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InsurTech and Financial Consumer Protection*

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ABSTRACT

Technologies are reshaping the insurance industry. Technologies are transforming the way insurers distribute, underwrite, manage products, and settle claims. Artificial Intelligence utilizes a wide range of data, and algorithms to access risks, target customers, and recommend products. It is not only that technological innovations improve the efficiency and lower frictions in each step of the value chain, but the industry is undergoing greater change. New market participants such as startups, Big Tech platform firms, manufacturers, and other service providers have entered the insurance industry in one way or another to serve their customers in the ecosystems. Although most changes seem to benefit financial consumers, the widespread and rapid change can create grey areas in financial consumer protection regulations, resulting in unexpected harm to consumers. In this study, I summarize current changes in the insurance industry and provide issues that call for supervisory attention in terms of financial consumer protection.

Keywords: InsurTech, Artificial Intelligence, Insurance, Financial Consumer Protection

1. Introduction

Digital technologies disrupt and transform the global economy and every industry and reshape every aspect of our lives. The insurance industry, known to be relatively conservative, seems to be not an exception to this wave of changes this time. COVID-19 accelerated digitalization, and the real transformation of the insurance industry is not a story of the future. Startups such as Oscar Health, Lemonade, and Root are now publicly traded companies, and Ant Financial's mutual risk-sharing platform Xiang Hu Bao has more than a million participants.

The change driven by new technologies in the insurance industry is referred to as the term InsurTech. InsurTech is revolutionizing how insurance contracts are created, distributed, and managed. InsurTech is not limited to the digital transformation of the traditional insurance value chain such as digitalized distribution, AI-based underwriting and claim management, and personalized contracts. Insurance companies are reshaping their business to proactive management of risks and constructing risk ecosystems. Startups and big tech companies are expanding their ecosystems and reaching out to the insurance industry.

Thanks to the changes, consumers can be insured much more efficiently and effectively. Now we live in a world where consumers can purchase insurance policies in a few seconds and have claims settled and paid out in seconds. However, these bright sides came with potential issues. Old regulations in the insurance industry need new considerations to facilitate the change of enhancing consumer welfare and at the same time protect consumers thoroughly.

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Although most changes seem to benefit financial consumers, the widespread and rapid change can create grey areas in financial consumer protection regulations, resulting in unexpected harm. For example, there has been an abrupt regulatory interpretation change regarding insurance price comparison website in Korea. Insurance price comparison was considered as an advertisement which does not require agency license. This view was changed and caused confusion to Fintech firms and consumers. This case will be discussed in more detail in section III. In the era of a rapid structural shift, new incidents may continue to arise - some of which may result in serious consumer harm.

The changes in the industry are having a real impact resulting from the little attempts within the regulatory “sandboxes”. It is about time to make serious revisions to the current supervisory systems in many countries. In this study, I summarize the recent changes in the insurance industry and provide issues that call for supervisory attention in terms of financial consumer protection. Section II summarizes the changes in the insurance industry and section III provides issues that call for supervisory attention in terms of financial consumer protection. Section IV concludes the paper.

II. InsurTech

InsurTech, the word, is an abbreviated term for “Insurance Technology”. NAIC (National Association of Insurance Commissioners) defines InsurTech as the innovative use of technology insurance and is a subset of FinTech, or financial technology. Ever since the first global Insurtech accelerator, Startupbootcamp, was initiated in London in 2015, investment in InsurTech increased rapidly (Alexander and Florian, 2017). According to CB Insights (2021), funding in InsureTech startups increased from \$347 million in 2012 to \$3.95 billion in 2018 and reached a record high of \$7.1 billion in 2020. The funding fueled in this industry resulted in the birth of InsurTech unicorns. In the 2019 Fintech 100 list in KPMG and H2 Ventures (2019), 17 were InsurTech firms. Among them, the most highly ranked were the healthcare and health insurance companies Clover Health and Oscar Health. The Insurance price comparison website in India, PolicyBazaar, followed.

A digital P2P insurer, Lemonade, a life insurance carrier, Singlife, a pay-per mile auto insurer Metromile, health insurer Collective Health, and a digital property and casualty insurer, ZhongAn, were also on the top list.

The changes in the industry were not limited to these emerging startups. Incumbents also transformed their businesses. Even before InsurTech or FinTech, Geico and Progressive sold auto insurance policies through online or mobile channels. Incumbent insurers introduced telematics-based pricing. Big Tech companies also stepped into the finance industry, including insurance. Notably, Amazon announced a joint venture with Berkshire Hathaway and JP Morgan to enter the healthcare industry in 2018. Although this ambitious attempt failed, this challenge increased great tension in the industry. Tesla started offering Tesla auto insurance to its consumers. Manufacturers are now showing their presence in the insurance industry.

Startups, incumbents, IT firms, and other participants in the insurance ecosystem have been reshaping the industry to lower frictions and enhance the consumer experience. As EY (2021) notes, insurance consumers felt underserved, and InsurTech helps cater to consumers’ needs. The specific changes in the insurance industry are described with real examples below.

A. Digital Channels and the Entry of New Service Providers

Regardless of the type of products, the way people buy and sell things has changed rapidly. Traditionally, insurance agents and brokers met consumers in person and solicited, negotiated, and sold policies. This process required tedious, time-consuming paperwork and expected a long wait time for approval. With mobile and online channels available for various product lines, consumers can search and compare products easily, get quotes quickly, and purchase insurance policies almost immediately, entirely from mobile or computer without human interaction. For example, an InsurTech company Lemonade uses AI chatbot Maya in the purchasing process and Jim in the claim process. Frequent contact between insurers and consumers means higher friction costs for tedious work in the distribution channels. The repeatedly renewed and frequently claimed personal line policies such as auto insurance, renters’ insurance, individual health insurance, and homeowners’ insurance were the first products con-

verted into digital distribution. The recent success of Next insurance and Singlife shows that term life and SME business insurance products can be the expected products to be mainly sold digitally.

This transformation excluded agents from the distribution process and reduced insurance prices significantly. With digital policies creating the need for easy access to digital price and product comparisons, done by independent agents and brokers in the past, aggregators or price comparison websites gained popularity. PolicyBazzar in India, Insurify and the Zebra in the US, confused.com in the UK are well-known sites. According to McKinsey & Company (2018), more than half of premiums written in the auto insurance policy in the UK were placed through aggregators in 2017. Platform companies that already have extensive digital account members like Grab in Indonesia, Alibaba in China, or Kakao in Korea can easily enter the distribution channel in various forms from simple lead-generators to MGAs (Managing General Agencies). Some other types of digital intermediaries provide advice and recommendations based on personal information, playing the role of financial advisors or private bankers. For example, Bomapp in Korea provides insurance concierge services. It analyzes the insurance policies owned, recommends purchasing or surrendering policies, and helps users make claims. A more comprehensive AI-based Robo-advisor financial advisory service also incorporates insurance consumption in their advisory service.

B. New Products: On-Demand and Embedded Insurance

Digital distribution enabled new types of insurance products to enter the market. Mini or micro policies are policies with small premiums and short coverage terms. These new types of products are expanding their markets. For example, ZhongAn, an insurance company in China, sold over several billion shipping return policies, costing only a few pennies per policy. Another example is travel insurance that covers medical expenses or other possible losses during traveling. People often travel without any coverage due to the tedious purchasing process, but now that travel policies can be obtained within seconds, anywhere, anytime, entirely from mobile, people can purchase needed protection more easily, reduce protection gap. Micro auto insurance coverages like Cuvva allow drivers

to drive cars for the short term like a few hours. Although these coverages are considered micro, as the premium is very cheap due to the short coverage term, these are very meaningful coverages as auto accident loss can be quite significant if occurred. In Korea, one-day auto insurance that can be purchased very easily has become widely available recently.

These small policies can exist thanks to digital distribution which reduced transaction costs significantly. In order to facilitate market innovation, Japan modified the minimum capital requirement to a mere JPY 10 million (USD 90,000) for Small-Amount Term Insurance (SASTI) companies. As a result, over 100 companies offered SASTI products in 2020 in Japan (Toa Re, 2021).

Another type of insurance gaining popularity is so-called embedded insurance. Embedded insurance is a policy sold along with products or services. Examples are auto insurance embedded in ride-share services or mobile phone insurance bundled in new phone sales. Any product sellers or service providers who want to combine their products or service with an insurance policy for their consumers can offer these policies. Although most embedded policies are mini-insurance, such as a return shipping policy or micro-mobility insurance, some are more significant than others. Tesla started selling auto insurance to Tesla buyers in certain regions in 2019, opening the participation of manufacturers as important insurance distributors in insurance markets. Swiss Re and Daimler teamed up and launched a new company, Movinx, to offer auto insurance in 2020, and Ford and Toyota also offer their own auto insurance. Auto manufacturers have a contact point with car buyers with their cars having built-in telematics devices. An advanced understanding of autonomous safety features gives OEMs (Original Equipment Manufacturers) a competitive advantage in underwriting and claim management. As their competitive advantage is rather on the distribution channel, risk evaluation, and management, their firms entered the insurance market as MGAs (Managing General Agencies), rather than full insurance carriers. The most recent big deal regarding embedded insurance is the cyber insurance offered to Google Cloud customers by Google's partnership with Allianz and Munich Re. This embedded insurance market continues to grow and may become a game-changer in the future.

C. AI and Alternative Data-Based Risk Classifications and Claim Adjustments

Insurance was a data-oriented business to start with. The recent developments in Big Data, artificial intelligence (AI), and IoT device technologies advance the insurance industry in numerous ways. More and more firms are turning to automated underwriting solutions or fraud detection systems. Various data which was not traditionally used as an input often are also used in this process. These InsurTech solutions increase efficiency and accuracy.

Risk classification heavily relied on demographic characteristics or some other past usage data. Now firms can use various sources of data and even use dynamic real-time pricing. Metromile in the US and Carrot in Korea collect real-time driving mileage data using a plug-in device and charge Pay-per-Mile premiums. Progressive, Root and many other auto insurers reflect telematics-based driving behavior information in insurance pricing. Some health and life insurers also adjust premiums or benefits based on real-time behavioral data.

Advanced data analysis technology is also used in claim processing and fraud detection. Shift technology is a B2B firm supporting insurers' detecting fraud. According to Shift technology's website, Shift technology can detect pre-existing roof damages for homeowners' policies using satellite image data, and it can detect staged auto accidents using other auto accident-related variables with very high precision. As the number of processed claims increases, the accuracy may also rise. InsurTech firm Lemonade has a digitalized claim processing based on AI. Policyholders send a video through a chatbot describing the loss processed in real-time. The AI analyzes the video for signs of fraud and can quickly settle the claim in as little as 3 seconds.

D. Proactive Risk Management: From Payer to PayVider

The core business of insurance companies is collecting premiums, diversifying risks, and then paying out losses. Insurance contracts benefit policyholders by converting their risky cash flows to less risky or certain ones. Insurance, however, faces the well-known information problems of adverse selection and moral hazard. Advanced data analysis described in the previous section can reduce the in-

formation problems significantly. Equipped with various IoT devices and other technology, insurers can now observe and communicate with policyholders continuously after the inception of a contract. So, the behavior or action taken by consumers after the contract can effectively be observed and contracted into an insurance contract.

Insurers now seem to take one step further to simply reduce information asymmetry using digital technology. Insurers expand their business to the area of proactive management of risks. As most insurance policies have a partial risk transferring scheme, both insurer and insured benefit from reduced risks. That is, there exists an incentive alignment to control risks. Well-known examples are the Vitality program, adapted by many insurers globally. It incentivizes policyholders to reduce health risk by providing monetary rewards for healthy lifestyle choices such as walking 10,000 steps each day. The homeowners' insurance company Hippo installs smart home systems for free to reduce fire and theft risks at home. Auto insurance company Metromile tracks the location of stolen cars using a plug-in device and has recovered more than 90% of them.¹ As more and more insurers provide risk management services, insurers are becoming PayVider, a collaboration between the payer and service provider.

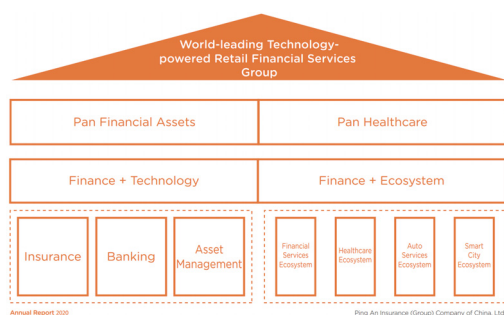
This transition is not unique to the insurance industry. IoT devices connect product manufacturers with their consumers. This trend of continuous communication with customers encourages all industries to adopt a customer-centric ecosystem strategy. Companies are empowered to provide high-quality personalized products and services that their target customers need. One example is servitization. Servitization refers to manufacturers combining their products with related services such as maintenance. Auto manufacturers seek more revenue by providing added services during the lifecycle of vehicles, and with the emerging market of fleet service, rideshare programs help convert manufacturers to mobility service providers. Traditionally, auto lending was the only financing area OEMs were involved in as the financing activity occurs at the inception of the transaction and promotes sales. Now that the interest of OEMs expanded to the entire life cycle of products, insurance and accident management can naturally become an interest of OEMs. E-commerce platforms such as

¹ This statistic is provided in Metromile's website. <https://www.metromile.com/blog/stolen-car-recovered-oakland-metromile/> accessed in 2021-09-30

Alibaba, Amazon, and Naver providing loans to sellers on their platforms can also be similar examples of a customer-centric ecosystem strategy.

These ecosystem strategies blur the boundaries between industries. The definitions of financial products, financial consumers, and financial companies become obscure, calling for an extended range of regulatory targets for financial consumer protection. Companies traditionally belonging to different industries inevitably encounter this issue due to the convergence of products and various services. Partnerships, integrations, and competitions between seemingly unrelated companies occur frequently. ZhongAn (Ping An life, Alibaba, and Tencent), Movinx (Swiss Re and Daimler), and Carrot Insurance (Hanwha Non-life, Hyundai Motors, and SK Mobility) are a few examples. Invaded by many companies outside of traditional insurance companies, some insurers seriously transform their business into an insurance-company-centered ecosystem.

Ping An Life is one of the largest incumbent insurers in the world and experienced an unusual level of growth during the last decade. Its strategy is shown in Figure 1. Ping An's ecosystem strategy focus is on healthcare as it launched the Ping An One Doctor app, a comprehensive healthcare app offered to all consumers regardless of Ping An's financial product holdings. It shows the possibility of an insurance company-centered ecosystem. Recognizing this trend being inevitable, in Korea the Financial Service Commission (FSC)² announced a guideline allowing insurers to own non-financial companies as their subsidiaries in Dec. 2020. Shinhan life and KB



Source: Ping An Life's annual report 2020

Figure 1. Ping An Life's Ecosystem Strategy

² Financial Service Commission is The Financial Services Commission is a government agency with the statutory authority over financial policy and regulatory supervision in Korea.

Non-life insurance company in Korea immediately responded and launched a healthcare service through their newly formed healthcare subsidiaries in 2021.

III. Issues in Financial Consumer Protection

The digital transformation we are going through does not automatically translate to the shift from in-person solicitation to a mobile-based channel or AI-based automatic underwriting. It has more to do with the dynamic changes in the insurance value chain, participants in the industry, the changes in roles, new partnerships, new products, and new business models. It is a structural shift that requires significant changes in the regulatory framework for consumer protection. In this section, I discuss emerging financial consumer protection issues that call for regulatory attention.

A. New Intermediary Services: Focus on the Issues in Price Comparison Websites

The process of sales was simple in the past. Captive or independent agents sold policies to consumers. They provided comprehensive mediation services, compared and suggested policies, and completed the necessary paperwork. Insurers and policyholders typically communicated through these agents. The roles of human agents are being replaced by other digital channels, with disaggregation of functions and the addition of new roles.

The simplest example is insurance carriers selling policies directly through their digital channel. Removing commissions used to pay agents may cut insurance premiums, but consumers need to search and compare policies from multiple insurers on their own. To fill this gap, various types of price comparison websites or aggregators have appeared. Price Comparison Websites (PCWs) can reduce search costs for consumers and enhance competition and innovation in the insurance market. Some services provide quotes and only generate leads to the insurer's website or agents. Others give an exact price and even sign a contract. Some services analyze comprehensive customer data and provide recommendations and advice. MGAs are even involved in underwriting and some claim adjustment process.

These activities could be financial contract “mediation” and thus regulated by financial consumer regulatory bodies, but some activities may fall into a grey area. Recently Korea had a significant incident related with this issue. Kakaopay is a new FinTech firm providing service on KaKao talk, a messenger app used by over 90% of the Korean population. Taking advantage of its members, Kakaopay began offering various financial services, including insurance price comparison. However, this type of service never existed before in the traditional value chain of the insurance industry, so the service was unclear whether it should classify as an advertisement or mediation. The original interpretation of the regulation considered this service as a type of targeted advertisement, so a platform firm without an insurance producer license can provide the service. In September 2021, the Financial Supervisory Commission in Korea suddenly announced that the activity should be considered as a part of insurance mediation, which requires insurance agency license. The range and definition of “mediation” being unclear confused the market, and Kakaopay had to immediately end the service. Fintech firms like KaKao tried to acquire insurance agency license right away, but current regulation requires that at least 10 percent of employees of an insurance agency should be insurance agents. This requirement is very hard to be met by Fintech firms.

There were debates between Fintech firms and insurers on whether this service should be considered an advertisement or mediation. FinTech firms argued that the service is an advertisement as it simply compares policies and generates leads to the insurer’s website. Insurers, on the other hand, viewed this as a mediation. Services considered as a mediation require the service providers to obtain appropriate business licenses and fall under the regulation of the Financial Supervisory Commission (FSC) in Korea. Advertisement, on the other hand, does not require a license from FSC. In September 2021, the FSC in Korea announced that this service should be viewed as mediation, resulting in the immediate discontinuation of these types of services from many service providers. Reflecting regulatory uncertainties and loss of business opportunity of platform companies, the stock price of KaKao plummeted from 156,000 Korean won to 116,000 Korean won in a few days.

This is not a unique problem in Korea, of course. The issue of new service providers called for the revision in supervising firms in the process of insurance distribution.

In order to handle this issue, the European Parliament issued an Insurance Distribution Directive (IDD)³. Effective from October 2018, the member states of the European Union should comply with IDD, which replaces the Insurance Mediation Directive (IMD)⁴. Insurance distribution is “to sell, propose to sell, advise on or prepare in any other way the conclusion of insurance contracts.” Replacing “insurance mediation” with “insurance distribution” was done to protect consumers regardless of the type of distributors in the distribution process. In the UK, where price comparison websites are widespread, the Financial Conduct Authority (FCA) set out a separate guideline for price comparison websites in 2011 to better accommodate and regulate PCWs (FCA, 2011).

The FCA, however, finds problems and concerns regarding PCWs, most notably that consumers focus too much on the pricing when they use PCWs, often leading consumers to policies that do not meet their needs. The FCA sent out letters to the CEOs of PCWs listing the concerns and noted that the FCA is developing a new supervisory strategy for PCWs for better financial consumer protection.⁵ Marano (2021) also points out that the current IDD is not sufficient to regulate insurance distribution.

Although most discussions are on PCWs, other changes are also arising. For example, the embedded insurance market is developing fast. Often these policies are combined with other products or services and thus are almost invisible to consumers. The complexity of the distribution of insurance contracts is increasing. The way insurance contracts are “distributed” has been radically changed and is expected to continue changing. The reshaping of regulation needs serious attention to protect consumers and to enhance consumer welfare through innovation at the same time.

B. Risk Classification and Fraud Detection

Digital technologies like IoT, big data, and machine

³ Directive (EU) 2016/97 of the European Parliament and of the Council of the 20 January 2016 on insurance distribution.

⁴ Insurance Mediation Directive. Directive 2002/92/EC of the European Parliament and of the Council of the 9 December 2002 on insurance mediation.

⁵ The letter can be found here: <https://www.fca.org.uk/publication/correspondence/portfolio-letter-price-comparison-website.pdf> accessed on 2021-09-30

learning are advancing the precision of risk classification. More precise risk classification increases actuarial fairness and reduces adverse selection problems. Better assessing risks greatly benefits both insurers and consumers. Consumers can have access to better products, personalized policies, and overall more affordable insurance. However, an important consideration is in rate making. In most states and developed countries, rating regulation forbids the usage of discriminatory factors such as religion, race, gender, and national origin. Prohibiting these factors has resulted in forced cross-subsidy. Unless these technologies create a rise in adverse selection that threatens market failure, this somewhat intentional coarse pricing scheme continues to be adapted.

But the usage of new technology may affect the anti-discriminatory risk classification framework. Precise risk classification and less cross-subsidy will create winners and losers, and the winners and losers may not be equally distributed. Fuster et al. (2021) shows the evidence for this. The study shows that Blacks and Hispanics are predicted to lose in the mortgage market when the rating model changes from a simple logit credit model to machine learning technology. The algorithm may successfully find hidden discriminatory traits.

While Fuster et al. (2021) proves that the change in the algorithm itself may have the effect of proxy-banned factors, the use of more information can cause serious problems. Lemonade uses AI technologies to process claims. Policyholders send video messages to a chatbot that analyzes them in almost real-time. In May 2021, Lemonade tweeted that its AI uses information on non-verbal traits collected from video calls such as customers' facial characteristics to deny claims. A backlash of negative public attention forced Lemonade to respond by retracting some of their comments.⁶ If not properly regulated, incidents like this can occur where firms use both verbal or non-verbal, provided or inferred information to classify risks and detect frauds. Our behaviors in daily life can be tracked and priced in insurance premiums or loan

rates unequally across races, religions, and genders.

Concerned about this issue, the EU's Fundamental Rights Agency issued a report on artificial intelligence and fundamental rights (FRA, 2020) suggesting that organizations using AI explain their AI systems and the decision-making process based on AI. A report by the European Commission (2020) on algorithmic discrimination in Europe also analyzes the problems, reviews good practices, and proposes the "PROTECT" framework as a set of key recommendations to be implemented in Europe.⁷ Specifically for insurance consumers, IAIS (International Association of Insurance Supervisors) issued a report on the use of big data analytics in insurance (2020). The report notes that the advanced data analysis can limit the availability and affordability for certain consumer groups, and thus, supervisory actions should be taken to have a sufficient level of transparency and insurer accountability for customer outcomes based on algorithms. Some jurisdictions take conservative action towards this concern. The state of New York issued a letter in 2019 mentioning that "an insurer should not use external data sources, algorithms or predictive models in underwriting or rating unless the insurer has determined that the processes do not collect or utilize prohibited criteria and that the use of the external data sources, algorithms or predictive models are not unfairly discriminatory."⁸ The letter also requires a valid explanation or rationale for using such technology and proper disclosure of the algorithm and data contents.

C. Regulating AI Advisors

AI is not only used in internal risk assessment but also used as a Robo-advisor. Robo-advisors have direct interactions with consumers and substitute some functions of humans. These "advisors" can play their role in various distribution channels, not limited to online or mobile. Robo-advisors can take over the entire function of a human advisor, but they may conduct parts of the agents' role and help human agents in the process of distribution. In Korea, AI alone cannot be an insurance producer as

⁶ Lemonade tweeted that "1. AI that uses harmful concepts like phrenology and physiognomy has never, and will never, be used at Lemonade. 2. We have never, and will never, let AI auto-reject claims. Here's why: We do not believe that it is possible, nor is it ethical (or legal), to deduce anything about a person's character, quality, or fraudulent intentions based on facial features, accents, emotions, skin-tone, or any other personal attribute." <https://www.lemonade.com/blog/lemonade-claim-automation/> accessed on 2021/9/29

⁷ The PROTECT proposal can be found in page 12 of European Commission (2020).

⁸ The letter can be found here: https://www.dfs.ny.gov/industry_guidance/circular_letters/cl2019_01 accessed on 2021/09/30

it is not a legal person. However, the FSC announced in May 2021 that producers are allowed to use Robo-advisors in telemarketing channels to explain insurance products. As more algorithms utilize individual data to give advice and recommendations, the roles of Robo-advisors will continue to rise.

Insurance agents and brokers need to acquire an appropriate license, and they are liable for their misconduct. When human-like Robo-advisors interact with consumers in the distribution process, misconduct issues may arise, just like with human agents. We need to set standards for algorithms substituting human roles and clarification for who should be held liable in the case of misconduct.

The issue of liability regarding AI is part of a much broader discussion out of the insurance industry. AI is substituting for drivers, doctors, and many other human roles. Although it performs these roles, AI is a product under current law. But unlike other products, AI can learn itself, make autonomous decisions, and act and interact independently without human control. When multiple humans are involved in controlling AI, grey areas for liability may exist.

As the usage of AI is expected to increase, new thoughts on the legal status of AI have emerged. The European Parliament stated that we are allowed to create a specific legal status of electronic persons to be given to AI.⁹ This statement brought up fierce criticism and debates. In 2019, European Union (2019) expressed a view denying the necessity of adopting “electronic personhood.” Bertolini (2020) provides more analytic discussions on the notion of “electronic personhood.” Although it is evolving and developing, the dominant opinion on the current legal status of AI is that AI is not a legal person. The AI guideline by European Commission (2019) states that “the manufacturer can be liable even if the defect was caused by changes made to the product under the producer’s control.”

Clarifying the subject of liability and providing guidelines for the usage of AI seems to be an absolutely necessary condition for utilizing Robo-advisors in the distribution channel of financial products.

⁹ European Parliament resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL)), paragraph 59.

IV. Conclusion

With the accelerating technological developments and changing consumer expectations, I believe that the insurance industry will continue evolving. This innovation can certainly benefit consumers; risk management and risk sharing will become more efficient and more customer centric. However, the significant level of structural change that is currently taking place -where the type of value chain and market participant changes along with the change in the service and product provided by insurers, and where algorithms play significant roles - requires a significant level of change in the regulations for consumer protection as well.

In this paper, I have summarized the main changes taking place in the insurance industry and provided major issues that call for the attention of supervisors to redefine the scope of financial products and the range of licenses and regulations by the financial supervisory bodies. Ethical norms for complex technologies such as AI will minimize regulatory uncertainties and thus promote further innovation while protecting financial consumers.

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