### **PANEL DISCUSSION:** *ML/AI in Consumer Credit. Evolution or Revolution?*

### ADAIR MORSE, UC BERKELEY

What I have been doing a big part of the last 3 years:

- "Algorithmic Discrimination and Input Accountability under the Civil Rights Acts"
  - With R. Bartlett, R. Stanton, N. Wallace
- "Consumer-Lending Discrimination in the FinTech Era"
  - With R. Bartlett, R. Stanton, N. Wallace
- "Discrimination" in Handbook of Technological Finance
  - With K. Pence

#### Engaging:

Lawyers & Economists at:

- Federal Reserve System
- FDIC, CFPB, OCC
- FCA (UK)
- Freddie & Fannie
- US Senate
- States: Multiple DA's offices and Fair Housing (etc)

## TRIGGER 2 POINTS FOR DISCUSSION

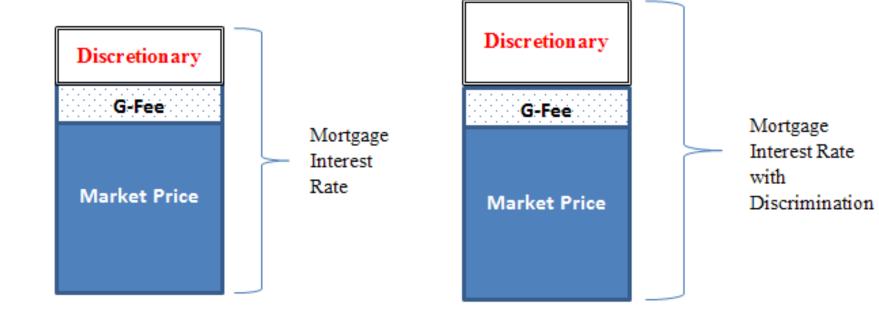
### I. Law about inputs (just presented)

- Supreme Court in Griggs v. Duke Power Co, codified by Congress in Civil Rights Act of 1991
- Any variable must only cause disparate effect on protected category via legitimate business necessity.
- In lending: Court is explicit that legitimate business necessity is credit risk
- 2. Related.... Large implications for using algorithms to derive pricing strategies to profit maximize
  - In particular... expected "shopping around" behavior

# LENDER PRICING OF MORTGAGE

#### **Interest rate pricing**

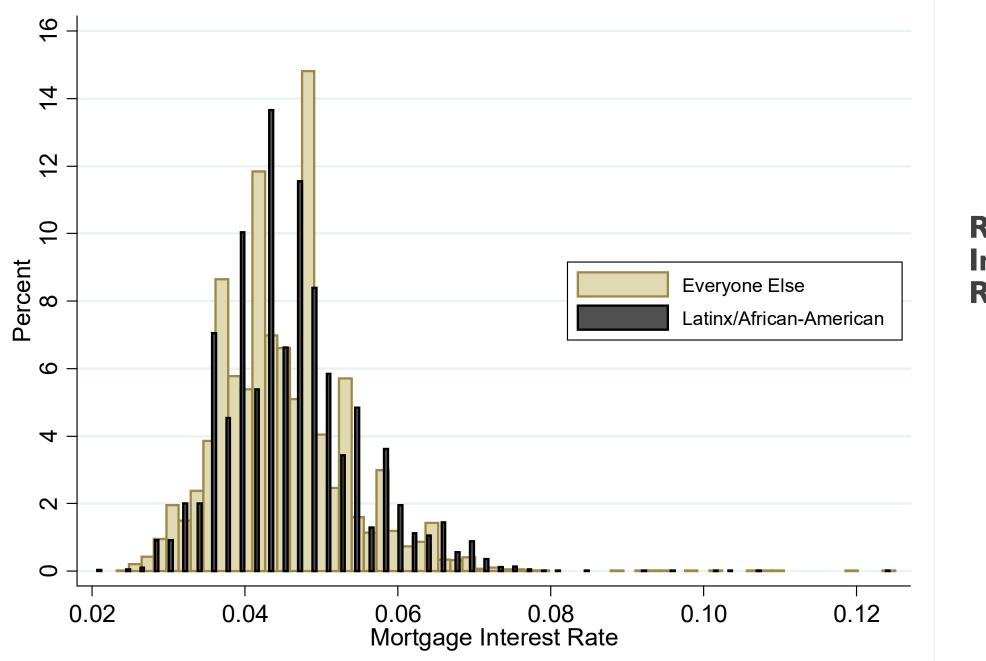
- = Market rate
- + Expected cost of default (credit risk= G-Fee)
- + Discretionary part for lender profits & strategic pricing



#### (AfricanAmericans & Hispanics)

### **G-FEES**

Table 2: All Eligible Mortgages (Excluding MCM): LLPA by Credit Score/LTV									
PRODUCT FEATURE	LLPAs by LTV Range								
	<u>&lt;</u> 60.00%	60.01 – 70.00%	70.01 – 75.00%	75.01 – 80.00%	80.01 – 85.00%	85.01 – 90.00%	90.01 – 95.00%	95.01 – 97.00%	<b>S</b> FC
Representative Credit Score	Applicable for all mortgages with greater than 15 year terms For whole loans purchased on or before March 31, 2011, or loans delivered into MBS pools with issue dates of March 1, 2011 or earlier								
<u>&gt;</u> 740	-0.250%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	N/A
720 – 739	-0.250%	0.000%	0.000%	0.250%	0.000%	0.000%	0.000%	0.000%	N/A
700 – 719	-0.250%	0.500%	0.500%	0.750%	0.500%	0.500%	0.500%	0.500%	N/A
680 - 699	0.000%	0.500%	1.000%	1.500%	1.000%	0.750%	0.750%	0.500%	N/A
660 - 679	0.000%	1.000%	2.000%	2.500%	2.250%	1.750%	1.750%	1.250%	N/A
640 - 659	0.500%	1.250%	2.500%	3.000%	2.750%	2.250%	2.250%	1.750%	N/A
620 – 639	0.500%	1.500%	3.000%	3.000%	3.000%	2.750%	2.750%	2.500%	N/A
< 620 <sup>(1)</sup>	0.500%	1.500%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	N/A



### Raw Interest Rates

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