

# Dirty Money: How Banks Influence Financial Crime

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Discussion by James O'Donovan at the 10th Moscow Finance  
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# Setting

Banks are the first line of defense against dirty money getting into the legitimate financial system, criminals have an incentive to turn potentially worthless cash into money that can be used to buy anything, anywhere.



## Setting and contribution

- ▶ Banks must submit **Currency Transaction Reports** to FinCEN for customers who make more than \$10,000 cash transactions within one business day.
- ▶ Banks are required to submit **Suspicious Activity Reports** if they detect suspicious transactions during AML checks.

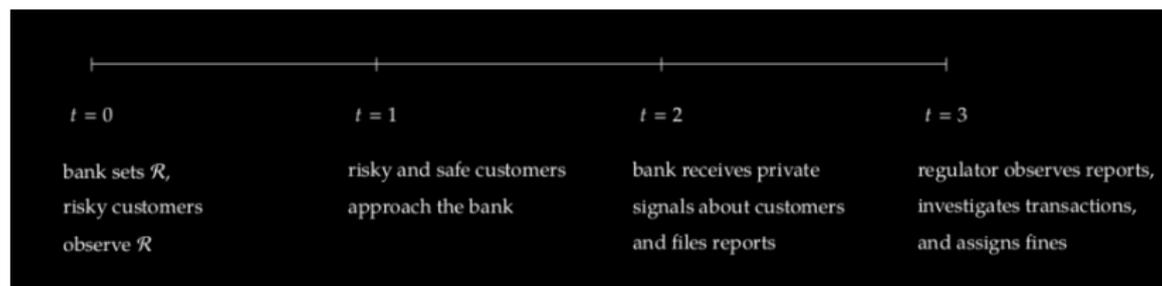
The **CTR** does not give banks a choice, but the **SAR** gives banks a choice:

- ▶ What are the incentives of banks in this choice?
- ▶ How do bank and criminal incentives interact in equilibrium?
- ▶ What banks should we allocate more monitoring resources to, e.g. how do we identify “bad banks”? Which bank characteristics matter for SAR reporting?

This is an important topic!



# Summary - Model Results



- ▶ Key parameters are the regulatory fine  $F$  and ex-ante profitability  $x_0$
- ▶ Risk shifting - limited liability and a convex objective function means bank will take a risk with low profits but not with high profits
- ▶ Lemma 1 “Strategic advertising effect” The bank attracts more risky customers with a lax reporting policy - this is a neat insight, banks with more SARs are riskier
- ▶ “the strategic reporting effect” the bank can reduce the expected penalty by choosing the strict policy.

## Summary - Empirical Results

The general insight from the model is that bank risk-taking incentives are related to suspicious activity reporting

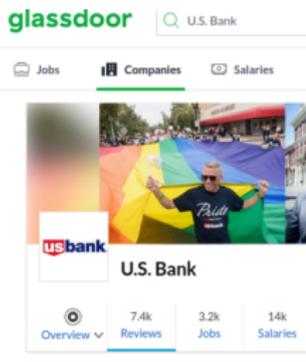
- ▶ Table 2: At the county level high competition, low profitability, or low liquidity are related to higher SAR volume
- ▶ Table 4: Allays the concern that time-varying county level omitted variables drive the result using a shock to capital adequacy
- ▶ Table 6: Controls for crime (a key omitted variable)
- ▶ Table 8: Controls for size (allay the concern that financially constrained banks have low profits and high SAR volume due to weak AML technology)
- ▶ Table 9: Sanity check - higher SAR volume related to more violations

## Comment: SARs and competition

<i>Panel A: Competition</i>				
<i>Dep. Var.: SAR/Pop</i>	(1)	(2)	(3)	(4)
<i>Deposit HHI</i>	-0.9187*** (0.233)	-0.7929*** (0.296)		
<i>Branch HHI</i>			-1.1514*** (0.216)	-1.0321*** (0.260)
State-Year FE	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes
County Controls	No	Yes	No	Yes
Observations	21,014	18,013	21,014	18,013
Adjusted R <sup>2</sup>	0.843	0.855	0.843	0.855

- ▶ Key result: as county level competition increases, SAR/Pop increases
- ▶ Particularly impressive given Garmaise and Moskowitz (2006) who show that causal increases in concentration increase certain measures of crime
- ▶ You could use state branching deregulation to instrument for bank competition...

# Comment: How to think about incentives?



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4.0 ★★★★★ ✓

Former Employee, more than 1 year

## Great job with high expectations

17 Jun 2019 - Universal Banker in Carlsbad, CA

✓ Recommend CEO Approval Business Outlook

### Pros

Perfect schedule PTO/sick pay Holiday pay Competitive pay salary 401K contribution matched

### Cons

High demand in monthly/quarterly sales goals Penalized if you don't succeed. Software programs/internet often crashing/or slow making it difficult to make sales.

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Former Employee

## Good place to work

4 Dec 2020 - Manager in Canyon Lake, CA

✓ Recommend CEO Approval Business Outlook

### Pros

Good benefits and great training for growth with company.

### Cons

Unrealistic sales goals and pressure from management.

4.0 ★★★★★

Former Employee, more than 3 years

## Great job- hard goals

18 Jun 2020 - Personal Banker in San Diego, CA

✓ Recommend  CEO Approval  Business Outlook

### Pros

great people, nice office, corporate company

### Cons

the sales goals are insane to reach-

U.S Bank (above) is the fifth largest banking institution in the United States - employees have strict sales goals.

## Comment: How to think about incentives

### Story 1: Bank level

- 1 Being a county dominated by low profitability/capital adequacy banks, means county branch employees are worried about the survival of the overall bank and take deposits from criminals and out of state positive shocks help them (Table 2 and Table 4)

For story # 1 it would be nice to see more evidence on the microecon. of bank decisions and how deposits help profitability and capital adequacy at the margin:

- ▶ How much did banks actually earn on dirty money transactions? How constrained were banks in terms of capital adequacy?
- ▶ Call reports separate into interest and non-interest income - you could use this data if you believe one form of income is more related to dirty money

## Comment: How to think about incentives

Story 2: County level

- 2 Being in a county where competition for deposits is fierce, you are willing to take criminal deposits even if the overall bank is profitable

The challenge for story # 2 is to show that deposits are good in and of themselves

- ▶ Deposit profitability and customer profitability are distinct
- ▶ Under the second story there is a tension between the economic mechanism of Table 2 and Table 4
- ▶ These stories are not mutually exclusive, but it would nice to see more evidence for those incentives
- ▶ Policy implications are different

## Comment: Crime

County level crime as an omitted variable:

- ▶ Table 6 Controls for Non-bank SARs, it's not clear if the enforcement is strong here...
- ▶ Anecdotally proximity to criminal activity seems to be a strong explanatory variable for money laundering (e.g. HSBC & Mexico), maybe better controls are available here
- ▶ FBI have a uniform crime reporting program containing county-level data on arrests for categories like forgery, fraud, drugs, and embezzlement.

# Summary: Structural Model (stripped down)

**model of money laundering** criminal deposits if  $u_{i,j,s,t}^n$  greater than utility at other banks and reservation utility

$$u_{i,j,s,t}^n = \alpha_1 \mathbb{E} \mathcal{R}_{i,j,s,t} + \varepsilon_{i,j,s,t}^n + v_{i,j,s,t}$$

aggregating choices across individuals get market shares of dirty money handled by each bank  $\omega_{i,j,s,t}$   
Dirty money depends on underlying crime and criminal depositor decisions

$$M_{i,j,s,t} = \omega_{i,j,s,t} \times N_{s,t}$$

Banks reporting strategy depends on profit

$$\mathcal{R}_{i,j,s,t} = \exp(\gamma_1 \text{Profit}_{i,t} + \mu_{i,j,s,t})$$

SAR volume at the interaction of dirty money and bank poilyc

$$\text{SAR}_{i,j,s,t} = M_{i,j,s,t} \times \mathcal{R}_{i,j,s,t} \approx \omega_{i,j,s,t} (\alpha_1 \mathbb{E} \mathcal{R}_{i,j,s,t}, \cdot) \times N_{s,t} \times \exp(\gamma_1 \text{Profit}_{i,t} + \mu_{i,j,s,t})$$

Aggregate to a county level then estimate unknowns  $\Theta = (\alpha_1, \gamma_1, \sigma_v, \sigma_u, \rho)$  to maximise the likelihood of having SAR ratio of  $\hat{f}_{j,s,t}$

$$L(\hat{f}_{j,s,t}, \Theta) \equiv \mathbb{P}_{i,t} \left( \frac{\text{SAR}_{j,s,t}}{\text{SAR}_{1,s,t}} = \hat{f}_{j,s,t} \right)$$

**model of violations (bank level)** Unreported suspicious activities at a bank level

$$O_{i,t} = \sum_{h=1}^S \sum_{q=1}^J (M_{i,q,h,t} - \text{SAR}_{i,q,h,t})$$

Probability of being charged with a violation is probit function of unobserved activities

$$P_{i,t} = \rho_0 + \rho_1 O_{i,t}$$

Likelihood as function of unreported suspicious activities

$$L(\text{Violation}; \Theta) = (P_{i,t})^{\text{Violation}} \times (1 - P_{i,t})^{1 - \text{Violation}}$$

## Comment: Structural Model

- ▶ To match high SAR in a given county we some combination of lax policy ( $\gamma_1 < 0$ ) low criminal disutility to bank policy ( $\alpha_1$ ) and/or high underlying crime ( $N_{s,t}$ )
- ▶ Table 3 mentions state-year fixed effects, which would mean  $N_{s,t}$  variation is removed...
- ▶ What (co)variation exactly matters for each parameter? more intuition here would be nice

## Summary

- ▶ Important question and not easy to answer
- ▶ 9 Tables (incl. natural experiment) + Model + Structural estimation (!! ) all provide consistent evidence - banks with higher risk taking incentives take more risk through lax reporting policy
- ▶ Equilibrium result - banks with more SARs are more likely to be violators (this goes against casual intuition)
- ▶ Alternative stories about resources for AML ruled out - the results are even stronger for the largest banks
- ▶ Competition+limited liability are core foundations of our markets, but this is not always good, especially if it encourages this type of risk taking