From CeFi to DeFi: What do Investors (Mis)trust?

Shaokai Ding
Manchester

Wenzhi Dave Ding
HK PolyU

Chen Lin
HKU

May 2026 @ ABFER

Introduction

Great Financial Crisis and Bitcoin

- Bitcoin & GFC both happened in 2008.
- Industry belief: “Bitcoin is invented and gets popular since people lose trust in centralized financial system.”

COINTELEGRAPH MAR 21, 2024

History of Crypto: Bitcoin — Satoshi Nakamoto’s response to the global financial crisis

In 2008, at the height of the global financial crisis, an anonymous figure named Satoshi Nakamoto proposed Bitcoin, a groundbreaking electronic cash system.

Coincidence?

Source: Cointelegraph

Research question

- **Do users adopt DeFi when they realize CeFi is not trustworthy?**
  - DeFi: Financial services hosted by blockchain (e.g., Bitcoin, decentralized exchange…)
  - CeFi: Financial services hosted by company (e.g., Robinhood, Binance, Coinbase…)

- Existing financial crisis literature only cares about how investors shift within existing financial system. As DeFi grows, it could be a valid substitute.
- We try to inform regulators and cryptocurrency industry.

Cryptocurrency Exchange ≠ DeFi

- CeFi and DeFi are **ways of organizing financial services**. It is not related to the assets being traded.

	Cryptocurrency Exchange	
	Centralized Exchange (CEX)	**Decentralized Exchange (DEX)**
Function	Trade cryptocurrency (i.e., buy X sell Y)	
Transparency		
Who execute your trade?	The company	**Smart contract code**
Who control your assets?	The company	**Yourself (“self-custody”)**
All asset flow visible?	No	**Yes**
Market share	~85%	~15%

Preview of Results

- Traders **do not adopt DEX** after major CEX failure.
- Key barrier is traders **do not know** the difference between CEX and DEX.
  - Both reduced-form (DID), information provision experiment, and structural estimation confirm this finding.
  - Market quality differences and switching cost are secondary effects.

Institutional Background

Iconic event of FTX collapse

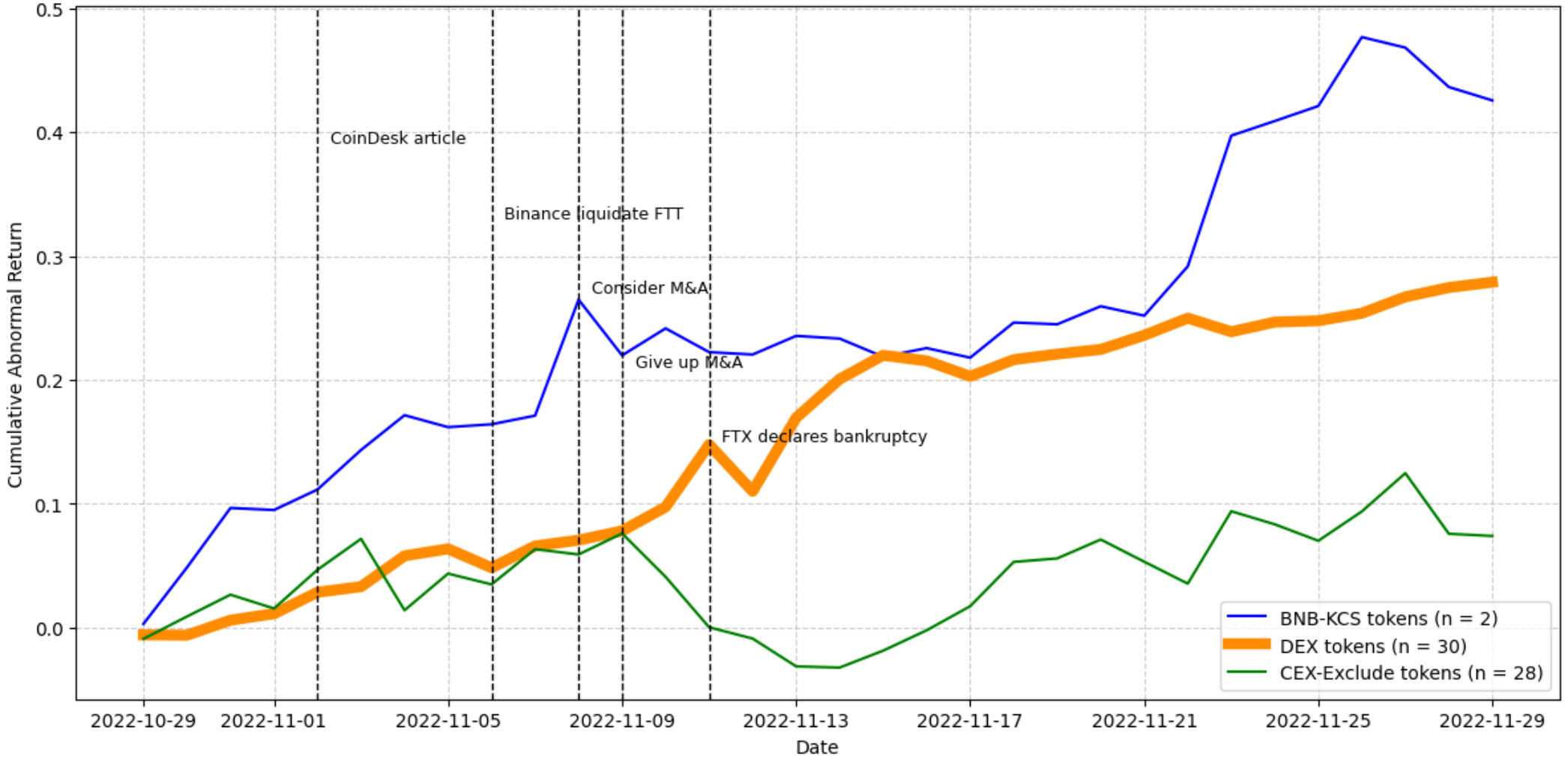
- Use to be the second/third largest cryptocurrency exchange in the world.
- It is a **centralized** exchange (CEX).
- The founder team appropriated customers' **US$9 billion** assets for risky investments.

#	Name	Exchange Score	Volume(24h)
1	Binance	9.9	$17,094,524,385 ▲ 2.74%
2	Coinbase Exchange	8.0	$1,926,187,786 ▼ 23.42%
3	FTX	8.0	$1,817,863,176 ▼ 6.73%

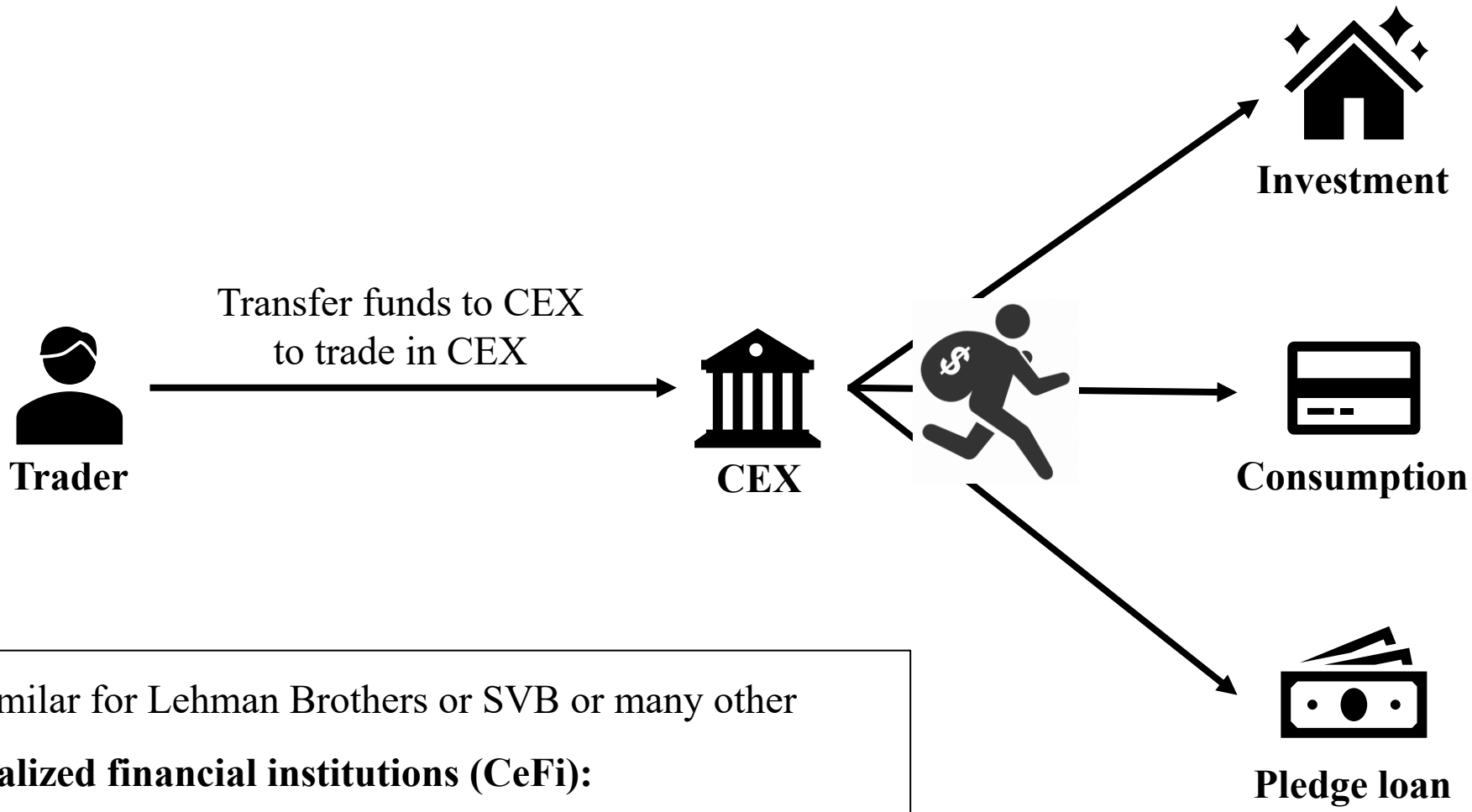
Ranking as of Oct 31, 2022
(Source: CoinMarketCap)

Founder Sam Bankman-Fried
(Source: Forbes)

Industry is very optimistic to DeFi after FTX collapse



Why this is a CeFi issue?



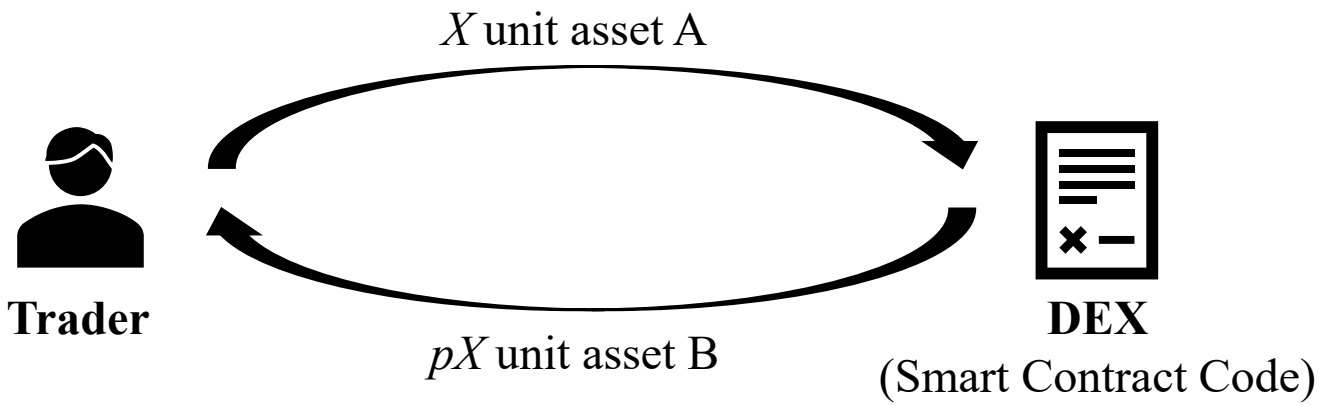
It's similar for Lehman Brothers or SVB or many other **centralized financial institutions (CeFi):**

They takes your money and use it irresponsibly.

How DEX is used?

- In short, DEX is a **code** run on blockchain such that you send it X unit of asset A, it returns you pX units of asset B, **simultaneously**, while p is the price.

That means you never lose control on your assets.



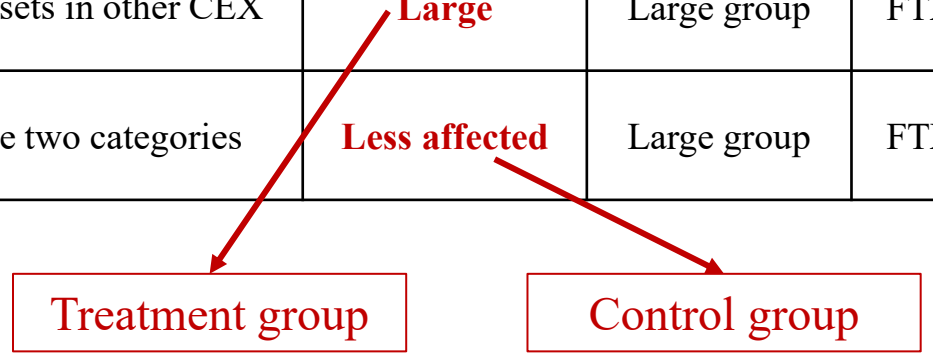
Research Design

Data sources

- Manually collect 1,114 CEX wallet addresses from Etherscan, CoinMarketCap, and CoinCarp.
- Retrieve 350 million transaction records from Ethereum blockchain.
- Aggregate 32 million wallet addresses to 8 million unique users using a special mechanism.

User level event study

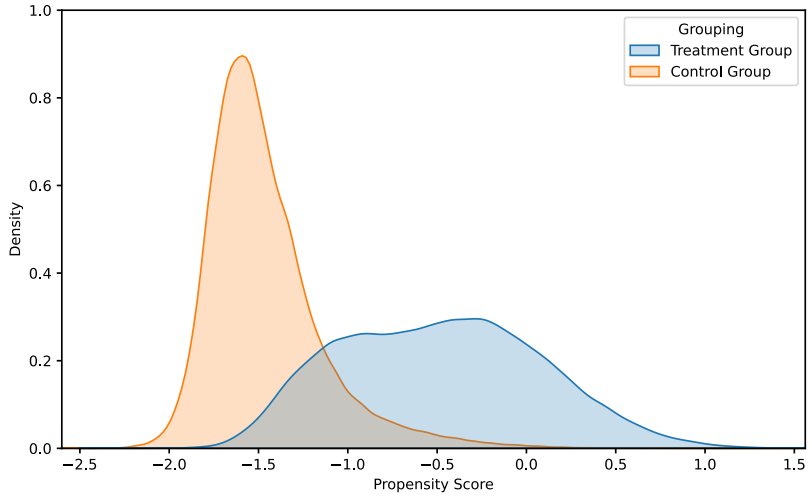
	Definition	Shock of FTX collapse	Size	Endogeneity
FTX user	Allocate ＞50% crypto assets in FTX	Largest	Small group	Endogenously matched with FTX
Other CEX user	Allocate ＞50% crypto assets in other CEX	**Large**	Large group	FTX collapse is **exogenous** to them
Non CEX user	All users not in the above two categories	**Less affected**	Large group	FTX collapse is **exogenous** to them



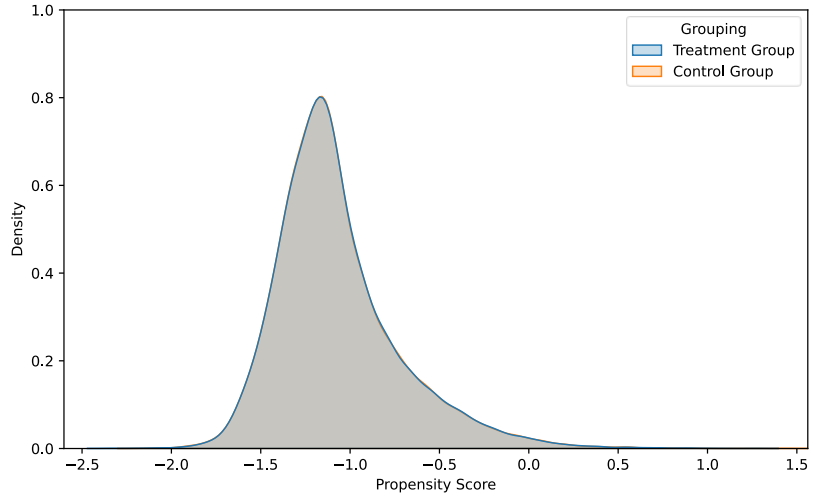
Comparability

- Those who deposit >50% assets in CEX may not be comparable to those who didn't.
- We do **propensity score matching** to obtain a comparable sample - marginal users between CEX and non-CEX.
  - On pre-FTX traits of wealth size, transaction volume, onchain experience, CEX/DEX experiences.

Before matching



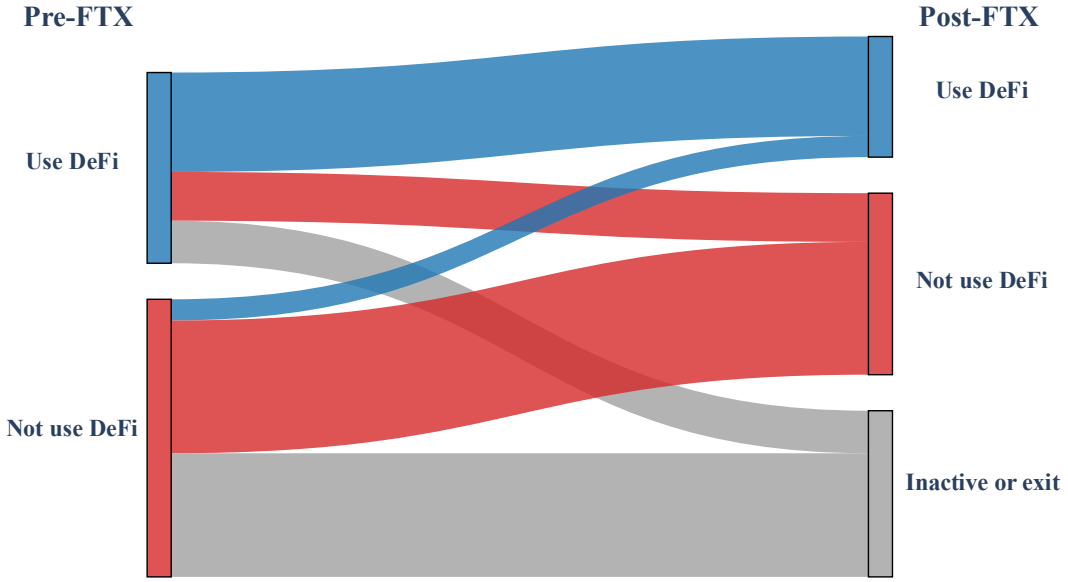
After matching



User level analysis

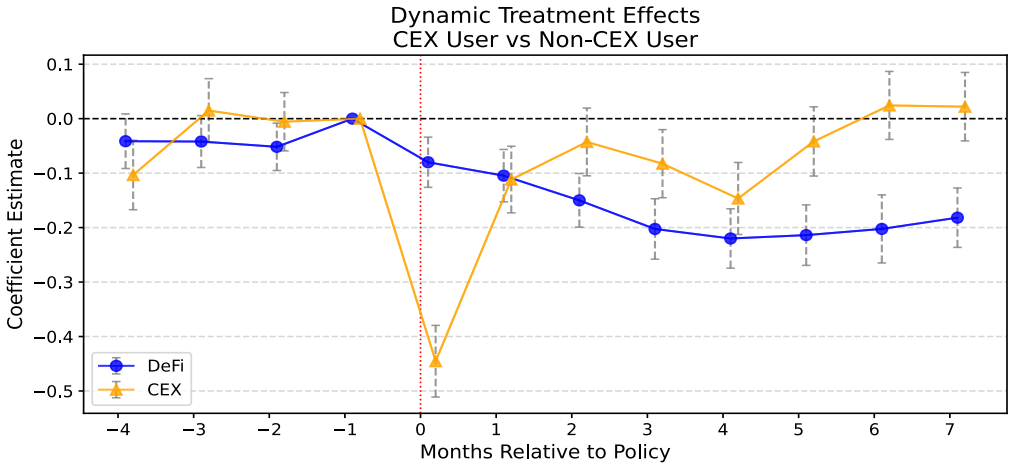
Descriptive statistics

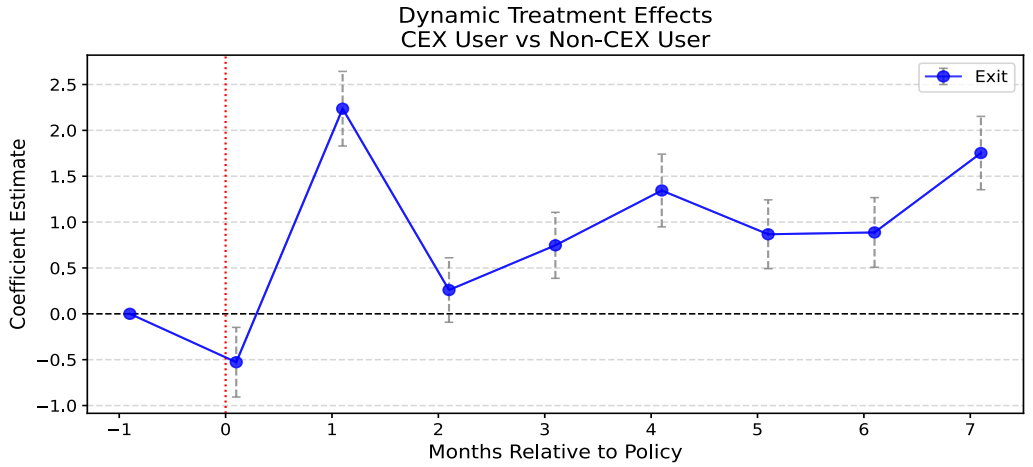
- For CEX users who also use DeFi, they keep using DeFi.
- For those who don't use DeFi, they leave or keep not using DeFi.
  - Only 8% begin to use DeFi.



	Pre-FTX CEX User	
	Use DeFi	Not use DeFi
Post-FTX		
Use DeFi	25,289 (52%)	5,392 (8%)
Not use DeFi	12,394 (26%)	33,771 (48%)
Inactive or exit	10,824 (22%)	31,439 (44%)
Sub Total	48,507	70,602
Total	119,109	

Parallel trend and dynamic effects





- Intensive margin
  - Drop in CEX usage in the first month (-22.6%), bounce back to original level in three months.
  - Compared to non CEX user, less DeFi usage (-20%)!
- Extensive margin: Many CEX users left at the second month (need to withdraw asset at first month)

Why trader does not go to DeFi?

1. (Market quality) DeFi does not offer comparable services as CeFi.
2. (Switching cost) Is it too hard to use?
3. (Trust) They know DeFi but ***don't believe*** it can solve problem.
4. (Information friction) They ***don't know*** DeFi as an alternative that solves FTX problem?

On-chain data analysis + experiment survey + structural estimation to test them.

DeFi experience matters

- If CEX traders used DeFi or held DeFi related assets before, they will
  - 7% higher interactions with DeFi, compared with other CEX users
  - Also increase 1 percentage point self-custody (≈$5 billion asset withdrawn from CeFi institutions).

	DeFi (count)	CEX (count)	Self-custodian (percentage)
	(1)	(2)	(3)
Post * CEX User with DeFi Exp.	0.050*	0.420***	1.318***
	(0.026)	(0.028)	(0.117)
Controls	Y	Y	Y
User FE	Y	Y	Y
Month FE	Y	Y	Y
Control group	CEX User without DeFi Exp.		
# Obs	187,391	187,391	187,391
Adjusted R2	0.570	0.691	0.921
# Clusters	15,693	15,693	15,693

	DeFi (count)	CEX (count)	Self-custodian (percentage)
	(1)	(2)	(3)
Post * CEX User Held DeFi Token	0.194	0.262***	1.033***
	(0.121)	(0.095)	(0.211)
Controls	Y	Y	Y
User FE	Y	Y	Y
Month FE	Y	Y	Y
Control group	CEX User not Held DeFi Token		
# Obs	187,391	187,391	187,391
Adjusted R2	0.570	0.691	0.921
# Clusters	15,693	15,693	15,693

Response heterogeneity of CEX users

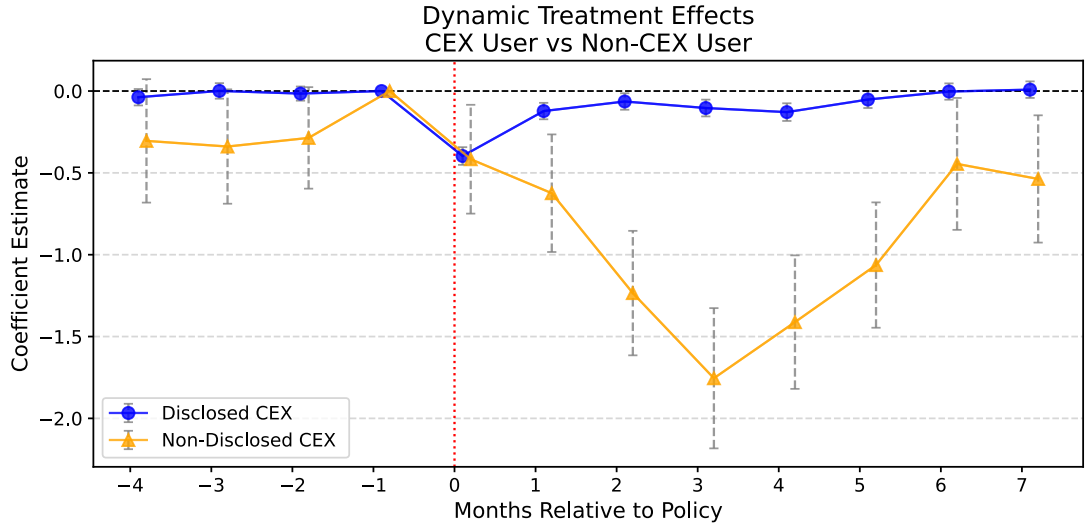
- More CEX users are concentrated in large CEX after FTX.

- **Size is probably what customer (mis)trust!**
  - Afterall, FTX use to be the second largest.
  - Size does not guarantee good governance.

	DeFi (dummy)	CEX (dummy)	Large CEX (dummy)
	(1)	(2)	(3)
Post * Small CEX User	-2.415***	-0.782**	0.671**
	(0.241)	(0.356)	(0.340)
Post * Large CEX User	-1.374***	2.815***	1.415***
	（0.214）	(0.291)	(0.288)
Controls	Y	Y	Y
User FE	Y	Y	Y
Month FE	Y	Y	Y
Control group		Non-CEX User	
# Obs	446,277	446,277	446,277
Adjusted R2	0.507	0.597	0.581
# Clusters	37,459	37,459	37,459

Is disclosure useful?

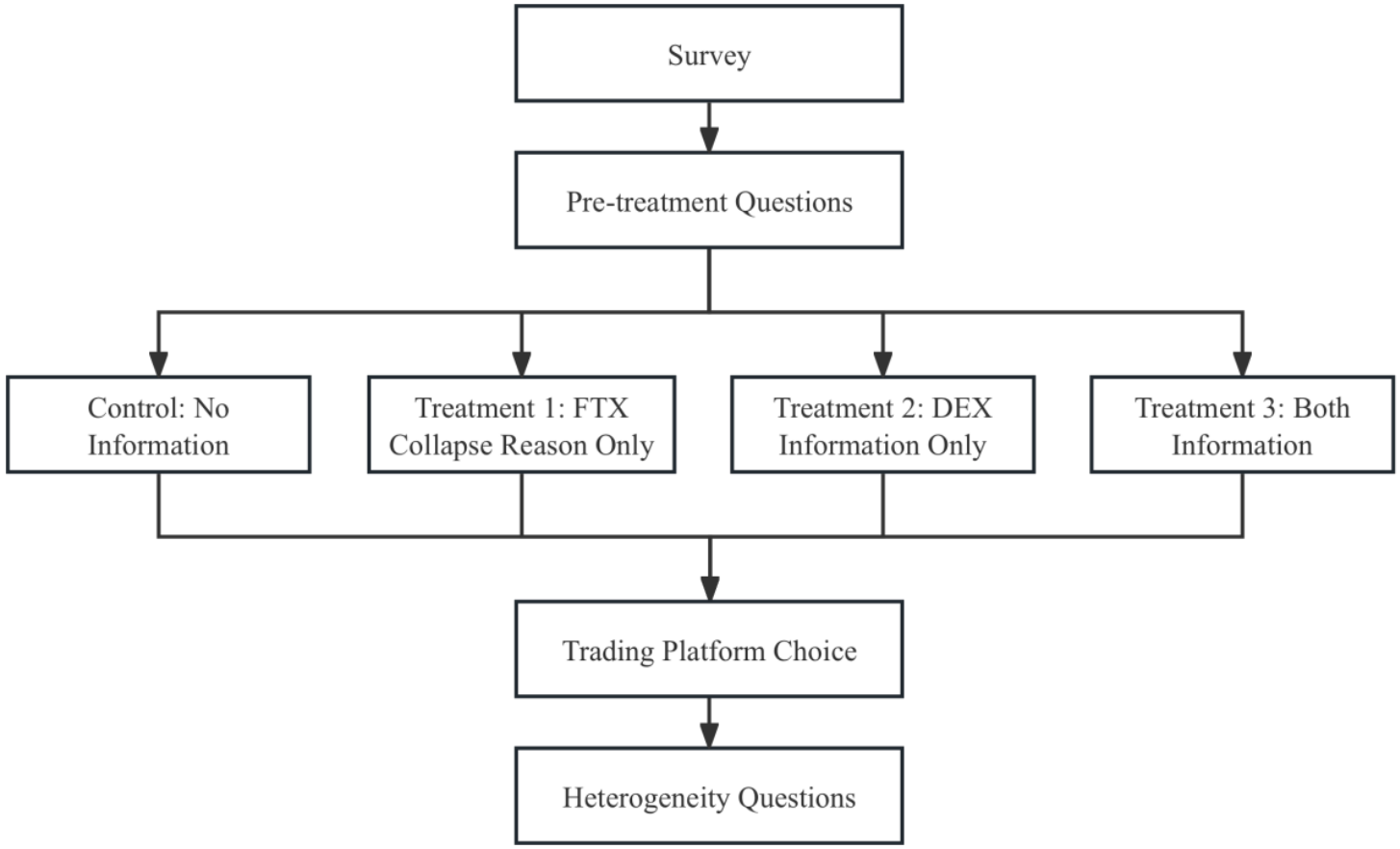
- Yes. CEX who disclose assets reserve in the first month bounce back in the next month.
- **(Partial) disclosure is probably what customer (mis)trust!**
  - It is good to know the ***asset side*** of balance sheet, but without knowing ***liability side***, such disclosure is meaningless.



Disclose reserve in first month	CEX (count)	
	Yes	No
	(1)	(2)
Post * CEX User	-0.384***	-0.187
	(0.025)	(0.154)
Post * CEX User * After first month	0.330***	-0.594***
	(0.024)	(0.158)
Controls	Y	Y
User FE	Y	Y
Month FE	Y	Y
Control group	Non-CEX User	
# Obs	446,277	446,277
Adjusted R2	0.695	0.790
# Clusters	37,459	37,459

Mechanism

Survey experiment design



Descriptive statistics of sample

- US households that have ever invested in crypto (to be comparable to our on-chain analysis sample)
- Male dominated (69%)
- Average 38 years old, 3-year investment experience
- Average hold 1.42 on-chain wallets

Variable	Num. Obs.	Mean	Std. Dev.
Female	823	0.31	0.46
Age	823	37.88	10.32
Investing Duration	823	3.42	1.85
Number of Wallets	823	1.42	0.88
Household Income (thousand USD)	823	69.72	29.40
Sense of Security	823	0.00	1.00
Switching Cost	823	0.00	1.00
Risk Aversion	823	0.00	1.00

Main result

- FTX collapse reason information has no treatment effect.
- DEX information strongly shift trader's choice from CEX to DEX (+30%!)
- No interaction effect for providing both information simultaneously.

	Platform Choice			
	DEX	Stay	Exit	Not Sure
	(1)	(2)	(3)	(4)
Control	0.159***	0.571***	0.132***	0.138***
	(0.033)	(0.036)	(0.024)	(0.020)
Treatment (FTX)	+0.033	+0.009	+0.002	-0.044
	(0.046)	(0.050)	(0.033)	(0.029)
Treatment (DEX)	+0.317***	-0.188***	-0.040	-0.089***
	(0.045)	(0.049)	(0.033)	(0.028)
Treatment (Both)	+0.271***	-0.201***	-0.009	-0.061***
	(0.044)	(0.048)	(0.032)	(0.028)
# Obs	823	823	823	823
Adjusted R2	0.085	0.036	-0.001	0.009
Mean of Dep. Var.	0.323	0.469	0.120	0.087

Major information friction is traders don't know DEX as an alternative.

Direct reason for the choice

	Control	**Treatment 1: FTX Info**		**Treatment 2: DEX Info**	
Know why FTX collapses	No	***Yes***		No	
Know DEX	No	No		***Yes***	
	N=189	N=193		N=206	
	Mean	Mean	Diff	Mean	Diff
	(1)	(4)	(5)=(4)-(1)	(2)	(3)=(2)-(1)
Current exchange acceptable	45.0%	49.7%	4.8%	25.7%	**-19.2%*** **
			(0.933)		**(-4.008)**
Other exchanges acceptable	19.6%	25.9%	6.3%	32.0%	**12.4%*** **
			(1.475)		**(2.818)**
All exchanges problematic	20.1%	12.4%	**-7.7%** **	29.6%	**9.5%** **
			(-2.033)		**(2.178)**
Stop trading	12.7%	8.8%	-3.9%	10.7%	-2.0%
			(-1.228)		(-0.625)
Other	2.6%	3.1%	0.5	1.9%	-0.7%
			(0.271)		(-0.468)

FTX collapse reason change belief to FTX and makes other CEX looks more sound.

DEX information makes all CEX less attractive and unacceptable

Switching cost

- Perceived switching cost also deters traders migrate from CEX to DEX.
- But consider secondary effects compared with cognitive barriers.

Trait=	DEX		
	Switching Cost	Sense of Security	Risk Aversion
	(1)	(2)	(3)
Treatment (Both) * Trait	-0.100**	0.048	0.005
	(0.041)	(0.044)	(0.044)
Treatment (Both)	0.272***	0.266***	0.271***
	(0.041)	(0.033)	(0.043)
Trait	-0.080**	-0.003	-0.018
	(0.032)	(0.033)	(0.032)
# Obs	424	424	424
Adjusted R2	0.180	0.084	0.080
Mean of Dep. Var.	0.309	0.309	0.309

Model for Trading Venue Choice

Rational choice: Minimize transaction cost

- For a given trade size $\Delta x_{i,t}$

$$C_{i,t}^{CEX} = c_{CEX}(\Delta x_{i,t})$$

$$C_{i,t}^{DEX} = c_{DEX}(\Delta x_{i,t}) + \frac{Gas_{i,t}}{\Delta x_{i,t}}$$

- $c_{CEX}(\cdot)$ and $c_{DEX}(\cdot)$ are price-impact functions calibrated from Barbon & Ronaldo (2026 MS).
- $\frac{Gas_t}{\Delta x_{i,t}}$ is the gas post per transaction, converted to basis points.

- Traders simply choose the venue with **lowest total trading cost**, if without other frictions.

$$NB_{i,t}^{base} = c_{CEX} - c_{DEX} - gas_{i,t}$$

Friction 1: Salience short-term shock

•For either CEX and DEX, there are some occasions people get appropriated.

Venue	Events	Example	Trader	Market maker
CEX	Deposit misappropriated	FTX	Lose deposit	Lose inventory
DEX	Liquidity pool bug exploited	Curve	/	Lose staked assets

•Traders only needs to concern their assets when trading on CEX.

•But traders have short memory and CEX may take actions to restore trust.

→ The effects of CEX collapse should be time-decaying $\tau_{c,t}(\rho)$, where ρ indicating the half-life period.

Friction 2: Misattribution

- Even a trader knows FTX collapse (CEX), does he know this kinds of asset misappropriate could never happens on Uniswap (DEX)?
- We have to model "DeFi knowledge".
- Traders with low DeFi knowledge $K_{i,t}$ will consider such a shock also applies to DEX, therefore, the **perceived cost of DEX will be distorted**.

Friction 3: “DeFi ideology”

- Some traders have unobservable DeFi preference.
  - Need privacy.
  - Love self-custody.
  - Trade meme coins.
  - Distrust CeFi.
- We bundle everything above into a fixed parameter δ.
- We assume δ has more impact on people with more DeFi knowledge on average.

Choice under frictions

• Financial costs + cognitive cost

$$C_{i,t}^{CEX} = c_{CEX} + K_{i,t}\lambda\tau_{c,t}(\rho)$$

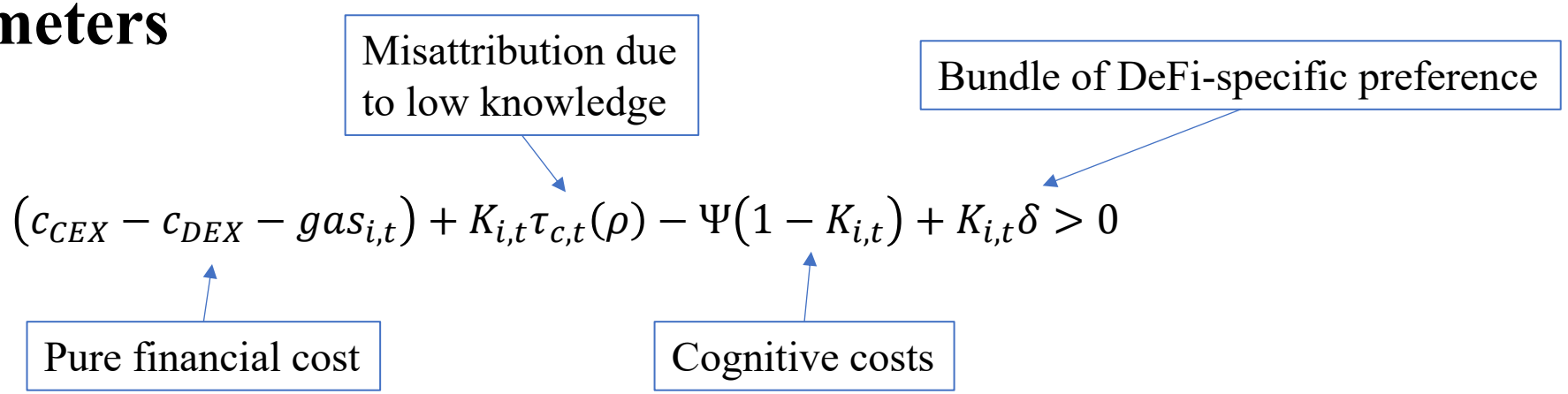
$$C_{i,t}^{DEX} = c_{DEX} + \frac{Gas_{i,t}}{\Delta x_{i,t}} + \Psi\left(1 - K_{i,t}\right) - K_{i,t}\delta$$

• Choose DEX when:

$$C_{i,t}^{CEX} - C_{i,t}^{DEX} > 0$$

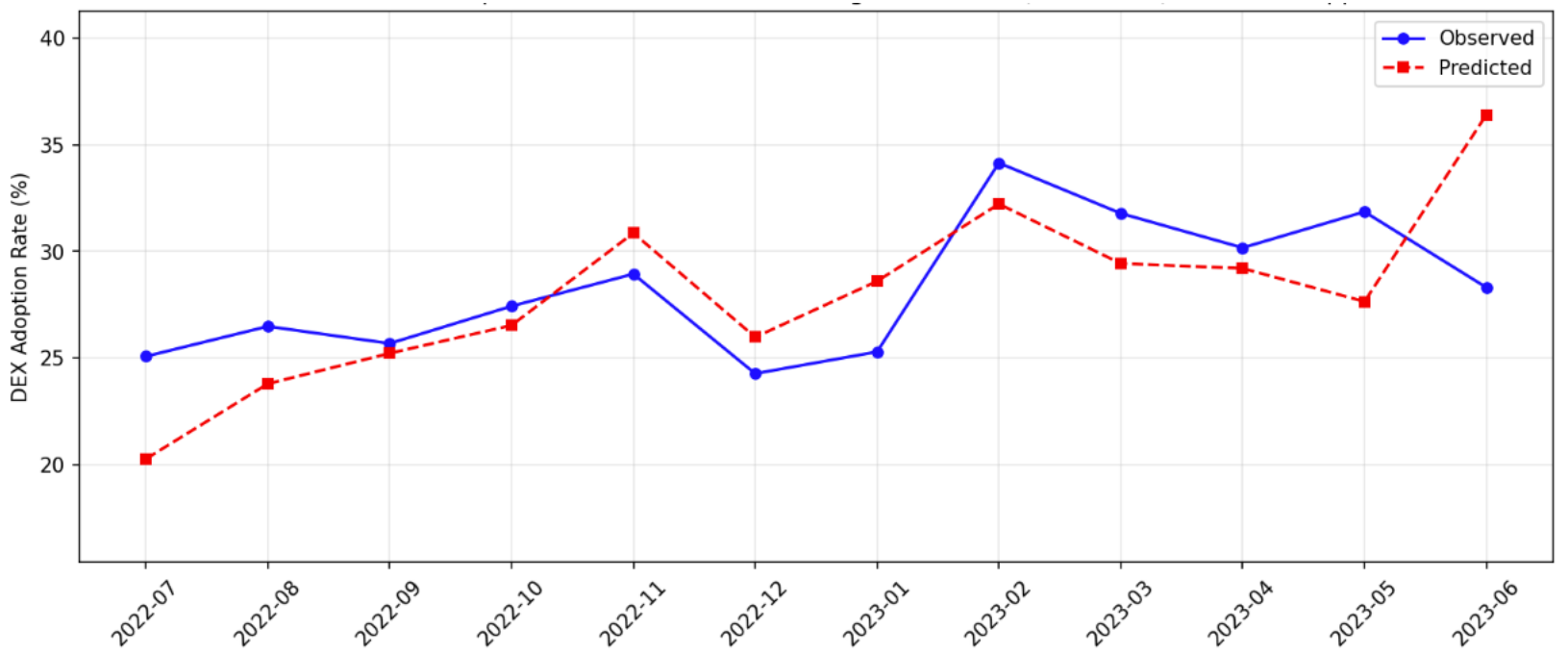
- $\tau_{c,t}(\rho)$: Perceived asset lose ratio. ρ describe how fast it decays.
- $K_{i,t}$: DeFi knowledge, drawn from empirical distribution of trader's transaction history (**how many coins and contracts interacted**)
- Ψ: Implicit cognitive cost.
- δ: DeFi preference.

Identify parameters

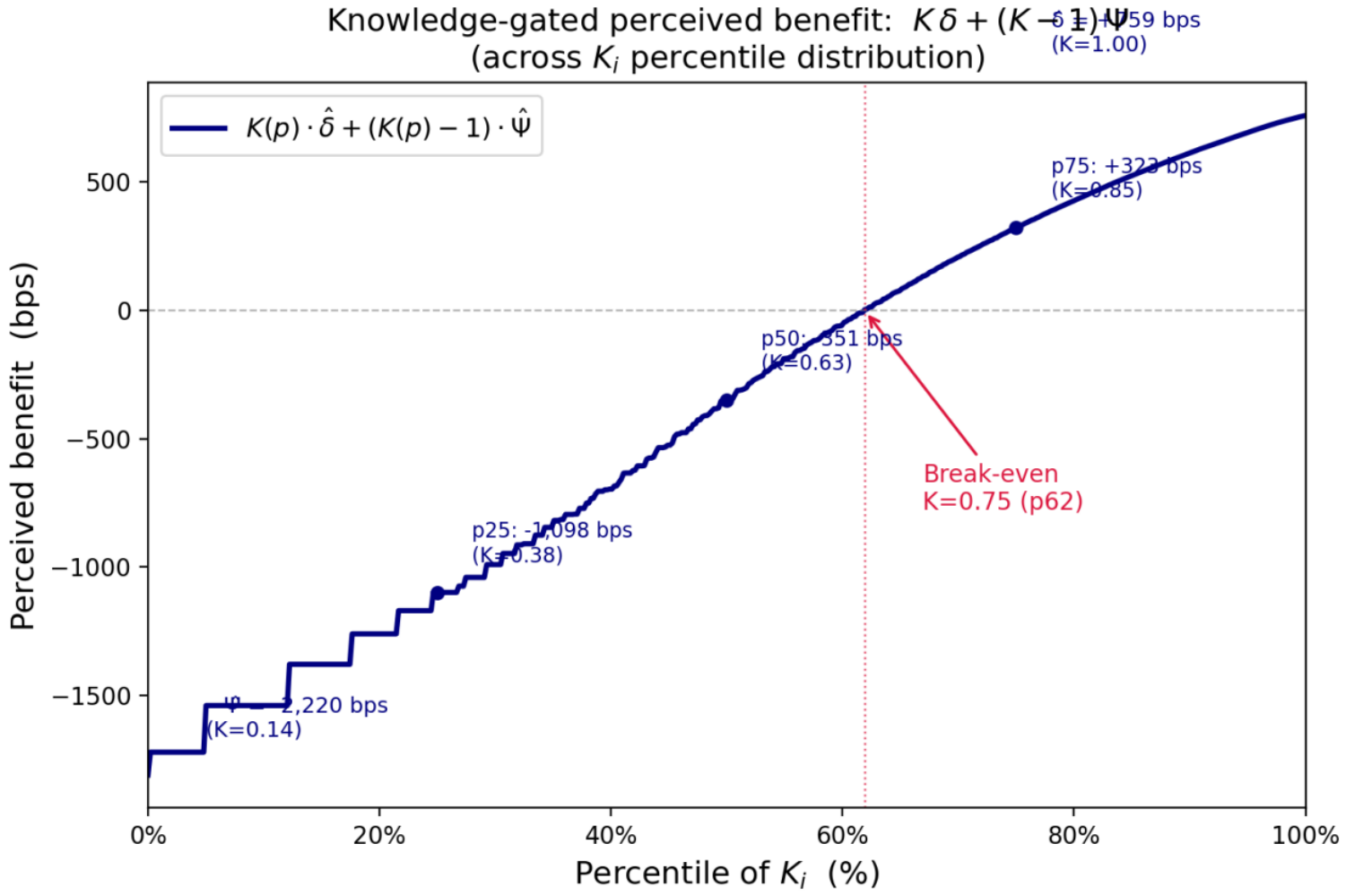


Parameters	Meaning	Identified from	Values
Ψ	Cognitive cost of adopting DeFi	DeFi knowledge distribution and monthly variation of $P(DEX)$	2220 bps*
δ	DeFi preference	Base level of $P(DEX)$	759 bps*
ρ	Time decay of shock	Monthly decay shape of $P(DEX)$	0.1008 (half-life=0.3 month)

Verification from matched moments: 12-month of P(DEX)



Break-even Point



Counterfactuals

Current level P(DEX)=32.08%

Scenario	Treatment	$\Delta P(DEX)$
Mild education	Clip left tail traders to current 75% level of K	+0.90 p.p.
Moderate education	Clip left tail traders to current 50% level of K	**+4.44 p.p.**
Aggressive education	Clip left tail traders to current 25% level of K	**+9.68 p.p.**
Market quality improve	Gas declines to 1/10 of 2023's level	+3.29 p.p.
Safe CEX	No CEX collapse events ($\tau_c = 0$)	-0.63 p.p.
Evil CEX	FTX-like events every quarter	+1.63 p.p.

Cognitive cost is the main channel for increasing DeFi adoption, among any other treatments.

Conclusion and Implication

Wrap up findings

- CEX traders do not use more DeFi after FTX collapse. They moved to large CEXs or left the market.
- **Cognitive barrier is the first order deterrent factor.** If you don't know the option, in what way you can choose it?
- If they know the difference between CeFi and DeFi, 30% more traders will try DeFi.

Implication

- **Industry**: Promote DeFi by the trustless value of decentralization rather than gambling (i.e., DeFi education).
- **Regulator**: Strict scrutiny and supervision on CEX are essential and urgent to protect investors - because they will stay in CEX no matter how bad it is.