



Data as Collateral: Open Banking for Small Business Lending

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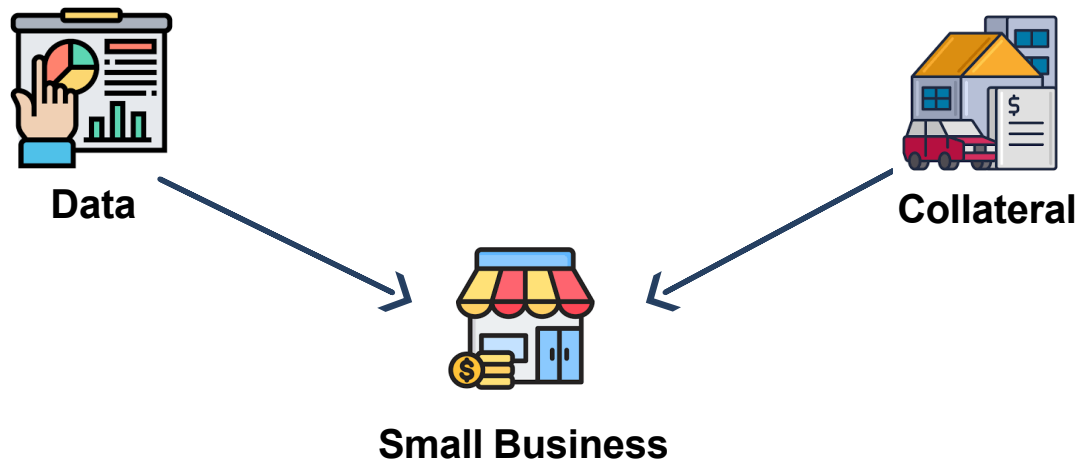
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Motivation

- Data and collateral play crucial roles in small business lending





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Motivation

- Data and collateral play crucial roles in small business lending

Less extensive
Outdated/not real-time
Costly to access



Data



Collateral

Lack of fixed assets
Volatile
Hard to track



Loan Declined





Motivation

- Bank customer data flow under **Open Banking**



Bank



Small Business



**New Financial
Service Provider**





Motivation

- Bank customer data flow under **Open Banking**



Bank



Small Business



**New Financial
Service Provider**





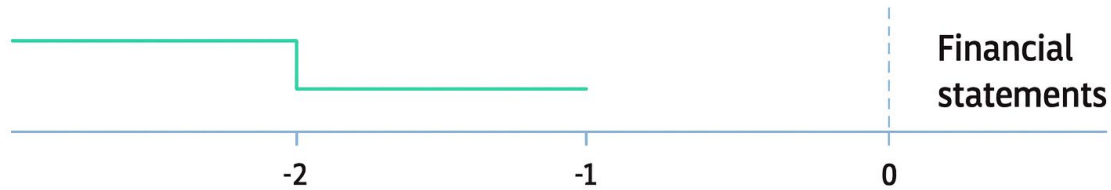
Motivation

- Bank customer data flow under **Open Banking**



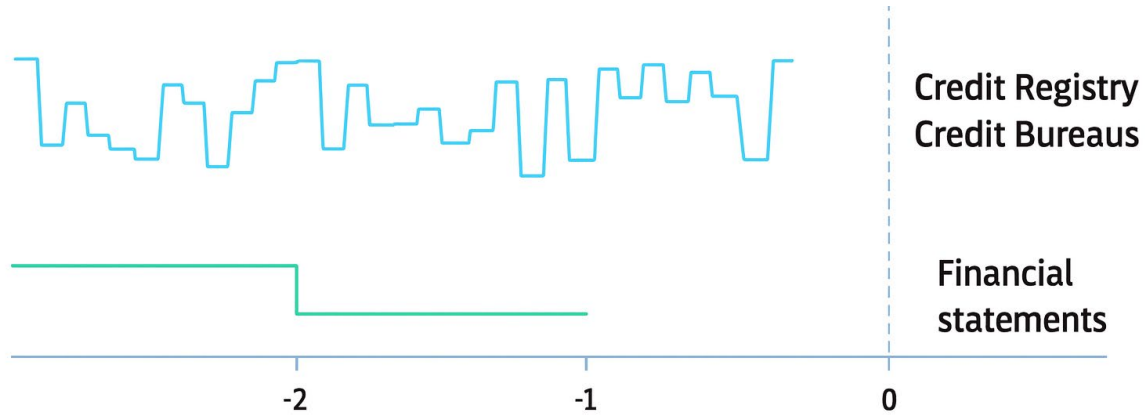


Motivation



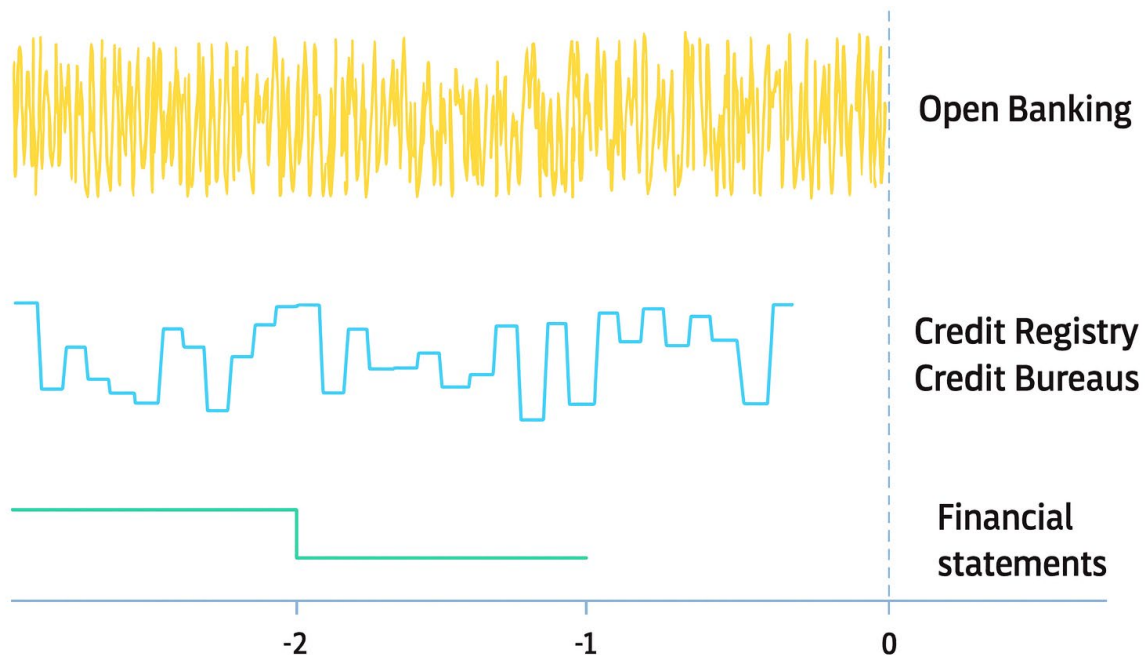


Motivation





Motivation





Motivation

Data

	Description	Amount	TransactionType	Category	Class
	TESCO PAY PLUS CARD CHECK GBR	£4.00	Debit	Supermarket	Point-of-Sale Transaction
	BEST ONE, xxx LONDON LONDON GBR	£10.00	Debit	Eating out	Point-of-Sale Transaction
7	Me	£595.00	Debit	Transfer payments	Payment Transfer
7	OLYMPIAKOS LENDING LTD	£254.23	Debit	Loan	Point-of-Sale Transaction
7	CAMELOT LOTTERY	£16.00	Debit	Gambling and gaming	Point-of-Sale Transaction
7	VITALITY LIFE	£50.00	Credit	Transfer payments	Payment Transfer
7	COMPANY X NOVEMBER SALARY	£2,901.99	Credit	Salary	Payment Transfer
7	John Doe's Mobile	£45.00	Credit	Transfer payments	Unclassified
7	John Doe's Holidays	£850.00	Credit	Transfer payments	Payment Transfer
7	123456 11111111 INTERNET TRANSFER	£2,375.00	Credit	Transfer payments	Payment Transfer
7	John Doe Internet Transfer	£800.00	Credit	Transfer payments	Payment Transfer
7	Now4	£2.00	Debit	Transfer payments	Point-of-Sale Transaction
7	123457 22222222 INTERNET TRANSFER	£216.35	Credit	Transfer payments	Payment Transfer
7	OLYMPIAKOS LENDING LTD	£282.70	Debit	Loan	Point-of-Sale Transaction
7	COMPANY X OCT-NOV 17 EXPS	£1,194.15	Credit	Transfer payments	Point-of-Sale Transaction
7	CAMELOT LOTTERY	£16.00	Debit	Gambling and gaming	Point-of-Sale Transaction
7	COMPANY X DEC 17 SALARY	£2,901.99	Credit	Salary	Payment Transfer
7	John Doe's Mobile	£45.00	Credit	Transfer payments	Unclassified
7	123456 11111111 INTERNET TRANSFER	£2,375.00	Credit	Transfer payments	Payment Transfer
	John Doe Internet Transfer	£55.00	Credit	Transfer payments	Payment Transfer
	John Doe's Christmas	£200.00	Credit	Transfer payments	Payment Transfer
	WARMINSTER FORECOURT WARMINSTER GBR	£13.66	Debit	Eating out	Point-of-Sale Transaction
	BEST ONE, xxx LONDON LONDON GBR	£20.00	Debit	Eating out	Point-of-Sale Transaction
	COMPANY X DEC 17 - JAN 18 EX	£148.30	Credit	Transfer payments	Point-of-Sale Transaction
	OLYMPIAKOS LENDING LTD	£282.70	Debit	Loan	Point-of-Sale Transaction
	CRV/TESCO STORES 6279 London GBR	£28.98	Debit	Beauty treatments	Point-of-Sale Transaction
	B & Q WAREHOUSE LONDON GBR	£13.38	Debit	Home improvement	Point-of-Sale Transaction
	BEST ONE, xxx LONDON LONDON GBR	£30.00	Debit	Eating out	Point-of-Sale Transaction
	pot_00000000000000000000000000000000	£1.02	Debit	Transfer payments	Point-of-Sale Transaction
	TESCO STORES xxxx LONDON GBR	£40.60	Debit	Supermarket	Point-of-Sale Transaction
	CAMELOT LOTTERY	£20.00	Debit	Gambling and gaming	Point-of-Sale Transaction
	John Doe	£100.00	Debit	Transfer payments	Payment Transfer
	John Doe's Birthday Gift	£3,430.91	Credit	Transfer payments	Payment Transfer
	NAMASTE KATHMANDU E'BURGH EHX GBR	£7.95	Debit	Eating out	Point-of-Sale Transaction

Date Range Filter



Category

All

Classification

All

Transaction Type

All

Description

All





Motivation

- Bank financial data provides a rich picture of operations and financial situations
- Open banking shifts the ownership of bank financial data from the banks to the firms
- Open banking helps small businesses build new lending relationships (Babina et al. 2025)





This Paper: Preview

- **Research question:** How does OB help small business lending?
- **Identification strategy:**
 - UK's small business-focused open banking policy
 - This policy requires large UK banks to share their small business customer data, but it applies only to small businesses with revenue $\leq$ £25 million
 - Regression discontinuity design (RDD)
- **Data:** A novel administrative dataset covering nearly the universe of UK firms and capturing the entire UK secured business loan market





This Paper: Key Findings

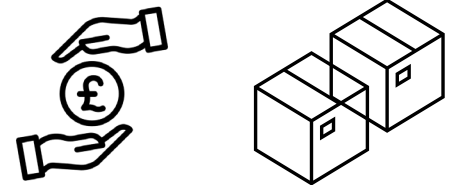
- Open banking increases the use of assets like **accounts receivable** and **inventory** as collateral, but it has no impact on the use of fixed assets
 - Firms eligible to share their data are about 4 percentage points more likely to pledge such assets as collateral
- **Main mechanism:** the effects of open banking are more pronounced for firms facing greater information asymmetry and for those with greater information available to share (“information channel”)
- **Access to credit:** OB **reduces collateral constraints** by mitigating information asymmetry and therefore improves access to credit





Institutional Background

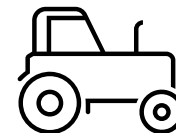
- Two types of collateral in the UK small business lending market
 - **Floating lien:**
 - covers general categories of assets as a whole
 - examples: current assets like accounts receivable and inventory
 - may fluctuate in quantity and value
 - can be sold without lender's permission





Institutional Background

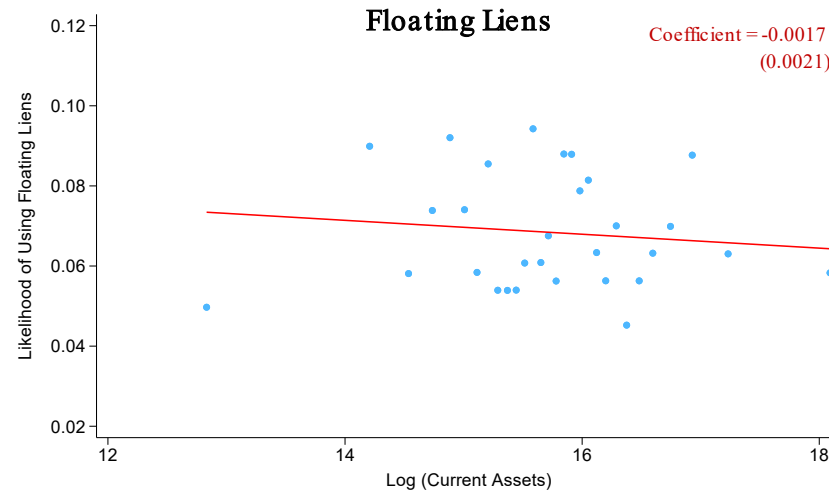
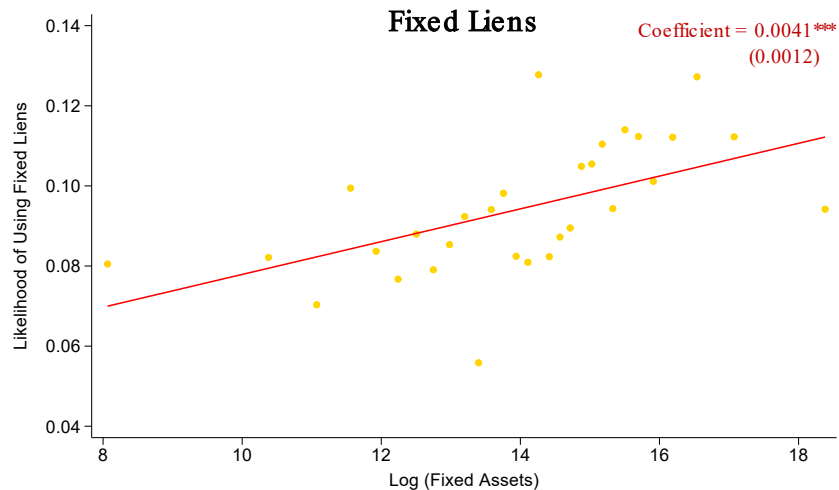
- Two types of collateral in the UK small business lending market
 - **Non-floating lien (fixed lien):**
 - is tied to a specific asset
 - examples: fixed assets like land, property, and equipment
 - has stable and predictable value
 - cannot be sold without lender's permission





Institutional Background

- Using floating liens is a challenge: Having more current assets doesn't increase a small firm's chance of using floating liens to secure loans





Institutional Background

- Why is using floating liens a challenge?
 - **Adverse selection:** firms with lower-quality or highly volatile assets may be more likely to seek credit
 - **Moral hazard:** assets under floating liens can be sold or diverted by the borrower without permission





Motivating Framework

- The roles of open banking: Data serves as a form of “digital collateral”
 - **Loan screening:** Mitigating adverse selection problem
 - OB provides better understanding of the borrower’s creditworthiness
 - This data improves default predictions (Norden and Weber 2010), thus, perceived risk is reduced
 - **Ongoing monitoring:** Addressing moral hazard issue
 - OB gives access to the borrower’s data even after the loan has been approved
 - This data allows to monitor the borrower’s ongoing cash flow more effectively (Mester et al. 2007)





Data

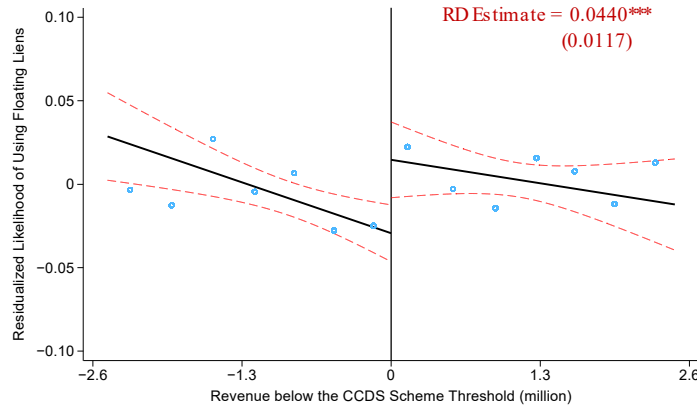
- **Loan-level data:** Company Charge Register (CCR)
 - the entire UK secured business loan market
 - type of collateral, contract terms, and performance information
- **Firm-level data:** Inter-Departmental Business Register (IDBR)
 - nearly the universe of UK firms
 - revenue figures from HMRC (UK's tax authority), basic firm profile information
- Other data: Bureau van Dijk (BvD) and Postcode Lending Data (PLD)



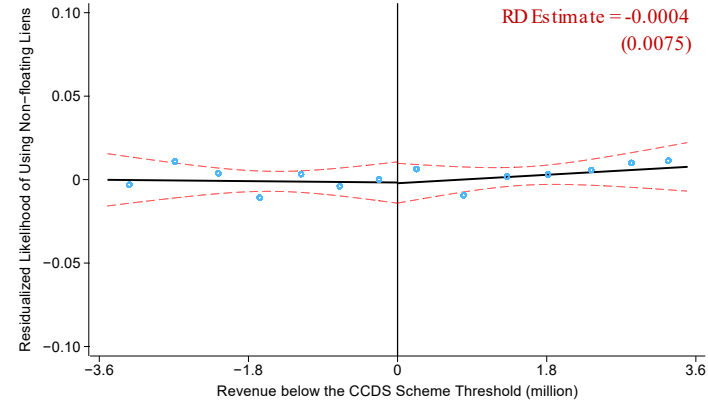


Key Results

Floating Liens



Non-Floating Liens

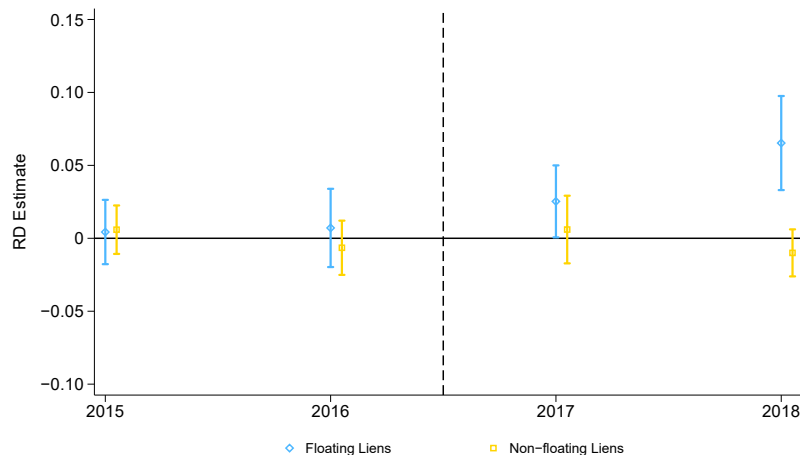


- OB leads to more use of floating liens, but no impact on non-floating liens
- OB reduces collateral constraints





Key Results



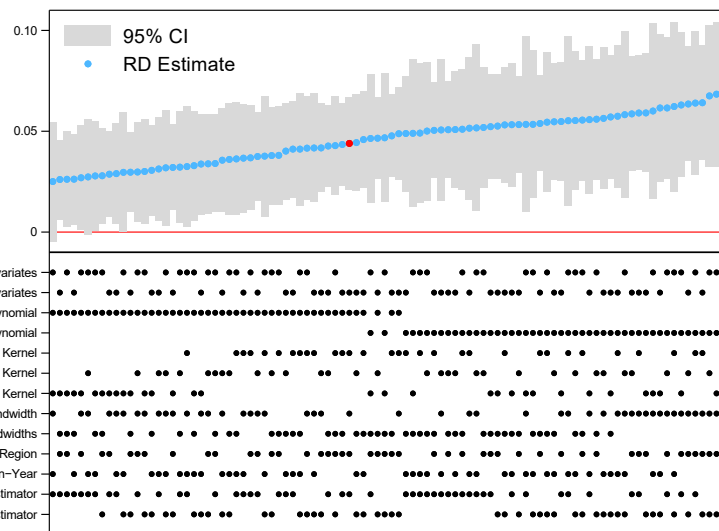
- In the absence of OB, firms just above and just below the cutoff exhibited similar patterns in their use of collateral



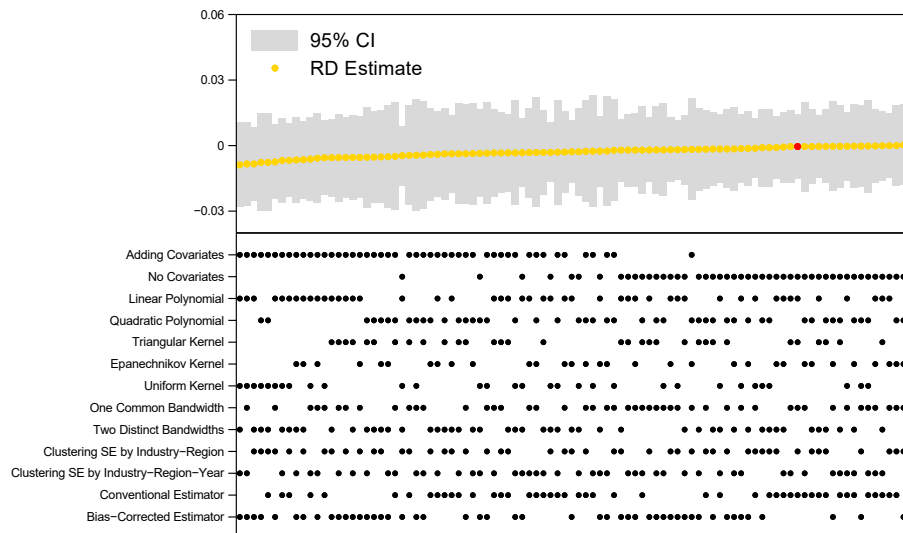


Validity and Robustness Check

Floating Liens



Non-Floating Liens





Why does OB reduce collateral constraints?

- Information channel:
 - what if firms face greater information asymmetry?
 - what if firms have greater information available to share?
- Competition channel:
 - what if firms are located in highly competitive lending market?
- Lending technology channel:
 - what if lenders are traditional banks versus non-banks?





Why does OB reduce collateral constraints?

- Information channel: ↓ firms are more significantly impacted by OB
 - Young firms, firms with higher level of asset information-intensity, firms without prior lending relationships (no information)
 - Firms with prior lending relationships with CCDS lenders (more information)
- Competition channel: Firms located in highly competitive markets are more significantly impacted by OB
- Lending technology channel: Differences in lending technology cannot drive the results





Conclusion

- Put together a novel dataset that covers nearly the universe of UK firms and captures the entire secured business loan market
- Open banking eases the pledge of assets like accounts receivable and inventory. Firms eligible to share their data are more likely to pledge such assets as collateral, thereby improving access to credit
- OB → information asymmetry ↓ → credit ↑





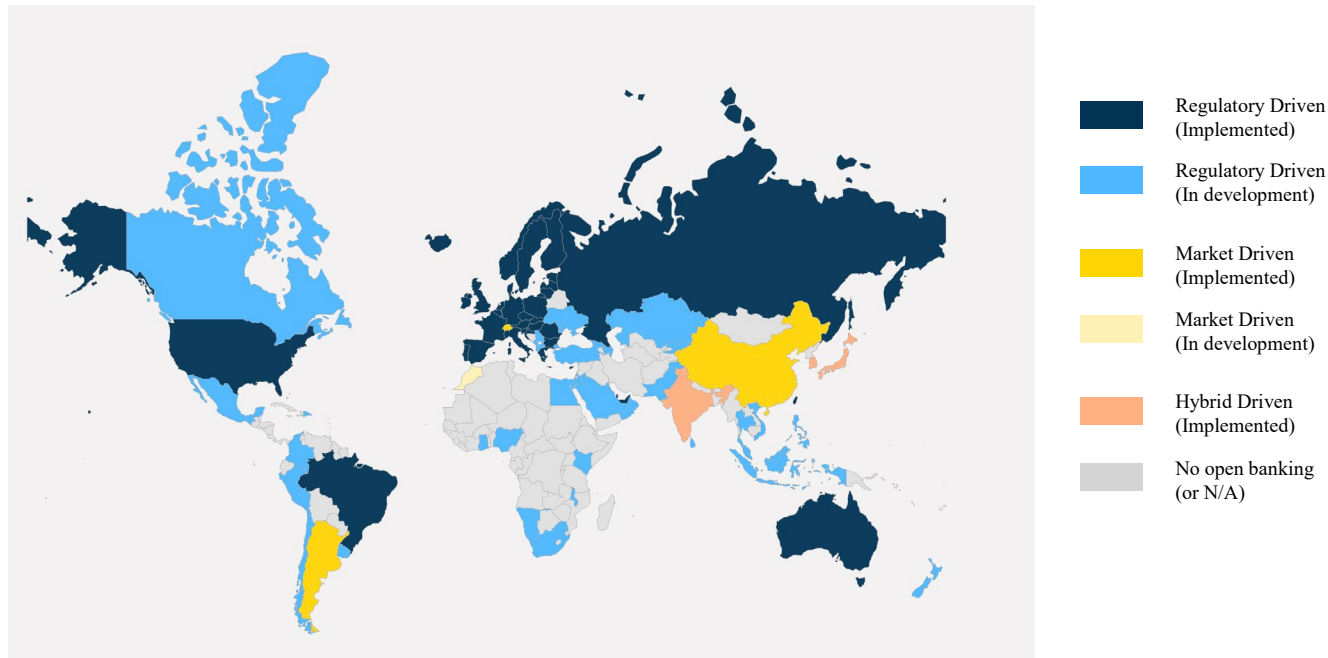
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The World of Open Banking (as of Oct 2024)





Open Banking in the US

- Regulatory uncertainty in the US
- Section 1033 of the Dodd-Frank and the CFPB rule:
 - requires covered financial institutions to make certain data available to consumers and authorized third parties in an electronic form
 - was set to take effect starting January 2025
 - Fintechs favored the rule while banks opposed it
- In July 2025, JP Morgan Chase started charging fees to Fintechs for access to their customers' bank data, e.g., JPMC-Plaid agreement





THANK YOU

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