

Overview of the U.S. Payments Industry

Southern Financial Exchange
Conference

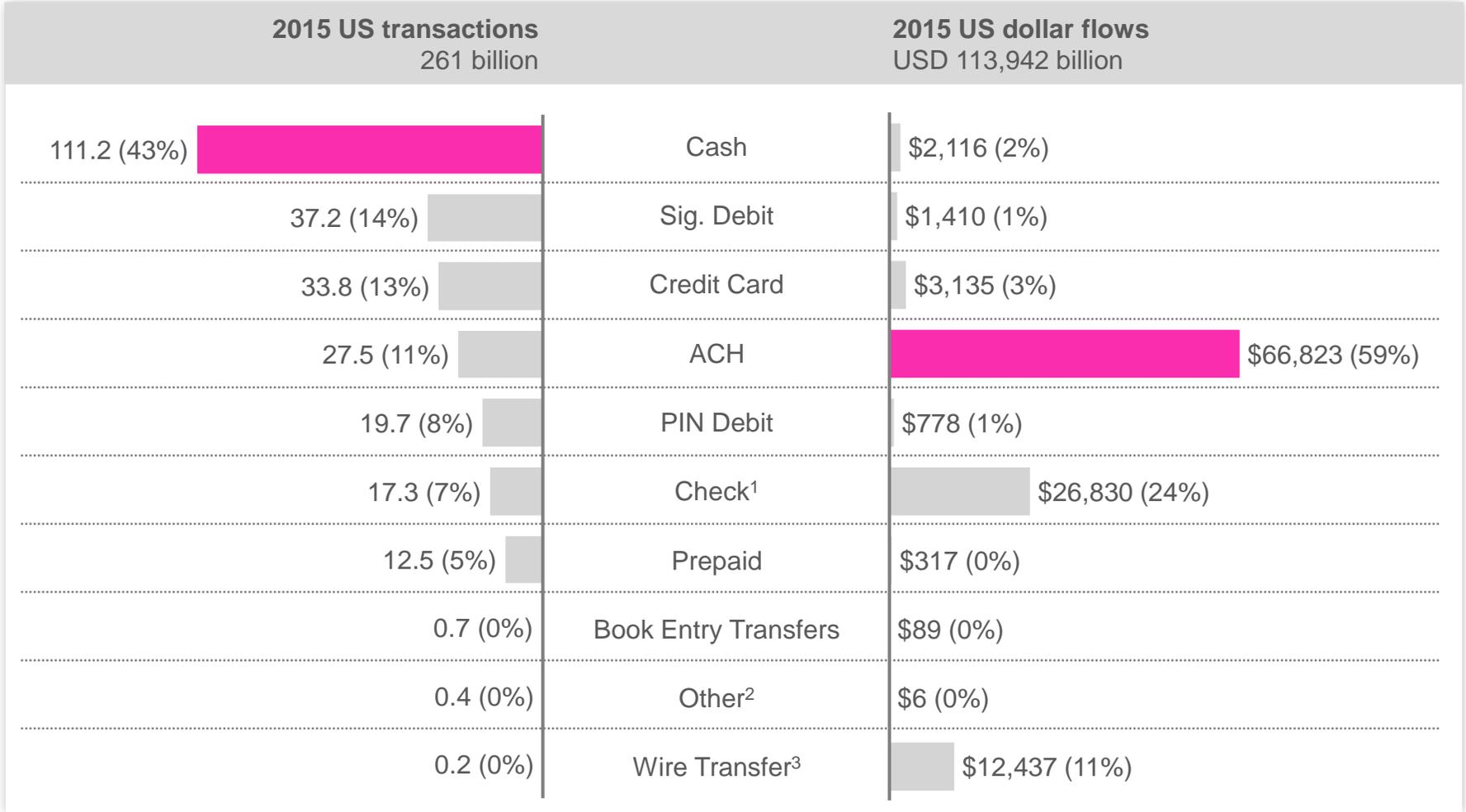
May 3, 2017

Today's Discussion

→ **Trends in payments volume and value**

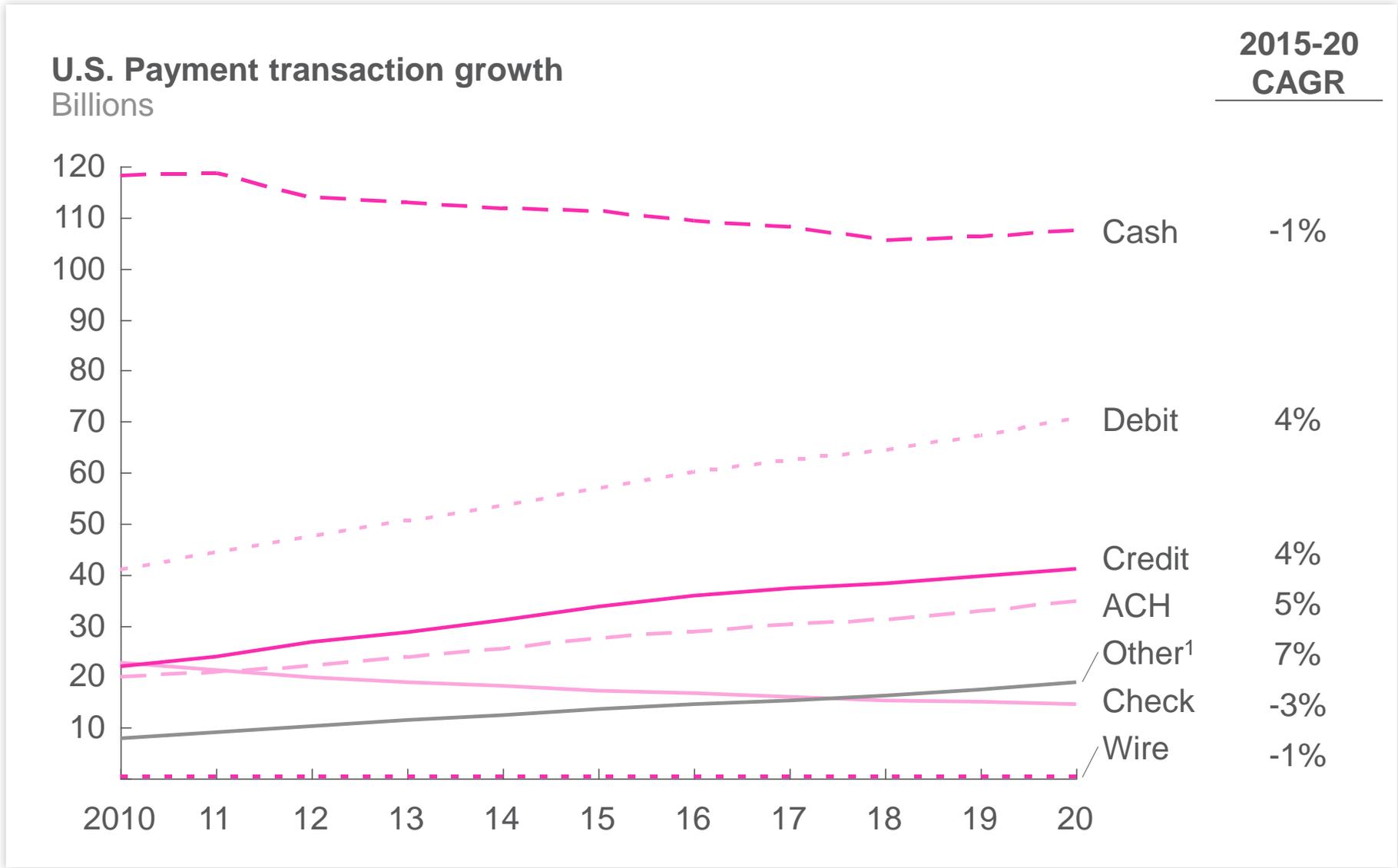
→ Five forces impacting payments

Cash remains the most frequently used payment instrument, while ACH represents the majority of payments flows for 2015



1 Reflects checks paid, not checks written. Checks converted to ACH are counted in ACH. This convention is used throughout.
 2 Includes deferred payment services (e.g. BillMeLater) and cell phone/other bill charges
 3 Our model excludes the vast majority of wire transfer dollars in an effort to approximate customer payments activity rather than FI settlement.

Electronic instruments continue to replace paper-based transactions



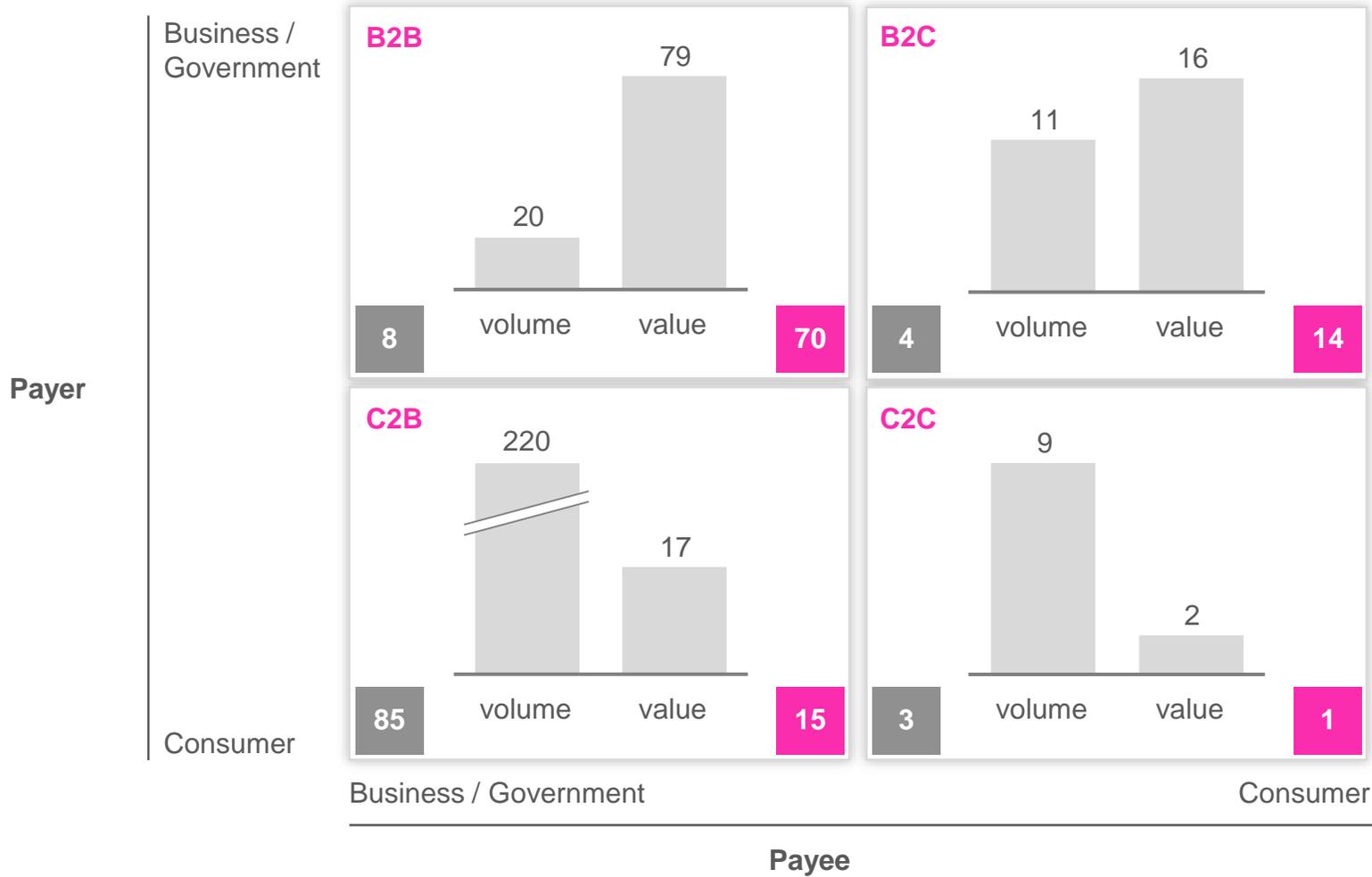
¹ Other includes prepaid, book entry transfers, and other payments.

C2B payments account for the vast majority of transactions, while the B2B space holds the largest share of dollar flows

Total 2015 payment volume and value by counterparty

Volume in billions, value in USD Trillions

■ % of total payments volume
 ■ % of total payments value

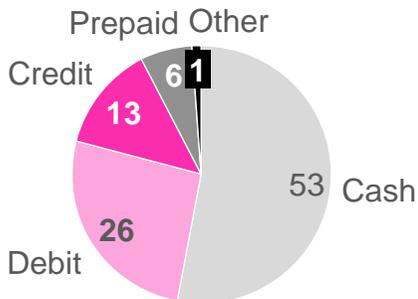


Cash makes up over half of consumer POS transactions but ~30% of flows; ACH dominates bill-pay; and cash and check still comprise most P2P payments

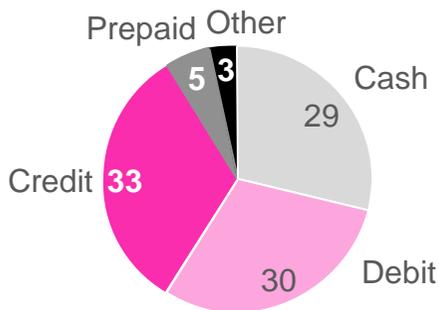
2015 distribution of C2X transactions and \$-flow by instrument

Point-of-sale payments¹

Transactions
100%=194.5B

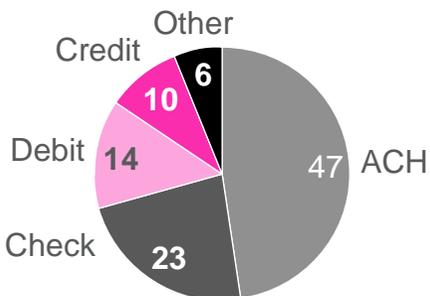


\$-Flow
100%=5.8T

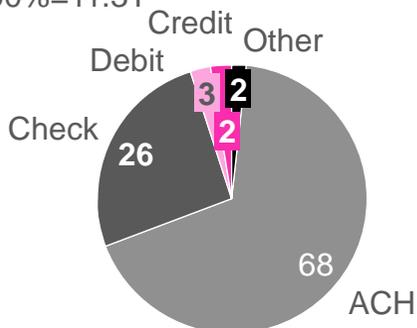


Bill payments²

Transactions
100%=26.0B

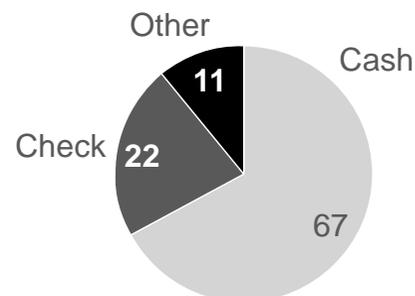


\$-Flow
100%=11.3T

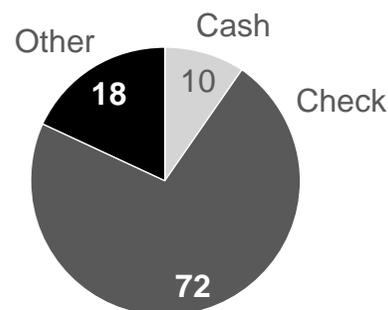


P2P payments³

Transactions
100%=9.0B



\$-Flow
100%=1.7T



1 Other includes check, ACH, and book transfer

2 Other includes prepaid, wire, and book transfer

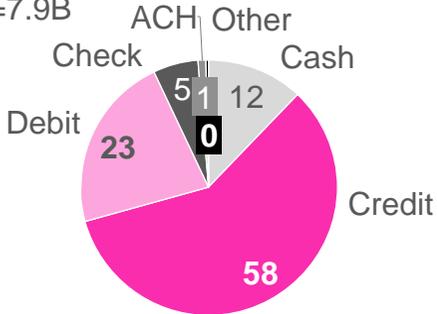
3 Other includes credit, debit, ACH, prepaid, book transfer, and wire

Businesses prefer using credit cards at POS; ACH and check dominate B2B bill pay and B2C income payments

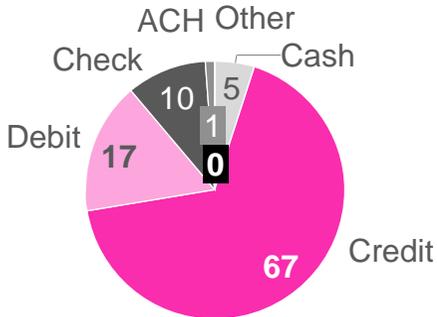
2015 distribution of B2X transactions and \$-flow by instrument

Point-of-sale payments¹

Transactions
100%=7.9B

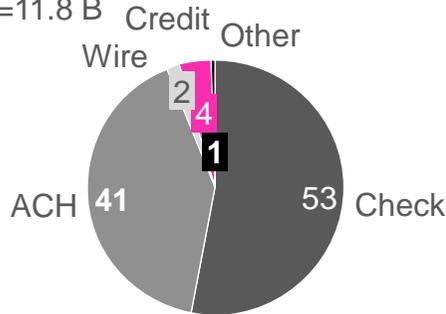


\$-Flow
100%=0.9T

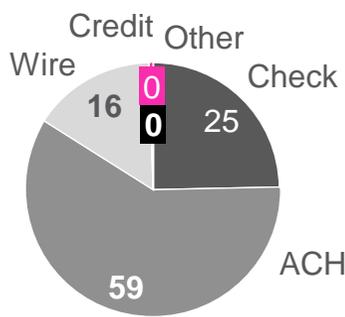


Bill payments²

Transactions
100%=11.8 B

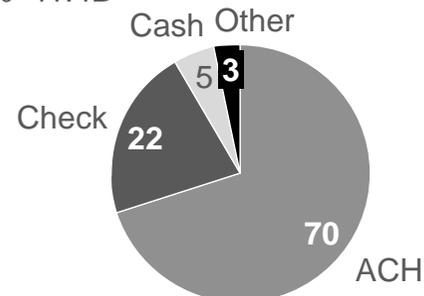


\$-Flow
100%=78.3T

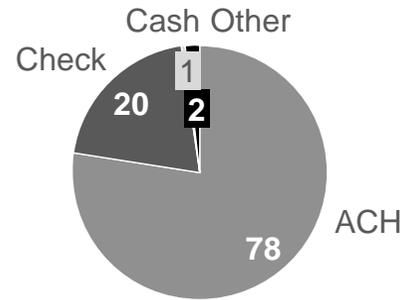


Income payments³

Transactions
100%=11.4B



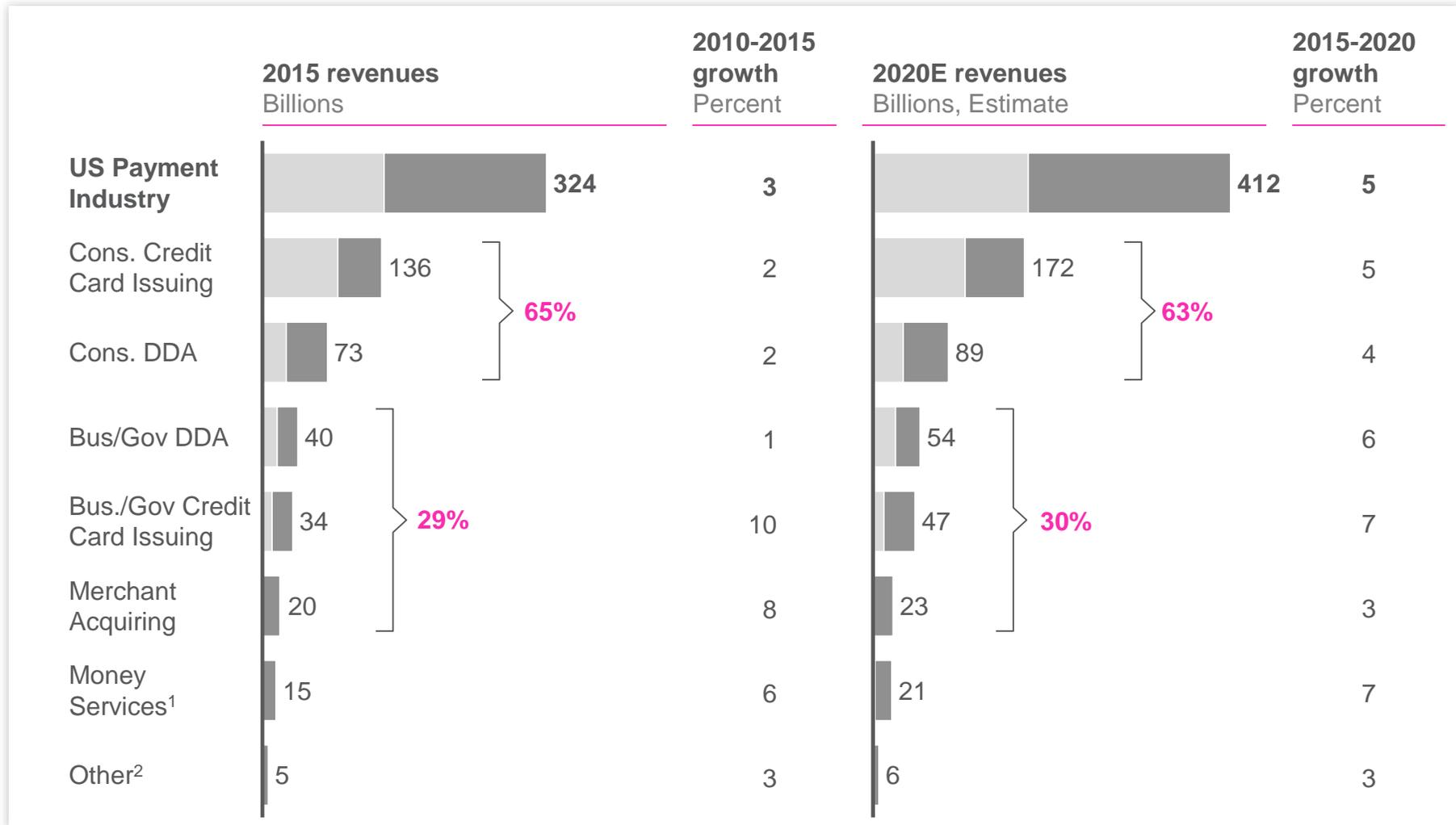
\$-Flow
100%=16.0T



1 Other includes wire, prepaid and book transfers
 2 Other includes cash, debit, prepaid and book transfers
 3 Other includes book transfers and wire

Payment revenues are expected to grow at 5% annually over the next five years

■ NII ■ Fees

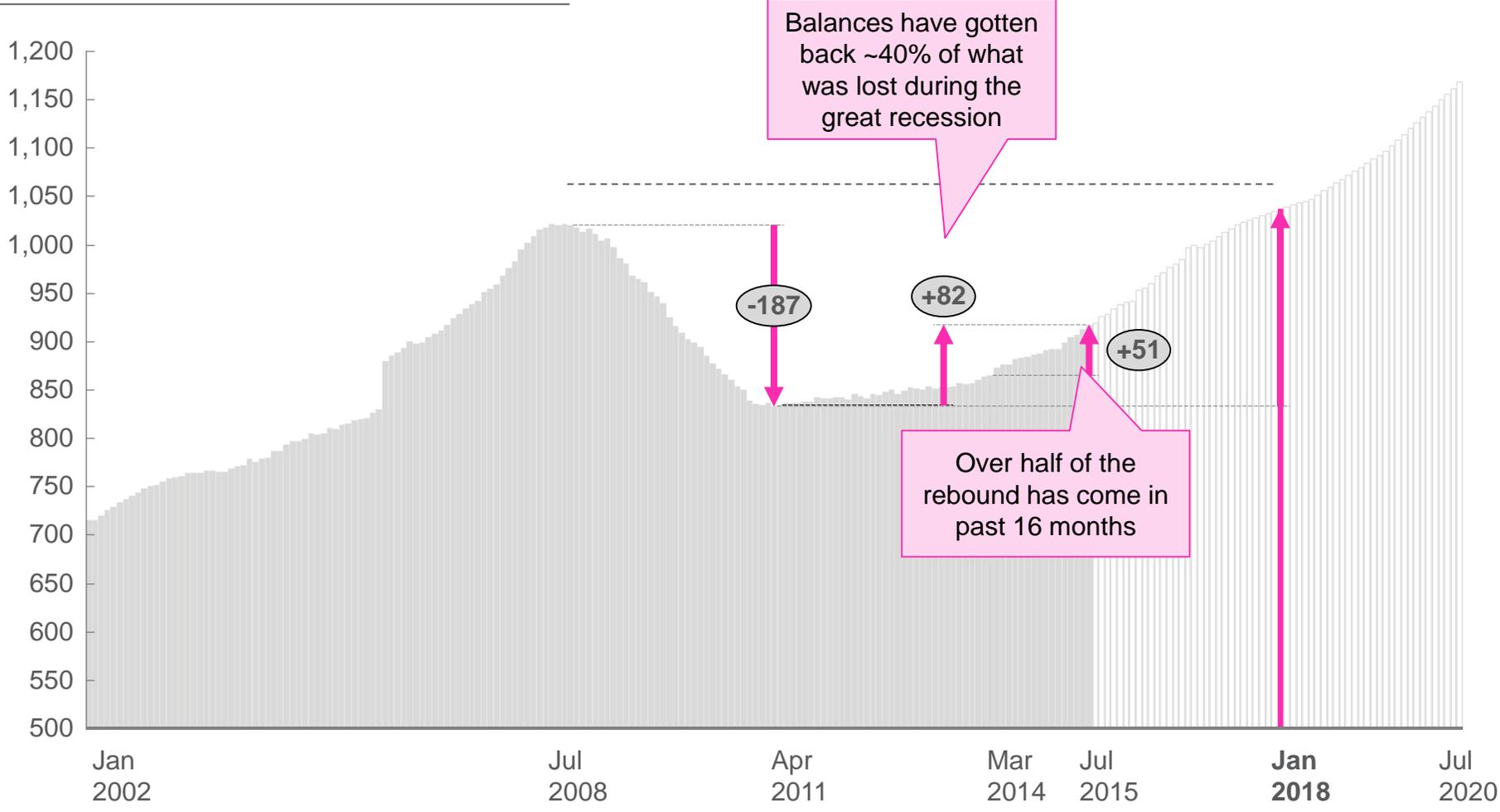


1 Money Services includes prepaid cards, electronic money transfer (EMT), non-bank check cashing and money orders.

2 Other includes armored transport, check verification/guarantee, travelers checks, and ISO ATM fees.

Revolving balances continue to recover after bottoming out in mid-2011

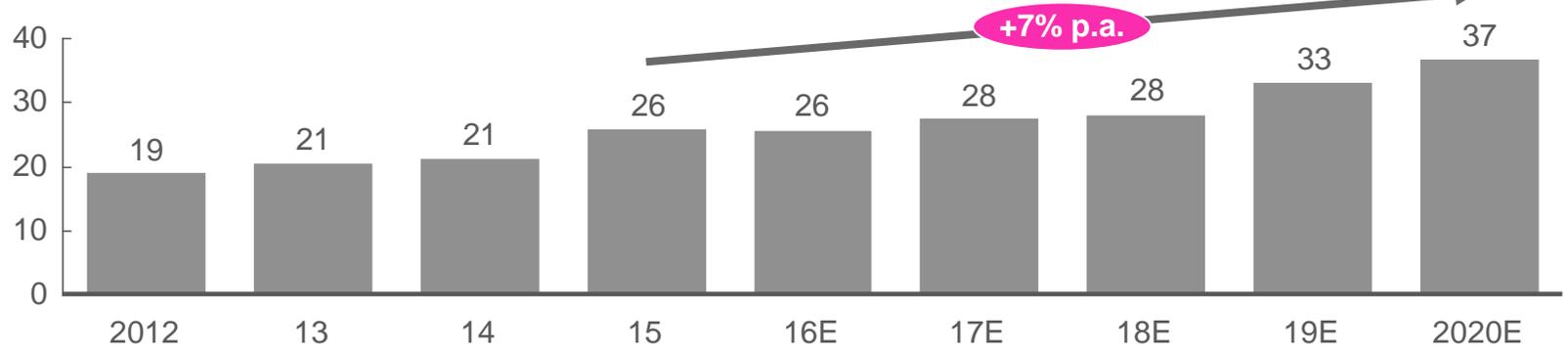
Consumer revolving credit (SA)
\$billion



Consumer balance levels are likely to decrease over the next five years; yet higher NIM will help drive income

Consumer DDA net interest income¹

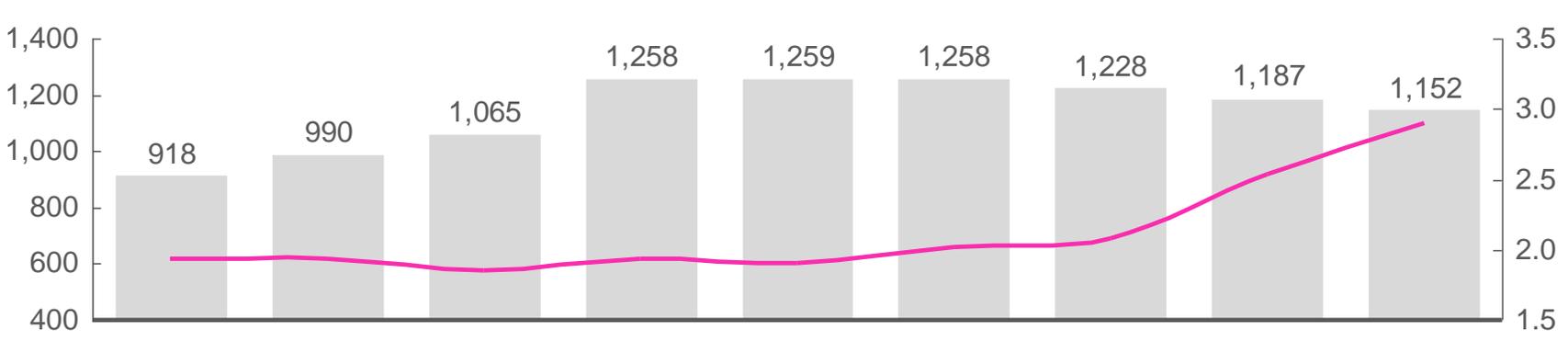
\$Billions



— NIM ■ Deposit Balances

Consumer deposit balances

\$Billions

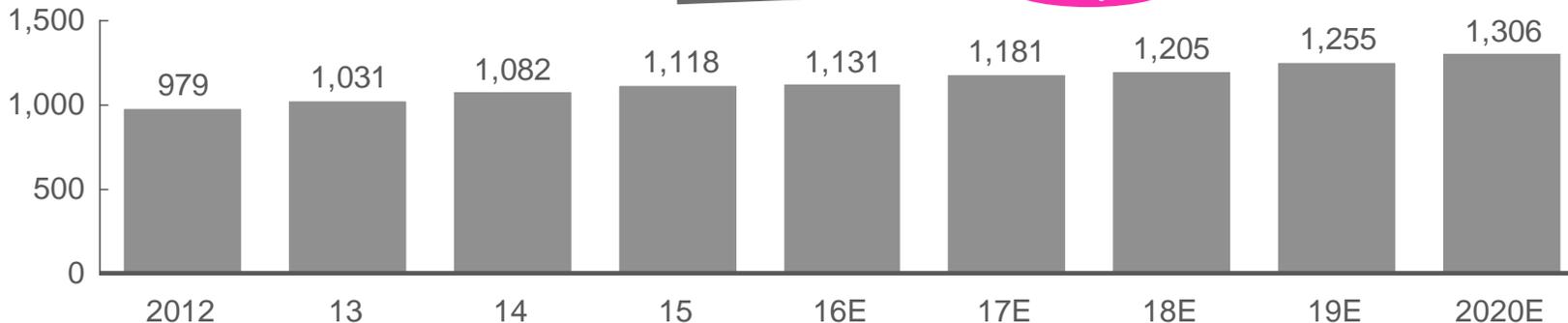


¹ Excludes OD line of credit NII

Rising NIM drives increased commercial DDA income over the next few years

Commercial DDA net interest income

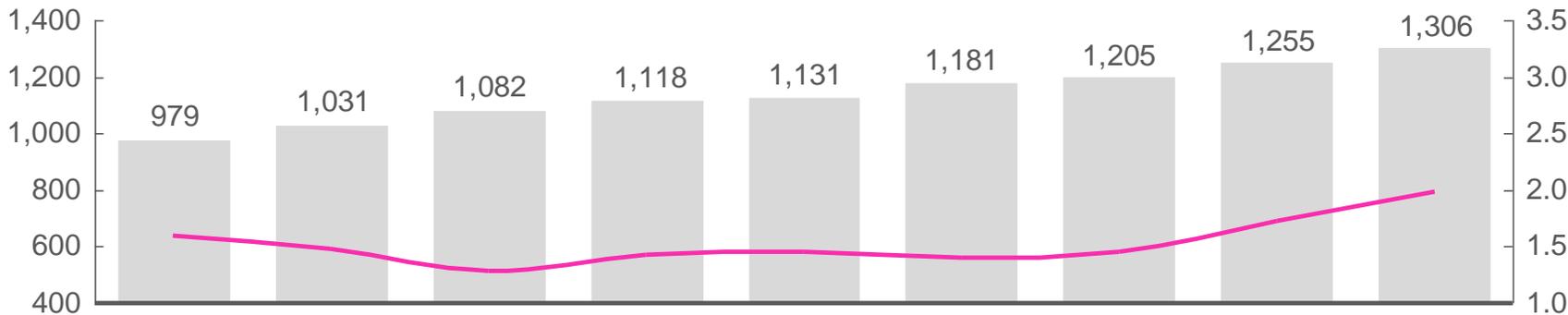
\$Billions



— NIM ■ Deposit Balances

Commercial deposit balances

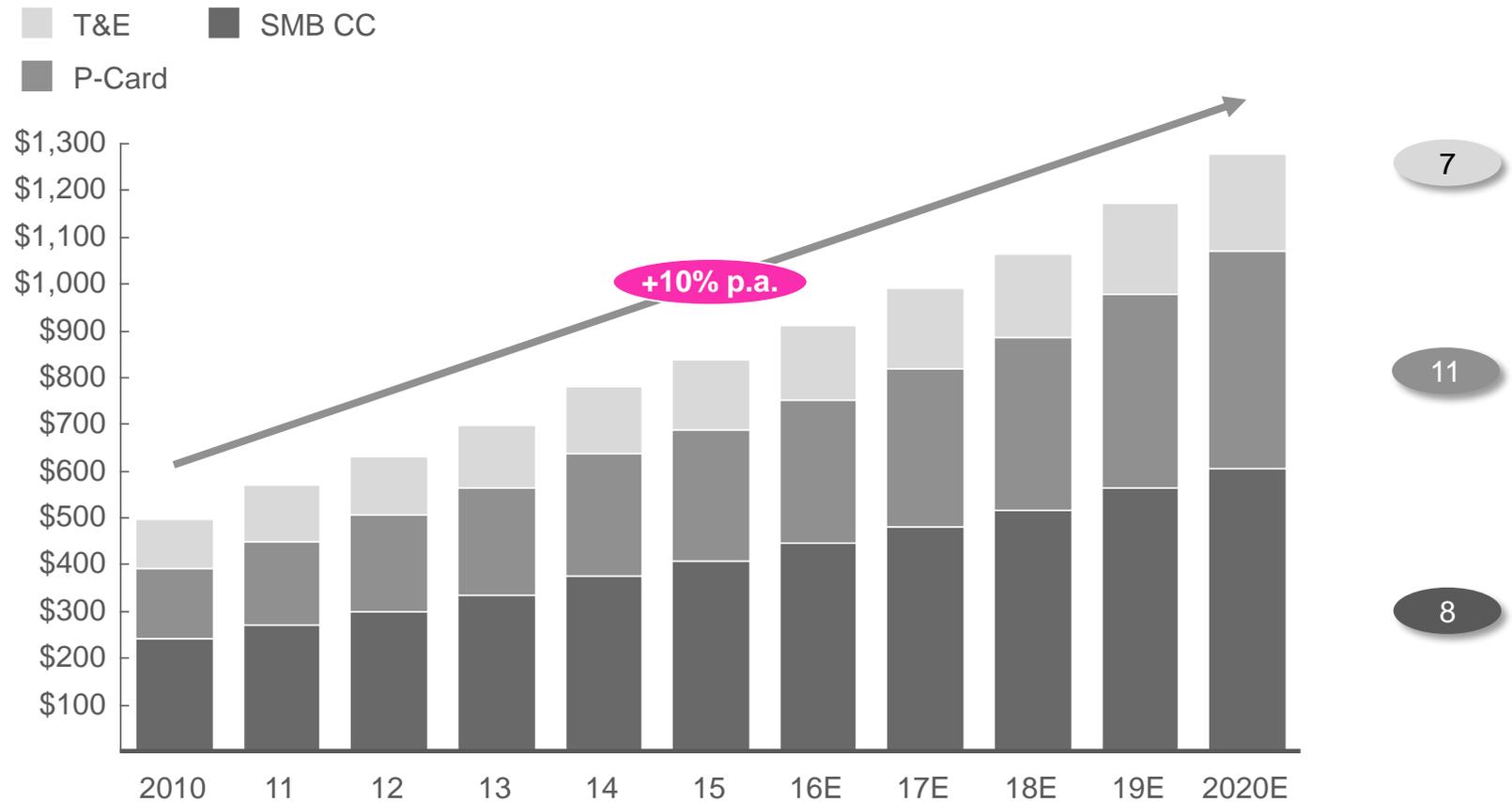
\$Billions



Commercial card spending took off post-recession; purchasing card continues to lead the charge, followed closely by small business credit cards

Industry general purpose commercial card purchase volume
\$Billions

CAGR 2015-20
Percent

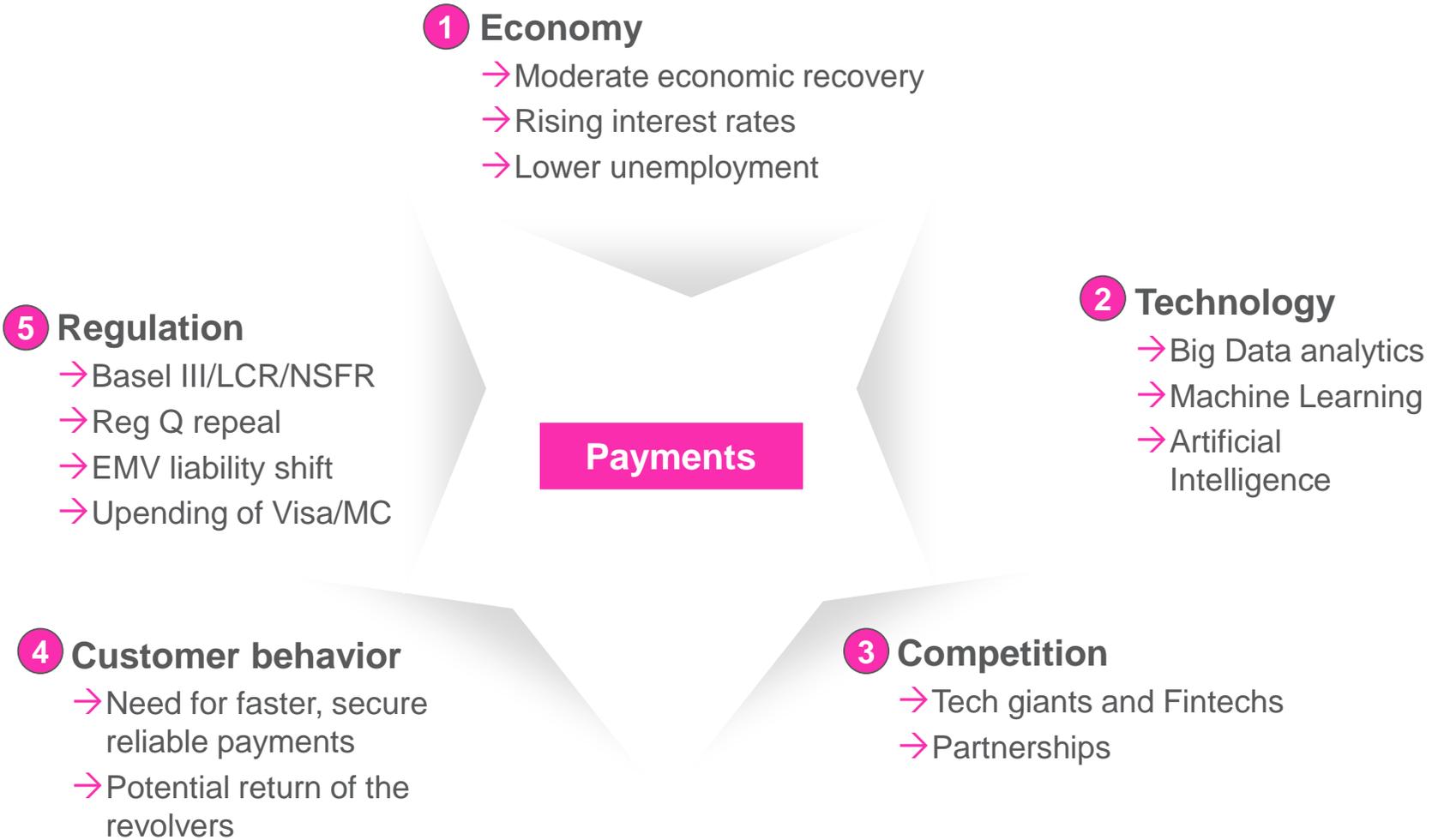


Today's Discussion

→ Trends in payments volume and value

→ **Five forces impacting payments**

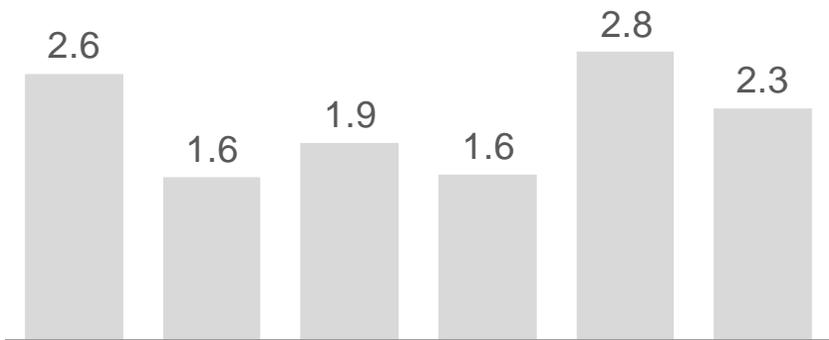
Five forces influence the payments landscape



1 Economic recovery and returning interest rates bode well for the overall payments landscape

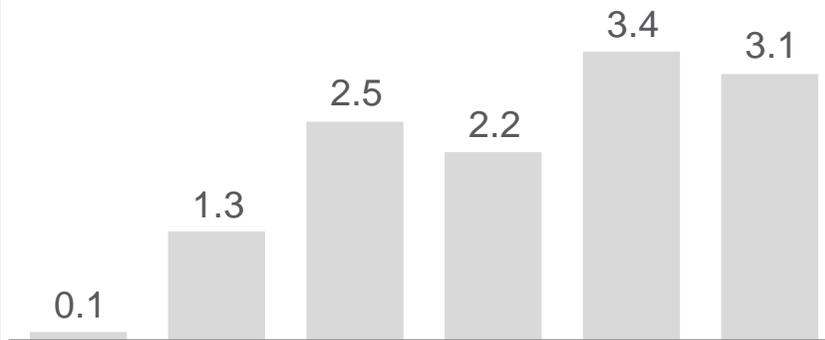
Annual change in US real GDP

Percent



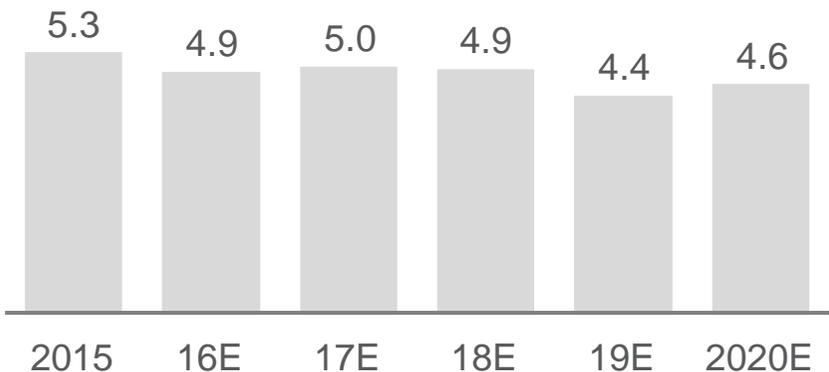
Inflation

Percent



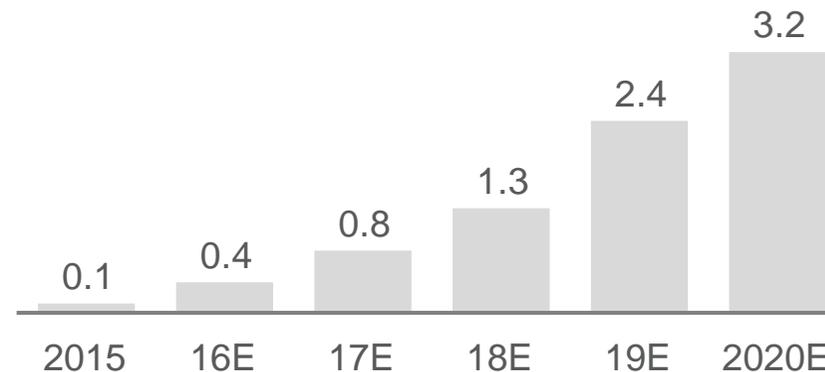
Unemployment

Percent



Fed Funds Rate

Percent



2 Significant advances in data sources and advanced analytics continue to fuel new technology

Big Data sources

→ **Transactions:** Trillions of data points from enterprise systems (e.g., DDA Systems, payments systems, loan account systems, billing systems), inter-company activities (e.g., clearinghouses), and consumer activity (e.g., POS)

→ **Mobile:** 5bn phones worldwide; growing share of smartphones



→ **Sensors:** Embedded M2M sensors growing 30% annually, installed in everything from cars, roads, buildings, appliances, to medical devices

→ **Social:** Over 1500mn active users of facebook; over 350mn tweets a day



→ **Scientific / engineering:** Satellite images, geophysical data, and genetic data

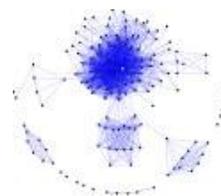
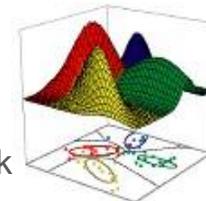


→ **Audio / video:** With increasing ability to automatically scan and extract information (e.g., facial recognition, speech analytics)

Analytics methods

Predictive modeling

Example uses: estimate customer churn; develop the “next best offer” for up-sell / cross-sell; estimating risk

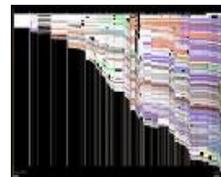
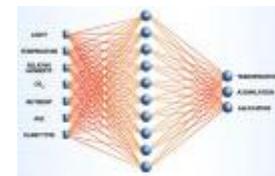


Social network mapping

Example uses: identify key purchase influencers; quantifying shifts in sentiment

Neural networks

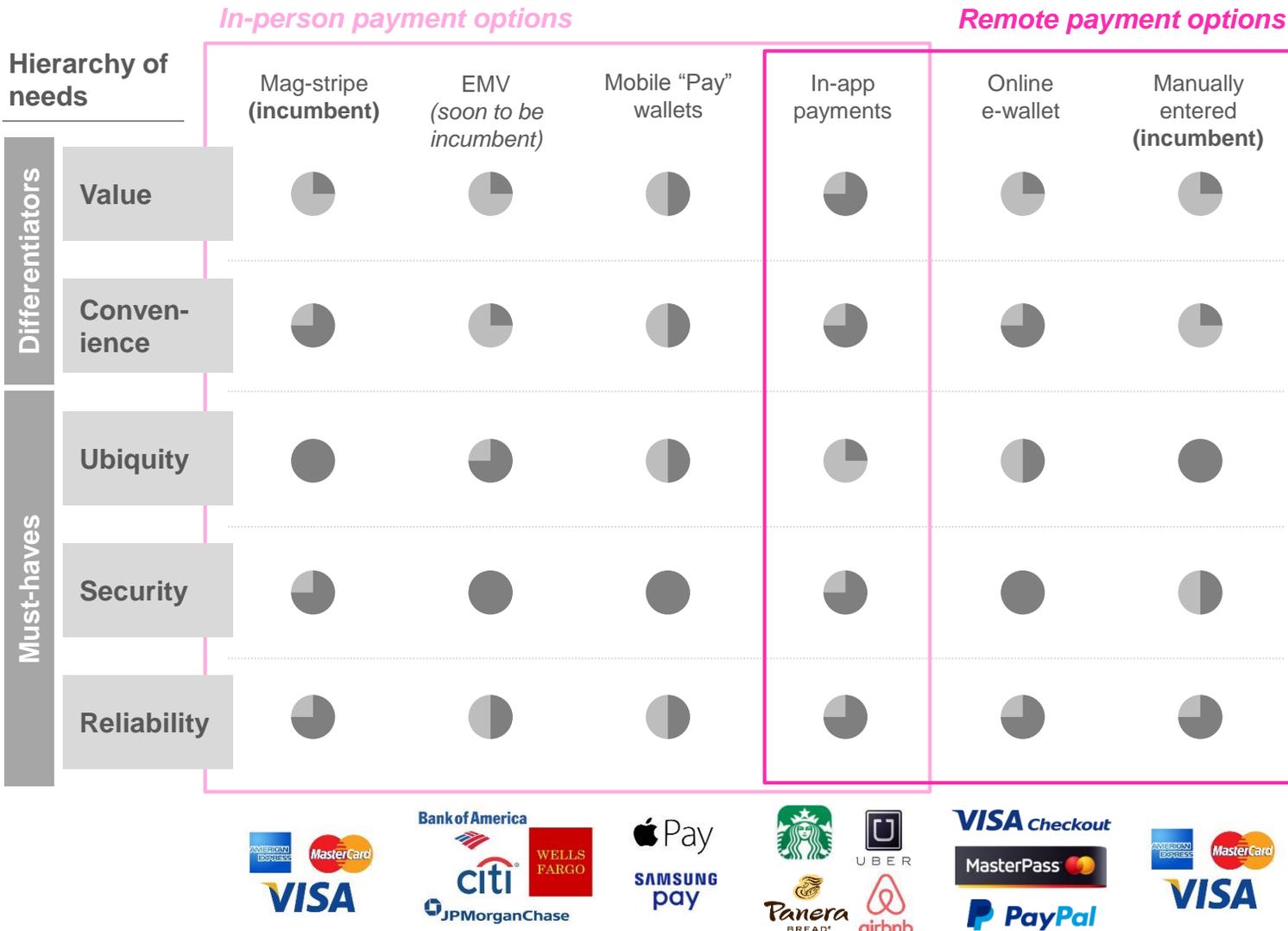
Example uses: fraud detection; medical diagnostics



Visualization tools

Example uses: visualizing risk; understanding correlations

3 Few new payments methods have offered step-function improvement over incumbent options

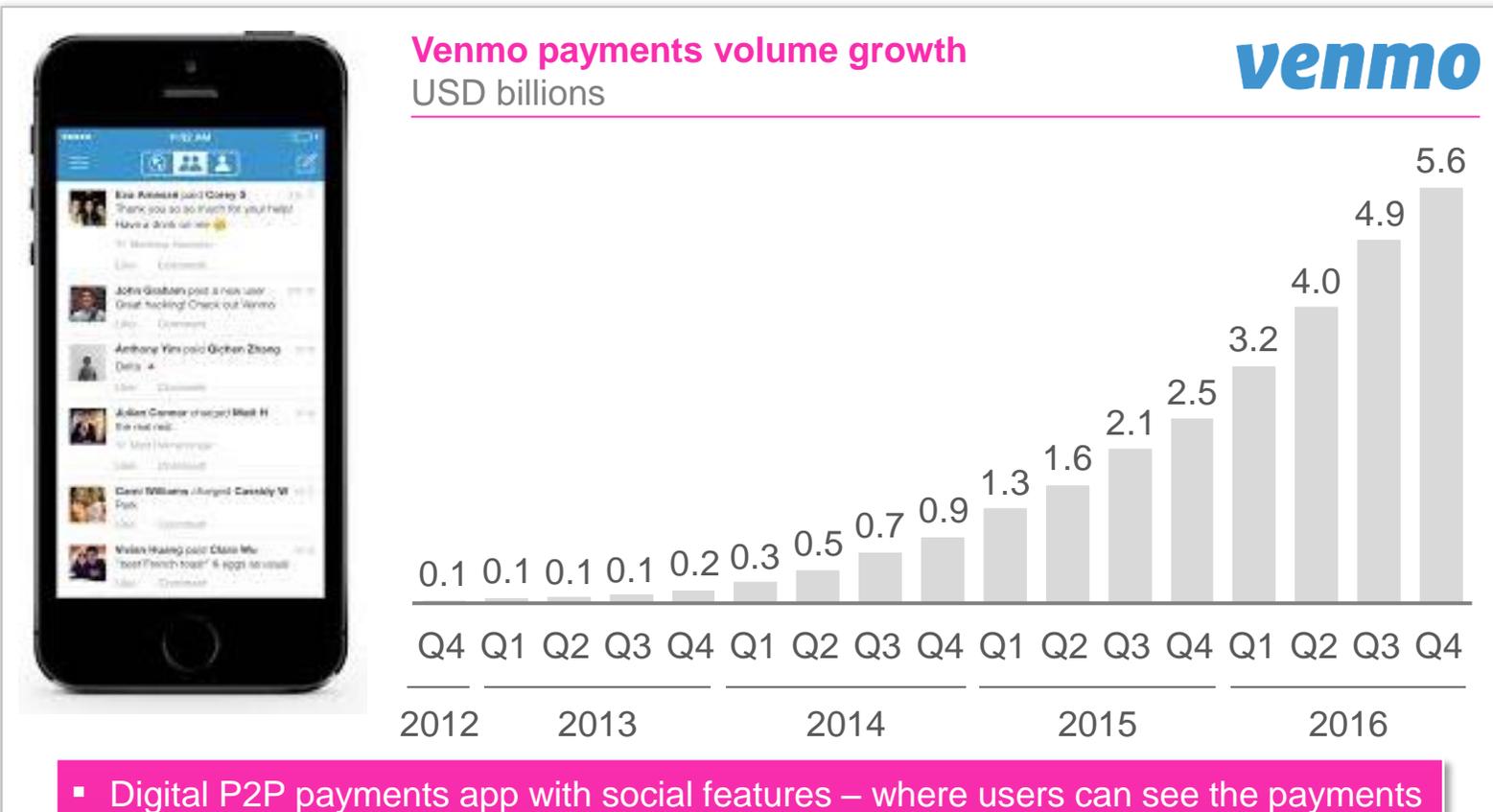


Key takeaways

- Value at the top of the needs hierarchy, but has most room for improvement
- EMV has potential to help "Pay" wallet ubiquity (infrastructure) and convenience (i.e., tap is better than dip)
- In-app payments do best job of step-function improvements however closed-loop systems cap ubiquity
- Success of online e-wallets driven by significant improvement in convenience, also helps shopping cart abandonment
- Merchant and user education go a long way to making EMV/mobile wallets more reliable and convenient

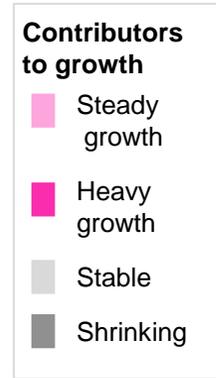


4 On the consumer side, Real-Time Payments is a response to digital attackers driving customer acquisition and engagement through P2P payments



- Digital P2P payments app with social features – where users can see the payments made by friends – that has gotten meaningful traction with Millennials
- Free, ACH and debit-card based, with a seamless ‘text messaging’-like interface
- Does not generate revenue on its own – was acquired by PayPal in 2013 and serves as a customer acquisition engine for a new demographic
- “Pay by Venmo” recently announced enabling payment of merchants from Venmo

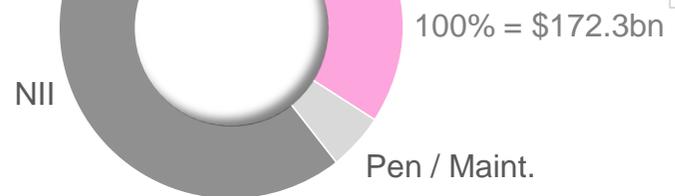
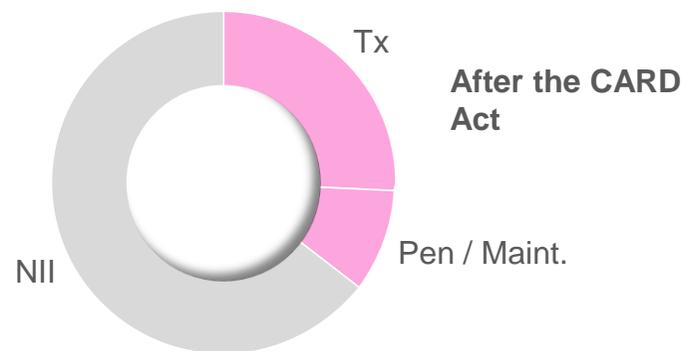
5 Regulations redefine the characteristics of revenue growth



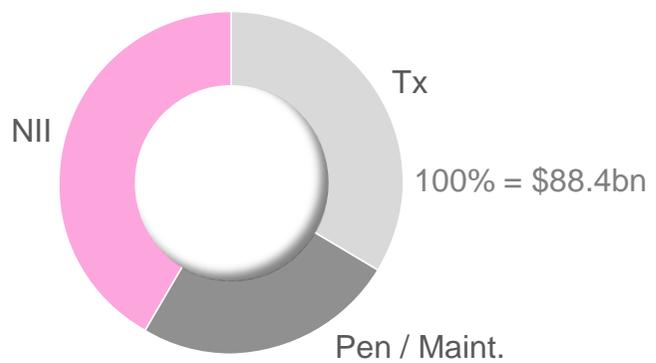
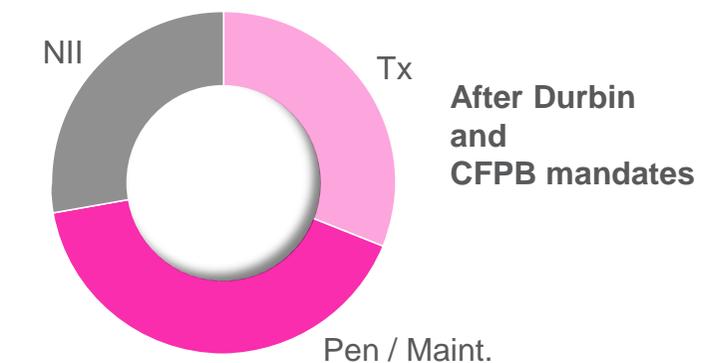
Pre-recession peak - 2008

Post-recession - 2020

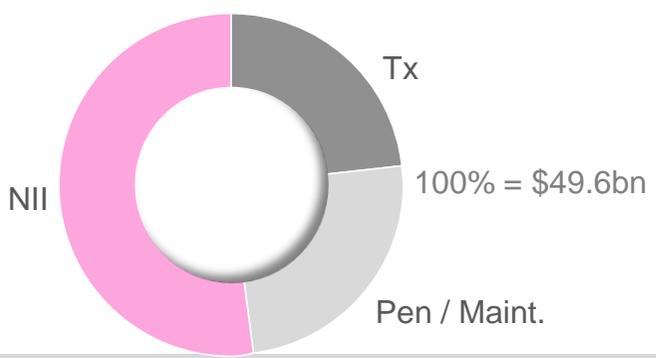
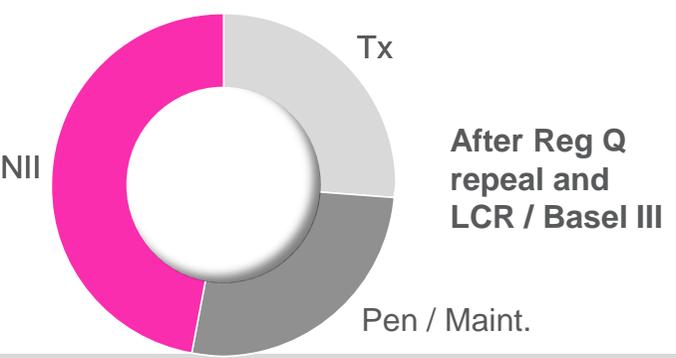
Consumer Credit Card
100% = \$132.7bn



Consumer DDA
100% = \$74.2bn



Commercial DDA
100% = \$35.95bn



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