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Irina Gemmo, Helmut Gründl “Fairness” in Insurance in the Digital Age



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SUMMARY

New digital technologies promise to transform the insurance sector and to extend the role of insurers from risk financiers to risk managers and even to risk preventers. This evolution in the insurance sector will possibly generate benefits for insurers as well as for policyholders. However, at the same time it may have socially unwanted effects. By using new digital technologies, which provide insurers with more granular and personalized data about their clients, insurance contracts become more individualized. Due to improved data protection and transparency in the use of their clients' personal data, more and more clients may opt for a screening contract which subsequently may lead to cross-subsidization in insurance being abandoned. However, clients who are, for different reasons, not willing to reveal their characteristics to insurance companies may become the losers of increased digitalization: contracts of people with privacy concerns may become very expensive, which ultimately can lead to welfare losses.

Policymakers and regulators need to discuss whether a deliberate cross-subsidization for essential private insurance policies such as private long-term care or occupational disability insurance is desirable to mitigate negative effects for individuals with privacy concerns. Such deliberate cross-subsidization would also make insurance affordable for high-risk individuals who would otherwise suffer a protection gap when their true risk becomes transparent.

DIGITALIZATION IN THE INSURANCE INDUSTRY

Big data and new digital technologies are transforming the insurance industry in different dimensions. The workflows for contract processing and claims handling are becoming more efficient, making cost efficiency on the administrative side a major competitive factor. In order to gain competitive advantages, new digital technologies are also used to acquire, store and manage more granular data about consumers. The aim is to price insurance policies more accurately according to the actually prevailing risk, and to influence policyholders' risk behavior, e.g. through telematic systems in car insurance. Screening consumers' characteristics by using new digital technologies such as medical wearables can mitigate problems arising from information asymmetries leading to adverse selection and market failure in insurance markets.

ABANDONING CROSS-SUBSIDIZATION IN DIGITALIZED INSURANCE MARKETS AND PRIVACY CONCERNS

If private information can predict consumers' risk types sufficiently well, high-risk consumers obviously do not have an incentive to share their private information with insurers. Revealing their risk type would lead to a higher premium, lower coverage, or even rejection of insurance. Therefore, they avoid a screening contract. Conversely, for low-risk consumers in the same pool, a screening contract could lead to a lower premium or higher coverage.

Nevertheless, low-risk consumers may not feel comfortable about sharing information with insurers because their private data might not be adequately protected against hacker attacks or might be voluntarily shared by the insurer with other sections of the corporate group or even with other companies. Thus, instead of sharing private information with their insurer, they rather abandon the option of a premium reduction or accept a deductible. As a consequence, in a cross-subsidized market, individuals with privacy concerns will have to pay higher insurance premiums or deductibles.

Our theoretical analysis¹ shows that utility shifts towards those individuals who choose to share their private information with their insurers. Therefore, the utility of all low-risk insurance clients could be improved if their concerns about information disclosure to their insurers were sufficiently low. In a digitalized insurance market in which data protection is reliable and the use of private data by insurers is sufficiently transparent, consumers may decide to give up their concerns on data security and choose a screening contract. Within this framework, low-risk policyholders are better off because they obtain risk-adequate and therefore cheaper insurance contracts. In contrast, high-risk policyholders are worse off. Since there is no cross-subsidization by low-risk insurers anymore, they are priced risk-adequately and therefore obtain insurance contracts that are more expensive. An additional issue – that is beyond the scope of our theoretical analysis – lies in the fact that for high-risk con- ▶

sumers insurance might even become unaffordable. This might be societally desired if consumers' riskiness is mostly determined by their behavior rather than by their characteristics, as for instance in car insurance, where information sharing might induce less risky behavior. In long-term care or occupational disability insurance, however, high-risk individuals might lose their insurance protection although they cannot influence their health status. Such situations lead to injustice in society, and there should be a consensus to avoid such a protection gap. This raises the question of whether risk-adequate pricing of insurance contracts is socially preferable to a cross-subsidized insurance market.

PRIVACY CONCERNS IN INSURANCE: TWO SCENARIOS

We see two scenarios of how digitalization in insurance markets, privacy concerns, and data protection might affect cross-subsidization in private insurance (as opposed to social insurance, where cross-subsidization is mandatory by social insurance schemes). The two scenarios are based on the assumption that digital technologies will cause a transformation of the insurance sector that cannot be avoided by market players. Insurance companies will certainly use technical devices to collect granular data about their clients and use big data technologies to develop more appropriate risk scenarios and individualized risk profiles of their clients.

1. The first scenario suggests that policyholders who value their privacy continue to cross-subsidize high risks because they do not want to share their information with their insurer, even though data security is taken for granted. In this scenario, a few low-risk clients whose privacy concerns could not be educated away serve as risk bearers for high-risk consumers. In this scenario, low-risk clients with privacy concerns suffer utility losses from digitalization. An improved and well communicated data protection system could change their mind towards allowing their characteristics and behavior to be screened and would thus reduce cross-subsidization towards high-risk individuals. Insurance regulation that improves data protection and subsequent communication would therefore positively affect low-risk individuals with substantial privacy concerns.

2. In the second scenario, insurance clients do not value their privacy or are convinced that their privacy is sufficiently protected. These insurance clients are priced according to their personal risk. Since all low-risk individuals opt for a screening contract, cross-subsidization is abandoned. High-risk clients pay higher premiums and consumers face the risk of anti-selection by insurers due to prohibitively high risk premiums for private insurance, such as private long-term care insurance policies. For this scenario, we need a political and societal discussion on insurability and affordability of insurance for those high-risk individuals who should be covered from a societal point of view. This applies, among other things,

to long-term care risks (for instance, the risk of Alzheimer's disease) that might be discovered even decades before they eventuate, going along with extremely high and often unaffordable risk-adequate insurance premiums. The political alternatives could include prohibiting price discrimination. The problem is that there might be a supply of screening contracts from other (foreign) markets, leading to adverse selection and high prices on the regulated market. Another alternative could be to subsidize certain high-risk insurance contracts by taxpayers' money. This could help avoiding adverse selection but entails a high degree of bureaucracy and a redistribution of wealth via the tax system.

DISCUSSION ON "FAIRNESS" NEEDED

As digitalization in the insurance industry moves forward and fully individual risk-based insurance becomes available, the issue of "fairness" arises. High-risk individuals may face (prohibitively) high insurance costs or will even be denied cover, while low-risk individuals may not be willing to further subsidize high-risk individuals by paying higher premiums. Policymakers, regulators, insurers and policyholders need to reflect and discuss the ethics of "fairness" in insurance in the digital age. The outcome of this discussion could be the foundation of an adapted insurance system that will continue to ensure social cohesion while insurers and clients benefit from the achievements of digital technologies. ♦