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Bernstein University US 2025

Payments Primer

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See Disclosure Appendix of this report for important Disclosures and Analyst Certifications

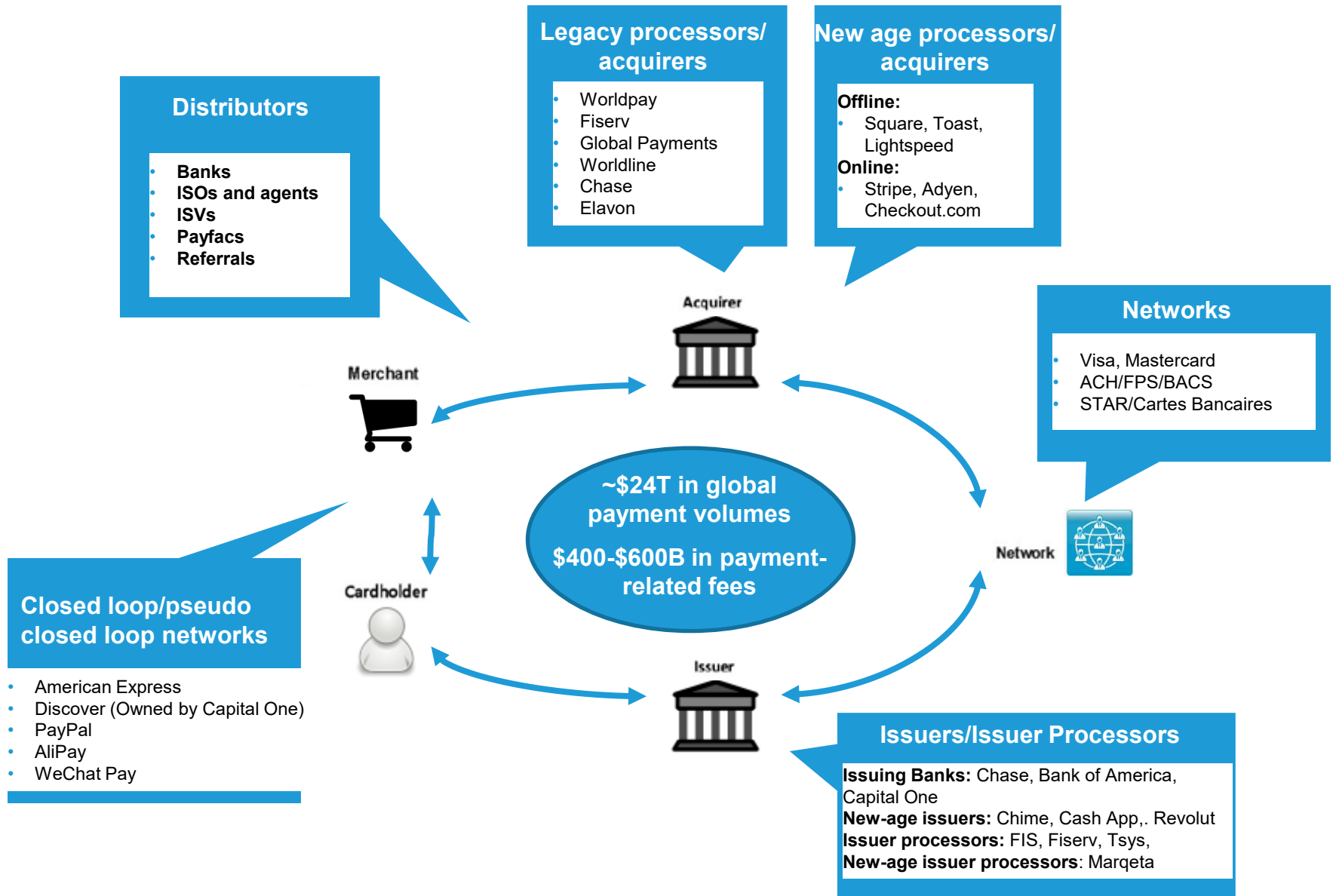
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Agenda

- **The Payments value chain**
- **Secular growth drivers and the changing growth algorithm**
- **Stablecoins**
- **Agentic Commerce – who wins / loses?**
- **Payments: Ripe for stock picking?**
- **A look at merchant acquirers**

The payments value chain

Payments value-chain



Large-Cap Players in Payments

Networks:



Closed-loop:



Issuers:



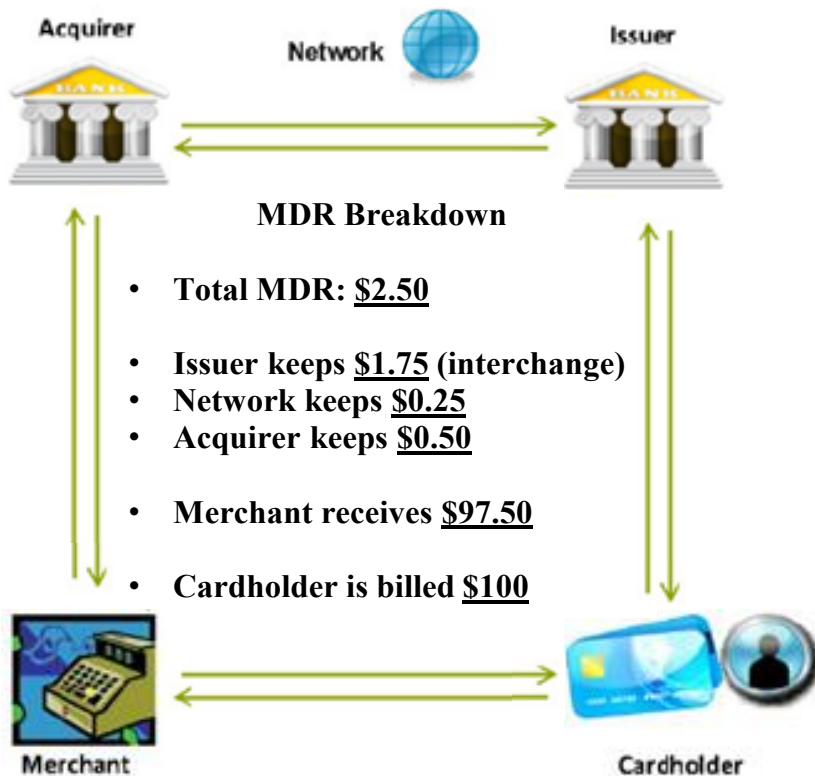
Acquirers/Processors:



Digital Wallets:



How does a card transaction work?

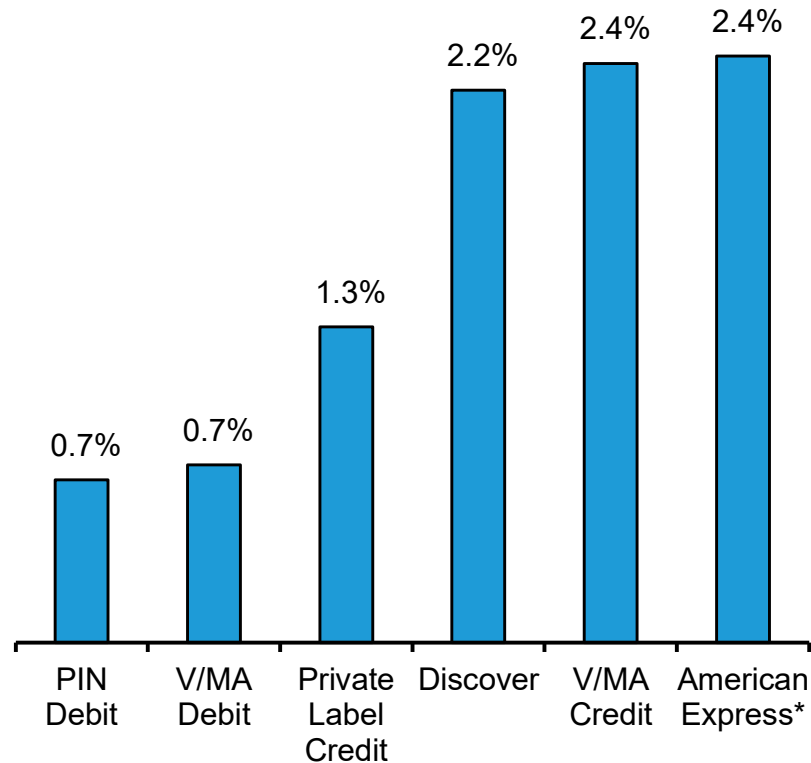


For illustrative purposes only..

- + Interchange rates vary significantly by country, transaction type, merchant, context
- + Acquirer fees vary from 5-150bps depending on the size and type of merchant
- + Network fees vary from 10-100bps depending on the type of transaction (domestic vs. cross-border) and country
- + Issuers keep the lion's share from a card transaction, and also earn economics beyond a transaction i.e., from interest income, etc.

Merchant discount rates vary widely depending on transaction type..

Weighted Average Merchant Card Fees in the US (2024, %)

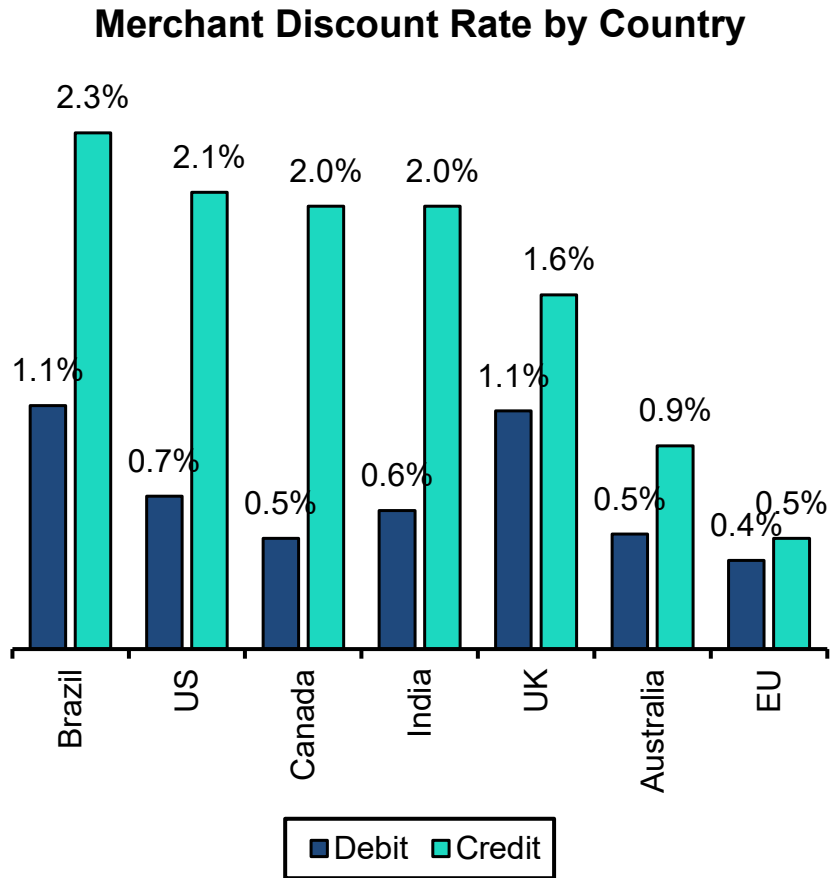


Source: Nilson, Retail Council of Canada, RBA, Demarest, Razor pay, Merchant Savvy, Bernstein analysis

*Includes third party issuers

**Average net merchant service charge

..and country



Source: Nilson, Retail Council of Canada, RBA, Demarest, Razor pay, Merchant Savvy, Bernstein analysis

*Includes third party issuers

**Average net merchant service charge

How consumers 'pay' around the world varies by country



We estimate US card payments (including P2P) represented a ~\$350-\$400Bn revenue pool in 2022 (global revenue pool is likely \$400-\$600Bn)

U.S. Card Payments Revenue Pool (Bernstein Estimates) 2022				Specialty B2B
Open Loop General Purpose	Closed Loop General Purpose	Private Label		P2P
Issuer Processors: 1-2% ~\$5-7B	Interchange: ~55-60% (\$30-40B)	100%	100%	100%
Networks: 13-15% ~\$30-35B				
Acquirers: 13-15% (~\$25-30B)				
Issuers - Interchange (net of network, processing fees): 25-30% (~\$60-70B)				
Issuers - Interest on Card Balances and Card Fees: 40-45% (~\$100-110B)	Interest & Fees: ~40-45% (\$25-30B)			
~\$220-240B	~\$50-60B	~\$40-50B	~\$7B	~\$2B
~66%	~18%	~13%	~2%	<1%

Under-appreciated truths in payments

+ Interchange is a solution, not a problem

- Interchange is a fee set by the networks, which a merchant's bank then pays to the issuing bank for card transactions
- It is contentious – often the target of litigation, regulation and disruption
- We believe interchange is brilliant. It creates incentives for issuers (including high-flying fintechs) to acquire customers and issue cards.

+ Conversion triumphs costs

- Cards drive conversion. For many merchants, CMO is just as important as (if not more important than) the CFO!

Secular growth drivers and the changing growth algorithm

Double digit revenue growth powered by evolving growth algorithm

The underpinning of sector bull thesis

Growth – a multiple stage story

1. Cash to card conversion story..

..smaller but still robust growth runway

2. Growth of value-added services..

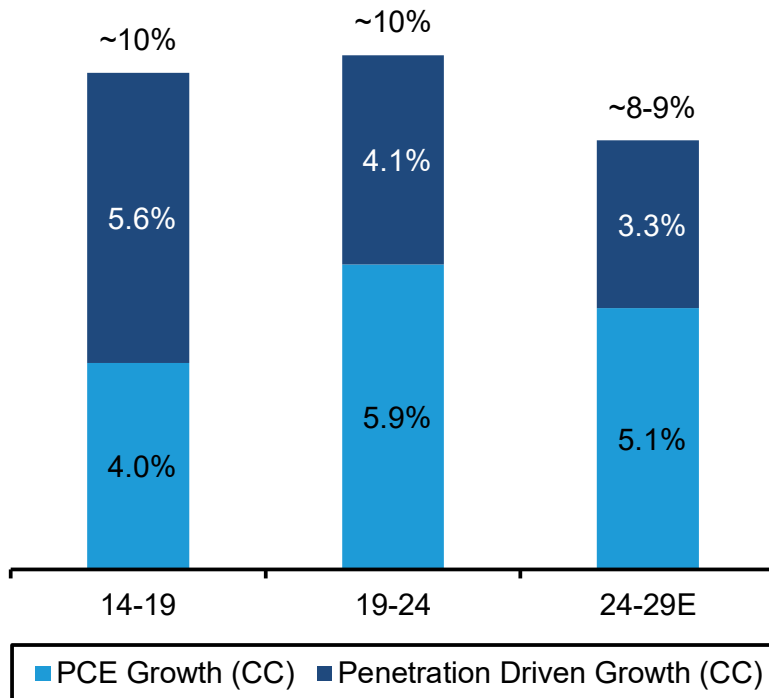
..provide the next leg of growth,

3. Optionality from new flows..

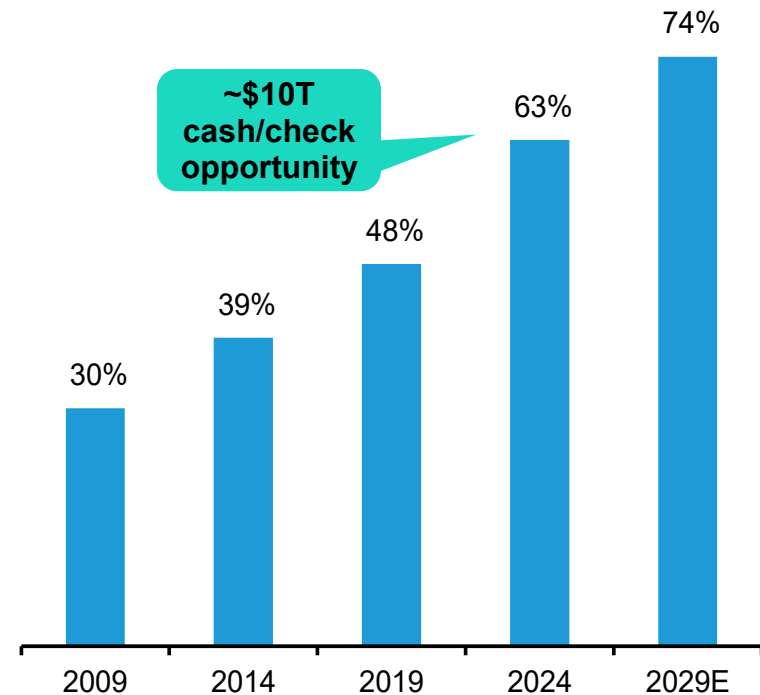
..e.g., B2C, B2B

1st phase – cash-to-card conversion driving HSD volume growth

Global Card Purchase Volume Growth Drivers (cc, ex. China)



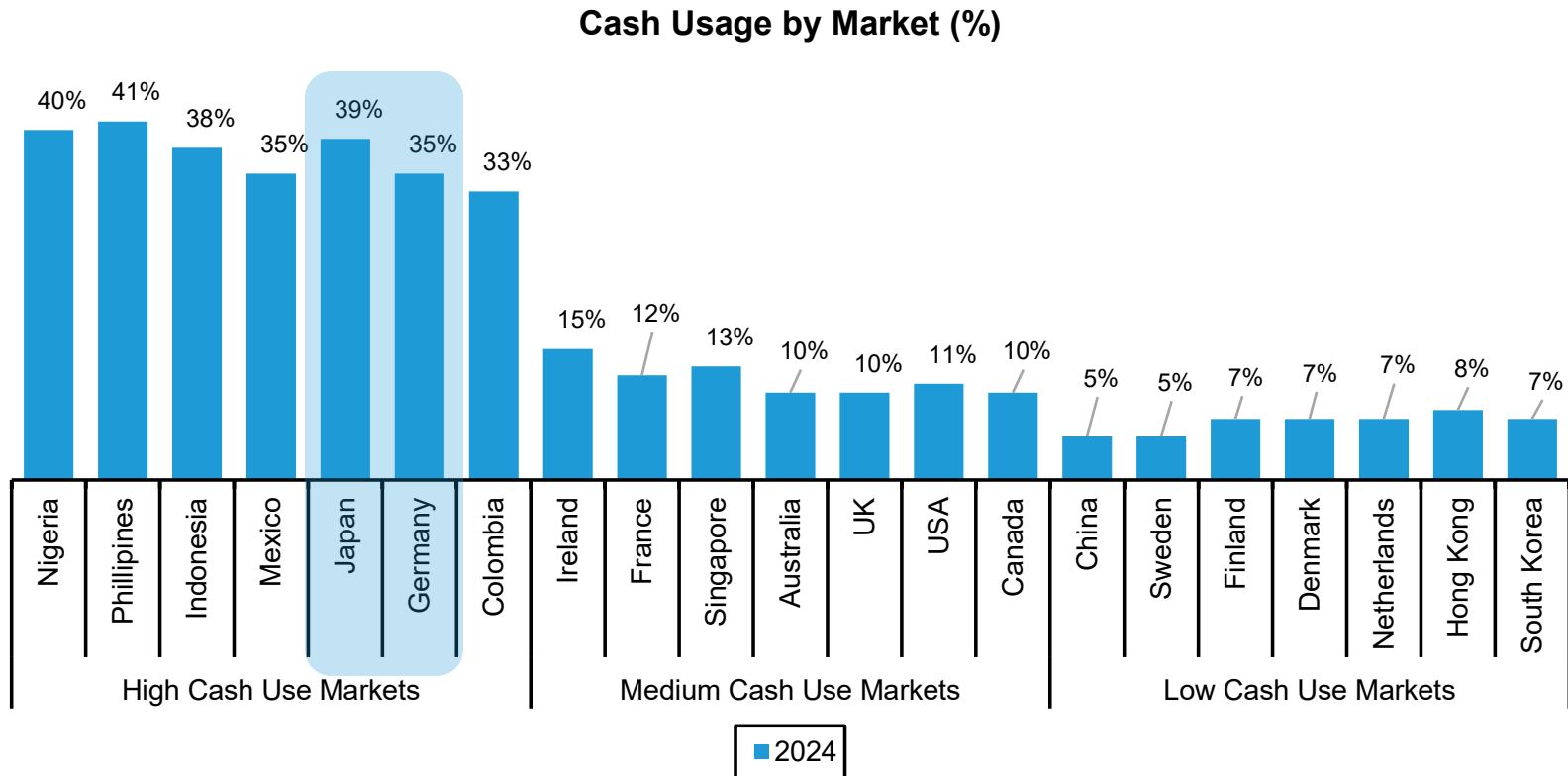
Card Penetration of Purchase PCE (Nominal and Adj. ex-China)



Growth will likely be slower vs. history but still robust

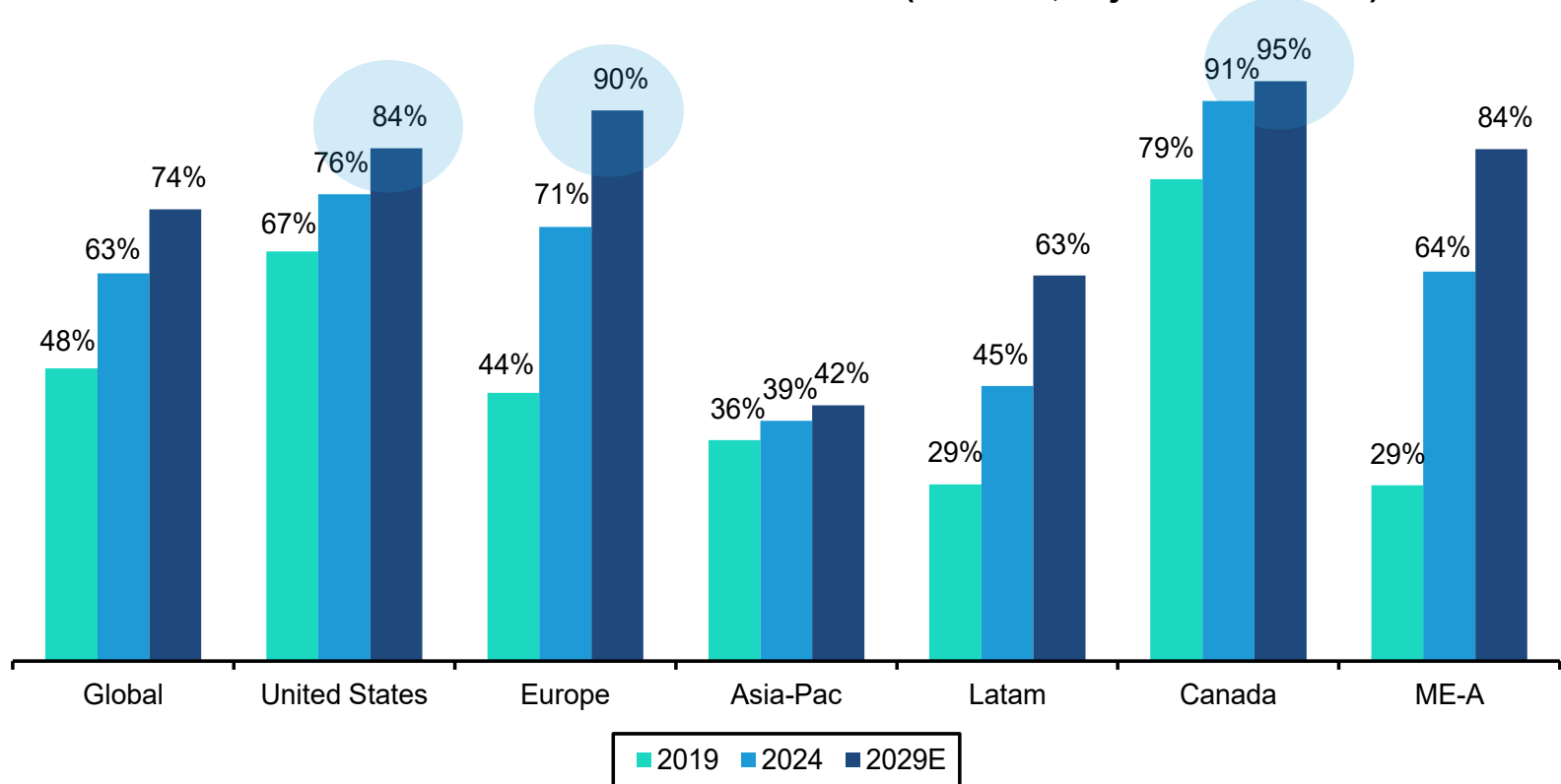
Cash usage is high even in certain developed markets

While cash usage has fallen over the years, there are markets with high cash usage that still exist today. Countries like Japan, Germany for e.g., have a strong cultural affinity towards cash, which is visible in the numbers..



However, in the next 5 years, card penetration in many developed markets will likely surpass 90%+ levels and Asia has its unique dynamics

Card Penetration of C2B Addressable PCE (Nominal, adjusted ex China)



Notes: PCE = Personal Consumption Expenditures, *historical volumes are adjusted for European payments regulation; card penetration adjusted for domestic schemes and US Private Label card penetration

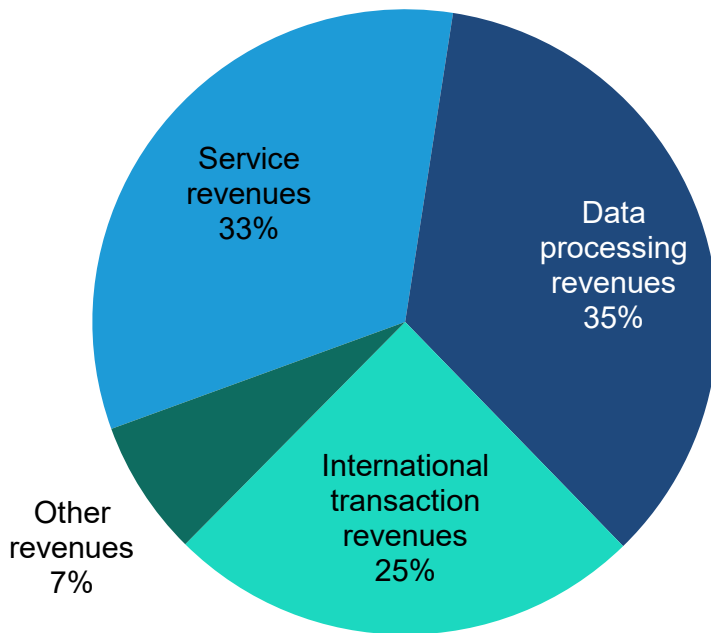
Source: Nilson, World Bank, IMF and Bernstein estimates and analysis

There is more opportunity in number of transactions..

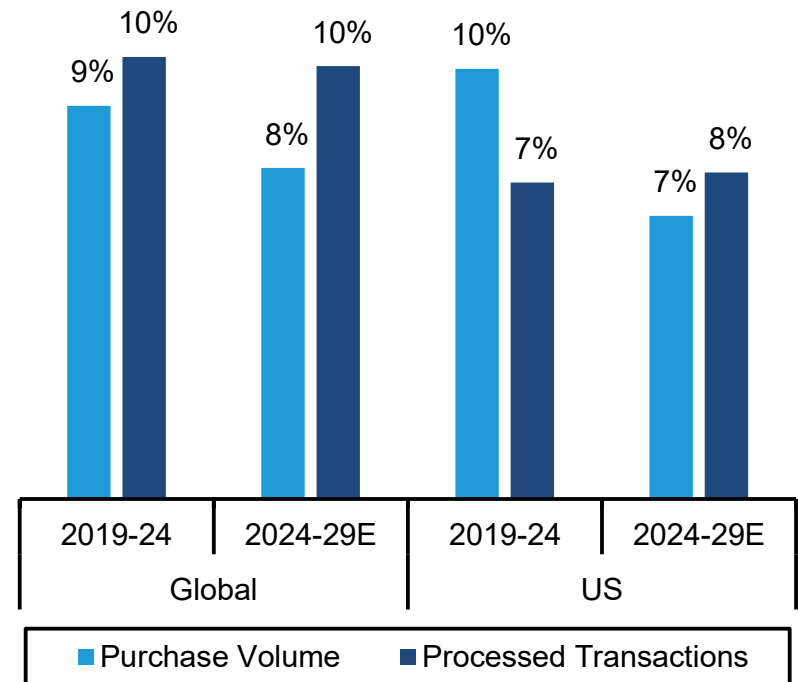
Transactions growth also matters along with \$ volume growth.. >1/3rd of Visa's gross revenues is assessed on a per transaction basis

Processed transactions have historically grown faster vs. volumes globally

Visa Gross Revenue Split C1Q25 (%)



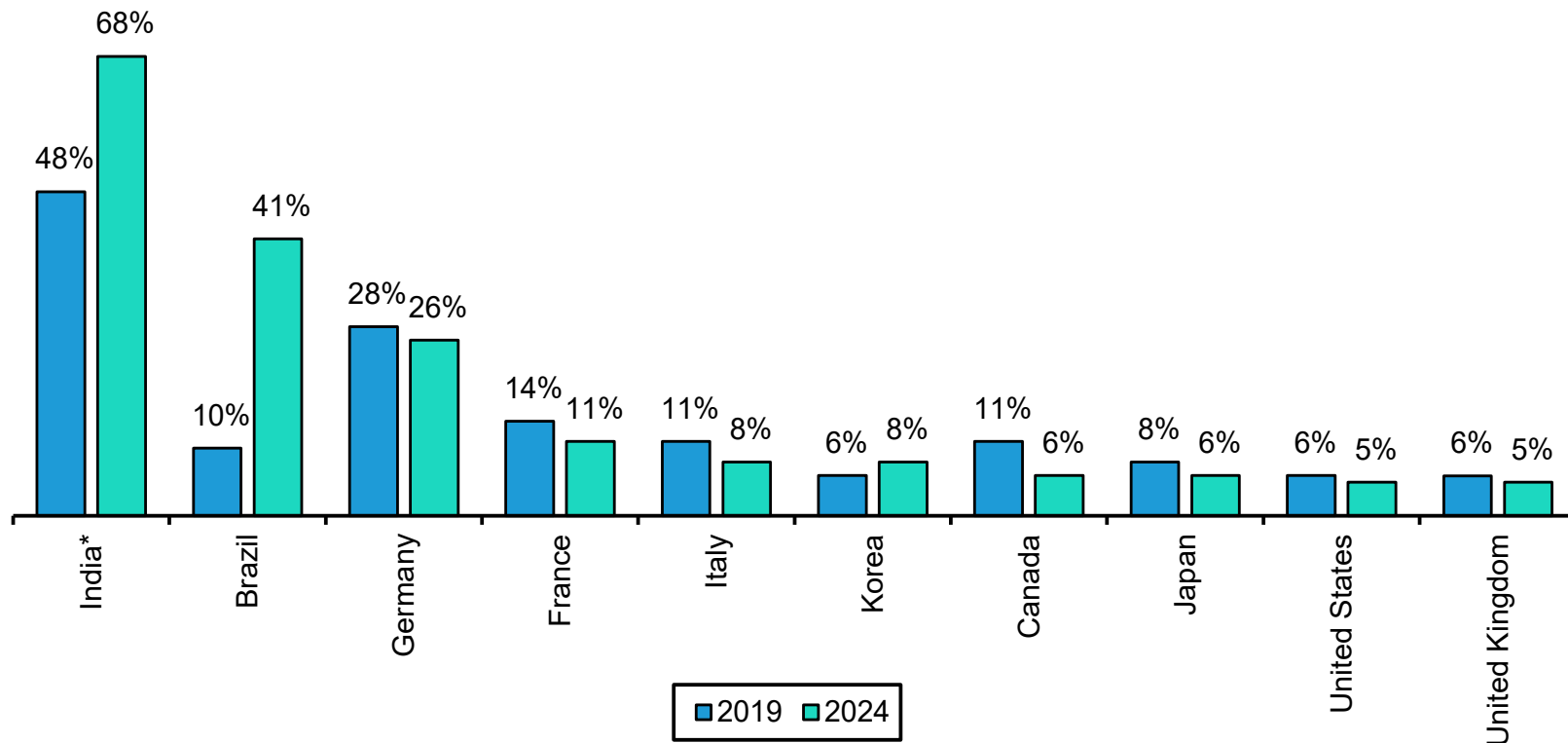
General Purpose Card Volume vs Transactions Growth (Nominal, %)



Source: Company reports, Bernstein analysis
We use calendar year for Visa and we compare 2019-24 to 2017-19 because of Visa Europe dynamics

While A2A Payments is growing meaningfully in places such as India and Brazil, they remain contained in many other parts of the world.

A2A as a % of eComm Transaction Value by Top 10 GDP Countries



Source: Worldpay Global Payments Report, Bernstein analysis

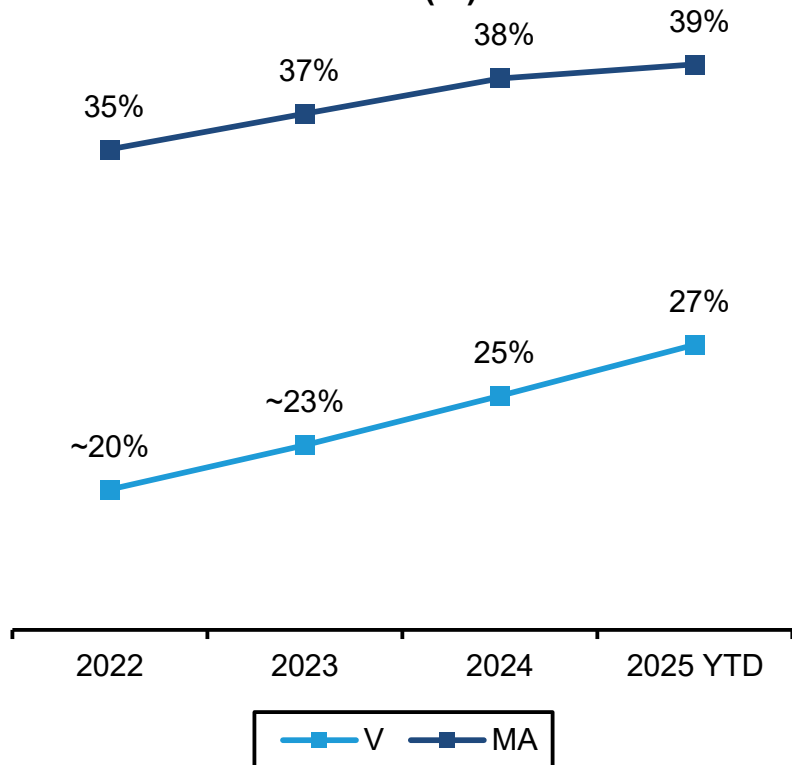
*Includes Digital Wallets which are majorly funded by bank accounts

2nd phase - diversification into services and new flows

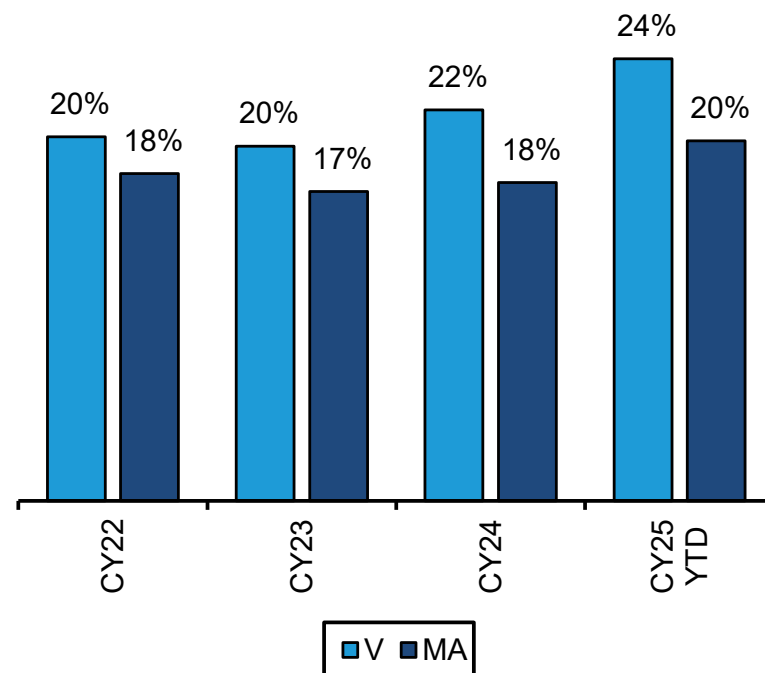
Value-added services are increasingly becoming an important growth driver for V and MA. As of 2025 YTD, they are now ~27% and ~39% of V and MA's revenues

Visa and Mastercard services growth remains robust at 24%/20% cc respectively in CY25 YTD

Services share of net revenue for V/MA (%)

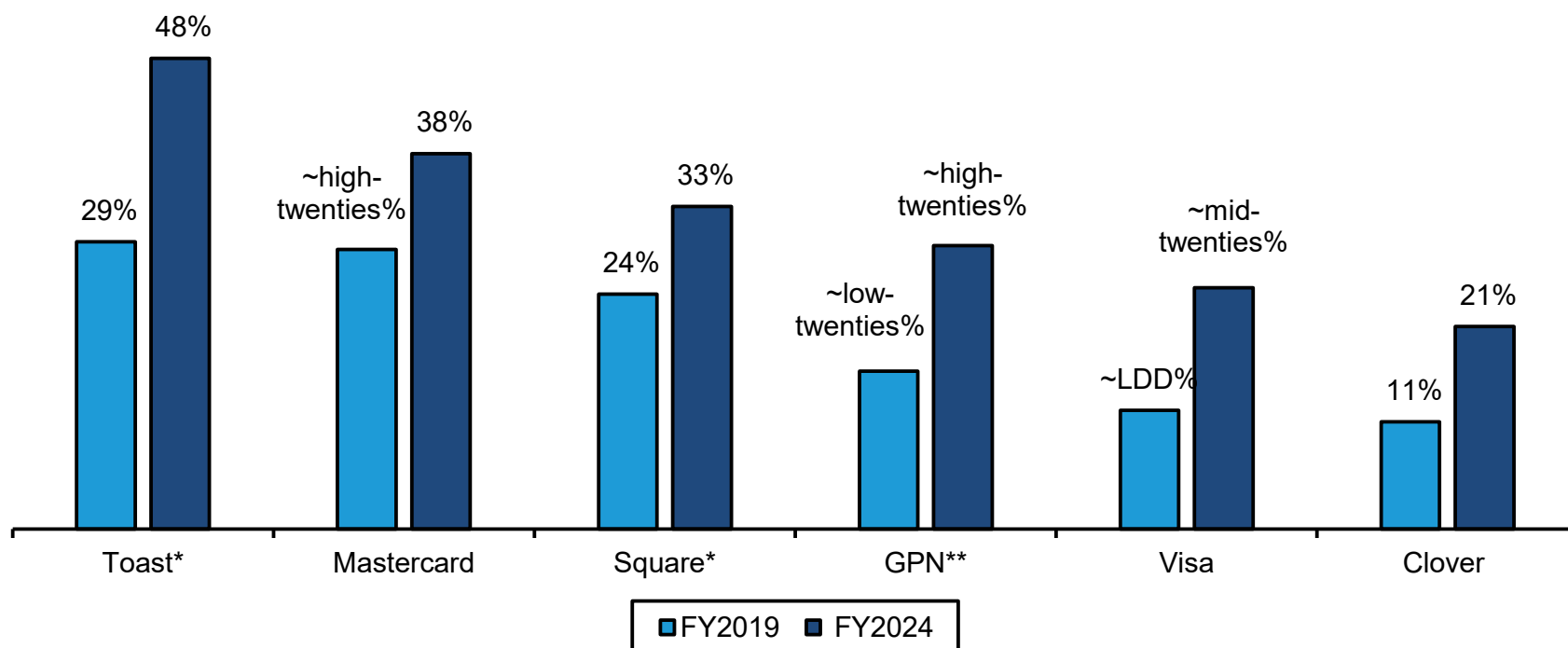


Visa and Mastercard: Value-added Services (% CC YoY)



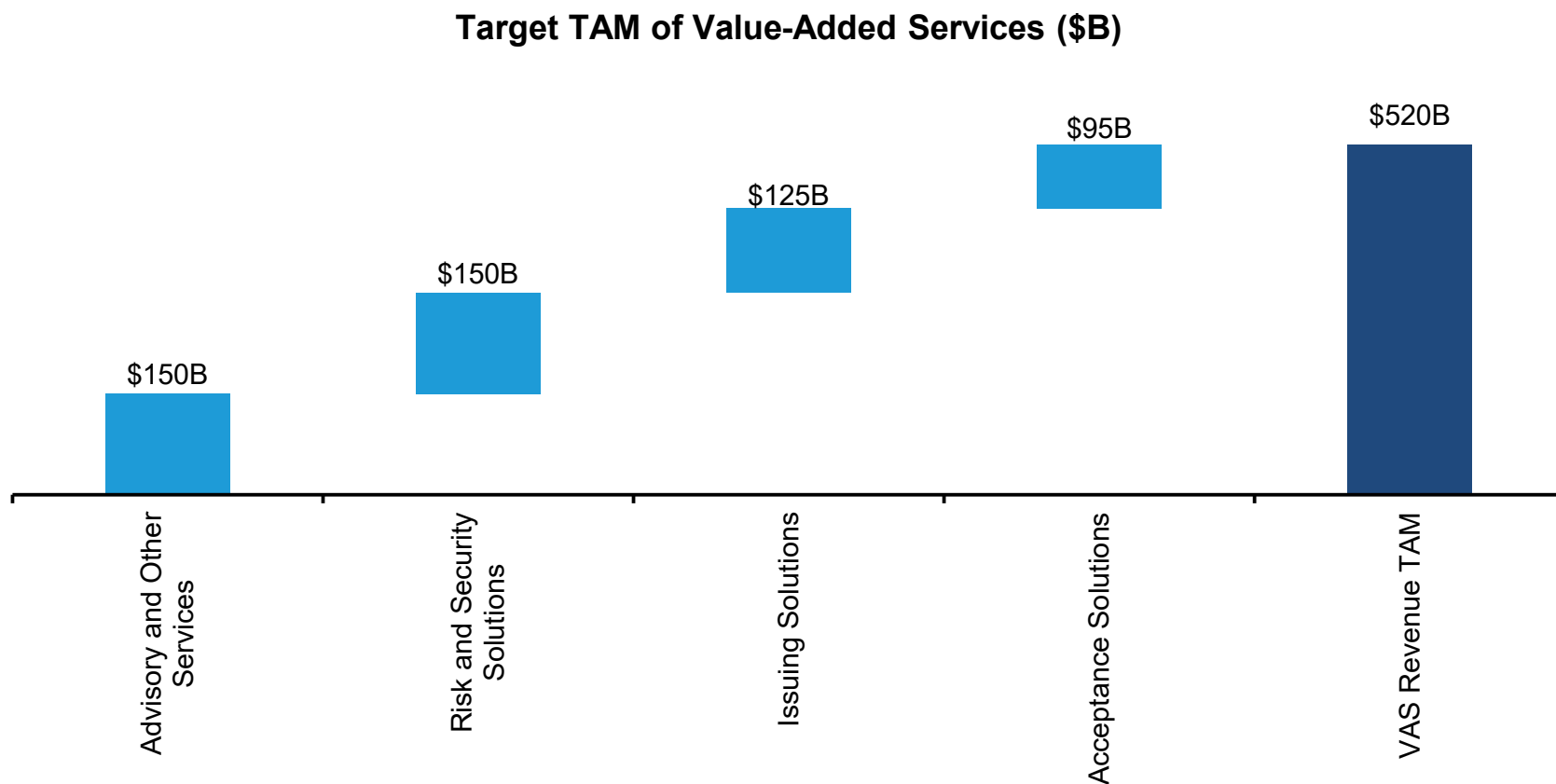
Software and services have become a larger share of overall revenue for payments companies

Software and Services share of Net Revenue (%)



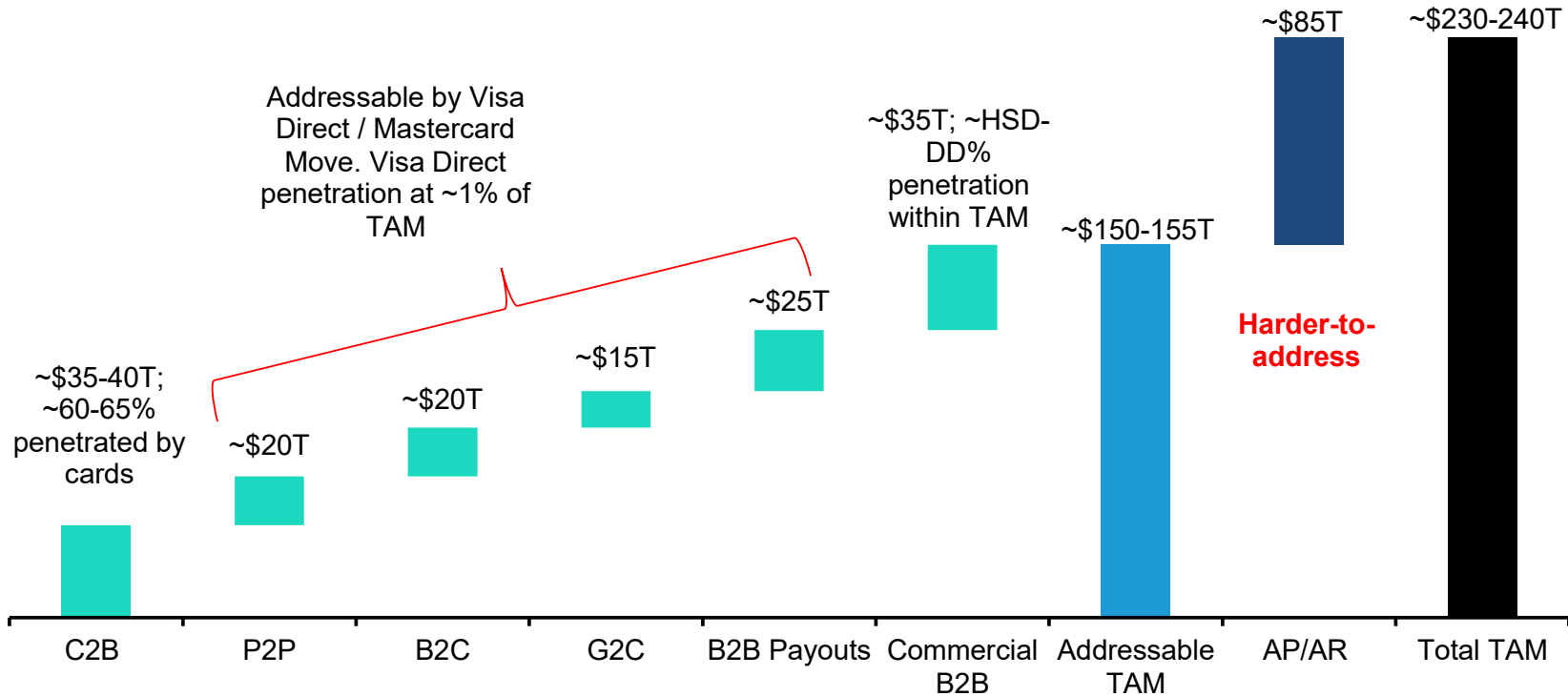
VAS extend the growth runway..

During its Investor Day, Visa sized the revenue TAM for Value-Added Services at \$520B

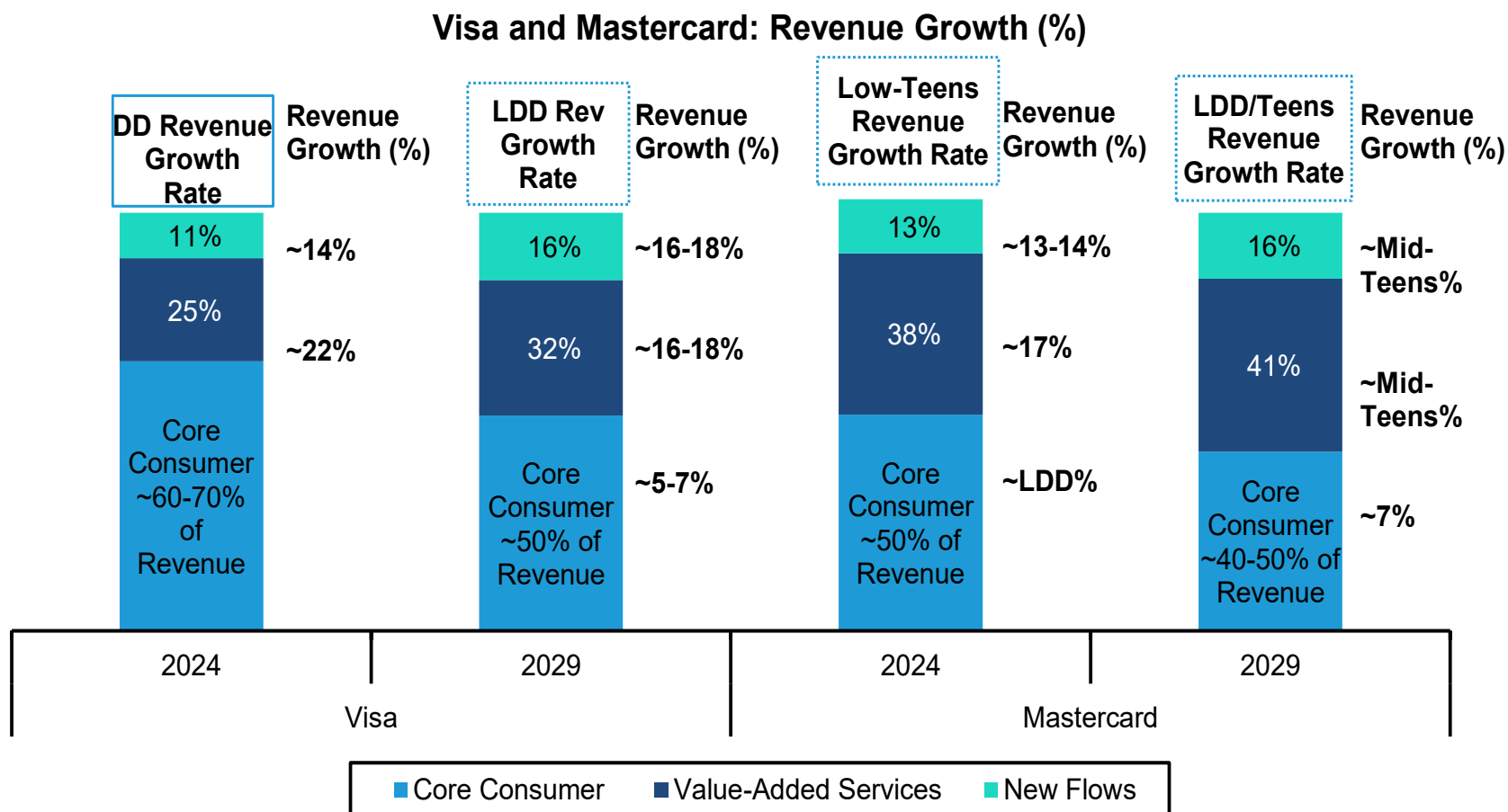


Finally, new flows provide optionality on a sizable TAM

Commercial and Money Movement Solutions' TAM (\$T)



We believe VAS and new flows can sustain V and MA's revenue growth in the LDD range even in 5years



Disintermediation risks – what is real and what is not?

Payments' landscape is fast evolving

Stablecoins, Crypto, CBDCs



Growth in Fintechs / BNPL



Growth in Account-to-account



Government Nationalism



Agentic Payments





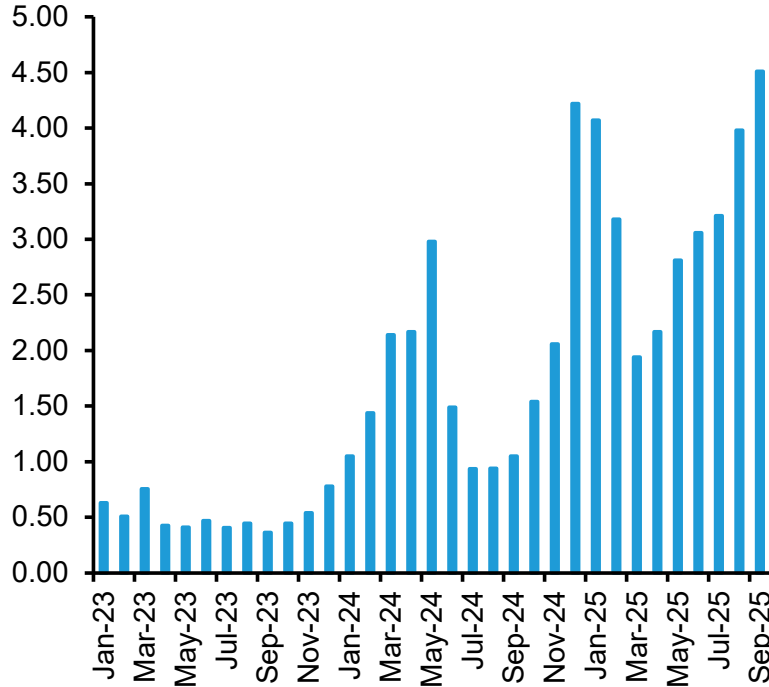
Stablecoins

Level setting numbers: Stablecoin adj. transaction volume numbers are meaningfully lower than it appears

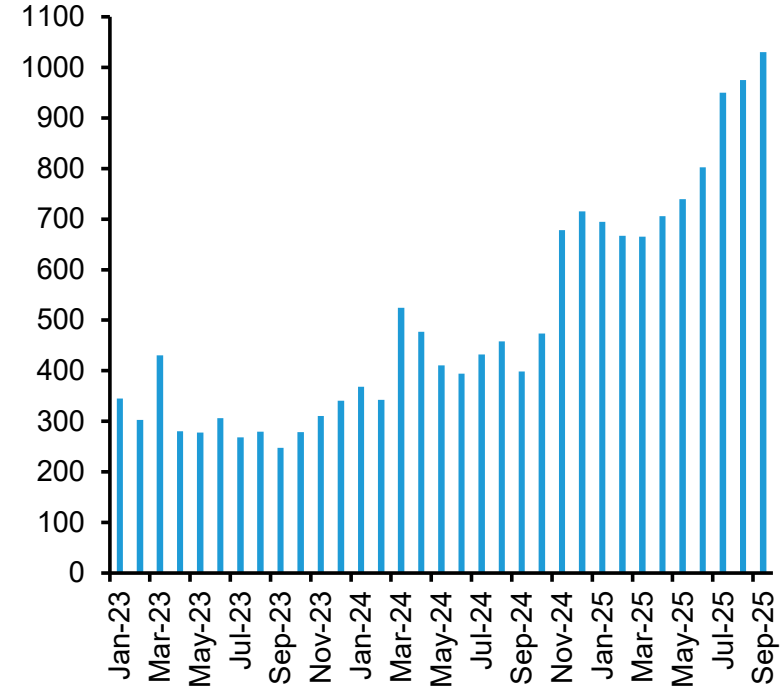
On surface, stablecoin transaction volumes reached \$3-4T on a monthly basis – exceeding many ACH and card networks..

But adj. volume is only ~25% of total unadjusted volume, meaning a large part of the stablecoin transaction volumes are caused by high-frequency trading, bots, etc.

Unadjusted Stablecoin Transaction Volume (\$T)

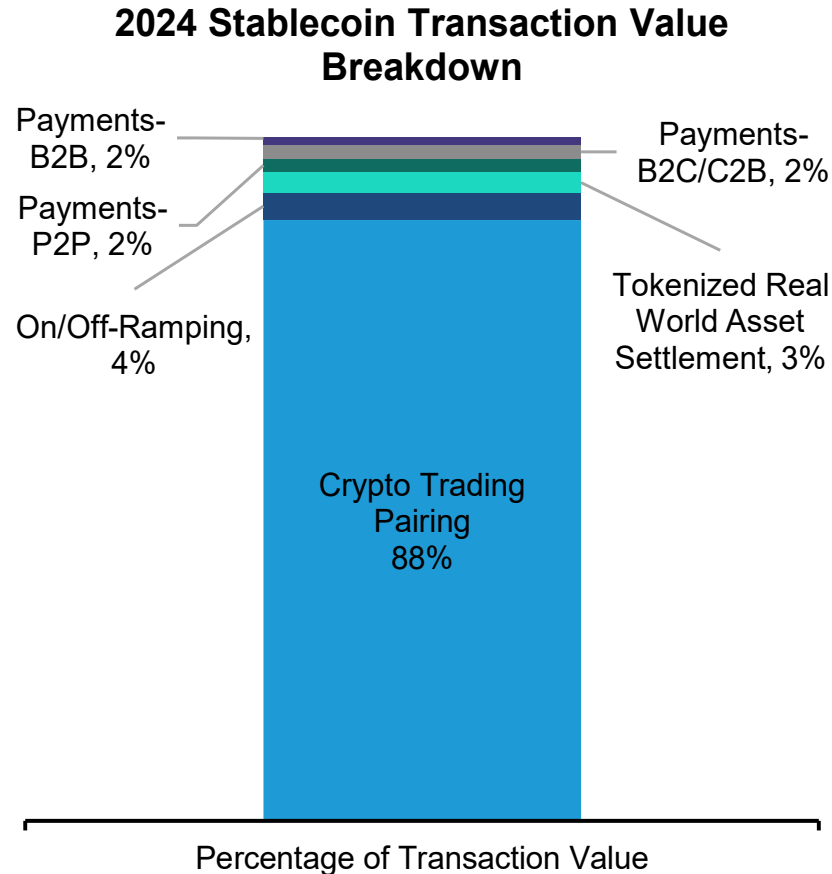


Adjusted Stablecoin Transaction Volume (\$B)



- The adjusted criteria aim to reduce distortions from **activities like high-frequency trading and bots**. Visa/Allium Labs has identified over **3 million labeled addresses**, categorizing entities based on themes like lending, investment funds, minting, on/offramps, and exchanges.

Vast majority of the adj. stablecoin usage is still in crypto trading with some limited uses in payments



Chess-board moves by payment companies..

Visa Direct Taps Stablecoins to Unlock Faster Funding for Businesses

WalletConnect Expands Payments

Offering With DTC Pay Partnership

Deutsche Börse Group and Circle Announce
Collaboration to Advance Stablecoin Adoption in
Europe

**Coinbase rolls out new protocol
for stablecoin payments**

**Visa and Bridge Partner to Make Stablecoins
Accessible for Everyday Purchases**

**Visa Expands Stablecoin Settlement Capabilities to
Merchant Acquirers**

**Mastercard Partners With OKX and Nuvei to
Power Stablecoin Transactions**

Coinbase rolls out new protocol
for stablecoin payments

**Stripe holds early talks with banks to explore
stablecoin integration for payments**

**Stripe Launches Stablecoin Accounts and AI
Model for Payments**

PayPal Launches U.S. Dollar Stablecoin

JP Morgan creates first US bank-backed
crypto-currency 14 February 2019

**Mercado Libre launches USD-pegged Meli Dollar
stablecoin in Brazil**

Crypto firms including Robinhood,
Kraken launch global stablecoin network

**Fintech Brex Launches Stablecoin
Payment Platform Amid Demand**

**Visa Launches Platform to Help Banks
Issue Stablecoins Globally**

Fiserv Launches New FIUSD Stablecoin for Financial
Institutions

**Big Retail Gets Into Crypto With
Amazon and Walmart Exploring
Stablecoins**

**Visa Invests in BVNK's Efforts to Promote
Stablecoin Payments**

Mastercard unveils end-to-end
capabilities to power stablecoin
transactions – from wallets to
checkouts

Mastercard and MoonPay team
up to mainstream stablecoin
payments

**Stripe closes \$1.1 billion Bridge deal,
prepares for aggressive stablecoin
push**

**PayPal introduces 3.7% yield on
stablecoin balances to boost
payments activity**

Revolut to launch its stablecoin

Source: PayPal, Visa, Bloomberg, PYMNTS, Cointelegraph, Latham & Watkins, Bits of Blocks, CoinTelegraph, Bitget.com, Cryptoslate.com, Corporate websites, CNBC, OneSafe, JPM, PYMNTS, Biztech, Bitcoinst, Ledger Insights, Coin Desk, the Payers, Reuters, The Block, CNBC, Bernstein analysis

Is Payments ripe for disruption from stablecoins?

- Not in areas where one would think. **Vast majority of stablecoin activity today is in crypto capital markets — NOT in payments.**
- **In Retail C2B payments, stablecoins are a solution looking for a problem (for the foreseeable future) in most developed markets.**
 - There is the chicken and egg problem of building a merchant and consumer network. Debit is already regulated (& cheaper vs. credit).
 - Cheaper rails already exist (but barely used for retail payments) e.g., ACH and RTP solutions.
 - Card payments wrap many services including chargeback protection, fraud mitigation, and other VAS.
- **In our view, it is pointless to compare the cost of cards (MDR) to that of stablecoins** because credit cards offer a different value proposition.
- **Retail cross-border payments (ones addressed by cards) also remain very hard to disrupt.** Also, it's noteworthy that cross-border retail payments often happen in local currencies and the bulk of the fees are in the FX conversion piece of cross-border — which dollar-denominated stablecoins may also require.
- Instead of being a risk, stablecoins offer growth opportunities for cards with respect to on-ramp/off-ramp solutions. At the end of day, stablecoins are tokenized currencies, and V/MA enabled 180+ currencies and billions of tokens on their platform.

There are, however, other use-cases with stronger product market fit

- **In certain emerging markets** (e.g., ones with volatile currencies and high inflation), **stablecoins are desirable and starting to see payments/fintech use-cases** — and in fact this is an area where Visa/Mastercard are already partnering to enable stablecoin linked-cards (e.g., in LATAM).
- **Use-cases can emerge in remittances** (in certain corridors), **cross-border B2B payments and treasury/cash management**. Despite recent innovations such as Swift GPI and ISO20022, many cross-border payments (especially in certain less-liquid corridors) suffer from high degree of friction. We need to look at stablecoins' product-market-fit corridor-by-corridor and use-case by use-case.
- Also, it's worth noting that Stablecoins are just a rail and **for broader adoption in any type of payment, Stablecoins will need to solve problems beyond cost, transparency, stability and programmability**. Stablecoins will have to solve for UX, be incorporated into existing ERP/accounting and other systems, implement compliance/AML/tax/other requirements and procedures, develop services around fraud prevention & disputes, and create liquidity for on/off ramps.
- One long-term optionality related to stablecoins is also **in AI agent driven payments**. If the payments' infrastructure were being created from scratch, then stablecoins would have been a good fit for Agentic payments. But payments infrastructure already exists and there is a huge last mile problem for any new payment method.

Agentic Commerce

2025 is seeing the beginnings of a new era of commerce — the Agentic one.

OpenAI takes on Google, Amazon with new agentic shopping system

Google launches new protocol for agent-driven purchases

Mastercard unveils Agent Pay, pioneering agentic payments technology to power commerce in the age of AI

Anthropic AI agents can now search the internet

Stripe powers Instant Checkout in ChatGPT and releases Agentic Commerce Protocol codeveloped with OpenAI

The Future is Here: Visa Announces New Era of Commerce Featuring AI

PayPal Brings Together Developers, AI Leaders to Power Agentic Commerce at Dev Days

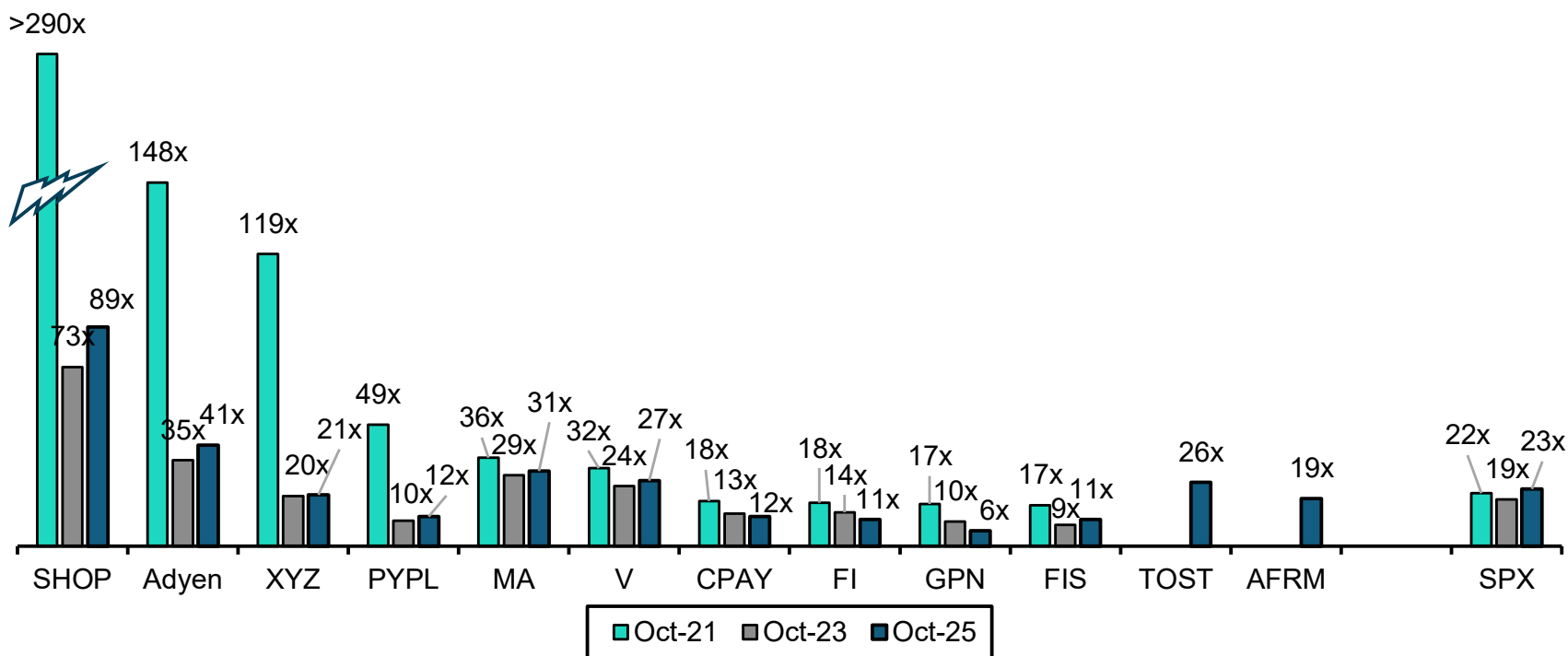
Perplexity partners with PayPal for in-chat shopping as AI race heats up

Shopify and OpenAI bring commerce to ChatGPT

Payments: Ripe for stock picking?

Multiples have been slashed in the past several years

NTM PE Multiples



Source: Bloomberg, Bernstein analysis

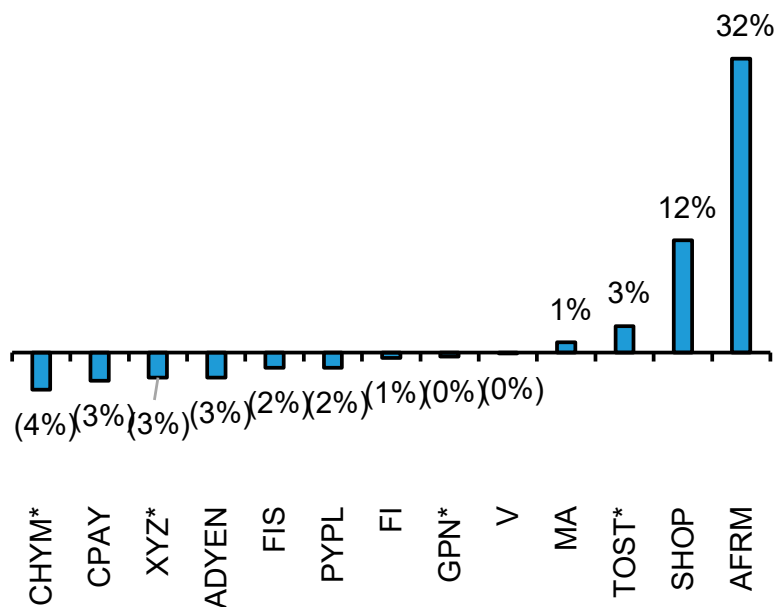
XYZ and PYPL 2025 multiples adjusted by SBC reporting change; FIS multiple reflects Worldpay impact; Multiples data for Sep'21, Sep'23, Sep'25 as of 10/18/2021, 10/16/2023, 10/13/2025 respectively; AFRM and TOST multiples are EV/EBITDA;

But revisions have been largely stable

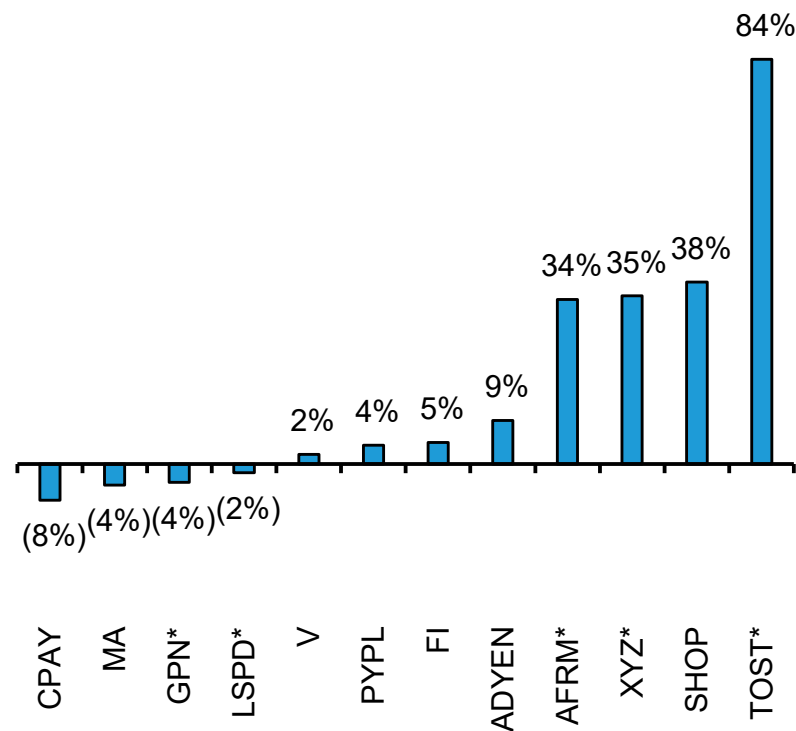
Over the last two years, across the payments companies within our coverage, revenue estimates have been revised down by ~1% in aggregate..

..similarly for EPS

2025 Revenue Revisions - Last 2 Years (%)



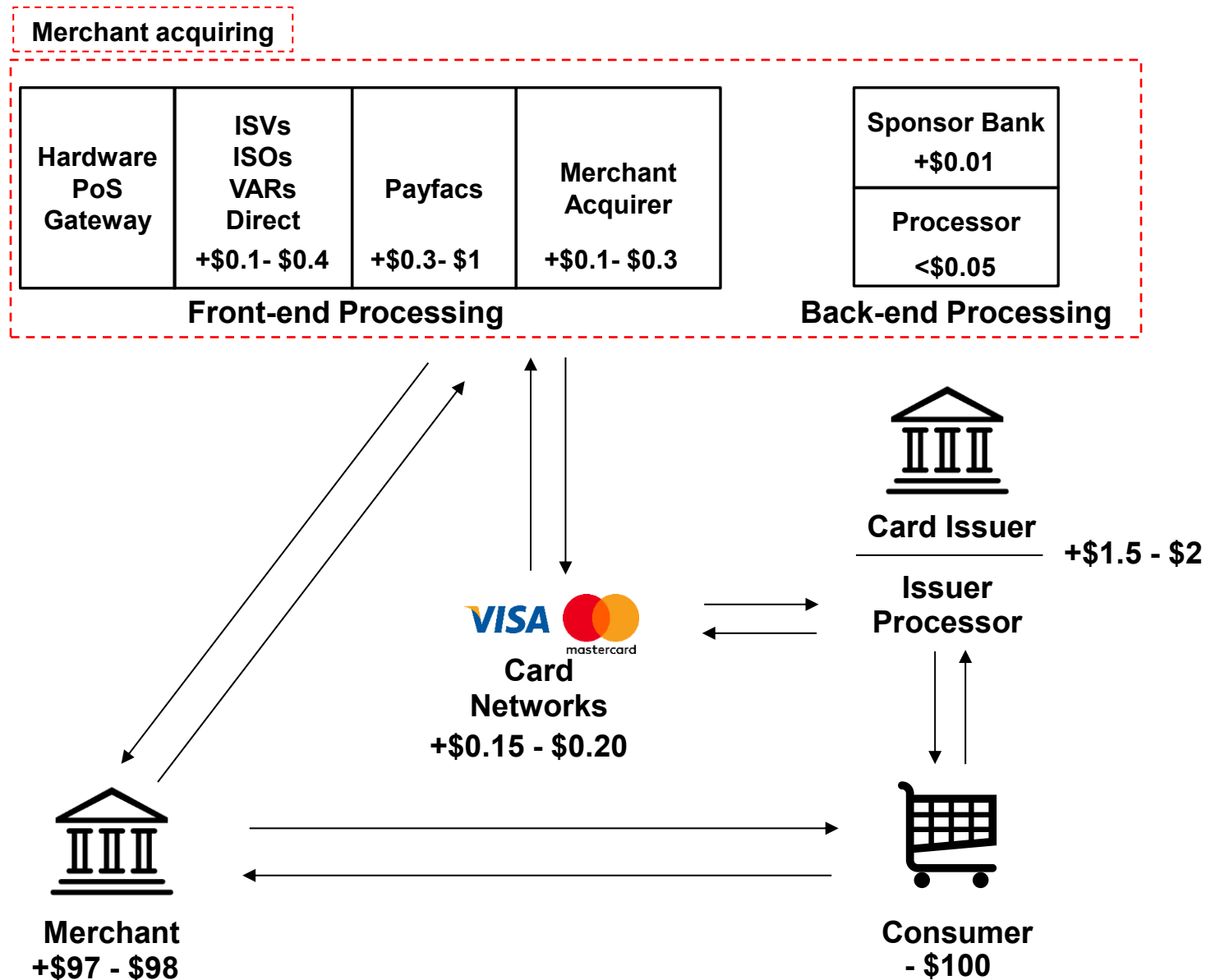
2025 EPS Revisions - Last 2 Years (%)



Source: Bloomberg, Bernstein analysis XYZ and TOST are using gross profit; FIS adjusted for Worldpay divestiture; GPN adjusted for AMD, Payroll and other divestitures & acquisitions. Adyen revisions are negatively impacted by EUR as reporting currency. Comp set excludes companies with market cap <\$10bn. For EPS, XYZ, AFRM, TOST are using EBITDA; FIS adjusted by WP divestiture; PYPL EPS revisions adjusted for 2025E SBC per share forecast in Aug 2023; AFRM is revision since Aug 2024 given, they flipped EBITDA positive late 2023; GPN adjusted for AMD, Payroll and other divestitures & acquisitions

A look at merchant acquirers

Merchant acquiring has a complex value-chain



Distribution models/mix vary significantly across players

- + Direct

- + *Often in enterprise; so specific verticals/sub-sectors in SMBs*



- + Banks

- + *Used to be the dominant distribution channel historically & still is a sizable share of the market*



- + Independent Sales Organizations (ISOs)

- + *Thousands of 'feet on the street' models*



- + Independent Software Vendors (ISVs)

- + *Software vendors integrate payments in offerings. Accessed through Integrated platforms provided by GPN, FIS, FI, etc. Thousands of ISVs exist.*



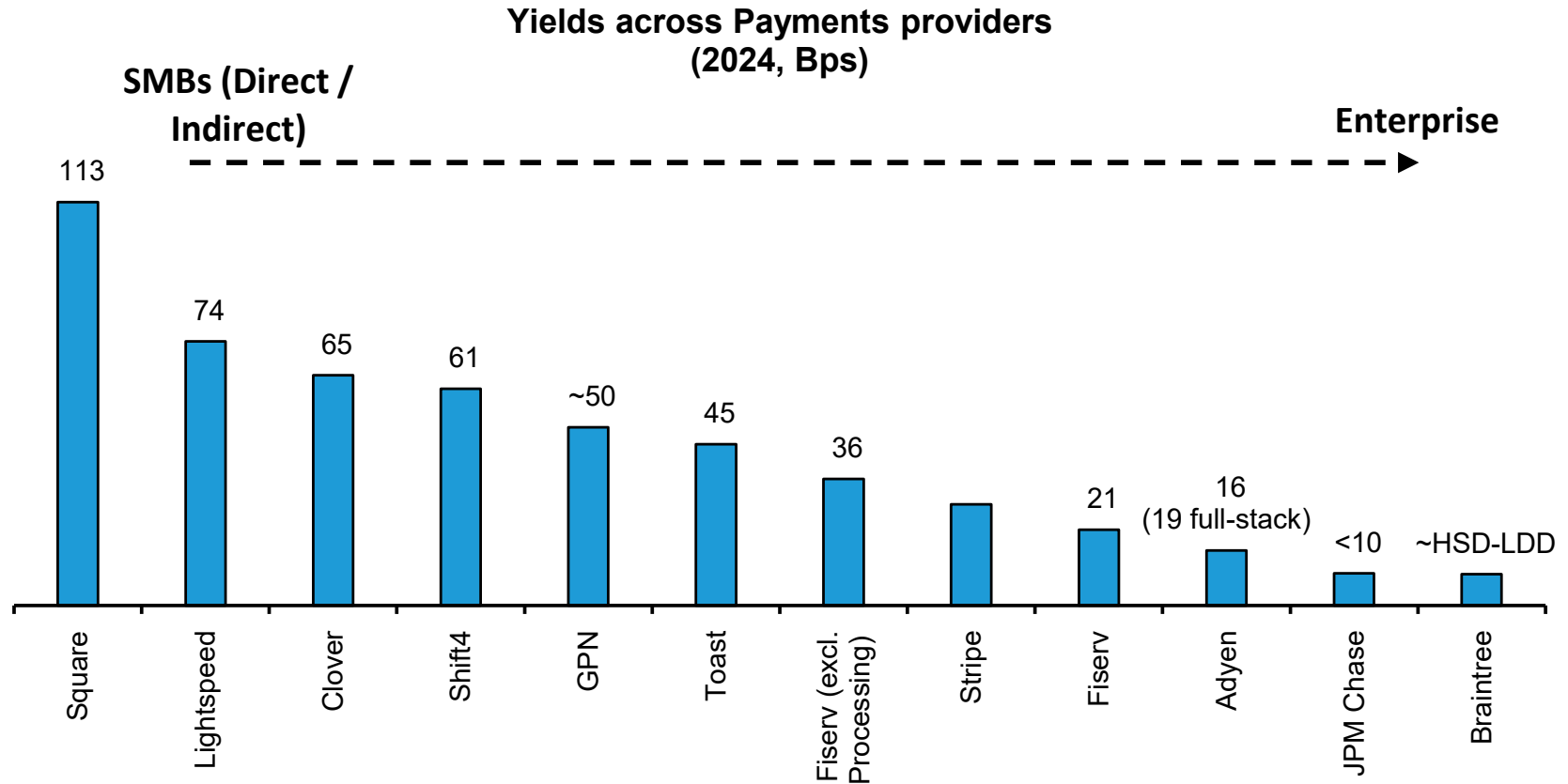
- + Payment Facilitators (Payfacs)

- + *Platforms or marketplaces which embed payments into their offering and become a master merchant*



Yields vary widely across acquirers/processors

Depending on the exposure (SMB/enterprise) and distribution mix (direct vs. via channel partners)



For Clover, we calculate using Payments revenue (~70% of total revenue/ Volumes)

For SQ, we calculate using Transaction Gross Profit/ Volumes

For Toast, we calculate using Fintech Gross Profit excluding Toast Capital/ Volumes

For GPN, we calculate yields by excluding vertical software revenue

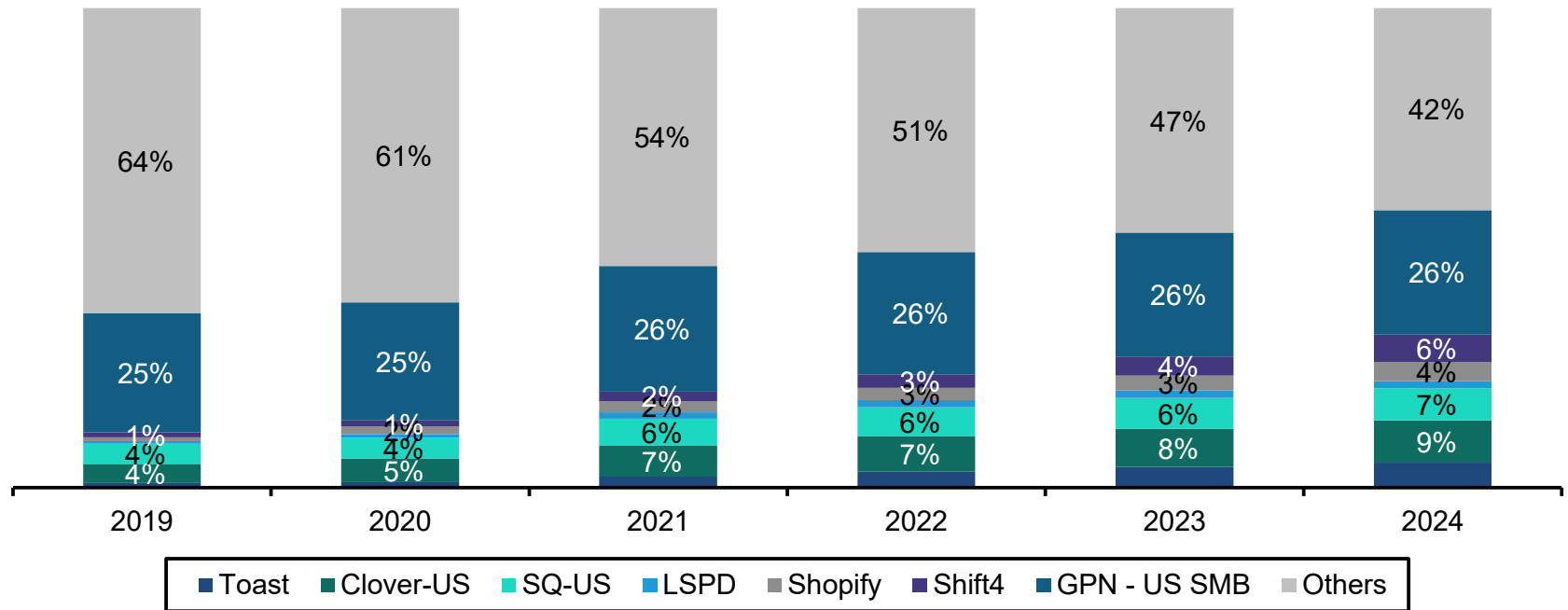
For FOUR, Blended Yield (disclosed) = Payment Revenue less Gateway Revenue less Network Fees / End-to-End Payment Volume

For Fiserv (excl. processing), we calculate using Merchant revenue/ Overall Payment Volumes adj. for processing (~40%)

Source: Company reports, Bernstein estimates and analysis

US SMB space is getting more crowded over the years

US SMB Market Share
(Incl. merchant with receipt <\$100M, 2024 = \$3.1T)



Key trends to watch within merchant acquirers

- + Aggressive price-based competition in parts of enterprise business..now easing
 - e.g., in US enterprise eCommerce by players such as Braintree/PayPal in 2023/24
 - Also, now growth of payment orchestration
- + Low hanging fruit of growth is somewhat behind us..
 - Stripe, Adyen, Braintree are now >40% of U.S. eCommerce & their customer growth is slowing
 - Micro-merchant base is increasingly saturated, and more competition within SMBs
- + Beyond payments – software and embedded finance support growth and create stickiness
 - E.g., Square offering in financial services & software, Toast's products in software
 - Adyen investing in embedded finance capabilities for platforms

Comps table

Valuation comps table - 2026

Multiples based on 2026 estimates	FY2026						5-year average (2-year fwd)		Gross Profit growth		Earnings growth				
							Price/				23-26E GP				
	EV/	EV/	EV/	EV/	EV/	Price/	Earnings	Price/	EV/	Price/					
	Sales	Gross Profit	EBIT	EBITDA	NOPAT	FCF	(Non-GAAP)	Earnings (GAAP)	Gross Profit	Earnings (Non-GAAP)	growth CAGR	EV/GP/ Growth	23-26E EPS Growth	CAGR	PEG Ratio
Networks															
V	15.3x	15.3x	22.5x	21.7x	27.5x	26.9x	26.7x	26.9x	19.5x	27.9x	10.6%	1.5x	13.6%	2.0x	
MA	14.1x	14.1x	23.9x	22.6x	29.9x	28.4x	29.5x	29.6x	54.6x	27.0x	13.3%	1.1x	15.6%	1.9x	
Average	14.7x	14.7x	23.2x	22.1x	28.7x	27.6x	28.1x	28.2x	37.0x	27.4x	11.9%	1.3x	14.6%	1.9x	
Median	14.7x	14.7x	23.2x	22.1x	28.7x	27.6x	28.1x	28.2x	37.0x	27.4x	11.9%	1.3x	14.6%	1.9x	
High-growth FinTech															
XYZ	1.6x	3.8x	17.8x	10.5x	22.1x	15.8x	20.2x	23.8x	7.1x	42.1x	15.0%	0.3x	32.3%	0.6x	
LSPD	0.8x	1.8x	NA	11.3x	NA	49.3x	27.1x	NA	8.1x	1,401.9x	16.4%	0.1x	52.8%	0.5x	
AFRM	5.0x	10.7x	17.9x	22.0x	21.4x	18.2x	41.6x	44.5x	24.1x	86.7x	43.1%	0.2x	26.4%	1.6x	
SHOP	13.9x	28.7x	77.5x	75.9x	88.0x	75.2x	84.7x	100.8x	25.5x	117.7x	24.1%	1.2x	35.5%	2.4x	
TOST	2.6x	9.5x	34.8x	24.2x	36.5x	28.5x	39.7x	47.2x	9.4x	90.0x	32.7%	0.3x	135.2%	0.3x	
MQ	1.8x	2.6x	NA	10.9x	NA	12.7x	NA	387.6x	4.2x	778.6x	15.0%	0.2x			
NVEI									7.7x	21.5x	18.3%		10.8%		
BILL	2.5x	3.0x	14.4x	13.6x	14.7x	13.6x	20.2x	9,920.0x	13.6x	1,125.3x	15.3%	0.2x	5.0%	4.0x	
FOUR	3.6x	5.1x	13.0x	7.3x	15.2x	10.1x	11.8x	18.1x	8.0x	26.1x	37.1%	0.1x	17.1%	0.7x	
ADYEN NA	10.1x	11.3x	20.3x	18.5x	26.1x	28.5x	35.2x	30.3x	99.9x	50.9x	21.7%	0.5x	32.2%	1.1x	
CHYM	2.4x	2.7x	45.5x	24.1x	47.8x	32.2x	61.0x	NA	4.0x	45.1x					
Average	4.7x	8.5x	28.0x	21.6x	32.0x	28.0x	35.1x	1,321.5x	20.8x	374.1x	23.9%	0.3x	38.6%	1.4x	
Median	2.6x	5.1x	17.9x	13.6x	22.1x	18.2x	31.1x	45.8x	8.7x	88.3x	20.0%	0.2x	32.2%	0.9x	
Processors/Legacy Fintech															
FIS	4.2x	11.4x	14.0x	10.2x	17.0x	14.3x	10.8x	19.8x	11.9x	12.5x	17.1%	0.7x	9.5%	1.1x	
FI	4.3x	7.2x	10.4x	8.7x	12.6x	11.4x	10.4x	13.0x	8.3x	14.4x	11.2%	0.6x	16.2%	0.6x	
GPB	3.5x	5.7x	7.8x	7.1x	9.7x	8.5x	6.1x	12.5x	7.1x	10.9x	8.9%	0.6x	9.8%	0.6x	
PYPL	1.9x	4.2x	10.0x	9.0x	12.8x	8.9x	11.9x	12.2x	7.3x	19.8x	6.0%	0.7x	14.8%	0.8x	
Average	3.5x	7.1x	10.6x	8.7x	13.0x	10.8x	9.8x	14.4x	8.6x	14.4x	10.8%	0.7x	12.6%	0.8x	
Median	3.9x	6.4x	10.2x	8.9x	12.7x	10.2x	10.6x	12.8x	7.8x	13.5x	10.0%	0.7x	12.3%	0.7x	
OLO	-		-	-	-	-	-	-	13.2x	87.8x			21.6%	-	
FLYWIRE	2.0x	3.2x	25.8x	9.2x	21.3x	11.8x	24.0x	48.1x	7.2x	1,226.5x	19.0%	0.2x			
JKHY	4.1x	9.7x	17.4x	12.8x	22.7x	24.4x	22.0x	22.1x	12.4x	29.4x	8.1%	1.2x	9.2%	2.4x	
Other															
COIN	10.9x	12.9x	35.2x	25.4x	42.5x	32.1x	51.2x	52.4x	7.0x	77.2x	41.3%	0.3x	55.8%	0.9x	
HOOD	25.0x		50.4x	42.8x	65.7x	49.4x	64.6x	65.6x		69.2x	39.7%				
CRCL	9.4x	25.6x	79.8x	50.6x	116.2x	83.2x	103.1x	114.4x	20.5x	68.2x			19.6%	5.3x	

Source: BBG, Company reports, Bernstein estimates and analysis

Data as of 10/13/2025; LSPD, SHOP, MQ, NVEI, BILL, FOUR, CHYM, OLO, FLYWIRE, JKHY not covered by Bernstein. For companies not covered, data is from Bloomberg.

BERNSTEIN TICKER TABLE

Ticker	Rating	Cur	13 Oct 2025		TTM	Cur	Adjusted EPS			Adjusted P/E (x)		
			Closing Price	Price Target	Rel. Perf.		2024A	2025E	2026E	2024A	2025E	2026E
ADYEY	O	USD	17.01	20.30	1.6%	USD	0.32	0.38	0.47	53.0	44.7	35.9
ADYEN.NA	O	EUR	1,478.40	1,880.00	(5.8)%	EUR	29.64	35.20	43.83	49.9	42.0	33.7
XYZ	O	USD	75.02	95.00	(5.7)%	USD	3,029	3,608	4,198	14.3	12.0	10.3
FIS	M	USD	67.31	85.00	(35.8)%	USD	5.22	5.76	6.05	12.9	11.7	11.1
FI	O	USD	122.55	205.00	(49.0)%	USD	8.80	10.18	11.69	13.9	12.0	10.5
GPN	M	USD	84.22	95.00	(29.7)%	USD	11.03	12.44	13.78	7.6	6.8	6.1
KLAR	M	USD	39.09	45.00	NA	USD	0.08	(0.75)	0.51	(69.7)%	151.6%	
MA	O	USD	559.24	607.00	(2.0)%	USD	14.60	16.31	18.95	38.3	34.3	29.5
PYPL	M	USD	68.86	85.00	(27.8)%	USD	4.65	5.23	5.81	14.8	13.2	11.9
TOST	M	USD	35.84	48.00	13.1%	USD	373.00	585.06	845.52	51.5	32.8	22.7
V	O	USD	343.30	380.00	10.2%	USD	10.05	11.46	12.93	34.2	30.0	26.6
SPX			6,552.51									
EDM			1,497.30									

O - Outperform, M - Market-Perform, U - Underperform, NR - Not Rated, CS - Coverage Suspended

ADYEY estimate is Adjusted EPS Gross Profit (M); XYZ, TOST estimate is EBITDA (M); XYZ, TOST valuation is EV/EBITDA (x); KLAR valuation is EPS Adjusted CAGR;

Source: Bloomberg, Bernstein estimates and analysis.

BERNSTEIN

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Neutral (Autonomous Brand)					
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