Addiction as a Banking Risk Factor

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What we explore and why it is important

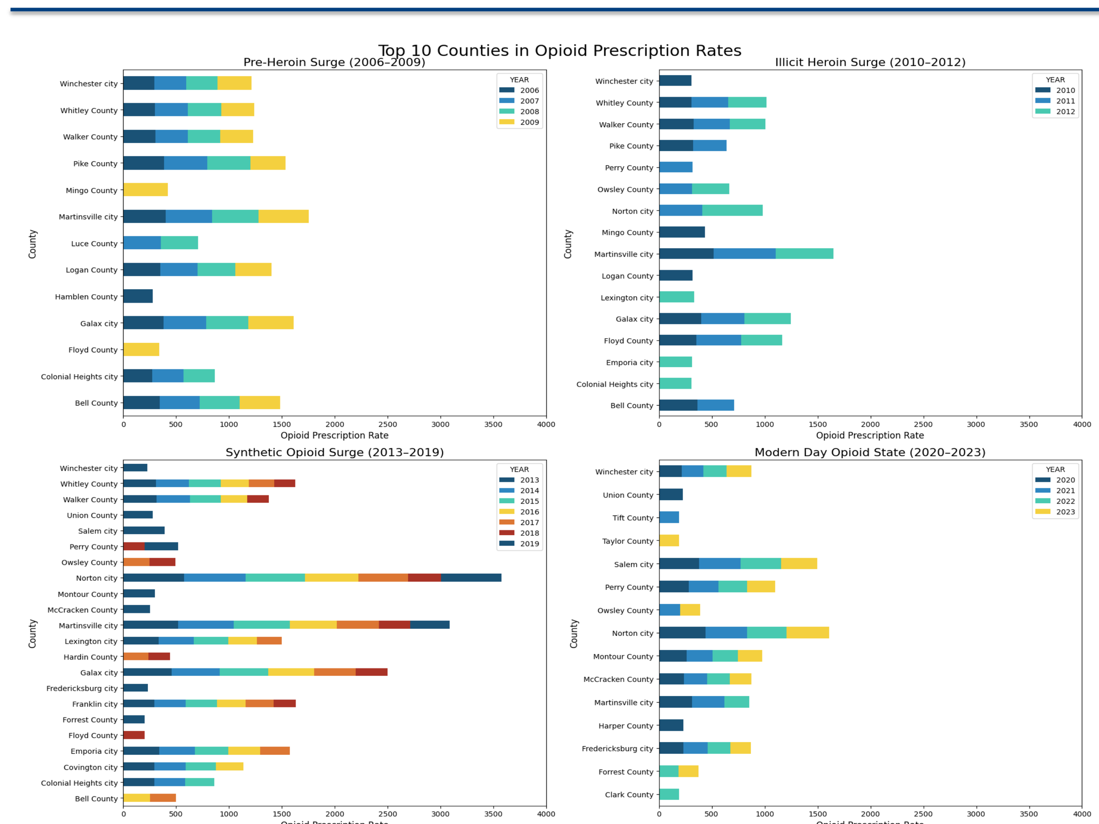
- **Systemic Financial Risk from Opioid Crisis** The opioid epidemic poses not only a social and medical crisis but also systemic financial risks, significantly impacting banks' stability in affected regions.
- **Increased Bank Volatility and Capital Response** Banks in opioid-exposed areas experience higher volatility in ROA, ROE, and charge-offs, leading many to build up their equity buffers as a defensive risk management strategy.
- **Geographic Unpredictability of Risk** The shifting and increasingly unpredictable geographic distribution of opioid harm complicates resource allocation and financial risk forecasting for both policymakers and banks.
- **Changing Drivers of Bank Stability** Traditional predictors of bank health, such as loan structure, are now being overtaken by new drivers like liquidity risk, uninsured deposits, and local public health conditions.
- **Need for Integrated Risk Models** Effective management of these risks requires a new framework that incorporates public health indicators into financial models, emphasizing the interdisciplinary nature of systemic resilience.

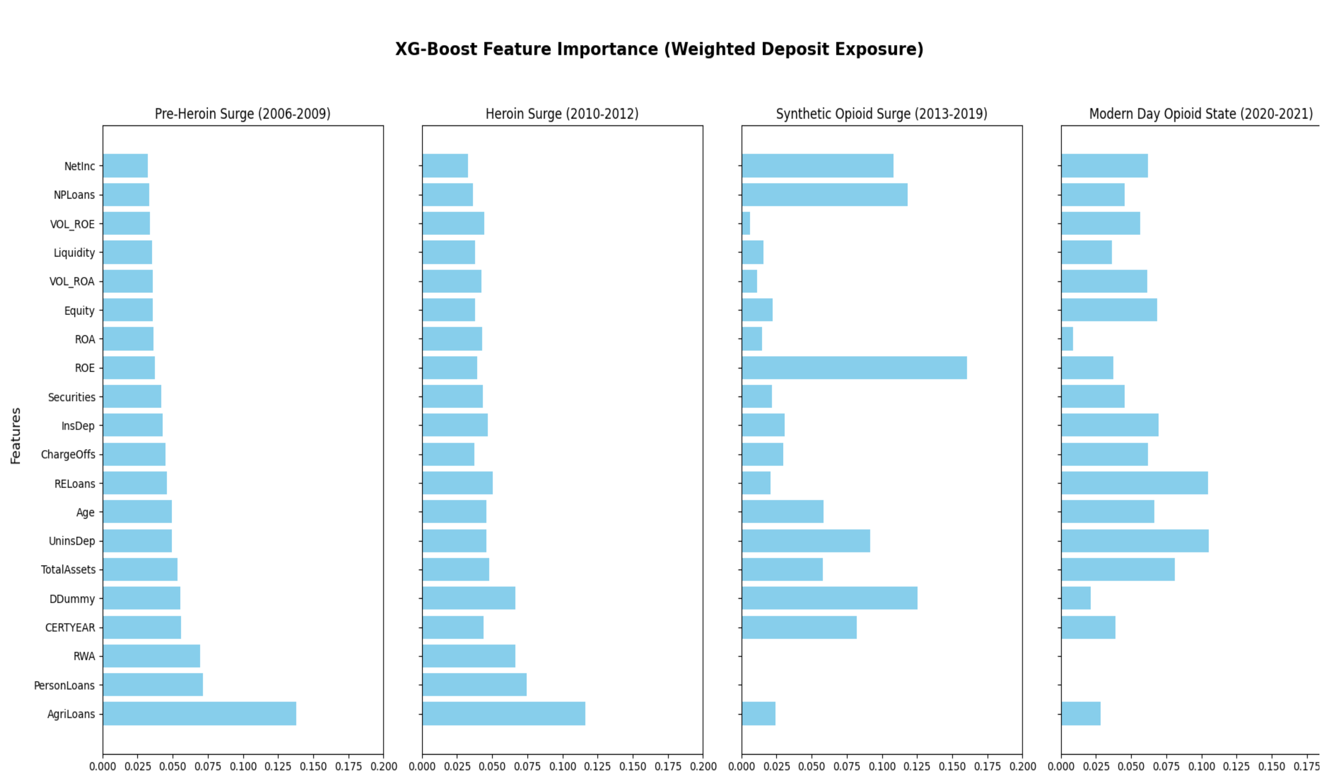
QUICK FACTS:

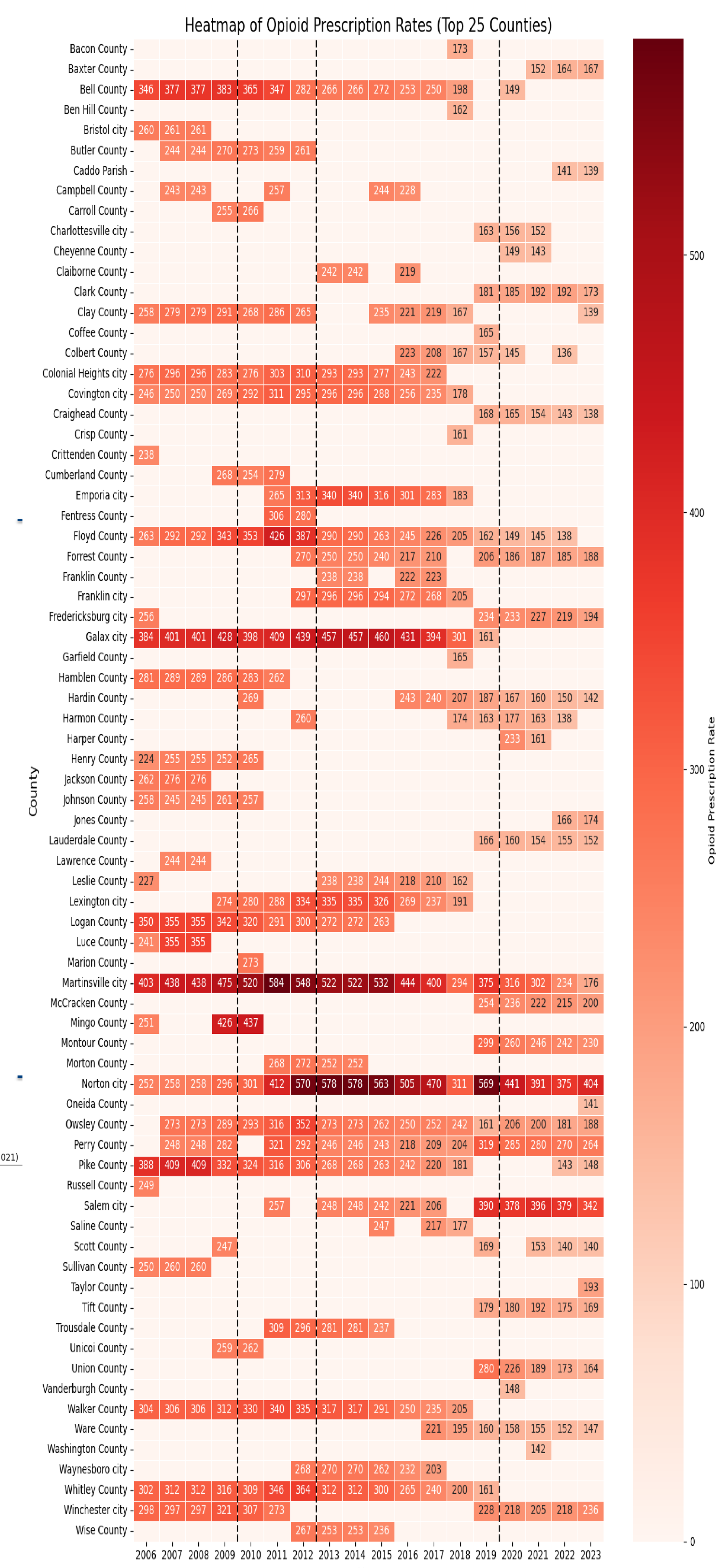
- Between 1999 to 2018, an estimated 232,000 Americans have died
- Deaths from opioids are skyrocketing measuring in 100s thousands a year
- Per CDC, opioid addiction costs the US economy over $78.5 billion each year
- Other sources estimate the impact exceeding $700 billion or even $1.5 trillion recently

RESEARCH QUESTION DEVELOPMENT:

- Opioid crisis impacts household credit and deposits.
- Bank risk effects remain underexplored.
- Firms in affected areas show higher financial fragility.
- Opioid exposure creates broader systemic risks.
- Study links public health shocks to bank risk.
- Highlights new financial risk factors for banks.







Empirical Model for Regression Analysis

$$BankRisk_{j,t} = \alpha + \beta_1 * Exposure_{j,t} + \sum_{i=3}^{n} \beta_i * X_{i,j,t} + \varepsilon_{j,t}$$

EXPOSURE METRICS:

- Prescriptions
- Overdose deaths

total / illicit/ prescriptions

- Continuous / Top10 (25, 50)

EXPOSURE AGGREGATION:

- Weighted Branch Exposure
- Weighted Deposit Base Exposure
- Geometric Exposure

STUDY SUBPERIODS:

- Recent
- Synthetic opioid surge
- Heroin surge
- Prescription opioids

KEY RISK METRICS:

•**Volatility of ROA/ROE**: How much a bank's profits (Return on Assets/Equity) jump up and down. High fluctuations in a bank's return metrics signal unstable earnings, making it harder to forecast future performance and assess long-term viability.
•**Liquidity**: How easily a bank can access cash to meet its needs. Adequate liquidity ensures a bank can meet short-term obligations and avoid insolvency during financial stress or market disruptions.
•**ROA (Return on Assets)**: How much profit a bank makes for every dollar it owns in assets. This metric reflects how efficiently a bank is using its assets to generate profits, serving as a key indicator of operational performance.
•**Equity**: The value of what a bank owns after subtracting what it owes. Equity acts as a cushion against losses; higher equity means the bank is better positioned to absorb shocks and protect depositors.
•**Charge-offs**: Loans that the bank gave up on because they think they won't get paid back. Frequent charge-offs indicate poor credit quality and can erode a bank's profitability and capital base.
•**Non-performing loans**: Loans where the borrower stopped making payments for a long time. A high ratio of non-performing loans suggests deteriorating asset quality and increased risk of future losses.
•**Risk-weighted assets**: A way of measuring a bank's assets based on how risky they are. This measure adjusts for the riskiness of a bank's assets, guiding how much capital the bank must hold to remain solvent under regulatory standards.

SAMPLE RESULT (PRELIMINARY - DO NOT CITE)

	VOL_ROA	VOL_ROE	Liquidity	ROA	Equity	ChargeOffs	NPLoans	RWA
				weighted_branch_exposure				
Exposed		0.0058 ***	0.0654 *			0.0006 ***	0.0000 ***	
Controls		YES	YES			YES	YES	
FE		NO	NO			NO	NO	
R2		0.0228	0.0132			0.0317	0.3746	
No obs		547	547			547	547	

COMING SOON:

- Fixed Effects Regressions
- Two – Stage Regressions with Instrumental Variables
- Propensity score matching
- Predictions of the high-exposure areas based on socioeconomic factors and AI/ML methods

- **Vulnerable Populations at Higher Risk:** Marginalized groups—including those in poverty, racial minorities, and the uninsured—face greater exposure to opioid misuse due to systemic inequalities.
- **Geographic and Economic Disparities:** Rural communities lack treatment access, while economically strained individuals and physically demanding workers are more prone to misuse due to injury and financial stress.
- **Educational and Occupational Barriers:** Low educational attainment limits access to prevention and treatment, reinforcing addiction and economic instability.
- **Gender and Intergenerational Effects:** Women, especially pregnant women, face care barriers with severe outcomes for infants; children in affected households endure trauma and disrupted development.
- **Systemic Racial Inequities:** Black and Hispanic populations face delayed care and rising fentanyl-related deaths, despite lower initial opioid misuse rates.

Big shout out to **Tanuja Voruganti** for her excellent Research Assistantship!!!
(check out her own poster – she is here in the room ☺)