

PwC European Banking Transformation and M&A Conference

Transforming the market, creating value

27 March 2019



The Future of Banking Part 1

PwC European Banking Transformation
and M&A Conference

27th March 2019



A discussion with...



Isabelle Jenkins
PwC UK Banking Leader

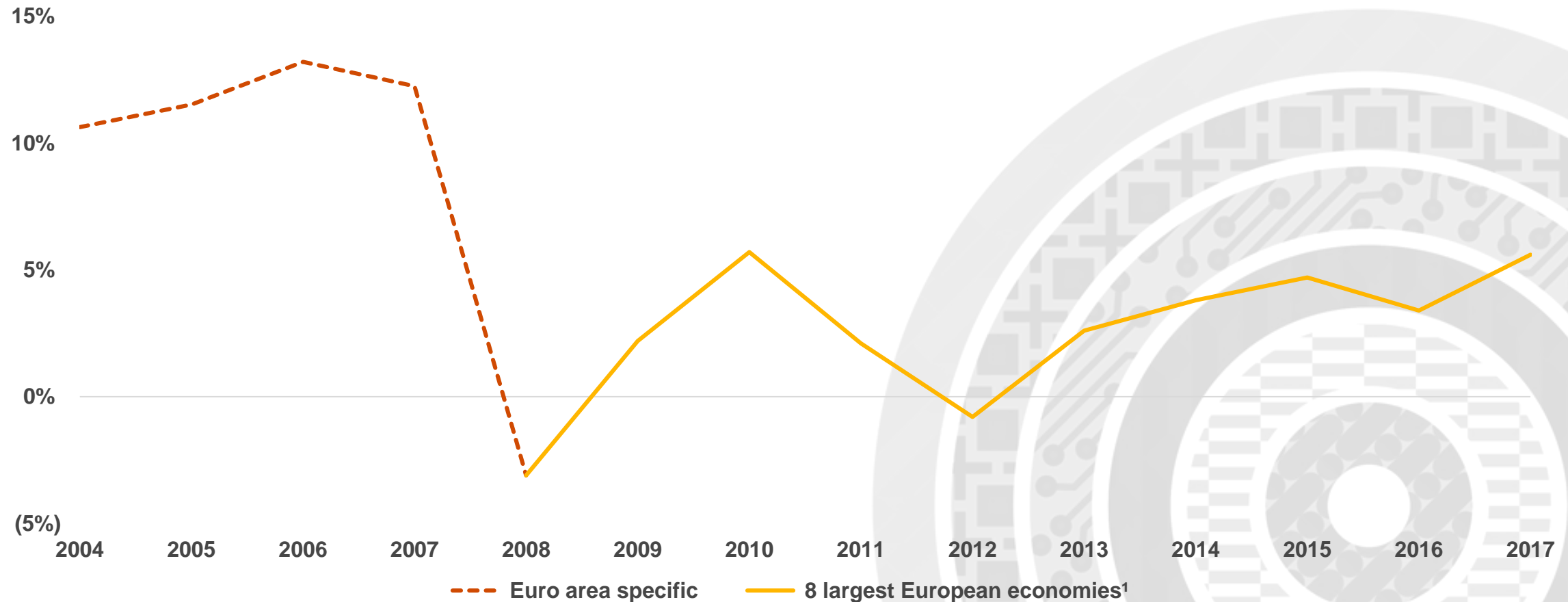
The Future of Banking Part 1

Richard Thompson
Conference Chairman



Return on Equity is slowly recovering but remains below the cost of capital

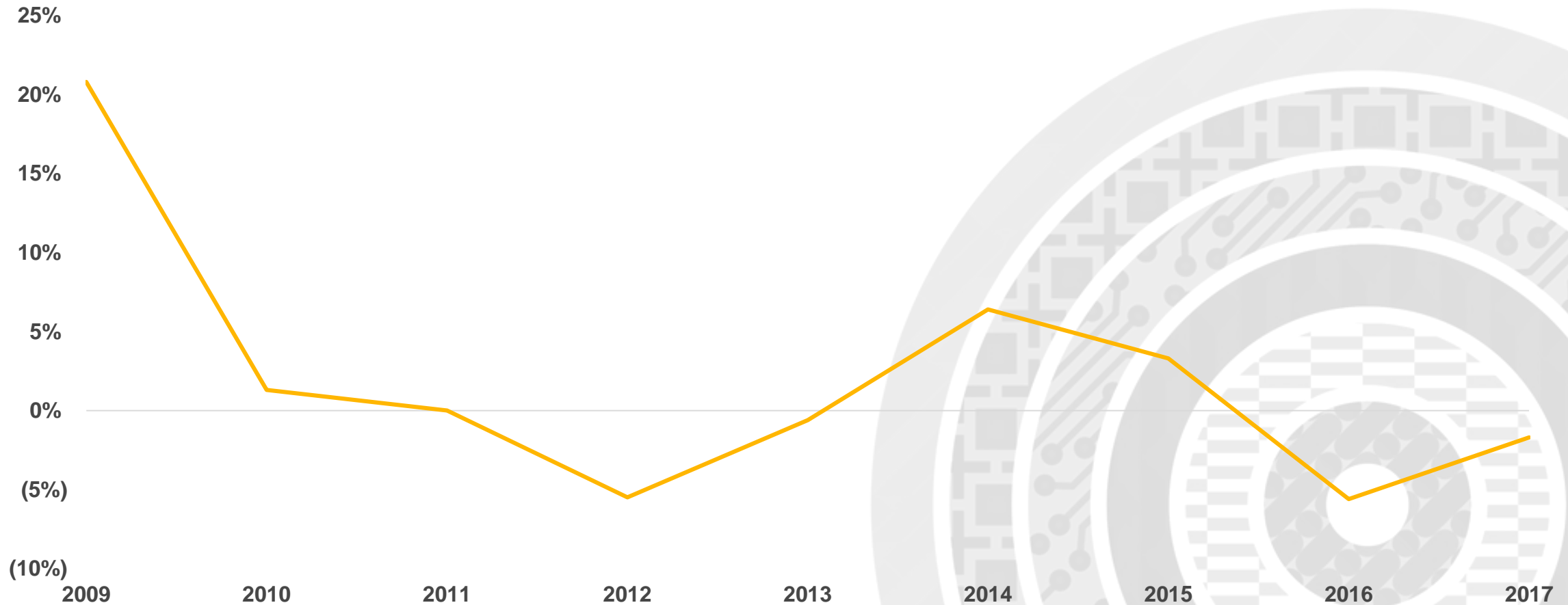
Return on Equity, banks across the largest European economies, 2004-17



Note: (1) The eight countries captured include Belgium, France, Germany, Great Britain, Italy, Netherlands, Spain and Sweden. Source: ECB PwC

Banks have not experienced any sustained income growth

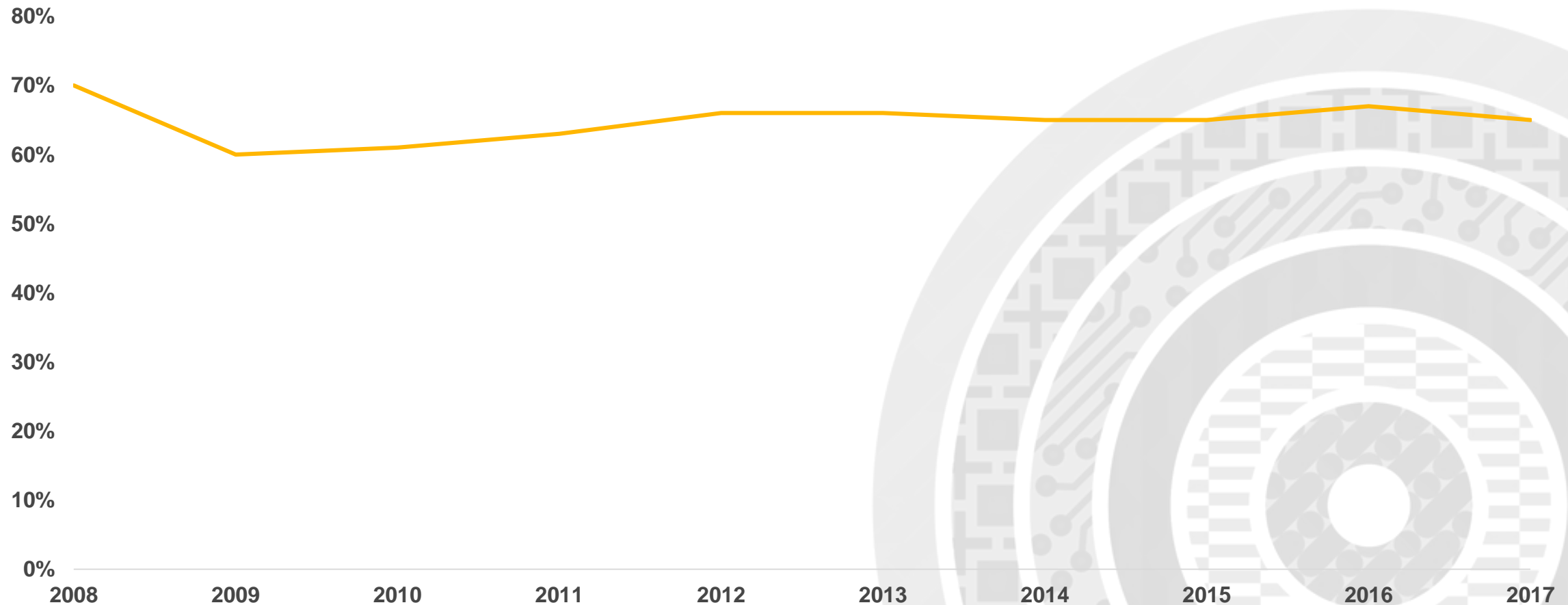
Income growth YoY, banks across the largest European economies¹, 2009-17



Note: (1) The eight countries captured include Belgium, France, Germany, Great Britain, Italy, Netherlands, Spain and Sweden. Source: ECB PwC

Despite cost cutting efforts, cost-to-income ratios remain stubbornly high

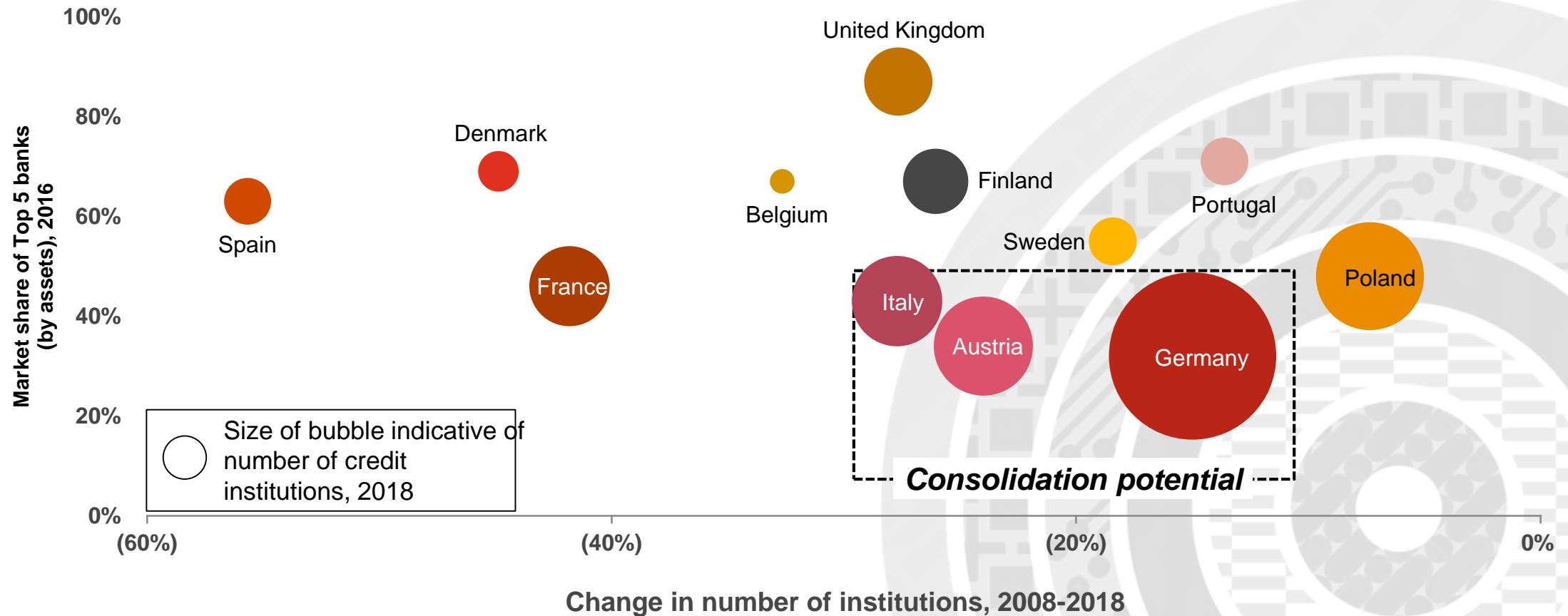
Cost-to-income ratio, banks across the largest European economies¹, 2008-17



Note: (1) The eight countries captured include Belgium, France, Germany, Great Britain, Italy, Netherlands, Spain and Sweden. Source: ECB
PwC

Europe has seen a wave of consolidation, with further potential across Germany, France and Italy

Number of credit institutions legally incorporated by European country, 2008-2018



Market map

Low cost manufacturers

- Reallocate resources and shed unattractive businesses from portfolio
- Low cost and flexible business model
- Sophisticated risk pricing
- “Utility” service providers

Specialist lenders

- Less complex business model than traditional banks
- Innovative product development
- High-touch and relationship driven
- Potentially white labelling products to 3rd parties

Digitised providers

- Large customer base
- Mix of own and 3rd party products
- Reduce legacy systems and drive efficiencies by digitising and automating processes
- CLTV focus driving high share of wallet

Marketplace

- Large, engaged customer base
- CRM and cross-selling
- Strong brand, low CPA and high loyalty
- Wide range of financial and non-financial services and products
- Partnership management skills

What could happen in banking by 2029

Competitive landscape

- *Amazon launches its own cryptocurrency driving widespread customer adoption*
- *FAANGs penetrate financial services more decisively*
- *Half of today's fintechs are acquired or merge with traditional banks*
- *A pan-European investment bank champion emerges*

Product developments

- *European citizens have a portable digital KYC identity and credit worthiness*
- *Standardisation gives way to mass personalisation*

Operating models

- *Core banking is a utility with differentiation occurring at the front end / customer interface*
- *Back and middle office functions are shared or outsourced to large utility providers*

Time for a Word Cloud...



How do we get there?



The Future of Banking Part 2

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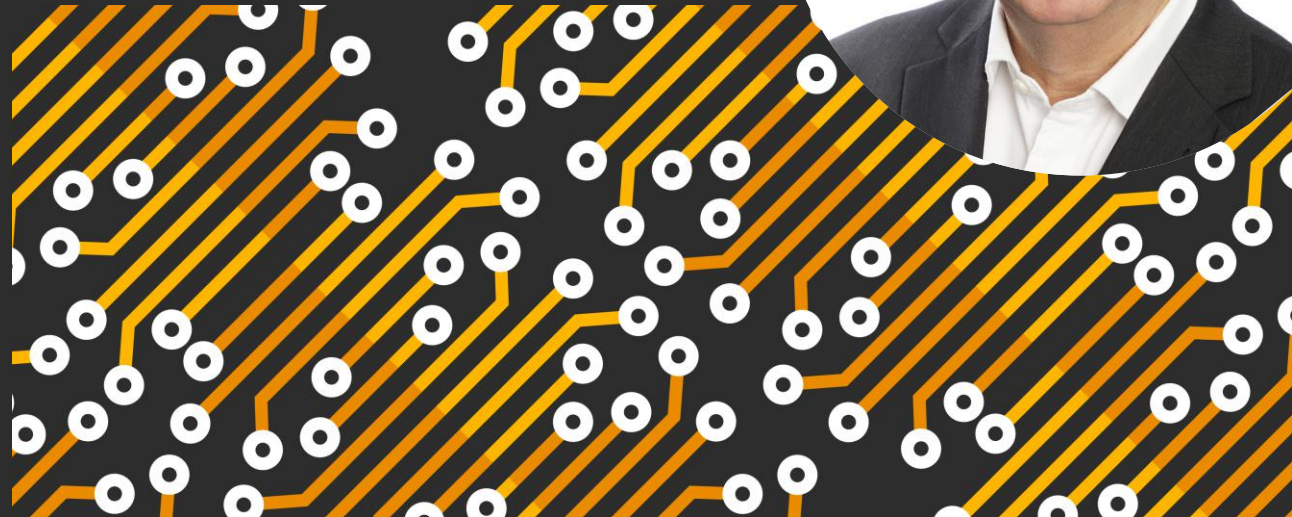
A discussion with...



Anne Boden MBE
Founder & CEO
Starling Bank

The Future of Banking Part 2

Richard Thompson
Conference Chairman



The Future of Banking Part 3

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Panel members



Henrietta Baldock
Member of PwC
Advisory Council



Nick Page
PwC Global Origination



Rob Boulding
Partner
Portfolio Advisory Group

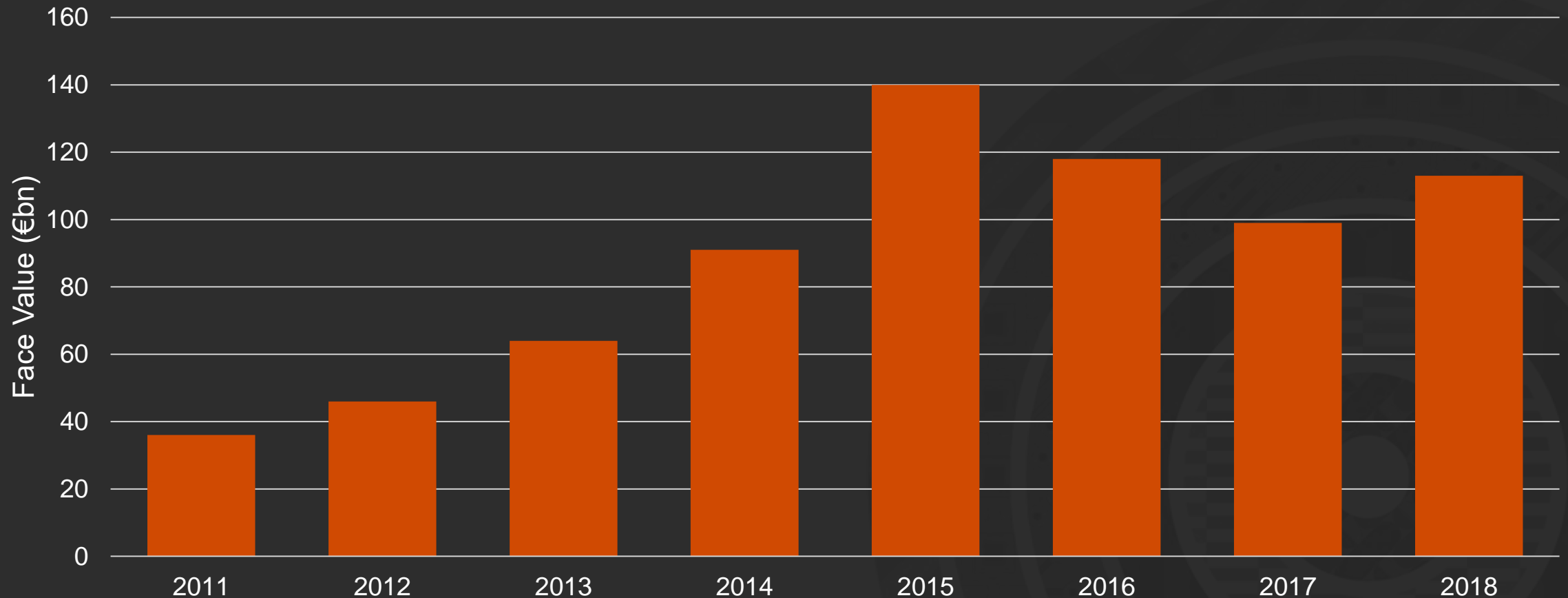
The Future of Banking Part 3



Richard Thompson
Conference Chairman



European loan portfolio transaction volumes over time



Wider spectrum of credit related transactions now in the market

- Capital Relief Transactions
- Forward flows
- Long Dated Assets
- Non Bank originators
- Role of insurers and pension funds

The Future of Banking Part 4

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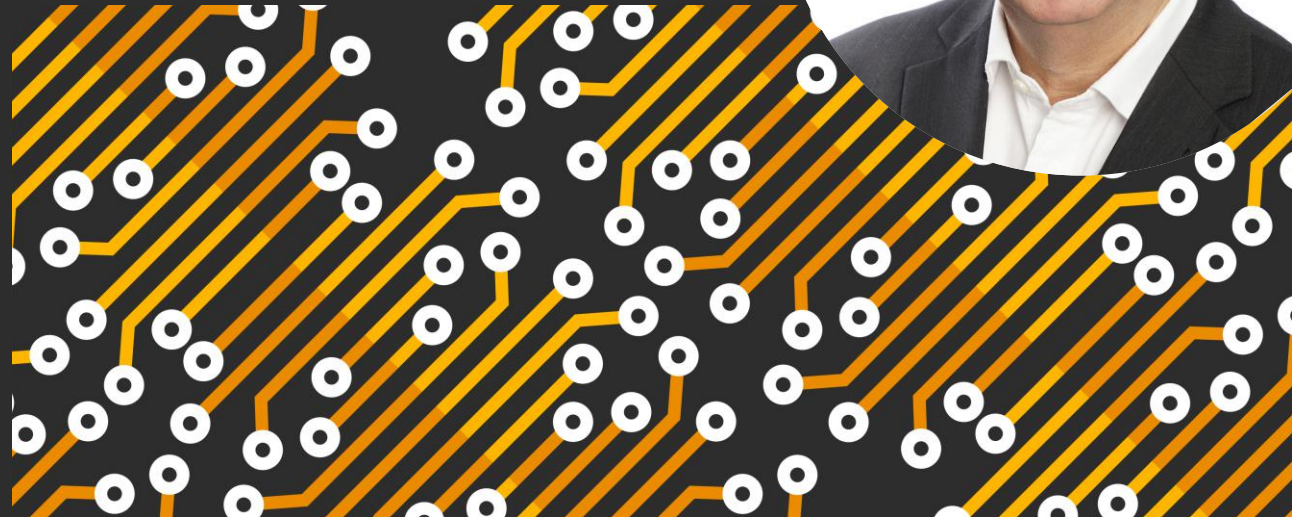
A discussion with...



James Saull
Senior Manager
Amazon Web Services - FS

The Future of Banking Part 4

Richard Thompson
Conference Chairman





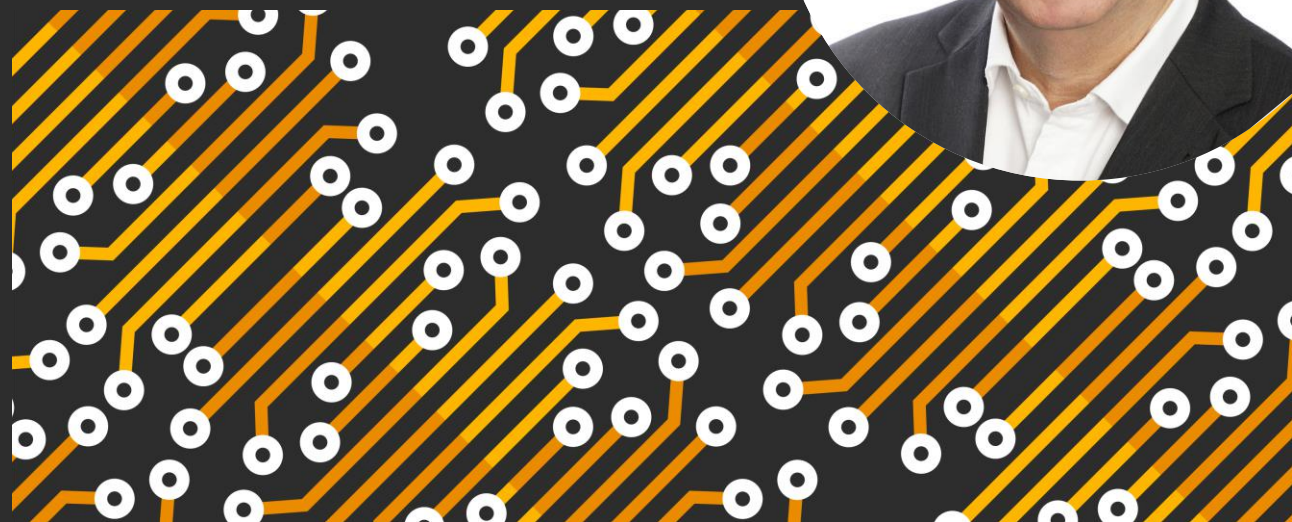
Shazia Azim

Head of Strategy & COO for FS
PwC

Disruption Room Results



Richard Thompson
Conference Chairman

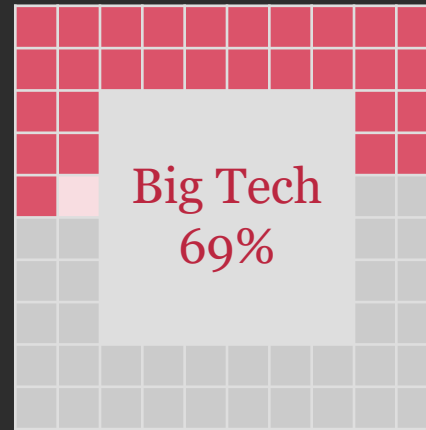


Disruption Room Results

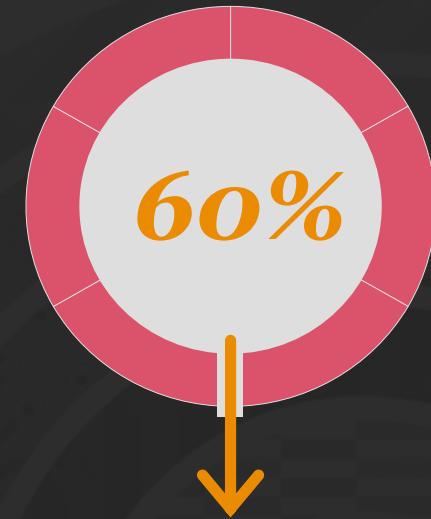
How you have viewed disruption and disruptive influences?



*% of automation
now vs 5 years*



*Threat to established
banking market*



*Disruption is a value
driver for M&A*

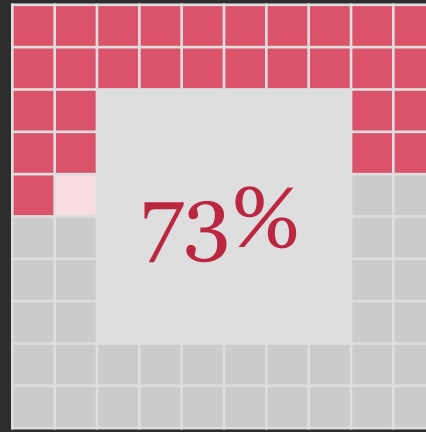
*Automation is coming at pace
Big Tech is overwhelming driving change
Disruption is a value driver for M&A*

Disruption Room Results

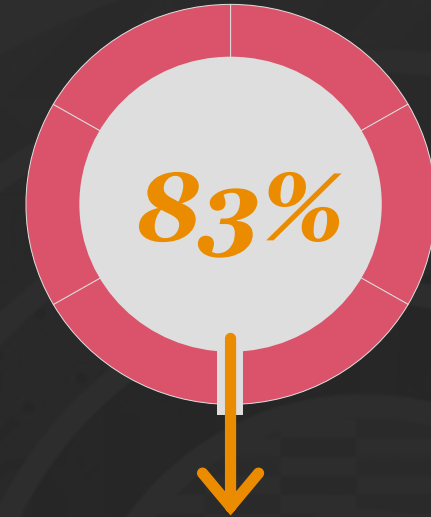
Use of disruptive technology



Believe AI will displace more jobs than it creates



Would immediately use voice assistants for financial advice



VR to become the norm in work & personal life

*AI will have a huge impact on workforce
Voice recognition will transform financial intelligence
Virtual reality will become mainstream in the near future*

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Driving a successful FinTech deal

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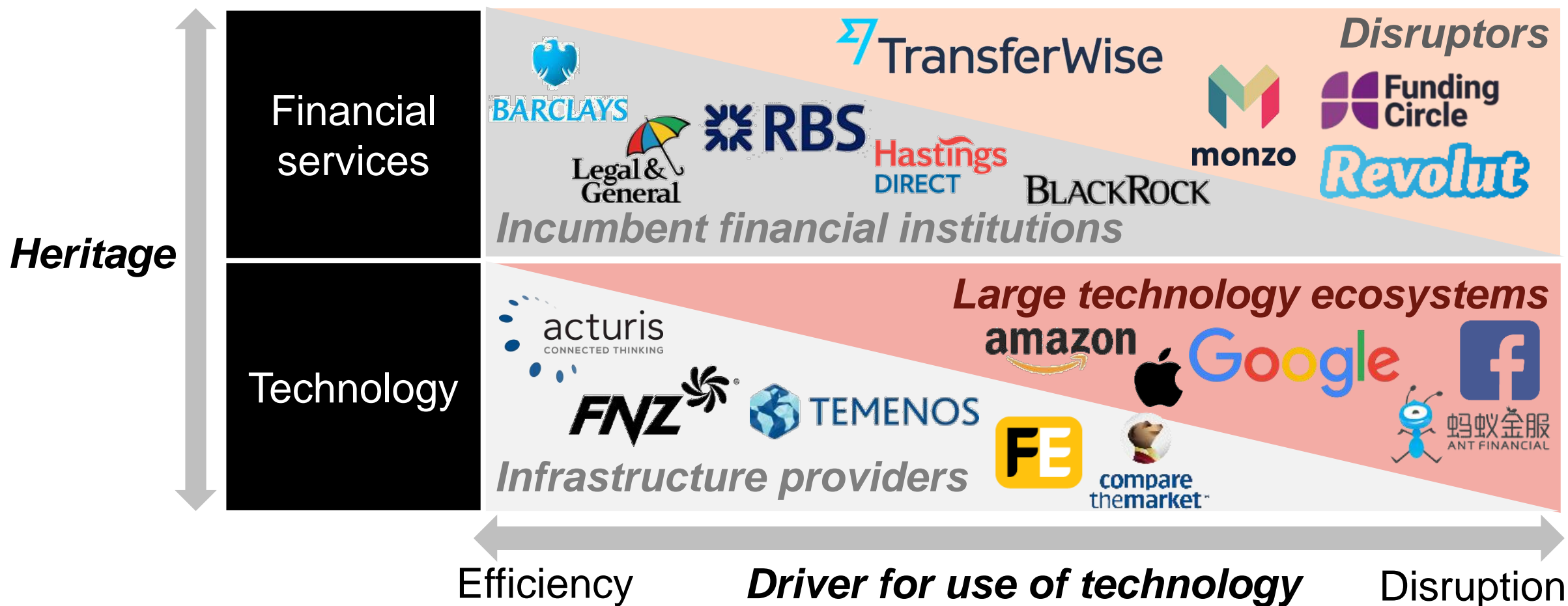
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PwC view on FinTech

FinTech companies differ in their heritage and how they apply technology

FinTech landscape



The FinTech landscape spans multiple sectors, with each experiencing hot-spots of tech-led innovation

Key FinTech sectors	Hot sub-sectors				Example companies
Banking & lending	Digital banking	Alternative lending	POS finance	Credit scoring	  
Capital markets	Trading software	Clearing & settlement	Data management	Capital markets data	 
Insurance	Telematics	Insurer software	Aggregation platforms	Broker software	  
Asset/wealth management	Data management	DFM & robo-advisors	Wealth platform systems	Enterprise software	  
Payments	FX payments	Mobile / e-payments	E-wallets	Payment processing	  
FinTech support services incl. RegTech	Regulatory & compliance systems	Risk management systems	Document production & management	Data management / governance	  

Market trends are creating positive dynamics for FinTech companies...

Evolving FS landscape with products and services being delivered by new disruptors challenging incumbent providers

Evolving value chains with new business models and new ways to deliver products and services

Increased cost to serve - several factors are putting pressure on providers' cost bases, and they are seeking technology to reduce this



Technology and innovation creating both improved efficiency & disruptive new services; user experiences, ways to leverage data and cloud solutions

Changing consumer behaviour with a growing demand for; digital distribution, price comparison, ease of use

Waves of regulatory evolution with implications for the business models and operations of incumbents and new businesses alike

...who are becoming increasingly attractive to investors...



Large and growing market fuelled by technological development and innovation



Capital light businesses with high margins



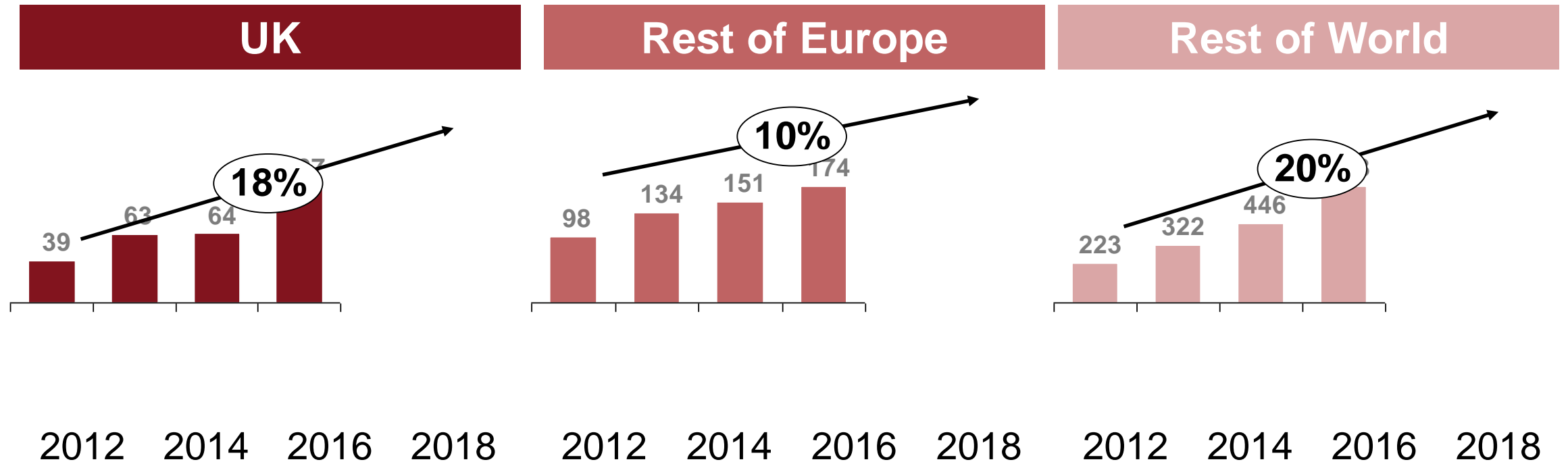
Diverse range of investable assets ranging from start-ups to mature businesses



Highly scalable business models

...as seen in the number of FinTech deals which has been growing significantly

Number of FinTech M&A deals



We estimate that in 2018, c.10% of these deals were >£500m and a further c.25% were £50-500m in deal value

Source: Pitchbook, PwC analysis

Panel Discussion

Panel members



Gemma Godfrey
Founder & CEO
Moola



Richard Watts
Fund Manager
Merian Global Investors



Ludovic Blanquet
VP, Global Product
Strategy & Portfolio
Finastra

Driving a successful FinTech deal or investment

Neil Hampson
Partner – Strategy
PwC

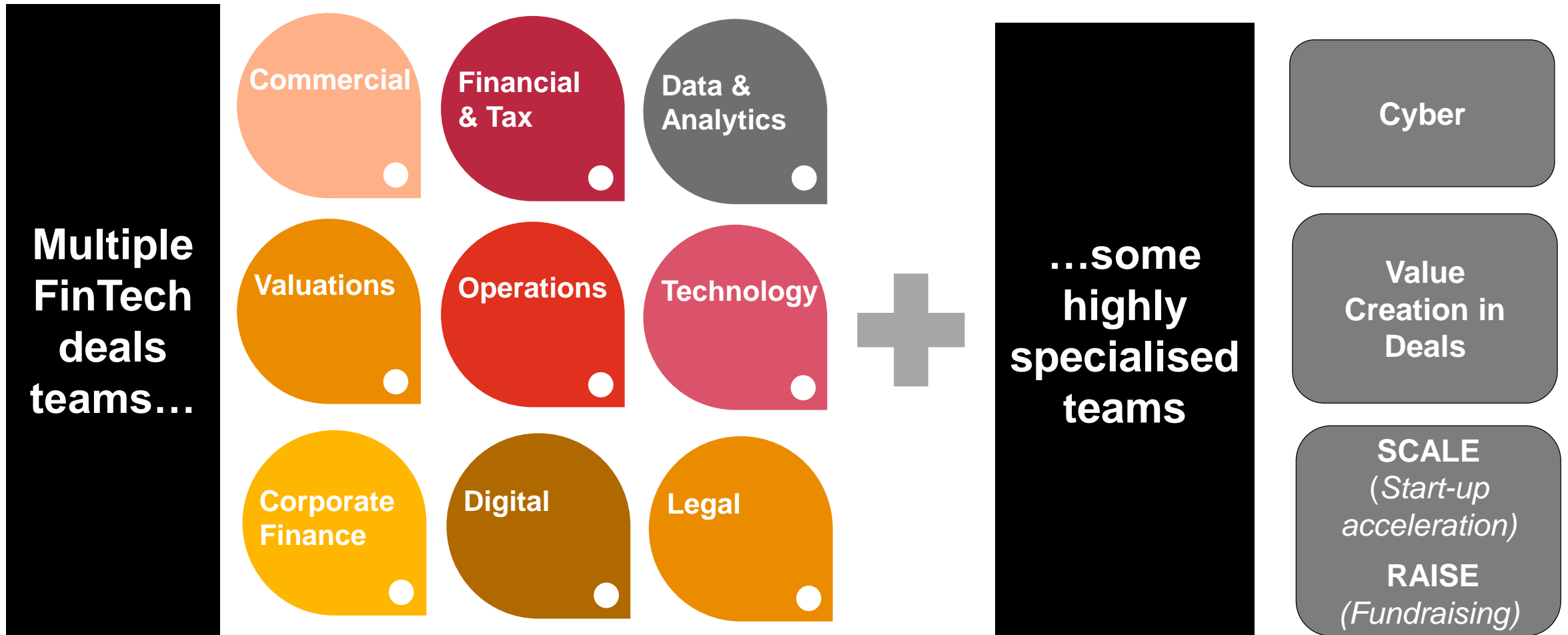


Andrew Macnab
FinTech Deals Lead
PwC



Wrap up

Our FinTech Deals team spans across a range of deal areas, with some highly specialised teams



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Matchmaking between Banks and FinTechs

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Agenda

1. Introduction and Opening Statement
2. Banking transformation
3. Currency Cloud
4. Squirrel
5. Growth Street
6. Q&A and Close

Panel members



Stephen Lemon
Co-founder
Currency Cloud



Greg Carter
Founder & CEO
Growth Street



Emanuel Andjelic
Chairman & Co-Founder
Squirrel



Caroline Vaughan
Head of Commercial and
Business Development
Innovate Finance

Matchmaking between banks and Fintechs

Mike Magee
FS Deals Leader
PwC

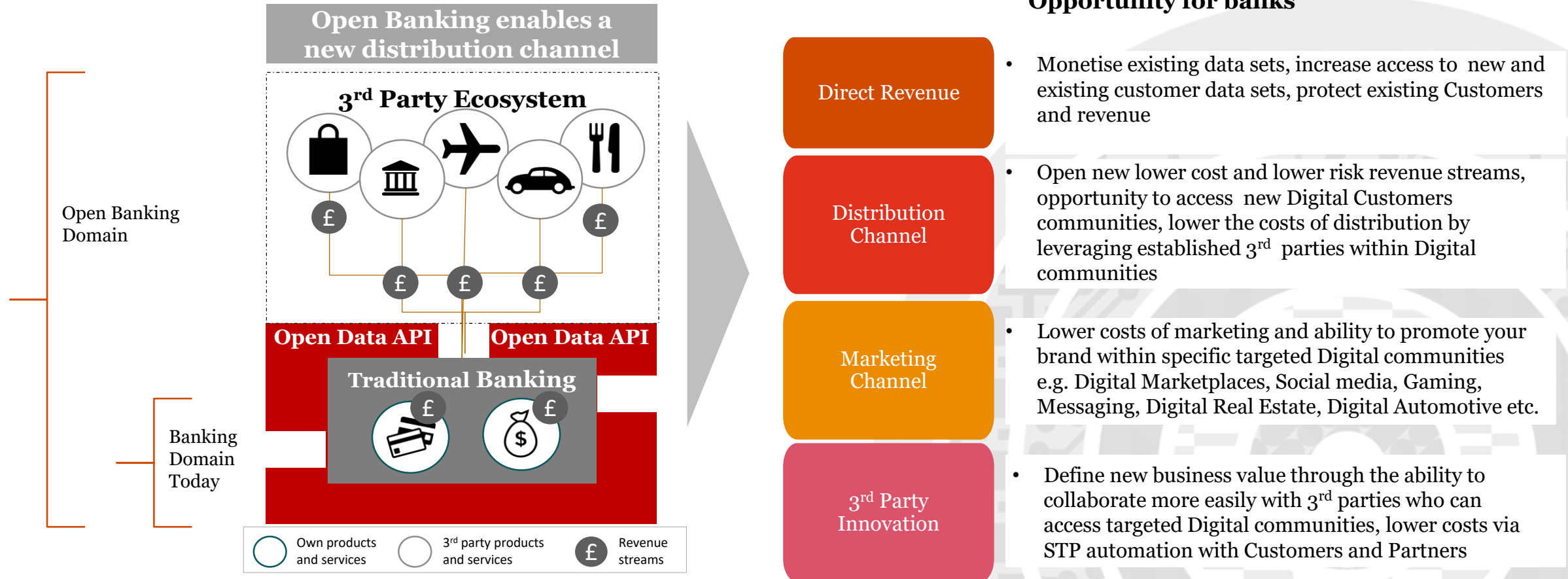


Darshan Chandarana
Technology & Change Partner
PwC

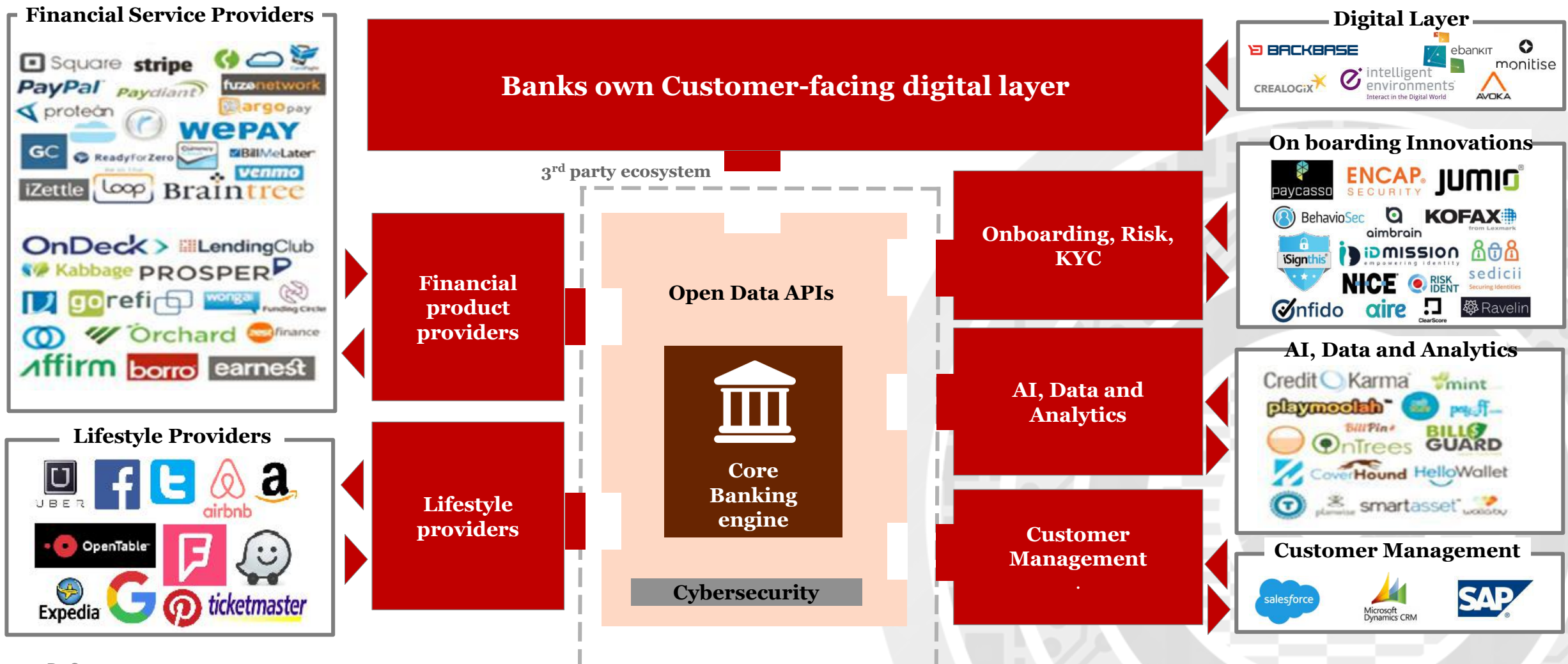


Open API Banking is creating a new ecosystem

By unlocking new opportunities and revenue streams through collaboration with 3rd parties and/or strategic partners



Collaboration will accelerate innovation - Banking platforms need to be more adaptable



Company Overview

**A global B2B cross-border
infrastructure solution**

Collections, conversions, and payments.

**We are unlocking the
global digital economy
for the next generation
of financial companies
and creating a better
tomorrow for all**



Currencycloud

Currencycloud at a glance



\$1bn

monthly volume

300+

customers

c.\$37m

2018 exit
run-rate⁽¹⁾

c.65%

revenue CAGR
FY2016-2019E

180

FTEs
(Dec 2018)

- A comprehensive **B2B cross-border infrastructure** solution for collections, conversions, and payments.
- Built through innovative **APIs** and a full-stack **technology platform**.
- Delivered via a **SaaS** model.

(1) Monthly run-rate revenue for December 2018 converted using a GBP/USD exchange rate of 1.285 as at 24/8/2018

Massive and growing international B2B payments market

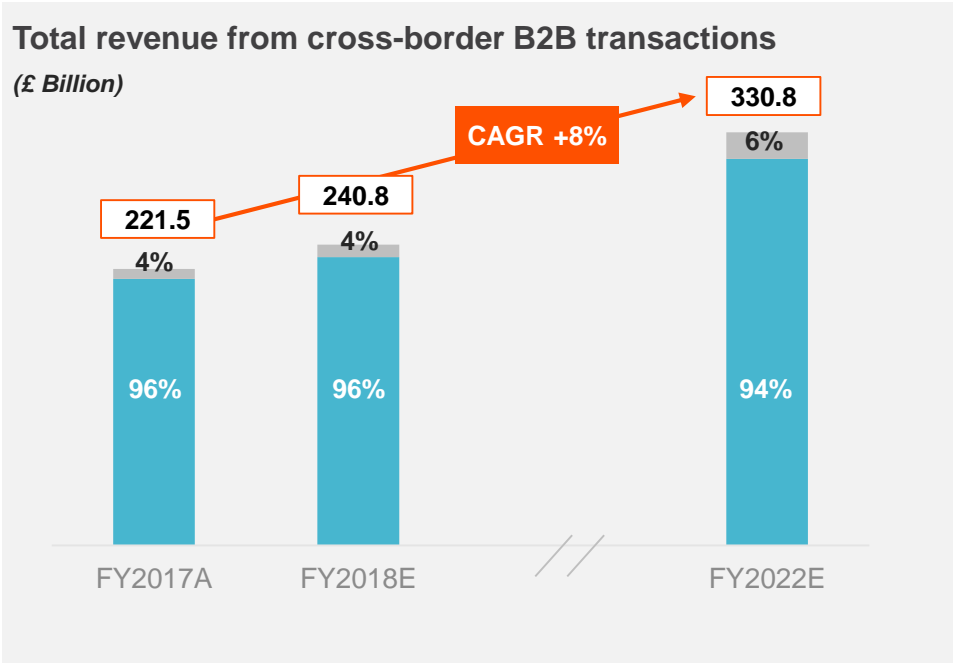
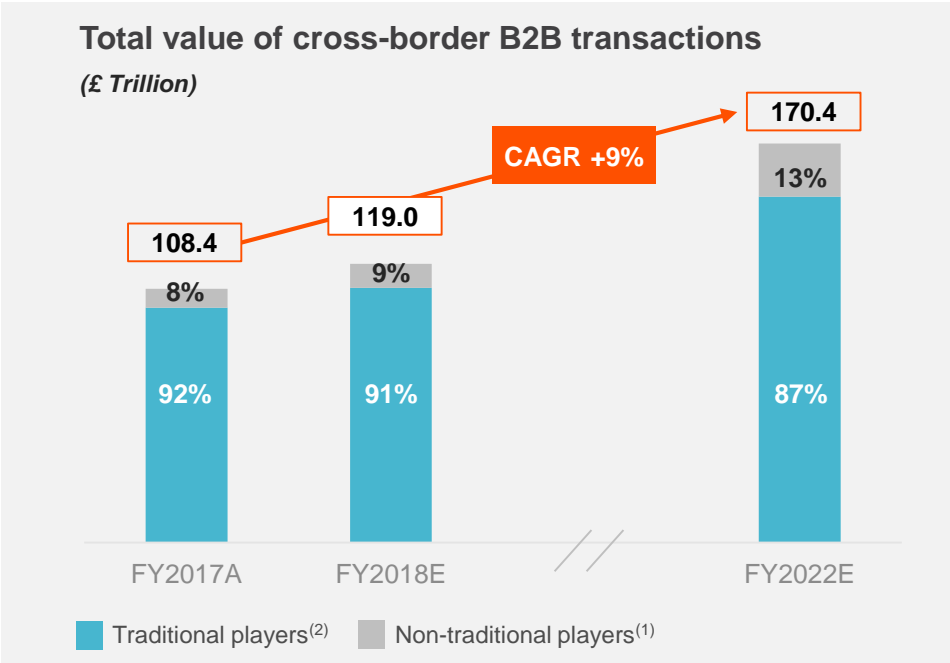


18 million
Businesses making transactions in 2018

8-9%
Market CAGR
2017-2022E

£10 trillion
Value of non-traditional⁽¹⁾
cross-border B2B
transactions

£119 trillion
Total value of
cross-border B2B
transactions in 2018



(1) Fintech and other pure play digital operators
(2) Financial Institutions

Sources: B2B Money Transfer, Cross-border Market Opportunities 2018-2022, Juniper Research.
Values are shown in GBP trillion, translated from USD at the GBP/USD exchange rate at 1.285 as of 24/8/2018

Trends driving the growth of cross-border payments

Globalization

Increasingly connected world



Increasing expectations

Customers demand speed and transparency



Uberization

New business models favor integrated payments



Controls

Stricter compliance and greater focus on security



Banks cannot keep up with today's needs

Legacy technology

Fix over build



Innovation takes a back seat

Other priorities come first



Difficult to serve new entrants



Fragmented organizations

Slow to respond to market changes



Currencycloud – disrupting the cross-border business



What we do...



Collections

Regulated activity facilitating end-users to get paid locally



Conversions

Offering real-time wholesale FX rates, spots and forwards



Payments

Automated, end-to-end payments process, sending globally to customers



Management

Provision of complete control over accounts of customers through state-of-the-art dashboards



For whom?

FX brokers/ remittance companies



Banks and issuers



E-commerce platforms



SQUIRREL

Emanuel Andjelic
Co-Founder & Chairman

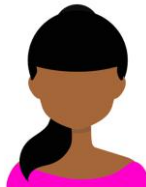
The problem - People are bad with money



I just can't save any money!



Always more month than money!



Where has all my money gone?



Everything is geared to help you spend more AND easier!



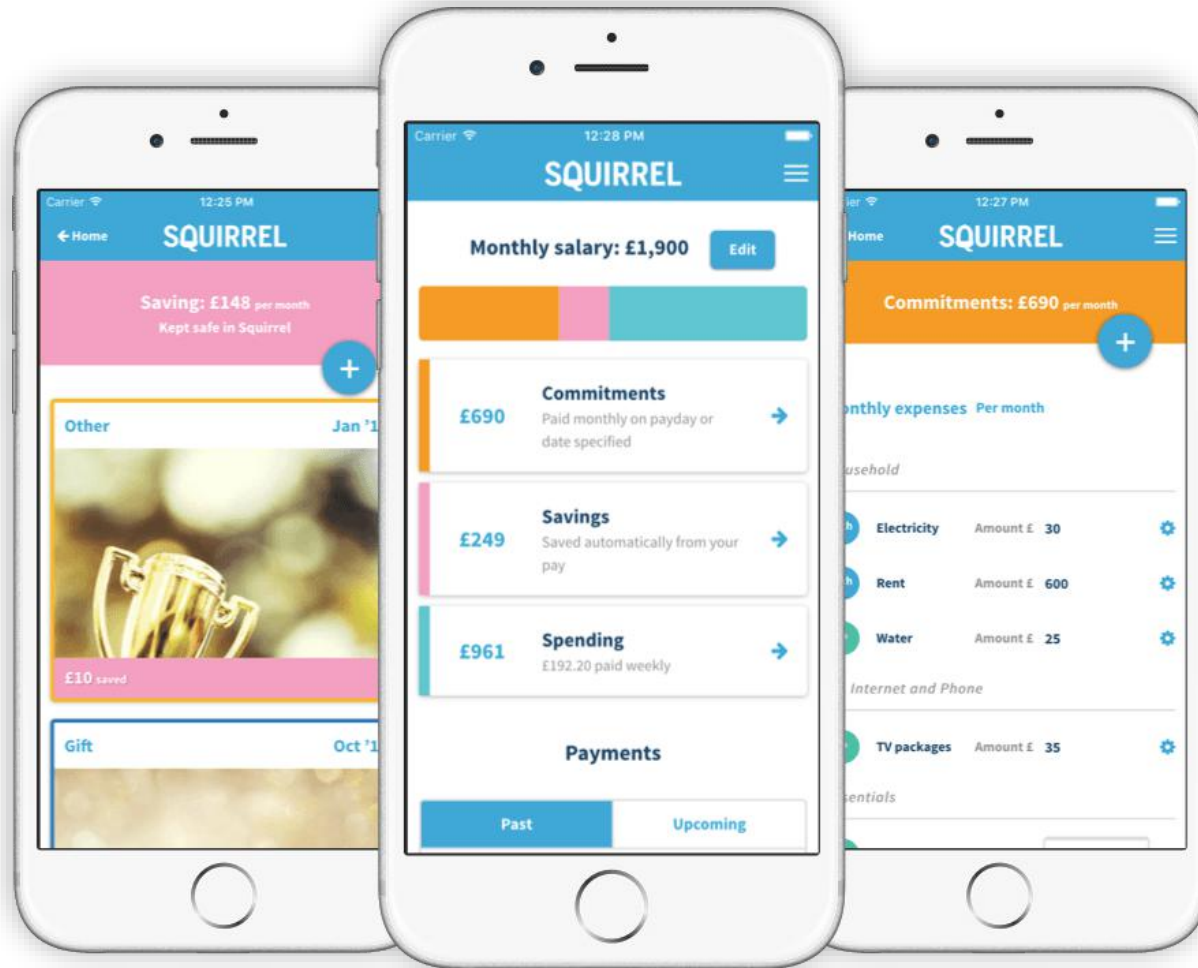
@asksquirrel

Squirrel gives people control of their money!



@asksquirrel

How it works



Squirrel reviews - “Life Changing”



Published Tuesday, September 6, 2016

Life changing

Sounds cheesy but this service has honestly changed my life. I have Christmas money sorted (and it's only September!) whereas I'd usually spend on a credit card and spend months into the next year paying it off. October is always an expensive month for me as it's renewal time for everything (car insurance, tax, house insurance, service and MOT). I've got these covered aswell so again, no need to put it on my credit card and spend the new year up to my eyeballs in debt. Instead I can pay off my previous credit card bills, save for a holiday next year and towards a deposit for a house. Great great feeling taking control of my life, I feel like I'm getting somewhere and finally broken the bad cycle :)



Published 23 March 2017

✓ Verified order

Lifesaver.....!

I earn a good wage.. But as I've got older I've gotten worse & worse with my finances.. My money goes in and I spend... But Squirrel has already helped me address this, I'm saving.. Something I'm just not able to do if left to my own devices! It's like having a 'responsible adult' looking after me... So thank you Squirrel!... Help when I needed it... And peace of mind.. Absolutely priceless!!!



Published 15 June 2017

Squirrel changed our lives

Squirrel changed our lives! We are in control of our finances for the first time ever. Saving money and being able to plan for the future. Already have money squirrelled away for Christmas!



Published 06 December 2016

✓ Verified order

Improved my finances ten-fold!

This is only my second month of using Squirrel but I can confidently say that it has made a huge difference in the health of my bank balance and management of my funds! I have recently booked a long awaited trip to New York next May. Using the savings tool, I am managing to put a significantly larger amount away than I ever would have thought I could do before.



Published 15 May 2017

✓ Verified order

Changed my Life!

I've been using Squirrel for a few months now and it's so good to be able to have money all through the month! Usually I'd be skint for 3 weeks. Direct Debits weren't getting paid because I had spent too much money for them already. I never saved anything because I thought I couldn't afford to. Squirrel changed all that. I'm so grateful and I'd recommend it to anyone.



Published 18 July 2017

Life changing

I went from constantly borrowing about 15% of my income every month in a cycle to saving 30% of it within 2 months and can confidently forget about my finances and know it's handled and know exactly what I can spend.

This service is amazing.



Published Friday, September 1, 2017

Changed my life!!!Finally I am on top ...

Changed my life!!!Finally I am on top of my finances!Given me the opportunity to actually save for things. I used to spend money that I didn't have!Now I don't feel guilty for buying things as I know I can afford it. Now I have a healthy relationship with money, I highly recommend. I was a little bit nervous to start with as it did seem too good to be true , but honestly give it a go as it will change your life!



Published Monday, October 16, 2017

✓ Verified order

Squirrel has literally changed my life

Squirrel has literally changed my life. I never worry about running out of money at the end of the month, and only have to focus on my spending for that week. Knowing your bills are covered, no matter when in the month they're due, and that each week you get another chunk of money makes managing it a breeze. I've gone from over spending every month to saving and paying off debts without really having to change much.

The only negative is that you need to think ahead if you need extra money for a weekend, and request it on Thursday to get it in time. Whilst it is annoying, it actually helps me save even more and the Squirrel team have always helped me out if I really needed access to my money straight away.

Give it a go! I have no regrets at all.

Ranked the UK's #1 Savings Product!



“Squirrel’s savings product has taken over from RBS/NatWest’s ‘Your Saving Goals’ product as the top-ranked in the UK.”

- Fairbanking Ratings Report



@asksquirrel

Everybody is taking notice!



“Top 10 Apps to Manage Money”



“Website of the Week”



“Top 10 Apps to Save for a Home”



@asksquirrel

Squirrel's Business Model



Subscription

TODAY



Whitelabel



Commissions

Future



@asksquirrel



Powered by  **NatWest**



Barclays Accelerator



octopuslabs



@asksquirrel

SQUIRREL

emanuel@squirrel.me

Banks and Fintech

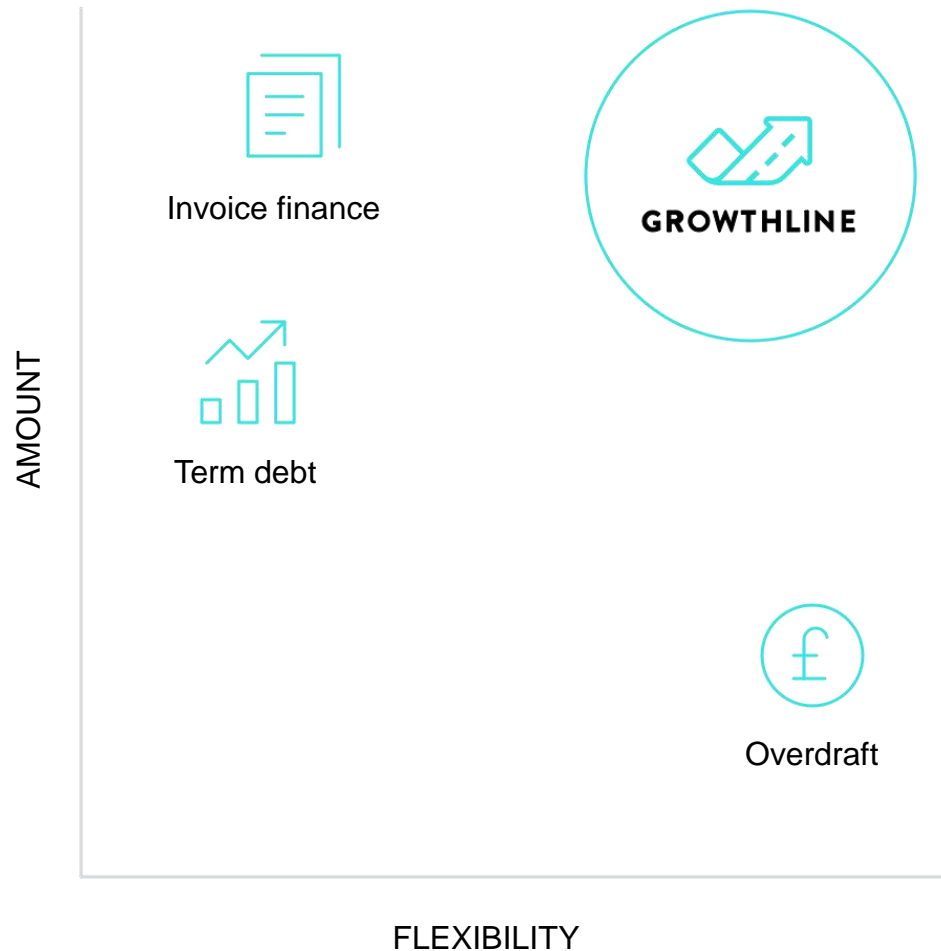
Collaboration and innovation

March 2019



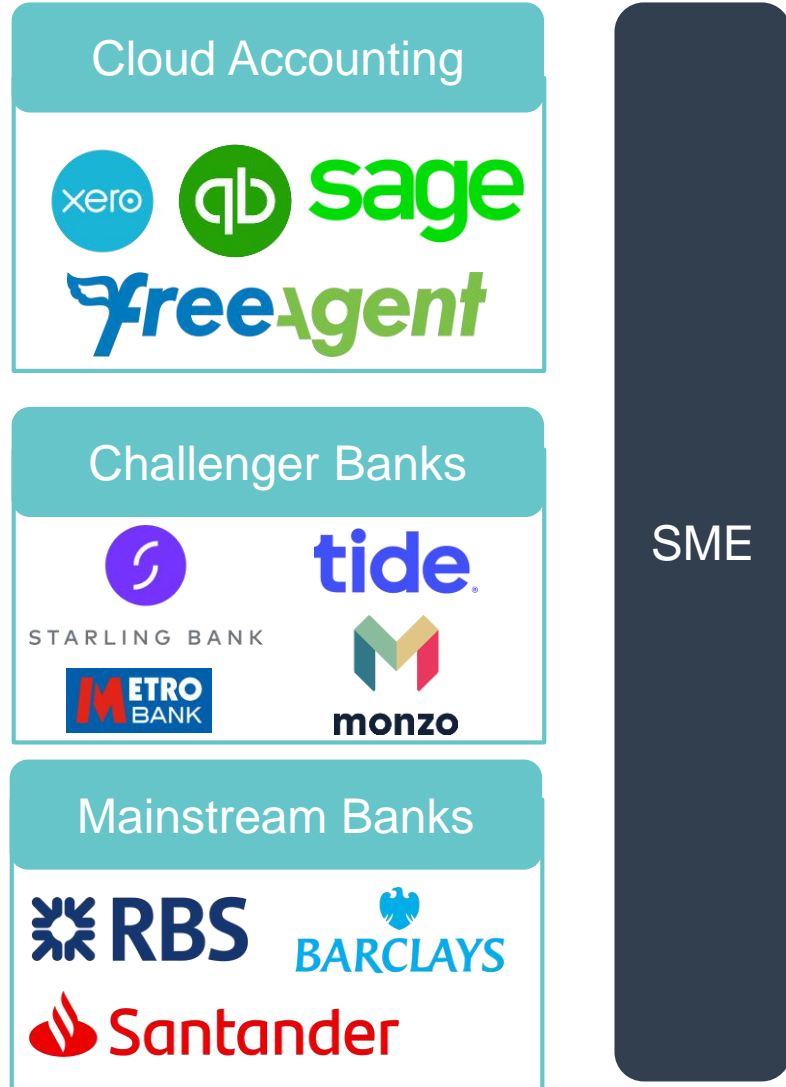
GROWTH STREET

GrowthLine



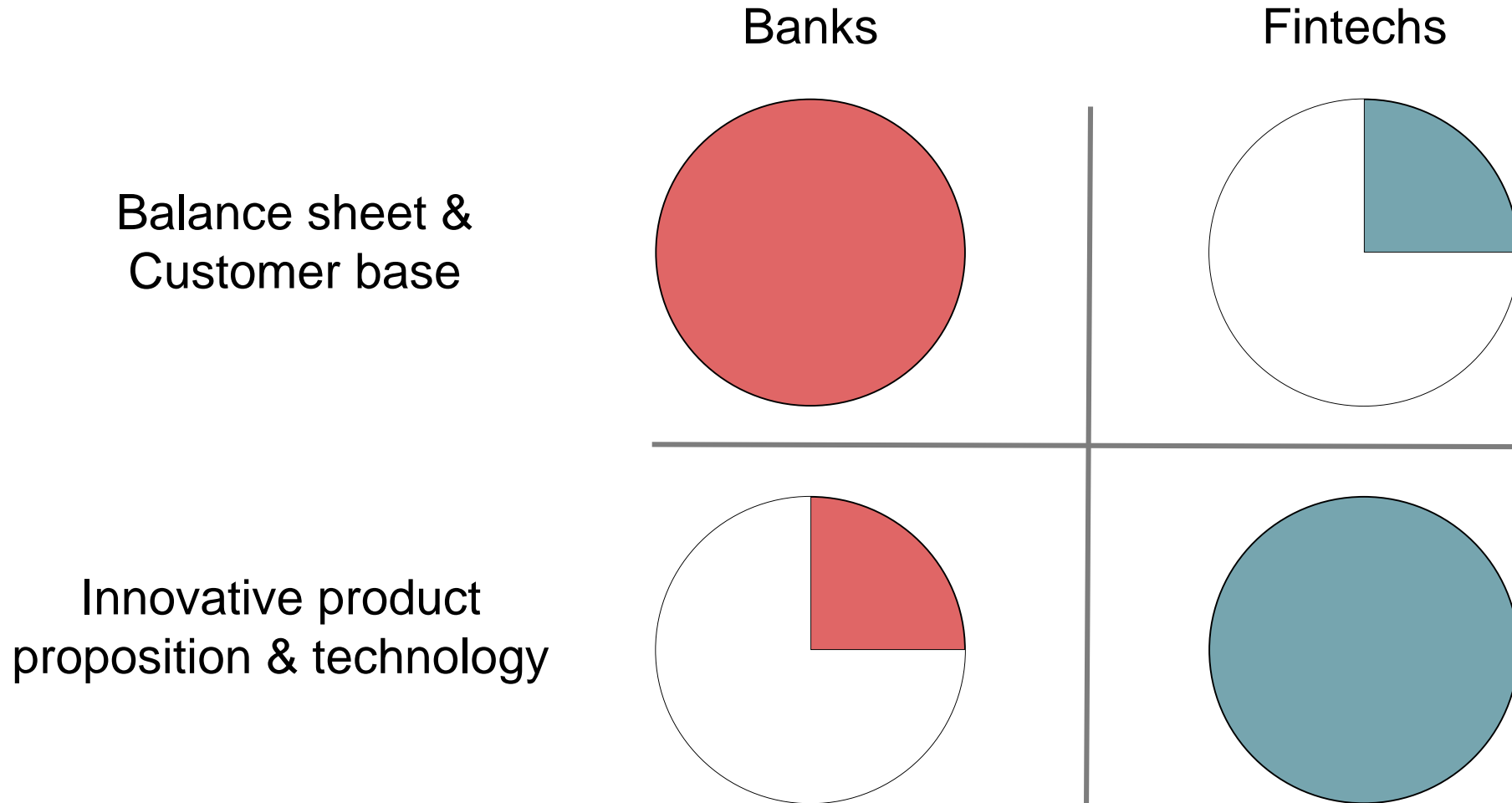
- £420m matched on platform
- 9,718 average data points per borrower
- 2,276 live investors
- Open Banking & accounting data integrations
- GrowthLine APIs for partners

Tech & regulation driving realignment of financial services



Who will win the battle to become the new gateway to financial services for SMEs?

Comparative advantage can lead to win-win outcomes



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Value Creation in Deals – Financial Services

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Panel members

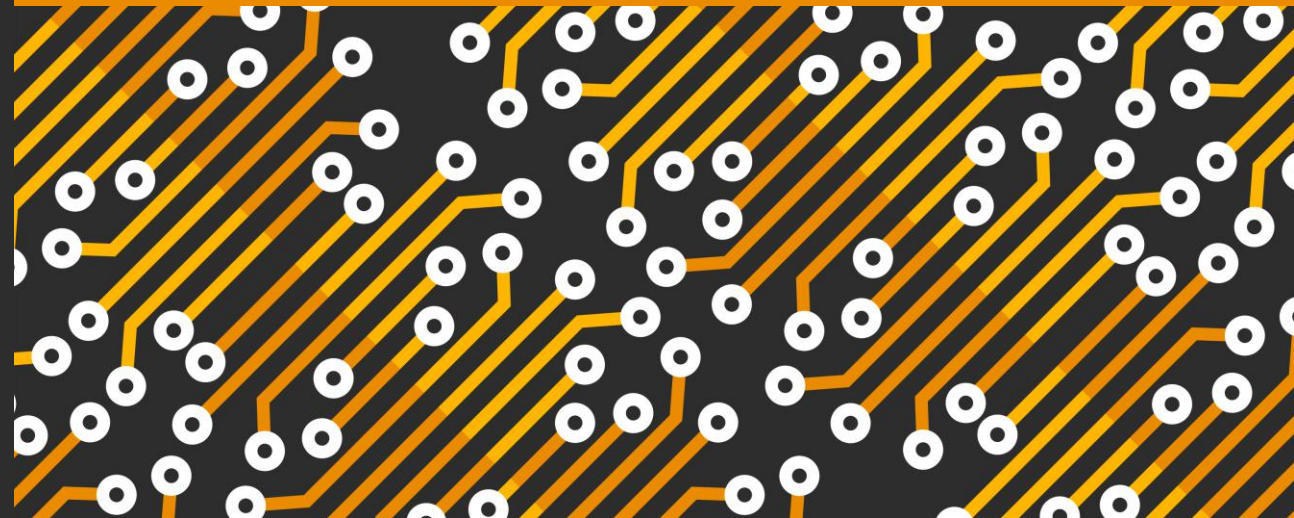


Pier Paolo Masenza
EMEA FS Leader,
Value Creation in
Deals Partner
PwC Italy



Anna Sargeant
Director
PwC UK

Value Creation in Deals – Financial Services



We have commissioned Global, independent research, delivering insight on what drives deal success

Those who **prioritise value creation outperform peers** by as much as **14%**...

The M&A market is changing, a focus on value creation has never been more important:

- Volatility in pricing transactions
- Industry disruption
- Industry convergence
- Technological change

Global M&A research **independently** conducted by:



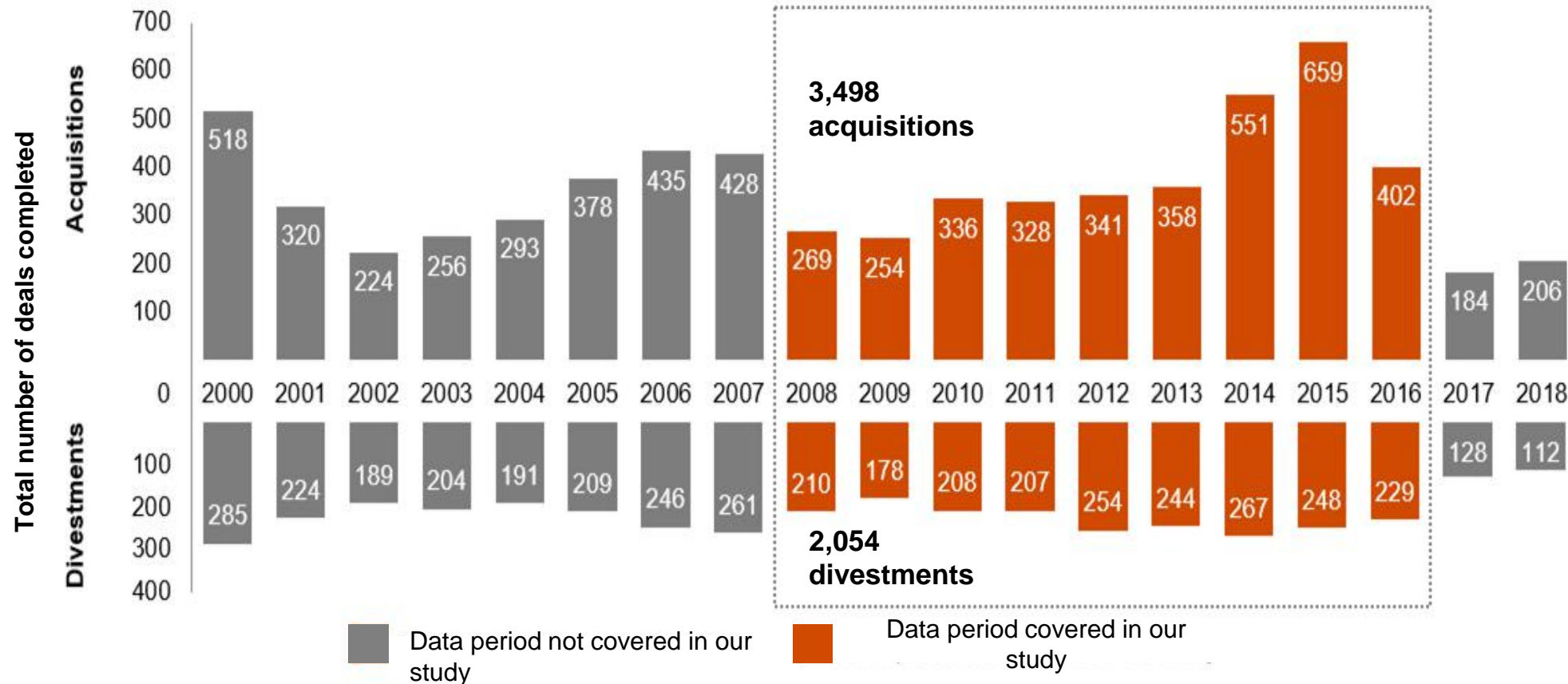
61% of buyers believe that their last acquisition created value, whilst in reality...

53% of acquisitions underperformed their industry peers.

57% of divestors underperformed their industry peers...

Both based on Total Shareholder Value, on average, over the 24 months following completion of their last deal.

Research methodology and background



600 c-Suite
interviews

+ more than **30**
PwC Global
Deals Leaders

The buyer's guide

90% of buyers had a creation plan in place however 53% of acquisitions failed to create value 24 months after completion...

1: Pre-deal

Start with a clear M&A strategy

80% state that more work can be done to validate their pre-deal hypotheses and

68% say target selection can be improved.

2: During deal

Focus on value creation from the start

90% of buyers had a value creation plan in place when they signed a deal,

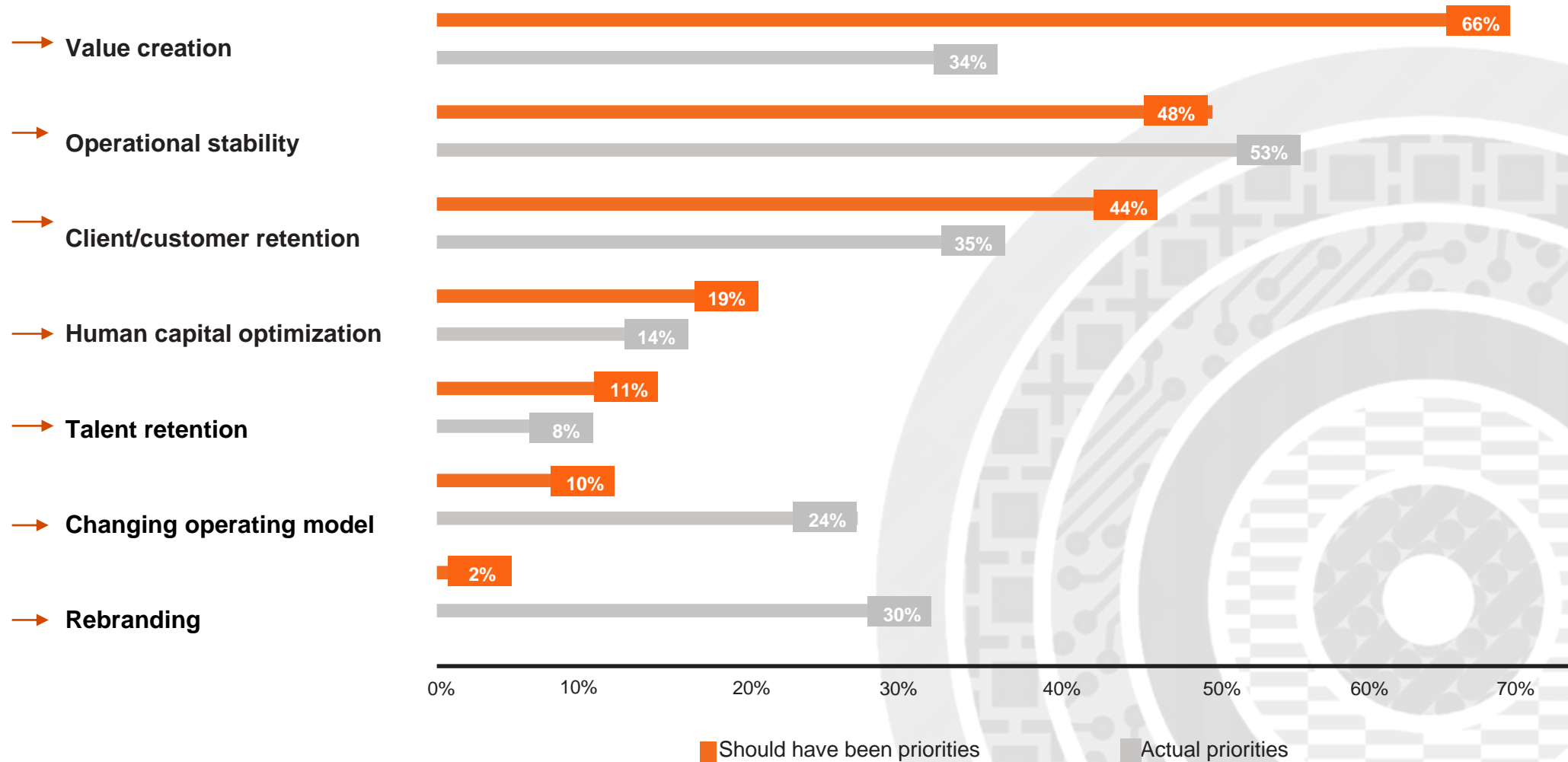
however **83%** stated that their plans could be improved.

3: Post deal

Focus on keeping your best people

82% of companies that destroyed significant deal value had lost over **10%** of the target's employees following the transaction.

...Dealmakers state that a broader and more intense focus on Value Creation would have been needed

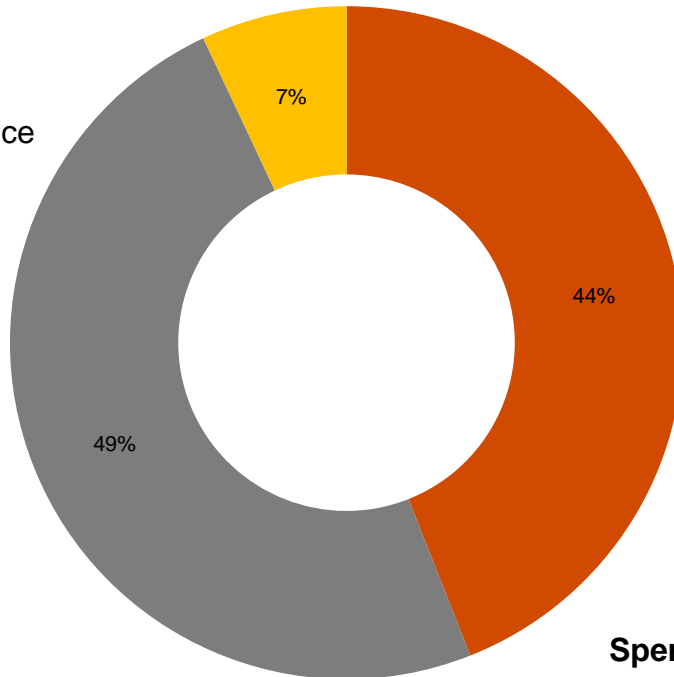


...And need to invest more in integration

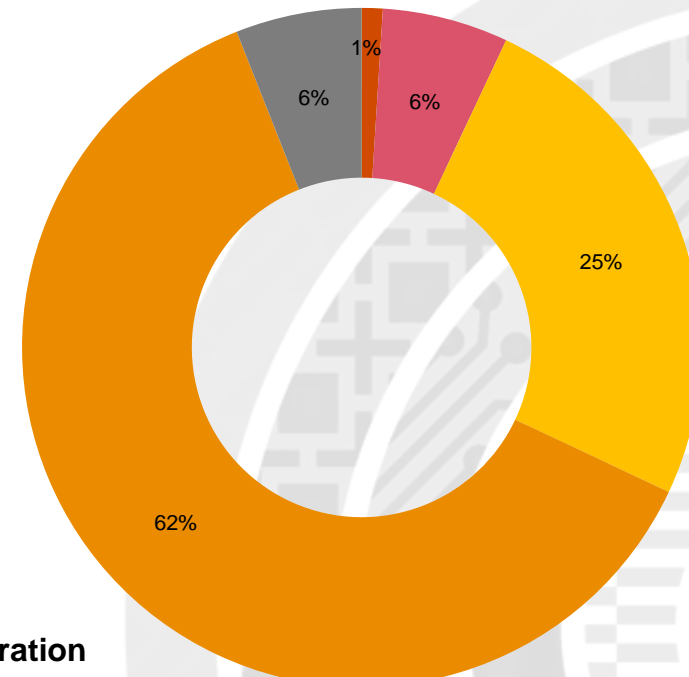
Our research highlights a clear correlation between the investment that organisations make in integration and their ability to create value:

As a percentage of the total deal value, how much did you spend on integration?
Spend as percentage of total deal value

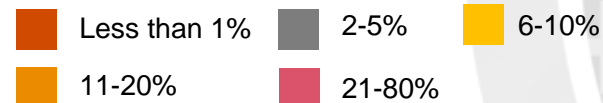
Acquisitions with
significant value lost
relative to purchase price



Acquisitions with
significant value created
relative to purchase price



Spend on integration

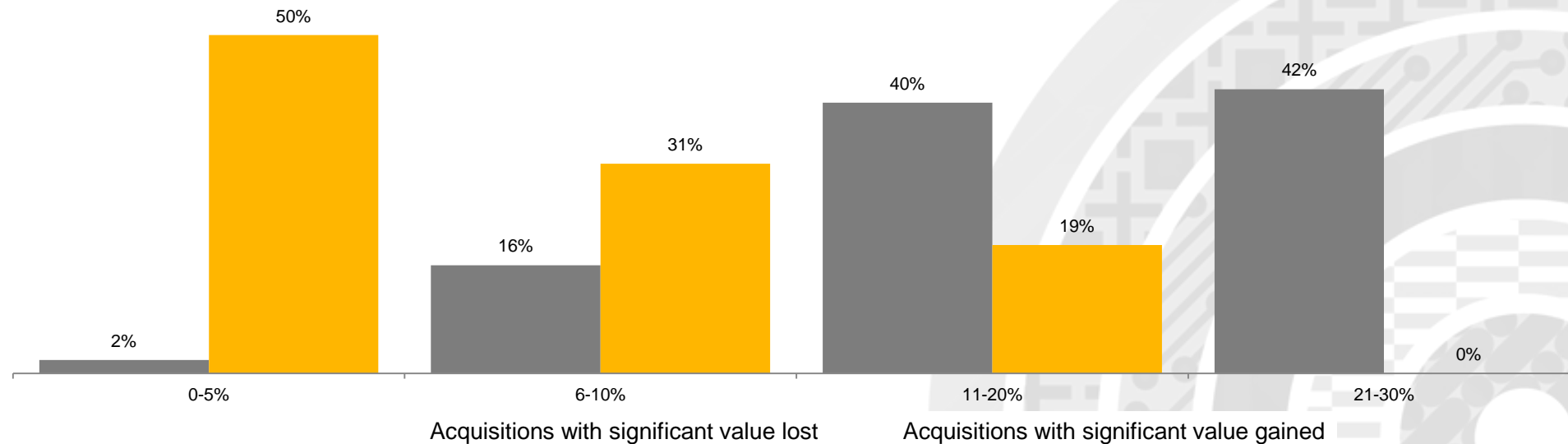


Source: Creating value beyond the deal report, Mergermarket
Base: 2018 survey of 600 corporate senior executives

Top talent retention is one of the most effective barometers of deal success

Culture takes a long time to develop, a great deal of effort to maintain, but relatively little time to undermine. As such, early consideration is critical.

What percentage of target employees left, that you would have hoped to retain?



Talent retention is a key barometer of deal success, with 82% of deals that lost significant value losing 10% or more of key employees - demonstrating that culture plays a central role, in delivering value beyond the deal

The seller's guide

Our research shows that **57% Divestitures underperform their industry benchmark** 24 months after completion...

1: Pre-deal

Experience is key

65% of respondents

stating that their last divestment lost significant value made no divestments in a typical year.

2: During deal

Your plan should be a blueprint, not a checklist

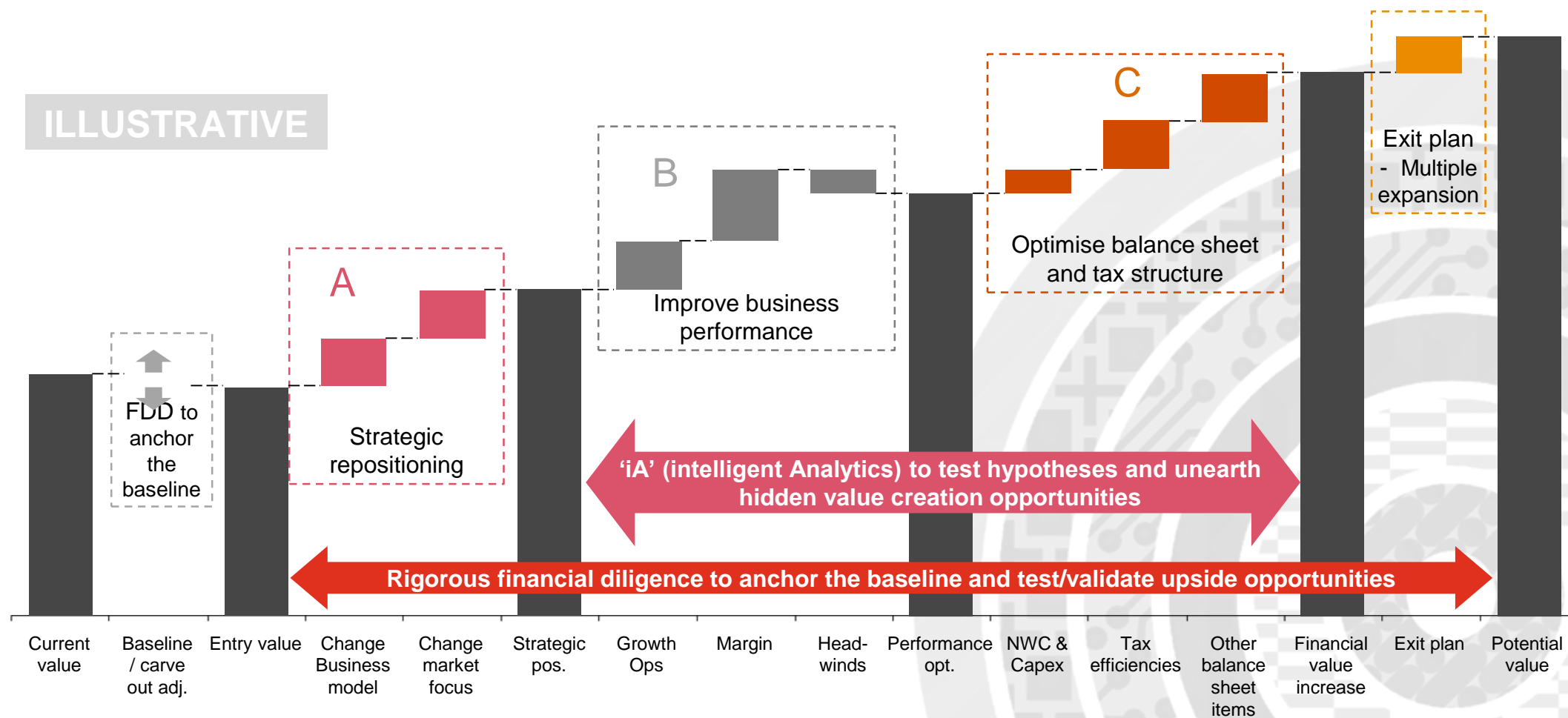
99% of divestments that created significant value have formalised methodologies in place.

3: Post deal

Make the most of your people

89% believe they could drive more sales value, by engaging more closely with the management team

We typically think about Value Creation through the lens of a value bridge



Three steps to creating value beyond the deal

Stay true to the strategic intent

It is crucial to **develop a strategy that prioritises value at every stage of the deal**: from identifying the right target, to planning rigorous due diligence, ensuring key talent remain engaged and investing appropriately in value creation planning and integration.

Be clear on all elements of the value creation plan

Whether buying or selling, have a comprehensive value creation plan in place.

Start early, be thorough and take every opportunity to validate the key assumptions in the plan through advanced analytics and diligence. **Value creation plans should cover all aspects**, including strategic repositioning, improving business performance, optimising operating model, the balance sheet and considering the right tax structure.

Put culture at the heart of the deal

Many organisations now rank their people as their most important asset. Whether buying or selling, **recognising key skills, clear communication and incentivising core talent to stay engaged** throughout the deal process, is essential. Buying a brand but losing the people who made it so desirable, or preparing an asset for sale, but losing the vital people within, can both destroy deal value.

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Transforming the market, creating value

27 March 2019



Digital Banking – Creating Value with Deals

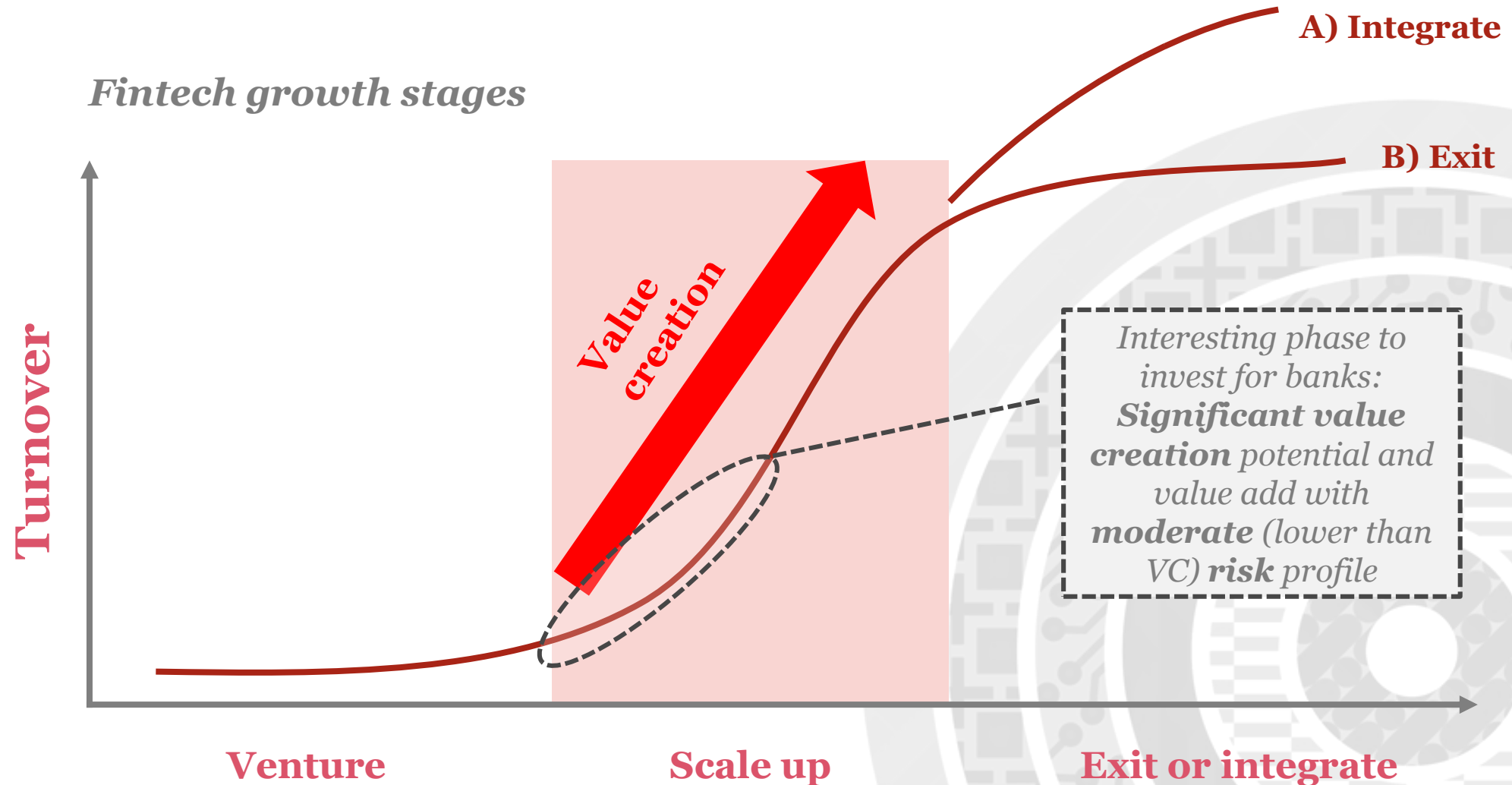
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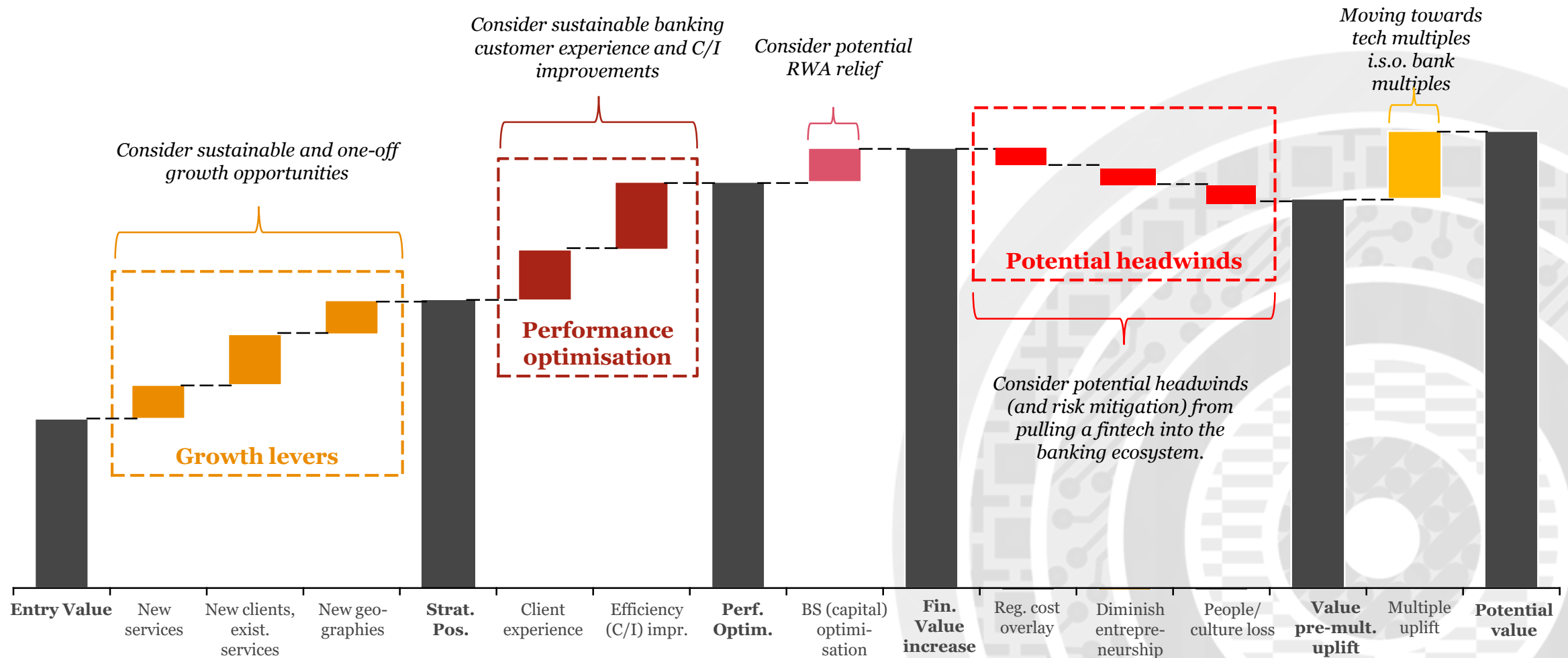
More banks are looking to collaborate with / invest in scale-ups

Providing significant value creation opportunity at moderate risk



Value Creation bridge - value creation throughout the deal cycle

Illustrative example for Fintech (enabler) investment from a Bank's perspective



Panel members



Jan-Willem Nieuwenhuize
Managing Director
ING Ventures



Conrad Ford
Founder & CEO
Funding Options



Dr Tim Sievers
Founder & CEO
Deposit Solutions



Torsten Winkler
Partner at
Vitruvian Partners

Panel discussion



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Partner
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Sofie Simon
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PwC Deals, Switzerland

Prepare to vote...



How do you expect fintech valuation (multiples) will develop over the next 3-5 years?

A. Grow significantly



B. Grow moderately



C. Stay at a similar level

0%

D. Decline



In which areas do you see most growth potential in the context of a deal between a bank and fintech?

A. New clients



B. New services



C. New geographies



D. Other



Where do you see most potential for cost improvements for banks via fintech?

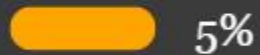
A. People costs



B. Technology costs



C. Regulatory & legal costs



D. Other costs



How can you motivate and retain key talent after the deal within the fintech?

A. Remuneration / financial incentives



B. Keep entrepreneurial and creative freedom



C. Combine innovation agenda



D. Offer scale-up opportunity



Panel members



Jan-Willem Nieuwenhuize
Managing Director
ING Ventures



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Place Your Debts: What is the future of the debt purchase sector?

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and M&A Conference

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Panel members



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Relations – B2 Holding



Richard Roberts
Head of Corporate
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Joshua Rozells
Senior Manager
PwC Deals

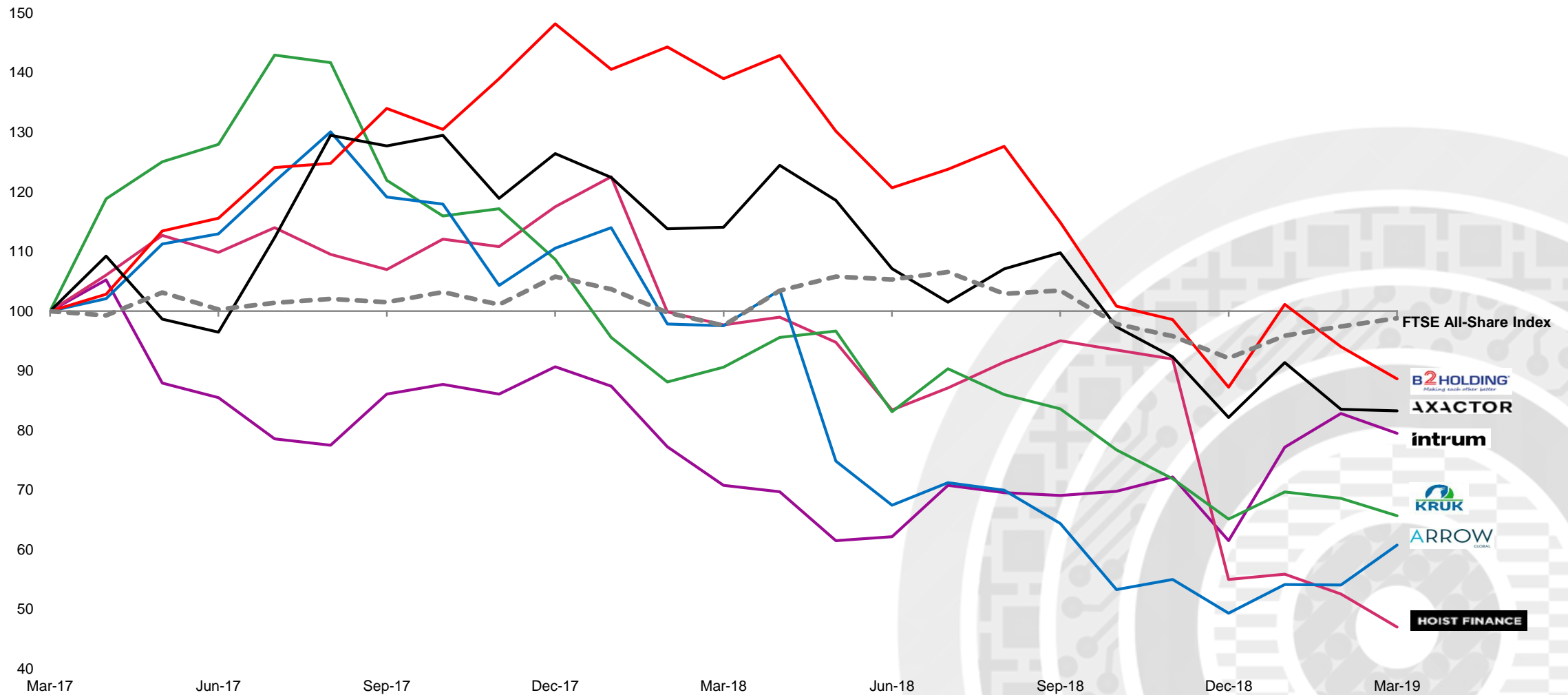
Place Your Debts: What is the
future of the debt purchase
sector?



Richard Thompson
Conference Chairman



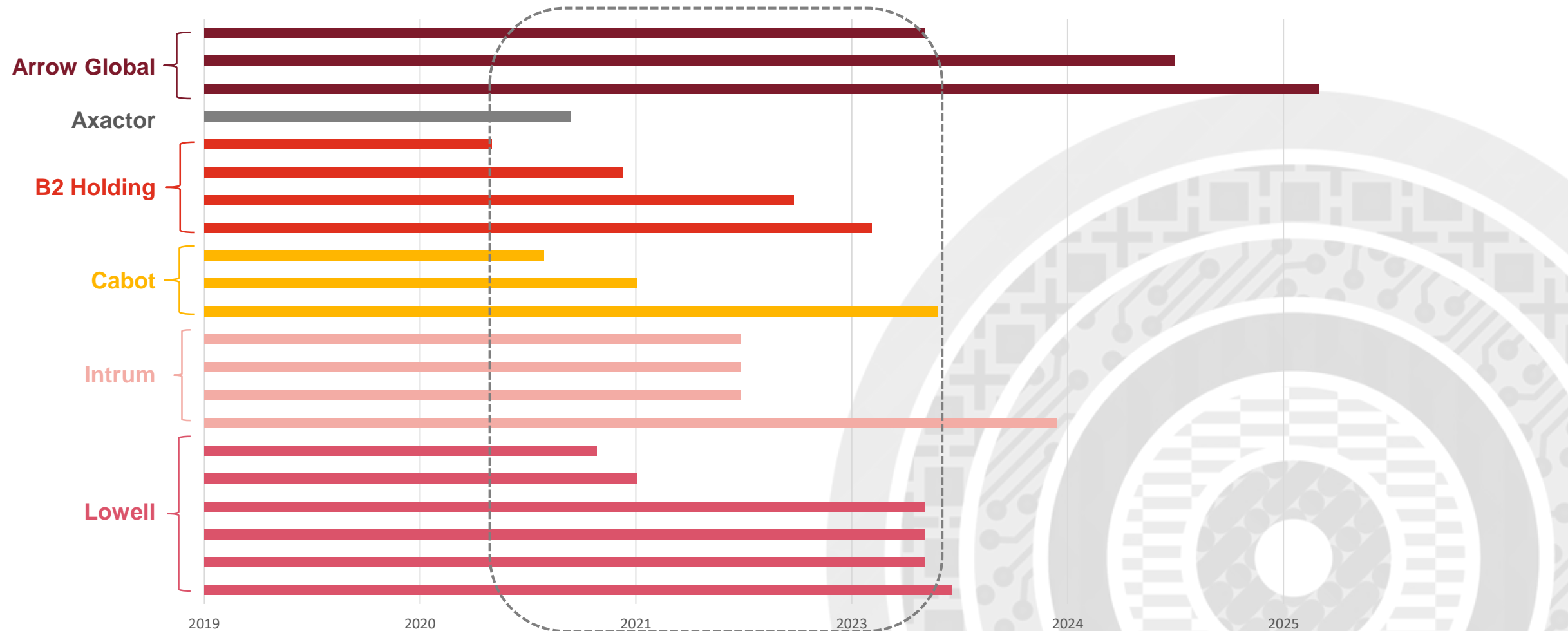
Share prices



Note: Share prices indexed to 100 = March 2017, local currency

Source: S&P Capital IQ, Bloomberg

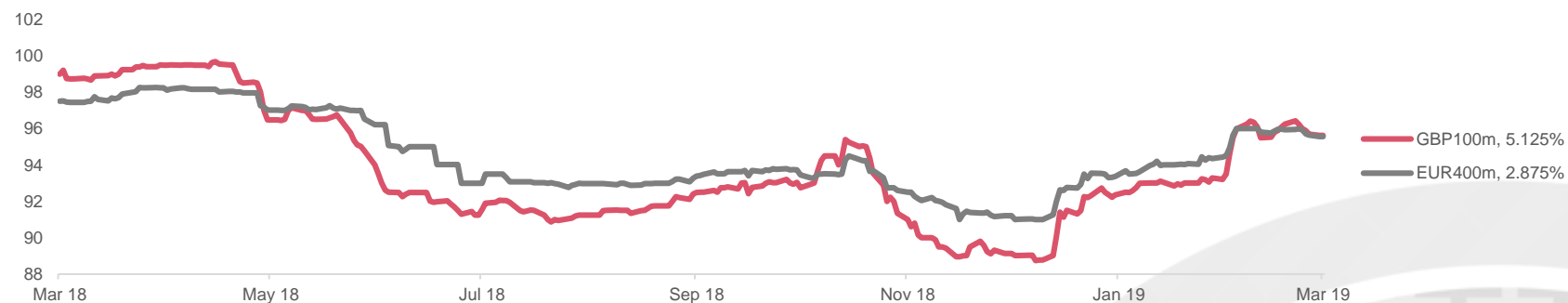
Bond maturities



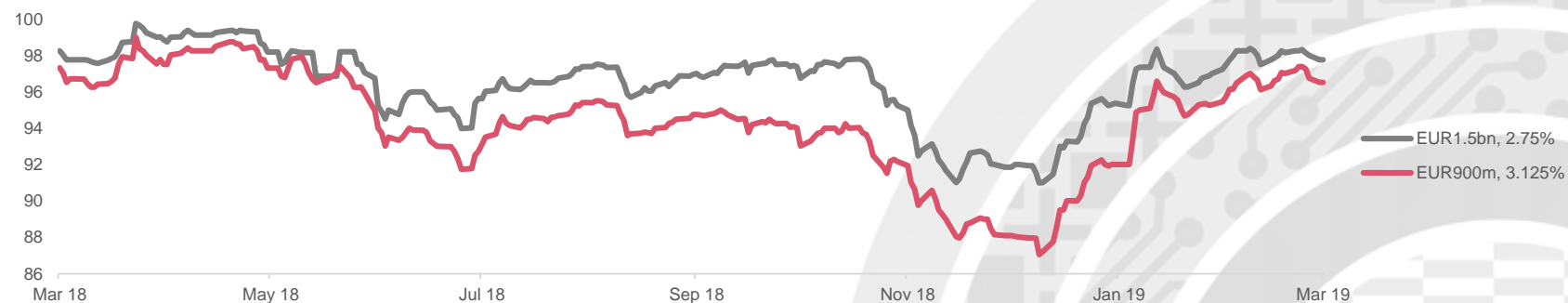
Source: S&P Capital IQ, Bloomberg

Bond prices

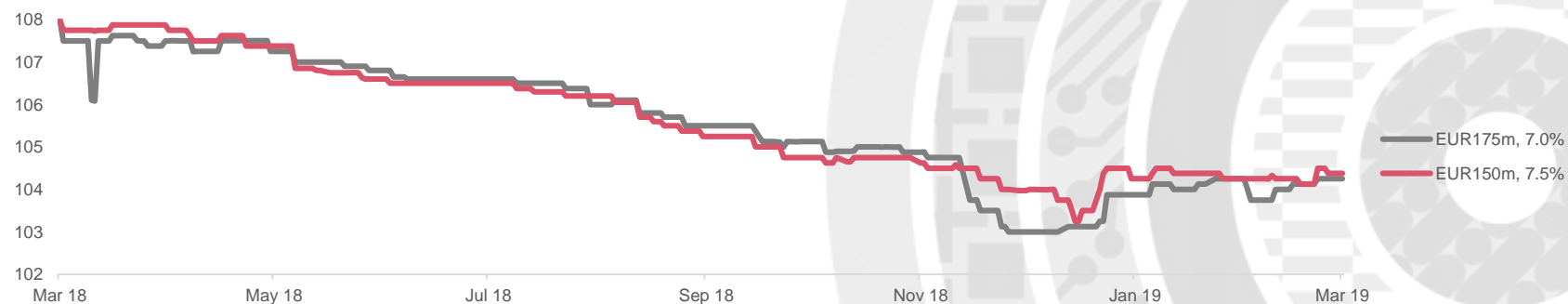
ARROW
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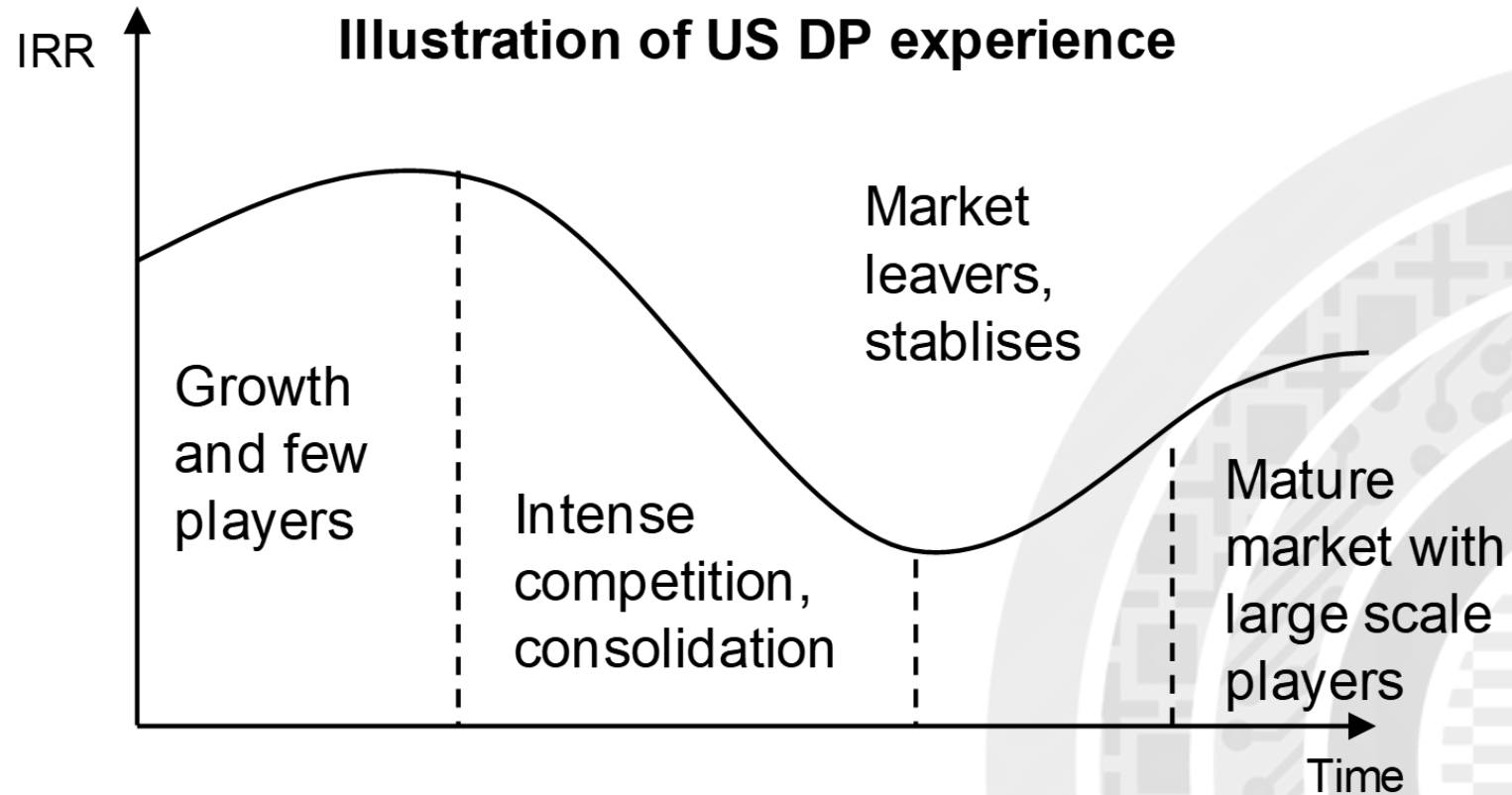


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Source: S&P Capital IQ, Bloomberg

The US debt purchase cycle



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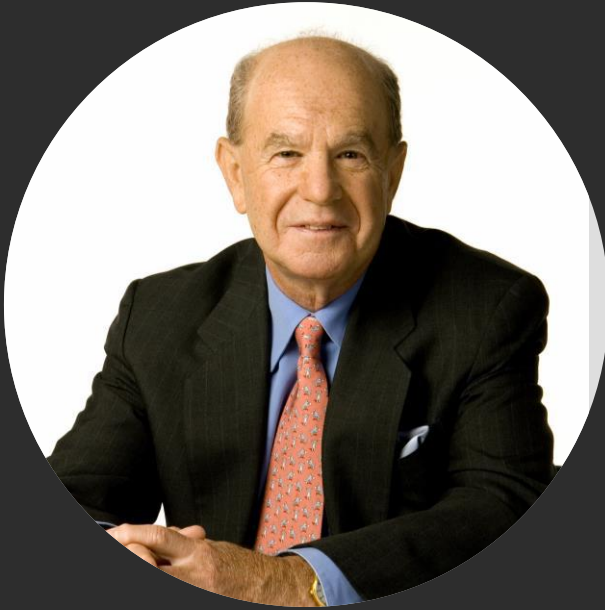
The Credit Cycle

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A discussion with...



Edward Altman

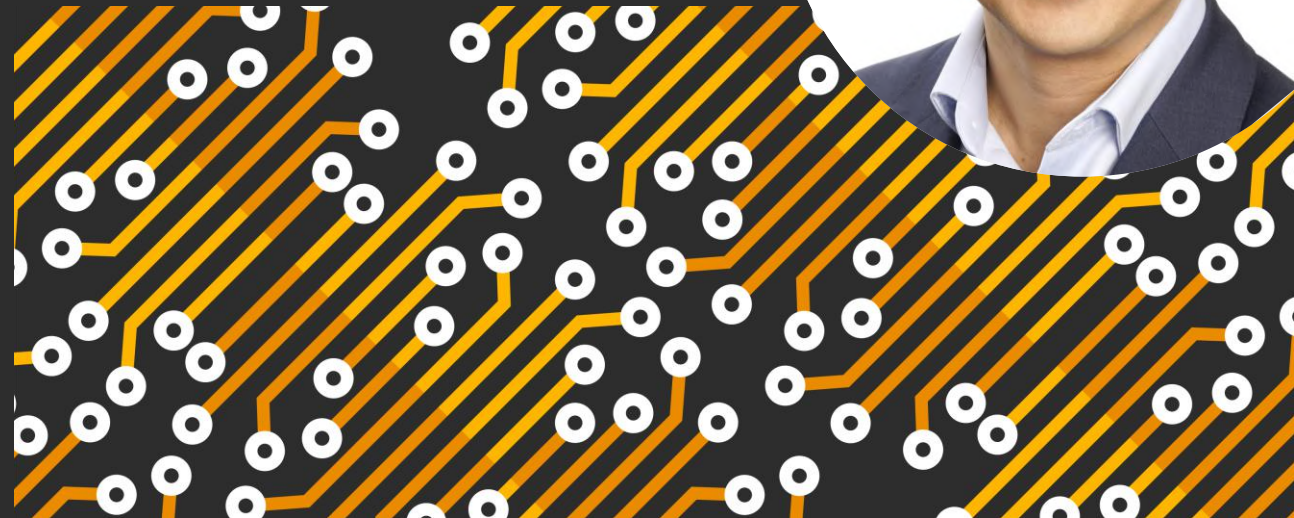
Professor of Finance at NYU Stern School of Business and co-founder and Board member of Wisefunding

The Credit Cycle



Joshua Rozells

Senior Manager
PwC Deals



Where Are We in the Credit Cycle?

Dr. Edward Altman

NYU Stern School of Business

Wiserfunding Limited

European Banking Transformation and M&A Conference

PwC United Kingdom

London

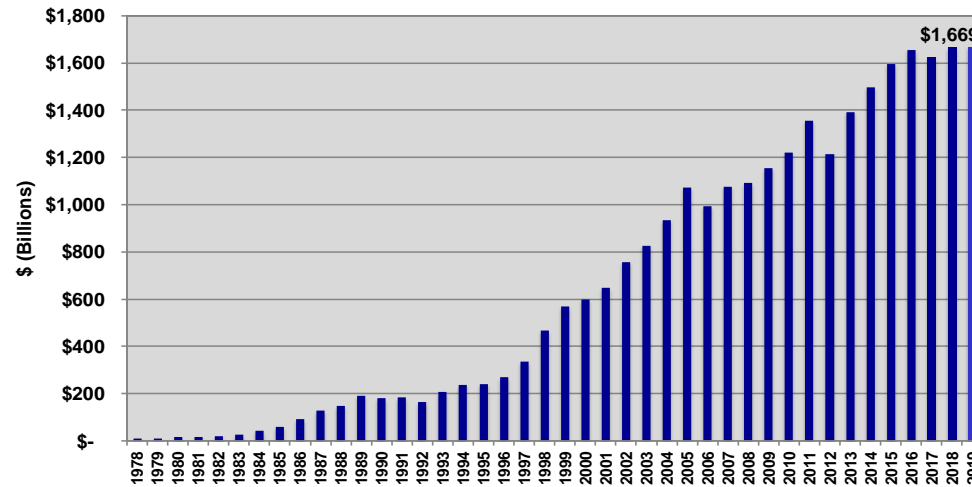
March 27, 2019

Size Of High-Yield Bond Market

US Market



1978 – 2019 (Mid-year US\$ billions)

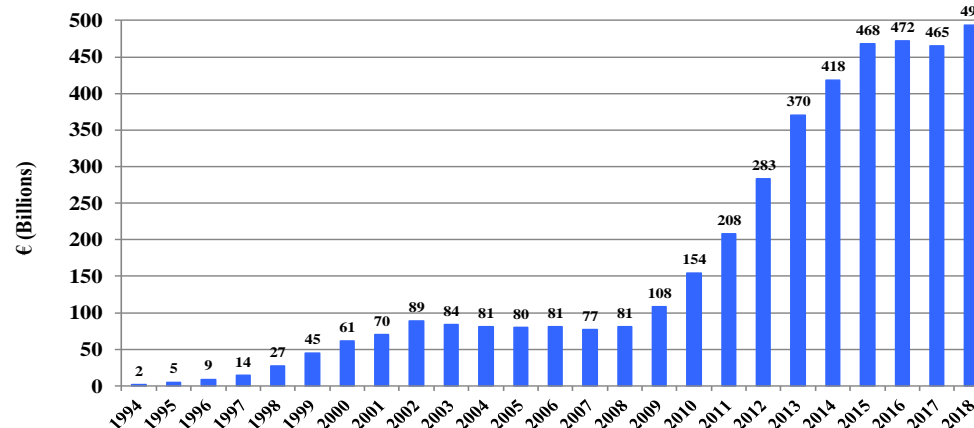


Source: NYU Salomon Center estimates using Credit Suisse, S&P and Citi data

Western Europe Market



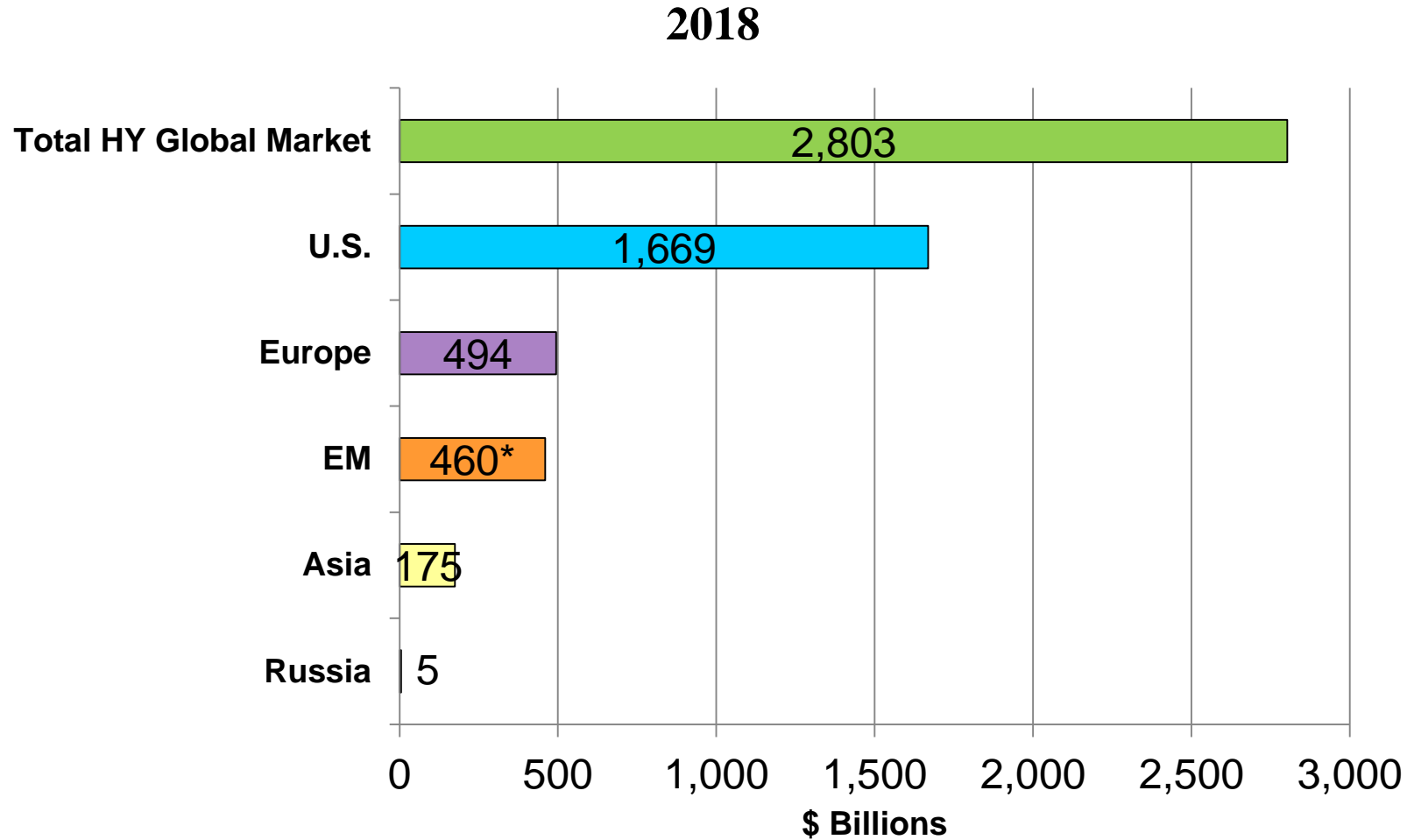
1994 – 2018*



Source: Credit Suisse

* Includes non-investment grade straight corporate debt of issuers with assets located in or revenues derived from Western Europe, or the bond is denominated in a Western European currency. Floating-rate and convertible bonds and preferred stock are not included.

Size of Corporate HY Bond Market: U.S., Europe, Emerging Markets & Asia (ex. Japan) (\$ Billions)

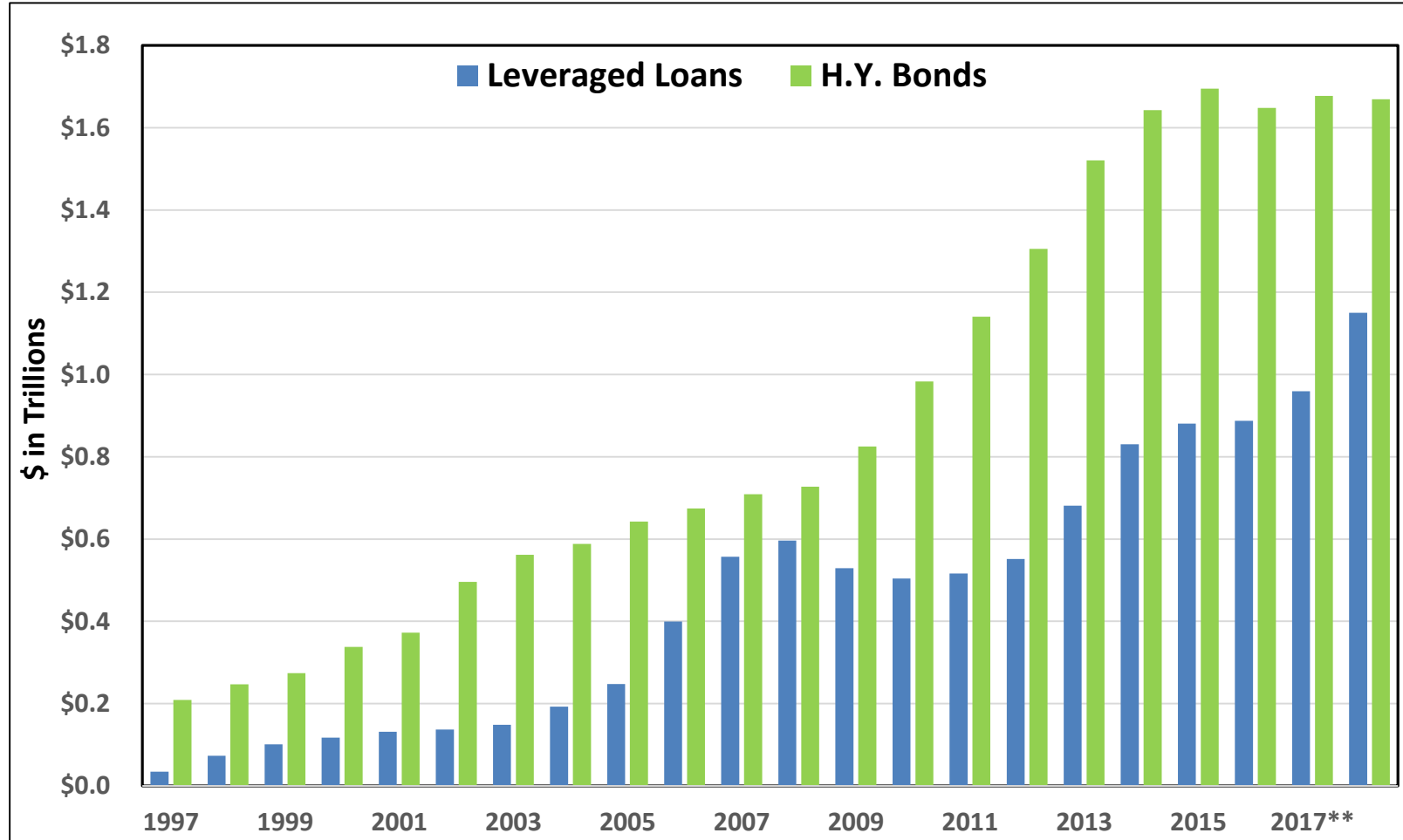


*Mainly Latin America. Note: EM & Asia value as of 2017.

Source: NYU Salomon Center, Credit Suisse, LIM Advisors Ltd.

Size of The U.S. High-Yield and Leveraged Loan* Markets

1997-2018



*Primarily Institutional Tranches. **NYU Salomon Center High-Yield Market Size as of 12/31/17 and 12/31/2018.

Source: S&P Global Market Intelligence.

Benign Credit Cycle: Is It Over?

- **Length of Benign Credit Cycles: Is the Current Cycle Over? No.**
- **Default Rates (no), Default Forecast (no), Recovery Rates (no), Yields (no) & Liquidity (no)**
- **Coincidence with Recessions: U.S. & European Scenarios**
- **Level of Non-financial Debt as a Percent of GDP**
- **Global Debt Levels**
- **Comparative Health of High-Yield Firms (2007 vs. 2017)**
- **High-Yield CCC New Issuance as a Liquidity Measure**
- **LBO Statistics and Trends**
- **Liquidity Concerns (Market and Market-Makers)**
- **Possible Timing of the Bubble Burst (Short-term versus Longer-term)**

Benign Credit Cycle? Is It Over?

- **Length of Benign Credit Cycles: Is the Current Cycle Over? No.**
- **Default Rates (no), but Rising**
- **Default Forecast (no)**
- **Recovery Rates (no)**
- **Yields (no)**
- **Liquidity (no)**

Historical H.Y. Bond Default Rates

Straight Bonds Only Excluding Defaulted Issues From Par Value Outstanding, (US\$ millions), 1971 – 2019 (2/28)

Year	Par Value Outstanding ^a (\$)	Par Value Defaults (\$)	Default Rates (%)
2019 (2/28)	1,669,171	6,771	0.406
2019 (2/28)*	1,686,748	24,348	1.443
2018	1,664,166	28,994	1.742
2017	1,622,365	29,301	1.806
2016	1,656,176	68,066	4.110
2015	1,595,839	45,122	2.827
2014	1,496,814	31,589	2.110
2013	1,392,212	14,539	1.044
2012	1,212,362	19,647	1.621
2011	1,354,649	17,963	1.326
2010	1,221,569	13,809	1.130
2009	1,152,952	123,878	10.744
2008	1,091,000	50,763	4.653
2007	1,075,400	5,473	0.509
2006	993,600	7,559	0.761
2005	1,073,000	36,209	3.375
2004	933,100	11,657	1.249
2003	825,000	38,451	4.661
2002	757,000	96,855	12.795
2001	649,000	63,609	9.801
2000	597,200	30,295	5.073
1999	567,400	23,532	4.147
1998	465,500	7,464	1.603
1997	335,400	4,200	1.252
1996	271,000	3,336	1.231
1995	240,000	4,551	1.896
1994	235,000	3,418	1.454
1993	206,907	2,287	1.105

Year	Par Value Outstanding* (\$)	Par Value Defaults (\$)	Default Rates (%)
1992	163,000	5,545	3.402
1991	183,600	18,862	10.273
1990	181,000	18,354	10.140
1989	189,258	8,110	4.285
1988	148,187	3,944	2.662
1987	129,557	7,486	5.778
1986	90,243	3,156	3.497
1985	58,088	992	1.708
1984	40,939	344	0.840
1983	27,492	301	1.095
1982	18,109	577	3.186
1981	17,115	27	0.158
1980	14,935	224	1.500
1979	10,356	20	0.193
1978	8,946	119	1.330
1977	8,157	381	4.671
1976	7,735	30	0.388
1975	7,471	204	2.731
1974	10,894	123	1.129
1973	7,824	49	0.626
1972	6,928	193	2.786
1971	6,602	82	1.242

		Standard Deviation (%)
Arithmetic Average Default Rate (%)		
1971 to 2018	3.076	2.981
1978 to 2018	3.270	3.131
1985 to 2018	3.699	3.249
Weighted Average Default Rate (%)		
1971 to 2018	3.273	
1978 to 2018	3.276	
1985 to 2018	3.287	
Median Annual Default Rate (%)		
1971 to 2018	1.774	

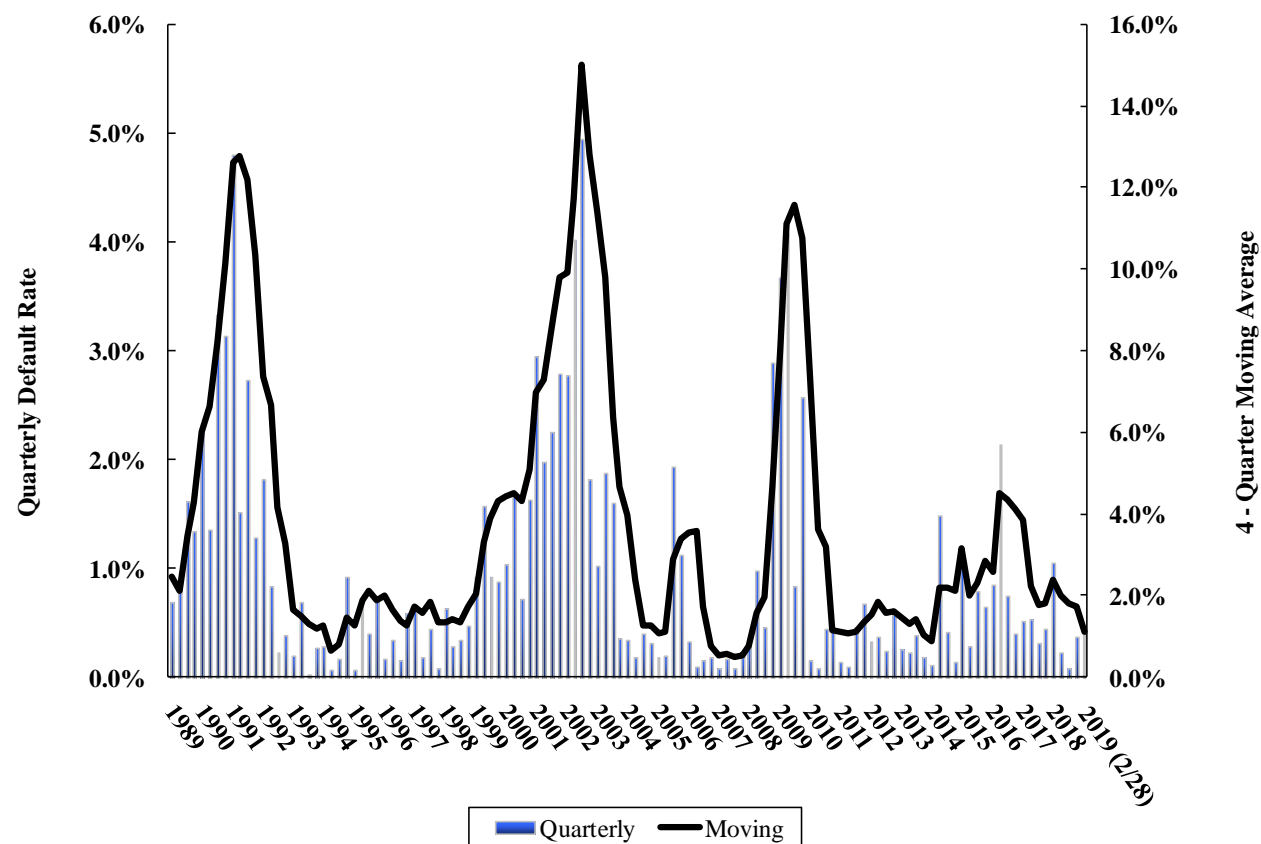
*Includes PG&E defaults in both Par Value Outstanding and Par Value Defaults.
Source: NYU Salomon Center and Citigroup/Credit Suisse estimates

^a Weighted by par value of amount outstanding for each year.

Default Rates on High-Yield Bonds

Quarterly Default Rate and Four-Quarter Moving Average

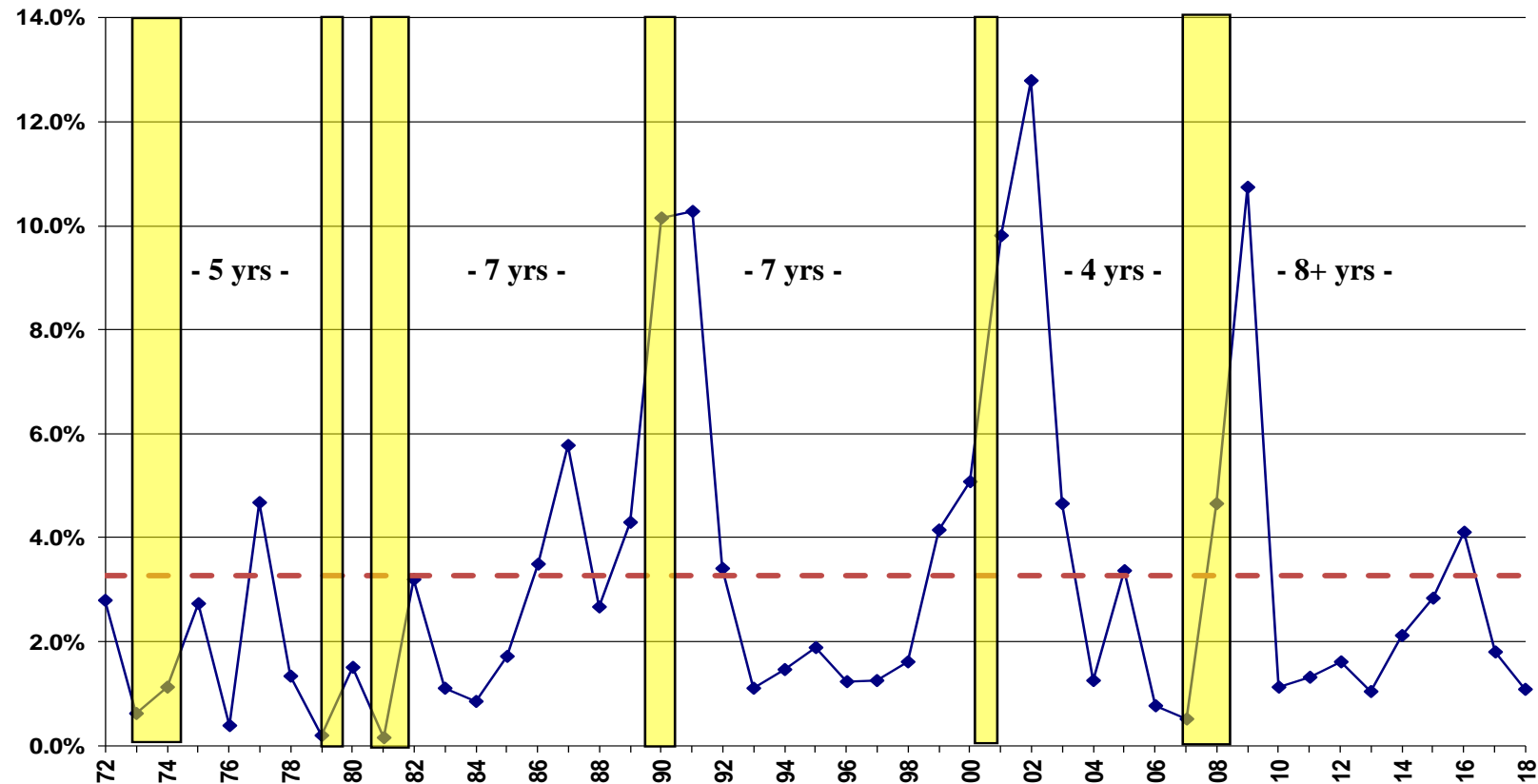
1989 – 2019 (2/28)



Source: Author's Compilations

Historical Default Rates, Benign Credit Cycles and Recession Periods in the U.S.*

High-Yield Bond Market (1972 – 2018)



Periods of Recession: 11/73 - 3/75, 1/80 - 7/80, 7/81 - 11/82, 7/90 - 3/91, 4/01 - 12/01, 12/07 - 6/09

*Benign credit cycles are approximated.

Source: E. Altman (NYU Salomon Center) & National Bureau of Economic Research

Forecasting Default Rates

Mortality Rate Approach (1989)

Yield-Spread vs. Default Rate Method (2008)

Distress Ratio vs. Default Rate Method (2008)

Default and Recovery Forecasts: Summary of Forecast Models

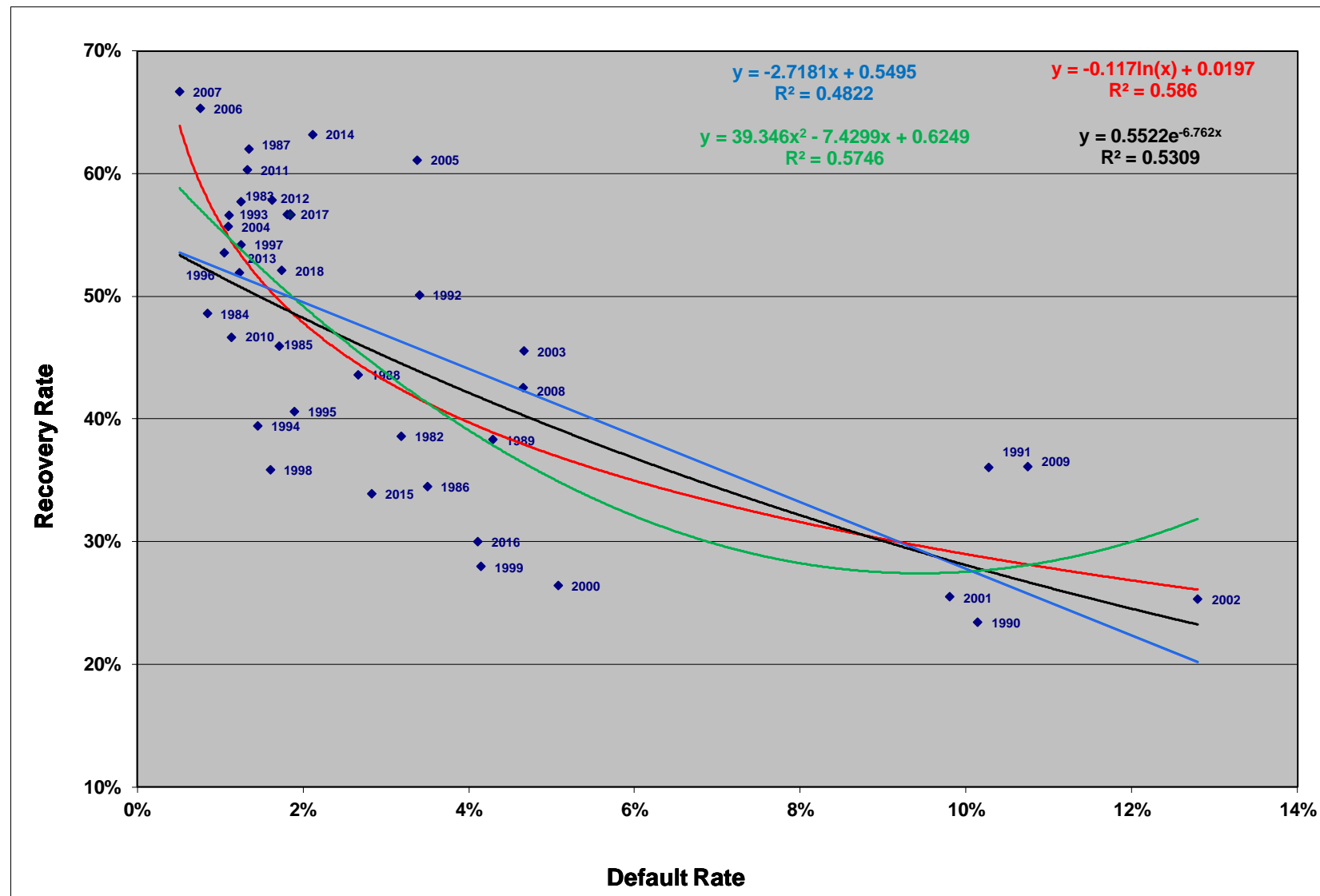
Model	2018 (12/31) Default Rate Forecast as of 12/31/2017	2019 (12/31) Default Rate Forecast as of 12/31/2018	2020 (2/28) Default Rate Forecast as of 2/28/2019
Mortality Rate	3.90%	4.20%	4.20%
Yield-Spread	1.95% ^a	3.91% ^c	2.26% ^e
Distress Ratio	1.75% ^b	2.28% ^d	1.76% ^f
Average of Models Recovery Rates*	2.53% 45.1%	3.46% 41.3%	2.74% 44.1%

* Recovery rate based on the log Linear equation between default and recovery rates, see Altman, et al (2005) Journal of Business, November and Slide 37. ^a Based on Dec. 31, 2017 yield-spread of 394.6bp. ^b Based on Dec. 31, 2017 Distress Ratio of 6.11%. ^c Based on Dec. 31, 2018 yield-spread of 547.2bp. ^d Based on Dec. 31, 2018 Distress Ratio of 9.91%. ^e Based on Feb. 28, 2019 yield-spread of 419.4bp. ^f Based on Feb. 28, 2019 Distress Ratio of 6.19%.

Source: All Corporate Bond Issuance and Authors' Estimates of Market Size in 2018 & 2019.

Recovery Rates

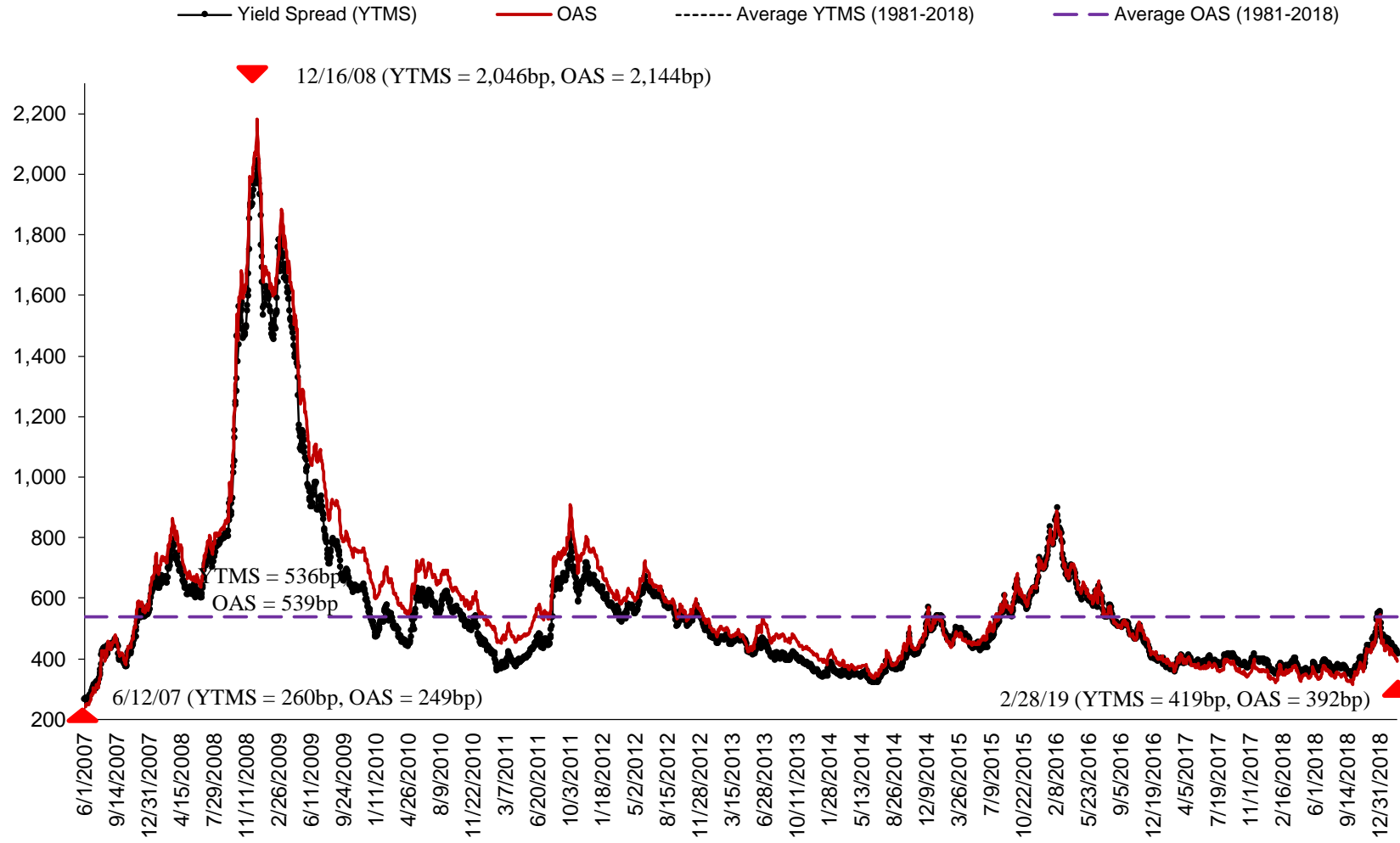
Recovery Rate/Default Rate Association: Dollar-Weighted Average Recovery Rates to Dollar Weighted Average Default Rates, 1982 – 2018



Source: E. Altman, et. al., "The Link Between Default and Recovery Rates", NYU Salomon Center, S-03-4.

YTM & Option-Adjusted Spreads Between High Yield Markets & U.S. Treasury Notes

June 01, 2007 – February 28, 2019



Sources: FTSE Yield Book Index Data and Bank of America Merrill Lynch.

Annual Returns (1978 – 2018)

Yields and Spreads on 10-Year Treasury (Treas) and High Yield (HY) Bonds^a

Year	Return (%)			Promised Yield (%)		
	HY	Treas	Spread	HY	Treas	Spread
2019 (2/28)	6.34	0.23	6.11	6.91	2.72	4.19
2018	(2.13)	(0.02)	(2.11)	8.16	2.69	5.47
2017	7.05	2.13	4.92	6.35	2.41	3.95
2016	17.83	(0.14)	17.96	6.55	2.43	4.12
2015	(5.56)	0.90	(6.46)	9.27	2.27	7.00
2014	1.83	10.72	(8.89)	7.17	2.17	5.00
2013	7.22	(7.85)	15.06	6.45 ^b	3.01	3.45
2012	15.17	4.23	10.95	6.80	1.74 ^b	5.06
2011	5.52	16.99	(11.47)	8.41	1.88	6.54
2010	14.32	8.10	6.22	7.87	3.29	4.58
2009	55.19	(9.92)	65.11	8.97	3.84	5.14
2008	(25.91)	20.30	(46.21)	19.53	2.22	17.31
2007	1.83	9.77	(7.95)	9.69	4.03	5.66
2006	11.85	1.37	10.47	7.82	4.70	3.11
2005	2.08	2.04	0.04	8.44	4.39	4.05
2004	10.79	4.87	5.92	7.35	4.21	3.14
2003	30.62	1.25	29.37	8.00	4.26	3.74
2002	(1.53)	14.66	(16.19)	12.38	3.82	8.56
2001	5.44	4.01	1.43	12.31	5.04	7.27
2000	(5.68)	14.45	(20.13)	14.56	5.12	9.44
1999	1.73	(8.41)	10.14	11.41	6.44	4.97
1998	4.04	12.77	(8.73)	10.04	4.65	5.39
1997	14.27	11.16	3.11	9.20	5.75	3.45
1996	11.24	0.04	11.20	9.58	6.42	3.16
1995	22.40	23.58	(1.18)	9.76	5.58	4.18
1994	(2.55)	(8.29)	5.74	11.50	7.83	3.67
1993	18.33	12.08	6.25	9.08	5.80	3.28
1992	18.29	6.50	11.79	10.44	6.69	3.75
1991	43.23	17.18	26.05	12.56	6.70	5.86
1990	(8.46)	6.88	(15.34)	18.57	8.07	10.50
1989	1.98	16.72	(14.74)	15.17	7.93	7.24
1988	15.25	6.34	8.91	13.70	9.15	4.55
1987	4.57	(2.67)	7.24	13.89	8.83	5.06
1986	16.50	24.08	(7.58)	12.67	7.21	5.46
1985	26.08	31.54	(5.46)	13.50	8.99	4.51
1984	8.50	14.82	(6.32)	14.97	11.87	3.10
1983	21.80	2.23	19.57	15.74	10.70	5.04
1982	32.45	42.08	(9.63)	17.84	13.86	3.98
1981	7.56	0.48	7.08	15.97	12.08	3.89
1980	(1.00)	(2.96)	1.96	13.46	10.23	3.23
1979	3.69	(0.86)	4.55	12.07	9.13	2.94
1978	7.57	(1.11)	8.68	10.92	8.11	2.81
Arithmetic Annual Average						
1978-2018	10.08	7.37	2.72	11.17	5.99	5.19
Compound Annual Average						
1978-2018	9.21	6.84	2.36			

^a End-of-year yields. ^b Lowest yield in time series. Source: FTSE's High Yield Composite Index

HY Annual Total Returns and Yields (2000 – 2018)

European and US HY Index Total Return and Yield spreads over Govt. Bonds

Year	Total Return (TR)		TR spread over Govt. Bond		Promised Yield		YLD Spread over 10yr Govt. Bond	
	EUR HY	US HY	EUR HY	US HY	EUR HY	US HY	EUR HY	US HY
2018	-0,05%	-0,38%	1,32%	3,34%	3,51%	6,62%	2,86%	3,74%
2017	6,24%	7,05%	7,00%	4,92%	3,32%	6,35%	2,89%	3,95%
2016	6,48%	17,83%	2,15%	17,96%	4,13%	6,55%	3,93%	4,12%
2015	2,92%	-5,56%	2,10%	-6,46%	5,37%	9,27%	4,74%	7,00%
2014	7,02%	1,83%	-6,37%	-8,89%	4,65%	7,17%	4,10%	5,00%
2013	9,90%	7,22%	11,76%	15,06%	5,08%	6,45%	3,15%	3,45%
2012	28,49%	15,17%	21,55%	10,95%	6,63%	6,80%	5,32%	5,06%
2011	-2,39%	5,52%	-15,23%	-11,47%	11,74%	8,41%	9,91%	6,54%
2010	16,18%	14,32%	9,27%	6,22%	8,60%	7,87%	5,63%	4,58%
2009	86,67%	55,19%	85,05%	65,11%	10,74%	8,97%	7,35%	5,14%
2008	-34,90%	-25,91%	-49,86%	-46,21%	26,05%	19,53%	23,10%	17,31%
2007	-2,99%	1,83%	-4,65%	-7,95%	9,36%	9,69%	5,05%	5,66%
2006	11,66%	11,85%	12,51%	10,47%	6,71%	7,82%	2,76%	3,11%
2005	6,71%	2,08%	0,81%	0,04%	7,79%	8,44%	4,48%	4,05%
2004	13,98%	10,79%	4,78%	5,92%	6,70%	7,35%	3,02%	3,14%
2003	28,52%	30,62%	24,20%	29,37%	7,80%	8,00%	3,51%	3,74%
2002	-3,31%	-1,53%	-14,59%	-16,19%	14,34%	12,38%	10,14%	8,56%
2001	-8,11%	5,44%	-12,46%	1,43%	17,52%	12,31%	12,52%	7,27%
2000	-11,17%	-5,68%	-19,97%	-20,13%	16,82%	14,56%	11,97%	9,44%

Source: Bloomberg Barclays Indices; Citigroup Indices; Classis Capital

EUR HY: Bloomberg Barclays Pan-European High Yield Total Return Index

US HY: Citigroup's High Yield Composite Index

EUR Govt.Bond TR: Bloomberg Barclays Germany Govt 7 to 10 Year TR

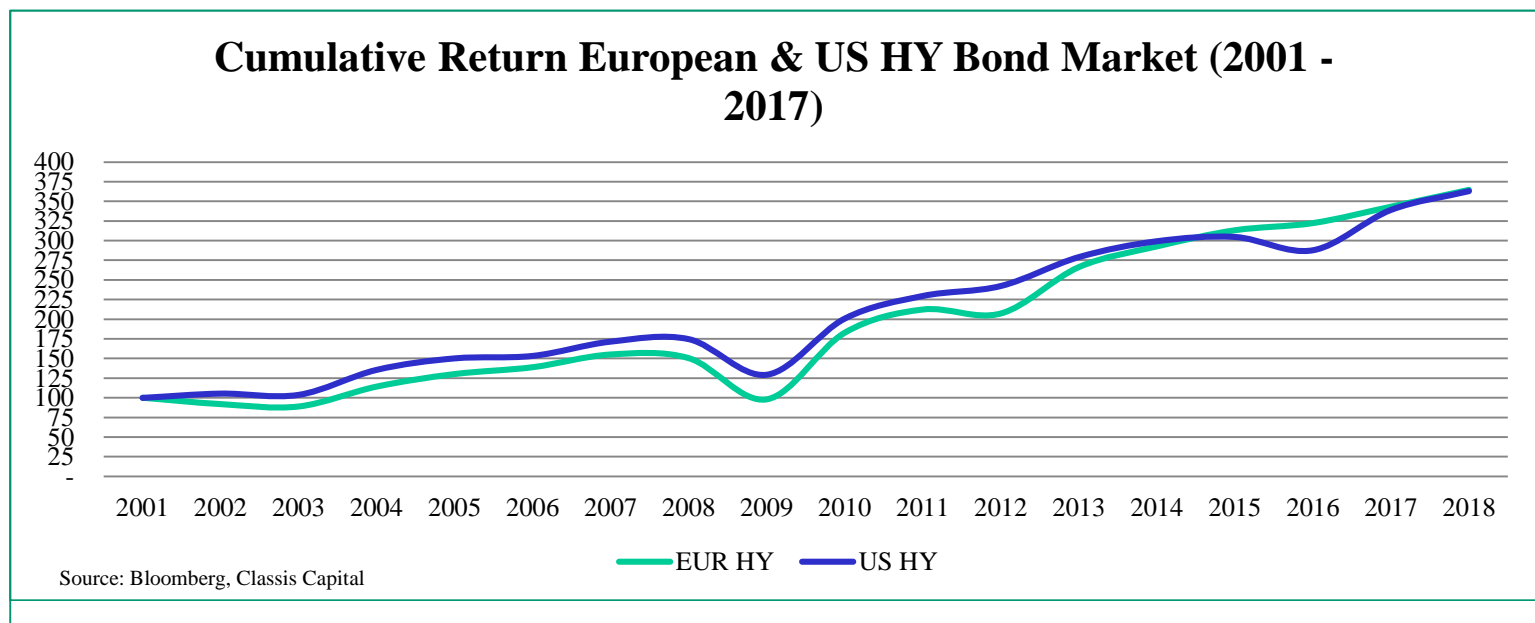
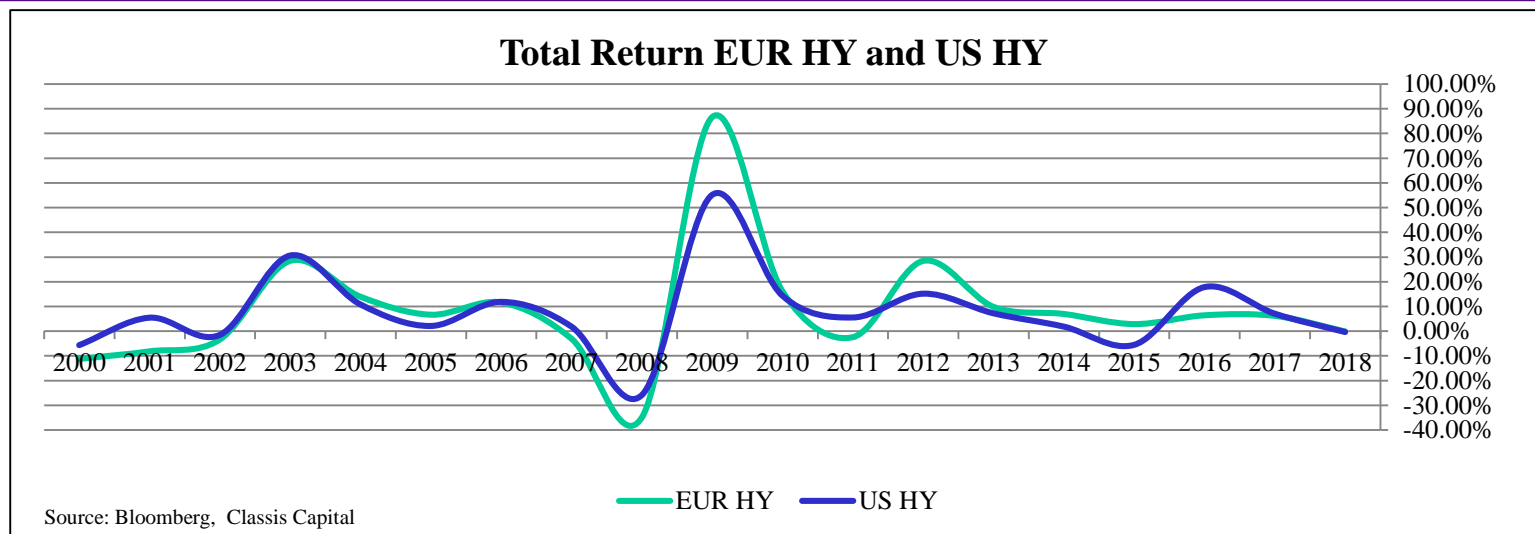
Compounded Annual Growth Rate (CAGR)	EUR HY	US HY
2001-2017	7,91%	7,88%
2008-2017	9,26%	7,59%
2010-2017	9,02%	7,68%

Arithmetic Average Return	EUR HY	US HY
2001-2017	10,18%	9,04%
2008-2017	12,66%	9,27%
2010-2017	9,35%	7,92%

Correlation Between US & EUR HY Market	Annual	Monthly
2001-2017	0,99	0,87
2008-2017	0,96	0,91
2010-2017	0,69	0,87

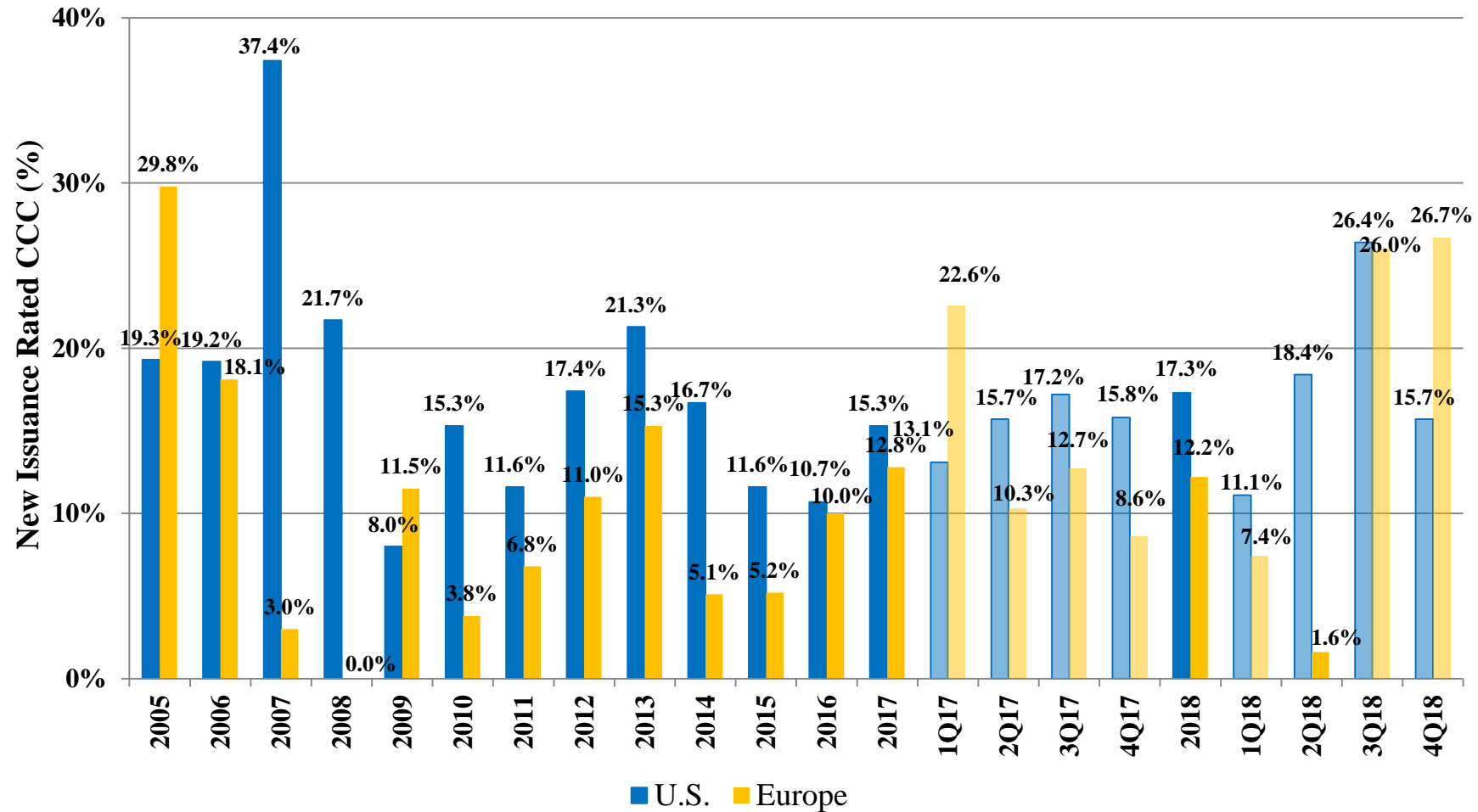
Source: Bloomberg Barclays Indices; ICE BOFAML Indices; Citigroup Indices; Classis Capital

European and US HY Bond Market Return



U.S. & European High-Yield Bond Market: CCC Rated New Issuance (%)

2005 – 2018

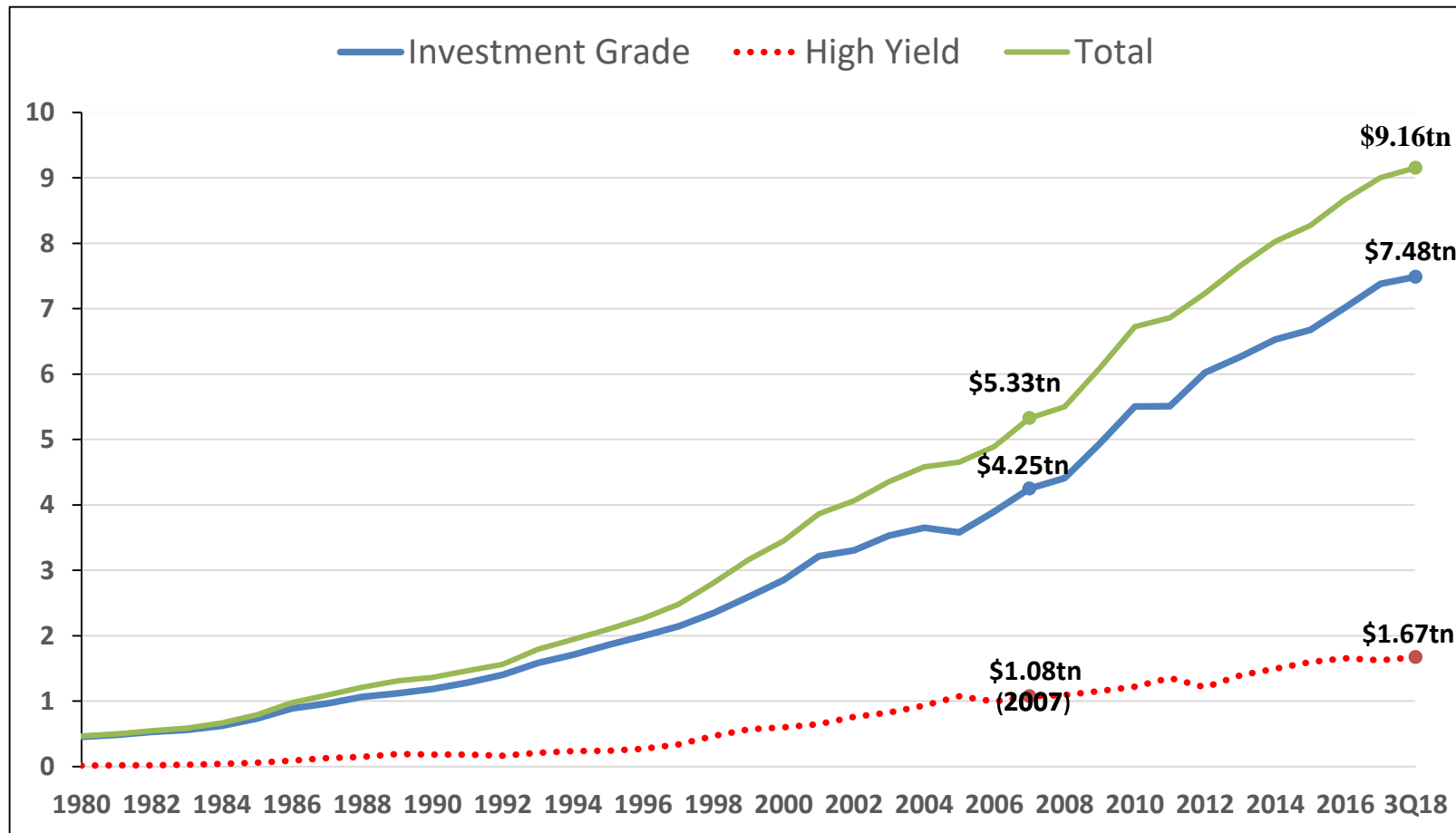


Source: Bank of America Merrill Lynch

Some Concerns About the Benign Credit Cycle

U.S. Corporate Leverage Surges to Almost \$10 Trillion

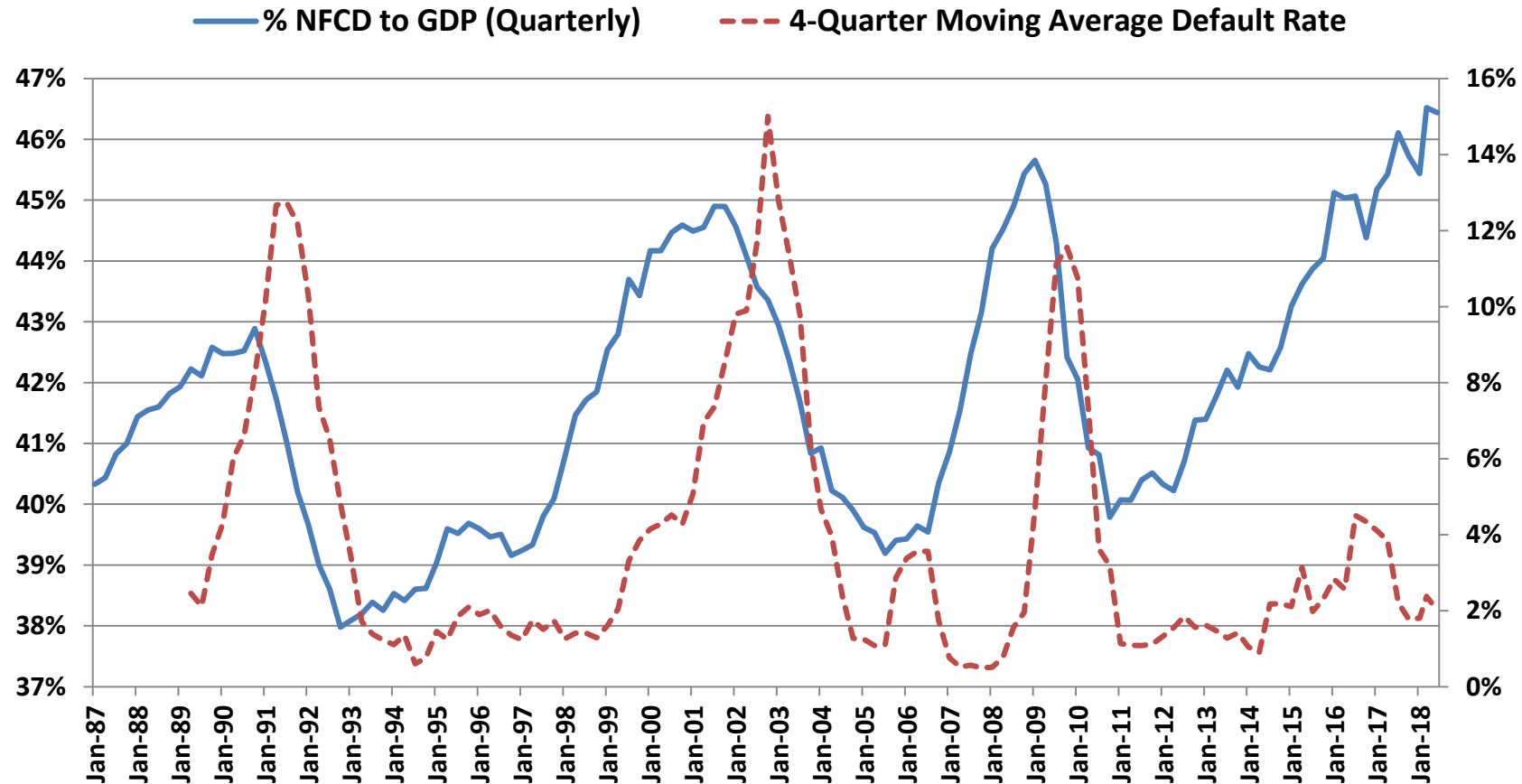
Outstanding Corporate Bonds, by Rating (\$tn)



Sources: SIFMA and NYU Salomon Center.

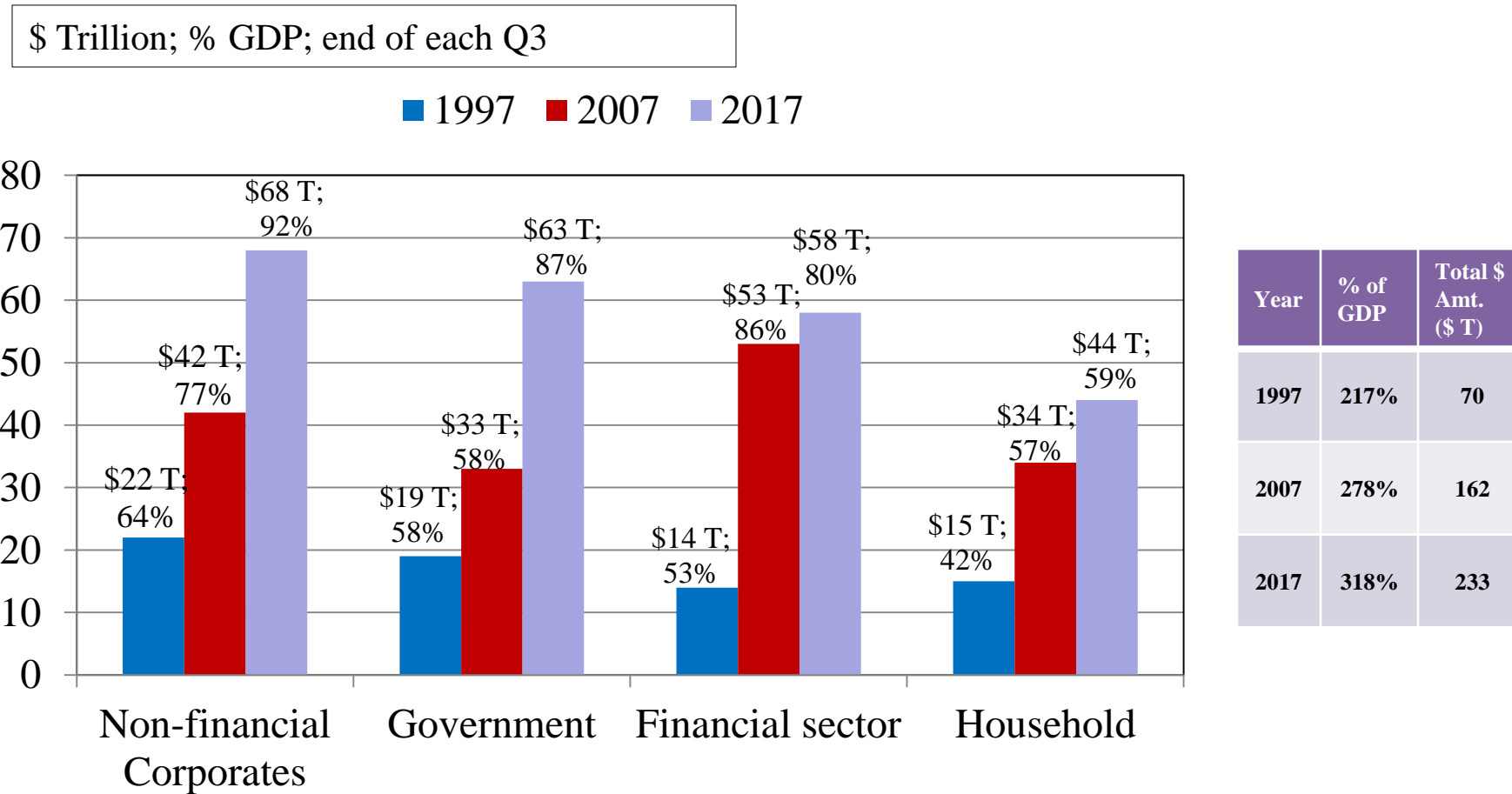
U.S. Non-financial Corporate Debt (Credit Market Instruments) to GDP: Comparison to 4-Quarter Moving Average Default Rate

January 1, 1987 – June 30, 2018



Sources: FRED, Federal Reserve Bank of St. Louis and Altman/Kuehne High-Yield Default Rate data.

Global Sectoral Indebtedness



Sources: Chart from *Independent UK* using IIF, BIS, IMF and Haver data.

Comparative Health of High-Yield Firms (2007 vs. 2017)

Comparing Financial Strength of High-Yield Bond Issuers in 2007& 2012/2014/2017

Number of Firms		
	Z-Score	Z''-Score
2007	294	378
2012	396	486
2014	577	741
2017	529	583

Year	Average Z-Score/ (BRE)*	Median Z-Score/ (BRE)*	Average Z''-Score/ (BRE)*	Median Z''-Score/ (BRE)*
2007	1.95 (B+)	1.84 (B+)	4.68 (B+)	4.82 (B+)
2012	1.76 (B)	1.73 (B)	4.54 (B)	4.63 (B)
2014	2.03 (B+)	1.85 (B+)	4.66 (B+)	4.74 (B+)
2017	2.08 (B+)	1.98 (B+)	5.08 (BB-)	5.09 (BB-)

*Bond Rating Equivalent

Source: Authors' calculations, data from Altman and Hotchkiss (2006) and S&P Global Market Intelligence's S&P *Capital IQ* platform/Compustat database.

Major Risks Going Forward

- Global Economic Performance – Primarily U.S., China and Europe: Impact on Default Rates, Credit Availability and Quality (No Current Major Concern)
- Falling Oil Prices (No Current Major Concern)
- Global Debt Excess and Increasing Interest Rates
- High-Yield Fundamentals Still Fairly Weak
- Contagion Between Markets – Risky Debt and Equity
- Interest Rates and Inflation – Reduced Importance of the Search-for-Yield
- LBO, Covenant-Lite and CCC New Issuance
- Sovereign Debt Crisis – Asia (1997), Europe (2009-13), Emerging Markets?
- Uncertainties (non-quantifiable) – e.g. Political, Trade, Other

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Transforming the market, creating value

27 March 2019



Challenger Banks in Italy

PwC European Banking Transformation and
M&A Conference

27 March 2019



Panel Members



Guido Lombardo
Chief Investment Officer
Credito Fondiario



Michele Antognoli
Head of International Markets
and Development,
BFF Group
CEO of BFF Finance Iberia

New digital path of banks in Italy: what are the prospective opportunities?

Pier Paolo Masenza
Financial Services Leader
PwC Partner



Emanuele Egidio
DDV Financial Services
PwC Associate Partner



New Initiatives in the Italian market

Italian Banking and Financial system is undergoing through transition process



Specialisation is the key competitive factor with focus on servicing niche segments and innovative digital operating model

Rise of specialty situations challenger banking model

Small and medium enterprises



01

Focus on collaboration with new innovative channels:
Fintech

Distressed assets:
NPL and UtP



02

NPL and UTP markets are **limited** in terms of volumes and number of transactions

Working capital financing



03

Supply chain financing through **factoring**

Main features of a specialty finance challenger bank

“Challenger banks” identify a new form of banking players that pursue differentiating strategies with respect to high-street banks in terms of product/customer specialization and technological innovation

Key Value Levers



Zero legacy with traditional banking system



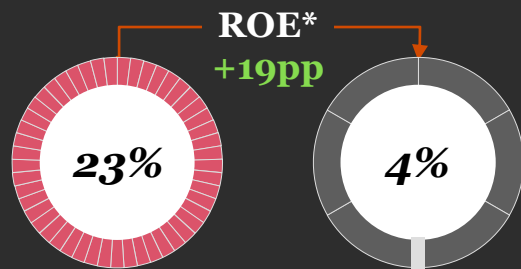
Option to use new financing facilities to leverage on special lending



Capability to invest in highly – specialized professionals by sector of interest

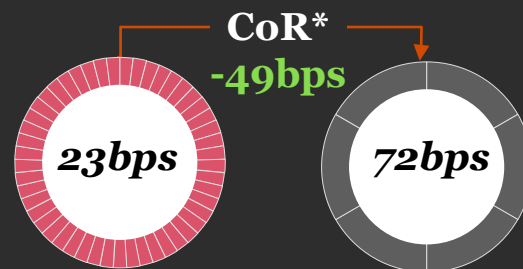


Availability of vertical competence centers (e.g. restructuring officers)



Specialty finance challenger banks

Traditional banks

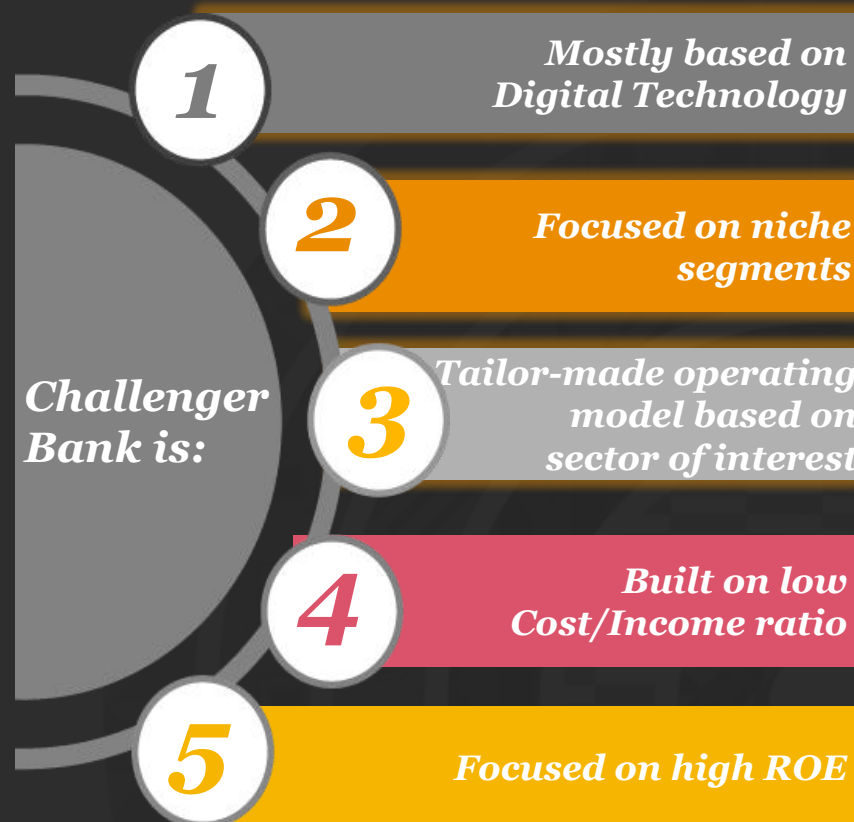


Specialty finance challenger banks

Traditional banks

* Data as of 2018

Core elements



Higher profitability based on lower cost/income structures and better returns on absorbed regulatory capital

Thank you

Q&A

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Doing deals in China and India – Opportunities in the \$1.8 trillion stressed assets market

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Panel members



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Mahender Khandelwal
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Doing deals in China and India – Opportunities in the \$1.8 trillion stressed assets market

Richard Thompson
Conference Chairman

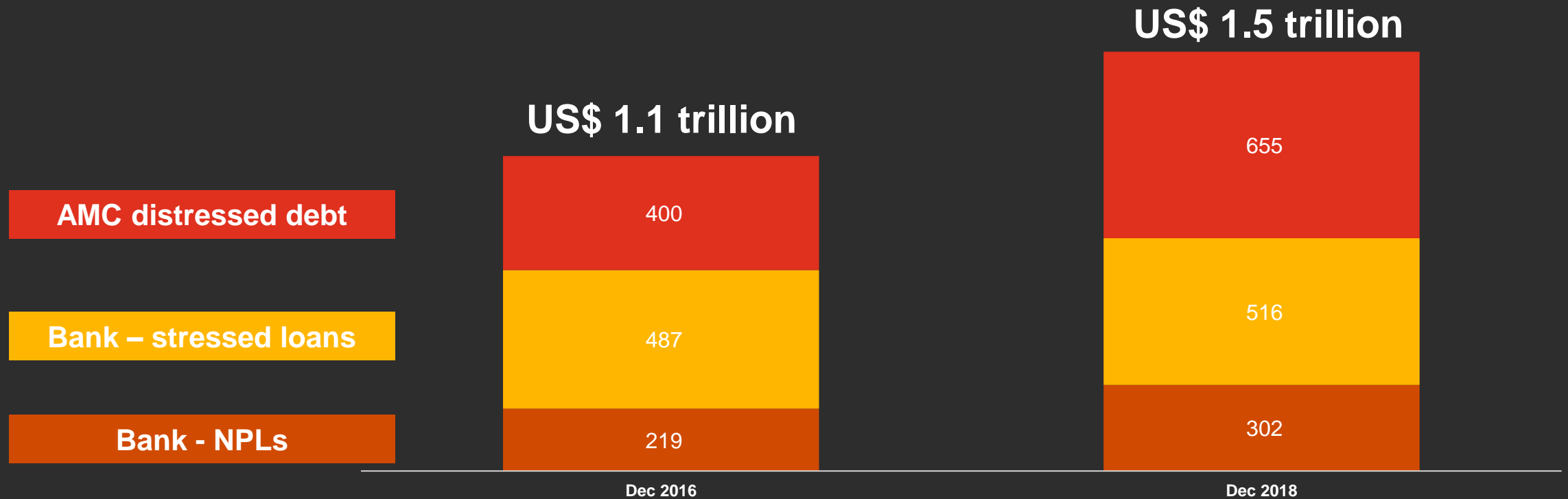


Simin Varghese
Senior Manager
PwC Deals



China: a huge pool of NPLs

Creating opportunities for investors



Source: PwC estimate, analysis of public information

China: Portfolio characteristics

Features of a typical Chinese NPL portfolio

- Buyers have the option to “shape” portfolios
- All commercial loans
- Mostly to private SMEs
- ~70% of credits in portfolio backed by real property
- Recoveries primarily from sale of collateral or loan
- Very few DPOs or restructuring



China: a flow of NPL trades, pace picking up

2019 expected to be a record year for NPL disposals

Closed NPL trades (2015-18)

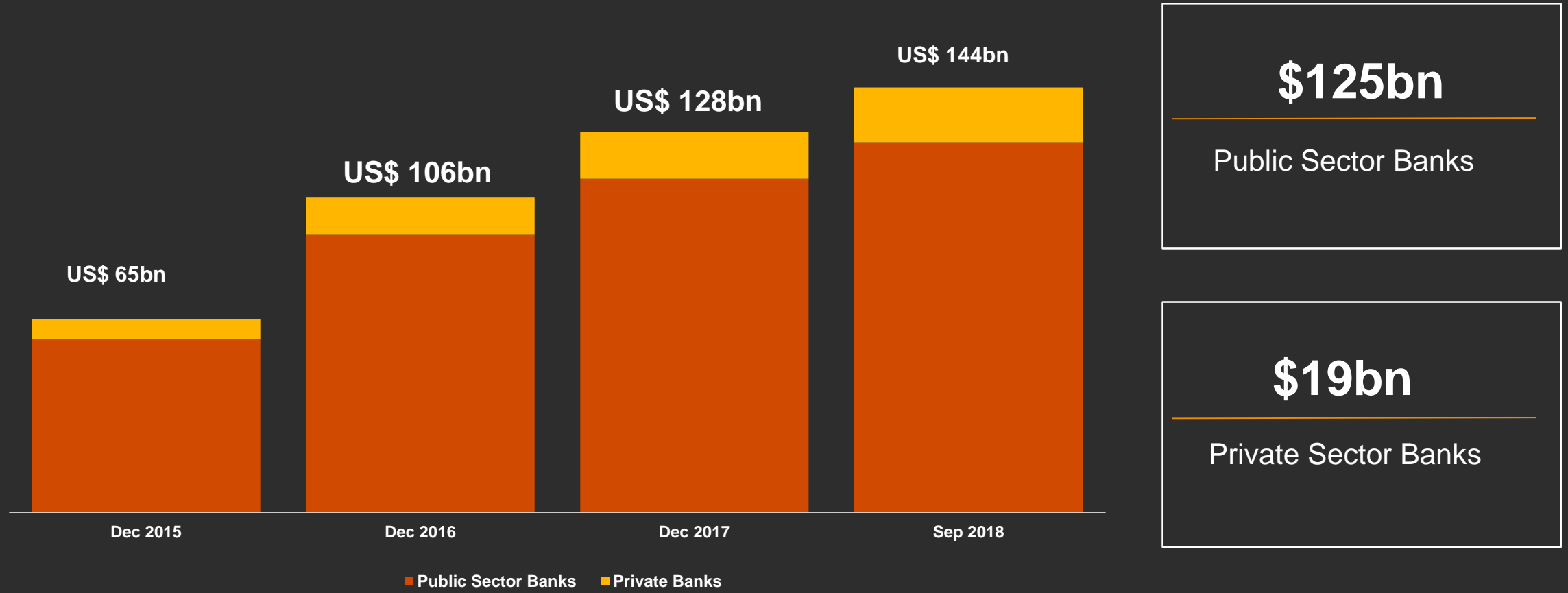
Oaktree	6 portfolios
Lone Star	5 portfolios
Goldman Sachs	5 portfolios
PAG	4 portfolios
Bain Credit	3 portfolios
CarVal	2 portfolios
Blackstone	1 portfolio
LVF Capital	1 portfolio

2019 – PwC estimate

- 2 to 5 new entrants to close first NPL deal
- Leading foreign funds targeting 2 – 4 portfolio trades in 2019
- ~US\$ 1.5 billion of foreign investor capital invested
- Differentiation of investor strategies

India: large stressed asset stock

Public sector banks hold about 85% of this stock



Deal activity

Distressed M&A on the rise

- Risen to ~ US\$ 15bn
- 10-12% of total M&A in value
- 2-3% of total M&A in volume

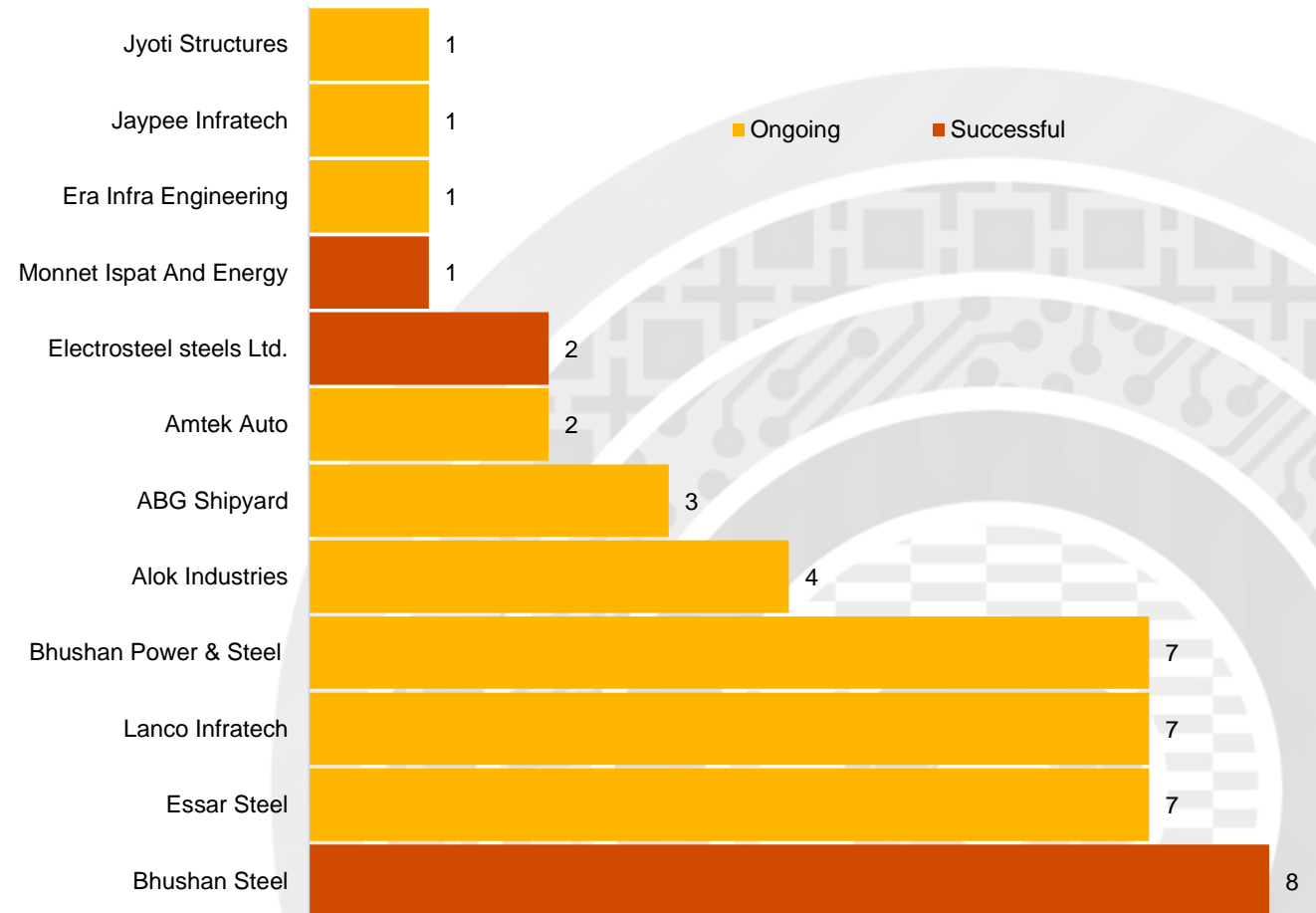
Steel sector in the spotlight

- Through 3 acquisitions, ~US\$ 8bn in assets have changed hands since 2017

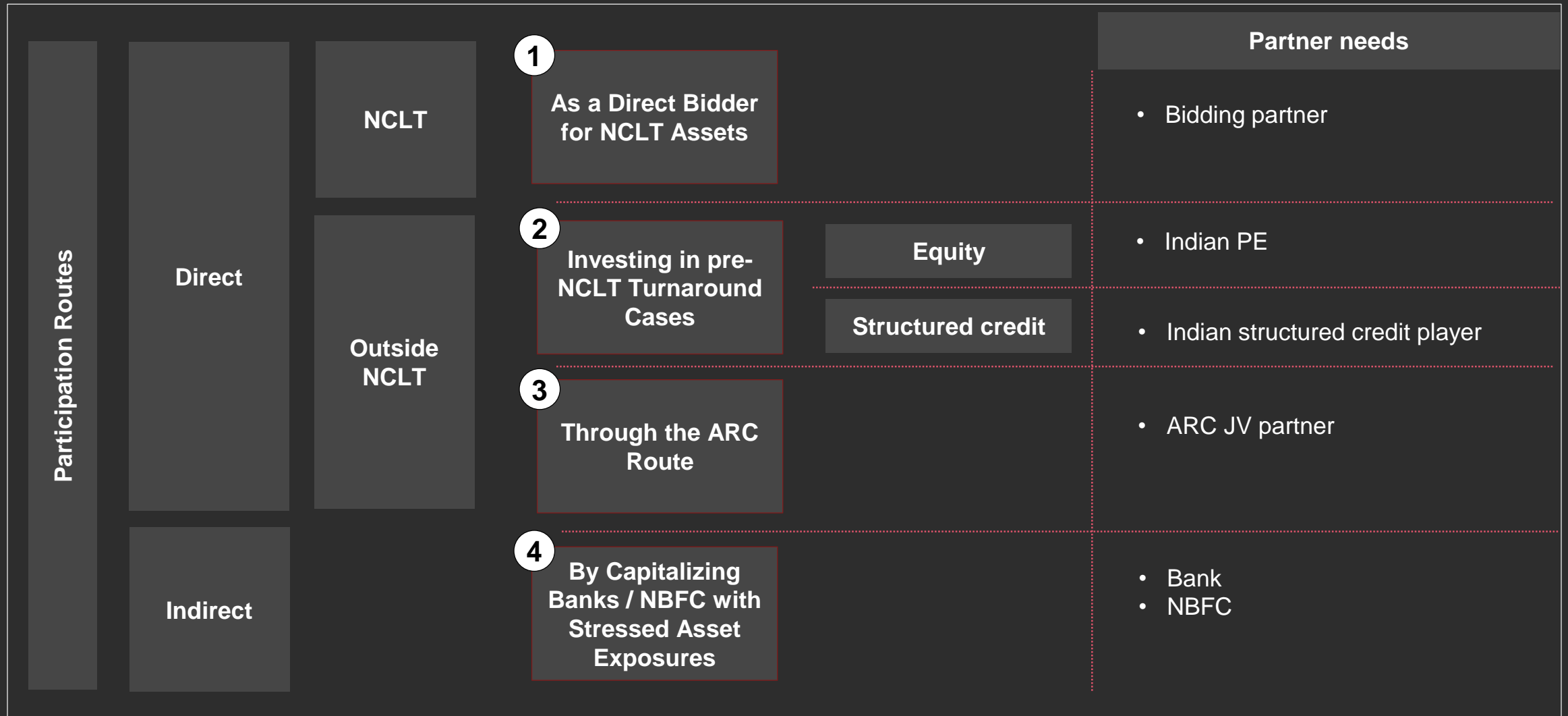
Other distressed sectors

- Industrial products & services
- Telecommunications
- Medical industries
- Industrials
- Financial services

Of the initial 'Dirty Dozen' cases, comprising USD 45bn in debt, 3 have already been successfully resolved



Opportunity to invest



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