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Supervisors' Identification of, and Response to, Increased Digitalisation in Insurance

Or

The Challenge of Big Data in Insurance: Supervisory Innovation to Empower Consumers

IAIS Market Conduct Working Group

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The Center for Economic Justice

CEJ is a non-profit consumer advocacy organization dedicated to representing the interests of low-income and minority consumers as a class on economic justice issues. Most of our work is before administrative agencies on insurance, financial services and utility issues.

On the Web: www.cej-online.org

Why CEJ Works on Insurance Issues

Insurance Products Are Financial Security Tools Essential for Individual and Community Economic Development:

CEJ works to ensure ***fair access*** and ***fair treatment*** for insurance consumers, particularly for low- and moderate-income consumers.

Insurance is the Primary Institution to Promote Loss Prevention and Mitigation, Resiliency and Sustainability:

CEJ works to ensure insurance institutions maximize their role in efforts to reduce loss of life and property from catastrophic events and to ***promote resiliency and sustainability*** of individuals, businesses and communities.

Captive Insurance Markets:
Who Are the Gatekeepers for Insurance Sales and Claims?

Today, there are a number of smaller insurance markets in which the consumer is captive to the intermediary:

- Consumer Credit Insurance / Payment Protection sold by Lenders
- Force-Placed Insurance, Private Mortgage Insurance "sold" by Lenders and Loan Servicers
- Travel Insurance Sold by Airlines, Travel Agents
- Rental Car Insurance Sold by Rental Car Companies

Reverse competition" means competition among insurers that regularly takes the form of <u>insurers vying with each other for the favor of persons who control, or may control, the placement of the insurance with insurers.</u>

Reverse Competition and Captive Markets: Why a Problem?

The Lender is the gatekeeper for a captive market – the lender as intermediary determines what products will be sold to which consumers and how much of the premium the lender will extract from the insurer as consideration for the lender's market power to open the gate to its consumers for the insurer.

Over the past ten years, captive markets have spread to many other types of insurance product and markets, but **now, the gatekeepers are Big Data Algorithms.**

Without public policy action, captive markets will no longer be limited to add-on products markets like credit-related insurance. Other insurance markets – whether personal or commercial lines – will become captive markets <u>where control over access is with the data vendors and algorithms describing and scoring the individual consumer or business.</u>

Big Data Algorithms as Insurance Market Gatekeepers

- Marketing: web searches and web advertising that pre-score and channel consumers to particular products, providers and price-levels.

- Pricing: pre-fill applications and pricing without the consumer providing information, pricing based not just on risk but on price optimization / consumer demand models, real-time competitive options and/or socio-economic characteristics

- Claims: automated, instant claim settlement proposals based on data generated by a vehicle, home telematics or wearable device and utilizing price optimization/consumer demand models to determine amount of claim settlement offer a particular consumer is likely to accept based on his or her personal data.

- Common characteristics – opaque algorithms, little or no disclosure or transparency to consumer, great potential to penalize most vulnerable consumers, limiting loss mitigation role of insurance

What is Needed to

- **Keep Insurance Markets Competitive and Fair to Consumers?**
- **Improve Insurance Role for Economic Security, Loss Mitigation, Resiliency and Sustainability for Individual and Businesses?**

1. Articulate What the Future of Insurance Should Look Like

2. Monitor Markets More Comprehensively and Efficiently

3. Empower Consumers With Information on Insurer Performance

4. Develop / Improve / Reinvigorate Capabilities for Economic Analysis of Markets, Competition and Anti-Trust.

Big Data Defined

Insurers' use of Big Data has transformed the way they do marketing, pricing, claims settlement and their approach to risk management. For purposes of my talk, Big Data means:

- Massive databases of information about (millions) of individual consumers
- Associated data mining and predictive analytics applied to those data
- Scoring models produced from these analytics.

The scoring models generated by data mining and predictive analytics are algorithms. Algorithms are lines of computer code that rapidly execute decisions based on rules set by programmers or, in the case of machine learning, generated from statistical correlations in massive datasets. With machine learning, the models change automatically. Coupled with the increased volume and granularity of data is the digital technology to generate, access, process, analyze and deploy big data and big data algorithms in real time

What's So Big About Big Data?

1. Insurers' use of Big Data has huge potential to benefit consumers and insurers by transforming the insurer-consumer relationship and by discovering new insights into and creating new tools for loss mitigation.

2. Insurers' use of Big Data has huge implications for fairness, access and affordability of insurance and for regulators' ability to keep up with the changes and protect consumers from unfair practices

3. The current insurance regulatory framework generally does not provide regulators with the tools to effectively respond to insurers' use of Big Data. Big Data has massively increased the market power of insurers versus consumers and versus regulators.

4. Market forces alone – "free-market competition" – cannot and will not protect consumers from unfair insurer practices. So-called "innovation" without some consumer protection and public policy guardrails will lead to unfair outcomes.

5. Regulators and policymakers must understand the economic and competitive implications of Big Data on insurance. Without public policy action, captive markets will no longer be limited to add-on products markets like credit-related insurance. Other insurance markets – whether personal or commercial lines – will become captive markets where control over access is with the data vendors and algorithms describing and scoring the individual consumer or business.

6. The insurance industry and insurance regulatory systems are at a crossroad. **One possible future is empowered consumers and businesses partnering with risk management and sustainability companies who also provide insurance.**

   Another choice is a small set of insurers, data brokers and consulting firms who control access to insurance through opaque algorithms.

Allstate CEO to Investment Analysts, May 2017[1]

The insurer's "universal consumer view" keeps track of information on 125 million households, or 300 million-plus people, Wilson said.

"When you call now they'll know you and know you in some ways that they will surprise you, and give them the ability to provide more value added, so we call it the trusted adviser initiative," said Wilson.

Allstate's Data Analytics Subsidiary[2]

"Arity is a data company — an insight company, really — whether or not it's data from fitness sensors or home sensors," Hallgren says. "But everything out of the gate so far is focused on the connected car."
That's because the company is benefiting from the wealth of data its parent company has gathered from its DriveWise programs and other telematics initiatives — 22 billion miles in total, according to Hallgren.

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[1] "Allstate CEO: Agents Will Have Access to Data on 125 Million Households," Best's New Service, May 30, 2017

[2] "Allstate's Arity Unit Navigates Rapidly Changing World of Data, " Digital Insurance, June 5, 2017

How Insurance Is Different from Other Consumer Products

1. **The insurance is required** – by law and by lenders requiring protection of home or vehicle collateralizing the loan. Limits normal competition.
2. **Contract is a promise for future benefits** if an undesirable event occurs. If the product "fails" – the consumer learns the insurance policy won't cover the loss – she is stuck and can't purchase another policy that would protect her against a known loss. ***Consumers have little or no information about the insurers' performance.*** Again, limits normal competition.
3. **Cost-based pricing is required by actuarial standards of practice and financial solvency.** The requirement for cost-based pricing is to protect insurer financial condition and prevent intentional or unintentional unfair discrimination
4. **There is Profound Public Interest in Broad Coverage** – failure or inability of consumers and businesses to access insurance has implications not just for individual families and businesses, but for taxpayers, communities and the nation.

Big Data Algorithms Can Reflect and Perpetuate Historical Inequities

Barocas and Selbst: *Big Data's Disparate Impact*

Advocates of algorithmic techniques like data mining argue that they eliminate human biases from the decision-making process. But an algorithm is only as good as the data it works with. Data mining can inherit the prejudices of prior decision-makers or reflect the widespread biases that persist in society at large. Often, the "patterns" it discovers are simply preexisting societal patterns of inequality and exclusion. Unthinking reliance on data mining can deny members of vulnerable groups full participation in society.

A computer algorithm reflects historical biases of the data and the developers.

Insurance Supervision in an Era of Big Data

1. Articulate the Future of Risk Management, Sustainability, Resiliency and Insurance:

   Empowered consumers and businesses partnering with risk management and sustainability companies who also provide insurance.

   Greater, not less, transparency in insurance pricing, sales and claims settlements.

2. Innovation in Insurance Supervision **– Enhanced Data Collection for Market Monitoring and for Development of New Tools for Consumers**

a. <u>What data are insurers using for what purposes?</u> Routine collection – and publication – by regulators of the types, sources and uses of data by insurers for marketing, sales, pricing, claims settlement and loss mitigation.

b. <u>What consumer outcomes are insurers producing?</u> Routine collection and analysis by regulators of granular consumer insurance market outcomes, including transaction-detail data on quotes, sales and claim settlements.

c. <u>Public data to empower consumers.</u>
Routine publication of insurer-specific anonymized consumer market outcomes.

3. Innovation in Insurance Supervision **– New Tools to Empower Consumers – A Future in Which Consumers Shop for Insurance Based Not Only on Price, But:**

a. What data about me are you collecting and how well are your protecting my personal information?
Insurers' and producers' transparency about and use and protection of consumers' personal information;

b. What is your actual history of treating consumers?
Insurers' and intermediaries' performance based on actual market outcomes for consumers; and

c. What types of tools and assistance do you offer to help me manage my risk and control my premium?
Insurers' and intermediaries' tools and partnerships for loss mitigation, loss prevention and consumer empowerment for risk management to control premium costs

4. Innovation in Insurance Supervision – **Develop / Improve / Reinvigorate Capabilities for Economic Analysis of Markets, Competition and Anti-Trust.**

Will future success in insurance market be determined by quality of products and services or by amount of consumer data insurer/intermediary controls?

Regulatory Intervention to align market forces with consumer interest, when needed.

Considerations for IAIS Issues and/or Application Papers Regarding Digitalisation in Insurance

Challenge: How Should the Market Conduct Working Group Approach This Topic/Issue That Touchs Every Aspect of the Insurance Life Cycle and Insurance Supervision?

We suggest a useful approach to examine the opportunities, challenges and dangers of increasing digitalization in insurance is to examine them in the context of specific parts of the insurance life cycle and specific supervisory mandates.

Such an approach ensures a comprehensive view and identification of linkages and synergies.

What Guides the Review and Analysis?

Step 1: Identify the Goals and Values for Insurance

We suggest a framework that starts by setting out the guiding values and goals against which we can evaluate the benefit or harm of a particular big data application / digitalization issues. What do we want insurance to look like in ten, twenty, thirty years and does the digital tool help or thwart accomplishing that future? What supervisory activity can turn a danger into an opportunity?

Step 2: Definition(s) of Big Data and Digitalisation

We believe it is foundationally important to define the issue we are examining, particularly since these terms will mean different things to different stakeholders. We suggest our definition from Slide 8.

Step 3: Examine Digitalisation Opportunities and Concerns by Major Insurance Function and by Supervisory Mandate

How does Digitalisation Distinguish This Issue or Mandate from Historical/Traditional Consumer Protection Concerns?

Consumer Protection by Major Insurance Functions
- a. Product Development/Products
- b. Marketing
- c. Product Sales
- d. Loss Mitigation/Sustainability
- e. Pricing/Risk Assessment
- f. Claims Settlement

Other Supervisory Mandates
- g. Financial Education
- h. Financial Inclusion
- i. Competition
- j. Market Supervision / Regulation

General Issues Found in All or Most Functions and Mandates:

- Personalisation vs. Exclusion

- Greater Transparency vs. Less Transparency

- Empowering Consumers vs. Weakening Consumer Market Power

- Promoting Competitive Insurance Markets vs. Stifling Competition

- Encouraging Innovation vs. Discouraging Innovation

- Generating Personal Data for Loss Mitigation vs. Privacy, Data Ownership, Data Security and Agreed-Upon Uses

- Digitalisation Issues Specific to Insurance / Insurance Supervision vs. Universal Concern / Broader Legislative Treatment.

Example of Approach: Marketing

Opportunities: Personalized Marketing by Insurers/Intermediaries; Easier Access to Better Information and Education

Challenges/Dangers: Excluding Less Favored Groups; Less Transparency, Additional Opportunities for Fraud and Theft of Consumer Personal Data or More.

Opportunities Example: Digital Marketing Via Tailored Advertisements:
1. Provide a consumer with important information at a key point in time – key messages and links to objective information sources at milestone events such as, for example, home purchase, home finance, auto purchase, job change, retirement.

2. New opportunities to empower consumers – access confirming information in real time. For example:

- Link to underlying studies that form the basis for the advertising claim;
- Link to consumer education sites/glossaries;
- Link to intermediary status and compensation disclosure;
- Link to responsible supervisor/jurisdiction;
- Link to Why you received this advertisement or to How you got here;

You clicked on a link from _____
We tailored an advertisement to you based on information we collected about you from third-parties. Click here for a list of the third parties who have data about you that we used

Comments on Draft Work Plan Outline

General Comment: It is unclear how or why digitalization distinguishes some of the issues or question from traditional approaches/supervisory practice. Stated differently, why is digitalization a particular concern for this issue or question?

1. Identification of the service and service provider:

   a. What product or service is being offered? By whom (eg what is their status, their awareness of the customer)? See General Comment.
   b. How does the provider ensure that marketing is "clear, fair and not misleading"; is communication appropriately balanced and without bias (eg is price overemphasised at the expense of policy terms)? See General Comment. Is marketing communication presented as such in all types of media (eg social media)? See General Comment. Is this not an issue today with television vs. radio vs. print? What makes digital marketing different? This question is not intended to suggest there are no new issues for digital marketing, but to ask for articulation of the concerns specific to digitalization.

c. Is product disclosure adequately transparency and important information sufficiently prominent? See our example. Digitalisation offers new opportunities for greater transparency through the use of hyperlinks. Instead of a lengthy brochure or treatise or multiple paper disclosures, a well-designed web page or mobile screen with hyperlinks facilitates a consumer's learning in a way print information and disclosures cannot.

d. Is advice involved, and how does the consumer identify whether advice, guidance or simply information is being provided? See general comment.

e. Where are the risks and services located? Where is the provider located? How is the competent supervisory authority identified? Location of risks, services and provider are straightforward disclosures. The question of which supervisor has jurisdiction is an important policy discussion, but will follow from a jurisdiction's requirements of the insurer or intermediary and the ability to provide cross-border products and services.

2. Informed consent and documentation
- How do insurers/intermediaries ensure that customers sufficiently understand the product they are buying, before proceeding? See General Comment. We suggest that digitalization offers additional opportunities to ensure consumer understanding. For example, when the consumer is finalizing an online purchase, s/he could be presented with a few questions that test her/his understanding and, if answered incorrectly, prompts the consumer to review certain product features. Of course, a supervisory requirement for such a digital tool in the online purchase process would likely be required based on the fact that insurers or intermediaries have not utilized an approach to date and would be unlikely embrace a tool that might discourage a sale.

- What mechanisms are used to reduce information asymmetries? Are key product features (eg in addition to price) adequately disclosed? See General Comment. Digital marketing and sales allow more, but more relevant and readily accessible information to a consumer. See our example, but consider generally providing a consumer with all the information about the product, price, insurer, intermediary, supervisor, additional resources and more in a single printed document. Then consider a web page or mobile screen with pop-up balloons to explain terms and links to the various categories and types of information.
- How are digital signatures used and are there circumstances in which they might not be sufficient? This is clearly an issue specific to digitalization, but applicable beyond insurance or financial services. Is there an evolution of the insurance contract (eg in respect of its form and proof)? We are unclear what the concern is here. If an insurer provides an electronic version of policy to the policyholder, is there concern that such an electronic document provided by the insurer would then not be acceptable to the insurer?

Is withdrawal of consent facilitated? See General Comment.
- What documentation should be provided to the customer and maintained by the provider, and in what format? See General Comment. Insurers/intermediaries today produce digital documents instead of paper, as well as convert old paper documents to digital documents for storage. What types of documents are contemplated here that might be generated in a digital transaction but were never generated historically? Is this an issue with online storage of important insurance documents?
- In the event that data pooling exists between multiple users during the policy lifecycle, are the data pooling arrangements appropriately disclosed? We are not clear what is meant by "data pooling" in this item. We generally think of insurers contributing to a common database to allow new entrants and small and medium sized insurers to access credible data as data pooling. However, this item could be referring to insurers passing telematics data to third-parties or some other sharing of personal consumer information.

3. Consumer outcomes
- How do insurers and intermediaries ensure fair treatment in a digital environment? See General Comment.
- How are market outcomes identified and monitored? See General Comment. Supervisory digitalization or big data should be a priority – supervisors collecting and analyzing granular consumer market outcomes to evaluate aggregate and distributional impacts of digital practices. In terms of insurers and intermediaries identifying and monitoring market outcomes, we suggest the insurers and intermediaries do this as a routine business practice. Intermediaries and/or intermediaries will, for example, routinely track applications received, applications denied, policies issued, claims received, claims closed with payment, claims closed without payment and much more. The ability of insurer and intermediaries to collect more and better data and to apply robust analytics has improved dramatically. We suggest supervisors have not made similar progress with marketing monitoring of consumer outcomes.

- What are the benefits and risks of "big data" (eg improved underwriting, better understanding of behaviour, impact on pricing, impact on size of the risk pool, potential for exclusion of high-risk consumers, data ownership and protection)? Please see our presentation to the Market Conduct Working Group from April of this year for detailed comments. We also suggest that this question is too broad – it fairly captures the entire issue of digitalization. We suggest applying this question to specific parts of the product life cycle and to other supervisory mandates, as proposed above.   Are the incentives for using big data always acceptable in terms of consumer outcomes? We respectfully ask, incentives for whom and in what context? An incentive implies knowledge by one party of something this first party is receiving in exchange for something provided to the second party. An overriding issue with Big Data applications is the transparency required to understand what is being given and what received by the consumers.

•Do providers understand the algorithms they use, and are they able to change these if needed? Are algorithms neutral or biased? First, algorithms are not neutral. With care and feeding, algorithms may reduce bias towards certain undesirable outcomes outcomes, but the purpose of an algorithm is to reveal differences that can be scored for business purposes. In addition to clearly articulating what an algorithm should do – say, predict driving behavior associated with higher accident frequency or predict claims much more likely than average to be a fraudulent claim – it is necessary to also clearly articulate what the algorithm should not do – penalize vulnerable populations by reflecting and perpetuating historical discrimination in the data used and cultural bias in decisions made to build the model. Second, in certain areas, like pricing, algorithms can represent a shift from traditional actuarial, cost-based techniques to modeling prices. Errors in modeling prices – deviations from cost-based pricing – have implications both for fair treatment of consumers, but also for the financial condition of insurers. Third, many algorithms are developed by consulting firms for use by small and medium sized firms, in particular, who don't have the data or skills to develop the algorithm on their own. Supervisory oversight or

requirements for model testing for validity, disparate impact on protected groups and routine re-validation are necessary.