

Global Finance, Local Fit

Managing Risks amidst Major Mega-trends

Andrew Sheng

Distinguished Fellow, Asia Global Institute, The University of Hong Kong

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Key Points

- 20 Years after Asian Global Financial Crisis, the world has changed beyond recognition
- Financial markets and Investment environment undergoing major transformation under the disruptions from: Trump Geo-politics, QE, Technology, Climate Change, Demographics, Social Inequalities, regulation and intense competition
- How is technology transforming the business model?
- How can we manage financial stability amidst these Black Swans and Black Elephants?

Section 1 **Global Finance**

*Megatrends in Geopolitics, Technology and
Business Models – KNOW YOUR CONTEXT*

Global and Asian GDP Overall Up

GS and Consensus forecasts 2016-2018

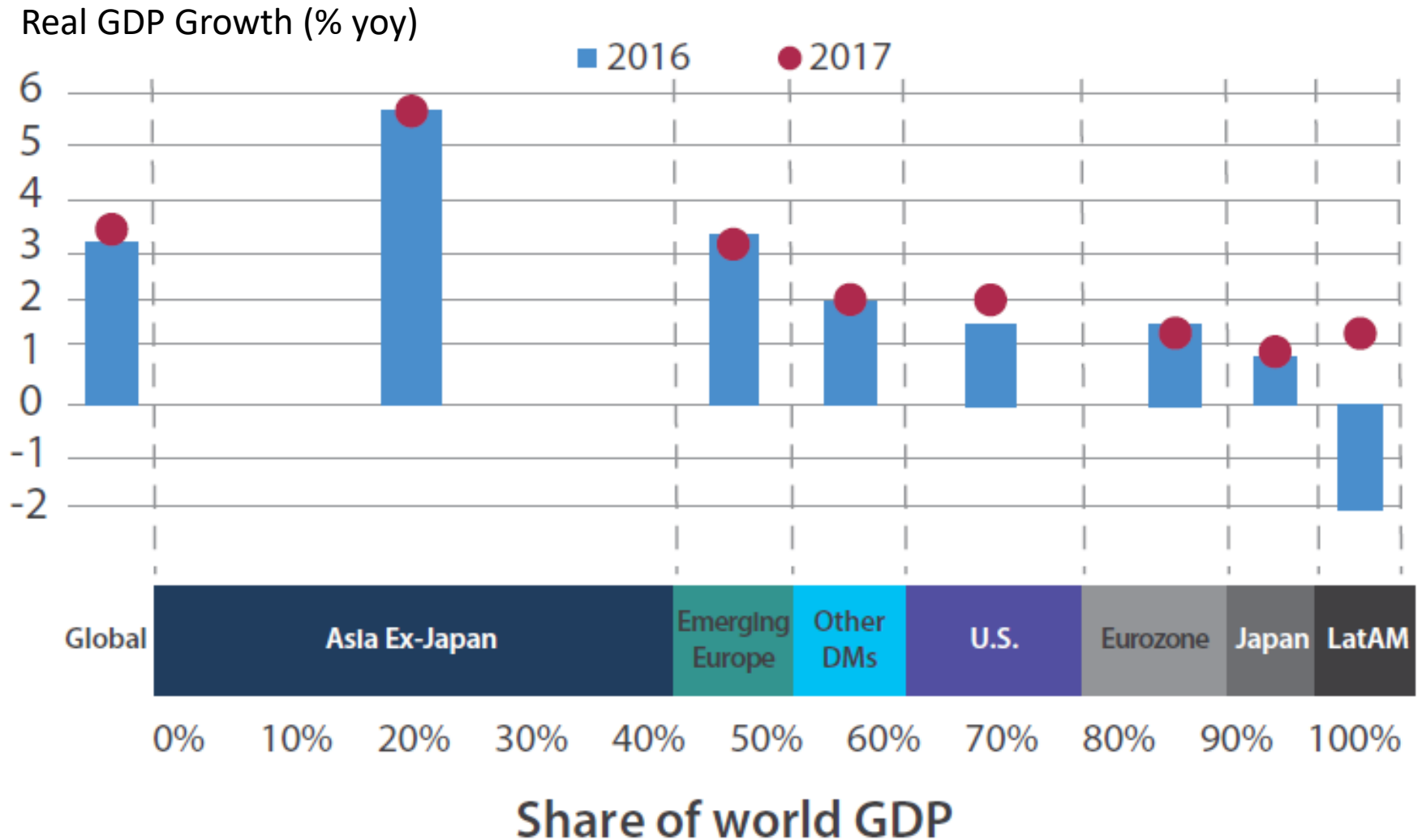
Real GDP growth (year-over-year)

	2016	2017		2018		Potential growth^
		GS	Consensus	GS	Consensus	
Asia ex-Japan	6.2	6.2	6.1	6.1	5.9	
China	6.7	6.8	6.6	6.3	6.2	6.0
India	7.1*	7.5*	7.3*	7.8*	7.6	7.6
South Korea	2.7	2.5	2.6	2.5	2.5	3.1
Hong Kong	2.0	2.1	2.2	2.1	2.1	2.4
Taiwan	1.5	2.2	2.1	2.2	2.0	2.6
ASEAN	4.6	4.7		5.0		
Singapore	2.0	3.2	2.4	2.0	2.2	3.2
Malaysia	4.2	4.5	4.4	4.7	4.4	5.2
Thailand	3.2	3.0	3.3	3.0	3.3	4.0
Indonesia	5.0	5.2	5.2	5.9	5.3	6.3
Philippines	6.9	6.6	6.5	6.4	6.3	6.5
U.S.	1.6	2.1	2.1	2.2	2.4	1.8
Euro area	1.7	1.6	1.7	1.4	1.6	1.0
Japan	1.0	1.4	1.4	1.1	1.1	0.5

^GS estimates for annualized growth rate of potential output from 2016-2020. *Fiscal year basis (forecast). 2016 is India FY17 (April 2016-Mar 2017)

Source: Goldman Sachs. 2017. "China: Monitoring Financial Stress in Real Time."

Asia Ex-Japan Still Strong (5%-6%) Growth (2016-2017)



Data sources: Consensus Mean Forecast from Bloomberg (as of 31 March 2017).

Source: AMRO. 2017. "ASEAN+3 Regional Economic Outlook 2017."

Transformative Mega-trends that Change Finance

1. Global Rebalancing – Multipolar Cold War 2.0 = growing geo-political risks – Geopolitical rivalry
2. Demography – Dividends or Age burden?
3. Financialization and Debt Overhang – Who pays?
4. Disruptive Technology – Jobs and Creative Destruction
5. Climate Change – Water, Food & Energy Stress
6. Governance – Democracy, Market or State?

QE and Negative Interest Rate Policy (NIRP) is compressing business model of financial sector and taxing the savings of the community

BIS (June 2017) and IMF (April 2017) views on Global Growth and Stability

Caruana BIS – 4 risks

1. Flare-up of inflation
2. Maturing financial cycles and high debt. 2016 stock of G-20 non-financial sector debt 220% of GDP, 40 points higher than 2007
3. Lagging corporate investment, profits and investments, partly due to persistent political uncertainty and high corporate debt
4. Threat of protectionism. Non-tariff barriers, such as regulations and subsidies, have risen fourfold since end-2010

IMF GFSR

- Policy uncertainty key downside risk
- Both advanced and EME corporate leverage levels vulnerable
- EME market risks remain elevated
- European banks face structural challenges
- Crucial to get policy mix right

Post crisis: Official vs Unofficial Views

IMF Crisis Lessons

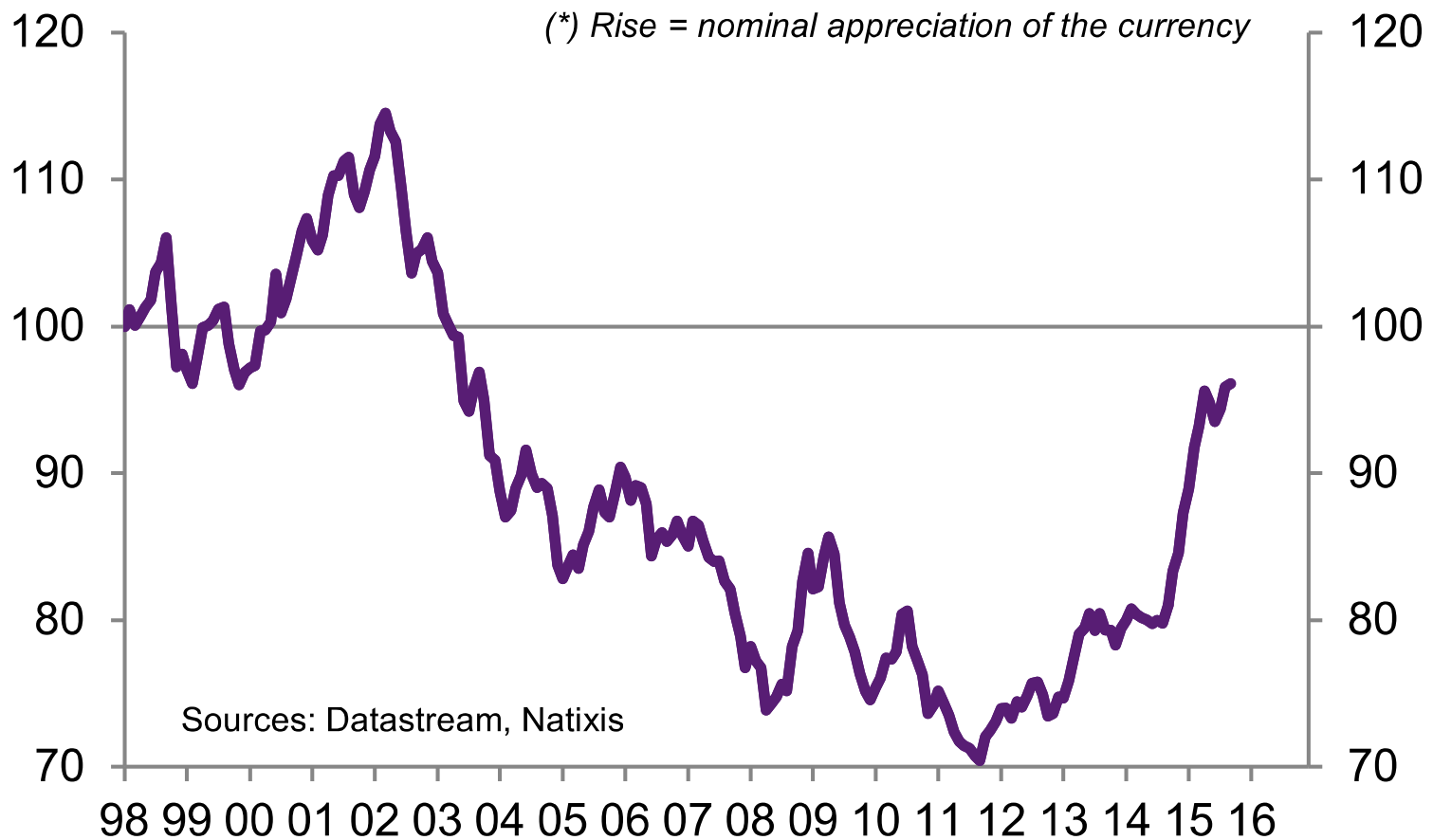
- Prevention vs. Resolution
- Data Gaps (blind spots)
- Macro-financial linkages
- New tools
 - Stress tests
 - Agent based models
 - Risk Maps
 - Higher capital, liquidity, TLAC etc
- But can't avoid politics as driver of crises

G20/FSB/Standard setters

- Working on shadow banking
- Better systemic views, but still under-appreciation of local-global interactions
- Lack of balance sheet data and linkages with shadow banks and offshore entities
- QE and very low interest rates create their own set of problems
- No one believes that TBTF will not be rescued

Strong Dollar = Global Crisis, 1998-2017

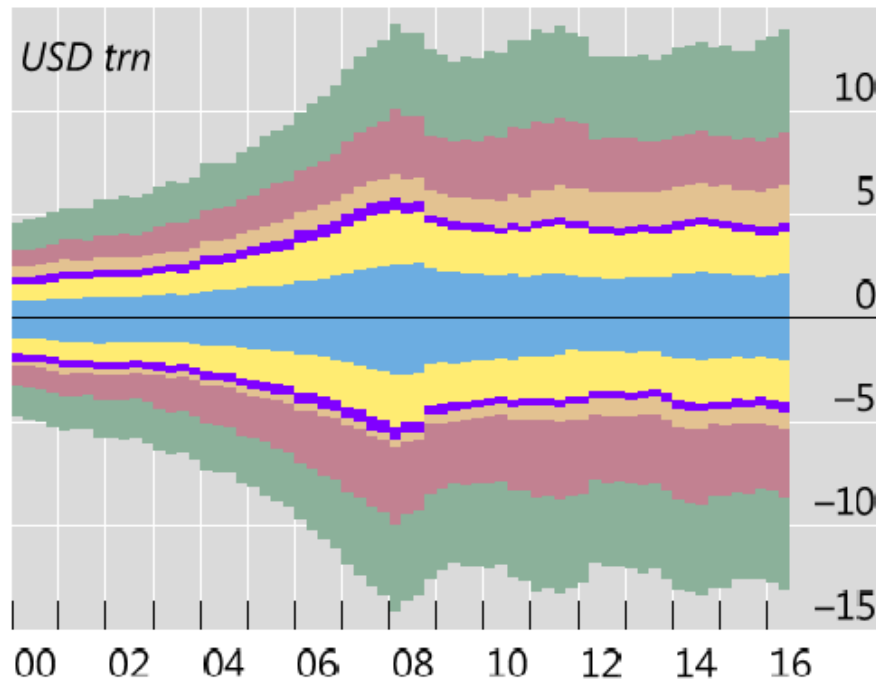
United States: Nominal trade-weighted exchange rate* (1998:1 = 100)



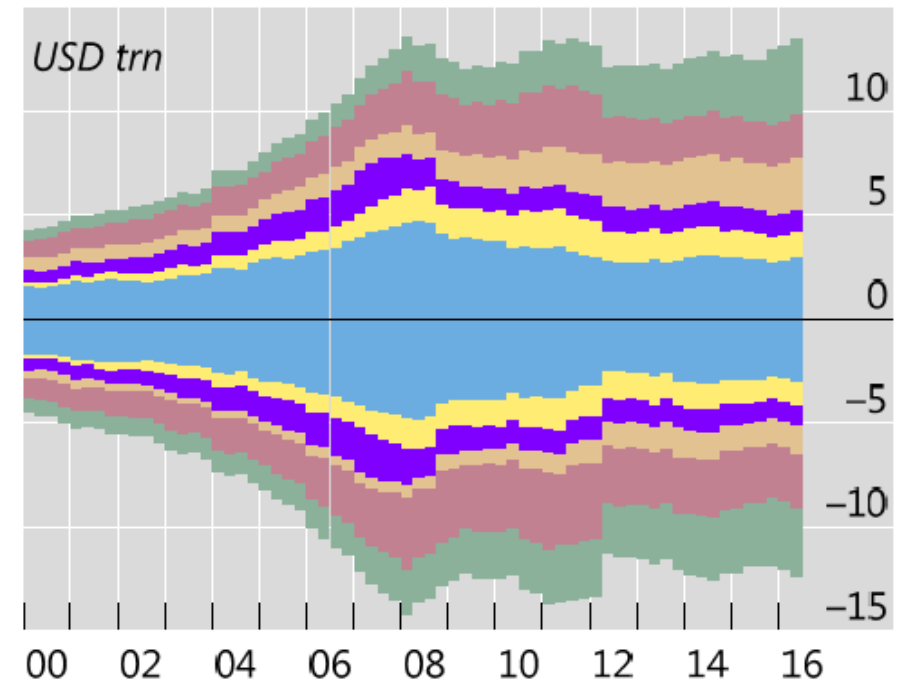
Dollar Funding has Become Very Important for Both Onshore and Offshore Debt *(Hyun Shin BIS July 2017)*

Cross-border US dollar-denominated credit, all sectors

By residence



By nationality¹

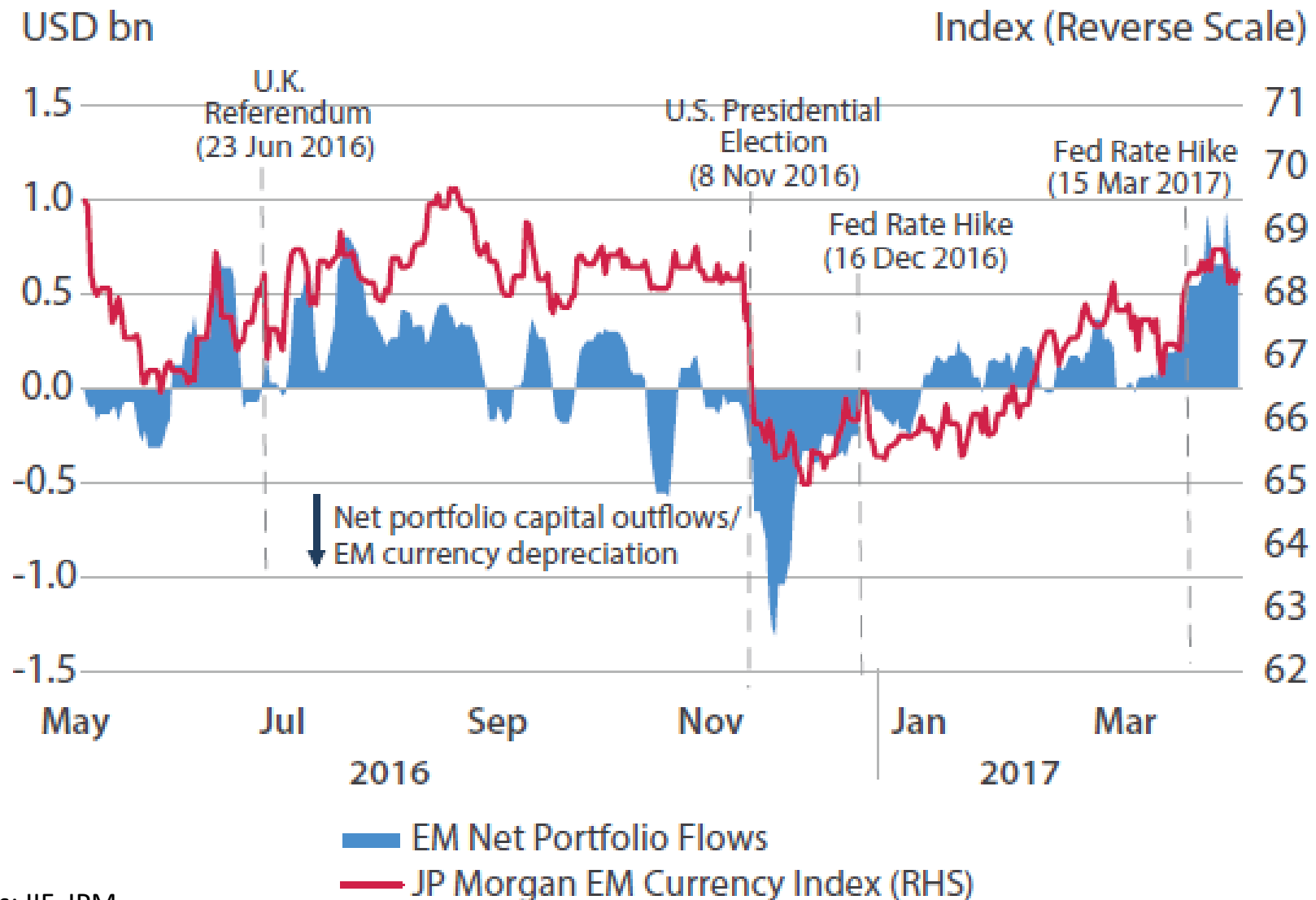


Claims (+) and liabilities (-) of:

- | | | | |
|--------|----------------|--------|---------------|
| Blue | Euro area | Maroon | United States |
| Yellow | United Kingdom | Green | Other |
| Purple | Switzerland | | |

¹ The break in series between Q1 and Q2 is due to the Q2 2012 introduction of a more comprehensive reporting of cross-border positions. For more details, see www.bis.org/publ/qtrpdf/r_qt1212v.htm. Data source: BIS locational banking statistics, Tables A5 (by residence) and A7 (by nationality).

Capital Flows to EM Waiting for Fed



Data sources: IIF, JPM.

Source: AMRO. 2017. "ASEAN+3 Regional Economic Outlook 2017."

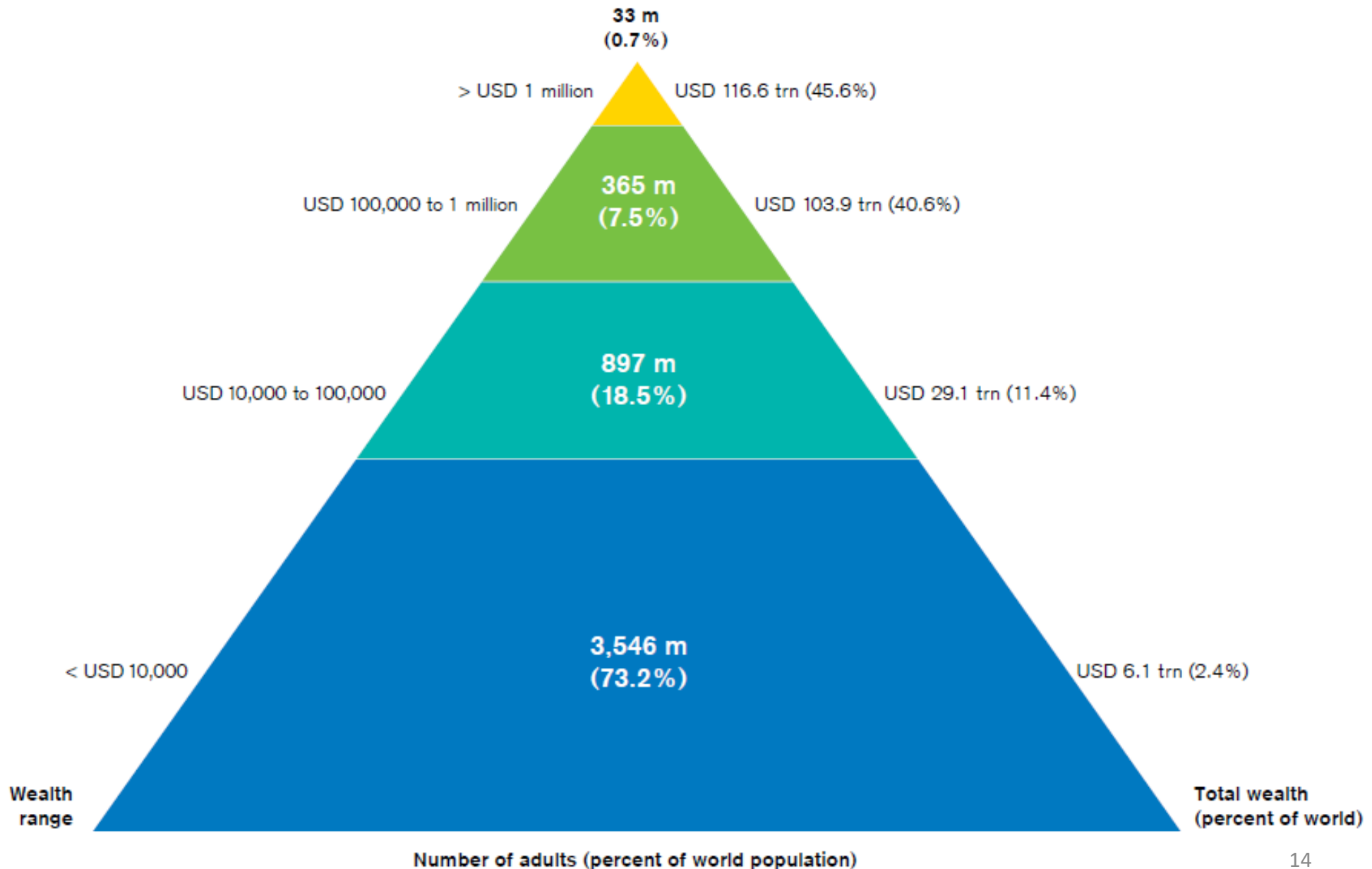
Global Supply Chain under Disruption – Rules, Technology, Disengagement



Global Supply Chain – Pre-conditions and Fragility Origins

1. No taxation on flows/Tobin Tax – free market flows
 2. No capital gains tax
 3. Subsidy on debt – tax deductibility on interest paid and provisions on NPL
 4. Assets and liabilities can be moved off-balance and off-shore to escape tax and regulatory oversight
- = Funded by US\$ with dominant reserve currency effects
- = Winner take all, benefits the 1%, leads to huge leverage, and vulnerable to speculative flows and concentration fragility

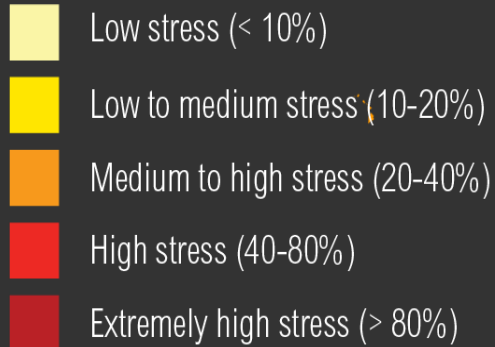
Inequality: 8.2% of Population Own 86.2% of Global Wealth



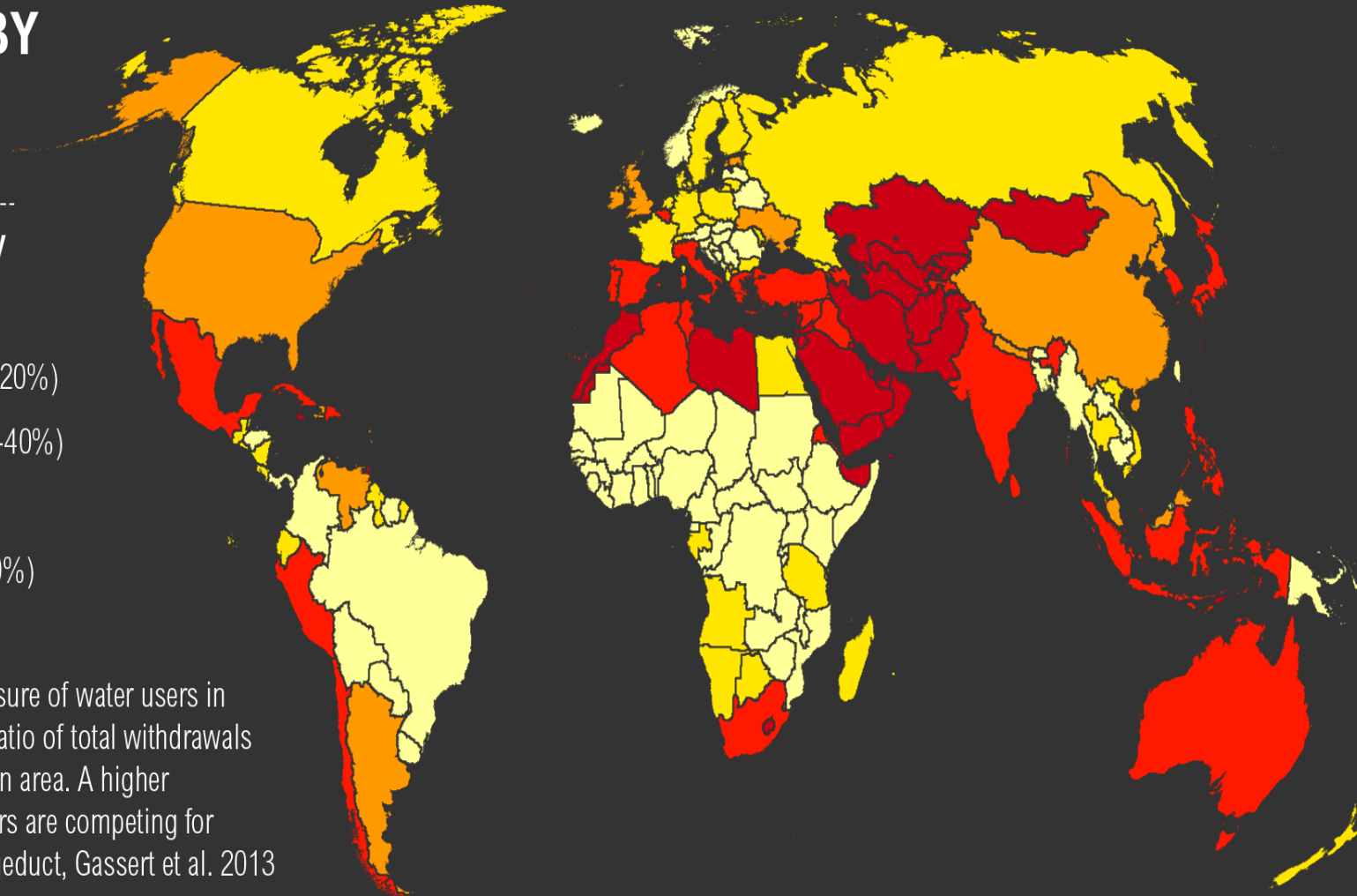
Climate Change: Water Stress Causes Civil Unrest

WATER STRESS BY COUNTRY

ratio of withdrawals to supply

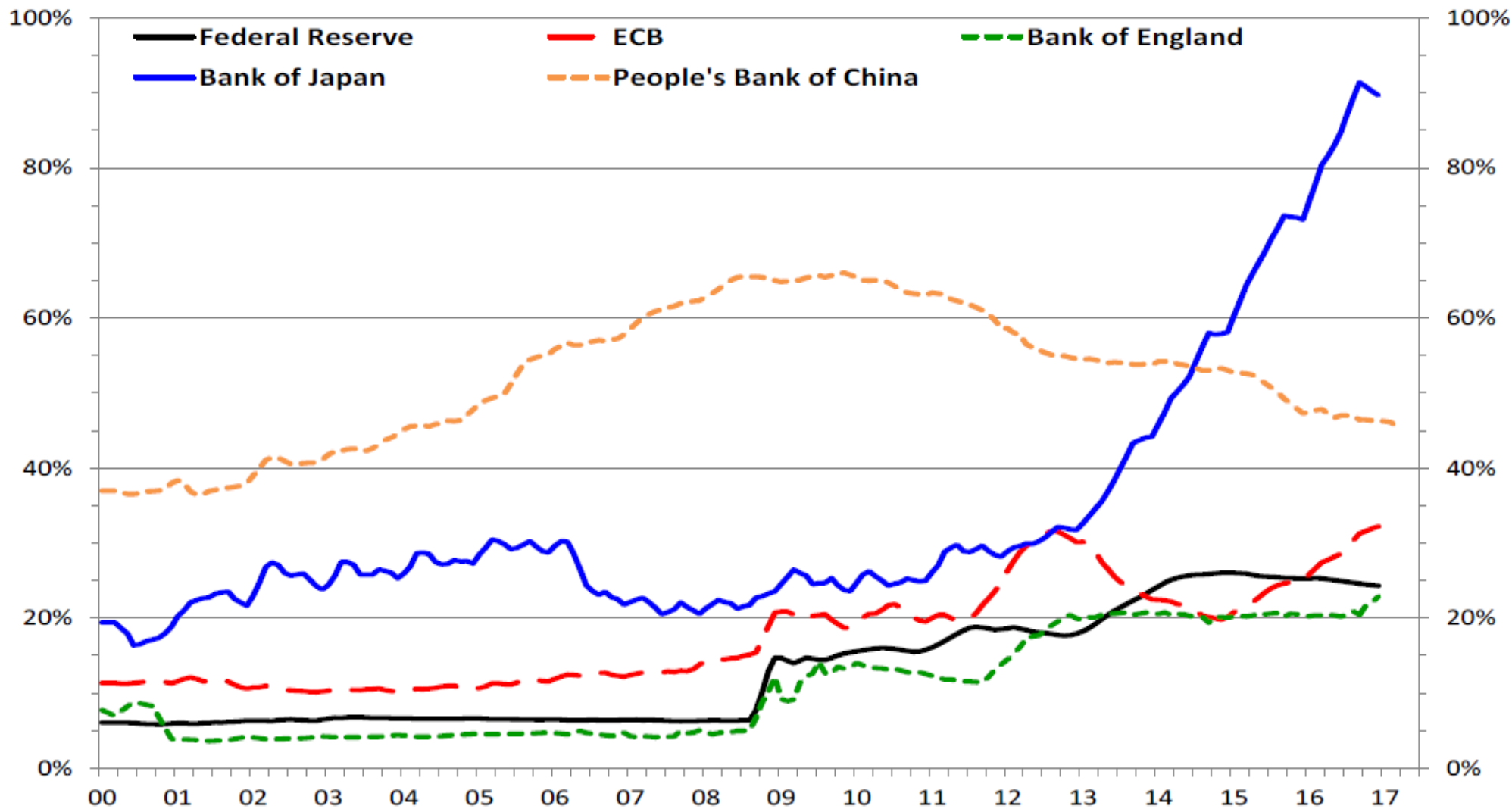


This map shows the average exposure of water users in each country to water stress, the ratio of total withdrawals to total renewable supply in a given area. A higher percentage means more water users are competing for limited supplies. Source: WRI Aqueduct, Gassert et al. 2013



Unwinding QE Won't Be Easy

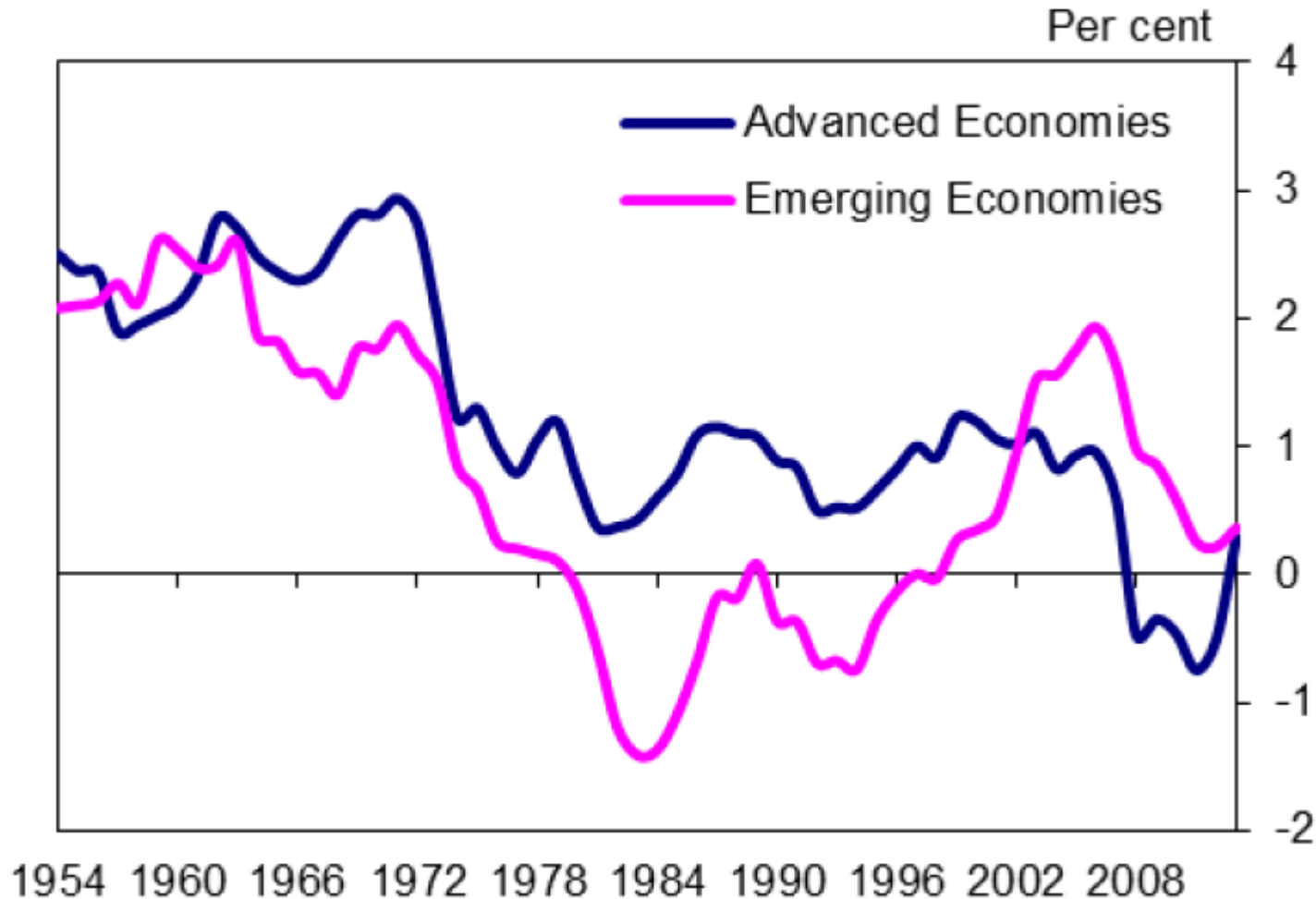
Central Bank Balance Sheets, 2000-2017 (% GDP)



Source: DSGAsia. 2017. "Where has All the Money Gone?"

Productivity Falling in AEs and EMEs

Long run global total factor productivity growth for AEs and EMEs

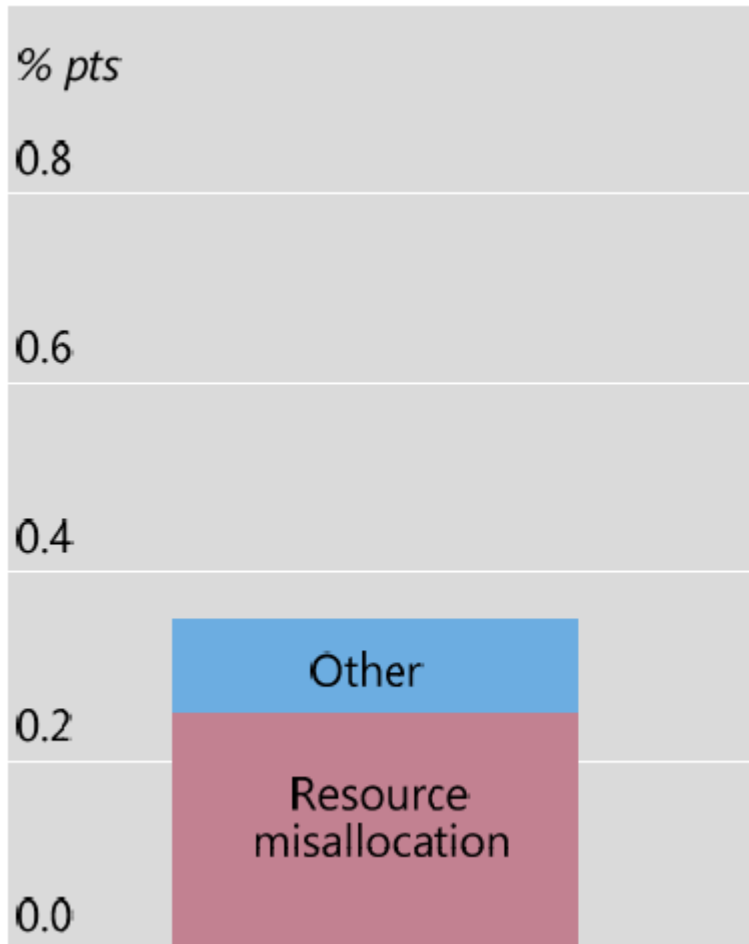


Data source: Penn World Tables database. Notes: Percentage change in median TFP growth; five year moving average.

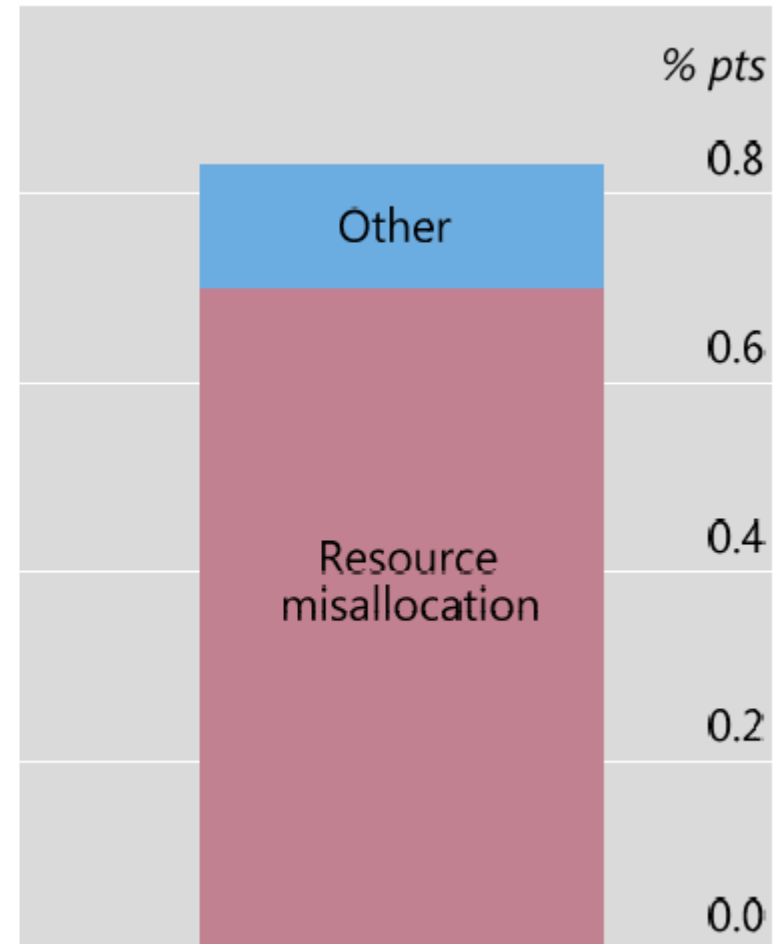
Source: Haldane. 2017. "[Productivity Puzzles](#)." Bank of England.

Financial Booms Sap Productivity by Misallocating Resources

Annual cost during a typical boom ...



... and over a five-year window post-crisis



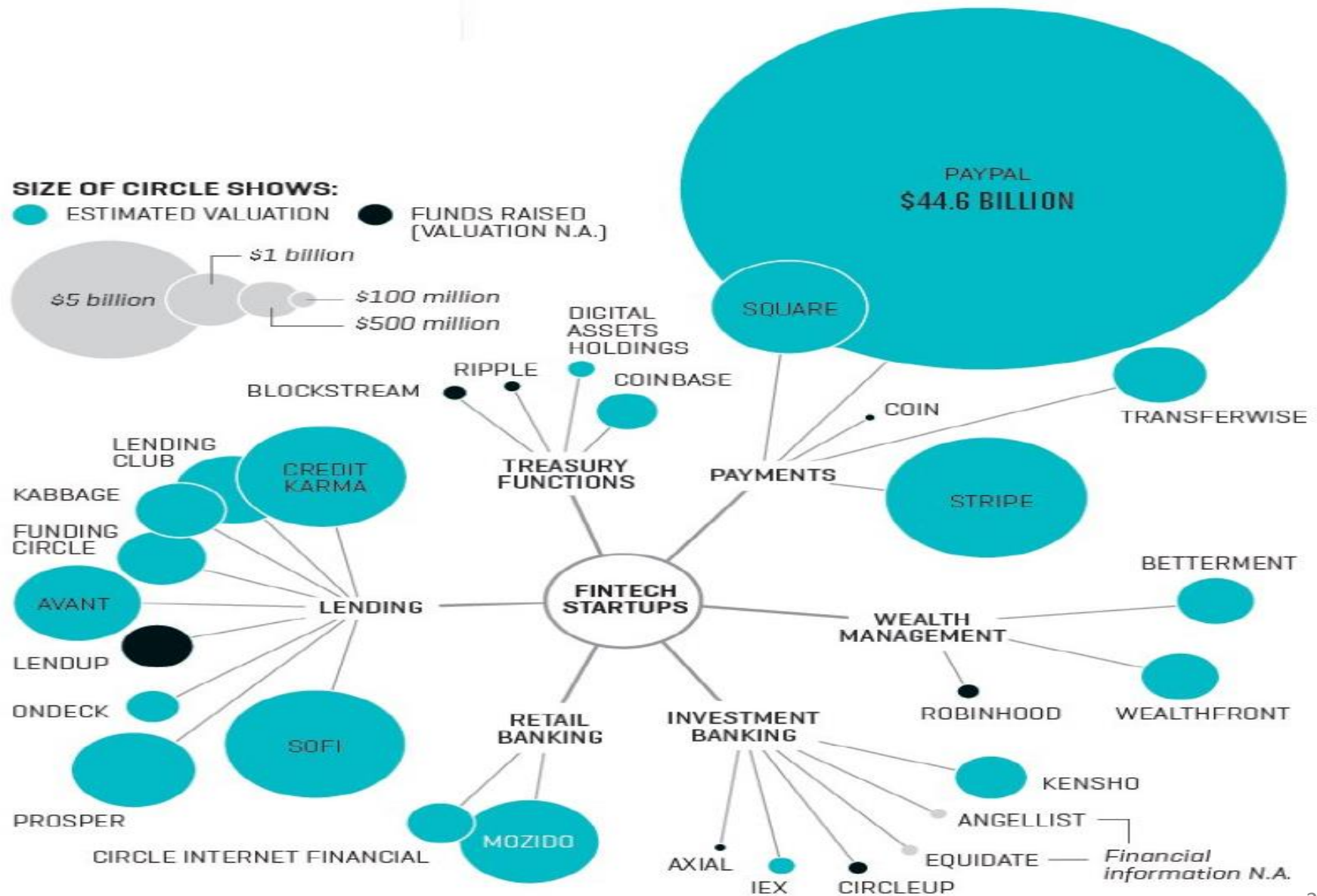
Source: based on Borio et al (2015), BIS calculations.

Source: Claudio Borio. 2015, September. "[Challenges for the global economy: A narrowing road?](#)" BIS.

Section 2 Disruptive Technology on Finance

*Changing Business Model, Disruptive FinTech,
Impact on financial institutions from foreign and
macro issues, Asian finance structural issues
KNOW YOUR BUSINESS*

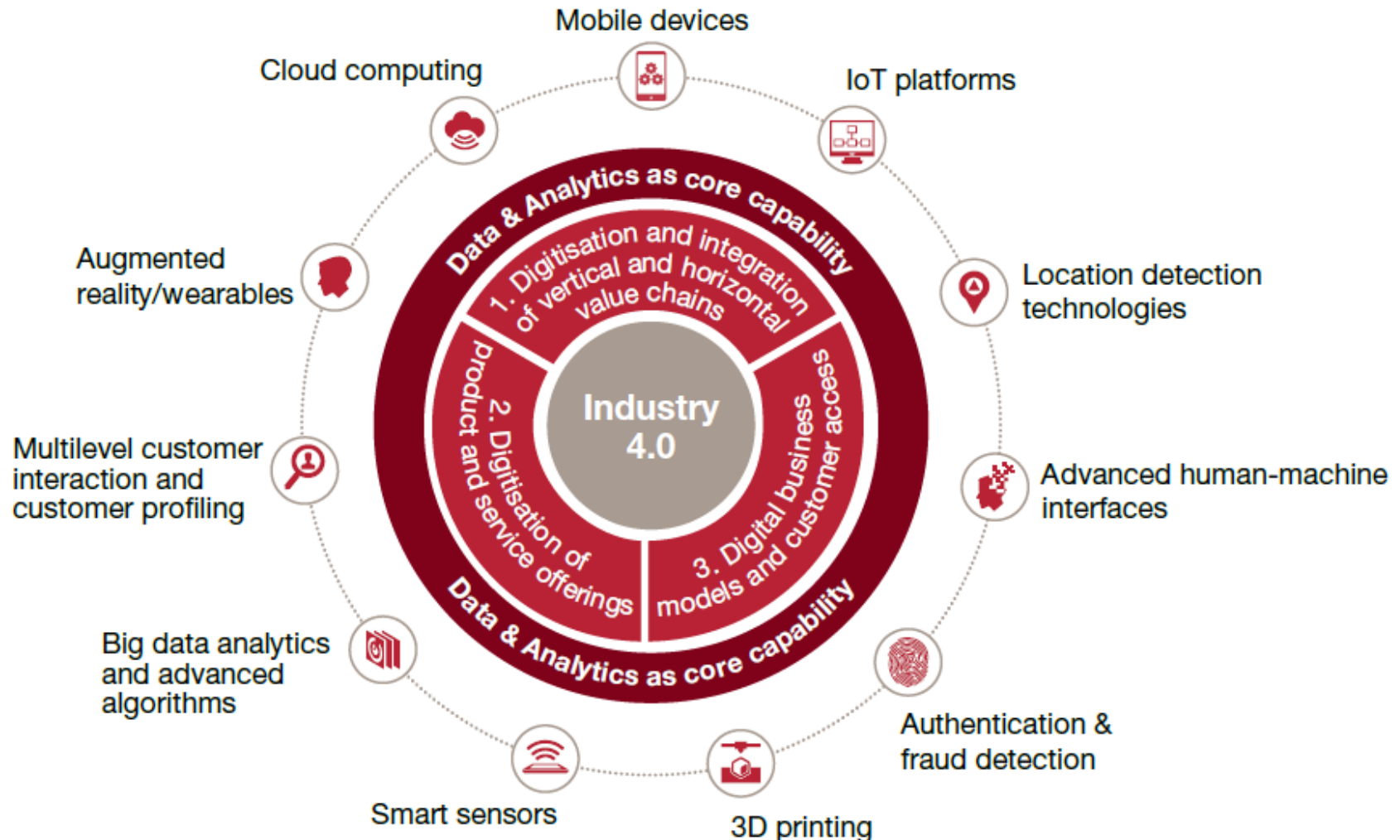
Disruption Everywhere



Note: Market data as of June 10, 2016. Data sources: CB Insights; Crunchbase; Funderbeam; Bloomberg, June 2016.
Source: OICU-IOSCO. 2017. "[IOSCO Research Report on Financial Technologies \(Fintech\)](#)."

Industry 4.0: Digitization as the New Business Model – PwC 2016

Industry 4.0 framework and contributing digital technologies



Automation to Reach 50% of All Activities by 2037

Productivity growth from the **steam engine**

0.3%

1850–1910



Productivity growth from **early robotics**

0.4%

1993–2007



Productivity growth from **IT**

0.6%

1995–2005



Productivity growth from **automation**

0.8 to 1.4%

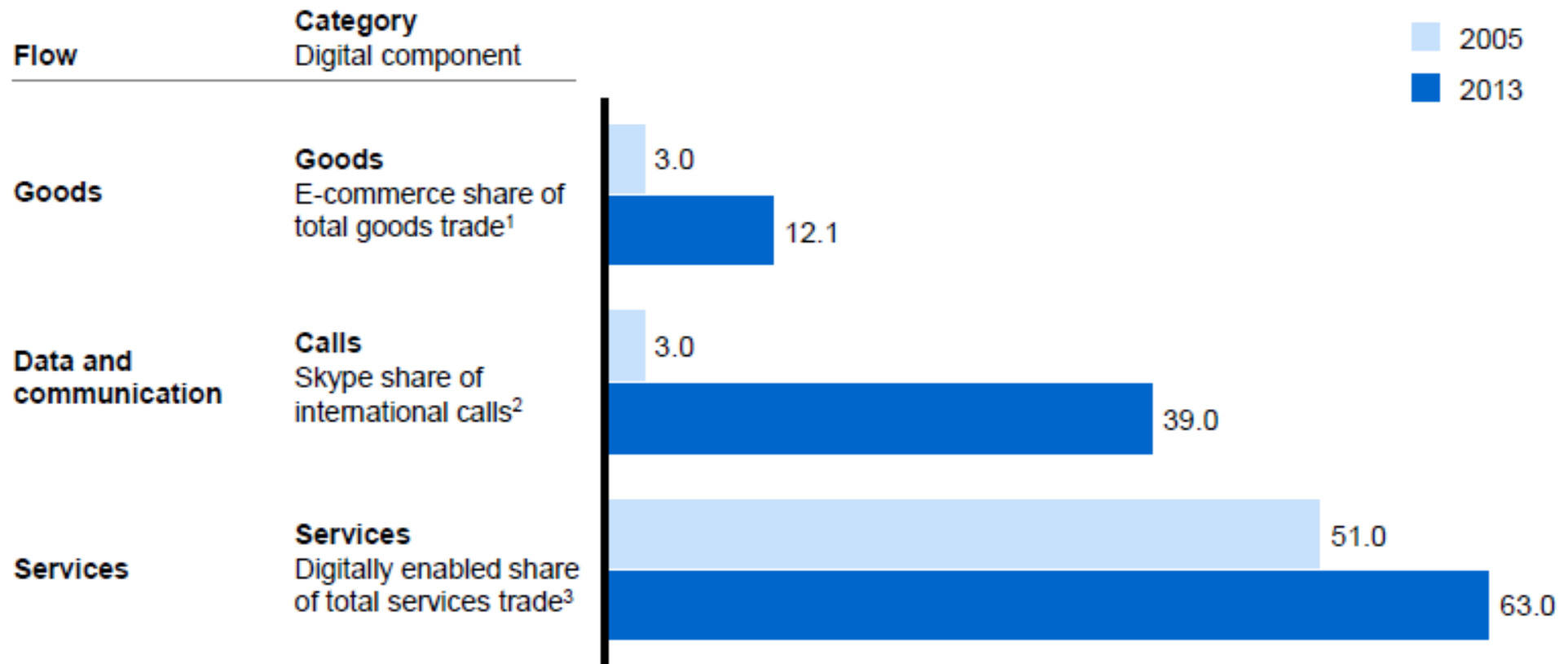
2015–2065

Adoption of robotics, artificial intelligence, and machine learning could give a bounce to the global economy, at a time of lackluster productivity growth and aging in many countries



Digital Component has Growing Share of Global Flows

Share of selected cross-border flows that are digital, %



Note: 1 Based on China data; 2 Excludes other VOIP minutes; 3 Based on US data.

Sources: iResearch; Telegeography; OECD; US Bureau of Economic Analysis; McKinsey Global Institute analysis

Source: McKinsey Global Institute. 2014. [“Global Flows in a Digital Age.”](#)

IOSCO: Global FinTech Landscape Mapped Across 8 Categories

Payments

- Payment processing, Money transfer Mobile payments, Forex, Credit cards, Prepaid cards, Reward programs
- Examples: AliPay, Transferwise, PayPal, Square, Klarna, Lightspeed

Insurance

- Broking, Underwriting, Claims, Risk tools
- Examples: Oscar, Insureon, Lemonade, Knip, Analyze, ClearRisk

Planning

- Personal finance, Retirement planning, Enterprise resource mgmt., Tax & budgeting, CRM, Compliance & KYC, Data storage, Infrastructure services
- Examples: Strands, Slice Technologies, Mint

Lending / Crowdfunding

- Crowdfunding platforms, Peer-to-peer lending, Mortgages & corporate loans
- Examples: Avant Credit, SoFi, Asset Avenue, Lending Club, Funding Circle, DianRong, Kabbage

Blockchain

- Digital currency, Smart contracts, Payments & settlement via blockchain, Asset tracking, Identity mgmt., Blockchain protocol developers
- Examples: Coinbase, Ripple Labs

Trading & Investments

- Investment mgmt., Roboadvisory, Trade pricing & algos, Trading IT, Trading platforms, Brokerage, Clearing
- Examples: Succession Advisory, Wealthfront, Motif Investing, Nutmeg, Fuscent

Data & Analytics

- Big Data solutions, Data visualization, Predictive analytics, Data providers
- Examples: Credit Benchmark, Solovis, Zenefits, DocuSign, Kreditech

Security

- Digital identity, Authentication, Fraud mgmt., Cybersecurity, Data encryption
- Examples: Bit9, Veracode, TeleSign



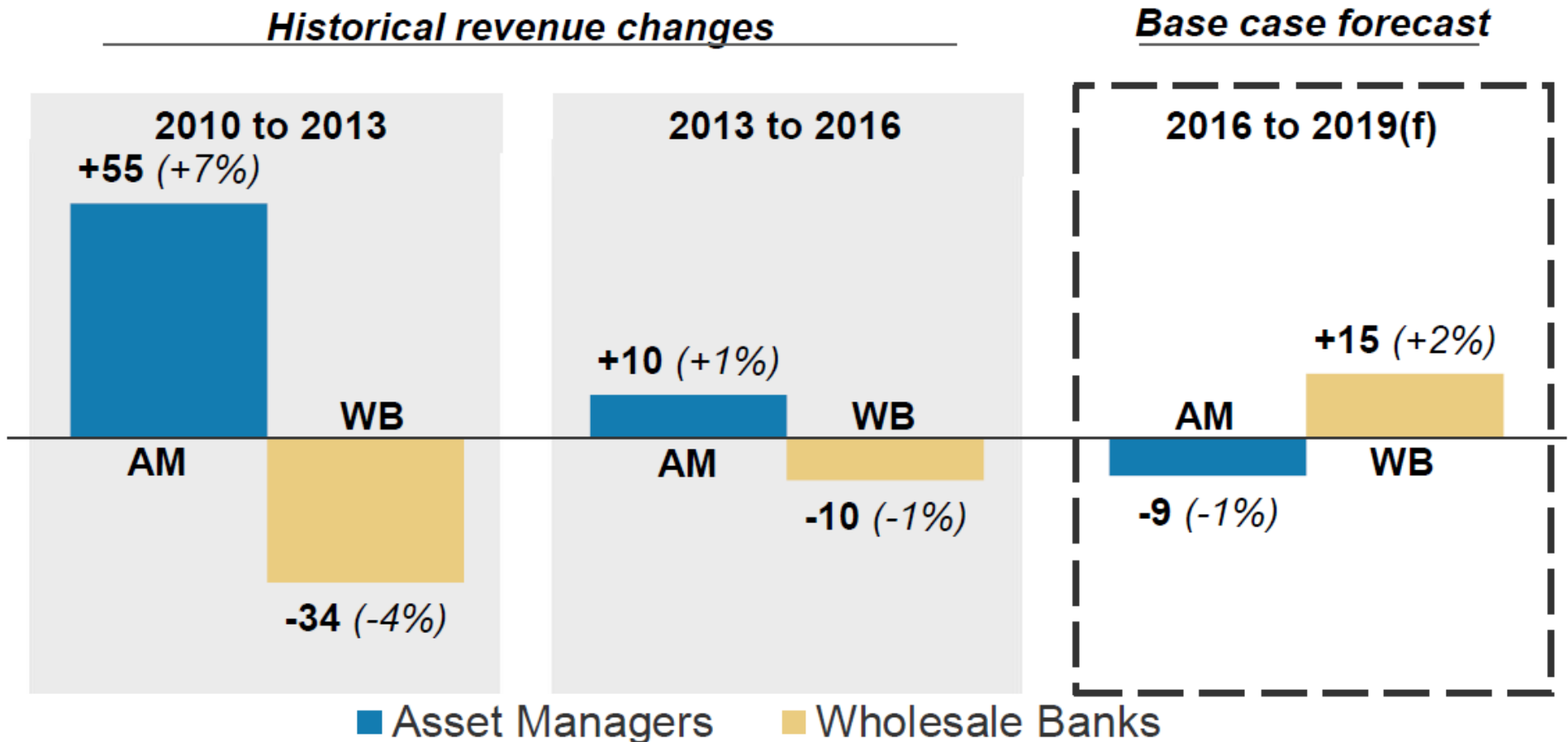
Visualization based on ~1,800 FinTechs receiving the highest amount of private funding. Dataset mapped with Quid and allowed to cluster based on similar products, technologies, customers etc. 1) Data based on over 8,800 companies which were discovered across over 10 data sources. Total funding based on date of funding. Total companies based on founding year. Data as of November 2016. Data source: Fintech Control Tower, Expand, November 2016.

Source: OICU-IOSCO. 2017. "[IOSCO Research Report on Financial Technologies \(Fintech\)](#)."

Finance Business Under Stress – Profit Margins Down – *(Oliver Wyman 2017)*

World turned upside down

Change in revenues, Asset Managers vs. Wholesale Banks, 2010-19(f), \$bn (% CAGR)



Data source: Oliver Wyman analysis.

Source: Oliver Wyman & Morgan Stanley. 2017. "[The World Turned Upside Down](#)."

All Financial Intermediaries Under Pressure

Pressure points and value are shifting across the securities industry

Total value captured 2016 \$BN, Outlook to 2019

		Banks & Broker Dealers	Traditional Asset Managers	Hedge Funds & Alternatives	Market Infrastructure ¹	Boutiques & specialists ²
Investment management	Retail service ³	--	\$30 - 35BN	< \$2BN	--	~ \$10BN
	Research, solutions, active management	~ \$15BN	~ \$105BN	~ \$60BN	~ \$25BN	~ \$5BN
	Beta provision and administration	--	~ \$80BN	~ \$8BN	~ \$50BN	--
Trading	Financing	~ \$35BN	< \$2BN	--	< \$2BN	< \$1BN
	Market connectivity	~ \$35BN	\$8 - 10BN	\$20BN	~ \$20BN	--
	Risk warehousing and recycling	~ \$65BN	--	< \$2BN	--	~ \$5BN
Liability generation & advisory	Issuer risk transfer	~ \$15BN	--	--	--	--
	Origination	~ \$35BN	--	--	< \$2BN	< \$2BN
	Corporate advisory	~ \$20BN	--	--	--	~ \$10BN
Total value captured		~ \$225BN	~ \$225BN	~ \$90BN	~ \$100BN	~ \$35BN
Strong growth		Modest growth	Modest pressure	Severe pressure		

1. Includes Inter Dealer Brokers, Exchanges, Central securities depositories, Custodians, Data providers. 2. Defined as organizations that participate in only one activity within this table, to include Non-Bank Liquidity Providers, specialist data providers and independent corporate advisory firms. 3. Represents the incremental costs borne by retail investors to access Asset Management services, not including retail distribution fees Data source: Oliver Wyman analysis.

Source: Oliver Wyman & Morgan Stanley. 2017. "[The World Turned Upside Down](#)."

What Business are You In?

1980s – Global Banking?

1990s – Finance Supermarket? – still only financial services

2000s – Platform for Cross-selling + Finance

– clicks moving faster than bricks

2020 – Information business? How much time do bankers spend on understanding their customers?

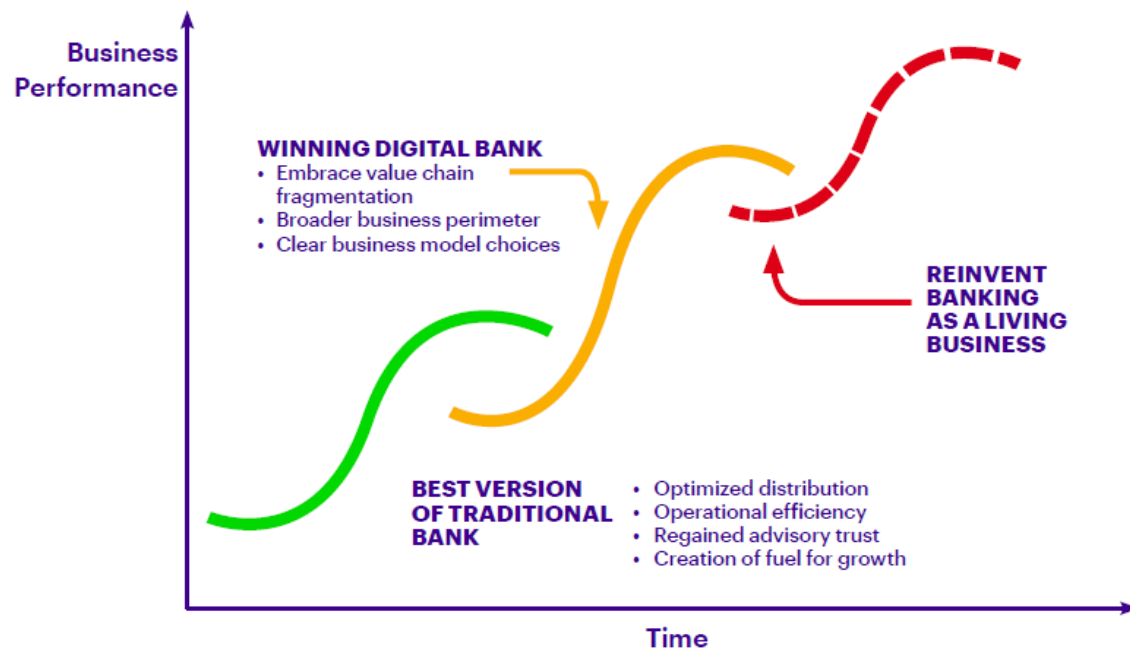
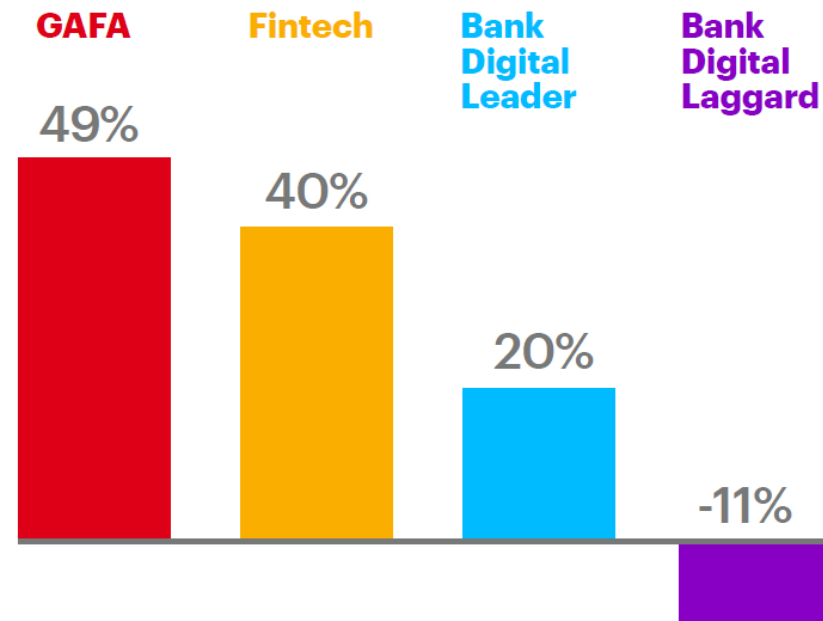
How do you make money from Digitization of services, when Net Interest Margin declining under NIRP?

Central bankers are taking away your lunch; regulations are squeezing your lunch; Fintech is eating your lunch and some of you may still be out at lunch

Financial Institutions Lagging in Digital Transformation – *Accenture 2017*

Banking Future Growth Value Analysis
(% of enterprise value)

The next “S” growth curve for banks



GAFA = Google, Apple, Facebook, Amazon *Methodology: The analysis of future growth value referred to in this paper was developed by Accenture Research based on financial performance, as of March 2017, of GAFA, 40 listed fintech companies (e.g. card networks, payments processors, software vendors, P2P lenders, robo-advisors etc.) and 73 banks. The analysis depicts the breakdown of the enterprise value of a firm into current operations value and future value of investments. The value of current operations is the value of the current business portfolio. The future value of investments reflects investors' expectations regarding ability to exceed the value of current operations. A positive future growth value is a premium investors are willing to pay beyond the value of current operations. The analysis also includes a qualitative assessment of the digital capabilities of 73 large banks worldwide. We identified 22 digital leader banks that have been more vocal about their digital strategies than others. These leaders show common traits. For example, their leadership have clearly set future direction announcing multi-year digital transformation plans, released multiple digital services, appointed chief innovation officers to identify new partners, managed innovation labs, invested in multiple fintech companies, attracted talent, and established new relationships to adopt new financial technologies. Data source: Accenture Research analysis on Capital IQ data, March 13, 2017.

CFA FUTURE OF FINANCE

Objective: To shape a trustworthy, forward-thinking investment profession that better serves society

Focus Areas



**Putting
Investors
First**



**Managing
Lifetime
Wealth**



**Improving
Investor
Outcomes**

U.S. Net Equity Issues by Nonfinancial Corporations Were Minus \$4.5 trn (2006-2015), Driven by Stock Buybacks

Net equity issues of nonfinancial corporations in the United States, 1946-2015, by decade, in 2015 dollars, and as a percent of GDP

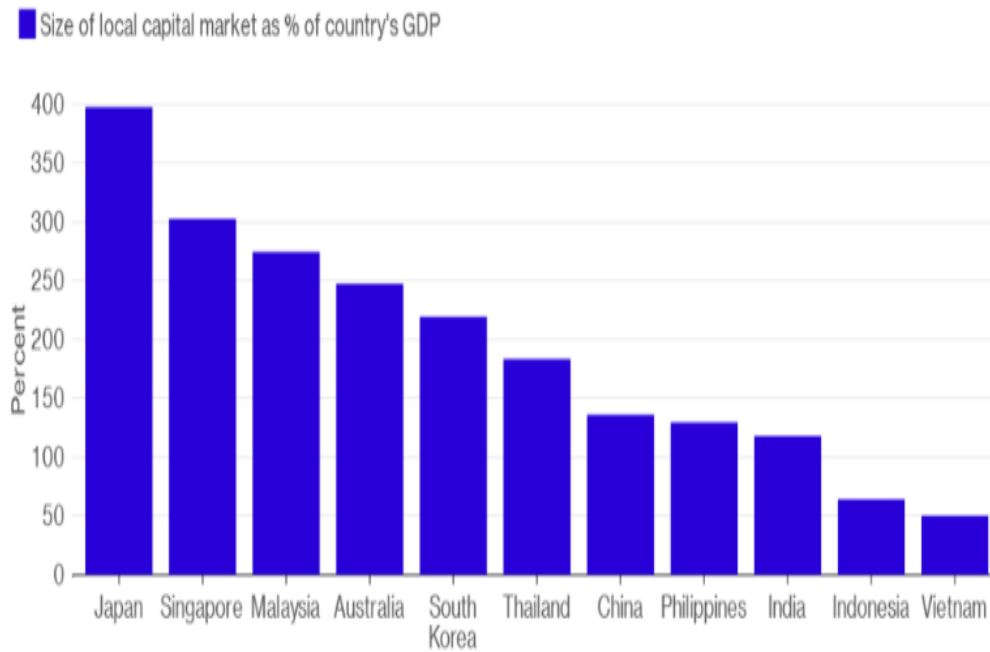
Decade	Net Equity Issues, 2015\$ billions	Net Equity Issues as % of GDP
1946-1955	143.2	0.56
1956-1965	110.9	0.30
1966-1975	316.0	0.58
1976-1985	-290.9	-0.40
1986-1995	-1,002.5	-1.00
1996-2005	-1,524.4	-1.09
2006-2015	-4,466.6	-2.65

Re-building Asian Finance

- Asia is net saver, with high savings in North Asia and also current account surplus with rest of the world
- Problem of Asian finance is that it is bank-dominated, which suffers from maturity mismatch (borrow short, lend long), FX mismatch (borrow \$, invest local), and debt/equity mismatch (too much debt relative to equity)
- Hence, we rely on U.S. and London markets, with HK and Singapore as proxies to invest our net savings, and then savings return to Asia via FDI, portfolio investment. Wall Street has become investment banker to Asia
- Asia has high savings, Asians don't invest adequately within Asia, result – Trump's US\$, our savings
- Solution is to rebuild Asian savings to invest back in Asia. Must build Asian intermediary capacity

Asia Puts Large Part of Their Savings in Bank Deposits and Real Estate, Small Pension Funds

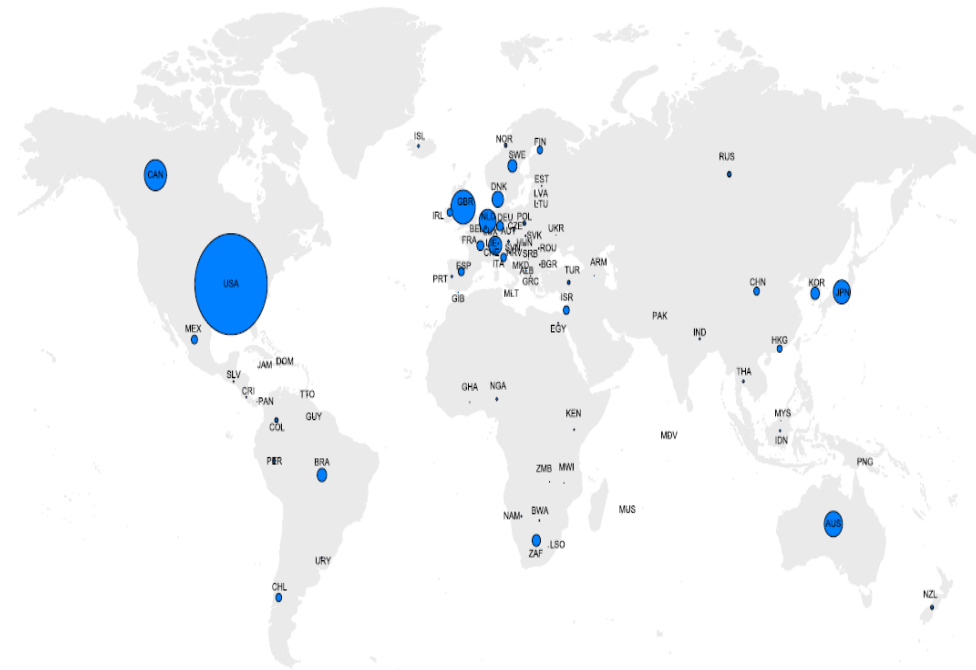
Market depth by countries, 2016



Data source: McKinsey.

Note: Includes outstanding equity, financial and corporate bonds, government bonds and securitized products.

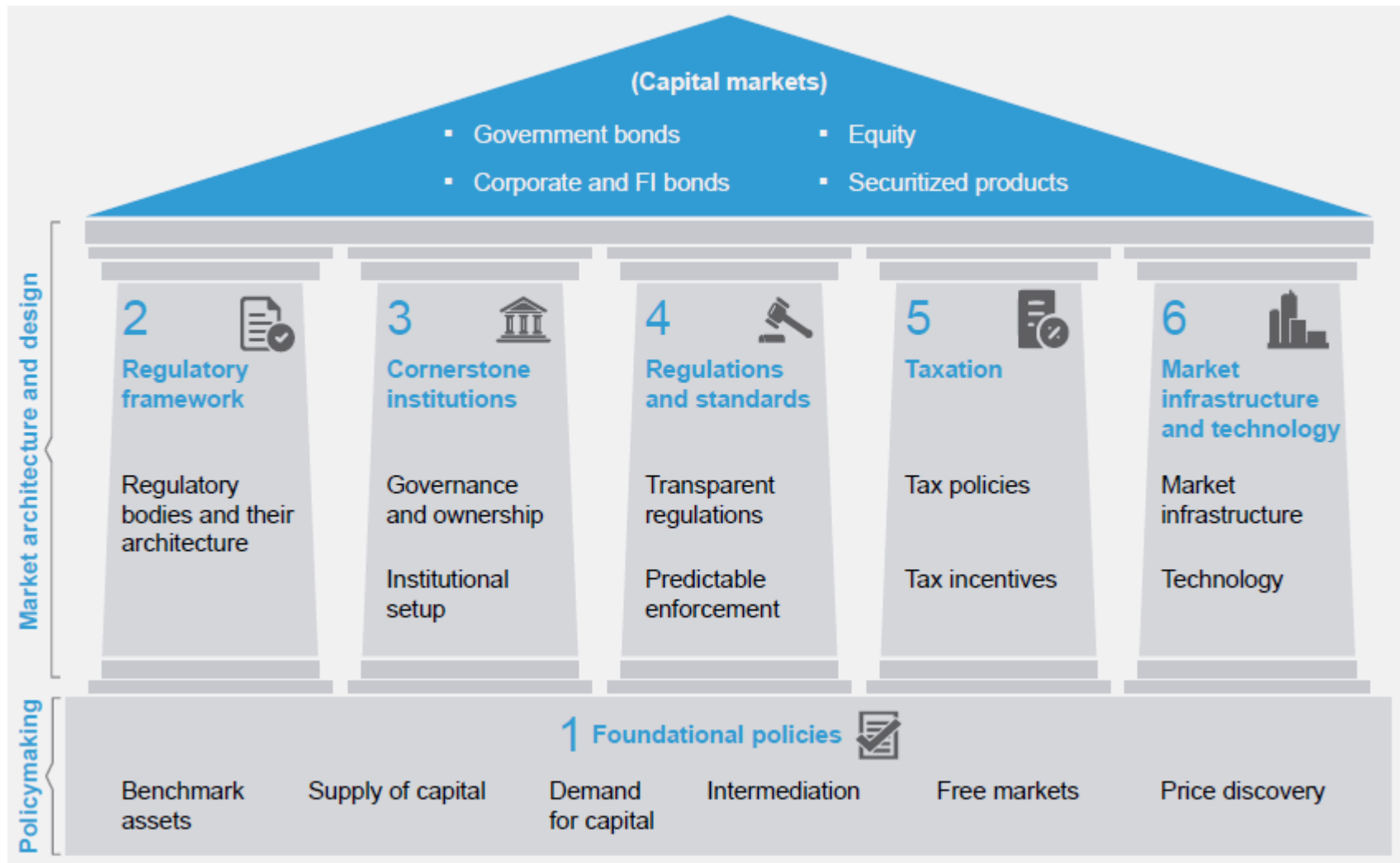
Size of global private pension investments, 2015



Data source: OECD Global Pension Statistics.

Deeper Capital Markets in Asia EMEs Could Free \$800 bn in Private Sector Funding

Foundation for long-term capital market growth



Future of Finance – End of the Debt Cycle

- If Asia will become a major player in the global economy, IMF study argues that Asian finance needs to take a bigger role , including:
 - Better managing accumulated saving
 - Efficiently mobilizing saving
 - Investing in human and physical capital
 - Deepening capital markets to escape a “middle income trap”
 - Supporting economic and financial integration of ASEAN

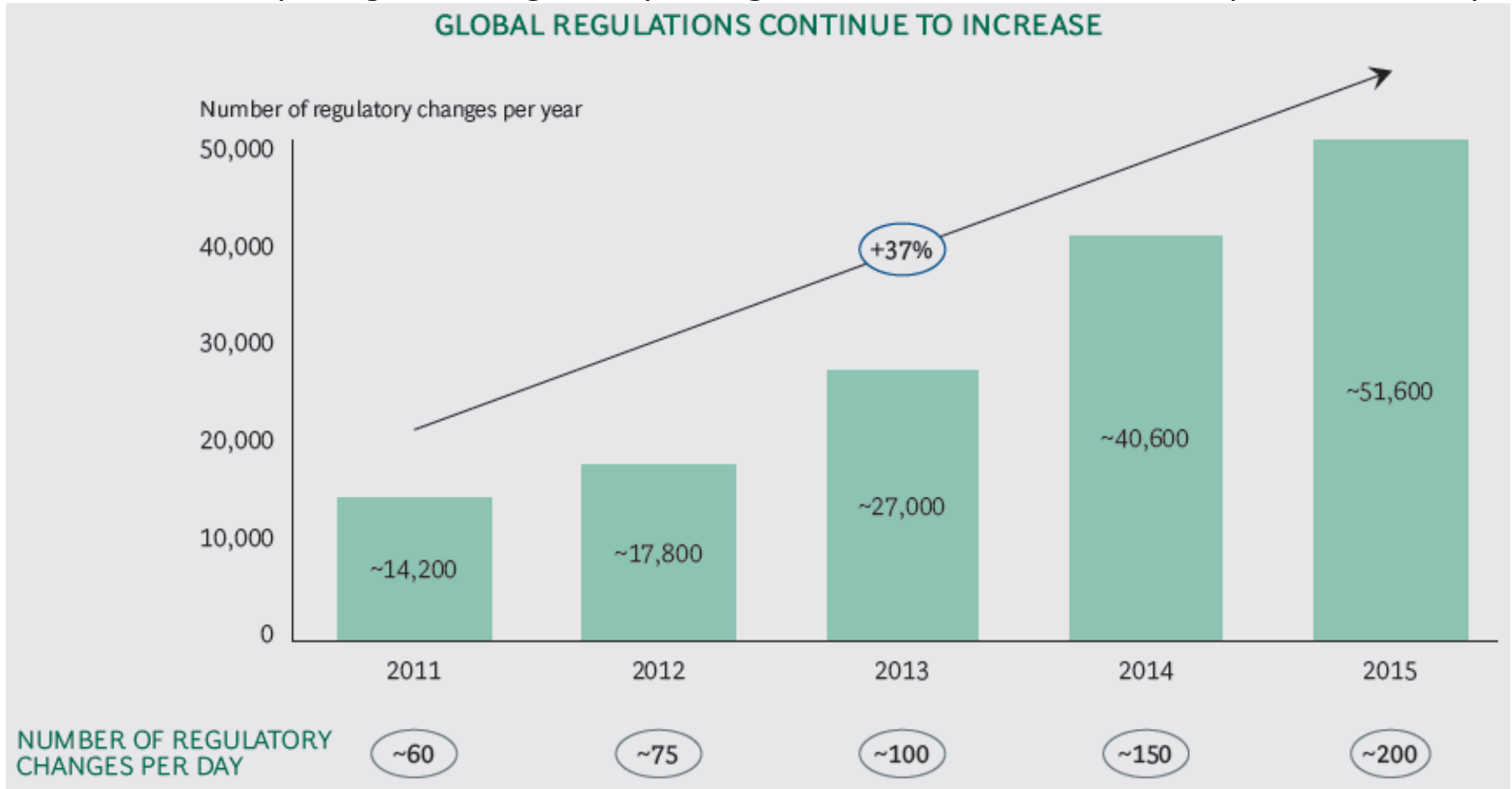
Section 4 **Role of Regulators**

*Take holistic view - Stewardship, Financial
Regulatory Outlook, KNOW YOURSELF*

Global Regulations have Tripled in Four Years!

BCG analysis (2017)

Banks must adapt to greater regulatory changes, which have more than tripled over four years

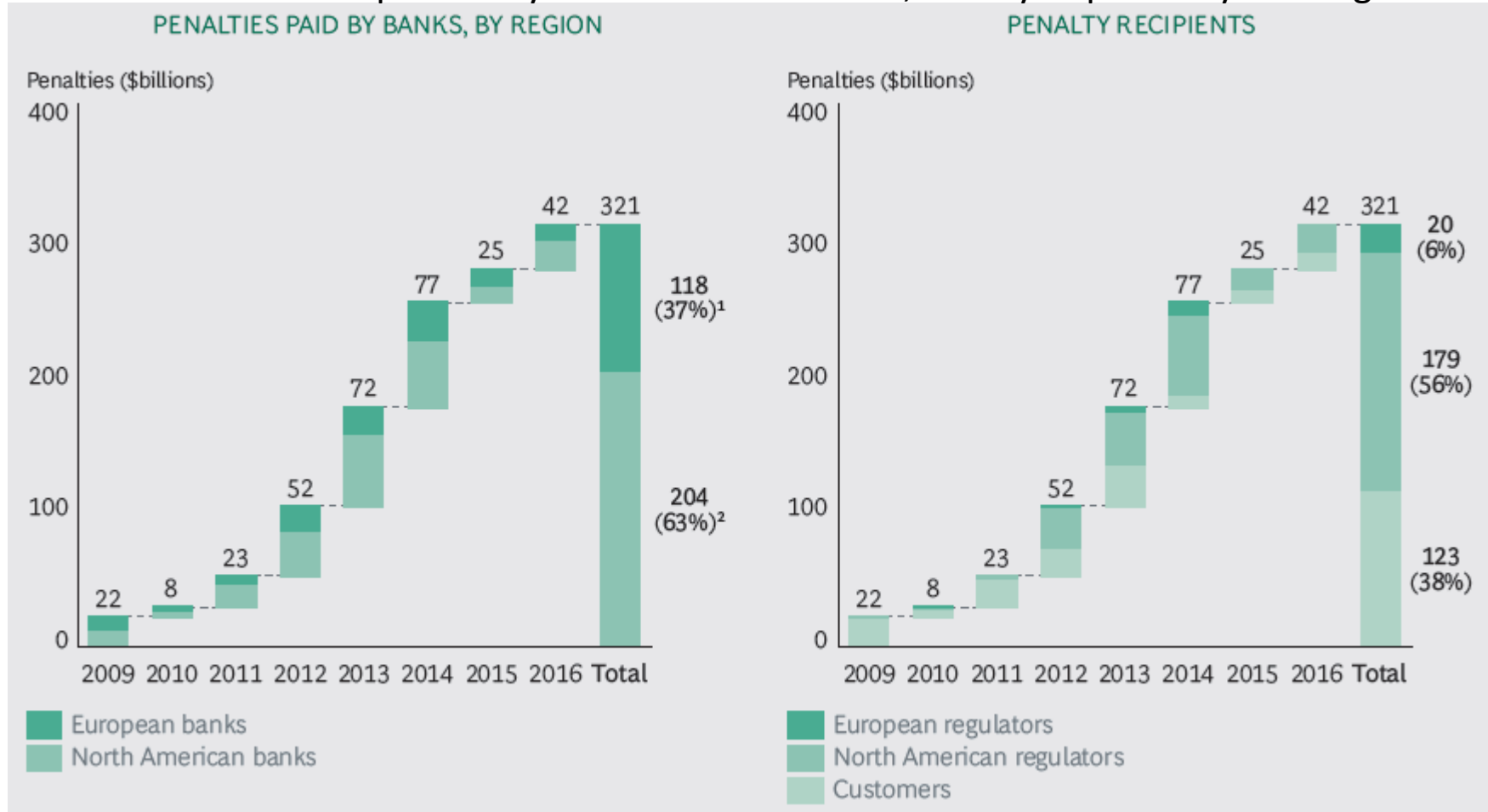


Data sources: Thomson Reuters; BCG analysis. Note: Regulatory change is defined broadly here to include any new local, national, or international policy, ruling, reform, action, law, ban, comment, announcement, publication, or speech that the compliance department of a bank would be expected to note and monitor.

Source: BCG. 2017. "[Global Risk 2017: Staying the Course in Banking.](#)"

A Lot of Capital Raised Since GFC Went to Fines – Mostly about Sanction-breaking!

Penalties for noncompliance by banks have escalated, mostly imposed by U.S. regulators



Data sources: Annual reports; press reports; BCG analysis. Note: The sample covers the 50 largest European and U.S. banks. Data through 2015 includes only the penalties, fines, and settlements that surpass \$50 million; data since 2015 includes only the penalties, fines, and settlements that surpass \$20 million. Values may not add up to the totals shown because of rounding. 1 56% of these costs stem from U.S. regulators' legal claims. 2 85% of these costs stem from U.S. regulators' legal claims.

Source: BCG. 2017. "[Global Risk 2017: Staying the Course in Banking](#)."

US Treasury Review of Financial Regulations

(June 2017)

Report to meet these Core Principles:

- Empower Americans to make independent financial decisions and informed choices in the marketplace, save for retirement, and build individual wealth
- Prevent taxpayer-funded bailouts
- Foster economic growth and vibrant financial markets through more rigorous regulatory impact analysis that addresses systemic risk and market failures, such as moral hazard and information asymmetry;
- Enable American companies to be competitive with foreign firms in domestic and foreign markets
- Advance American interests in international financial regulatory negotiations and meetings
- Make regulation efficient, effective, and appropriately tailored
- Restore public accountability within Federal financial regulatory agencies and rationalize the Federal financial regulatory framework

U.S. Depository System

- Over 5,900 banks and 5,800 credit unions operating in U.S., with total assets of \$21.4trillion end 2016, or 115% of GDP
- 8 U.S. G-SIBs have \$10.7 trillion of assets or 50% of total depository assets, down from 58% in 2008
- Regional and mid-sized banks have \$6.7 trillion of assets, or 31% of total U.S. depository assets, but without extensive capital markets activities
- Community banks and credit unions have total assets of \$2.7 trillion and \$1.3 trillion, respectively (totaling 19% of total U.S. depository assets)
- U.S. operations of foreign banking organizations have total assets of \$4.5 trillion, approximately 20% of banking system

Alignment of Regulation with Core Principles

– *Best Fit, not Best Standards!!!!*

- Breaking the Cycle of Low Economic Growth
- Better fulfilling Credit needs of Consumers & Businesses
- Aligning the financial system to help support US economy
- Reducing regulatory burden by decreasing unnecessary complexity
- Tailoring regulatory approach based on size & complexity
- Aligning regulation to support market liquidity, investment & lending in US economy
- Preventing Taxpayer-funded Bailouts and Maintaining Safety & Soundness of Financial System, through:-
 - Explicit, measurable capital & liquidity standards
 - Supervised stress-testing tailored to complexity
 - Actionable living wills

Financial Regulation and Macro-Prudential Approach

- Time to take a structural systemic view of risks and uncertainties in Asia
- Cyber-security is high priority in light of ransomware etc.
- Asia's high-growth and high-savings – need to get the balance of risk-funding right
- Use risk-sharing approach that develops equity, long-term savings market to fund long-term infrastructure and higher risk SMEs that push innovation, competition and job creation – generate Antifragility/Equity to improve resilience to shocks
- Financial supervision should be focused on enforcement of red-lines on corruption, market manipulation and fraud

Don't work in Silos – Regulatory Cooperation

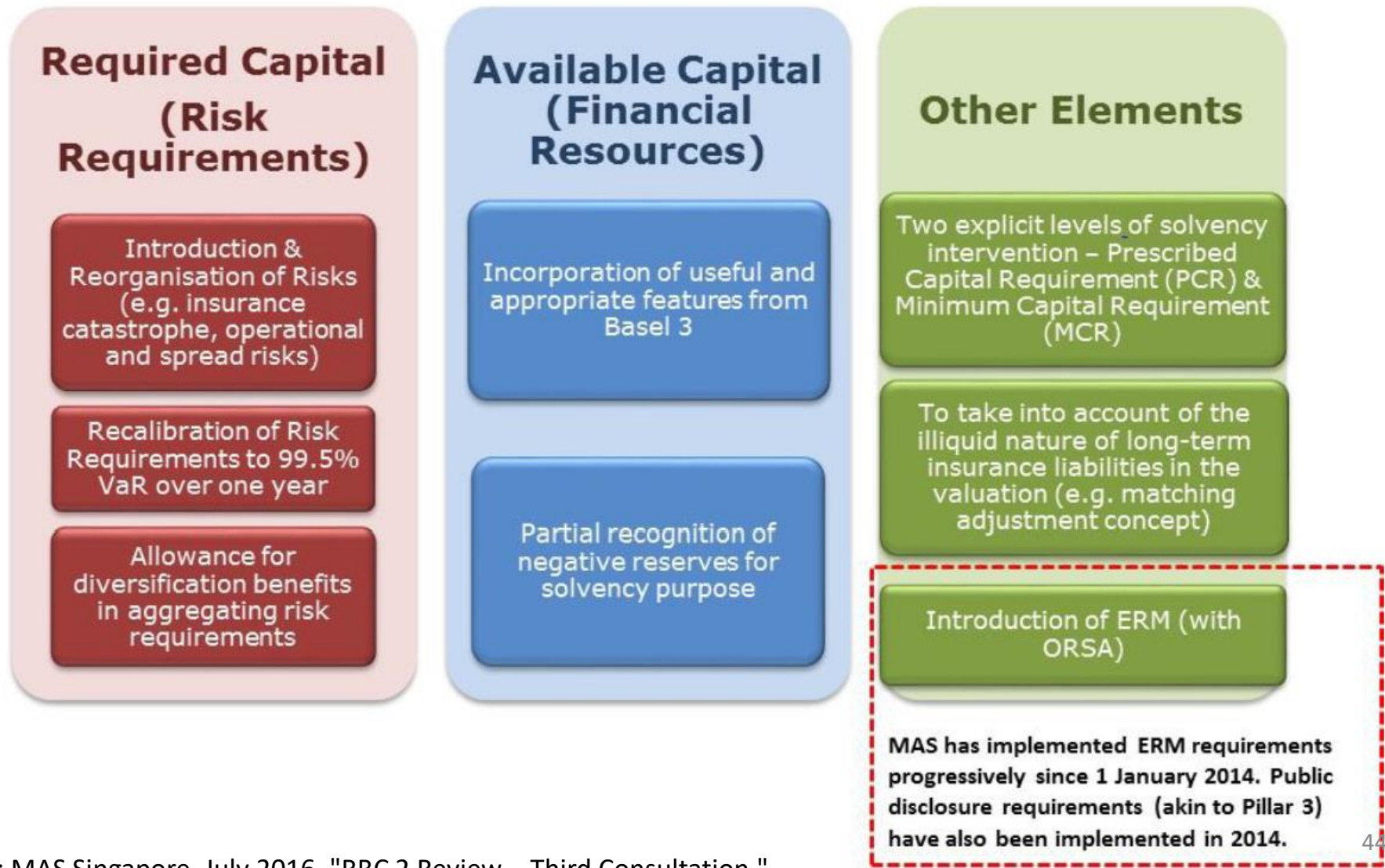
- Departmental (silo) approach to systemic issues means that specialists are blind to their own blindness
- Systemic risks involve interconnectivity, interdependence and system as a whole – you cannot see the risks from one single jurisdiction – you have to follow the money from light to dark to final pocket!
- To tackle financial crime, cyber-attacks, etc., financial regulators need to work with other financial regulators, ministry of finance, central bank, police, security and foreign agencies.
- Must share data and get systemic picture, if necessary through system wide inspections, rather than relying only on reported data (garbage data in, garbage analyses out, faulty policies!)
- Get systemic data, such as National Balance Sheets, better flow data (e.g. through internet companies), use Big Data of all kinds

From Basel III to Basel IV – Shift in Emphasis

From Basel III to Basel IV

Capital requirements	Credit risk	Securitisation	Counter-party credit risk	Market risk	Operational risk	CVA risk	Interest rate risk	Other topics
Capital floors (BCBS 306)	SA (BCBS 307) (BCBS 347) IRBA (BCBS 362)	Revisions to the securitisation framework (BCBS 303)	SA counter-party credit risk (BCBS 279)	Minimum capital requirements for market risk (BCBS 305) (BCBS 352)	Standardised Measurement Approach for operational risk (BCBS 291) (BCBS 355)	Review of the CVA risk framework (BCBS 325) (BCBS 362)	Interest rate risk in the banking book (BCBS 319) (BCBS 368)	Large exposures (BCBS 283) Disclosure (BCBS 309) Step-in risk (BCBS 349)

Solvency 2: Moving towards better Policyholder Protection, International Standards and Best Practice, Sustainable Insurance



Regulatory Focus – Supervision and Enforcement Key

- Move from “best practice” to “best fit”, subject to agreed international principles
- Despite technology and geo-political risks, fundamental role of regulators is to see that industry business model is healthy, competitive and playing by rules – customer comes first
- Too complex regulation makes industry behave even more cautious, sometimes predatory or risk taking (just to maintain profits)
- Focus on important rules with simple principles and enforce them rigorously
- Customer/investor expect that of the regulators

Concluding Remarks

- Finance Industry is already stressed by disruptive technology, complex geo-politics, social stress and onerous regulations
- Regulators need to move to stewardship – guiding them through these complex times and ensuring that the financial industry and markets enforce corporate governance
- We need to encourage Self-Discipline, Market Discipline, and Regulatory Discipline, plus good values
- Pick Important Problems, Fix Them and Tell everyone

Thank you

Q&A to
altsheng8@gmail.com
and www.andrewsheng.net