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MISSION

The Institutes Griffith Insurance Education Foundation seeks to empower public policymakers and their staff members through a greater understanding of insurance and risk management by providing unbiased educational programs.

Public Policymaker Education (PPE)

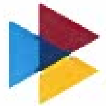
- Rationale
  - RMI Plays a Critical Role in the Financial Security of Our Country.
  - Informed Risk Management Serves as Catalyst for a More Secure Future.
  - Better Informed Policymakers are Better Equipped to Make Sound Decisions.

Public Policymaker Education (PPE)

- Methods
  - Delivered via: live webinar, on-demand playback; and traditional in-person sessions (greater focus on remote programming in recent years given pandemic)
  - Many programs offered in collaboration with complementary organizations
  - Lecture, Interview-based sessions, and panel presentations

The Griffith Insurance Education Foundation, an affiliate of The Institutes, is a 501(c)(3) non-profit, non-partisan, and non-advocative educational organization dedicated to the teaching and study of insurance and risk management.

In keeping with the non-partisan, non-advocative mission of The Griffith Foundation, comments and contributions to today's session will be unbiased and purely educational.



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Risk Management and Insurance: An Introduction

Presentation to the Michigan House Committee on Insurance and Financial Service

April 20, 2023

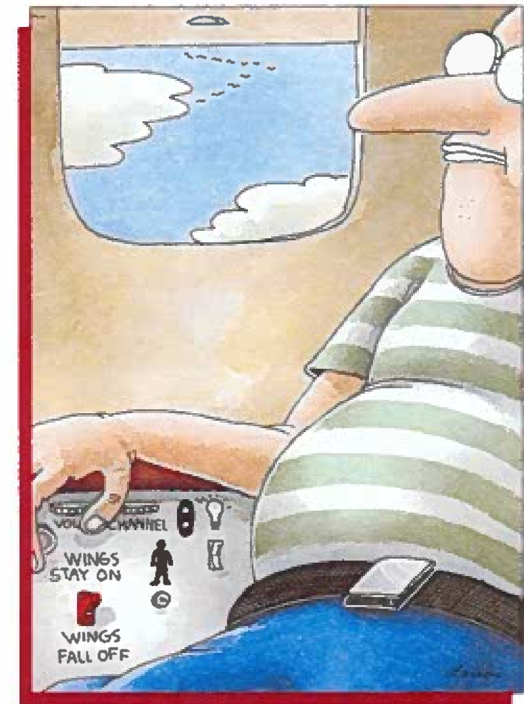
Robert W. Klein, Ph.D.

Overview of Topics

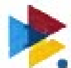
- What is risk?
- Elements of risk management
- Insurance as a form of risk transfer
- Information problems in insurance
- Importance of insurance to a state's economy
- Major types of insurance
- Insurance in Michigan
- Regulation of insurance
- Key developments in risk and insurance

What is Risk and Why Do We Care?

- Risk is the <u>chance</u> that you will lose something of value to you.
- We face many risks all the time – some we know about, others not.
- We continually make choices about risk, sometimes consciously, most times not.
- Managing risk involves making "good" choices involving tradeoffs.
- Managing risk well is critical to individuals, households, firms, the government, society, …



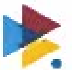
Fumbling for his recline button, Ted unwittingly instigates a disaster.



Risk Management Objectives & Methods

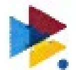
- Objective: Minimize the *cost of risk*
- Methods:
  - Risk control
    - Avoidance
    - Loss prevention
    - Loss reduction
  - Risk financing
    - Retention
    - Non-insurance transfer
    - Insurance transfer

- The *cost of risk* is equal to the probability of a loss multiplied times what the loss would be plus the cost of any risk management measures.



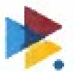
Insurance as a Form of Risk Transfer

- Insurance as a form of risk transfer makes economic sense for some people/firms for certain loss exposures, e.g., auto accidents, house fires, workplace injuries, premature death.
- Insurance involves exchanging the risk of a severe loss for a small, certain premium.
- Insurers reduce objective risk by pooling a large number of exposures; this makes insurance economically feasible.
- Insurers often provide additional services such as risk assessment, loss prevention, and loss recovery.



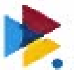
Pricing of Property-Casualty & Health Insurance

- The main components of the rate that an insurer charges for a specific policy are the "pure premium" and a loading for expenses and profits.
- The pure premium is the insurer's best estimate of the expected loss for a policy based on its historical experience and various adjustments.
- The loading includes variable and fixed expenses and profit. The provision for profit reflects the insurer's cost of capital.
- Risk-based pricing requires an insurer to vary its rates according to how the expected losses for different insureds vary, i.e., high-risk insureds will be charged more than low-risk insureds.
  - Risk-based pricing is no longer used for most forms of health insurance in the US.
- Insurers rely on data and perform statistical analysis on various rating factors to determine how rates should vary among different insureds.



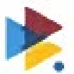
Asymmetric Information Problems in Insurance

- Adverse selection
  - All else equal, high-risk people will find it more attractive to buy insurance than low-risk people.
  - If everyone is charged the same premium, high-risk people will be more likely to buy insurance than low-risk people. This can cause a risk pool to collapse as the average loss and premium escalate.
  - Insurers combat adverse selection through underwriting and risk-based pricing.
- Moral hazard
  - Having insurance induces someone to either cause a loss or be more indifferent to having a loss.
  - If insurers fail to control moral hazard, losses will escalate and insurance can become become unaffordable.
  - Insurers control moral hazard by requiring insureds to retain some losses and not covering certain losses.



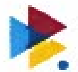
Principle of Indemnification

- Indemnification means that the insured is restored to her approximate financial position prior to the occurrence of a loss but not more.
- One purpose of this principle is to discourage moral hazard – if an insured profits from having a loss then they may be less inclined to prevent a loss.
- In practice, this principle is applied by paying an insured no more than their actual loss.
  - For example, if I total my 10-year old car in an accident, my insurer will not pay me to get a new car.
- There are situations where insurers do not exactly adhere to this principle.
  - For example, homeowners insurance is typically sold with replacement cost on the dwelling. So, if my old roof is damaged by a storm, I will get a new roof not an old one.
  - Insurers will bend the principle of indemnification when moral hazard is not a concern.



Other Information Problems in Insurance

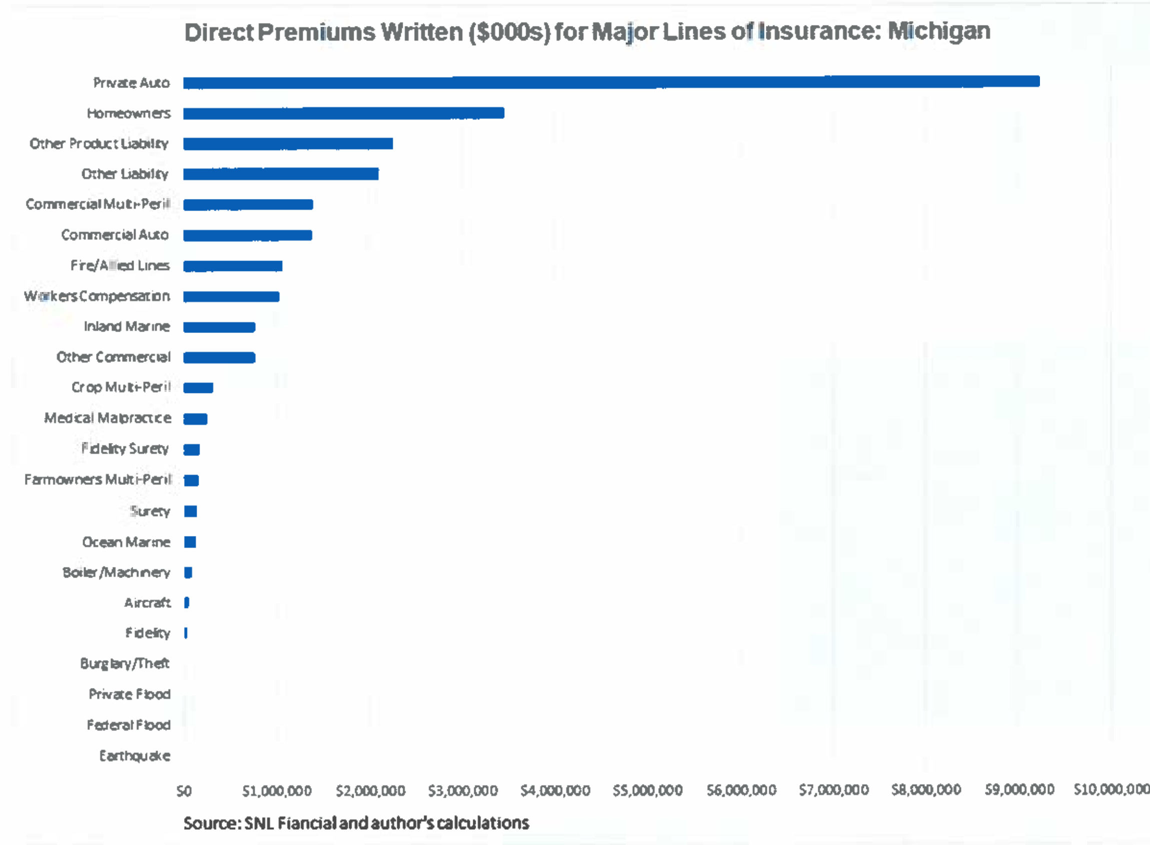
- Both consumers and insurers face other information challenges beyond or associated with adverse selection and moral hazard.
- Consumers are particularly challenged in understanding the terms of insurance policies.
  - This can make it difficult for them to shop for coverage and obtain the best policies for them at the best prices.
  - Consumers are also vulnerable to unfair trade practices and fraud by unscrupulous insurers and agents.
- Insurers are also challenged in accurately determining the risk of any prospective insured.
  - The theory is that insureds know their risk better than their insurers but, in practice, this may not always be the case.
  - Insurers strive to improve their ability to assess and accurately price risk to gain an advantage over their competitors.

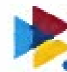


Major Types of Property-Casualty Insurance

- Personal Insurance
  - Auto
  - Home
  - Flood
  - Umbrella
- Commercial Insurance
  - Commercial Multi-Peril
  - Commercial Property
  - Commercial Auto
  - Workers Compensation
  - Business Owners
  - Inland and Ocean Marine

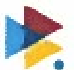
Major Lines of P-C Insurance in Michigan





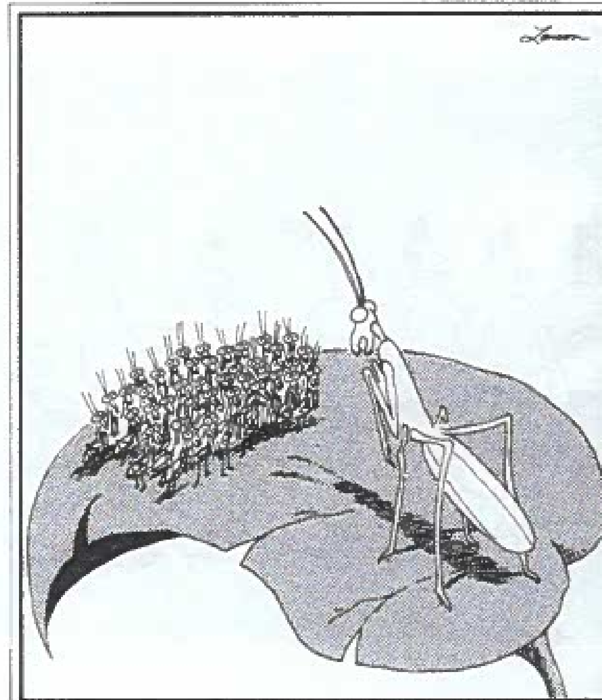
Major Types of Health Insurance

- Major Medical Health Insurance
  - Group and individual
  - Medicare and Medicaid
- Dental Insurance
- Vision Insurance
- Disability Income Insurance
  - Group and individual
- Long-Term Care Insurance

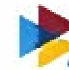


Life Insurance and Annuities

- Types of Life Insurance
  - Term life
  - Ordinary life
  - Universal life
- Annuities
  - Fixed immediate annuity
  - Deferred annuity
  - Variable annuity

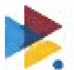


"Of course, long before you mature, most of you will be eaten."



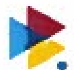
Importance of Insurance to Michigan's Economy

- Insurance is critical to individuals, firms, and other organizations in enabling them to engage in their activities with reduced uncertainty and protection against severe financial losses.
- Without insurance, it is likely that individuals and firms would drastically cut back their activities.
- By indemnifying first parties and third parties for severe financial losses, they are protected against financial impairment and bankruptcy.
- With insurance, firms can conduct their operations and undertake ventures with protection against property and liability loss exposures.
- The cost of insurance can be prohibitive for certain activities and make them economically infeasible.

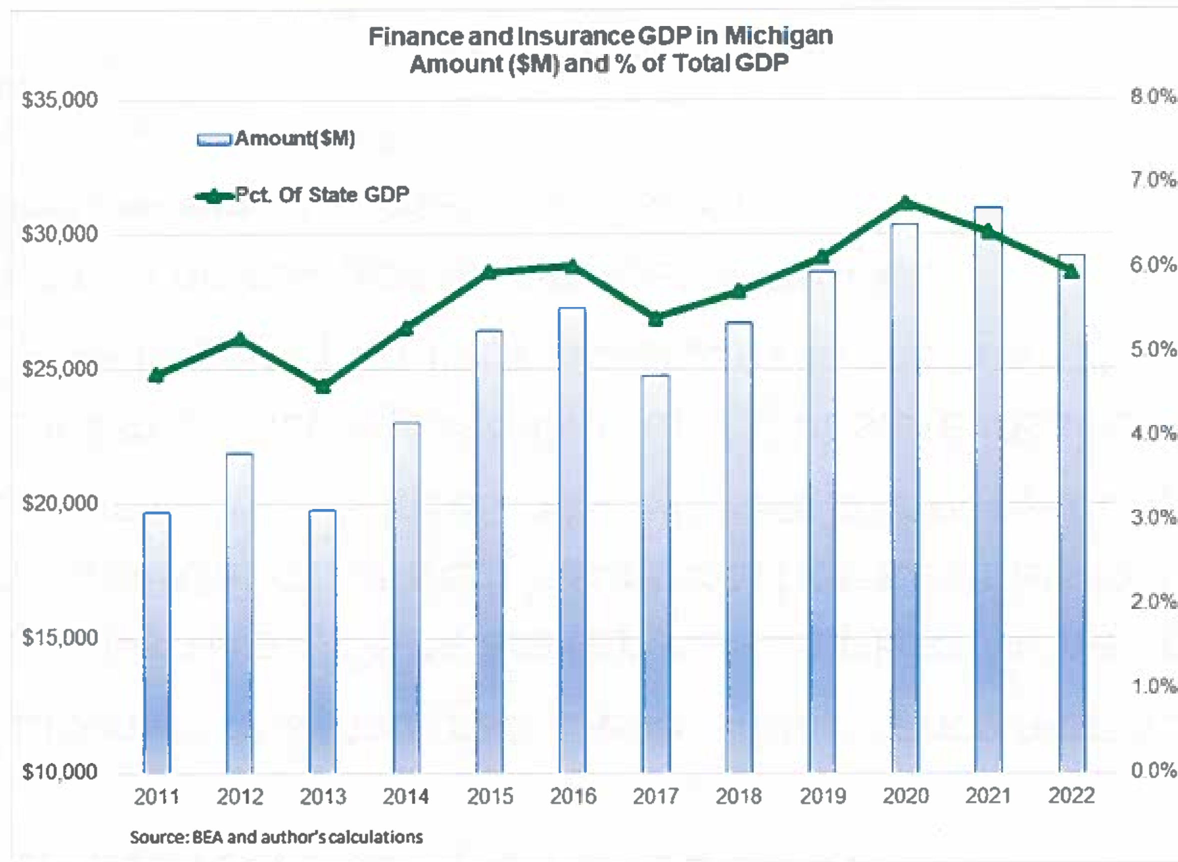


Importance of Insurance to Michigan's Economy

- The contribution of insurance to Michigan's economy is more than the income earned by people who work in the insurance industry and the taxes insurers pay.
- More important is the value added by the activities enabled by insurance.
- Because of insurance, employment and wage income are greater as well as business income and tax revenue.
- Insurance greases the wheels of commerce and the better insurance markets function, the better a state's economy functions.

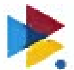


Finance and Insurance GDP in Michigan



Insurance Markets and Competition

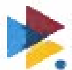
- Each line of business in a state represents an insurance market.
- For example, in Michigan, there are separate markets for personal auto insurance, commercial multi-peril insurance, homeowners insurance, health insurance, business owners insurance, workers compensation, etc.
- Insurance economists have generally found that state insurance markets are very competitive despite popular perceptions to the contrary.
- Economist assess competition using several metrics:
  - The number of insurers and market concentration
  - The ease of market entry and exit
  - Profitability
  - Innovation



Importance of Competition

- Competition is essential for insurance markets to function efficiently, even with some level of regulation.
- Competition tends to work better in insurance markets when:
  - Consumers are well informed and shop for coverage
  - There are a large number of sellers
  - No one firm or group of firms control a market
  - Entry and exit barriers are low

- Regulation and competition work hand in hand.
  - Regulators can make sure there is a level playing field and sanction companies that treat consumers unfairly.



Example: Personal Auto Insurance in Michigan: Market Structure

Private Passenger Auto Insurance: 2021
Market Structure in Michigan

Measure	Value
No. of Firms	46
CR4	62.4%
CR10	86.3%
HHI	1,193
Total DPW ($000s)	$9,113,155

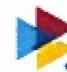
Source: SNL Financial, author's calculations

- A firm is defined as all companies within a group.
- CR4 = the combined market share of the top 4 insurers
- CR10 = the combined market share of the top 10 insurers
- HHI = the sum of the squared market shares of the firms in the market multiplied times 10,000

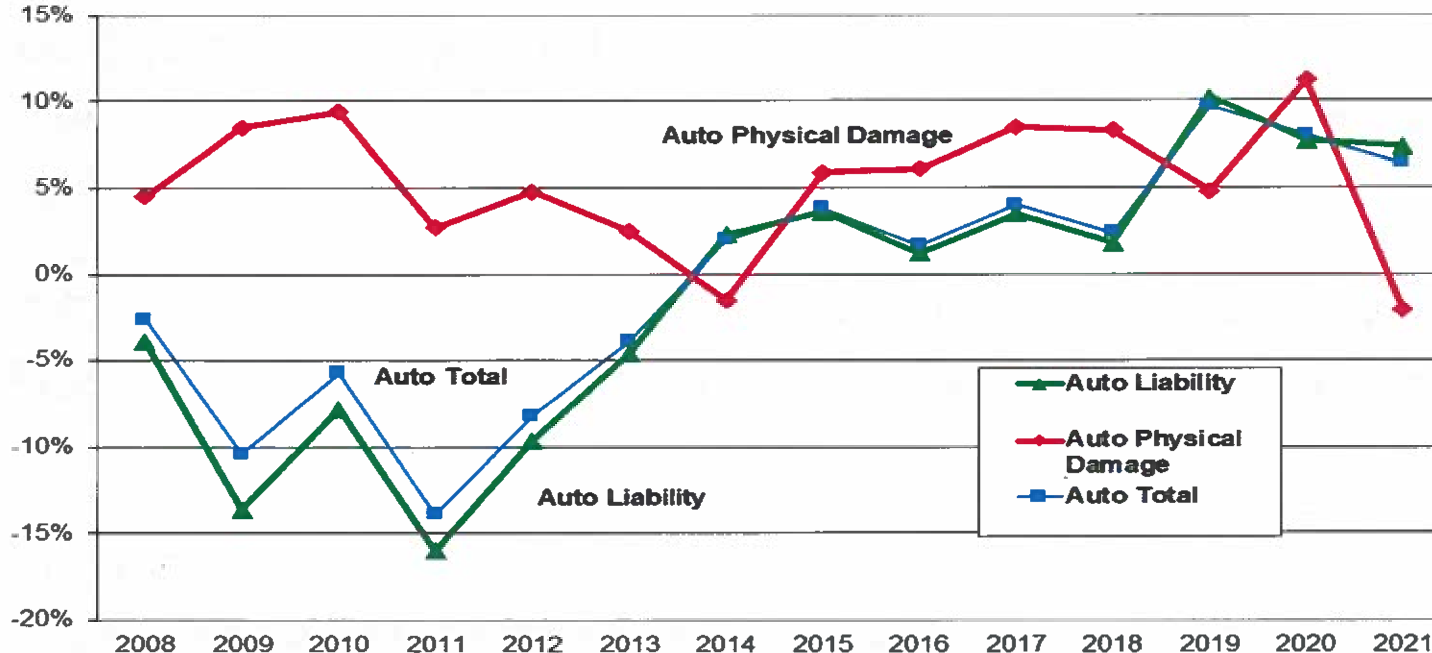
Leading Insurer Groups Michigan Auto Insurance
Market Shares 2019-2021

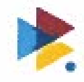
Rank 2021	Group/Company	2021	2020	2019
1	Progressive	20.4%	19.7%	17.9%
2	State Farm	17.1%	16.9%	16.3%
3	Auto Club	13.9%	14.3%	15.3%
4	Auto-Owners	10.9%	11.0%	10.7%
5	Allstate	7.6%	7.7%	8.7%
6	Hanover	6.7%	6.5%	6.5%
7	Liberty Mutual	5.2%	4.8%	4.1%
8	Michigan Farm Bureau	4.4%	4.7%	5.0%
9	USAA	2.7%	3.1%	3.0%
10	Farmers Insurance	1.9%	2.1%	2.3%
11	Pioneer State Mutual Ins Co.	1.7%	1.9%	1.9%
12	Frankenmuth Insurance	1.6%	1.6%	1.7%
13	Berkshire Hathaway	0.9%	0.8%	1.0%
14	The Hartford	0.8%	0.8%	1.0%
15	Westfield Insurance	0.6%	0.6%	0.7%
16	Nationwide	0.5%	0.5%	0.6%
17	Markel	0.4%	0.3%	0.3%
18	USA Underwriters	0.3%	0.2%	0.1%
19	Donegal	0.3%	0.3%	0.3%
20	Cincinnati	0.3%	0.4%	0.4%

Source: SNL Financial and author's calculations



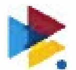
Example: Personal Auto Insurance in Michigan: Profitability





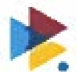
Why and How is Insurance Regulated?

- Insurance is regulated primarily because of the information problems faced by consumers.
  - Additionally, the insolvency of an insurer could have a negative impact on a state's economy.
- The legislature in each state determines the laws that regulators enforce.
- Each state has its own insurance department and insurance commissioner. The National Association of Insurance Commissioners (NAIC) assists the states in performing their regulatory functions.
- Insurance departments regulate insurance companies and agents. Both must be licensed to do business in a state.
- Major elements of insurance regulation include solvency, rates and policy forms, and market conduct.



Insurance Rate Regulation

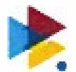
- By law, insurance rates must not be excessive, inadequate, or unfairly discriminatory.
- States use different types of systems to regulate rates: prior approval (PA), file-and-use (FU) , flex rating (FR), and use-and-file (UF).
- In Michigan, property-casualty rates are subject to FU, with the exception of personal auto insurance which is PA.
- Regardless, insurers are required to file their rates with extensive data and analysis to support the rates they file.
- Regulators will disapprove an insurer's filed rates if they determine that the rates do not meet statutory requirements, or they are not satisfied with the analysis underlying the rates filed.



Solvency and Market Conduct Regulation

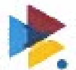
- Solvency regulation is intended to limit insurers' financial risk and minimize the frequency and cost of insurer insolvencies.
- Elements of solvency regulation include:
  - Financial standards and requirements
  - Extensive financial reporting
  - Examinations and analysis
  - Actions against troubled companies
  - State guaranty funds

- Market conduct regulation involves the policing of insurers' trade practices, e.g., marketing, underwriting, claims handling, etc.
  - Regulators monitor complaints filed against insurers and agents and conduct market conduct exams.

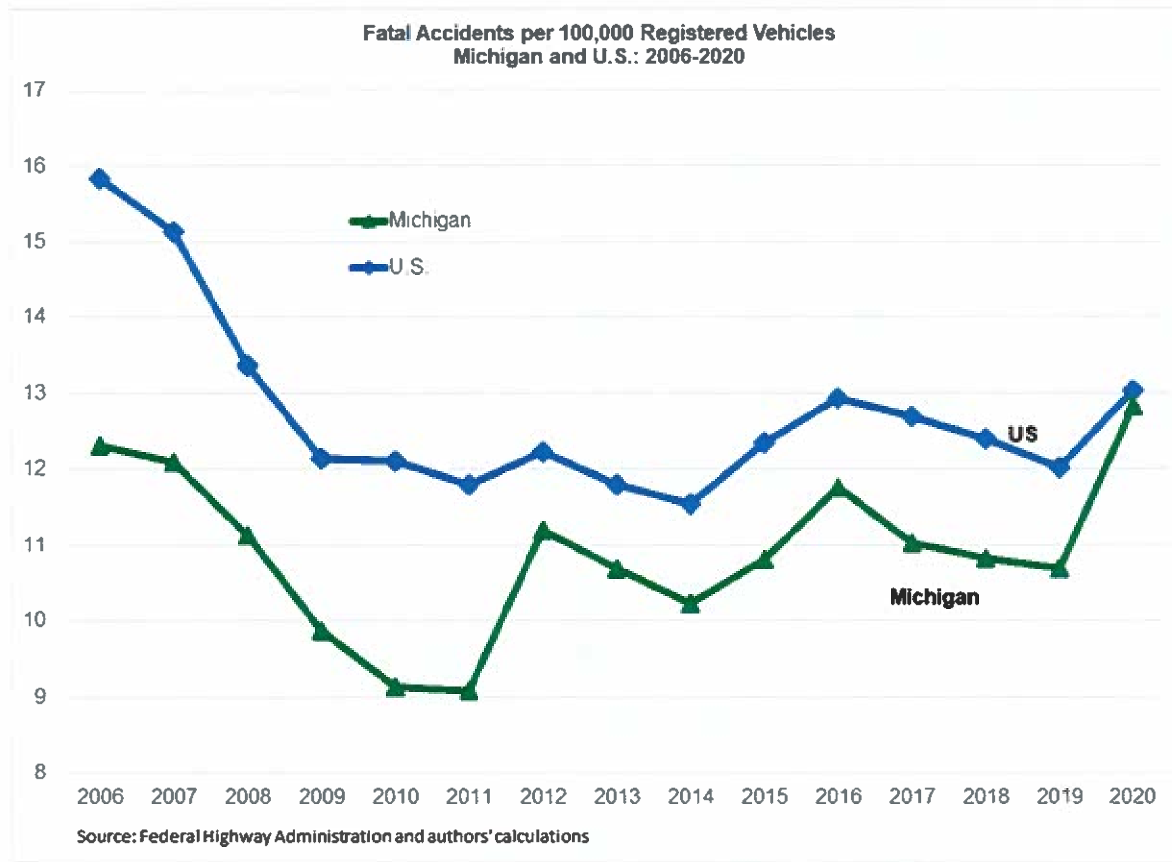


Key Developments in Insurance

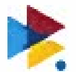
- The risk environment continues to evolve. Some perils are getting worse, others are getting better.
  - As weather become more volatile, we are seeing more extreme events (e.g., floods, wildfires, etc.).
  - The frequency of fatal auto accidents is increasing due to more aggressive driving.
  - Cars are becoming safer but also more expensive to repair.
- Insurers continue to explore how to better use data to assess and price risk.
- Technological innovation is expected to help mitigate risk.
  - Homes are being built to be more resilient to weather events.
  - New vehicles have enhanced safety features with self-driving vehicles on the horizon.
  - Medical technology and new drugs have the potential to treat conditions that were previously untreatable, but this also can be costly.



Fatal Accidents are Increasing



- NHTSA projects that an estimated 42,915 people died in motor vehicle traffic crashes in 2021, a 10.5% increase from 38,824 fatalities in 2020.



Resources

- Web Sites
  - The Institutes Griffith Insurance Education Foundation
  - Insurance Information Institute
  - Michigan Department of Insurance and Financial Services
  - National Association of Insurance Commissioners
  - National Conference of Insurance Legislators
- Books

  - Rejda, G. and M. McNamara, 2017. *Principles of Risk Management and Insurance*, 13th Edition. Pearson.
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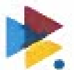

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  - I now live in East Lansing so I am in the neighborhood.