relatively healthy lifestyles.

In summary, let us stress that when viewing the effects of insurance coverages, we should pay much more attention to what risks they encourage, and not what risks they protect from. The net positive effects from insurance come from productive risk taking. Such productive risk taking should be encouraged by insurance pricing. On the other hand, unproductive risk taking, such as bungee jumping, with no benefits to the society at all, should be priced very highly, or possibly even, refused any coverage.

Insurance as a cure for externalities?

There is one more potential area of value that insurance can provide. In economics, the *tragedy of the commons* is the name given to the process of depletion of a shared resource by people, who act independently and rationally according to their own self-interest, despite their understanding that depleting the common resource is contrary to the group's long-term best interests. Let us also note that the overuse of certain resources may happen not just because they are common, and hence are perceived as free by members of the group. It is also possible that resources are over-utilized because some costs of their use are not accounted for in transactions involving their use. On the flip side, we may also overcharge for the use of certain resources, if we do not fully understand the long-term consequences of their use.

People who utilize resources without paying for them (or pay less than the full cost) are termed *free-riders* in economics. Free-riders naturally over-utilize resources, and cause societal problems. There have been several solutions proposed in economics for these problems. One such solution is a *Pigouvian tax*. It is a tax applied to a market activity that is imposing costs on other market participants that are not properly paid for. The tax is intended to correct an inefficient market outcome, and does so by being set equal to the cost created. Arthur Pigou (1920) developed the concept of Pigouvian tax, and it is named after him, while William Baumol (1972) brought Pigou's work into modern economics.

Pigouvian tax has been critiqued and discussed widely, and alternatives have been proposed. Pigou himself, already, then followed by Friedrich von Hayek, pointed out that the assumption that the government can determine the marginal social cost of a negative externality and convert that amount into a monetary value is a weakness of the Pigouvian tax. To quote Arthur Pigou (1954) himself: "It must be confessed, however, that we seldom know enough to decide in what fields and to what extent the State, on account of the gaps between private and public costs could interfere with individual choice." Such arguments about limited knowledge in general, and for policymakers in particular, of course have been also made specifically by Friedrich von Hayek.

The two most prominent alternatives have been developed by Ronald Coase (1960) and Elinor Ostrom (1990). Coase argued that market participants can come to an agreement with an efficient result, without the need for government correction or intervention, when transaction costs are low. Coase also pointed out that even if an efficient amount of Pigouvian tax were calculated, it would not remain efficient long, as the world changes.

Coase's work was formulated mostly under the assumption of market participants engaged in mutual bargaining and compensating each other. This concept is directly applicable to external costs imposed on one group by another group, but less applicable to the problem of free-riders depleting the resources of the entire community. Elinor Ostrom (1990) found the tragedy of the commons not as prevalent, or as difficult to solve, in practice as it appears in theory, since community participants often come up with solutions to the problem, on their own, without centralized policy prescriptions.

How can the insurance industry address these issues? First, if the market participants purchase insurance against overuse of the commons, or against the cost of externalities they put out, they pay the insurance premium that acts as a tax on their resources and causes them to have an incentive to reduce the costs, especially if premium is continuously adjusted in response to evolving nature of the risk. One additional bonus is that the insurance firm has natural incentives to assess the risk realistically, and is less restricted by political calculus of power in adjusting the premium or risk management policies. It is true that the insurance firm can capture its regulators and seek rents by using the government for its self-enrichment, but this problem is not limited to insurance companies, and should be addressed by the society in general.

Secondly, the payment of insurance premium creates property rights that the Coase's solution calls for. Costs of damages to others must now be paid by the insurance firm, and the insurance firm must follow insurance accounting, which requires it to reserve properly for payments of future claims.

Finally, we should remember that early insurance companies were mostly mutual firms, which were actually owned by its policyholders, resulting in better incentives for self-government. Even modern stock companies (i.e., insurance companies owned by stockholders, who are not necessarily its customers) implement mechanisms, which are equivalent to limited property rights in the insurance firm by its policyholders, such as experience refunds (where insurance company pays some of the previously collected premium back to the policyholders when it finds that the funds were not needed to pay the claims), or participating dividends (where the insurance company shares some of its profits with its policyholders).

Modern large-scale production resulted in creation of large-scale industrial organizations, and large-scale corporate ownership, that often appears non-personal and far removed from customers and employees. A mutual insurance company is a rare modern organization that may still keep some sense of community and common ownership, an approach quite similar to the one proposed by Elinor Ostrom.

Thus we believe that by engaging in societal problems as a partner, insurance can act to better arrange incentives to improve preservation of precious resources. In doing so, insurance company does not act as a "protector" but as a partner of main societal decision makers. This is a far better perspective for the industry to have than the currently proclaimed "protection" one.

Conclusions

In this paper, we propose that the role of the insurance industry in the society is dramatically different than the image of itself the industry projects. The industry is not in the business of protection from risks. It cannot protect from the risks it proclaims to protect from. Life insurance does not bring the dead back to life. Health insurance does not restore health, it merely addresses the disease. Car insurance does not prevent car accidents. Homeowners' insurance does not prevent hurricanes.

The net effect on the society, and the social purpose of the insurance industry, is to encourage risk taking. In doing so, insurance allows for more creative and productive activities. But the risk of those activities must be priced properly. Productive activities should enjoy affordable insurance coverage. Unproductive activities should face a stiff insurance bill, or even be refused coverage.

There is a reason why insurance usually is perceived as too expensive. It should be. If insurance is too cheap, it results in excessive risk taking and society's resources being wasted on unprofitable ventures. If insurance is too expensive, it causes fewer economic activities to be pursued in the society, but those that are pursued are profitable and thus beneficial to the society.

Insurance is not an external "protector" of the society. Insurance is an important business partner of economic decision makers, helping them in finding productive use for their labor and their resources. Insurance should be a servant to the society, not a cold master sending bills to pay and creating difficulties in obtaining claim and benefits payments.

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