Rotman

DISCUSSION OF: *A MODEL OF THE OPTIMAL SELECTION OF CRYPTO ASSETS*

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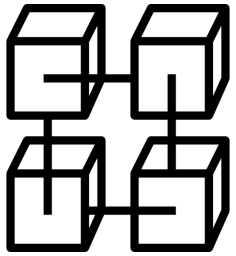
Discussion by: Andreas Park

November 14, 2019

2019 Philadelphia Fed FinTech Conference

Rotman School of Management
UNIVERSITY OF TORONTO

CRYPTO ASSETS: LIVE ON A DISTRIBUTED LEDGER/BLOCKCHAIN



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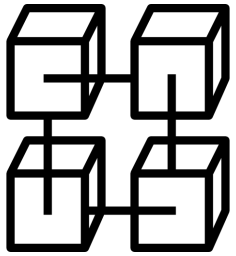
- What is a blockchain?
- A "joint, single system"



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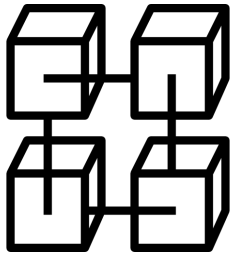

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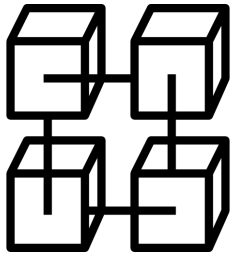

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- Features:
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  - guaranteed execution of code
- Promise:
  - open platform
  - global reach
  - low friction, automatable finance

BLOCKCHAIN ≠ BITCOIN/CYPHERPUNKS

3,702 views | Nov 4, 2019, 08:59am

Microsoft To Help Enterprises Mint Their Own Ethereum Tokens

from Forbes

Michael del Castillo Forbes Staff

Crypto & Blockchain

I cover enterprise adoption of blockchain and cryptocurrency.

https://www.forbes.com/sites/michaeldelcastillo/2019/11/04/microsoft-to-help-enterprises-mint-their-own-ethereum-tokens/#5048848a18f9

Azure Blockchain Tokens [...] lets enterprises, or anyone really, design, issue and manage a wide range of assets,

1

Currently, the platform is a permissioned version of the ethereum blockchain that uses Microsoft's Azure cloud computing.

In the future Azure Blockchain Tokens will interact with the public Ethereum blockchain or even at distributed ledgers created by some of Microsoft's own competitors.

THREE FALLACIES FOR CRYPTO-ASSETS

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CRYPTO ENTITIES =
TRADITIONAL FIRMS

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- Security
- Throughput
- Functionality
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Legal/Regulation

Accounting

Economic functions

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- state-dependent utility
- incentives
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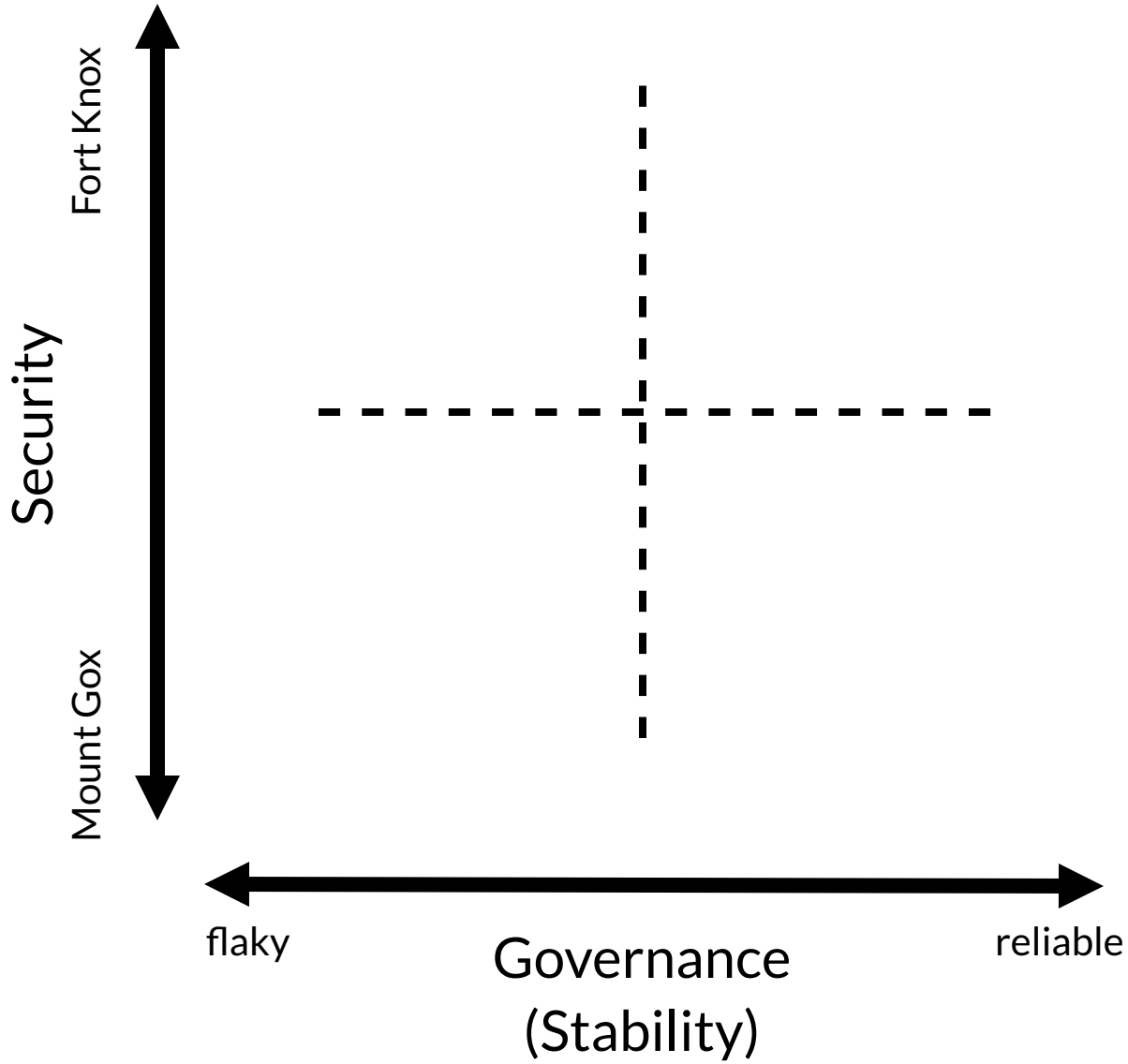

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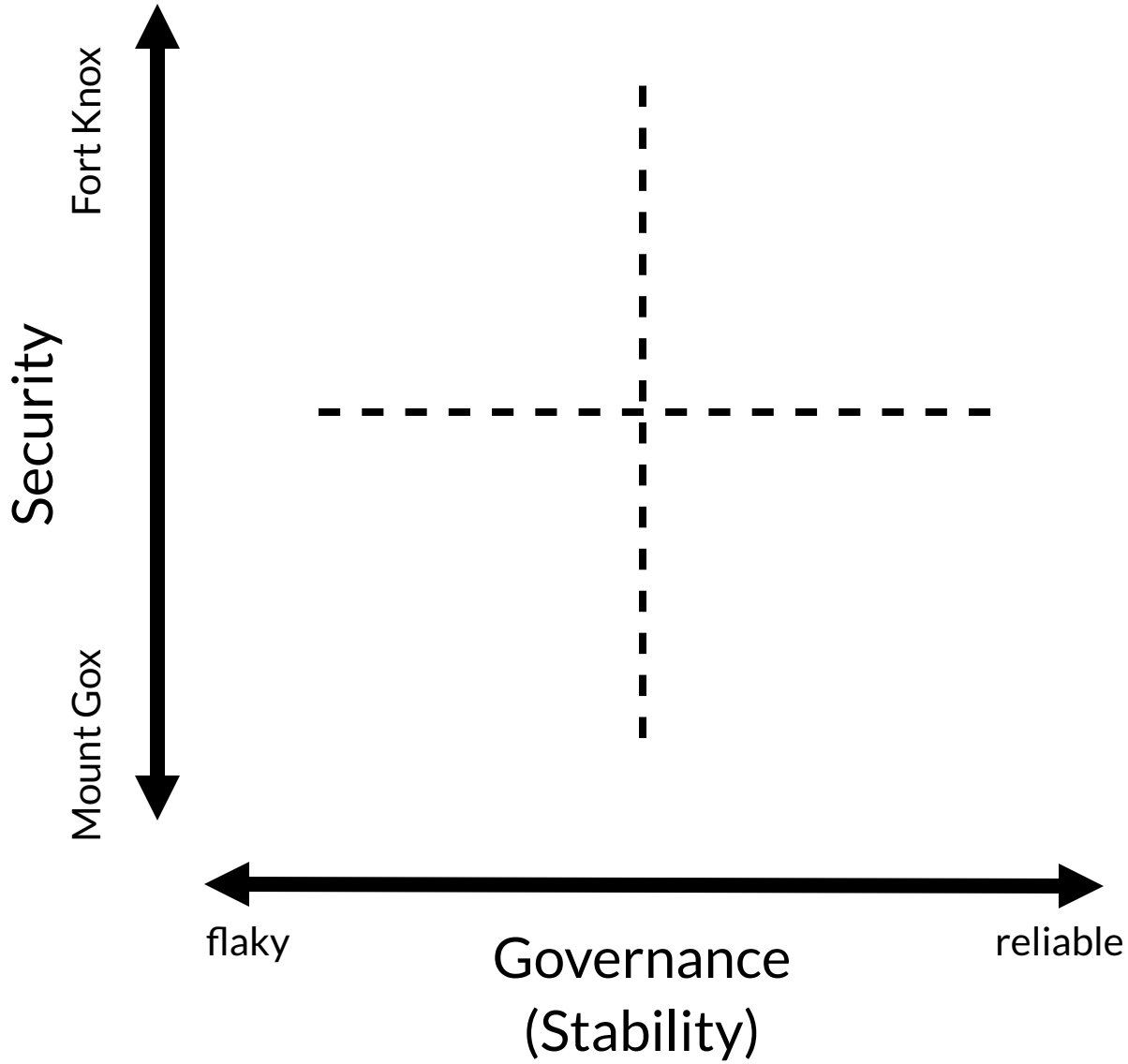

FED
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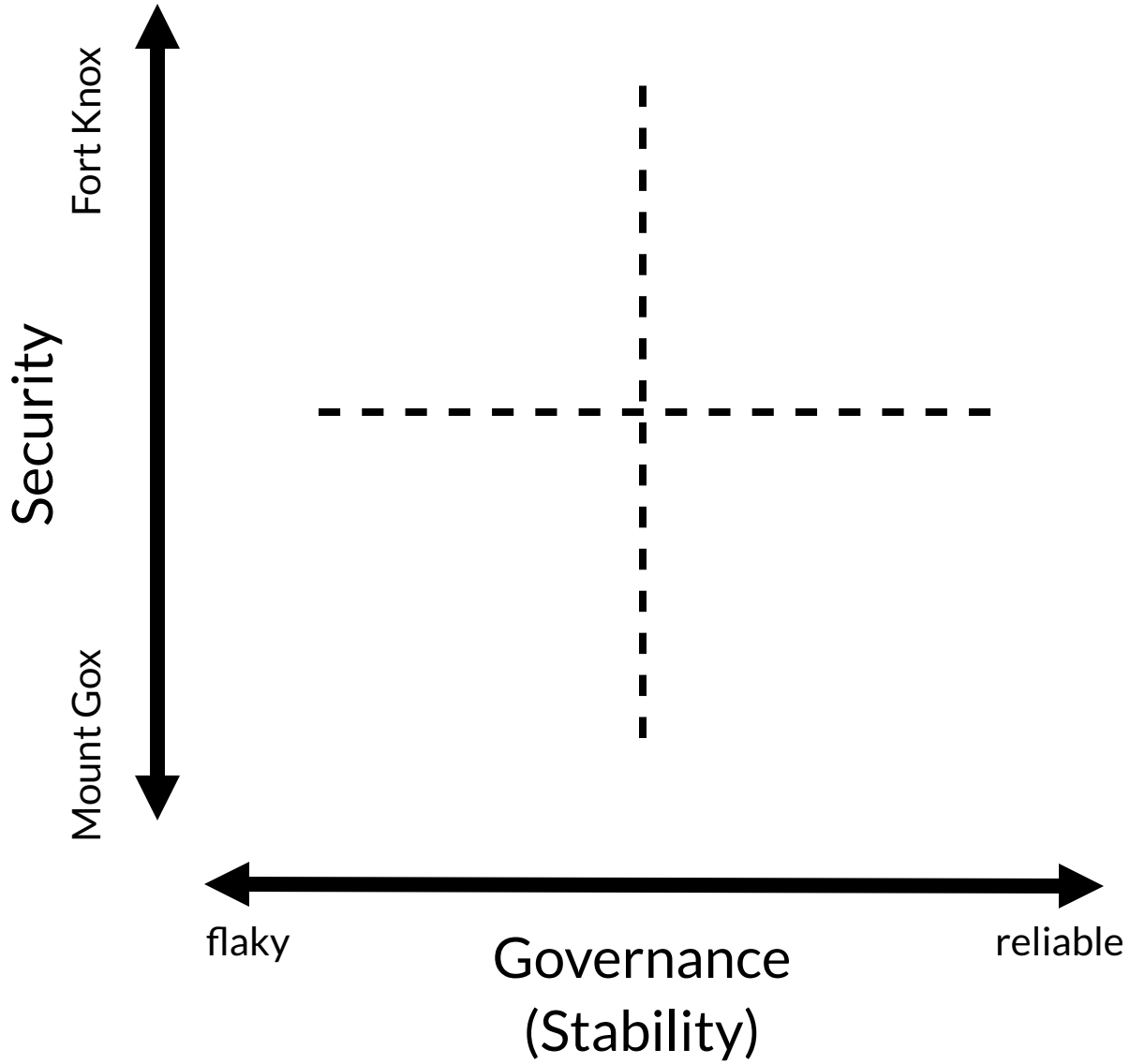

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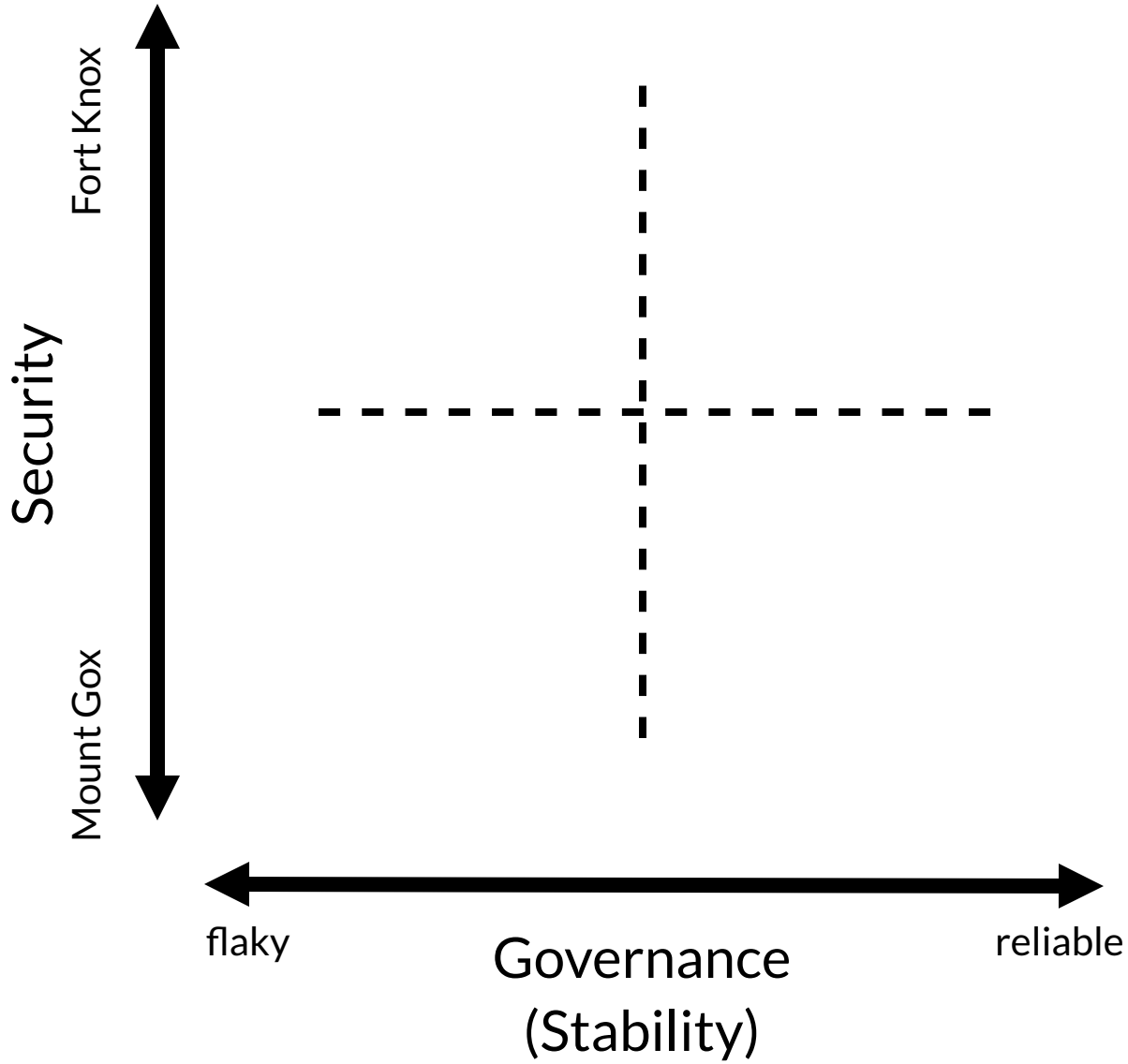

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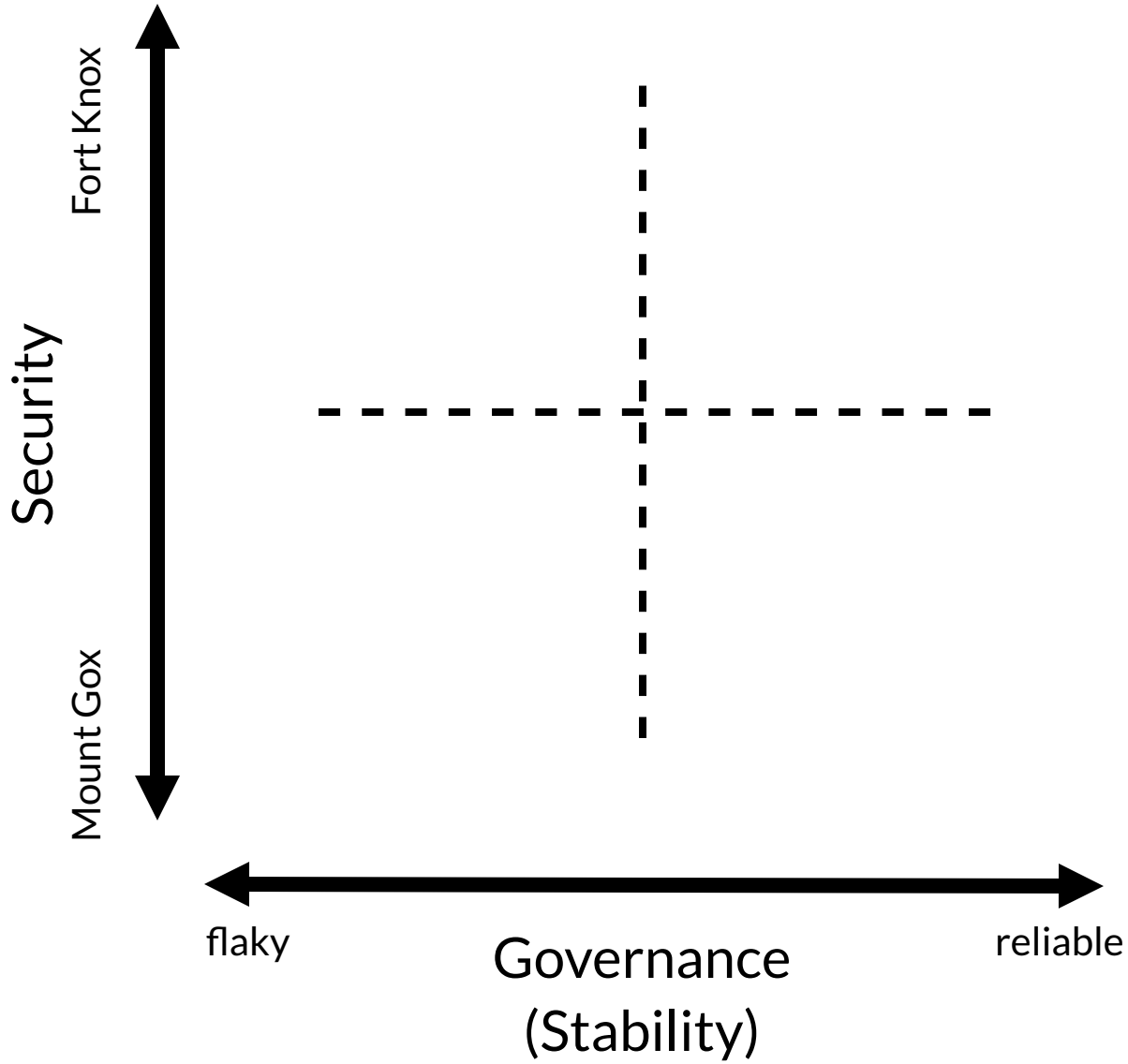

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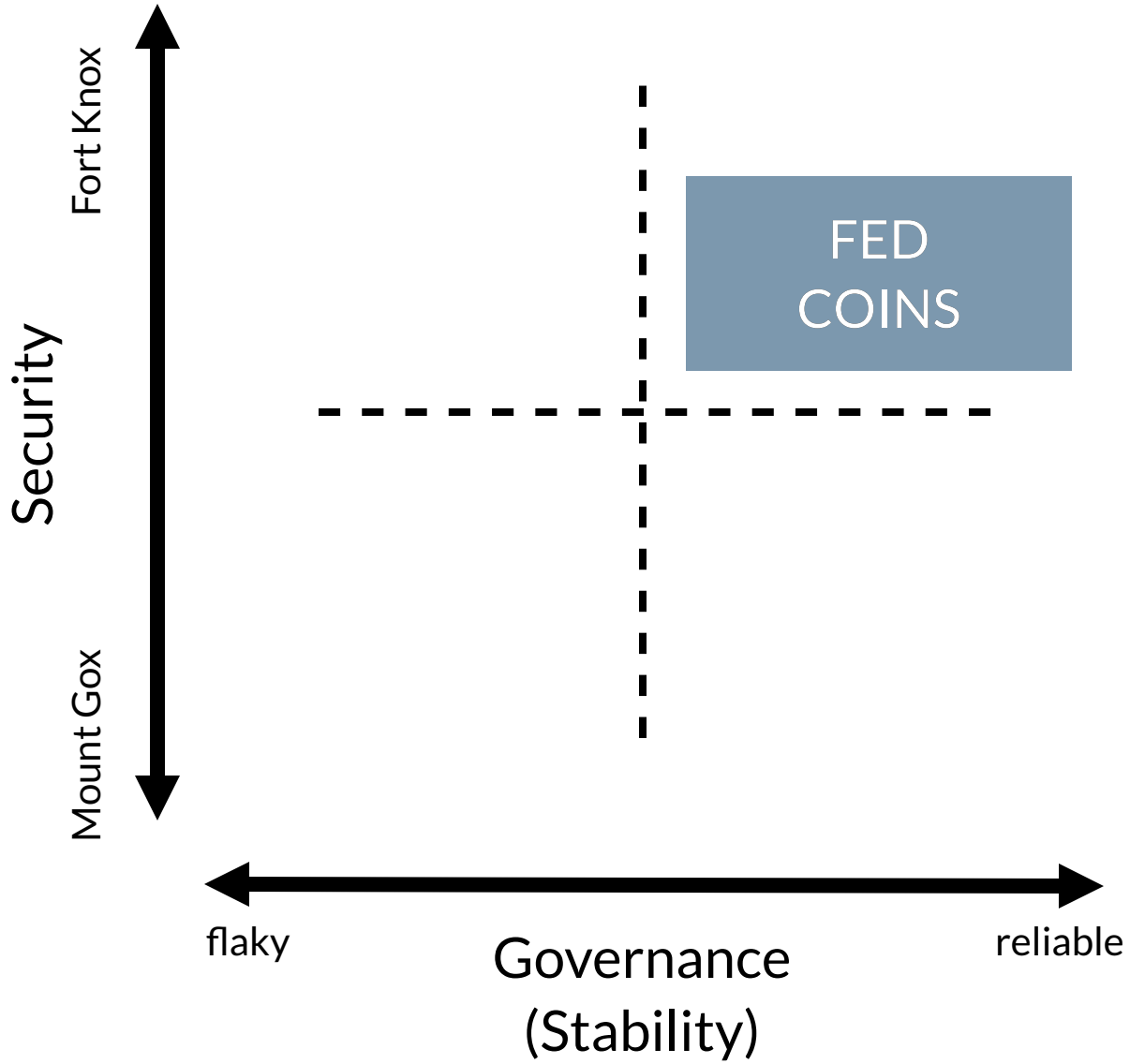

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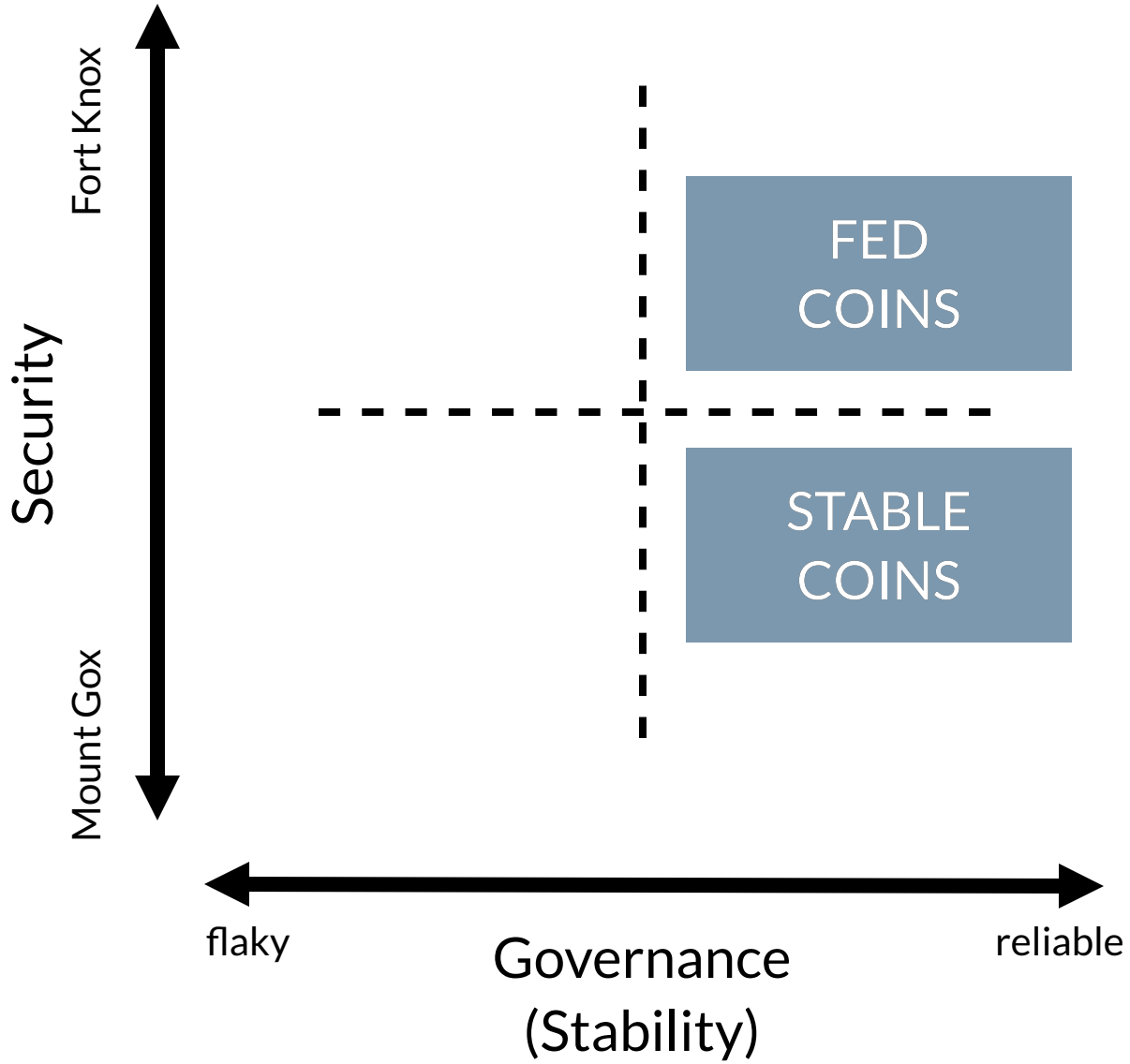

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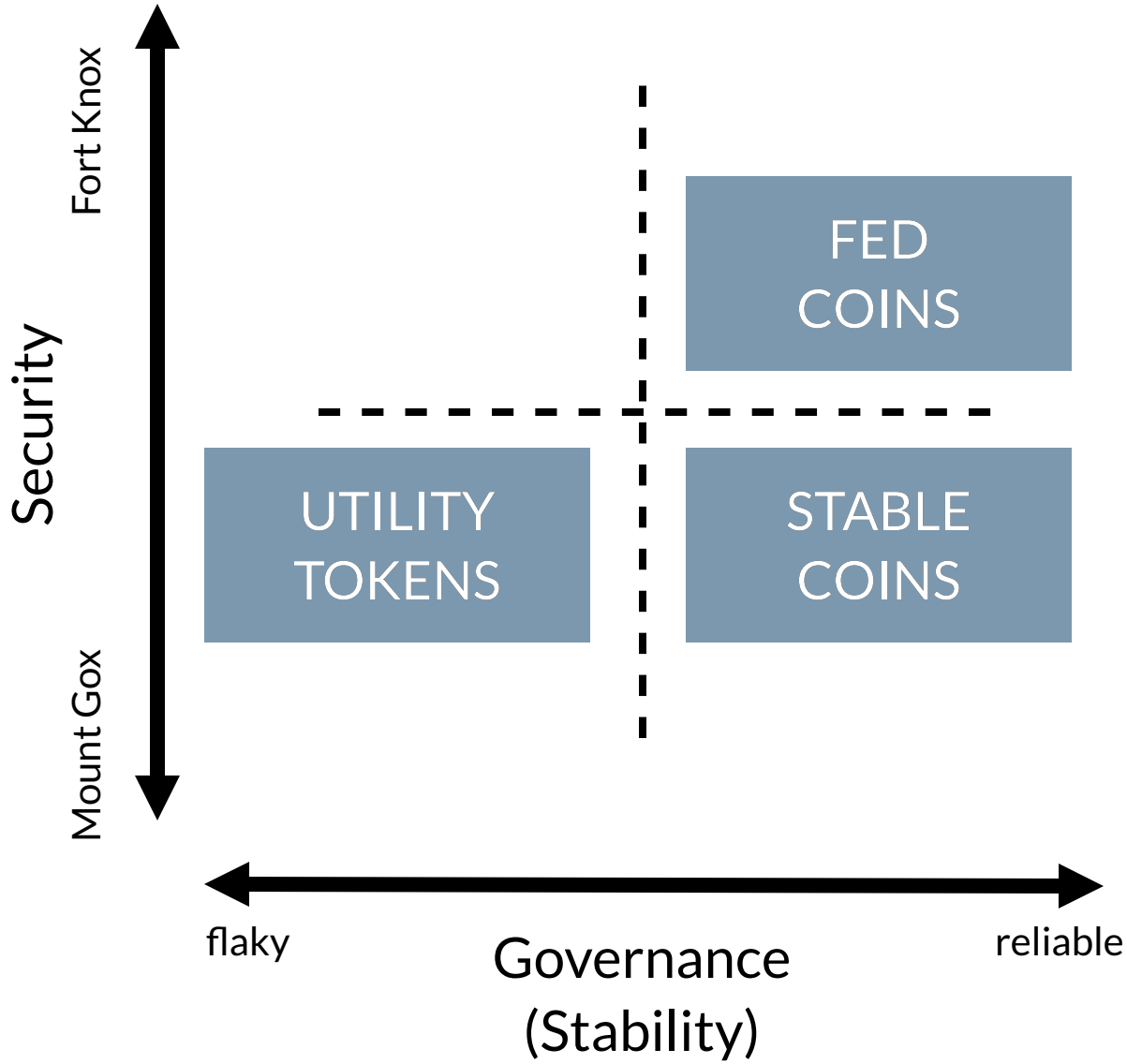

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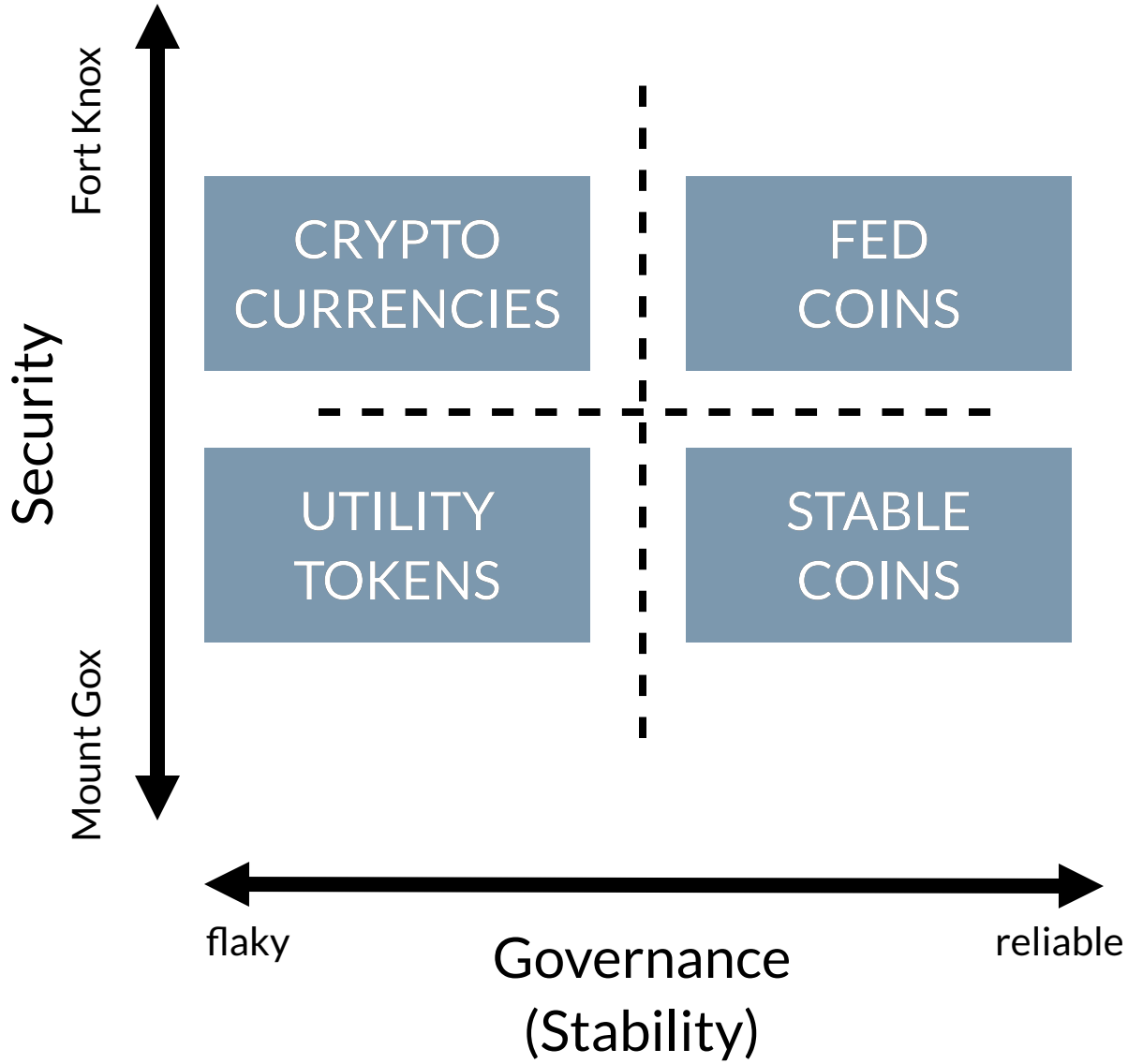

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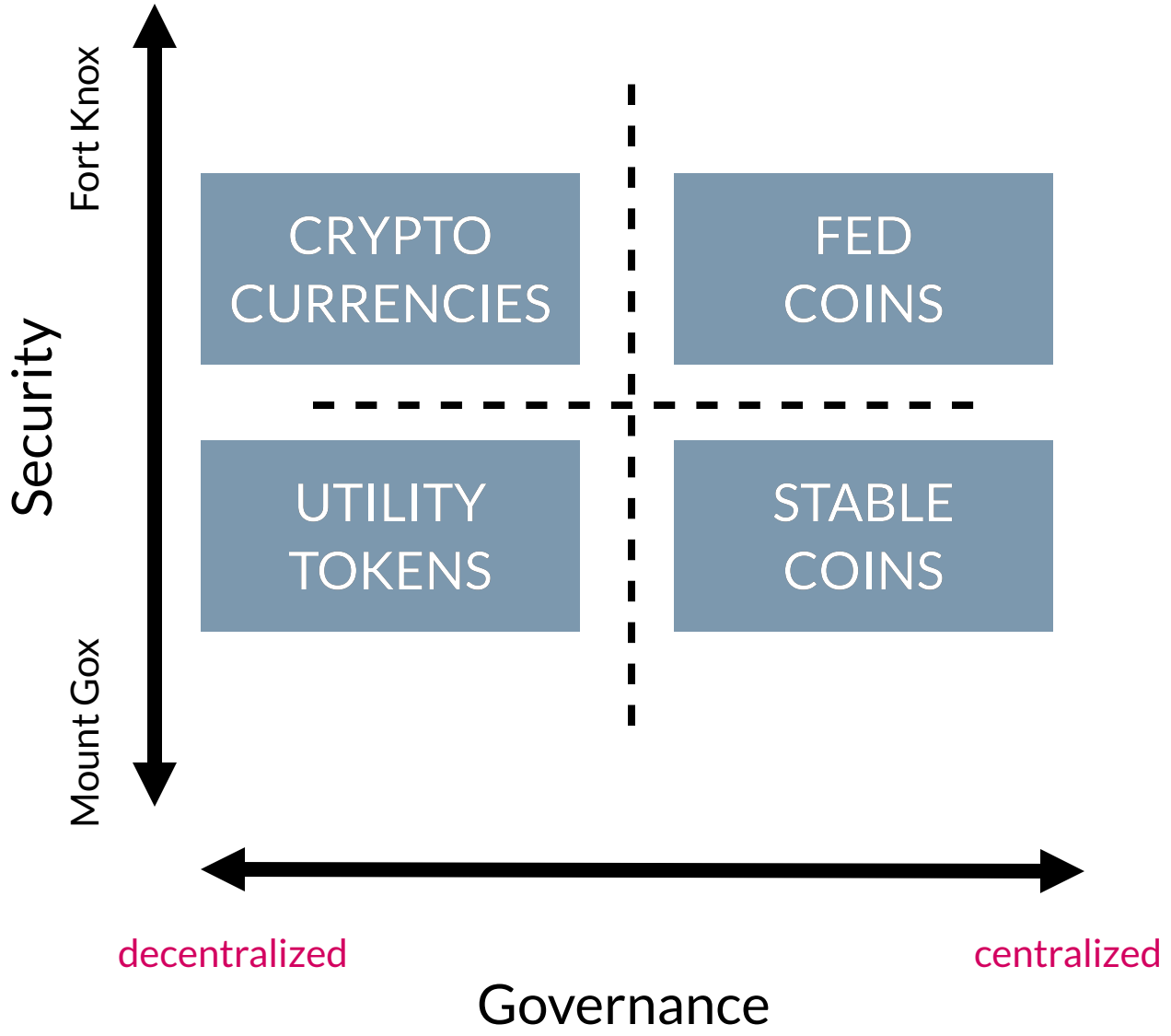

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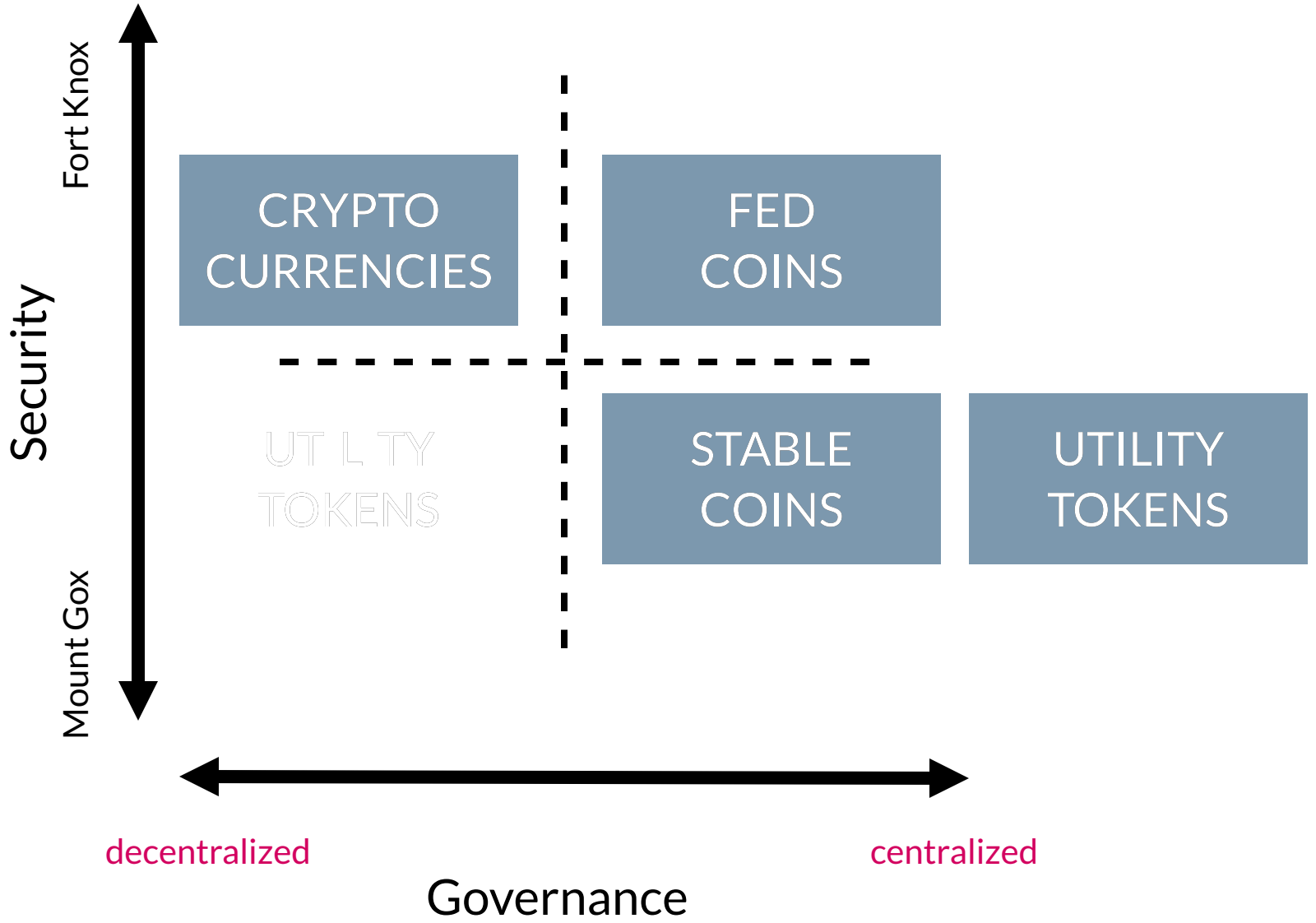

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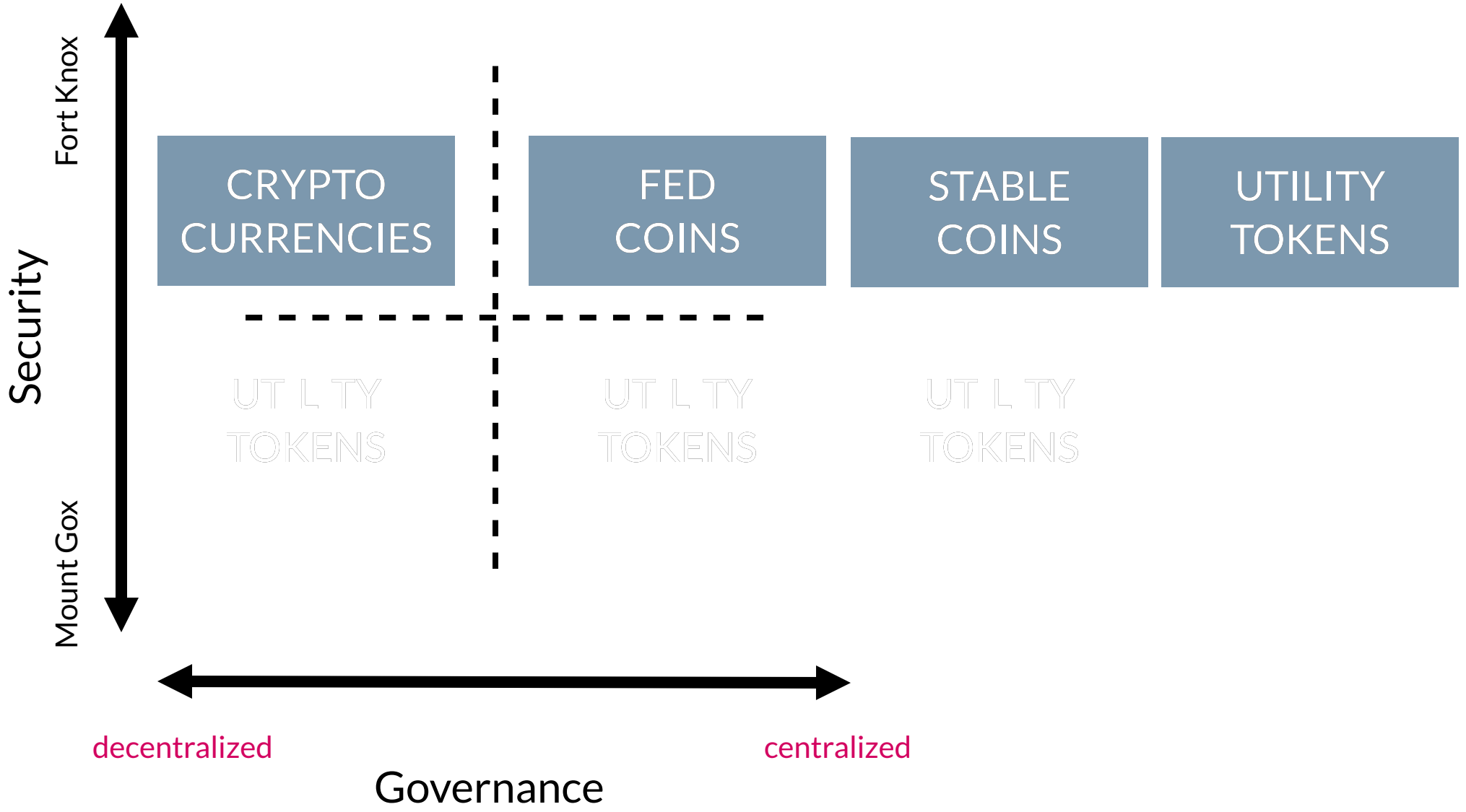

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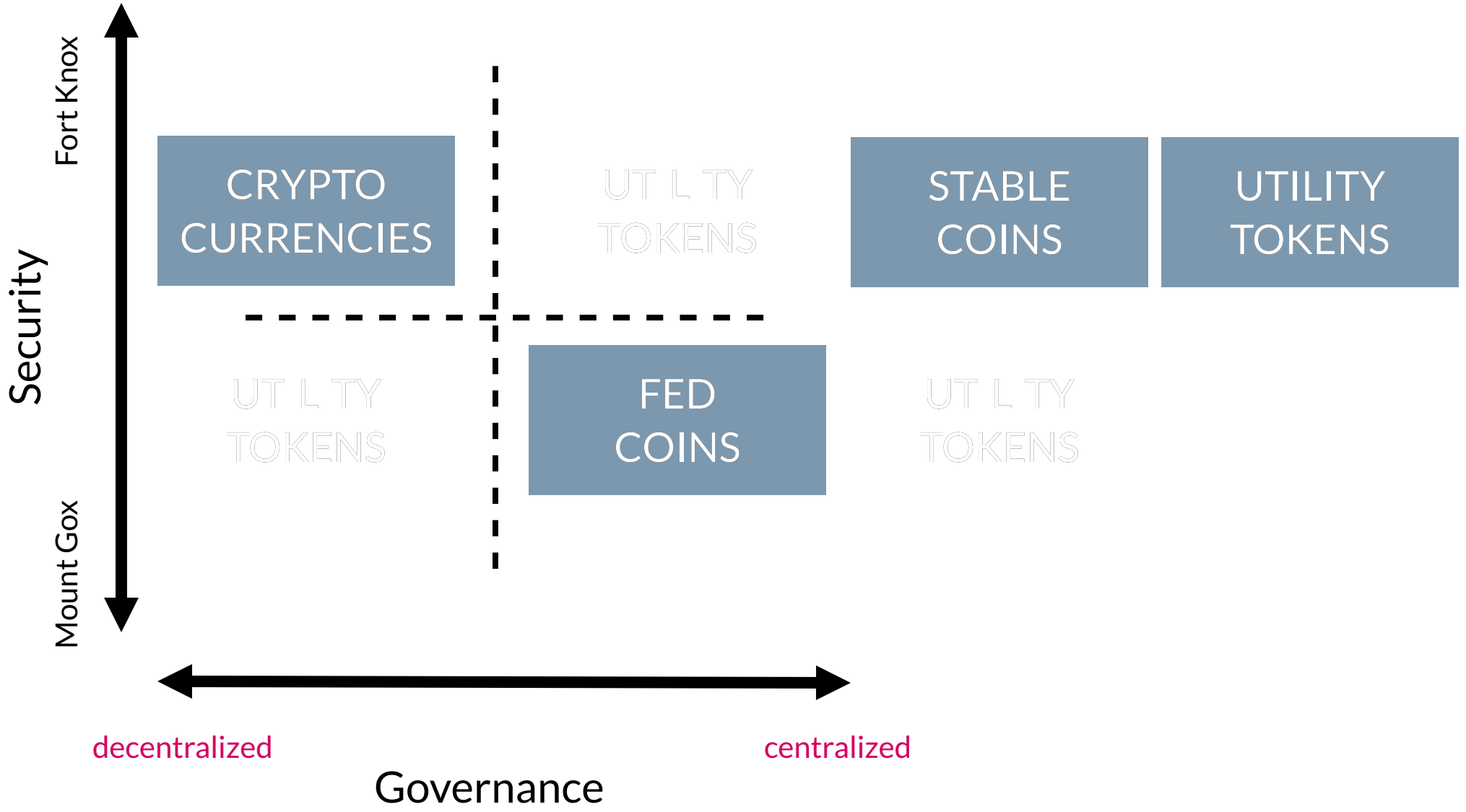

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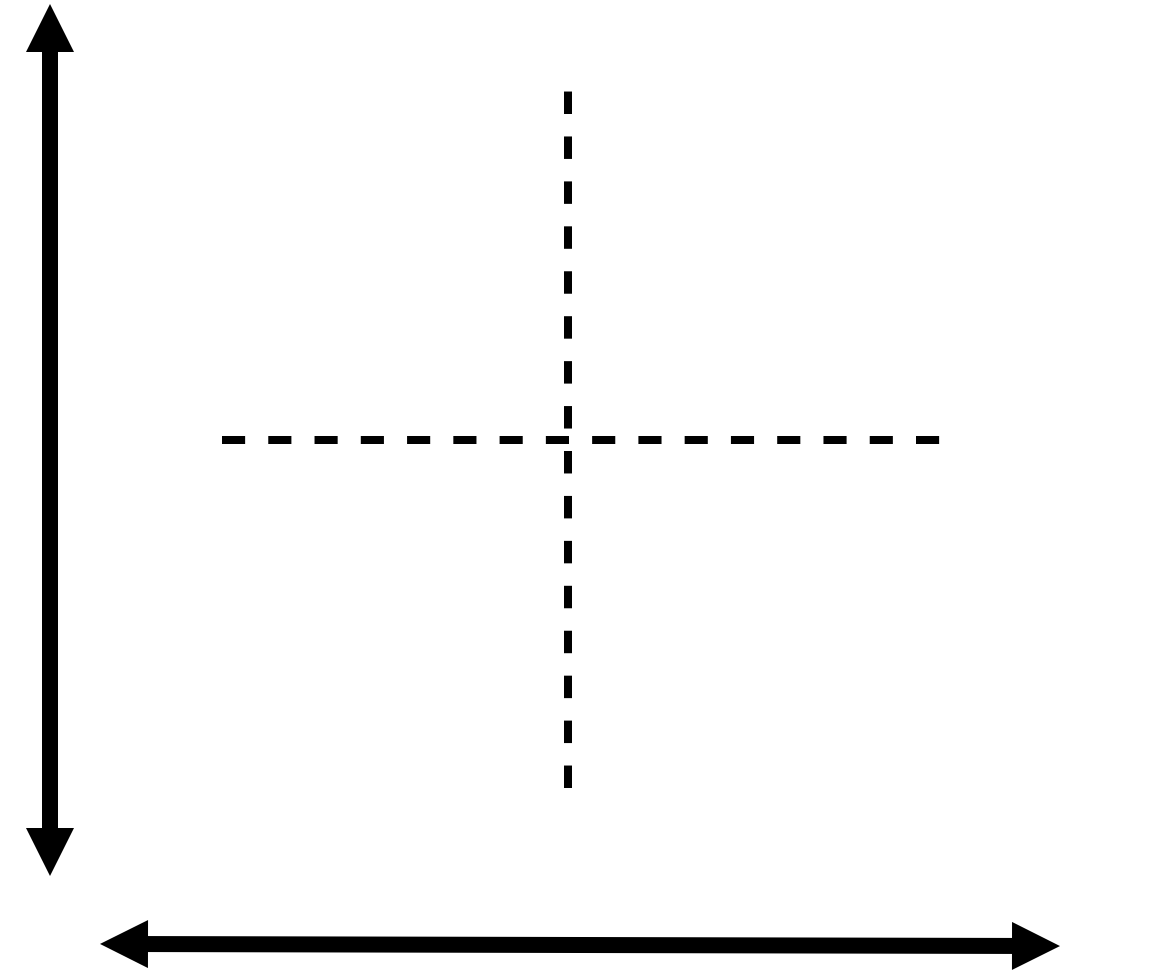

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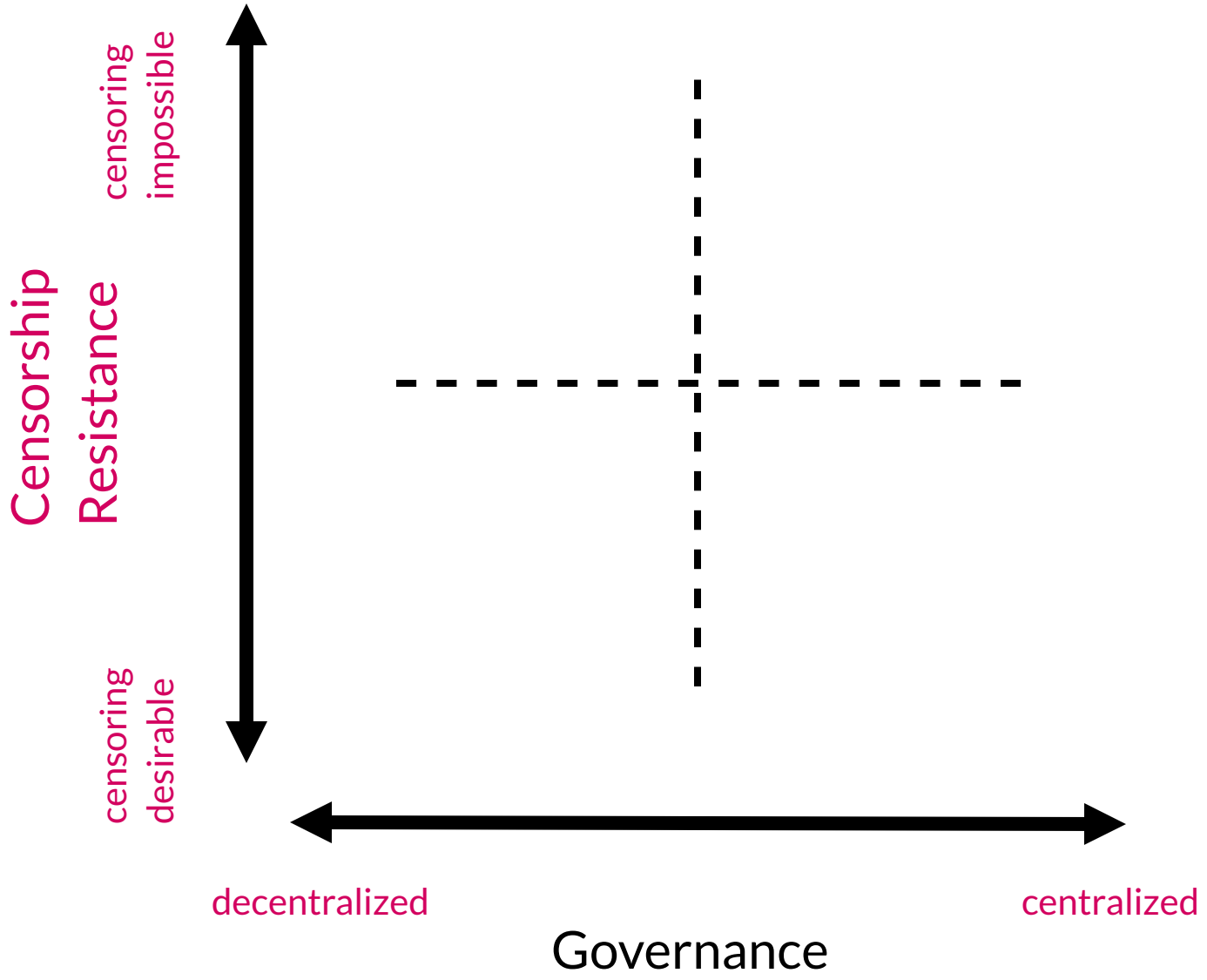

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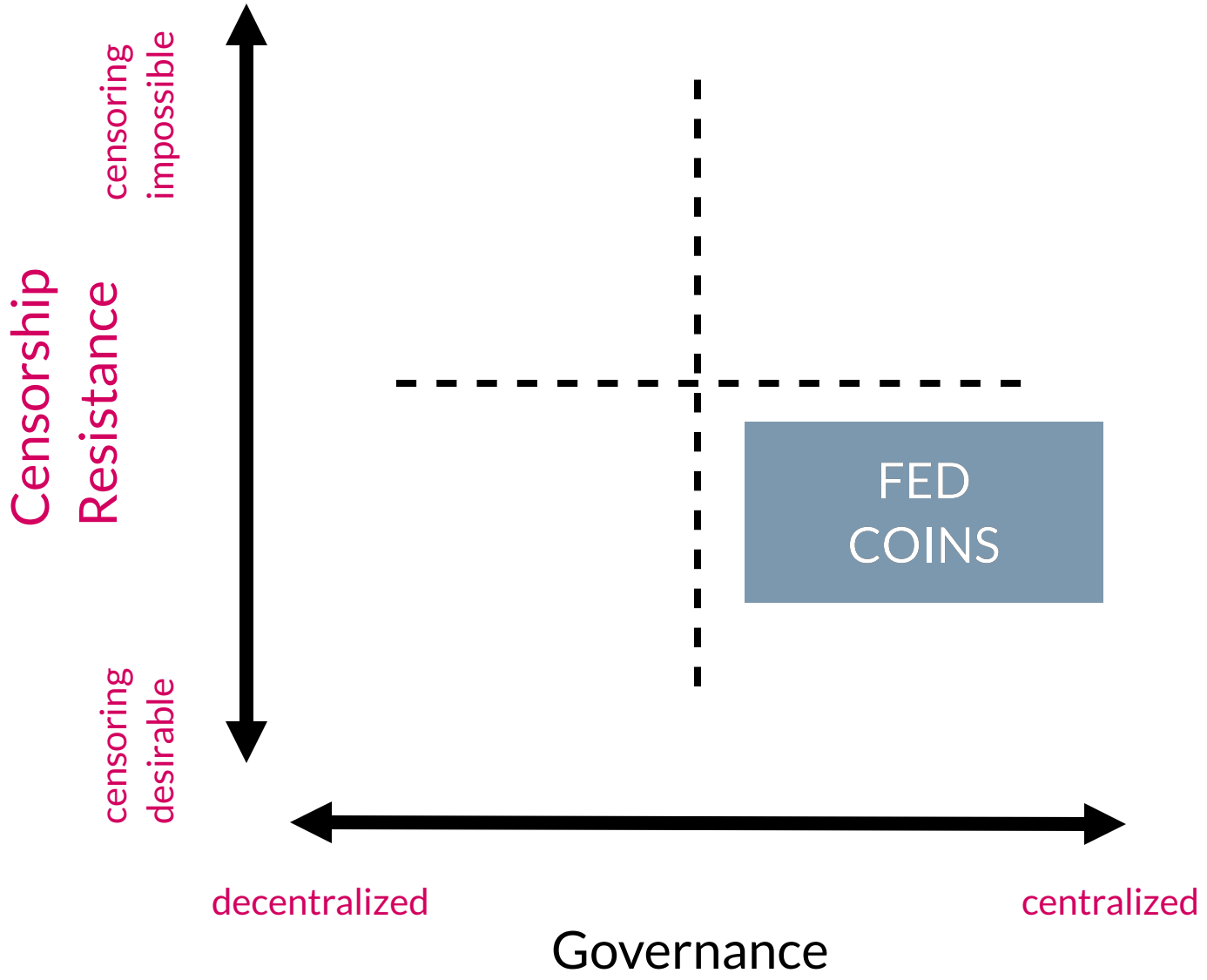

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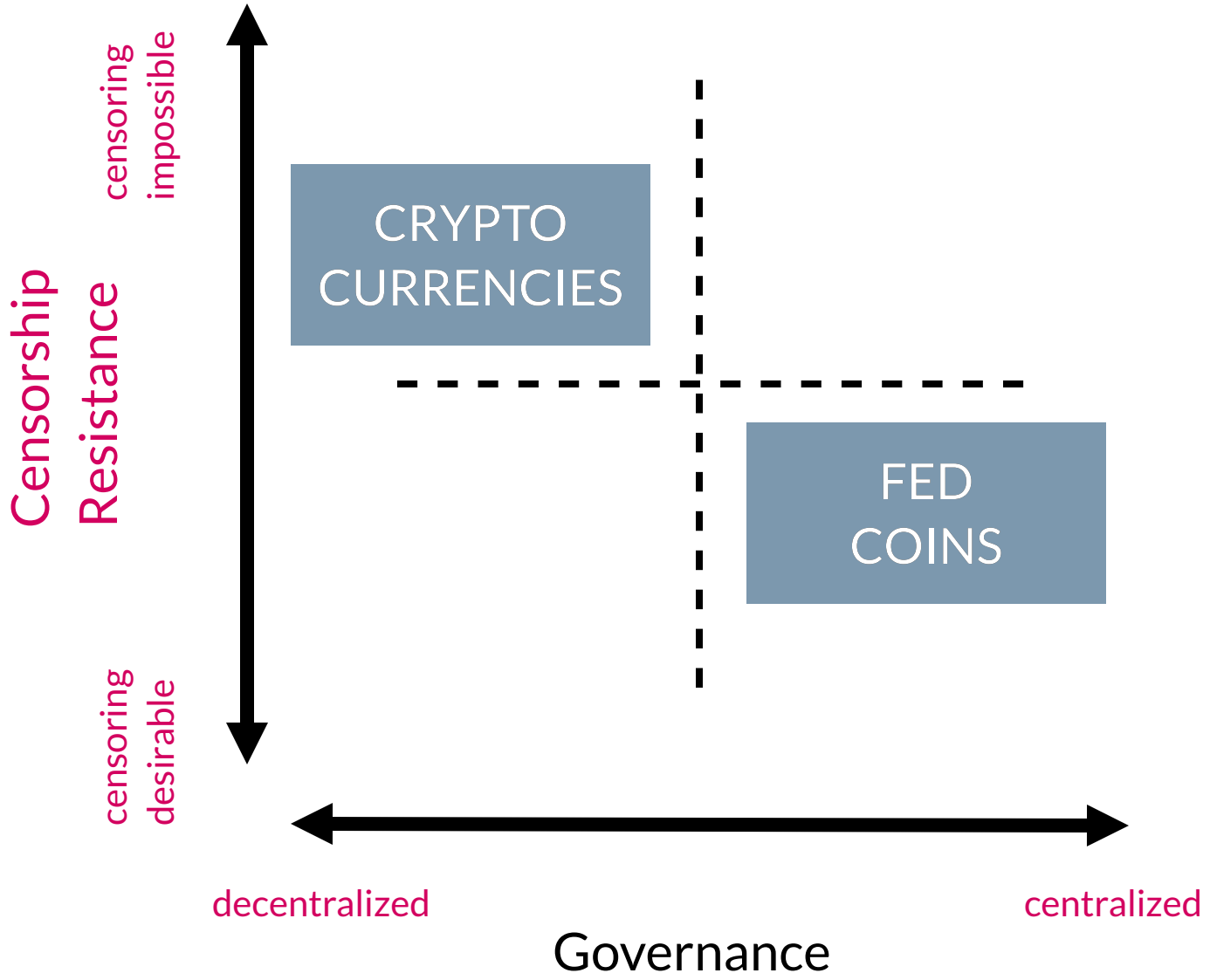

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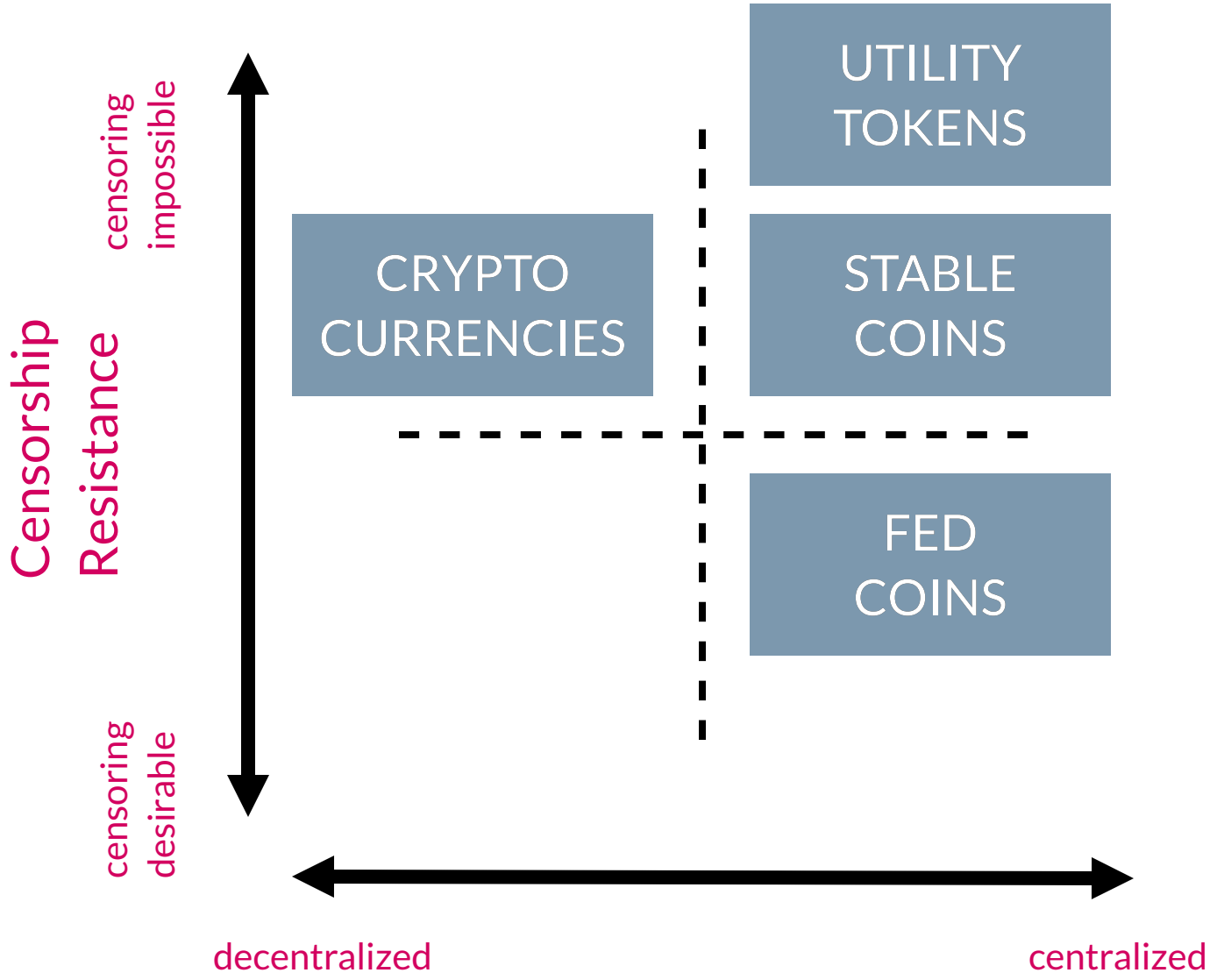

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Economic function
- some examples -

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- Which incentives do they provide to issuers and users?
- What externalities do they create among users?
- Which state-dependent utility do they yield?

HOW CAN WE CLASSIFY CRYPTO ASSETS?
A TAXONOMY BY ON- VS. OFF-CHAIN

ON-CHAIN LINK

CRYPTOCURRENCY

- native to a blockchain for payment
- examples: Bitcoin, Bitcoin Cash, Ether, Lumens, Cardano

UTILITY/PAYMENT

- build on top of or linked to an existing blockchain
- various uses, not just payments
- could use blockchain natively or as payment and settlement tech

OFF-CHAIN LINK

CBDC

STABLECOIN

EQUITY/DEBT

DERIVATIVES

- blockchain is a value transfer infrastructure
- claims to revenues, cash flows, assets (e.g. real estate)
- may use CBDC or Stablecoin in payments/transfers

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POSSIBLY TRANSFORMATIVE FOR BUSINESS & FINANCE

settlement tech

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TECH STACK LAYER	ROLE OF TOKEN
SERVICE	*USAGE FEE, PAYMENT, OR INCENTIVE*
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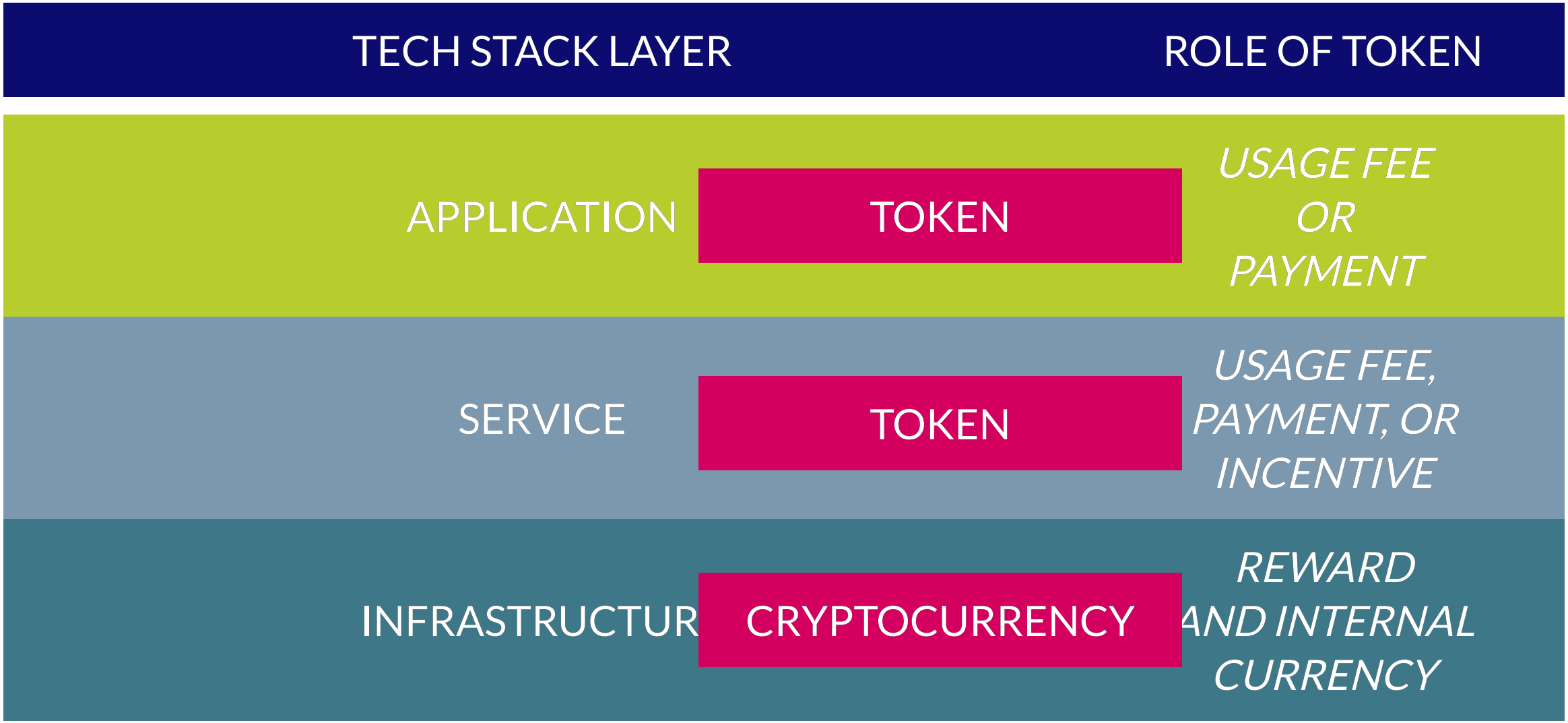

NEXT FEATURE OF THE MODEL: THE SELECTION "APP"

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Traditional Portfolio Theory

- collect information about assets' features such as expected returns and risks
- combine assets in a portfolio so as to maximize expected utility
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- usually: $1 = E[mR]$ or $p = E[mx]$

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Investment Approach in Paper

- sequence of pairwise comparisons of assets (similar to first application of Facebook as per "The Social Network")
- investors iteratively pick preferred asset
- aggregate choices determine returns
- changes to investment get assessed based on expected returns alone

NEXT FEATURE OF THE MODEL: THE SELECTION APP

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- In paper, utility is represented as weights in the acceptance probability

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- Won't investors end up with single-asset portfolio? Or will there be diversification?

- Is this meant to be a model or a proposal for a commercial product?

FINAL THOUGHTS

- There are by now a lot of papers that study crypto-assets like normal assets. BUT: Do we really understand their economic functionality?
- This paper: step in the direction of understanding crypto-assets as investments.
- My preference: anchor assumptions in primitives:
  - What features of crypto-assets give rise to "stability" and how does it affect payoffs?
  - How do features of "security" affect payoffs?
  - What type of preferences support the binary-choice equilibrium?

@financeUTM

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youtube.com/user/andreaspark2812/

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