

## Video Segment 2: Does Analytics Challenge Financial Fairness and Equity?

*"You're starting to see regulators recognize that crimes are getting increasingly sophisticated and difficult to detect." -Wharton Professor Daniel Taylor*

### NOTE-TAKING GUIDE

Briefly describe how analytics might lead to inequities and/or help level the playing field for the following:

**Adverse outcomes like discrimination:**

**Bridging the gap between market participants and regulators:**

**Buying or selling a house:**

Professor Michael Roberts says, “We can’t remove the human component from decision making. Rather, we need to think of the two: human and machine, working in concert and amplifying the benefits of both.” Explain what he means by this partnership in the context of making fair and equitable data-driven decisions.

**Reflection:** Fairness in data analysis means, in part, that you don’t create or reinforce bias through the process of data gathering, examination, and the decisions based on that data. In finance, this might mean that algorithms are using old data to assess credit risk, for example, rather than newer data that accurately represents a geographic area or population. And therefore, people are left out of opportunities to which they should have access. Have you experienced bias of any kind in your life? Briefly describe the incident or experience. How did it make you feel? How might data and analytics help or hinder this experience for you?

## **THE LANGUAGE OF BUSINESS**

**(Linked terms are defined in the Wharton Global Youth Video Glossary)**

[Bank](#)

[Investment Banker](#)

[Company](#)

[Investor](#)

[Corporation](#)

[Mortgage Loan](#)

[Credit Risk](#)

[Personal Finance](#)

[Data](#)

[Private Company](#)

[Data Mining](#)

[Private Sector](#)

[Demographics](#)

[Regulations](#)

[Financial Services](#)

[Technological Innovation](#)

[Hedge Fund](#)

**Academic Research:** Research conducted by faculty at a university like Penn that focuses on creating new ideas and perspectives. Academic researchers read all the existing studies and papers examining a specific topic or theory and then see where they can add value with new experimentation and insight.

**Artificial Intelligence or AI:** Intelligence demonstrated by machines (computers), rather than humans.

**Beyond Business:** An ongoing conversation at the Wharton School of the University of Pennsylvania that explores the most complex and pressing issues impacting individuals and organizations across the world. Each year Wharton Global Youth creates [Explore Business mini-sites](#) around different Beyond Business themes.

**Daniel Taylor:** A Wharton School Professor of Accounting and Director of the [Wharton Forensic Analytics Lab](#).

**Data Analytics (or just Analytics):** The systematic computational analysis of data or statistics. It is used for the discovery, interpretation and communication of meaningful patterns in data.

**Data Democratization:** Making data accessible to everyone and educating them on how to work with the data, even if they are not technical.

**Data Discrimination (also called discrimination by algorithm):** Bias (prejudice in favor of one person or group) that happens when predefined data types or sources are intentionally or unintentionally treated differently than others.

**Data Science:** The study of data to gather meaningful insights for business. Data scientists put this into practice.

**Electronic Payment System:** The transfer of funds through electronic or digital services, like mobile wallets or Zelle.

**Equitable Playing Field:** Also called a level playing field, in business this means that each persona plays by the same set of rules.

**Erika James:** Dean of the Wharton School with research interests in crisis leadership, workplace diversity and management strategy.

**Finance:** An industry or area of study having broadly to do with money and economics.

**Financial Intermediary:** An institution like a commercial or investment bank that serves as the “middleman” to handle financial transactions.

**Financial Market:** The market in which people trade financial securities, like stocks and bonds.

**Financial Statement Analysis:** The process of reviewing and analyzing a company's financial statements to make better decisions, including the balance sheet, income statement and statement of cash flows.

**High-frequency Trading:** A primary form of algorithmic trading in finance that uses sophisticated technology and algorithms to rapidly trade equities (like stocks).

**Historical Data:** Data or information gathered about past events and circumstances that is often used to forecast future data or trends.

**Lending Practices:** The rules and steps associated with persuading and assisting borrowers to take out financial loans for big purchases, like cars and houses.

**Machine Learning:** Using and developing computer systems that learn and adapt by using algorithms and statistical models to analyze and understand patterns in data.

**Market Participant:** A decision-maker in some part of the economy, like a buyer or a seller.

**Metric:** A system or standard of measurement.

**Michael Roberts:** A Wharton School Professor of Finance.

**Mortgage Broker:** An intermediary who brings mortgage borrowers (ie: a person who needs money to buy a house) and mortgage lenders (ie: a bank who lends out that money) together to transact a real estate loan.

**Mortgage Rate:** The rate of interest charged on a mortgage loan.

**Payment for Order Flow:** The compensation that a stockbroker receives for routing its clients' security trades to a particular market maker, which is the company/individual that buys and sells securities.

**Profits:** A financial gain, especially the difference between the amount earned and the amount spent in buying, operating, or producing something.

**Quantitative Analysis:** Using mathematical and statistic modeling to analyze a financial market.

**Redfin:** A public company based in Seattle, Washington, U.S., that operates a residential real estate brokerage in 95 markets.

**Robo-advisor:** A type of automated financial advisor that provides algorithm-driven wealth management services with little to no human intervention.

**Sherlock Holmes:** A fictional detective created by author Arthur Conan Doyle.

**Stakeholder:** A person with an interest or concern in a business, including owners, managers, board members, employees and investors.

**Technology Diffusion:** The process by which the broader population (not just the experts) adopts technological innovations.

**Transparency:** Transparency in business is the basis for trust between a company and its customers, investors – all stakeholders. When a company is transparent, it is open and honest about communicating what happens behind the scenes with its operations, management and other business functions.

**Retail Investor:** Someone who buys and sells securities, mutual funds or other instruments through a brokerage firm or savings account. An individual investor is a retail investor.

**The Wharton School:** The Wharton School, also referred to as just Wharton, is the business school of the University of Pennsylvania, a private Ivy League university based in Philadelphia, Pennsylvania. Wharton is a world leader in business education and a hub for academic research in all areas of business.

**Yahoo Finance:** A web-based media outlet that provides financial news, data and commentary.

**Zillow:** An American tech real estate marketplace company that claims to empower consumers with data to make informed decisions about buying and renting.

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**[5 Questions for Katherine Lin: Data Scientist in Training](#)**