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June 2018

Learning To Live With US-China Rivalry

Arthur Kroeber

Agenda

US-China rivalry and trade wars

The US-China strategic rivalry is here to stay; but so is Trump's broader trade-war-on-all-fronts agenda

China's technological capacity: a reality-check

US anxieties about China's imminent technological dominance are overblown

China's rise: the financial dimension

Portfolio inflows to Chinese equity and bond markets soar

The global outlook

Everything depends on the dollar and the oil price

US-China rivalry and trade wars

A strong China rattles the US

- **China's domestic position is strong:**
  - Politics: post NPC, Xi is firmly in charge. No term limits; an institutional agenda to strengthen the Party's control over governance.
  - Economy: stable growth in 2018, led by a strong construction cycle; financial risk looks contained.
  - Key policies: Made In China 2025 (industrial/technological upgrading); military-civil fusion; Belt and Road (international grand strategy). These policies drive strategic anxiety in the US.
- **The rivalry with the US is intensifying, permanently:**
  - Consensus is growing in Washington that the US is in a race with China for technological leadership; economic cold war is the answer.
  - "Trade warriors" in US administration want China to dismantle its industrial policy system.
  - Trump is unpredictable; but "deep state" interests are aligned against a quick deal. Long-run impacts more important than short-run ones.

China's capacities and ambitions are great

- Xi Jinping now dominates China's political system and is making governance more centralized, coordinated, effective.
- With the economy humming and financial risk under control, Xi can focus on strategic priorities:
  - **Made In China 2025**, a comprehensive blueprint to upgrade China's technological capacities and displace foreign companies.
  - **Military-civil fusion**, an effort to create a US-style military-industrial complex in China.
  - **Belt and Road Initiative**, a vision for regional (and ultimately global?) economic integration under Chinese leadership.
- In Washington, these strategies are seen as a direct challenge to US geopolitical and geo-economic leadership.

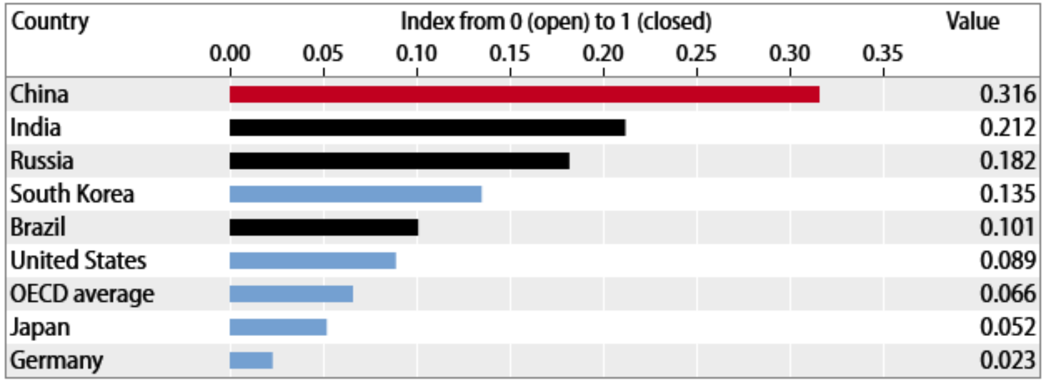
Made In China 2025: Turning China into a technological leader

- MIC 2025 is a broad industrial policy with many goals:
  - Improve manufacturing productivity by better use of IT.
  - Develop capacity/leadership in many tech-intensive sectors (robotics, new-energy vehicles, semiconductors, aerospace, etc). Artificial intelligence has a separate but related master plan.
  - Import substitution: 40-80% domestic self-sufficiency in most high-tech products by 2025.
- It could enjoy massive funding:
  - More than 1000 "government venture funds" will subsidize tech firms.
  - Precise data is scarce; some estimates suggest US$250bn has been raised for these funds, out of a target of US$750bn—although many local funds will invest in real estate/infrastructure, not tech.
  - US$130bn is earmarked for semiconductors alone via a central government IC fund, of which a third is already at work building three new memory fabs in central China.

Industrial policy combines with protectionism

China is highly protectionist on investment

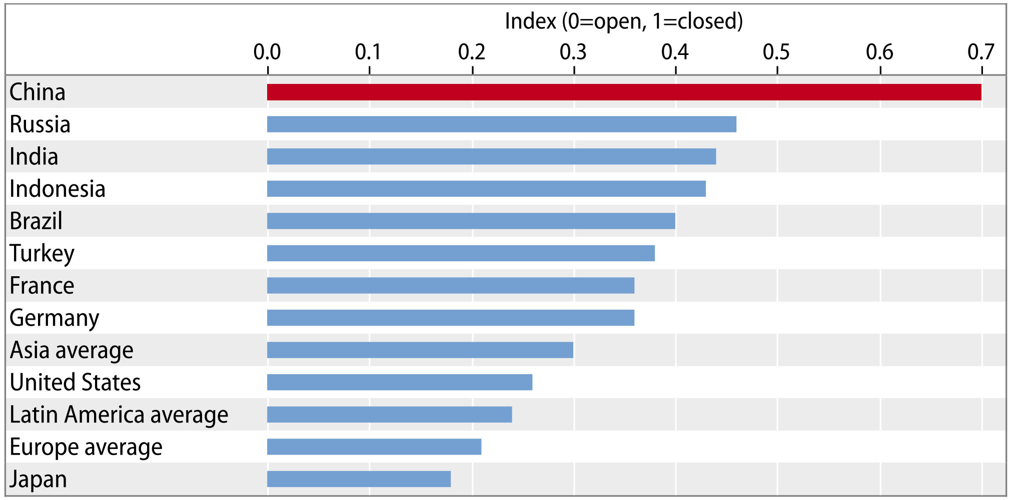
OECD FDI restrictiveness index, 2017



OECD, Gavekal Data/Macrobond

China has the world's tightest limits on cross-border data flows

ECIPE Data Trade Restrictiveness Index



ECIPE, Gavekal Data/Macrobond

An OECD index shows China has by far the highest barriers to inbound FDI of any major economy. In fairness, this mainly reflects China's stage of development. But China's sheer size makes such barriers problematic.

The US Trade Representative claims many barriers aim to extract technology from foreign firms. These include joint-venture / compulsory licensing requirements, and demands for tech transfer as the price of market entry.

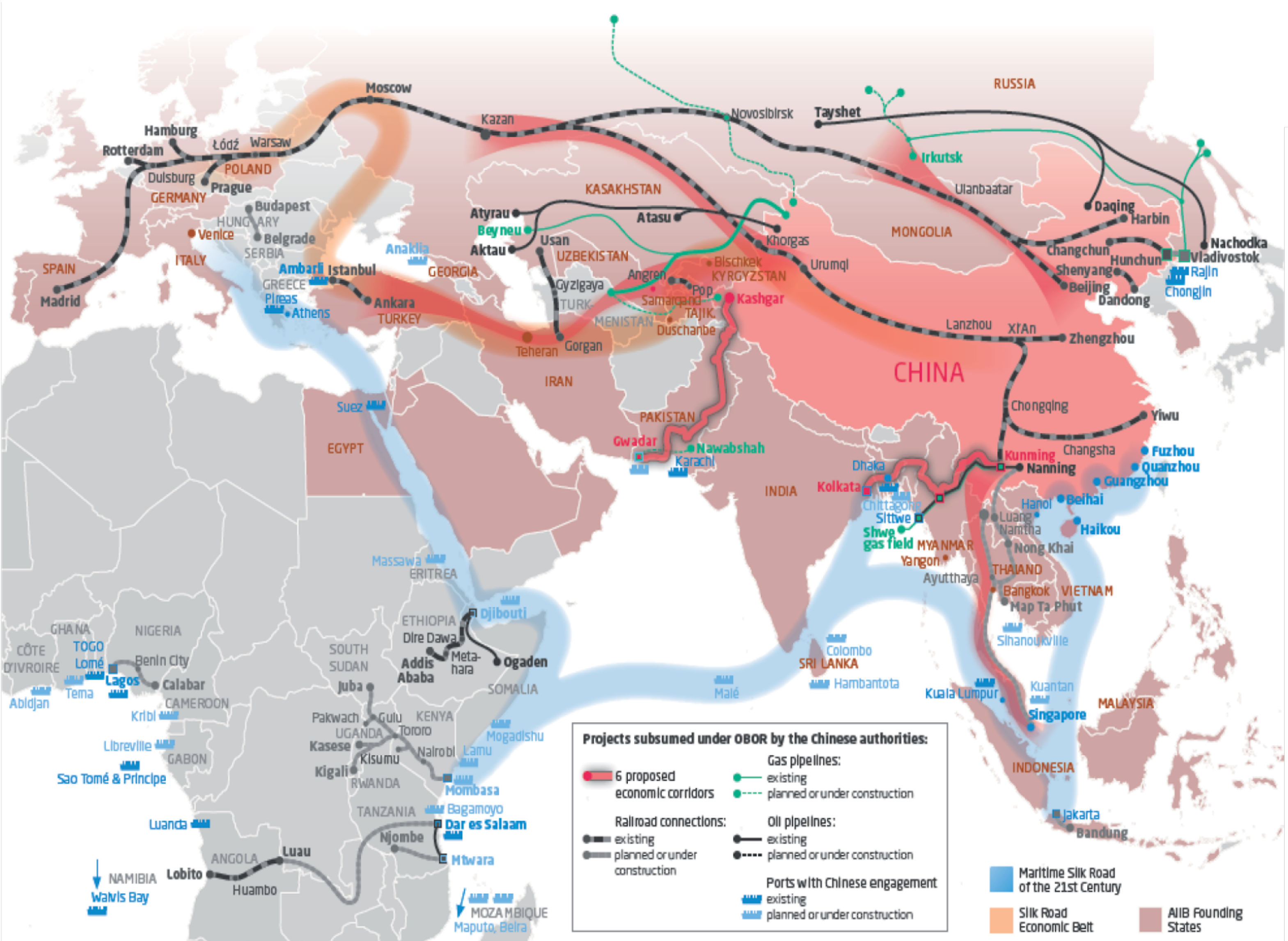
China's protectionism extends to cross-border data flows, an increasingly important part of value creation. It has the world's strictest rules on data localization and transfer, and is strengthening them. (See **Marshals Over Markets: China Tightens Cybersecurity**.)

This raises the concern that China will try to use its market power to make itself the world leader in data-intensive applications such as artificial intelligence.

Military-civil fusion aims to improve military technology

- China has a large defense industry but it is dominated by poorly run state-owned enterprises that lag behind the global leading edge and are plagued by low profits and excess capacity.
- Xi Jinping has made military-civil fusion a national strategy:
  - Existing SOE industrial base to be supported by technological developments by private-sector firms
  - Encouraging cross-ownership between defense SOEs and private tech firms
  - Easing private access to defense procurement contracts
- **The final goal: make China's military-industrial complex a match for America's.**
- Efforts coordinated by the Central Commission for Integrated Military and Civilian Development, founded in 2017, led by Xi.

Belt and Road: A vision for global economic integration



The Belt and Road Initiative aims to build infrastructure linking western China with Central Asia and Europe (the "New Silk Road Economic Belt") and southern China with SE Asia, Africa and the Middle East (the "New Maritime Silk Road.")

Much of the construction will be done by Chinese engineering firms, and much of the finance comes from China's opaque policy banks, China Development Bank and Exim Bank.

BRI is China's grand strategy for economic integration: an alternative to the US-led WTO and TPP.

BRI is a challenge to the established US-led order

- BRI is <u>not</u> just a laundry list of infrastructure projects.
- It is a "grand strategy" for:
  - ➢ Promoting economic integration (first regionally then globally) through physical connectivity, and
  - ➢ Gradually extending China's economic and political influence.
- It is a deliberate alternative to the post-WWII US-led model of economic integration via trade and investment agreements.
- A key difference is that the US-led system is governed by rules and multilateral arrangements; BRI is held together by physical infrastructure and governed by China's bilateral relations with its partners, in which its size always gives it an edge.
- These Chinese and American visions of economic integration may be able to co-exist—but many in DC are wary.

The four forces shaping US China policy

Trump
Strategic concern: None really; US needs to act tougher!
Tactics: Tear up treaties, hit everyone with tariffs, hope they crumble
Alter-ego: Navarro

Defense Hawks
Strategic concern: Maintain US tech/ military superiority
Tactics: Hobble China's tech ambitions at all costs
Key advocates: Mattis, DoD

Trade Warriors
Strategic concern: Scale back China's industrial policy
Tactics: Use trade/investment curbs to get China to change
Key advocates: Lighthizer, Ross

Business
Strategic concern: Build on US$250bn investments in China; cut market-access barriers
Tactics: Nudge Trump, hope for the best
Key advocates: Mnuchin, Kudlow

RESULT

Who knows???

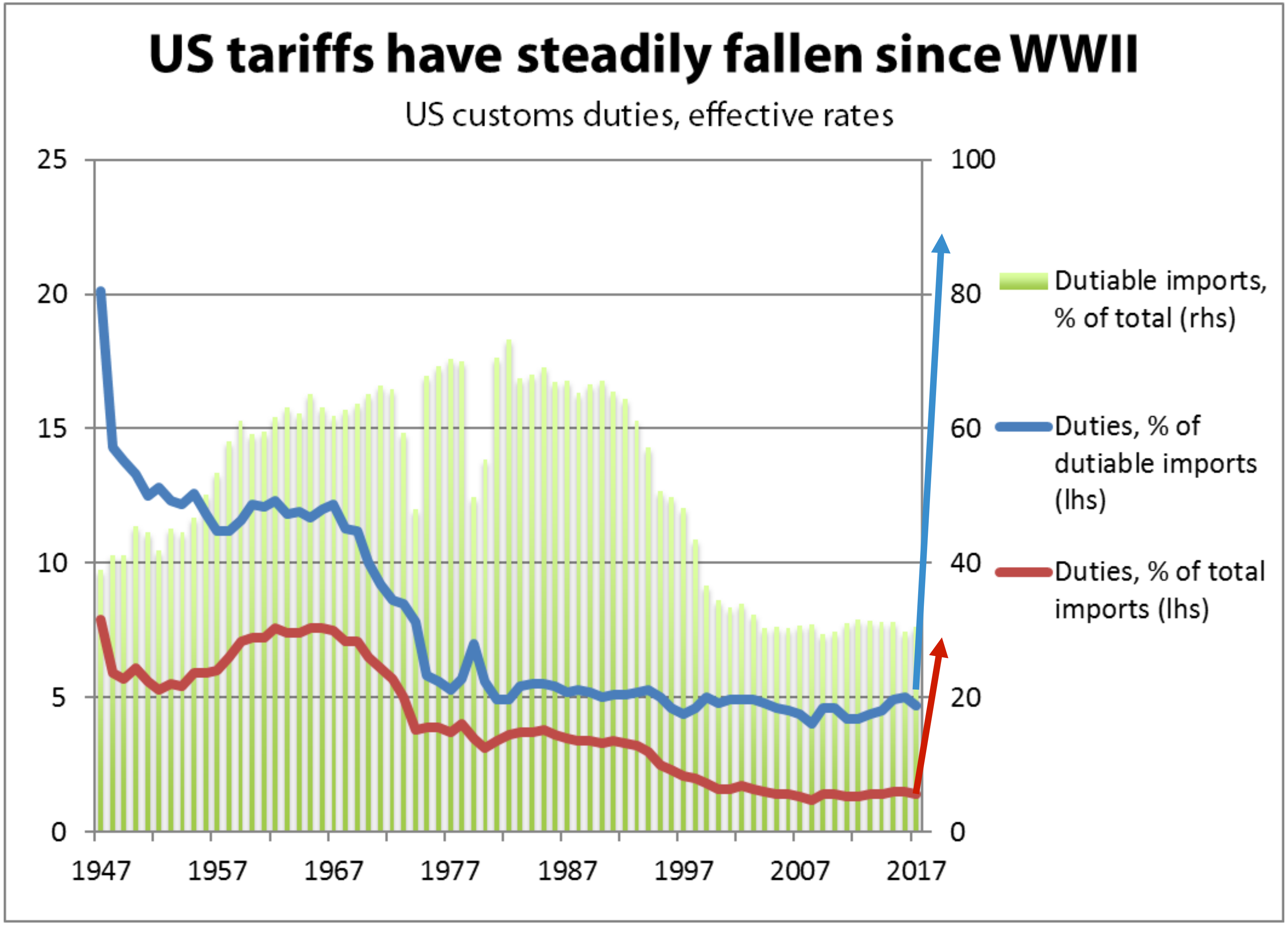
Investment and technology in the crosshairs

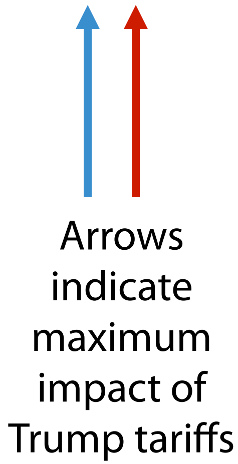
- The "trade warrior" and "national security hawk" agendas converge on a desire to limit Chinese access to US technology and maintain the superiority of US firms.
- Limits on investment/tech transfer, not tariffs, are the tools.
- Limits on China-US investment flows should be announced by June 30.
  - ➢ Could be justified by the International Economic Emergency Powers Act (IEEPA) which gives president almost unlimited authority.
  - ➢ Both inbound Chinese investment and outbound US investment/ licensing deals could be affected.
- Congress can also play a role. CFIUS expansion is likely to pass; a separate amendment may call for re-imposed sanctions on ZTE.

A trade war on all fronts?

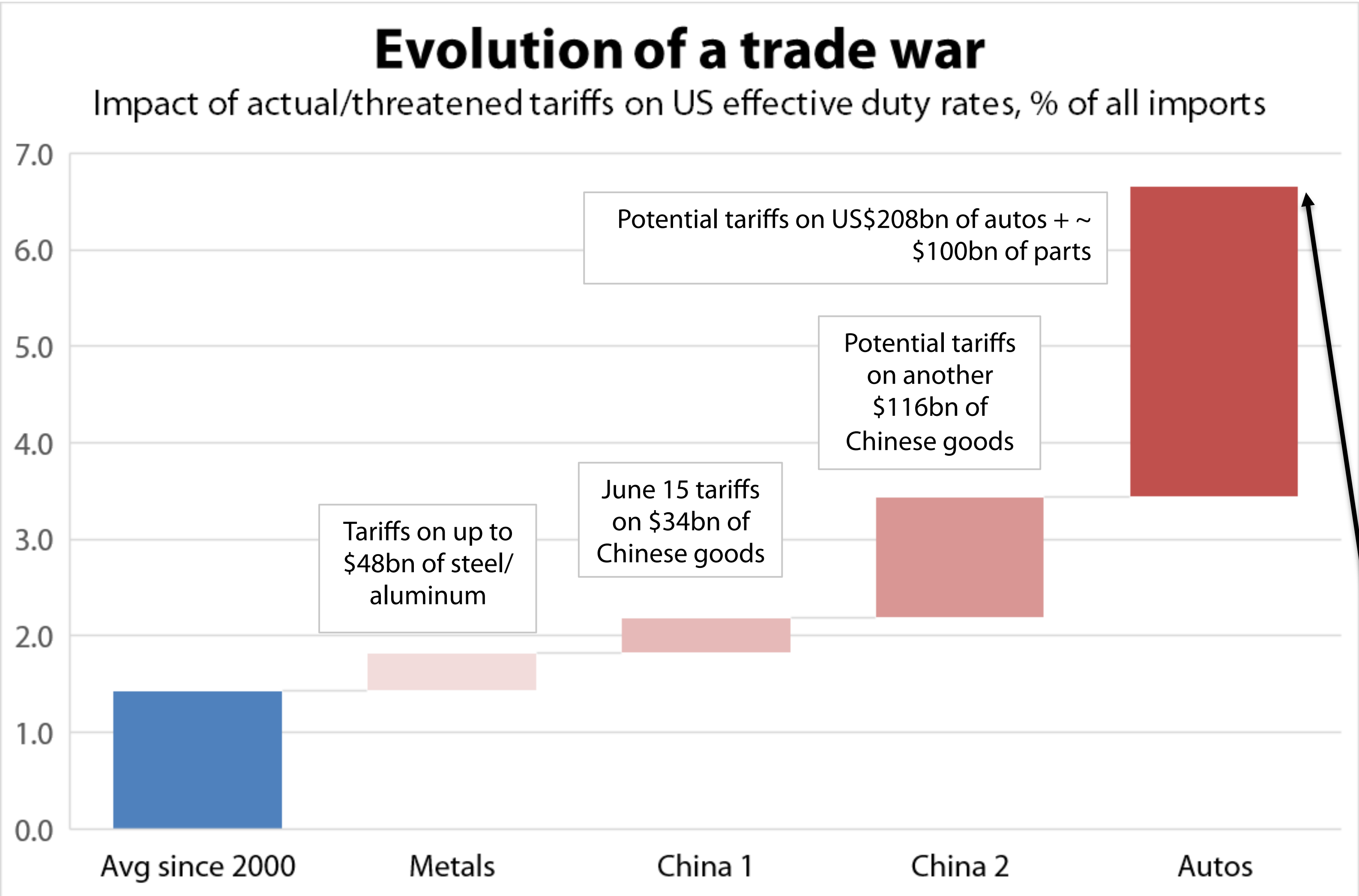
- Strategy-minded professionals focus on the China rivalry, but Trump's "America First" agenda is broader:
  - ➢ Wage a trade war on all fronts: tariffs on steel and aluminum—and soon on cars and car parts—that hurt US allies the most.
  - ➢ Exit, weaken or ignore multilateral agreements, maybe (or maybe not) replacing them with bilateral negotiations.
  - ➢ Respond to populist suspicion that US international engagements do not benefit most Americans.
- Implications:
  - ➢ So far, the trade war is a sideshow to a vibrant globalized economy. This could change if a) auto tariffs go through, opening the door to other moves; and/or b) Trump pulls out of Nafta.
  - ➢ Strategically, US go-it-alone approach weakens it against China; but so long as there is no economic/political cost expect Trump to escalate.

A reversal in a decades-long decline in tariff rates?





Trade war is more bark than bite…so far



Tariffs on steel and aluminum, and the fist $34bn of Chinese goods had little concrete impact.

This changes if the US makes good on threats of 25% tariffs on US$116bn more of Chinese imports, and on imports of autos and auto parts (~ $300bn).

These would push the notional effective tariff rate on all imports t 6.7%, the highest since 1969.

Excluding duty-free imports, the effective tariff rate would be 22%, the highest since 1946.

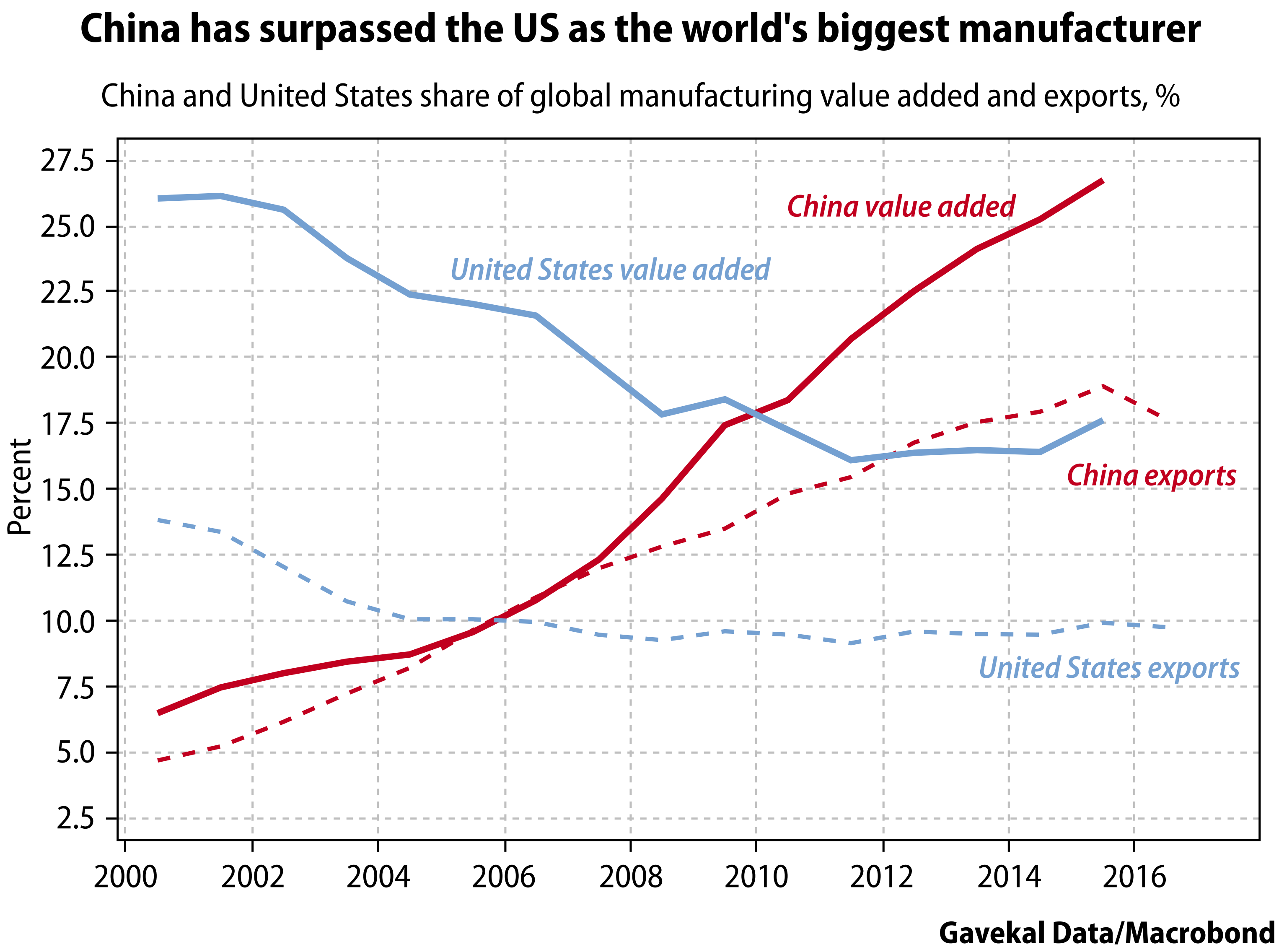
In reality, effective tariffs would rise less, because duties would discourage imports of the affected items.

Bottom line: what to worry about, and when

- **Macroeconomics:** Imposition of tariffs/investment curbs has little short-run impact on the US or Chinese economies.
- **Market sentiment:** Obviously negative for tariff-affected sectors; ironically the US/China tech sectors seem immune.
- **Longer-run risks and signposts:**
  - June 30: White House investment/export control restrictions on China due.
  - June 30: If no Nafta deal, then risk rises that Trump announces US pull-out from the agreement before the midterm elections.
  - Q3: US Congress action on CFIUS expansion
  - October: Likely completion of Section 232 investigation into autos (before the midterms)
  - Nov 6: US midterm elections

China’s technological capacity: a reality-check

Reality check: China has replaced the US as the biggest manufacturer…



Over the past 15 years China has surged past the US to become the biggest producer and exporter of manufactured goods. This has led to anxiety in the US about the "hollowing out" of its industrial base and the loss of technological edge.

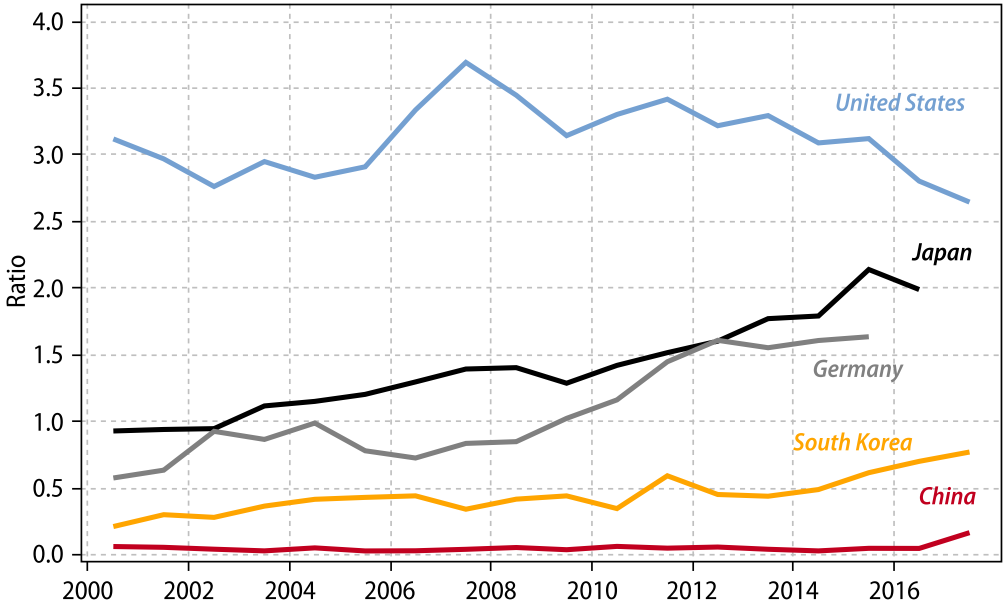
This shift reflects China's success in becoming the hub of a globalized supply chain, and the growth of its domestic market.

But it is only partly due to the success of Chinese firms. A large share of manufacturing activity, and nearly half of exports, come from foreign firms.

Reality check: China is not a technology leader. . .yet

China still lags in licensing its technologies to others

Ratio of international IPR licensing receipts to payments

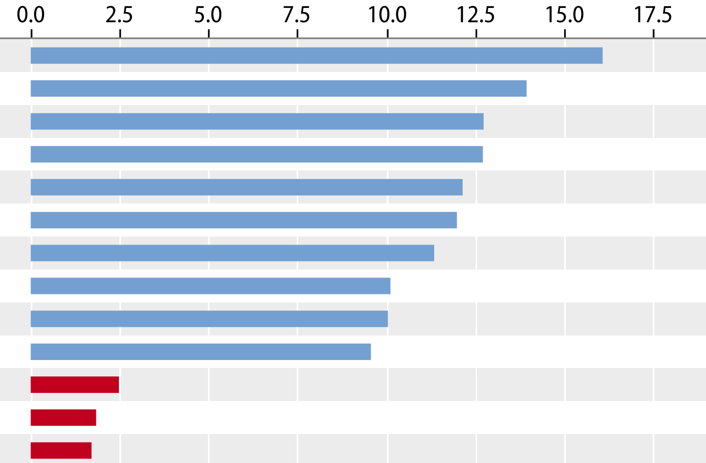


Gavekal Data/Macrobond

Chinese companies still lag in R&D, but are catching up

Ranking of top publicly listed global companies by R&D expenditure, 2017

Rank	Company	% of revenue
1	Amazon	11.8
2	Alphabet	15.5
3	Intel	21.5
4	Samsung	7.6
5	Volkswagen	5.3
6	Microsoft	14.1
7	Roche	21.9
8	Merck	25.4
9	Apple	4.7
10	Novartis	19.4
56	Alibaba	10.8
75	ZTE	12.6
81	Tencent	7.8



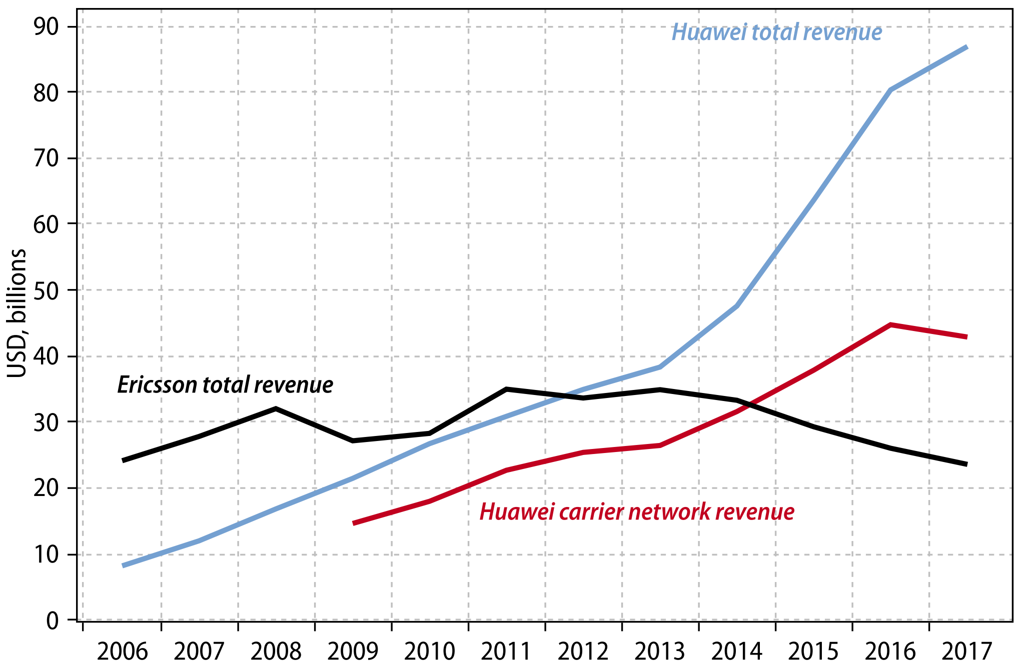
PwC, Gavekal Data/Macrobond

By many traditional measures, China is not yet a high-tech leader. Most (70-80%) of its technology hardware exports are by foreign firms. And in areas where patent revenues are important (such as telecoms), China is a minnow. It earns just 5 cents in international patent royalties for every dollar it pays out. The US earns $3 for every $1 it pays out; Germany and Japan earn $2. Stats like these are exactly why Beijing thinks it needs a massive industrial policy to catch up to the global leaders.

The picture looks different in newer areas such as internet services and artificial intelligence. China has the biggest e-commerce and mobile payments markets in the world; Alibaba and Tencent may lead their US rivals in some technologies. Chinese authors account for 24% of global AI research papers and will soon overtake the US for the top spot. (See **Seizing The Moment For Artificial Intelligence**.) Huawei is in a good position to seize leadership from Qualcomm in 5G mobile technology.

Telecoms: outlier, or leading edge?

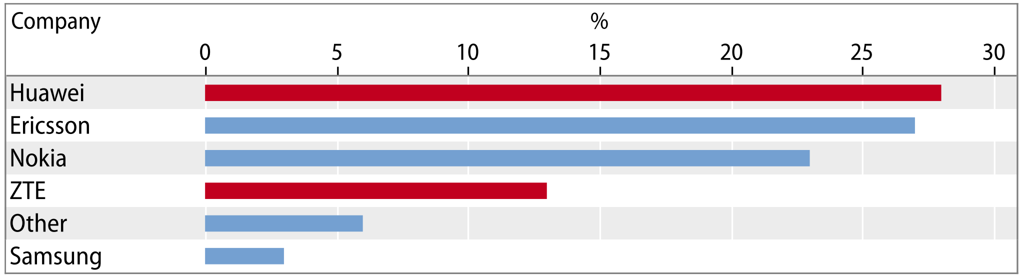
Huawei has rapidly become the world's largest telecom equipment firm



Company reports, Bloomberg, Gavekal Data/Macrobond

In 2017, Huawei overtook Ericsson as the top global vendor

Mobile infrastructure market share in 2017



IHS Markit, Gavekal Data/Macrobond

In the last four years Huawei's revenues have doubled and it has become the world's top telecom equipment firm. It has also played the international standards game smartly and is poised to take a leading position in licensing IP for 5G mobile networks—at Qualcomm's expense. (See **The 5G Dream Will Not Be Denied**.)

Because it controls some of its own IC design and production, it is less vulnerable to US pressure than ZTE.

Is telecoms an outlier? Probably not. Chinese firms are likely to pick up global market share in many sectors where it can exploit domestic market scale, data aggregation mobilization of financial / human resources.

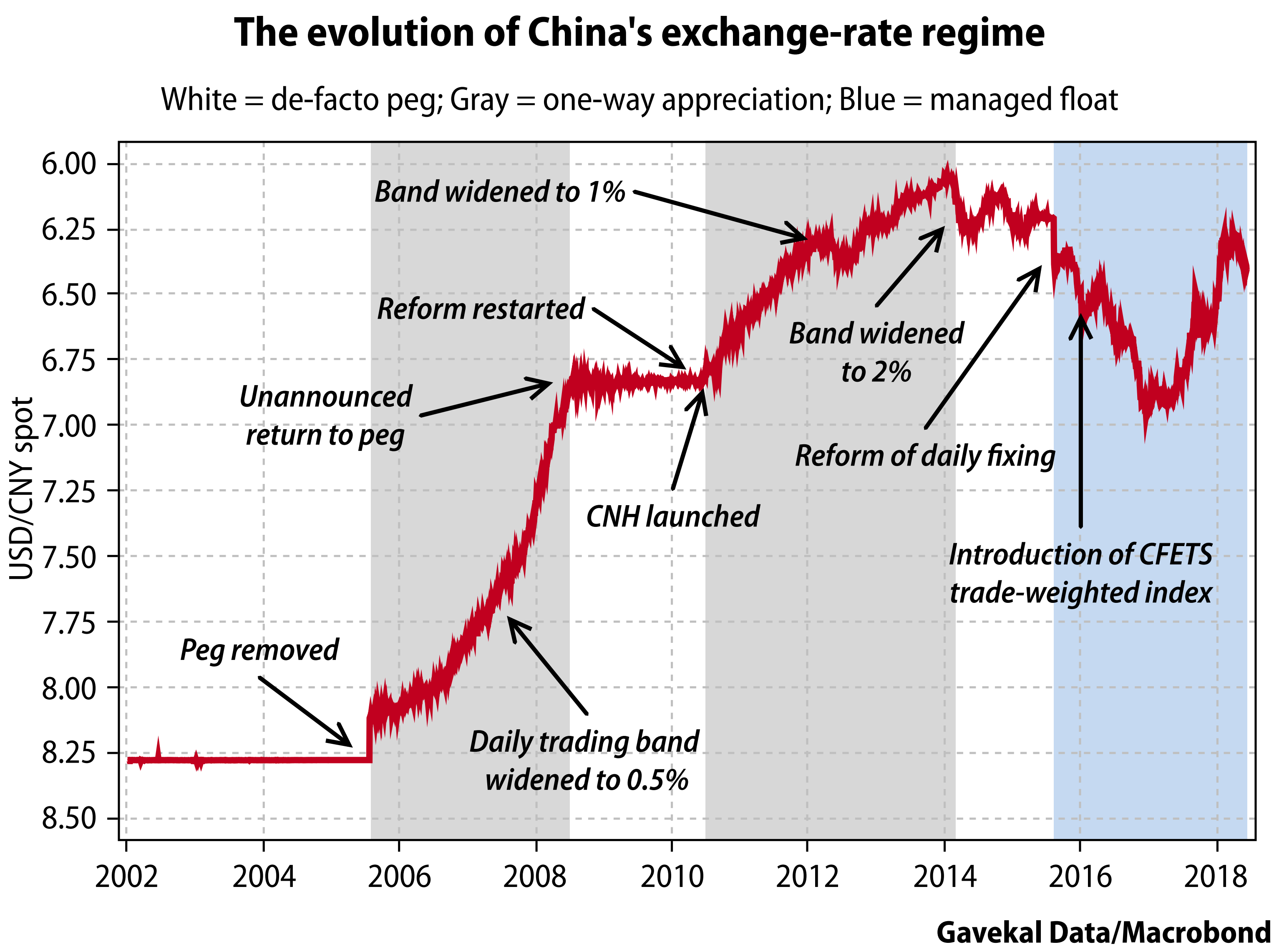
Mobile-internet enabled sectors are a big opportunity. Example: phone maker Xiaomi, which derives 40% of its revenues from mobile ads, controls 30% of India's cellphone market, and is the world's biggest producer of Internet of Things devices.

China's rise: the financial dimension

A financial re-opening

- After a hiatus in 2015/16 when Beijing was trying to stem capital outflows and shift to a new exchange rate regime, capital account opening is back on the agenda.
- China has moved to a true managed-float exchange rate. This substantially reduces the risk of structural misalignment and out-of-control capital flows (in or out). It also means the currency is truly de-correlated from the US dollar.
- Aided by the Shanghai/Shenzhen Connect schemes, portfolio equity and bond inflows have surged in the past two years. Both asset classes will grow in importance as they are included in international indices.
- However most indicators of RMB internationalization (trade invoicing, international reserves, etc.) remain stagnant.

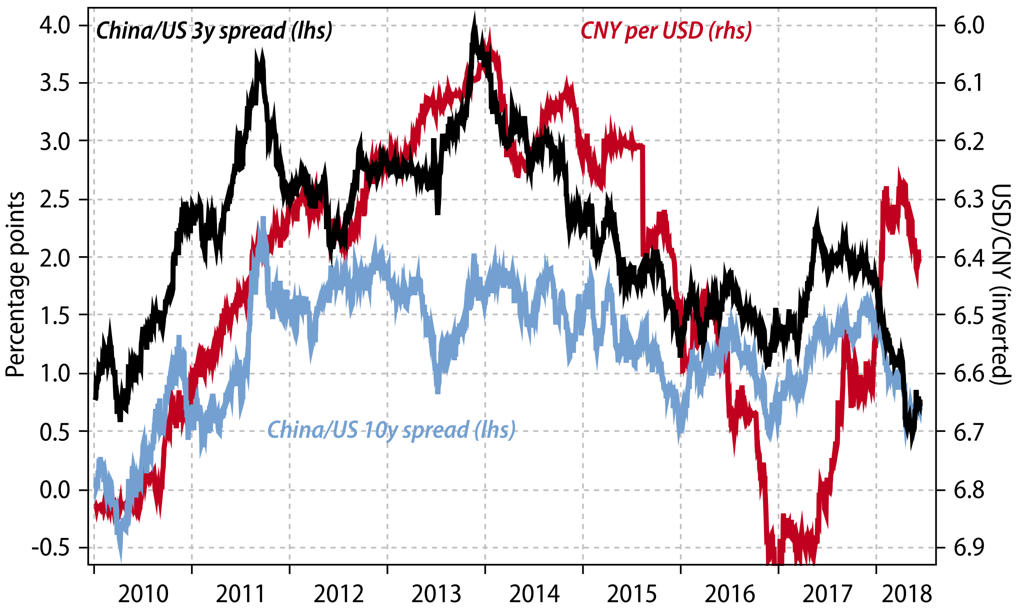
The RMB is finally free of the US dollar



Freedom means the RMB moves independent of US rates and USD

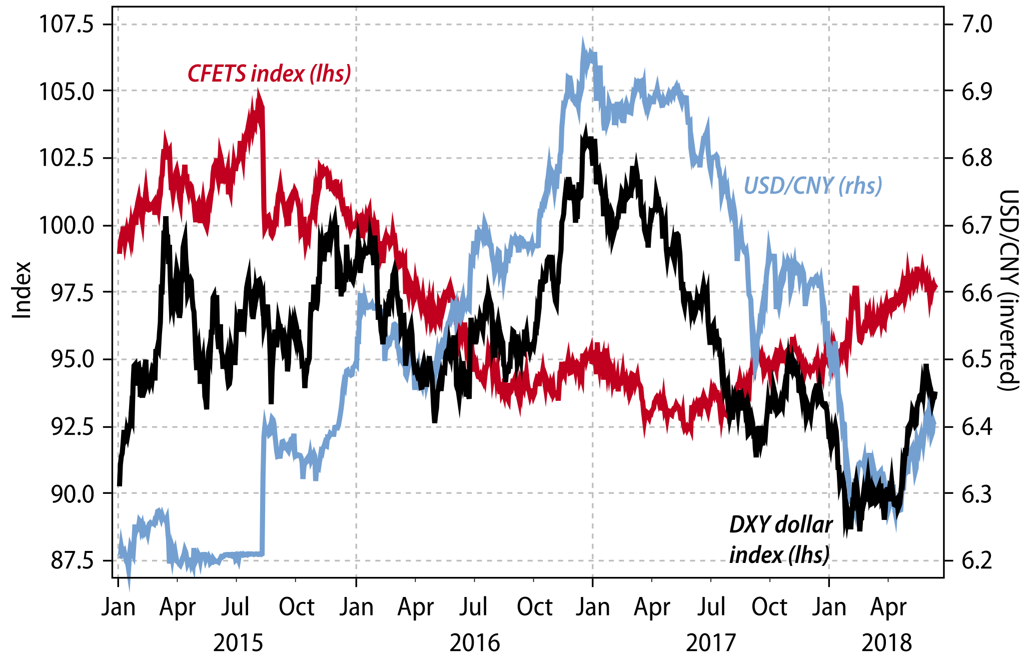
Rising US rates have not hurt the RMB much

USD/CNY spot rate vs US-China yield spreads



Gavekal Data/Macrobond

As the US dollar rallies, the renminbi is also quite strong



Gavekal Data/Macrobond

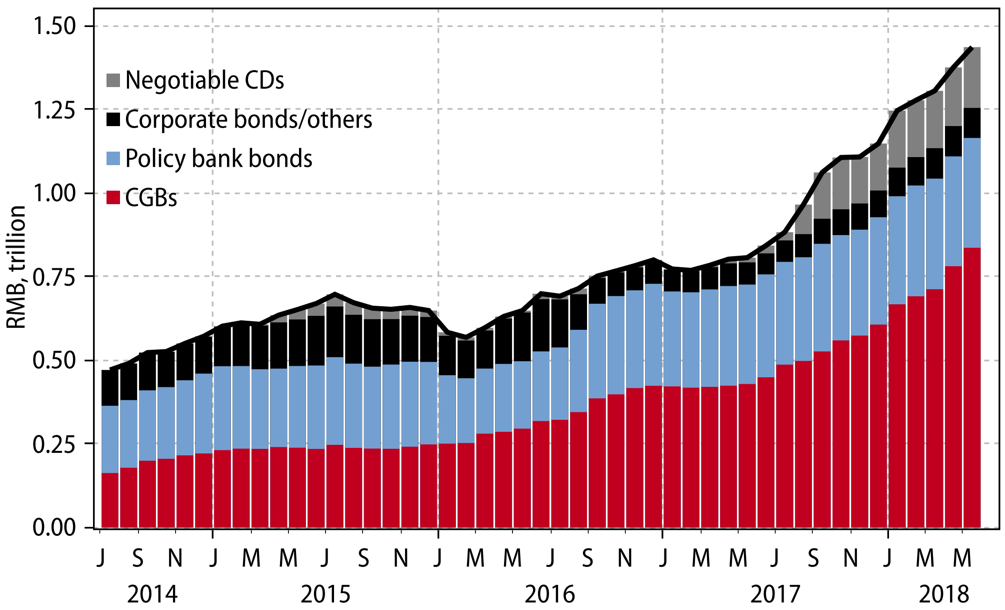
Starting in mid-2017, China bond spreads over USTs tightened as the Fed started to hike. Despite this, the RMB appreciated substantially against the dollar.

Similarly, the trade-weighted RMB (on the CFETs index; red line) steadily appreciated across both upward and downward movements of the USD/CNY exchange rate.

Foreign interest in sovereign bonds soars

Foreigners doubled China bond holdings since 2016

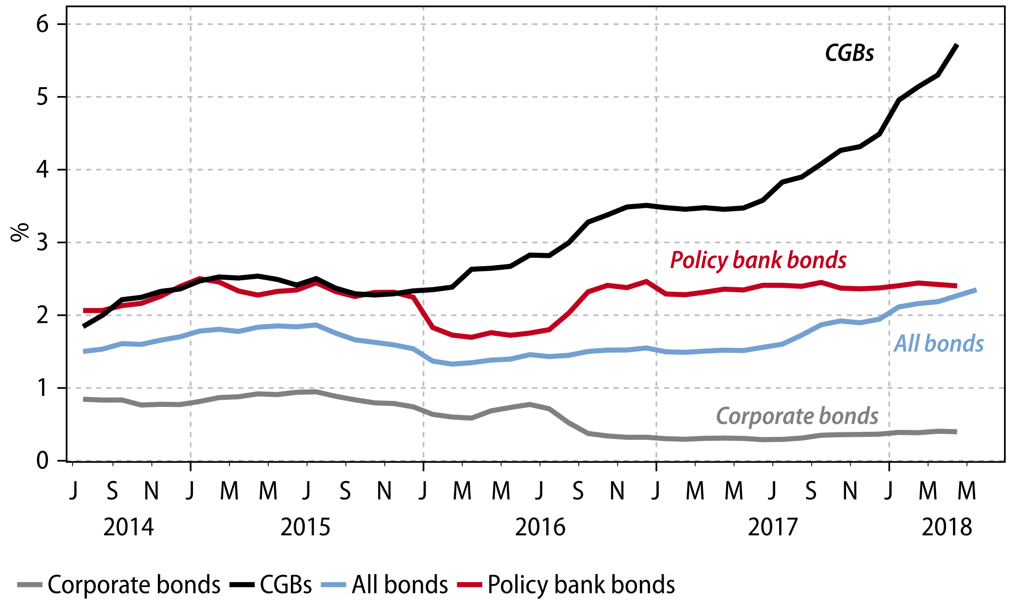
Foreign holdings of Chinese bonds by type, Rmb trn



Gavekal Data/Macrobond

Foreigners like CGBs

Foreign holdings as share of total issuance



Gavekal Data/Macrobond

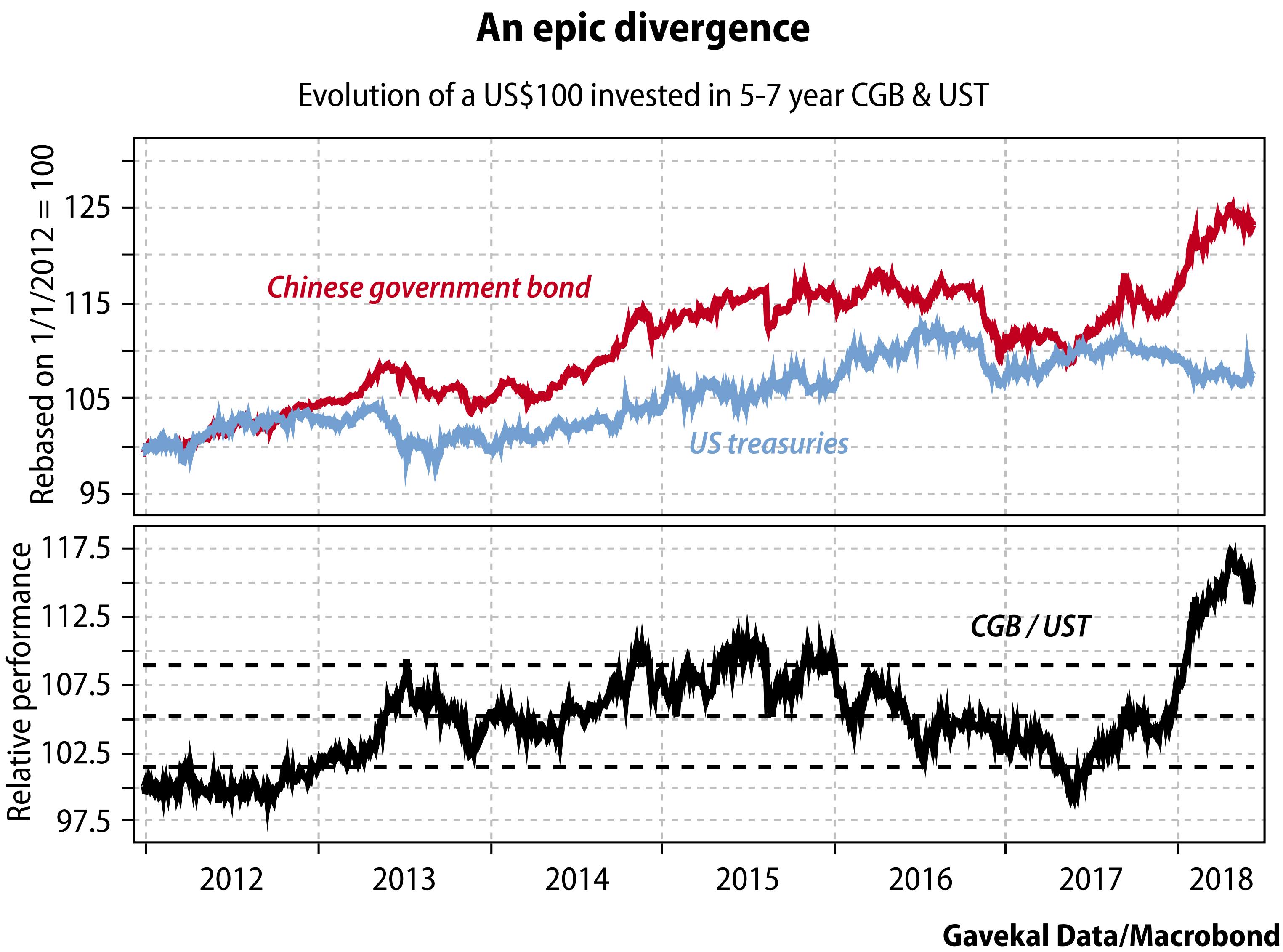
Since bottoming amid the panic of Jan-Feb 2016, foreign holdings of Chinese bonds have more than doubled, to about Rmb1.3 trn.

This came despite the fact that Chinese bonds are still outside most indices. Investors chased high yields, a stronger currency, and the prospect of capital appreciation. Bond Connect, which reduced liquidity risk, also helped.

Overall, foreigners still hold only about 2.2% of the massive Chinese bond marker. But their share of the Chinese government bond (CGB) market is much larger, at 5.5%.

Corporate and local government bonds are of little interest so far because of uncertain credit risk. Domestic bond ratings do not do a good job of forcing differential risk pricing.

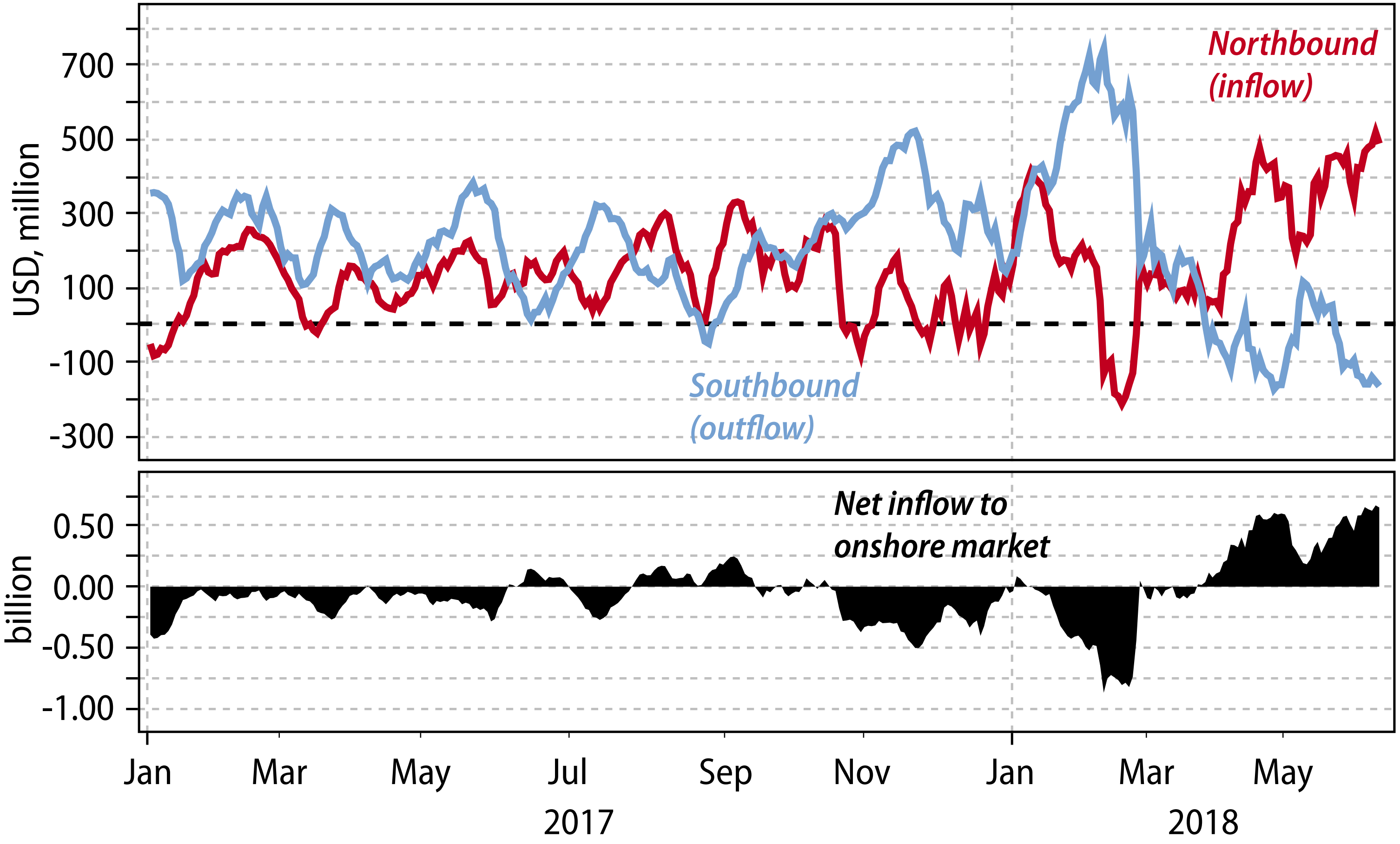
Since mid-2017 CGBs have massively outperformed USTs



Thanks to Stock Connect, foreign interest in A-shares gains steam

Equity inflows have risen sharply

Daily net buying through Stock Connect schemes, 10dma



CEIC, Gavekal Data/Macrobond

The global outlook

What has changed in 2018

As we approach the midyear mark, two key things are worth noting:

- First, all three of the key prices we identified at the beginning of the year (see **Everything Looks Fine, But…**) have risen sharply:
  - ➢ Since mid-April the US dollar has staged a strong rally, rising 6%.
  - ➢ Oil prices moved relentlessly up, with Brent going from US$65 to US$80 and WTI from US$60 to US$72, before recent pullbacks.
  - ➢ The UST 10y yield rose from 2.4% to 3.1%, again before pulling back.
- Second, political risk has returned with a vengeance, after a year in 2017 when politics had no impact on markets:
  - ➢ Political factors (Venezuelan collapse, Saudi politics, US re-imposition of sanctions on Iran) have played a big role in pushing up oil prices.
  - ➢ Italian political disruption has once again put the euro system at risk.
  - ➢ The Trump administration seems bent on trade war not just with China but with the EU, stoking volatility.

Just a rise in volatility, or a risk-off moment?

- The rise in our three key prices has been bad for growth outside the US. Assets in the US (both equities and bonds) have not delivered much return YTD, but non-US markets have delivered even less in dollar terms. The main safe havens have been cash and renminbi bonds.
- The key questions for the rest of the year are therefore:
  - Will the dollar keep rising?
  - Will oil prices keep rising?
  - Will growth outside the US keep disappointing?
  - Will political risk—especially in Europe—continue to exert a toll?
- If the answer to most or all of the above questions is yes, portfolios should stay defensive. If the answer to two or more is no, then buying opportunities should emerge.

A decision tree on the US dollar

Why is the USD rising?

Fed tightening/ less USD liquidity → We are in a risk-off phase

Weak growth outside the US

Does weak growth continue?

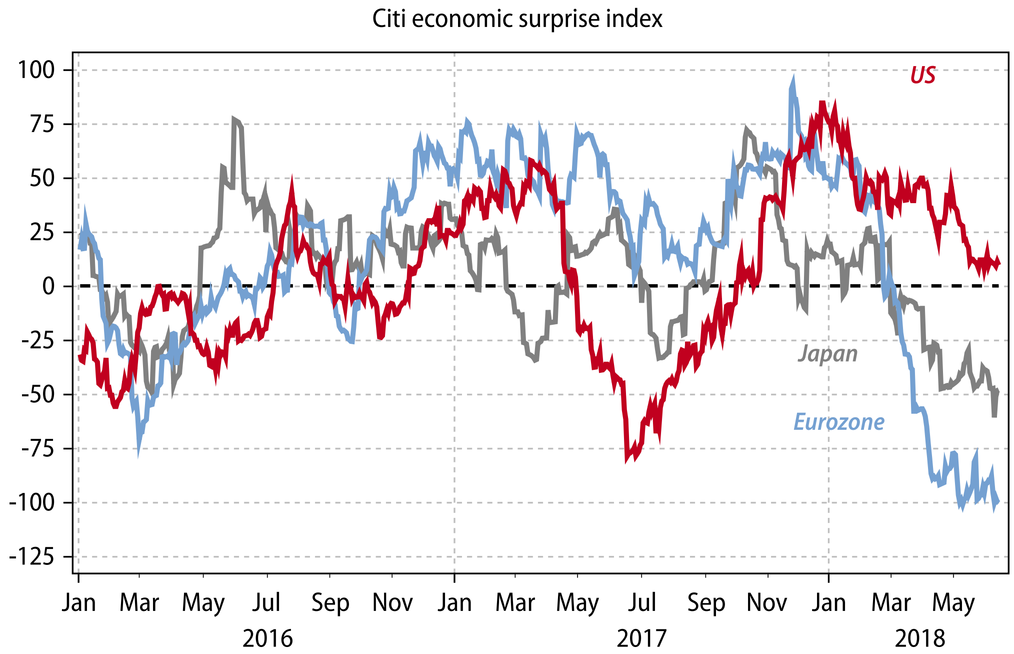
Yes → Goldilocks for the US: capital inflows drive up asset prices; rising USD keeps inflation under control

No → Rotate out of the US markets, especially into the stronger EMs

Technical rebound due to overcrowded USD short positions → Once it wears off, we return to an inflationary boom favoring EMs

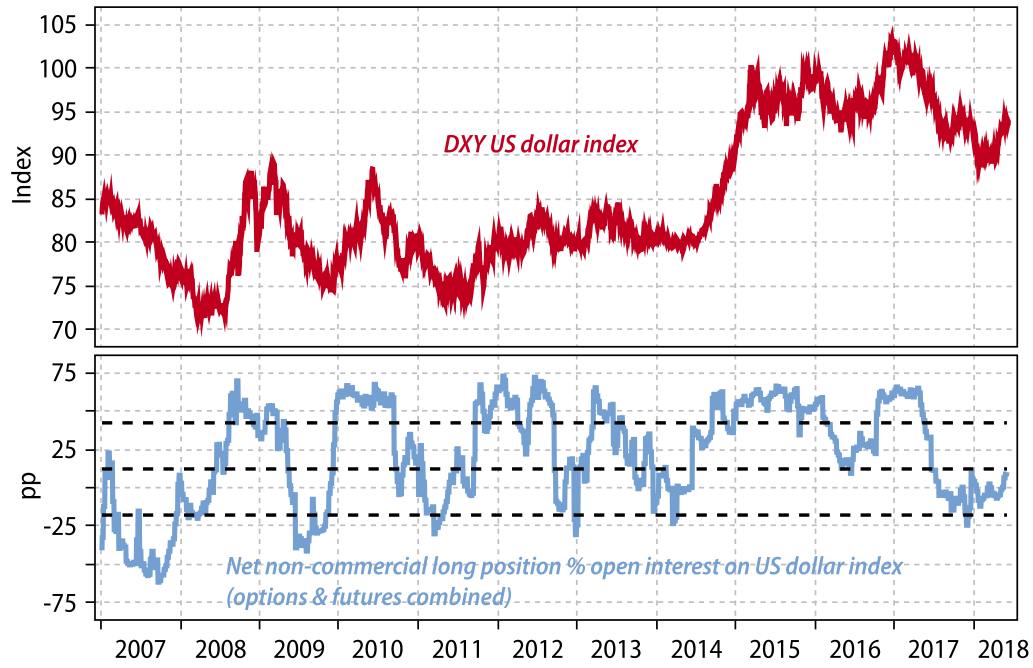
We believe dollar strength probably won't last

Can ex-US growth continue to surprise on the downside?



Gavekal Data/Macrobond

Large speculative short position causes a US dollar short squeeze?



Gavekal Data/Macrobond

It's a tough call, but we think there is more downside than upside to the dollar in H2. We believe the main sources of dollar strength have been disappointing growth figures outside the US, and the unwinding of a big speculative short position in the USD. The world does not face a fundamental shortage of USD liquidity. (See **Does The Dollar's Run-Up Have Legs?**) The short squeeze could drive the dollar up in the short run, but once that is done the key question is non-US economic growth.

Europe and Japan have seen a run of negative growth surprises. In Europe at least, this is probably due to a shift from economic acceleration to stable growth: i.e. it is a "soft patch" rather than a change in trajectory. (See **No Time To Give Up On Europe**.) In H2, there's a fair chance that non-US growth will pick up. In addition, with the US economy growing at above capacity, the trade deficit is set to widen—leading to a weaker dollar.

Oil: politics Trumps supply/demand

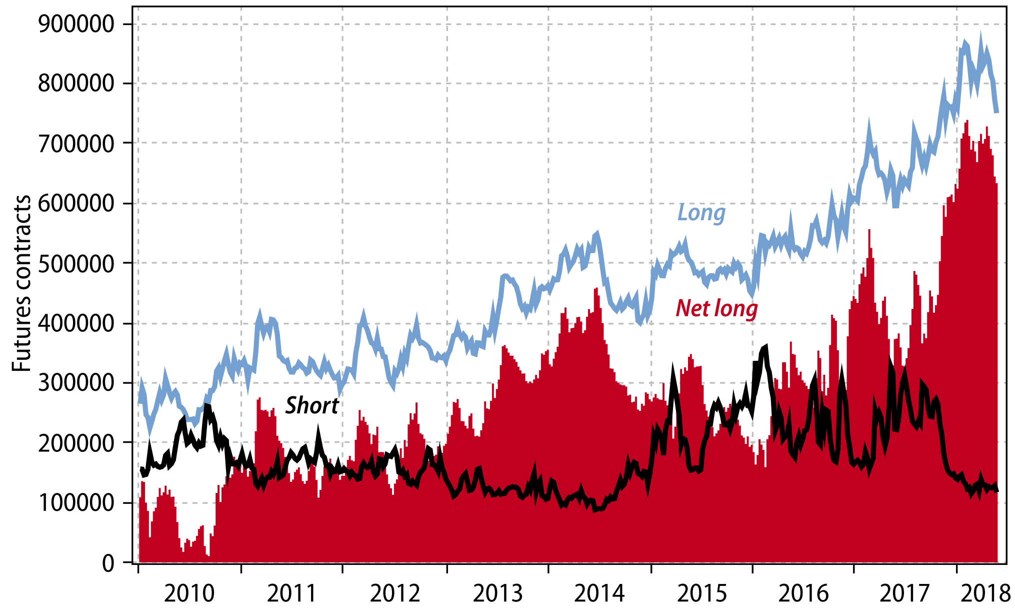
Politics caps the oil price at US$80

Brent crude spot vs March 2020 futures price

Gavekal Data/Macrobond

Speculative positions hit near-record levels but may have peaked

Crude oil (Brent) NYMEX non-commercial open interest



Gavekal Data/Macrobond

Oil bulls point to relentlessly rising demand and supply shortfalls in Venezuela and Iran, and increasing bottlenecks in US shale production. At Gavekal, Louis focuses on these worries and thinks oil could go higher.

Anatole and I think that supply/demand factors now play second fiddle to politics. Saudi Arabia has a strong political incentive to keep Brent below US$80: it does not want rising gas prices in the US to hurt its friend Trump ahead of the midterm elections.

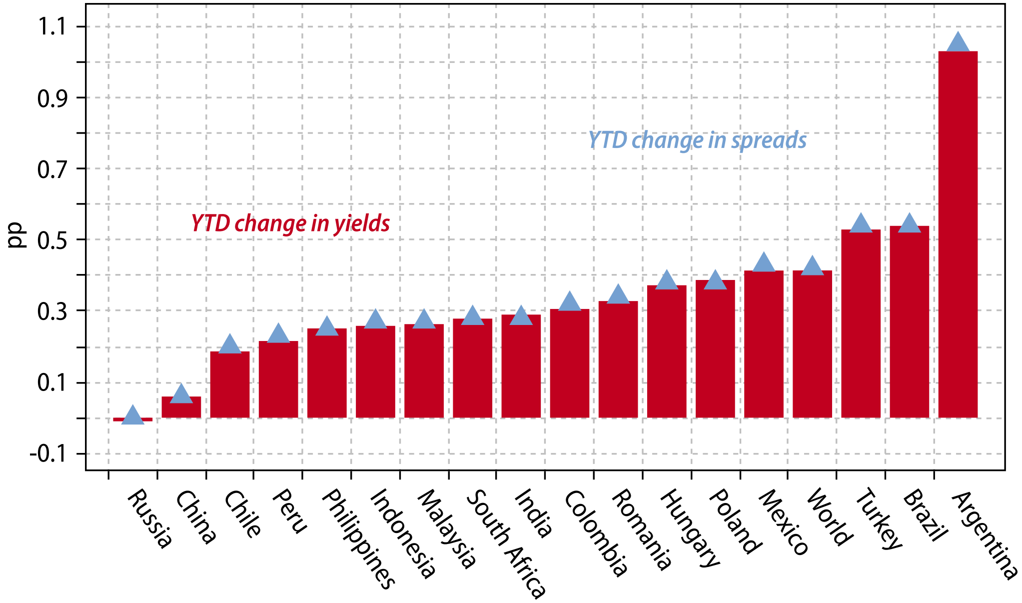
Russian oil companies are also lobbying for higher production because they face a lower tax rate when the oil price is below US$75.

So in short political factors seem likely to cap Brent at $80 or less, at least until late this year. Additional downward pressure will come from the unwinding of speculative long positions, which soared early in the year.

Why we (still! – nervously!) like emerging markets

So far the rise in US$ funding costs has only squeezed a few weak links

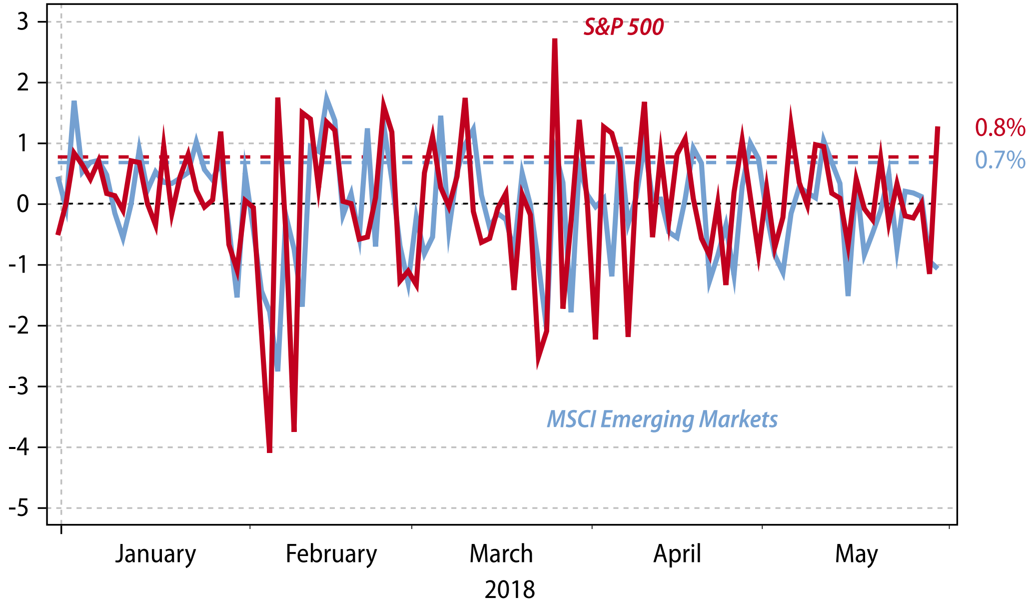
JP Morgan EMBI global diversified index



Gavekal Data/Macrobond

This year, the S&P 500 has been more volatile than emerging markets

Daily fluctuations of S&P 500 and MSCI Emerging Markets, with YTD avg. daily fluctuations



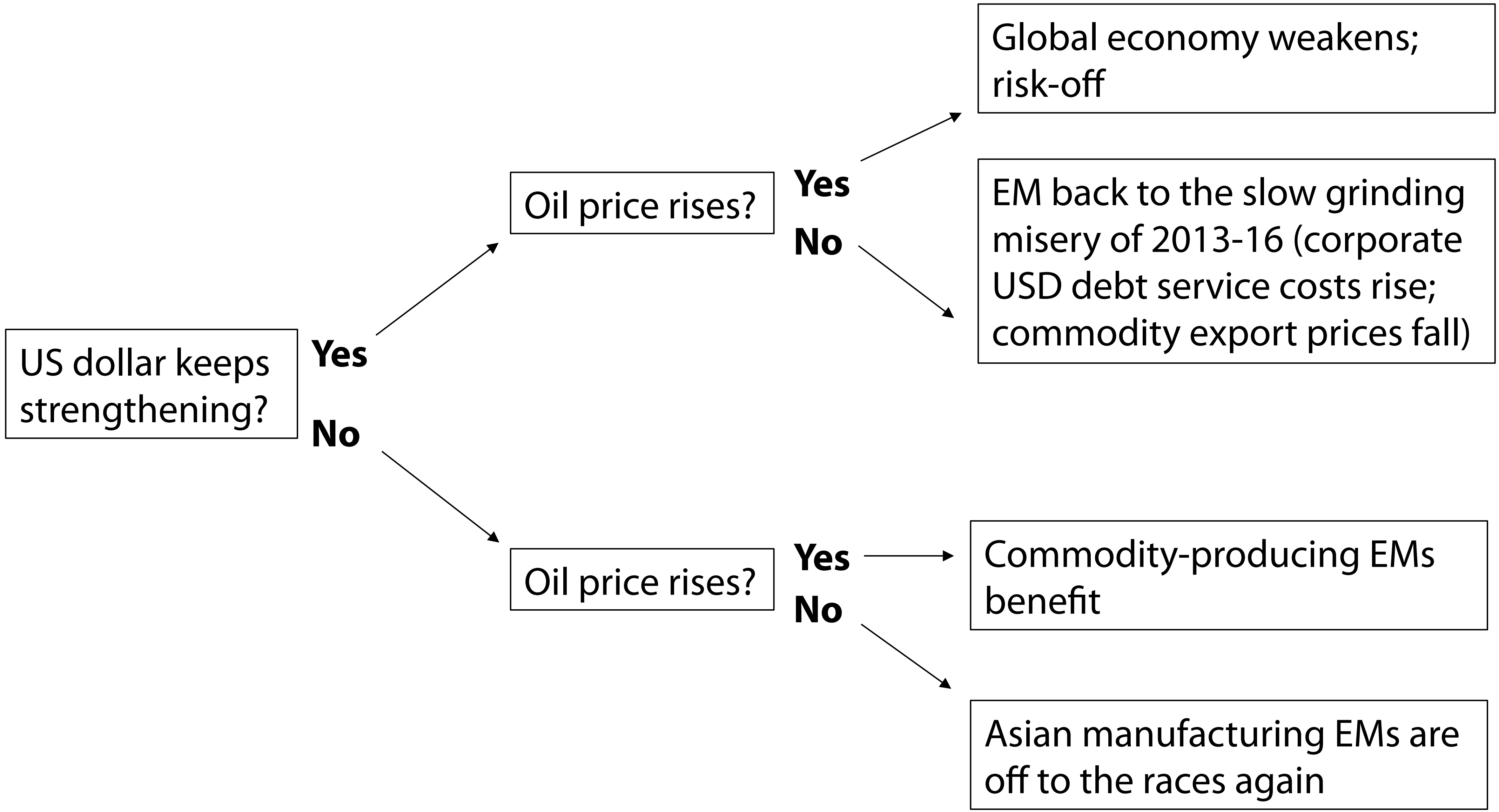
Gavekal Data/Macrobond

Media attention has focused on the woes of Argentina and Turkey, and more recently Brazil. Yet the overall EM position is more benign than for these two outliers. Currencies are fairly valued, national balance sheets are in good shape, exporters are poised to benefit from global growth, and dollar debt is not a problem for sovereigns. (It is for some corporates, but the biggest exposures are in China where buffers are also strongest.) Outside the few problem countries, spreads over treasuries have stayed fairly tight.

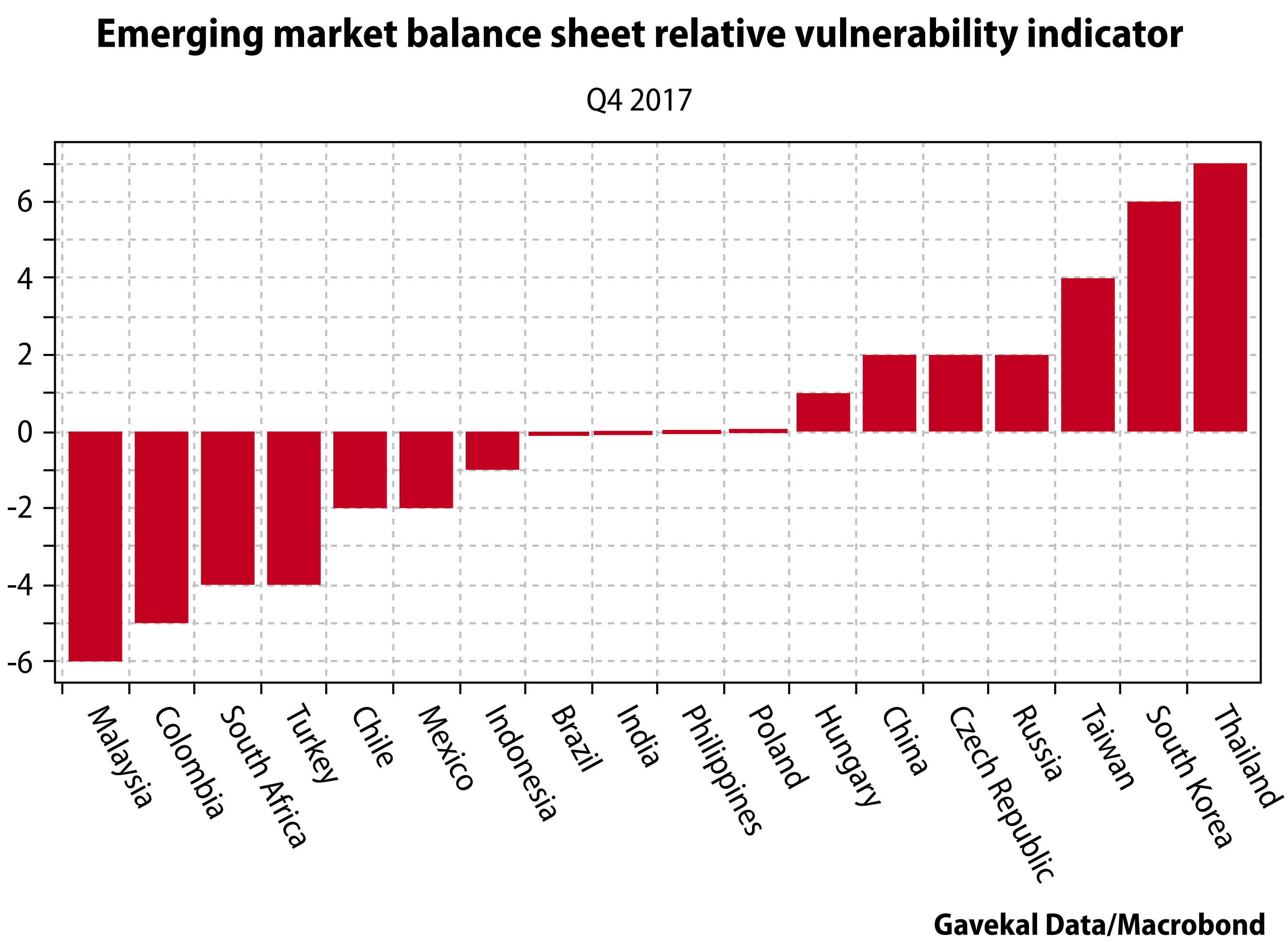
Moreover, overall EM equity returns have been only just below those of the S&P 500 – with lower volatility.

That said, EM returns will deteriorate if the strong-dollar and strong-oil trends continue. So the question of how much EM exposure to keep – and to which countries – is sensitive to those two prices. (See
[A Decision Tree For Emerging Markets](#).)

A decision tree for emerging markets



Discrimination should still pay, unless Brazil wrecks it for everyone



Global investors are nervous about EM: in May they took US$12.3bn out of EM equity and debt markets, the biggest outflow since 2016.

On a fundamental basis, we still see little risk in EM with strong balance sheets (right half of the chart). And losses on EM investment-grade corporate bonds (both USD and local currency) have so far been about the same as for US corporate bonds.

The key risk is contagion emanating from Brazil. If losses mount there portfolio managers might need to raise cash by selling out of their other EM positions. (See **The Moment Of Truth For Emerging Markets**.)

The hedge that works: renminbi bonds

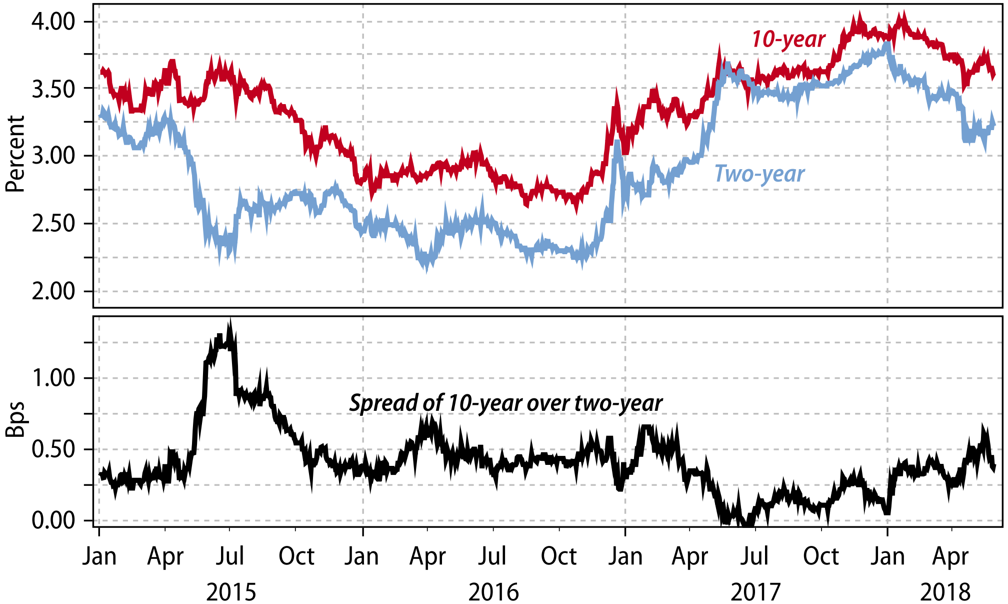
RMB bonds have been the safest haven in 2018

Evolution of a US$100 invested in 5-7 year CGB & UST

Gavekal Data/Macrobond

Bond yields have declined, but can fall more

China government bond yields



Gavekal Data/Macrobond

China has slowly but surely been liberalizing its capital account and opening up its domestic bond market, as part of a long-term strategy to make the RMB a more international currency—an "Asian deutschemark."

Because of this long-term strategy, Beijing has a strong interest in ensuring that total returns on RMB bonds are solid. And in fact Chinese government bonds (CGBs) have outperformed USTs consistently since 2013.

The independence of the Chinese economic cycle means that CGBs have been negatively correlated with most other assets. In the volatility of 2018, they have been a reliable safe haven. (See **A Structural Change, Or A Return To The Mean?**)

Moreover, CGB yields should keep falling. PBOC is keeping short rates stable and cutting bank reserve requirements; and foreign inflows have been accelerating. (See **Bond Yields Have Further To Fall**.)

Contact and disclaimer

Thank you!

This presentation was prepared by

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All research is available online at: research.gavekal.com

www.gavekal.com

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ASSET
MANAGERS
SINCE 1964

Platinum ASSET MANAGEMENT

Long term returns and emerging shortages

June 2018

Platinum Investment Management Limited ABN 25 063 565 006

A framework for identifying investments

A matrix of facts versus feelings

	Low conviction	High conviction
Weak Evidence		
Strong Evidence		

Source: MSCI, Bloomberg, RIMES, S&P Global Property index, Preqin Global Private Equity
Notes: Global Bonds represented by Pimco Global Bond Fund USD

A framework for identifying investments

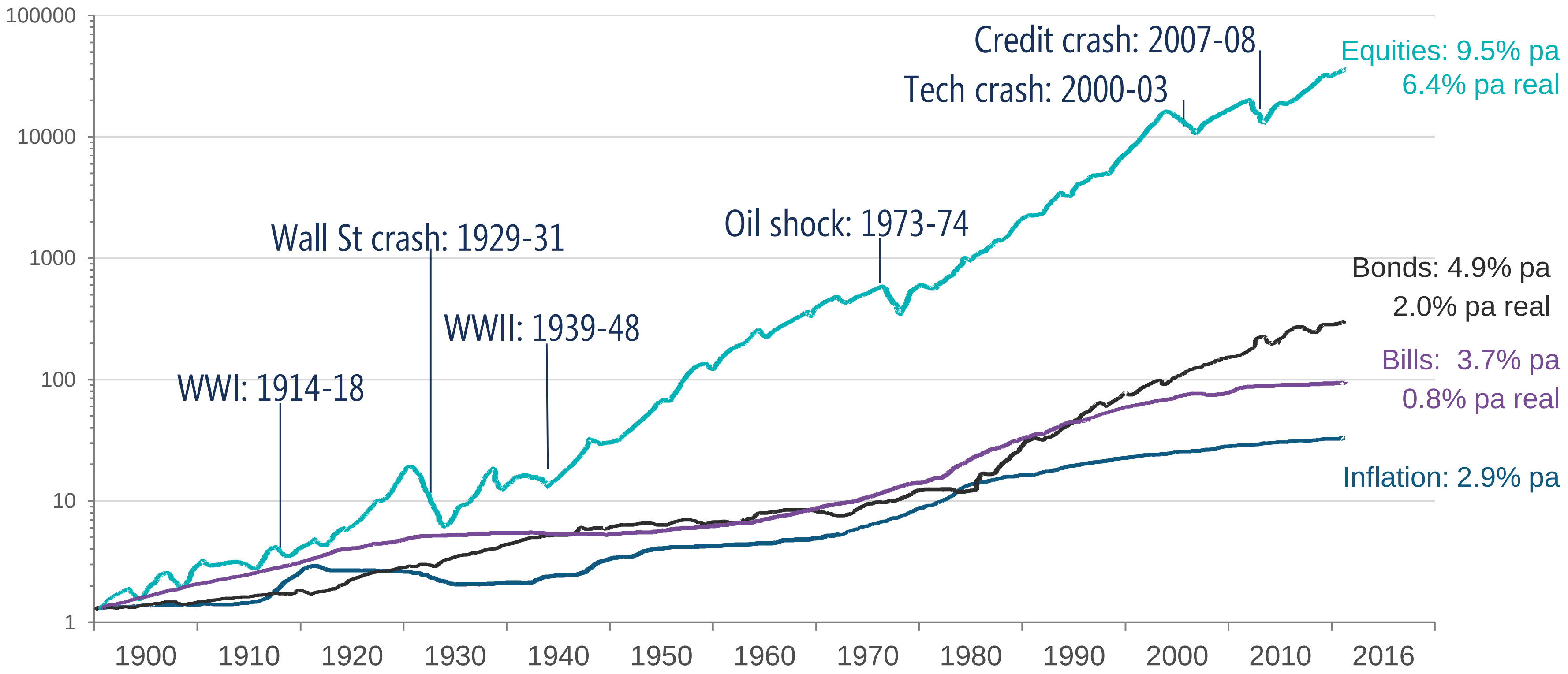
A matrix of facts versus feelings

	Low conviction	High conviction
Weak Evidence	Global Property 2% p.a. 10 year return	Global Private Equity: 6% p.a. 10 year return
Strong Evidence	Global Shares 5% p.a. 10 year return,	Global Bonds 5.5% p.a. 10 year return

Source: MSCI, Bloomberg, RIMES, S&P Global Property index, Preqin Global Private Equity
Notes: Global Bonds represented by Pimco Global Bond Fund USD

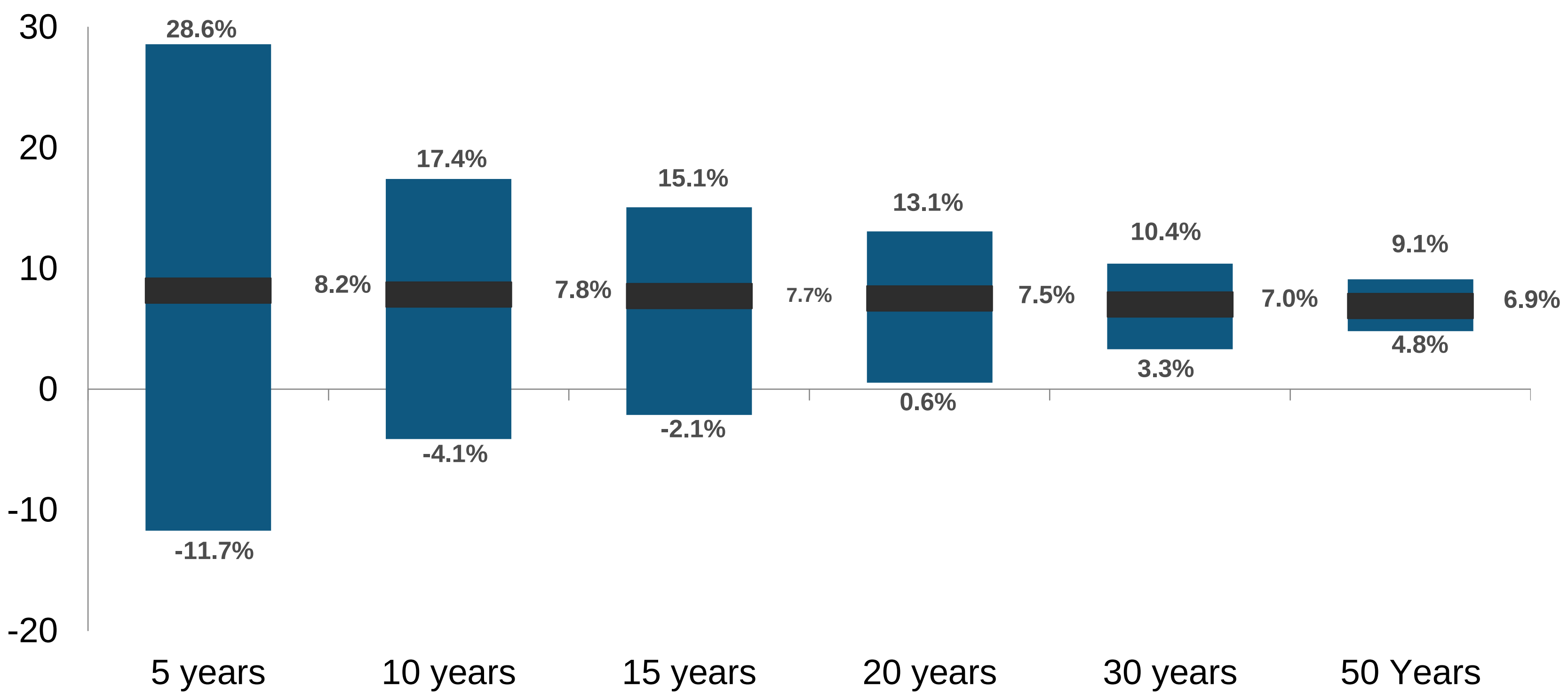
Cumulative returns on US asset classes

1900–2017: a case for global diversity



Source: Elroy Dimson, Paul Marsh and Mike Staunton, Credit Suisse Global Investment Returns Sourcebook 2017 and Triumph of the Optimists, Princeton University Press, 2002

Long term real US equity returns (1872-2016)



Decomposing historic equity returns

	1900-49	1950-2017	1900-2017
Dividend yield	5.1%	3.2%	4.0%
Real dividend growth rate	-1.3%	2.0%	0.6%
Change in valuation	-0.7%	1.5%	0.5%
Real return in US$	**3.1%**	**6.7%**	**5.1%**

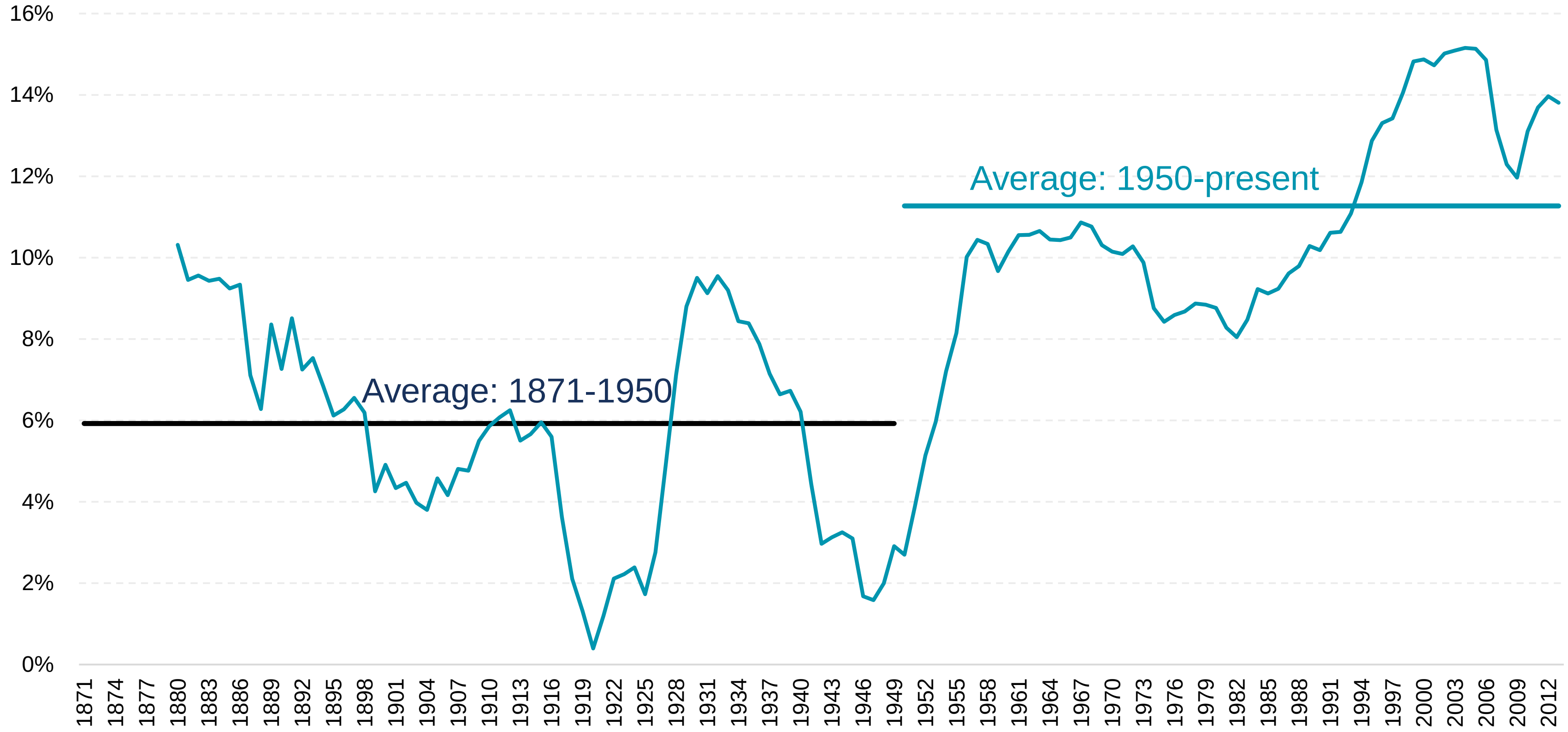
Source: Credit Suisse Research Institute

World Wars and crashes

	USA	UK	Germany	Japan	World
World War I	-18%	-36%	-66%	+66%	-31%
World War II	+22%	+34%	-88%	-96%	-12%
1929-31 crash	-61%	-31%	-59%	+11%	-54%
2000-02 crash	-42%	-38%	-58%	-49%	-44%

 Source: Credit Suisse Research Institute

Now hugely profitable: 150 years of real S&P 500 RoE

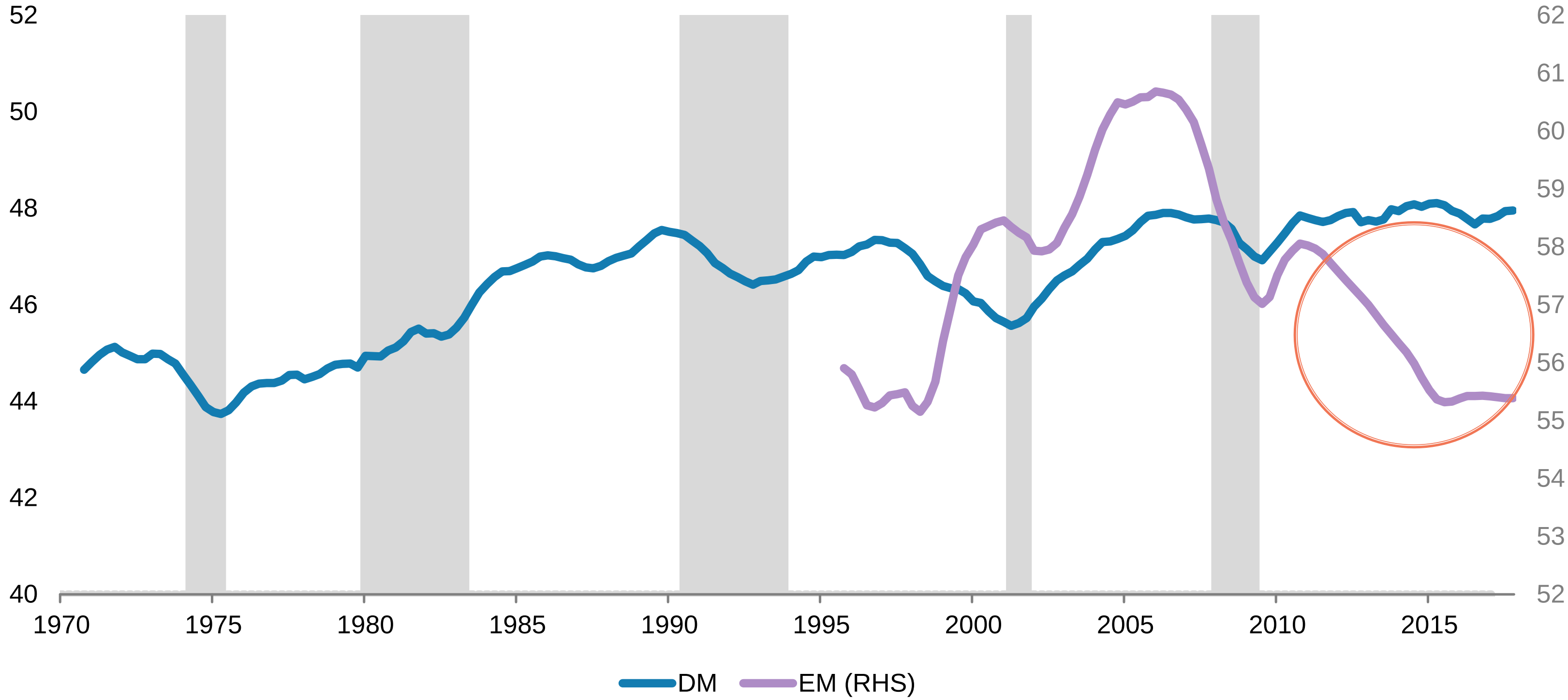


Source: Robert Shiller, http://www.econ.yale.edu/~shiller/data.htm
Note: Rolling ten year averages used.

An emerging turnaround?

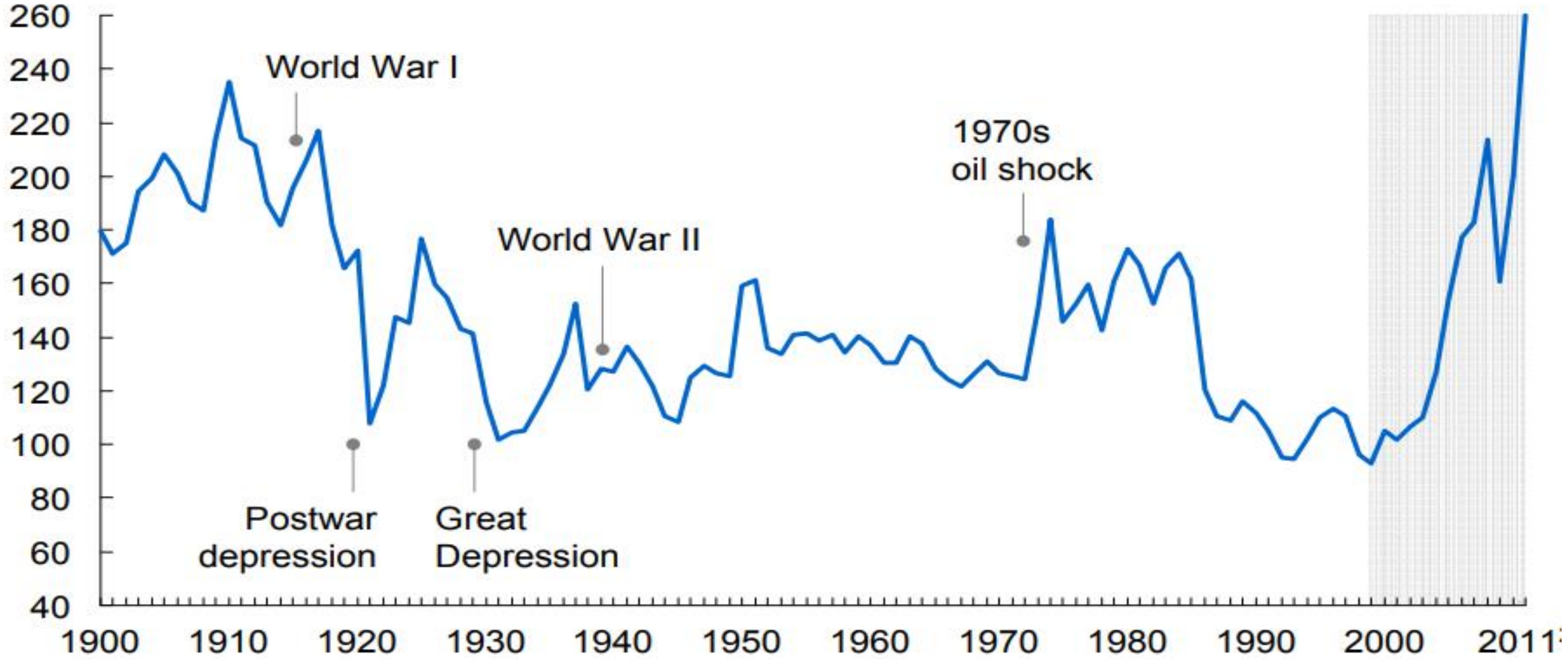
Secular rise in developed market profit share likely behind us, emerging markets set to rebound

Evolution of the Profit Share of GDP, % 4Q moving average



 Source: Morgan Stanley

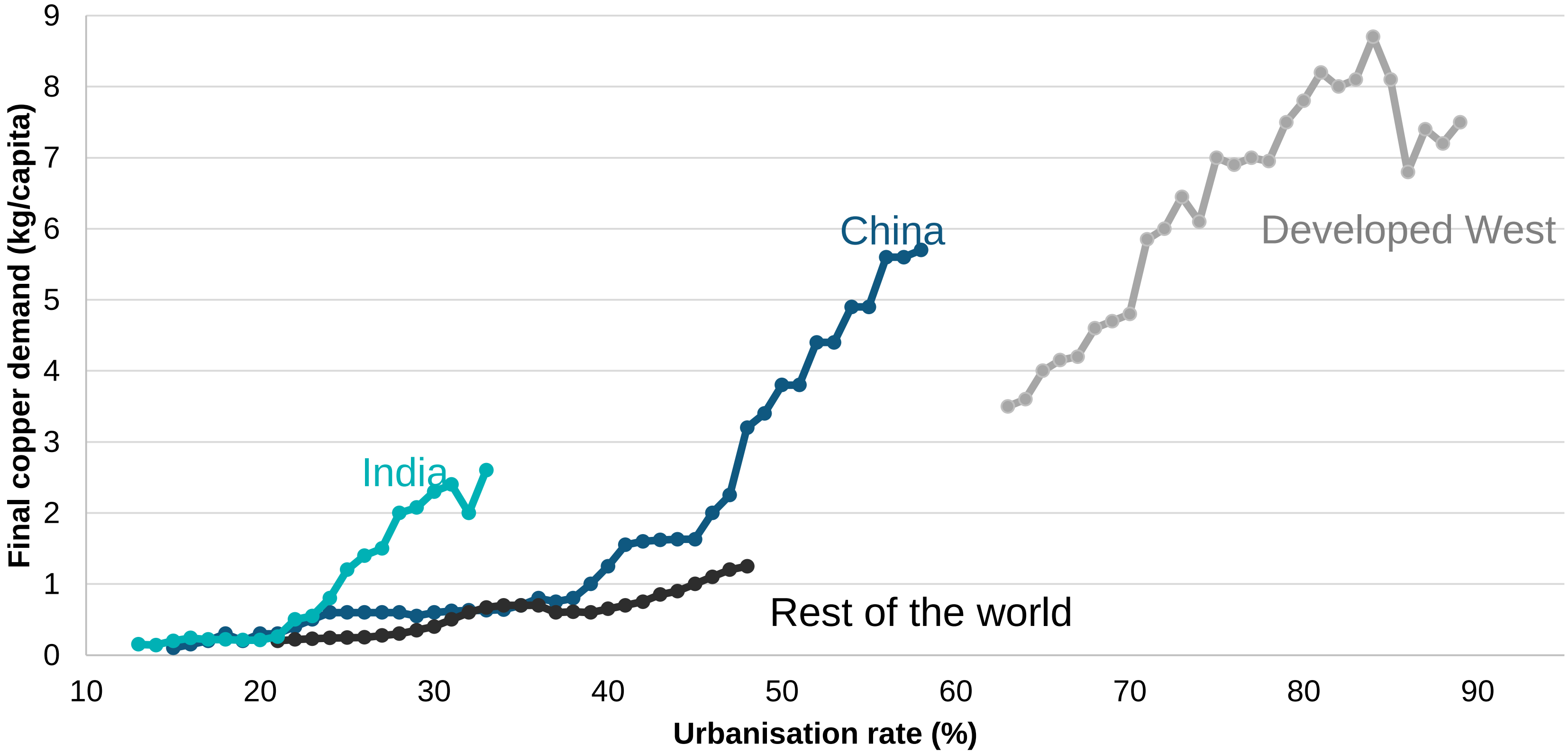
Resources prices increased after 2000



Source: Grilli and Yang; Stephan Pfaffenzeller; World Bank; International Monetary Fund (IMF); Organisation for Economic Co-operation and Development (OECD); UN Food and Agriculture Organization (FAO); UN Comtrade; McKinsey analysis.

Copper usage intensity by region

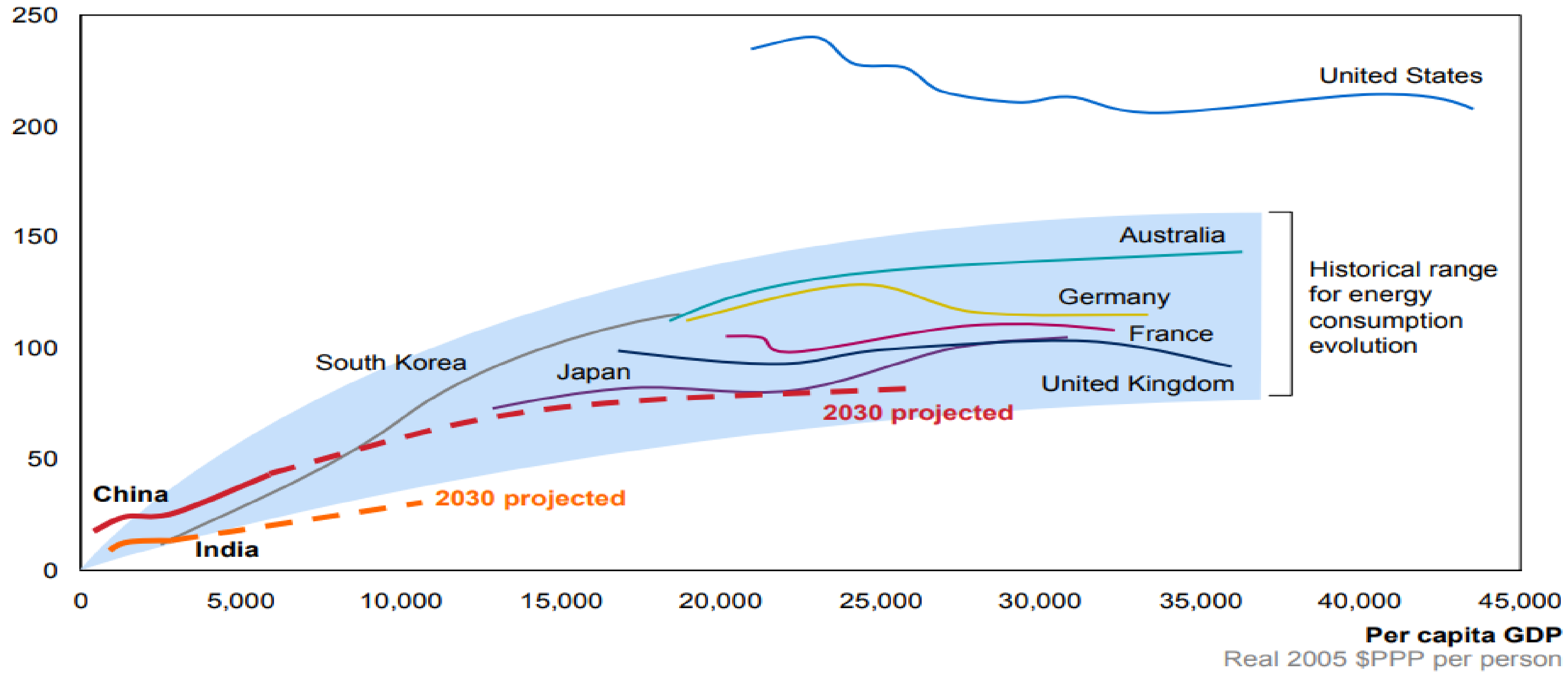
Final use copper intensity (kg/capita) vs. urbanisation (1950 – 2015)



 Source: United Nations, IMF, Wood Mackenzie, ISCG, Bernstein

Per capita energy consumption

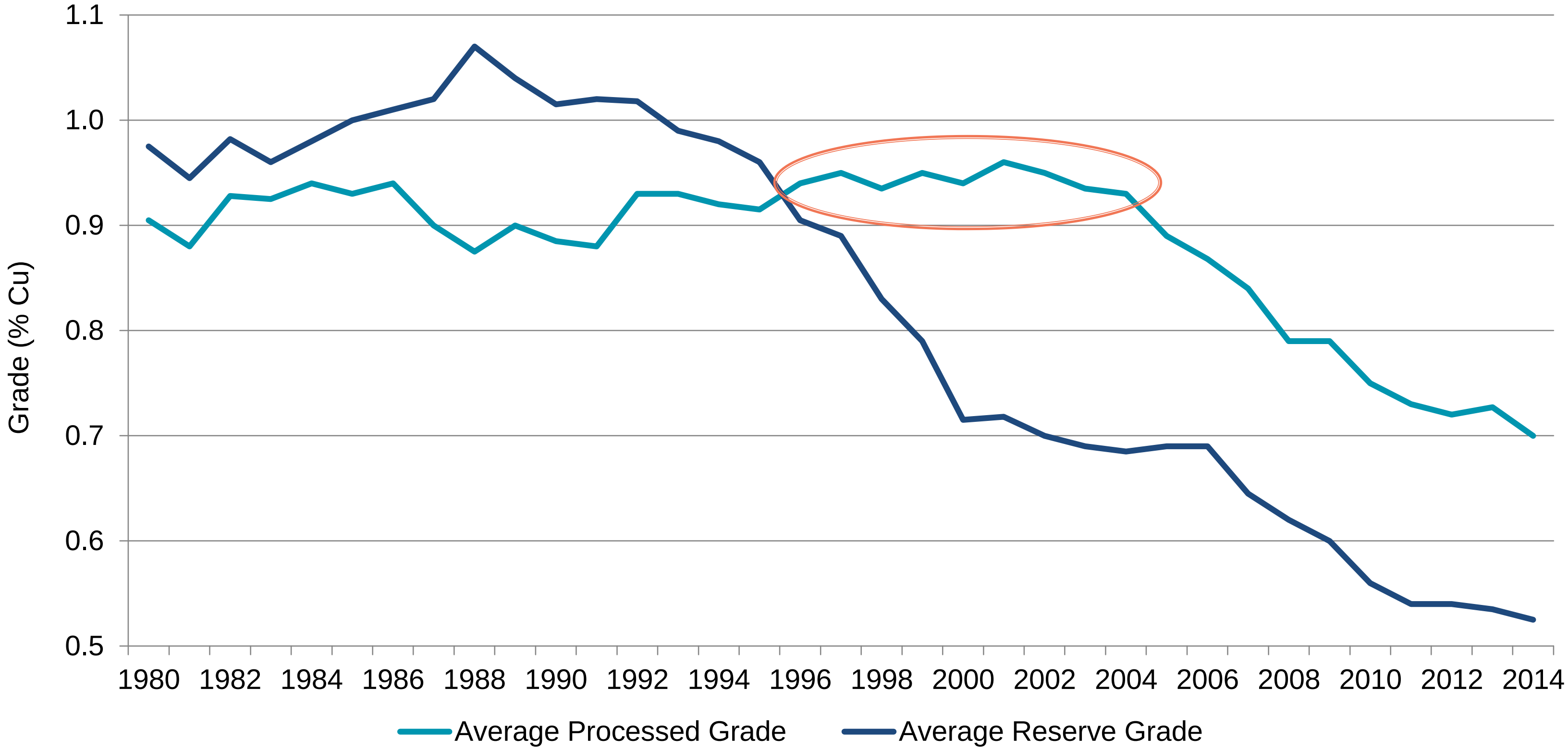
1970–2008, projected to 2030 for India and China (Million British thermal units per person)



 Source: IEA; Global Insight; McKinsey analysis

Global copper grades

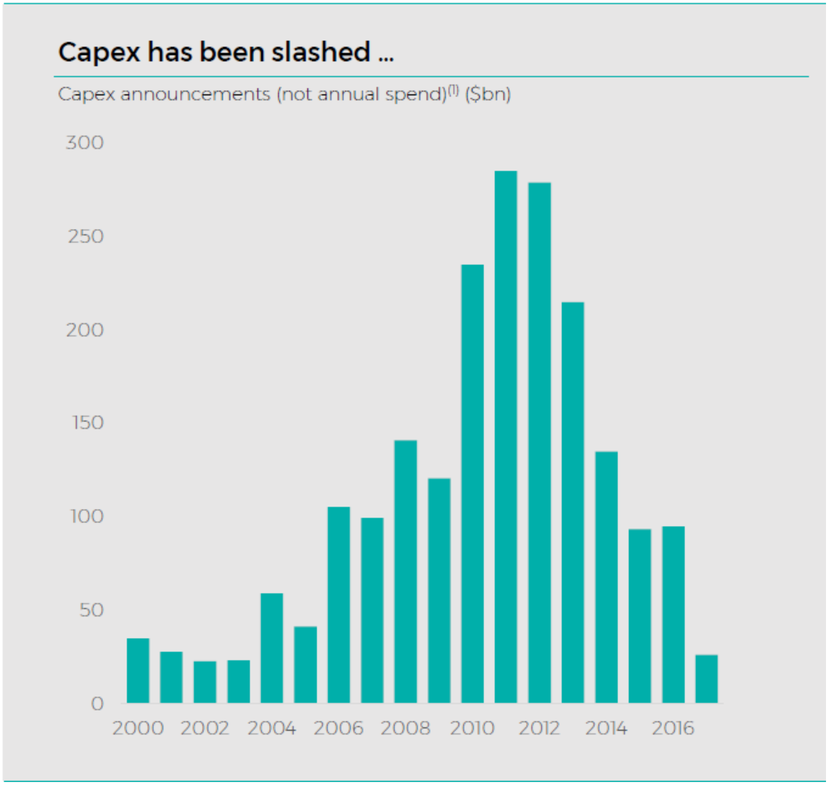
Global copper grades have been falling sharply since the mid-1990s…

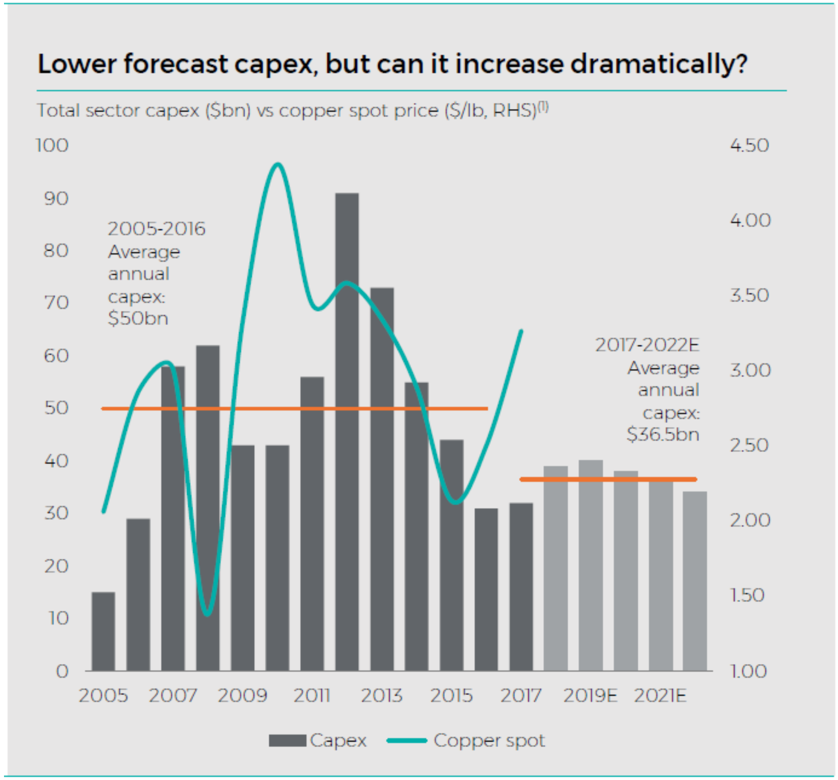


 Source: Wood Mackenzie, Bernstein

Copper

Historical capex

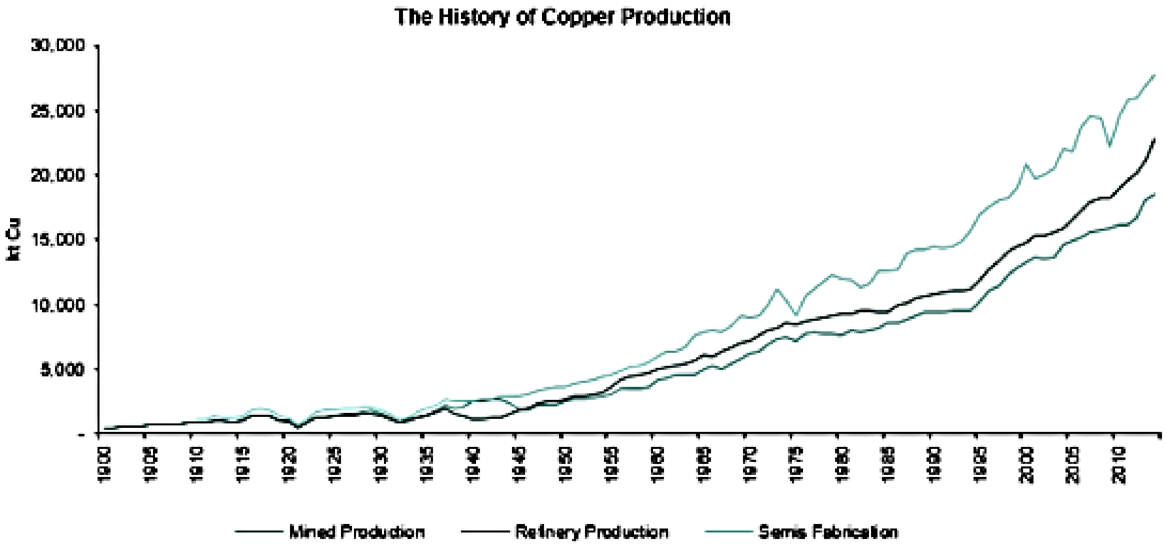


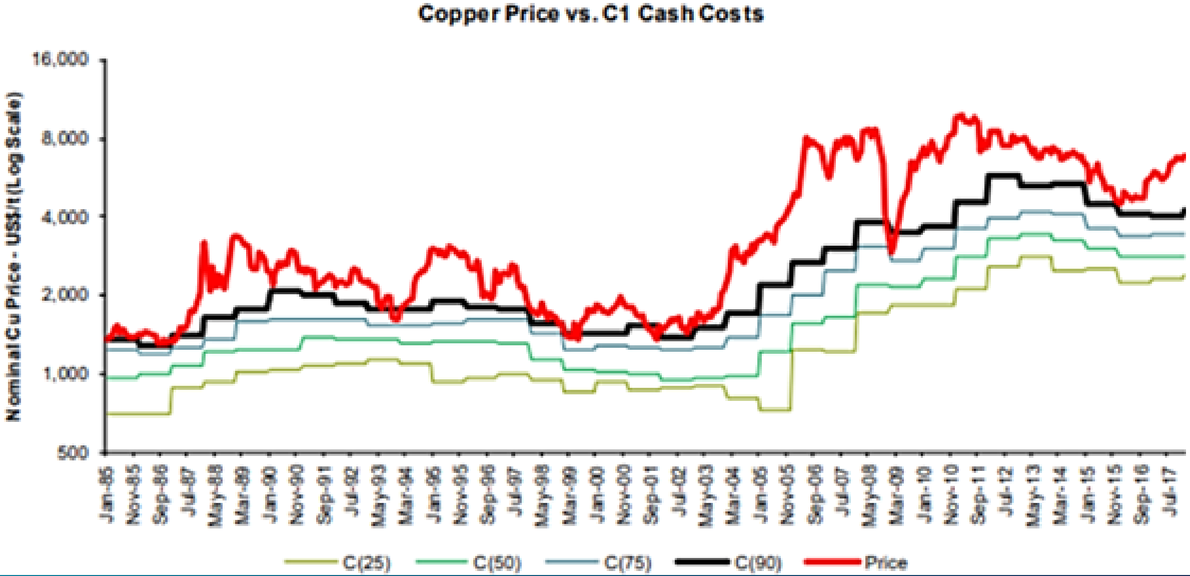


 Source: Morgan Stanley

Copper

Production increase and cash cost vs. copper price





 Source: Bernstein

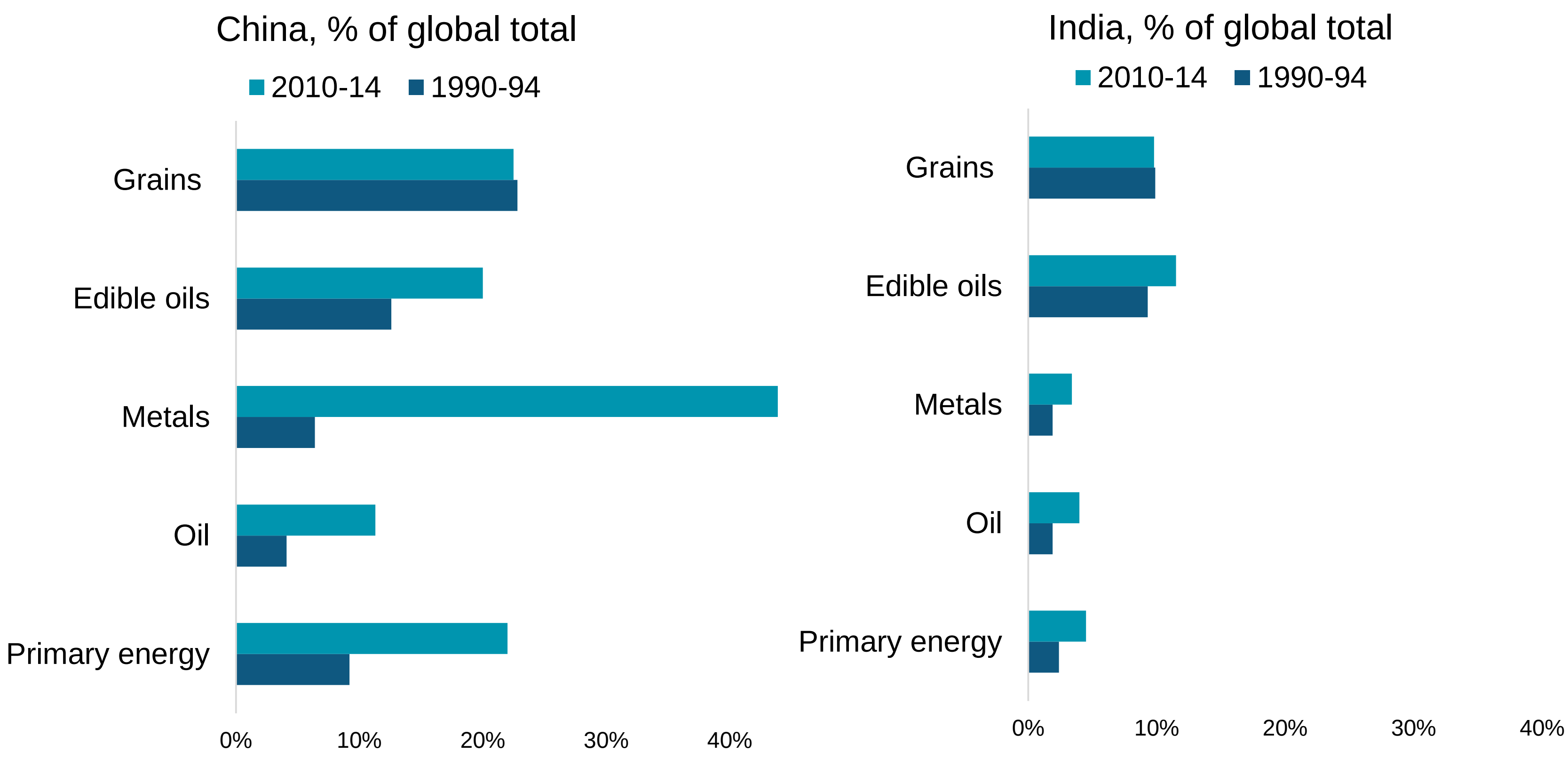
Copper new sources of potential demand

- Rapid emergence of EV reflects alignment of key drivers:
  - Environmental considerations
  - Political mandates
  - Technological progress
  - Consumer experience
- Metal requirements to achieve 30% EV market share by 2030:
  - c.4.1Mtpa of copper (18% of 2017 supply)
  - c.1.1Mtpa of nickel (55% of 2017 supply)
  - 314ktpa of cobalt (332% of 2017 supply)
- 2020 forecast demand requires an additional c.390 Kt copper, c.85kt nickel and 24kt of cobalt
- Estimated use per vehicle: 84kg copper, 30kg nickel and 8kg cobalt
- Demand implications across the value chain

		Generation and Grid Infrastructure			Grid Storage			Charging Infrastructure			Non-ICE Vehicles		
		2020	2025	2030	2020	2025	2030	2020	2025	2030	2020	2025	2030
CU	Kt	40	170	536	24	86	180	23	115	392	304	1068	2972
Ni	Kt	-	-	-	20	71	150	-	-	-	66	299	985
Co	Kt	-	-	-	7	26	55	-	-	-	17	80	259

 Source: Glencore CPU

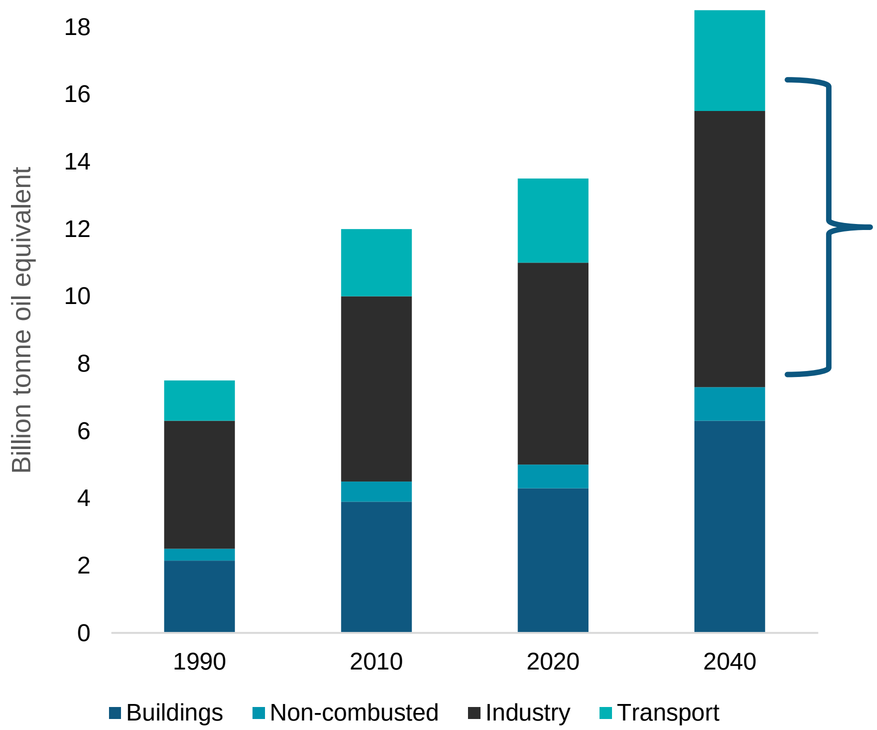
Chinese and Indian consumption of commodities



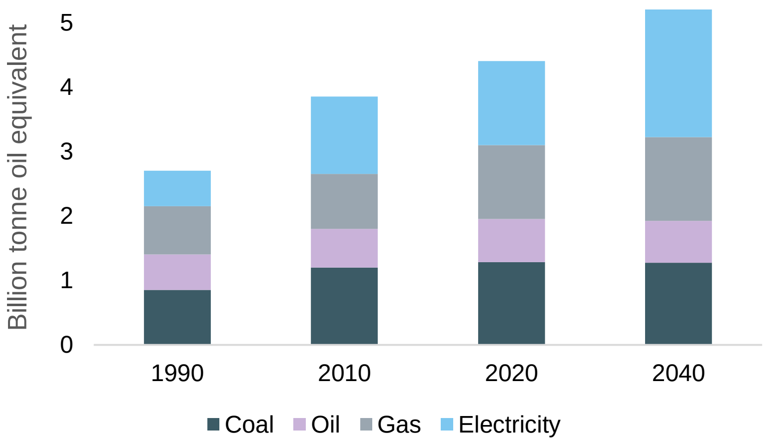
 Source: McKinsey

Energy demand – still growing

Total primary energy consumption by industry

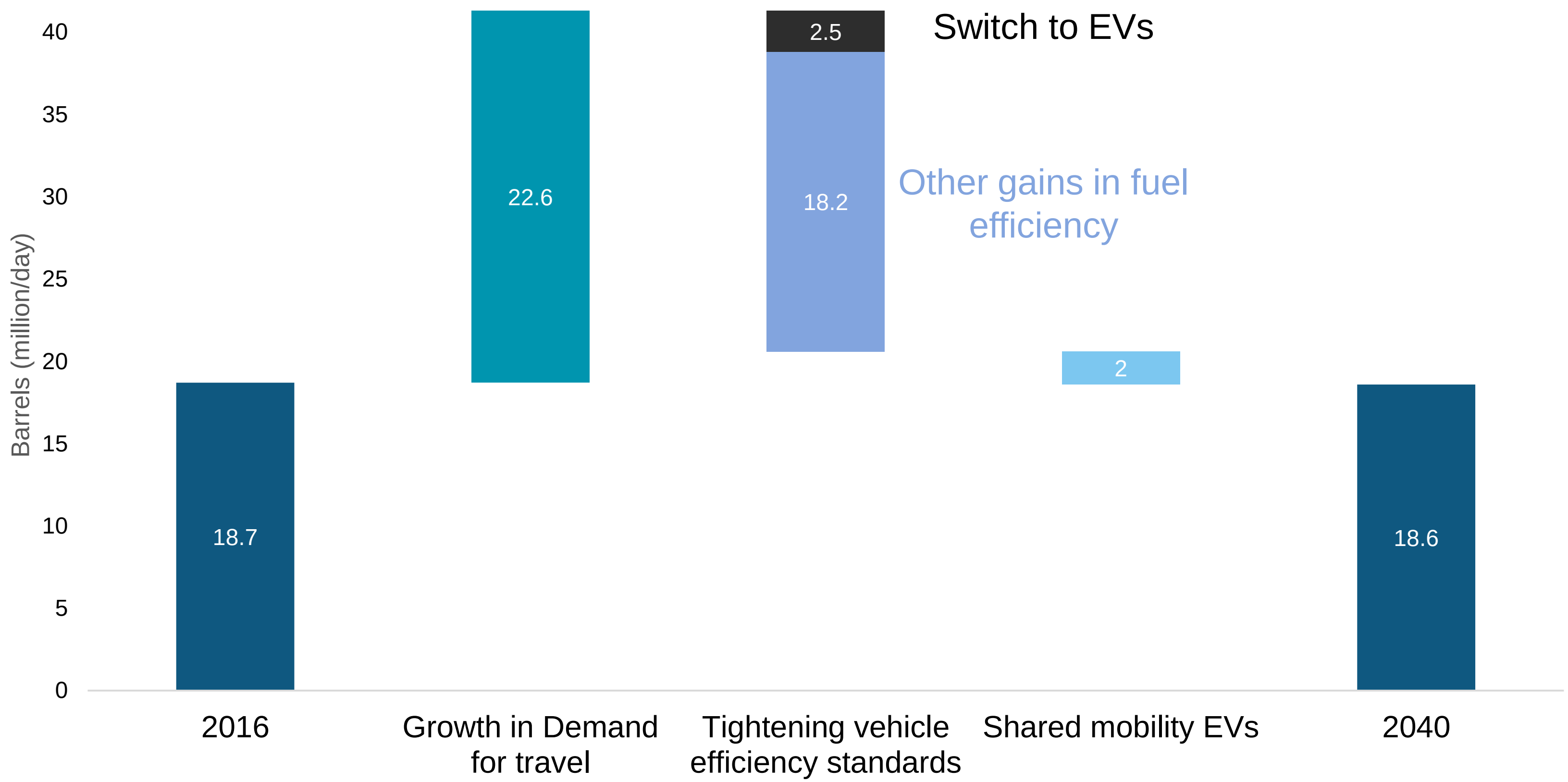


Final energy consumption in industry by fuel



Source: BP
Note: Final and primary energy consumption are not equal. Industry energy consumption breakdown indicative only.

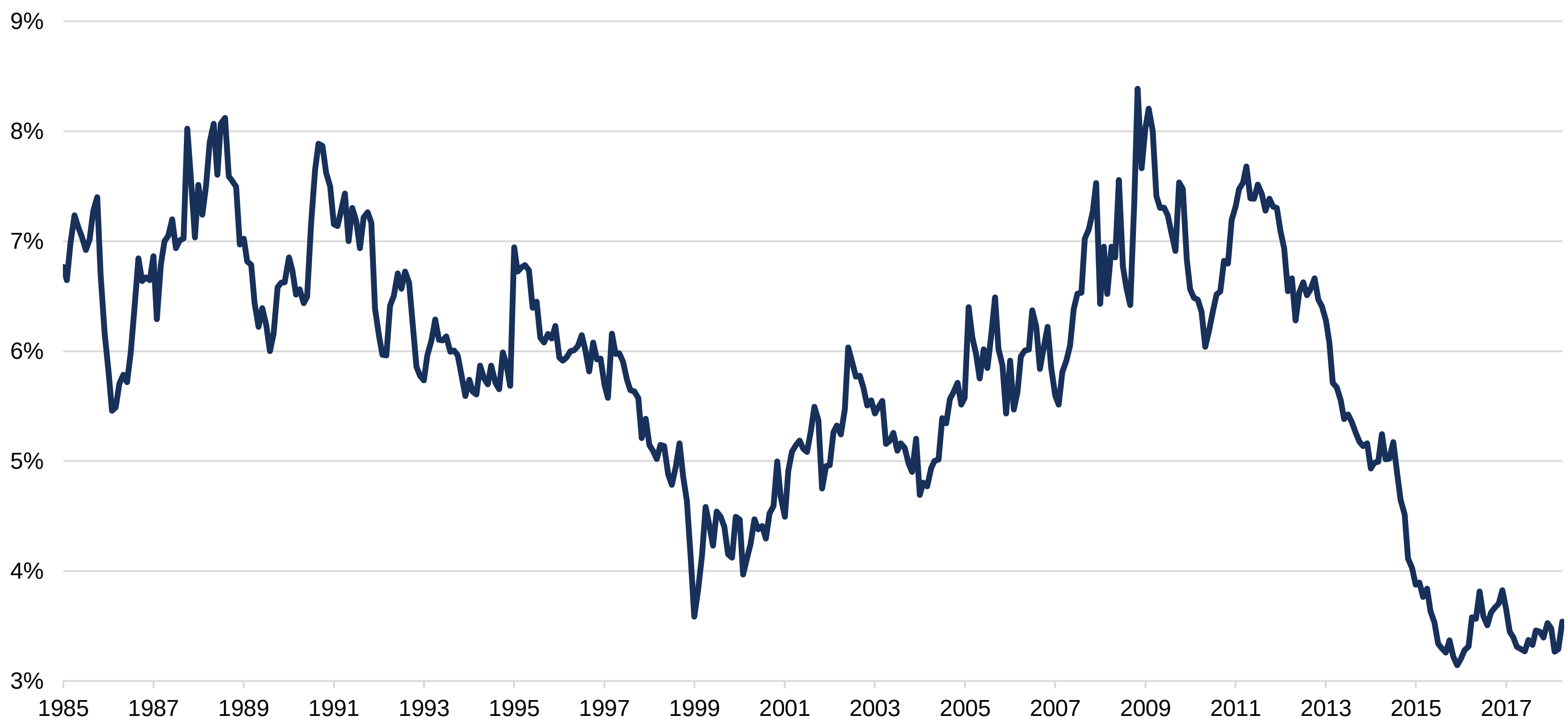
Liquid fuel use in cars may be broadly flat



 Source: BP

Energy and materials majors vs. US equities

Energy and Materials As % of US Market Cap

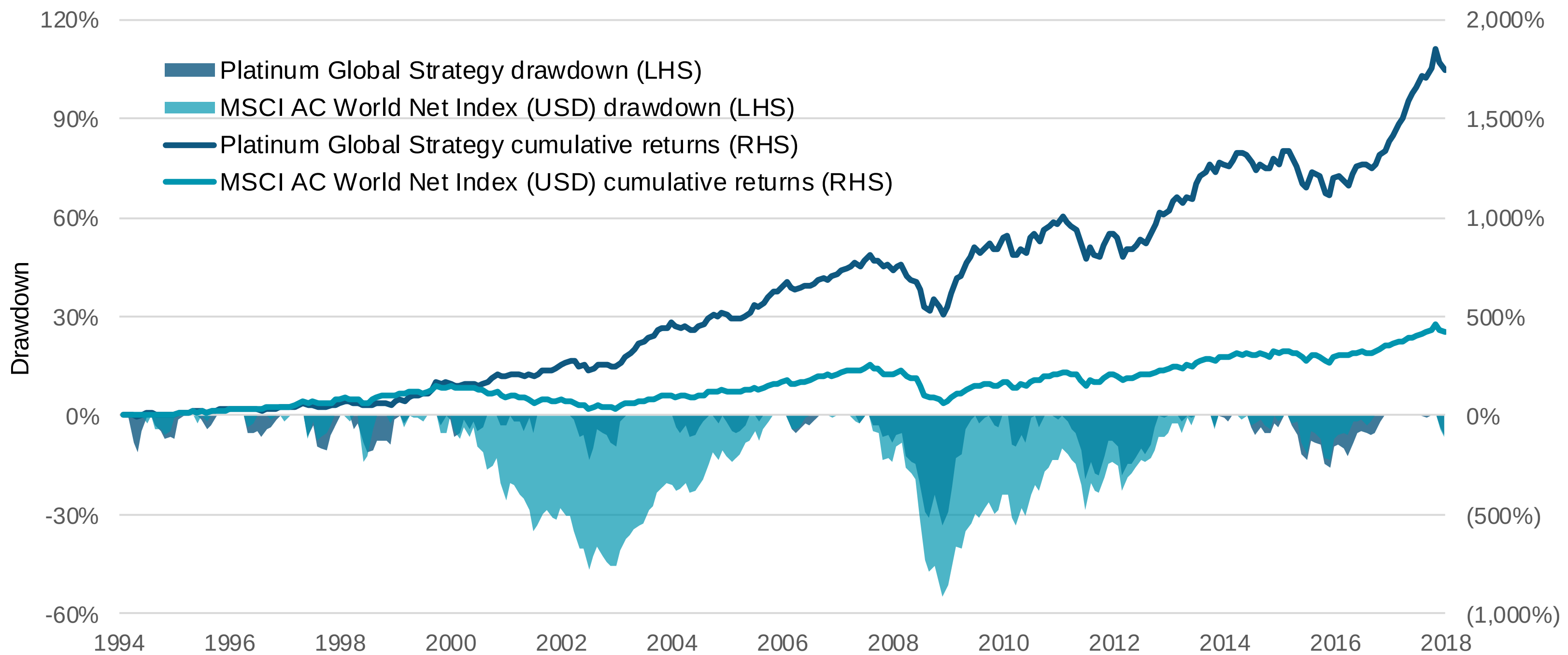


Source: Bloomberg, FacSet, Platinum Investment Management Limited
Note: Market capitalisation of Chevron, Exxon, Shell, BHP and Rio Tinto versus all listed US equities.

Platinum Global Strategy

Performance as at 31 May 2018 (net, AUD & USD)

	3 Months	6 Months	Calendar YTD	1 Year	2 Years pa	3 Years pa	5 Years pa	10 Years pa	Since Inception pa
Platinum International Strategy AUD	-0.15%	1.49%	1.82%	14.20%	16.01%	8.32%	13.89%	10.53%	12.94%
MSCI AC World Net Index in AUD	*1.87%*	*2.06%*	*3.48%*	*10.03%*	*12.18%*	*7.94%*	*14.16%*	*7.41%*	*6.78%*
Platinum World Portfolios - International USD	-2.14%	2.12%	-0.38%	15.51%	16.91%	-	-	-	11.55%
MSCI AC World Net Index in USD	*-1.08%*	*1.72%*	*0.11%*	*11.84%*	*14.65%*	*-*	*-*	*-*	*12.05%*



Source: Platinum and Factset Research Systems. Global Strategy returns are USD composite returns, net of fees. The fees of the performance fee class (Class A) of the Platinum World Portfolios have been used as a proxy to calculate the net returns for the Global Strategy. Index returns are net and shown in USD, except gross index returns were used prior to December 1998. Refer to the Disclaimer slide for details of the returns calculation methodologies. **Past performance is not a reliable indicator of future performance.** 'Drawdown' shows the cumulative loss at a point in time from the point of the immediately preceding performance high. Since inception is March 1994.

Swiss Qualified Investor

Additional information for Qualified Investors in Switzerland

Platinum World Portfolios plc (the "Company") is an investment company with variable capital incorporated with limited liability in Ireland with registered number 546481 and established as an umbrella fund with segregated liability between sub-funds pursuant to the European Communities (Undertakings for Collective Investment in Transferable Securities) Regulations 2011 (as amended). The Company and its sub-funds are available for distribution to qualified investors (as defined in the Swiss Collective Investment Schemes Act of 23 Jun 2006) in and from Switzerland. The Company's Swiss representative is Fundbase Fund Services AG, Bahnhofstrasse 3, CH-8808 Pfaeffikon SZ. The Fund's Swiss paying agent is Neue Helvetische Bank AG, Seefeldstrasse 215, CH-8008 Zurich. Qualified investors in Switzerland can obtain the binding documents of the Company and its sub-funds (such as the prospectus, key investor information documents (KIIDs) and financial statements) and marketing material about the Company free of charge from the Company's Swiss representative. The Company's country of domicile is Ireland. In respect of the shares of the Company distributed in or from Switzerland, the place of performance and jurisdiction is the location of the registered office of the Company's Swiss representative. This document may only be issued, circulated or distributed so as not to constitute an offering to the general public in Switzerland. Recipients of this document in Switzerland should not pass it on to anyone without first consulting with their legal or other appropriate professional adviser and with the Fund's Swiss representative.

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Life in 2030

FUSION'S MISSION

SUPERCHARGING INNOVATORS

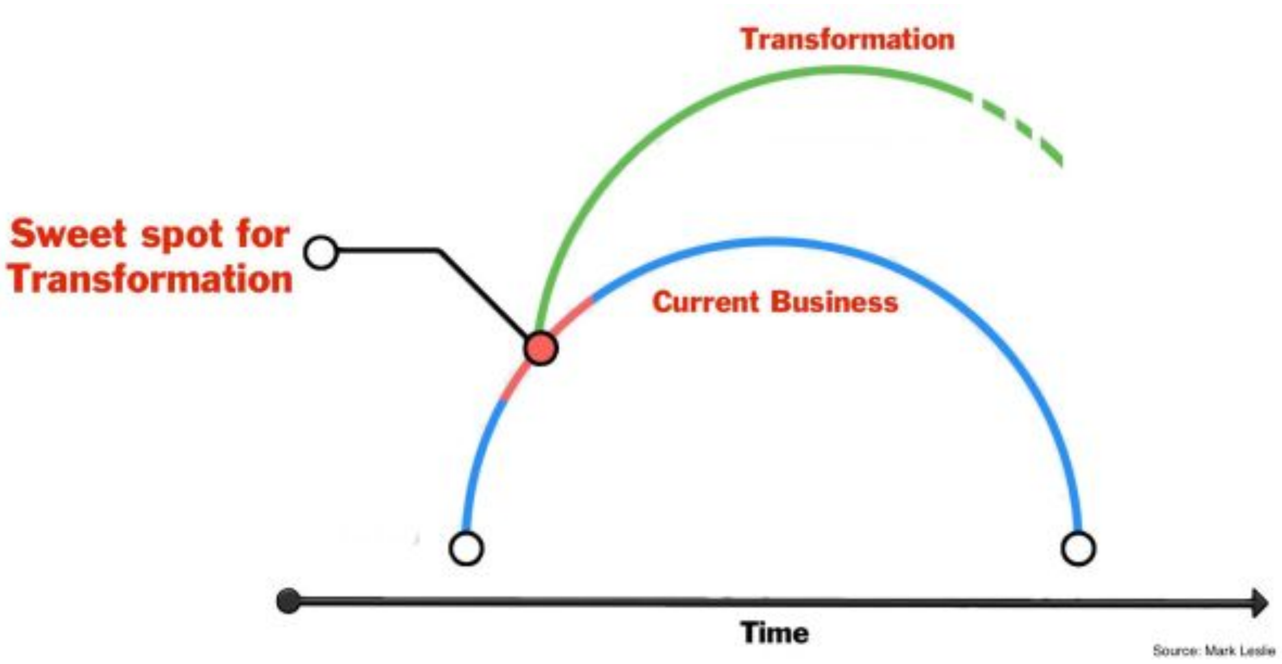
FUSION

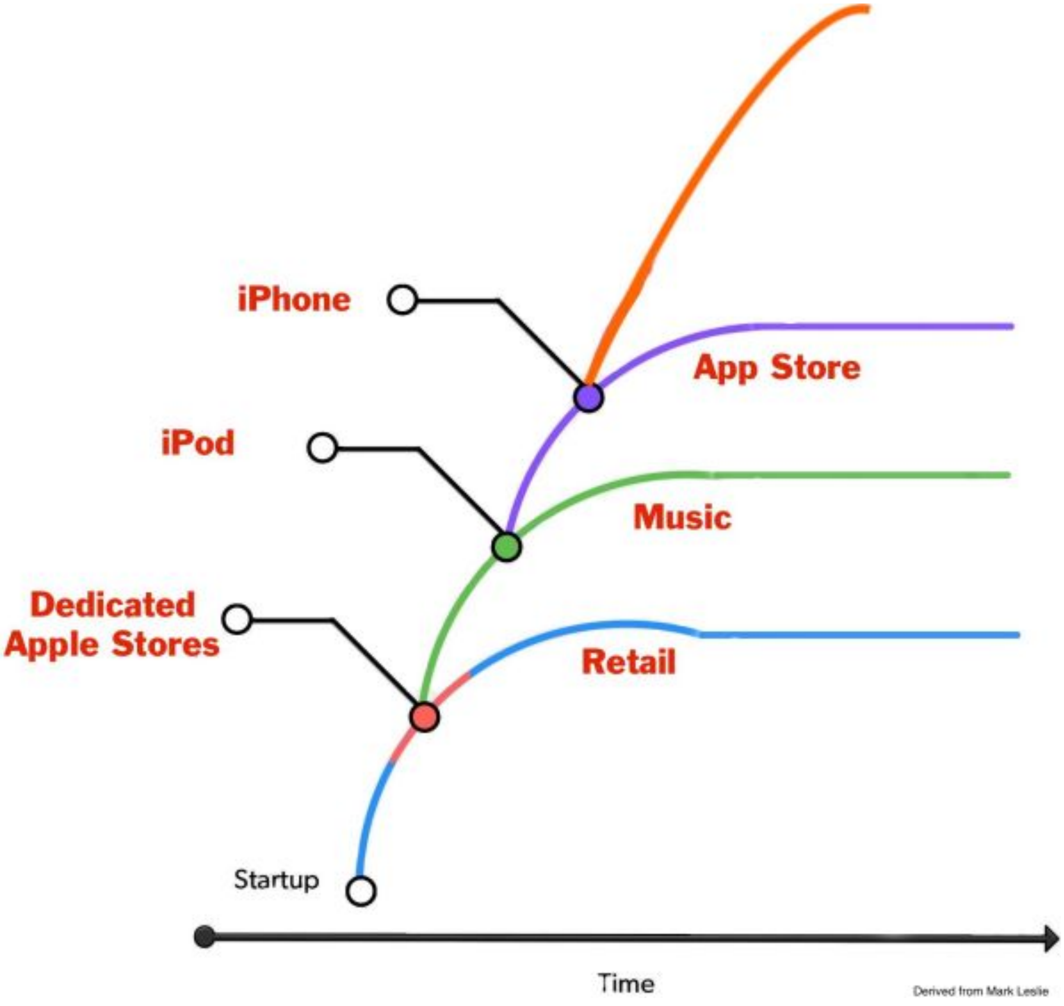
VERTICAL ECOSYSTEMS

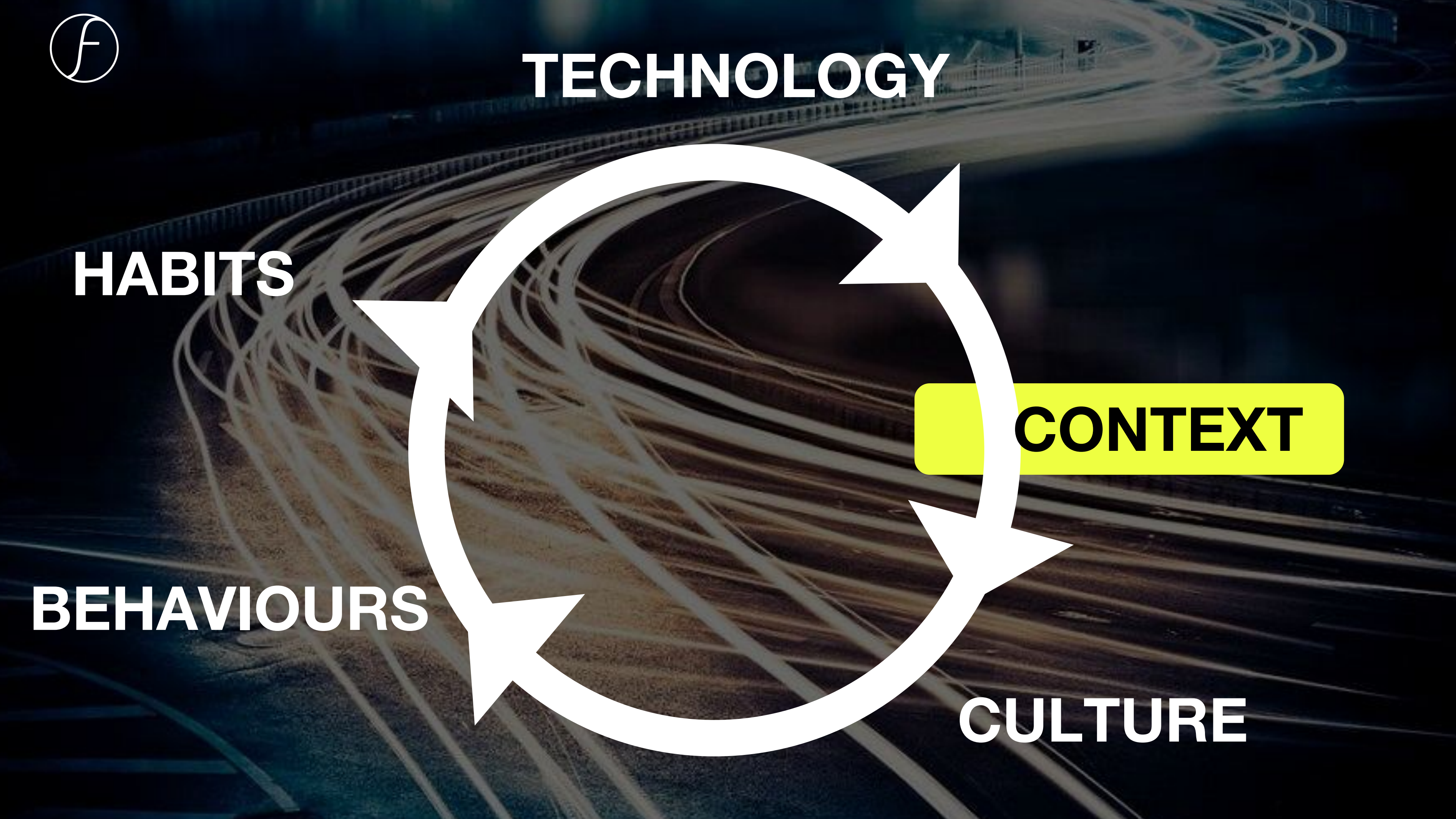
POLYTECH ECOSYSTEM
VENTURES

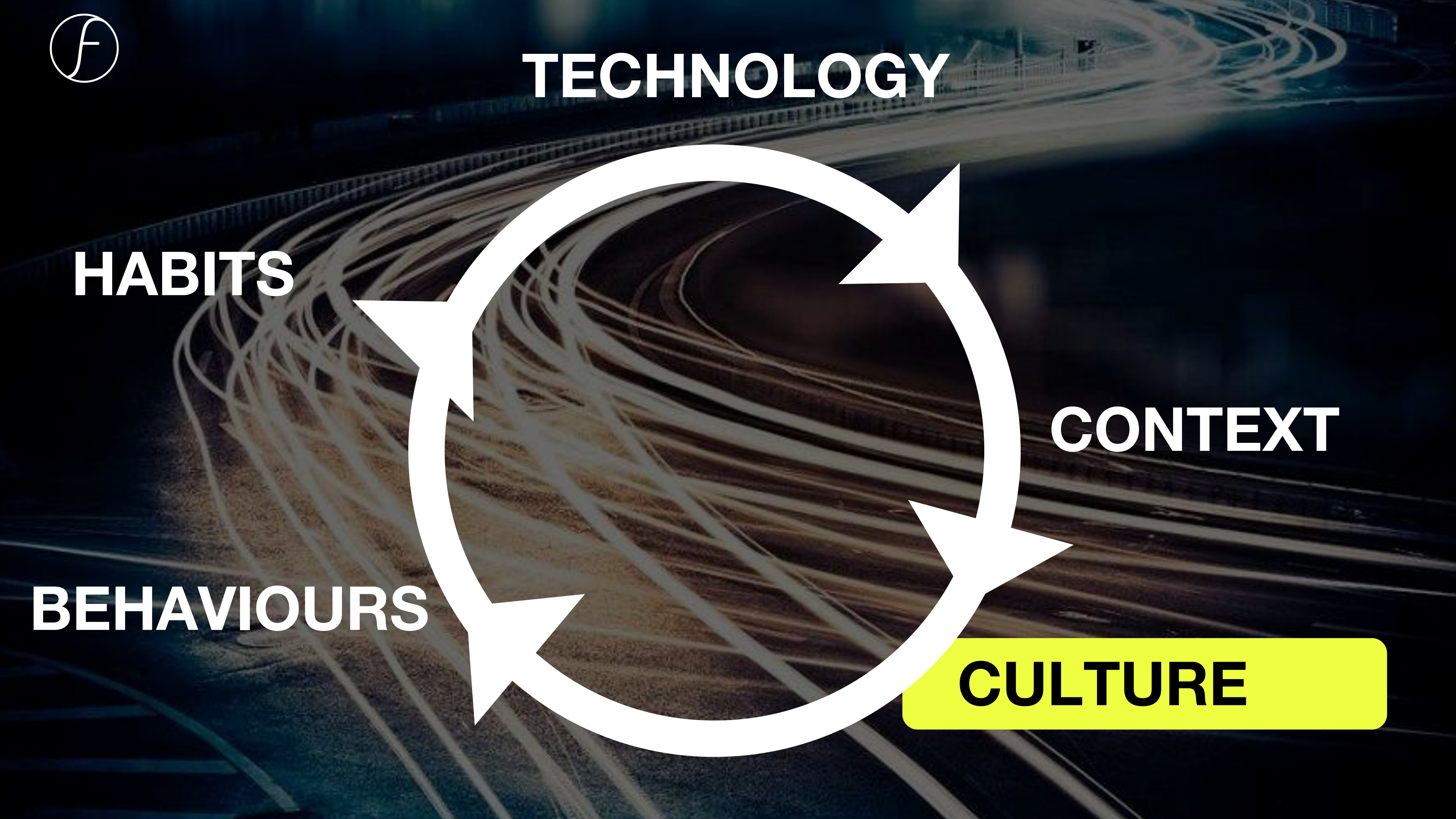
FUSION


WHY IS IT
IMPORTANT
FUSION


Transformation
Sweet spot for Transformation
Current Business
Time
Source: Mark Leslie


iPhone
App Store
iPod
Music
Dedicated
Apple Stores
Retail
Startup
Time
Derived from Mark Leslie


TECHNOLOGY
CONTEXT
CULTURE
BEHAVIOURS
HABITS


TECHNOLOGY
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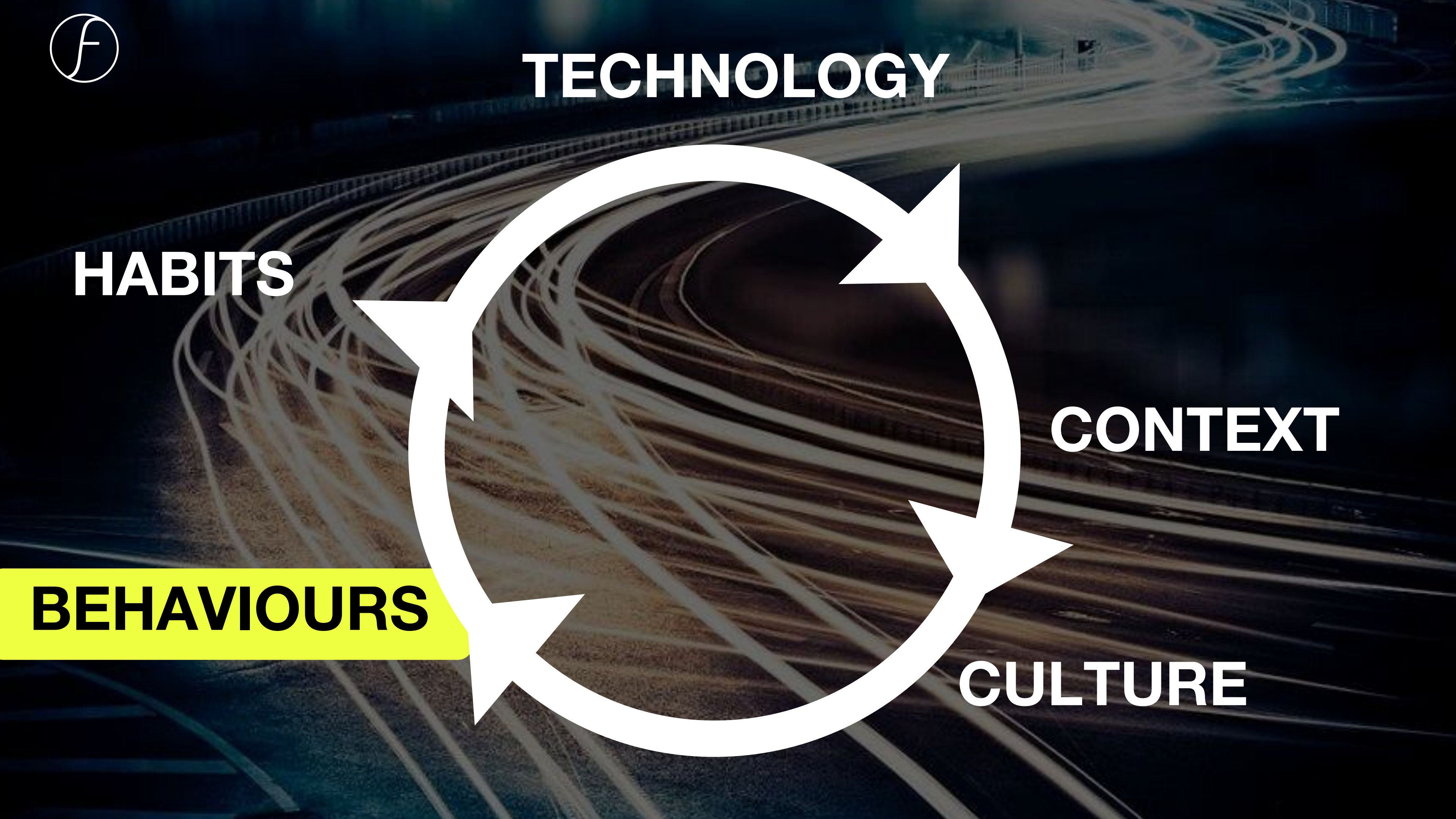
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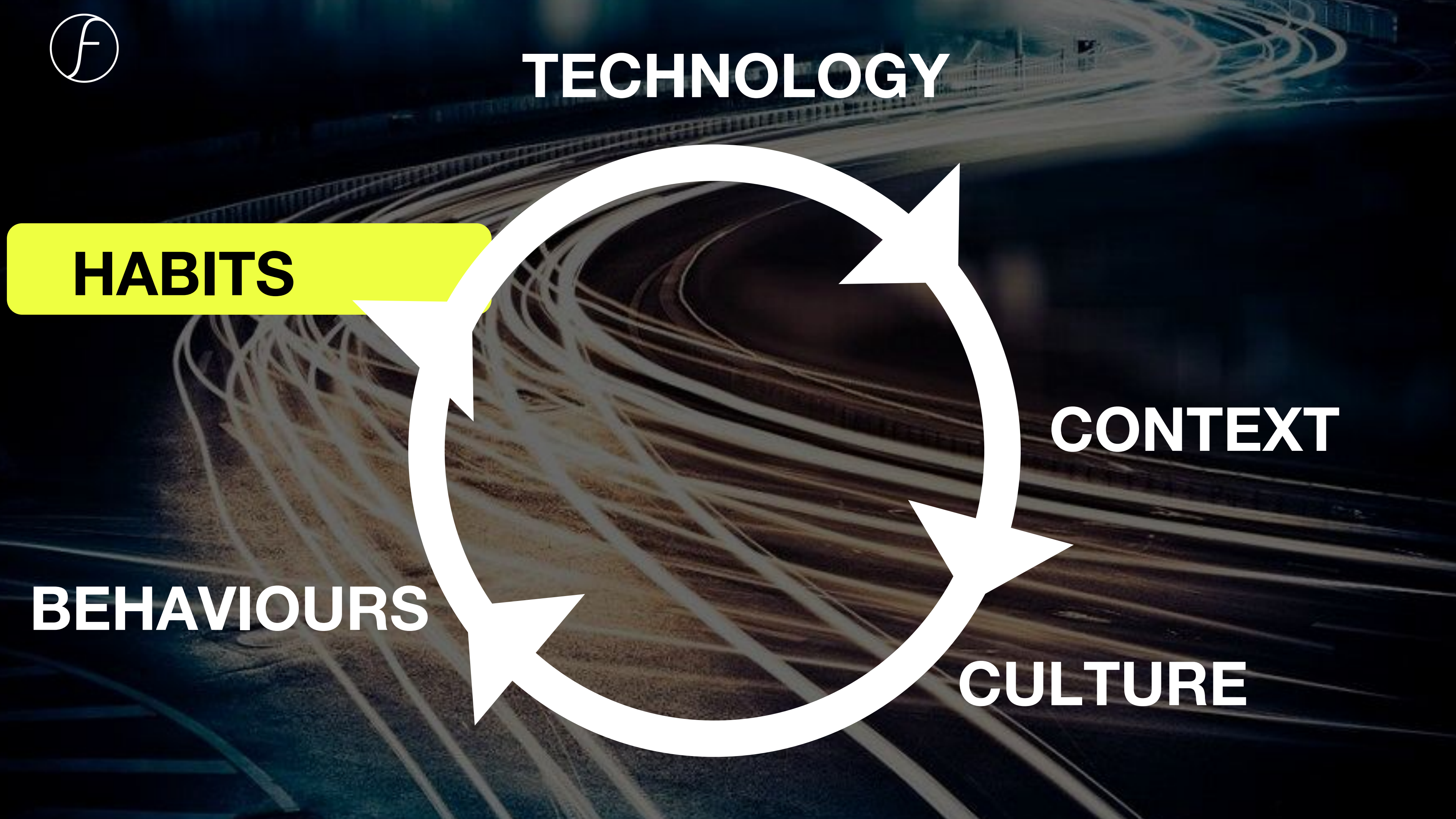
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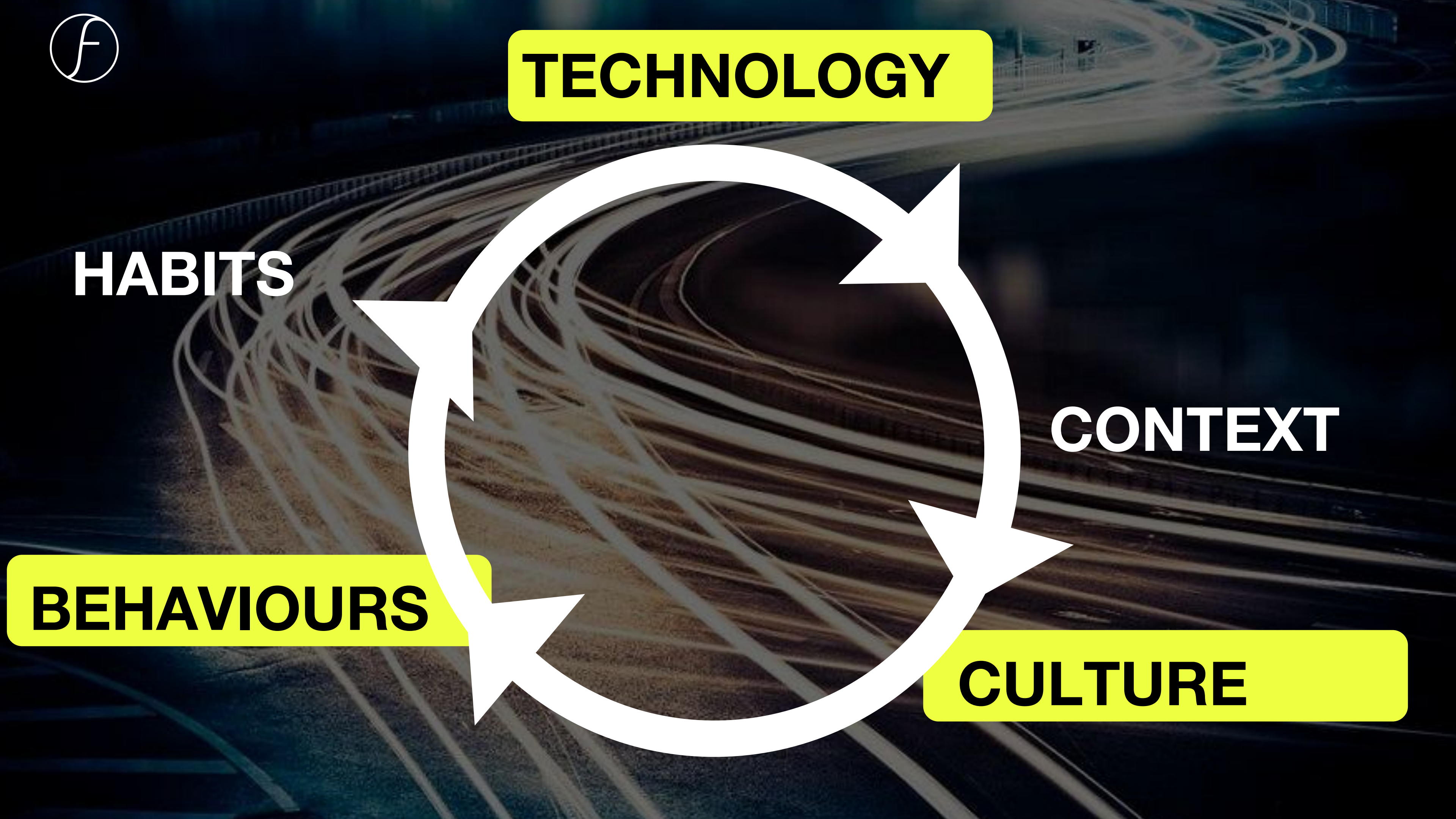

TECHNOLOGY
HABITS
CONTEXT
BEHAVIOURS
CULTURE

Life in 2030 Tech

- * Blockchain
  * Internet of everything
  * Internet of Marketplaces
  * AI & Robots (Alexa, etc)
  * API and Open data (we see open banking with PSD2, we'll see open data for health or insurance)
  * Genomics (Crispr)
  * Replace organs (ability to grow organs). 3D printed organs
  * Anti aging
  * Drones
  * Virtual reality
  * Hacking will become life threatening

Life in 2030 Behaviours

- * On demand
  * Self service (I google by myself)
  * Peer recommendation
- * Transparency
  * Organic death will decrease but Mental disorder (depression) disability will increase
  * 4hour week

Habitat

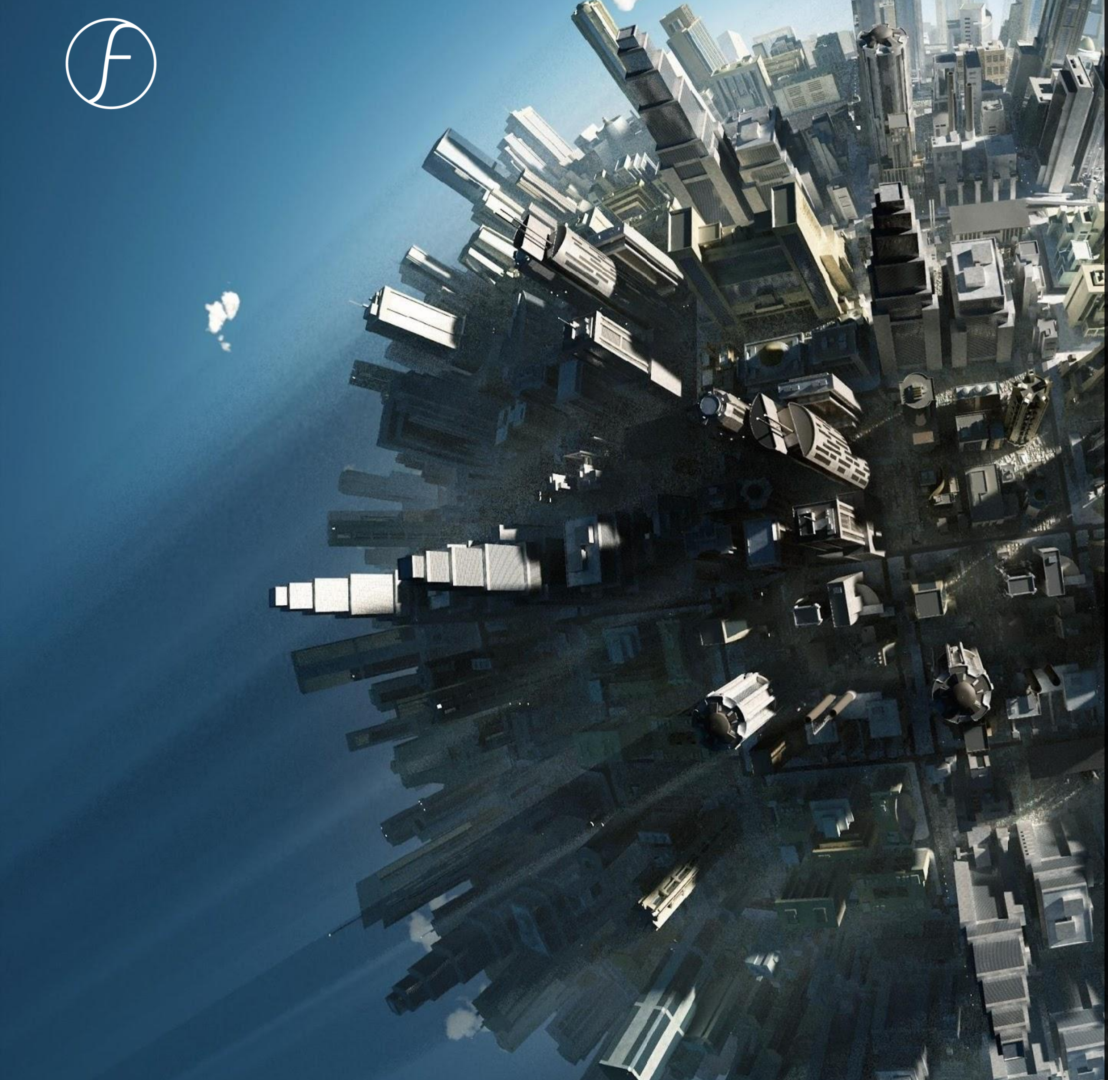

Vertical
Cities

Cities will be smarter driven by IoT and Big Data

Vertical Farming is widespread

Hydroponic Offices

NASA Wheel Garden

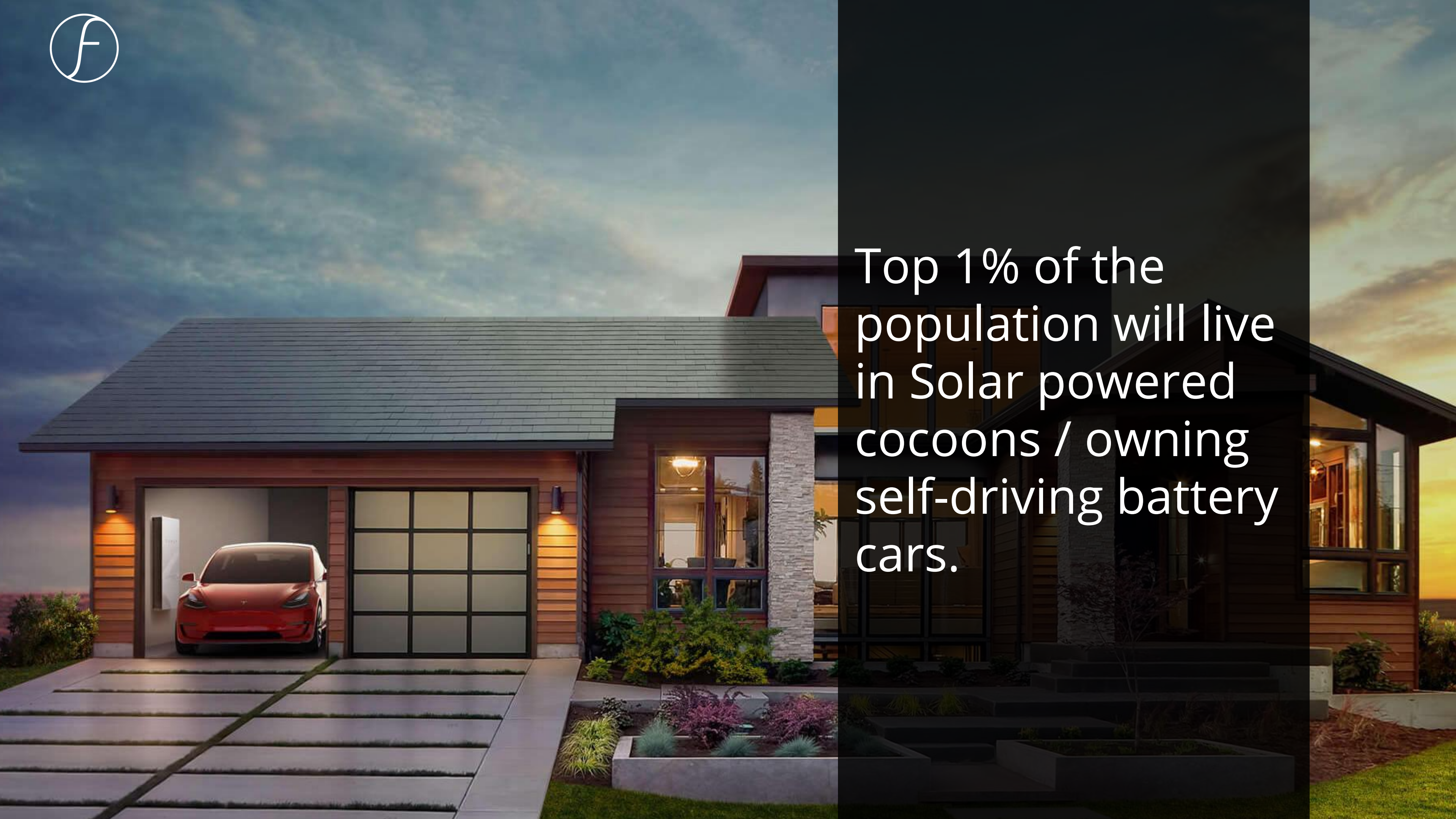


- Safer living environments
- Less pollution
- Less traffic congestion
- Real time service networks

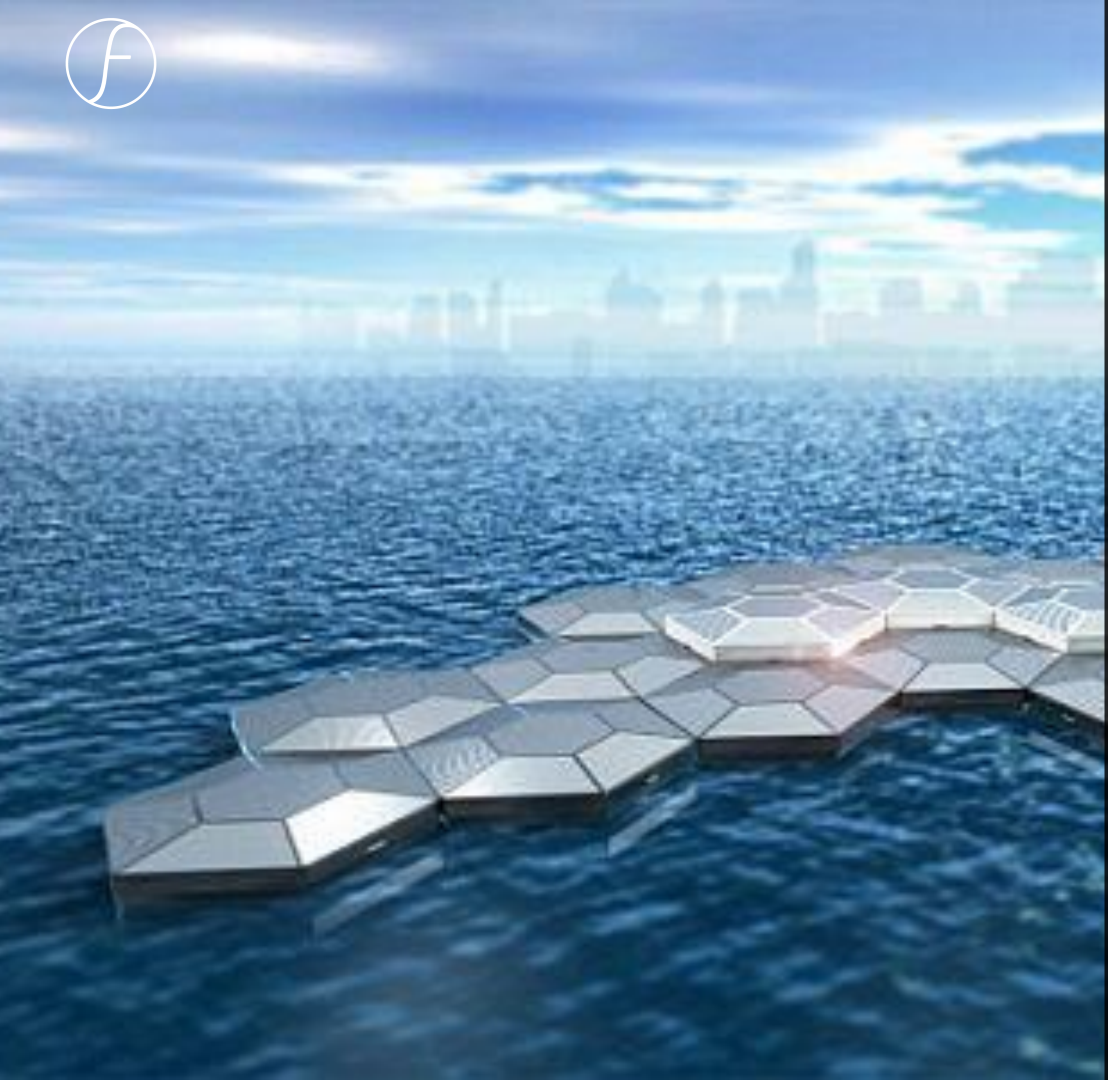

UTILITIES & Commodities

Solar, Wind & Fusion have become the main source of Energy creation.

Cost of Energy has dropped to 0.1 $



Top 1% of the population will live in Solar powered cocoons / owning self-driving battery cars.

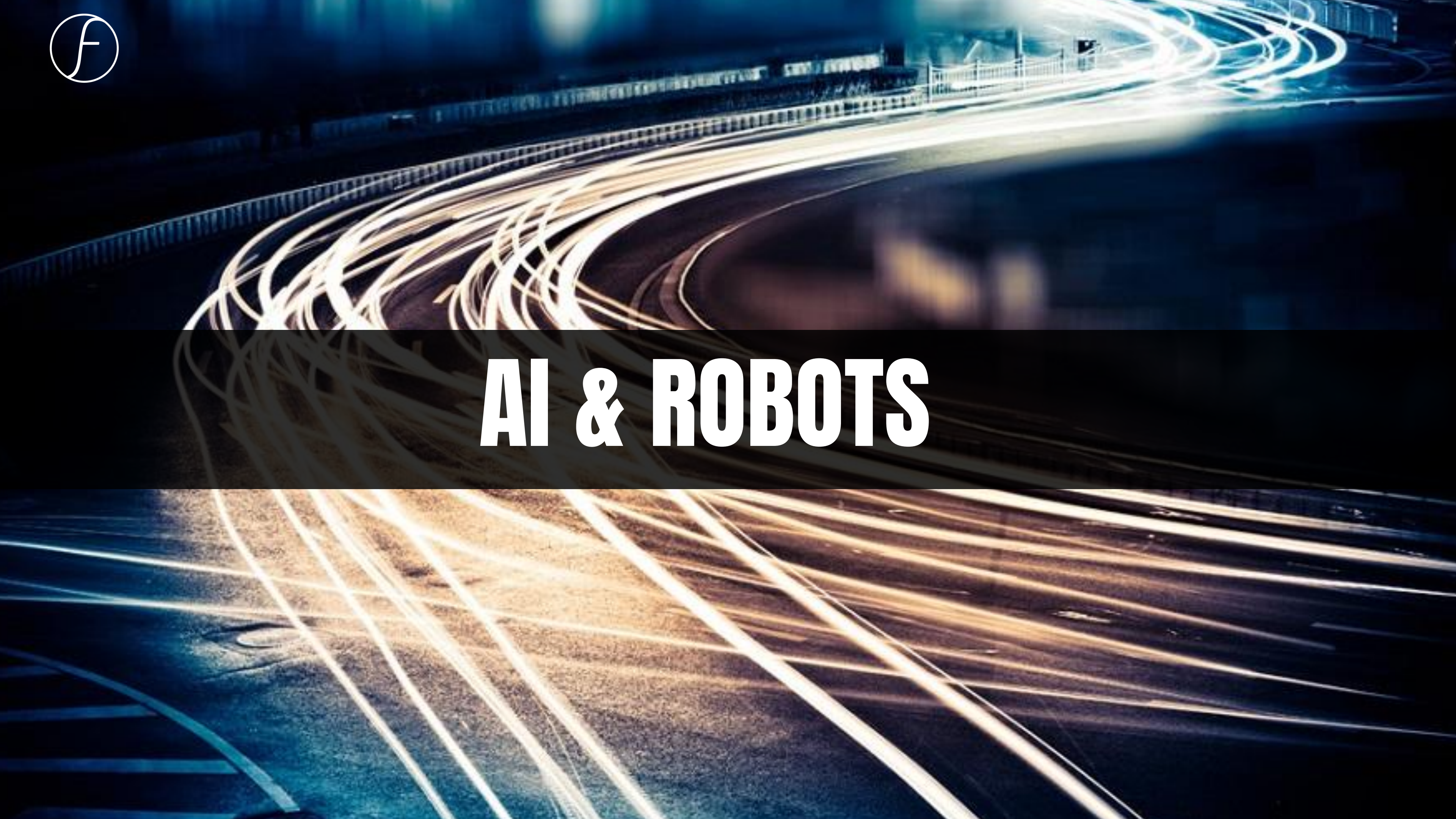


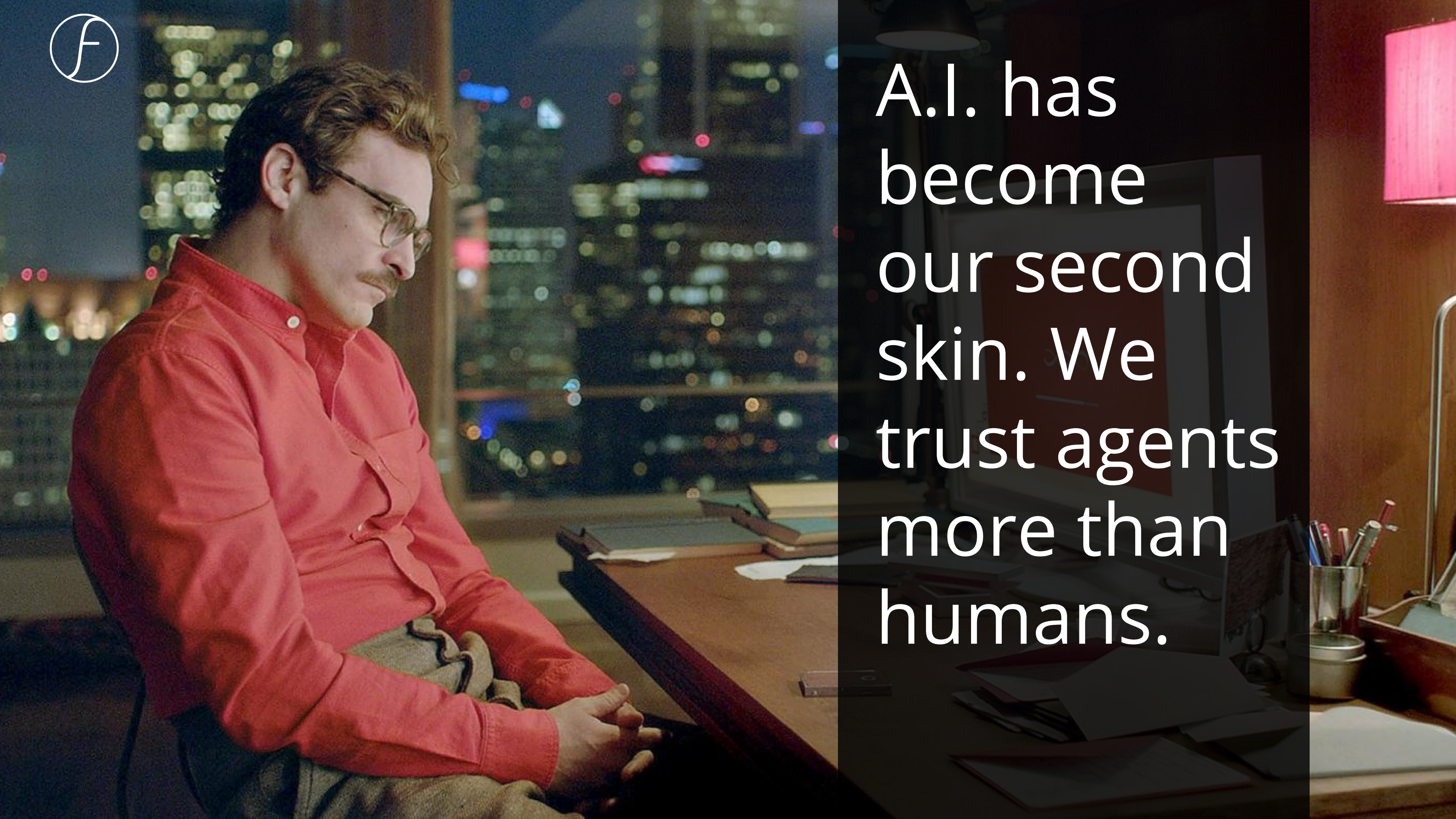
Cost of producing clean water with desalination becomes close to 0

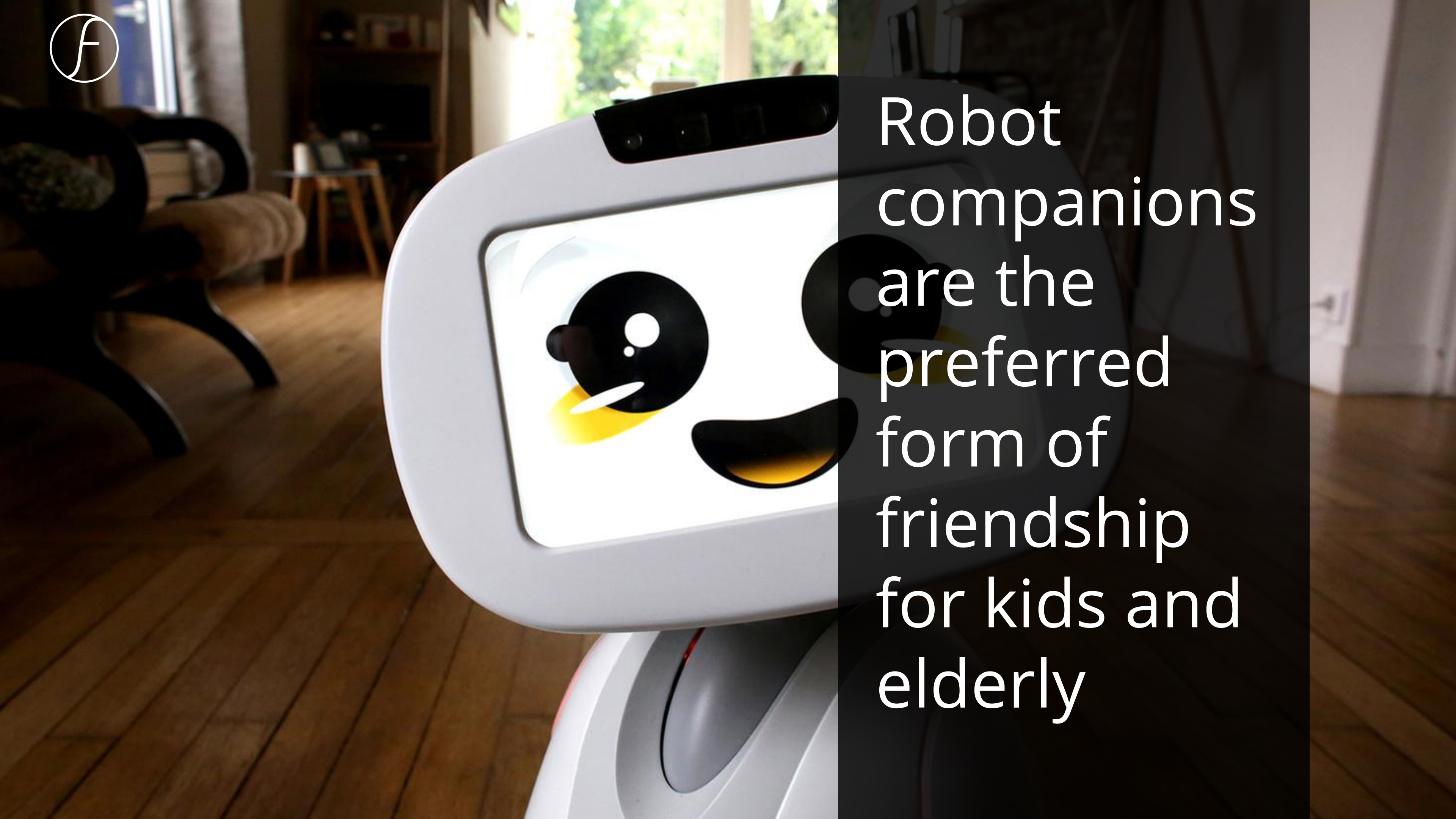
Powered by free energy.

With Solar + Free Water, Food production costs drops to all time lows.


Lab-grown meats make up 50% of the meat production at a fraction of the cost.
More sustainable and accessible for all.

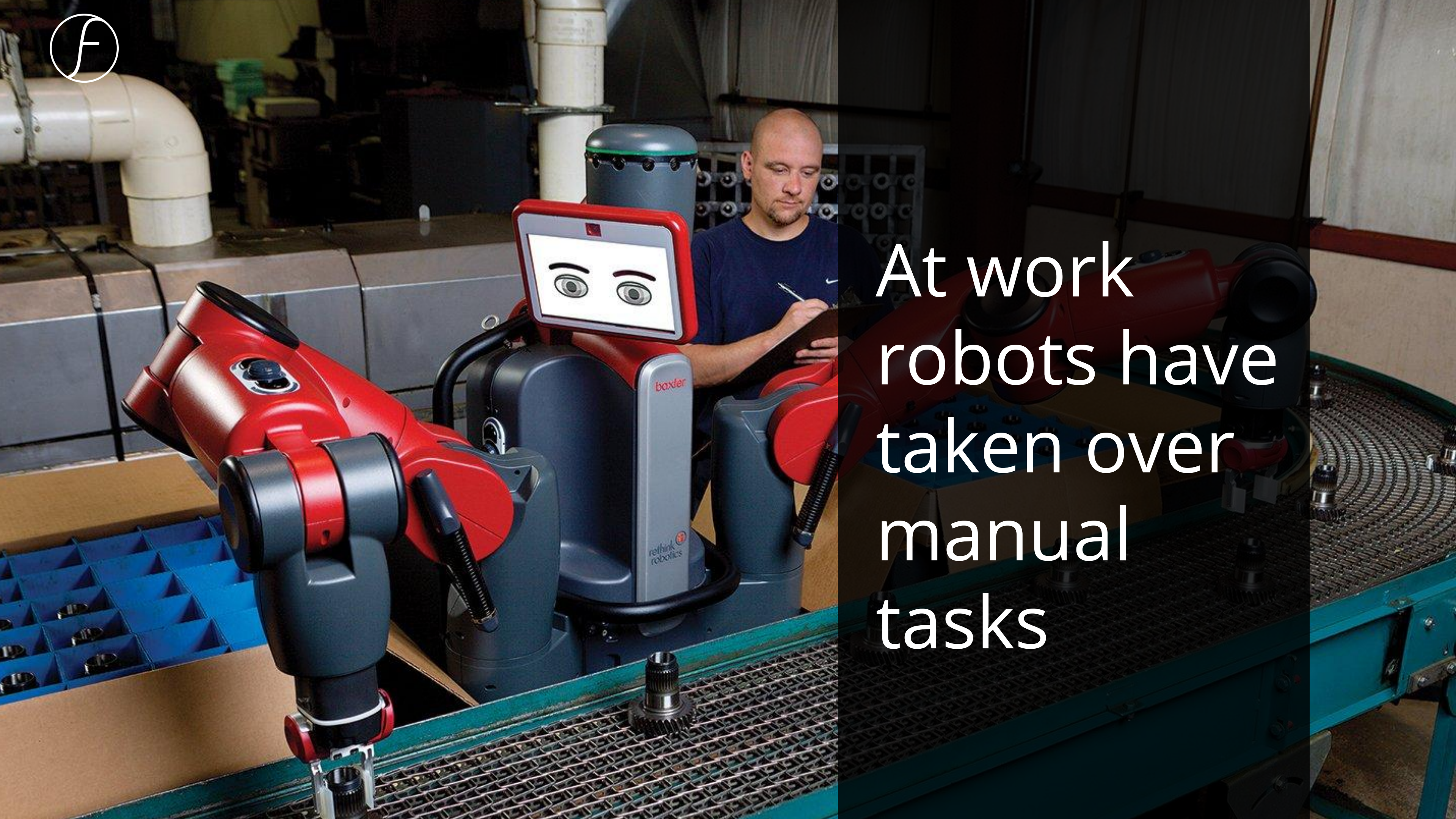

AI & ROBOTS


A.I. has become our second skin. We trust agents more than humans.



Robot companions are the preferred form of friendship for kids and elderly

Police patrol robot is connecting with Cameras & autonomous vehicles

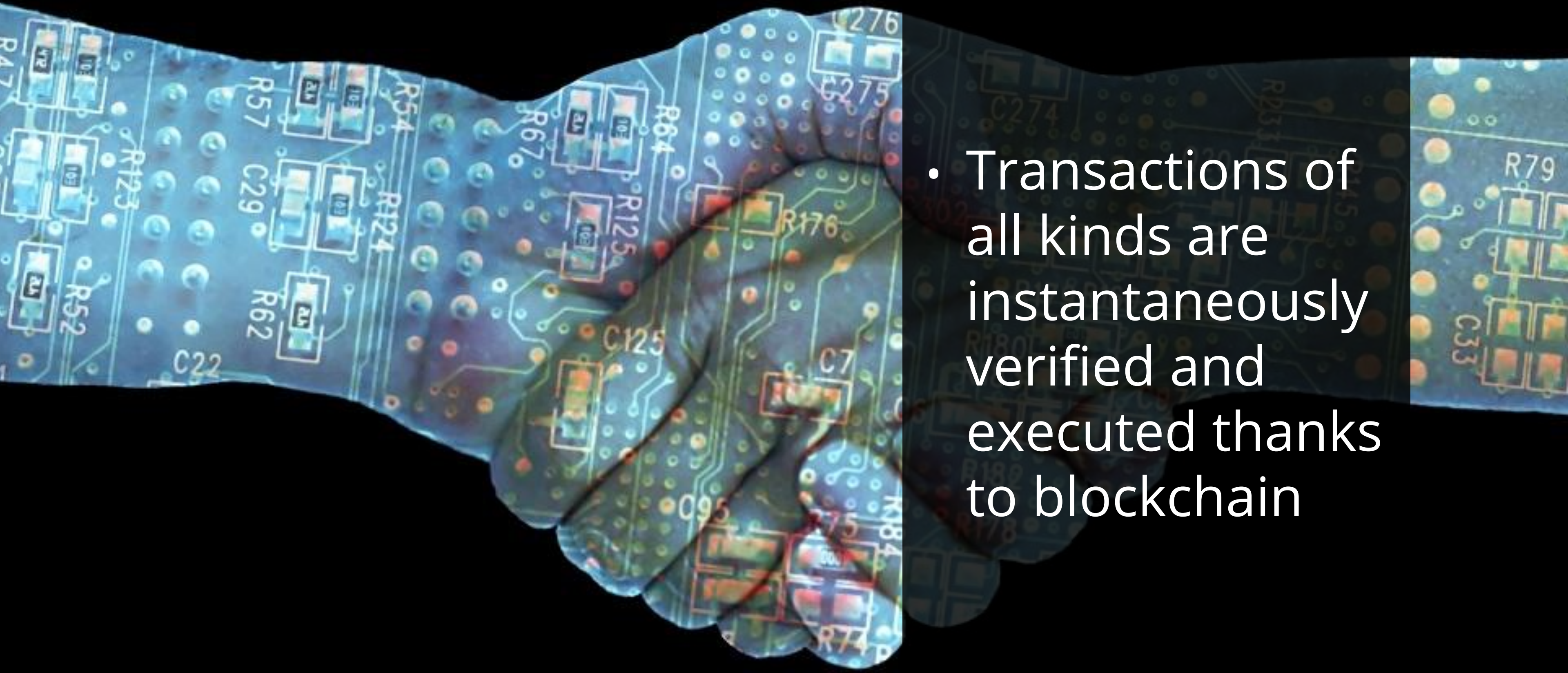


At work robots have taken over manual tasks

...and cater for patients in hospitals

BLOCKCHAIN

Blockchain has become Ubiquitous & key to trusted networks



- Transactions of all kinds are instantaneously verified and executed thanks to blockchain

Citizens

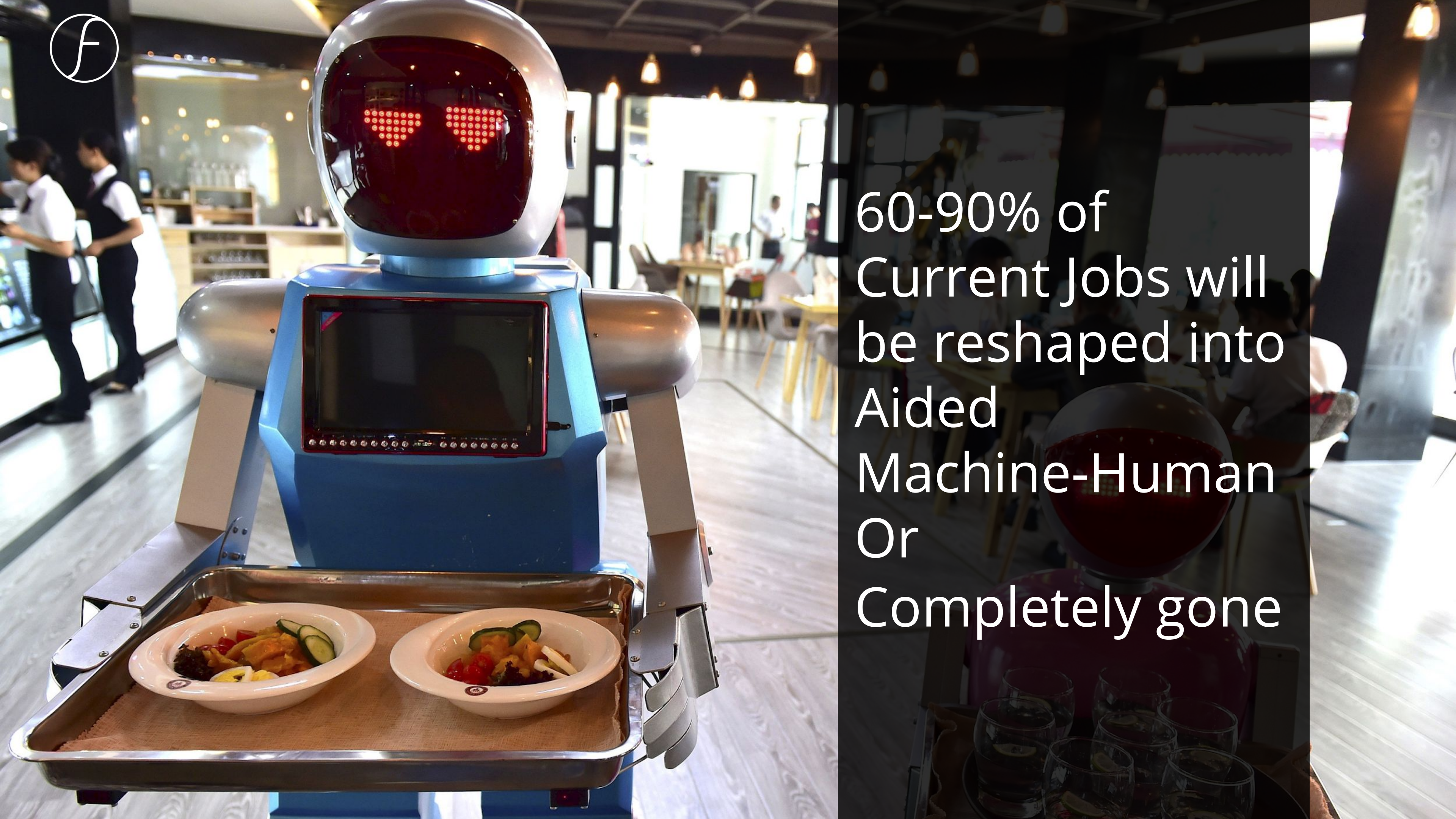
#1 India
#2 China
#3 Nigeria


8.5 billion
people,
growing older.
There will be
more of us

Language of 8.5 billion people:

1.39b —Chinese
588m —Hindi
572m —English
467m —Arabic
389m —Spanish
250m —Bengali


Global population
aged 60+ years
2030: 1.4 billion
2050: 2.1 billion
2100: 3.2 billion



60-90% of
Current Jobs will
be reshaped into
Aided
Machine-Human
Or
Completely gone


Health, Fitness & Wellness

- Wearable tech & IOT will be a standard by 2030

- 2015 - 33 million
- 2030 - 1 billion

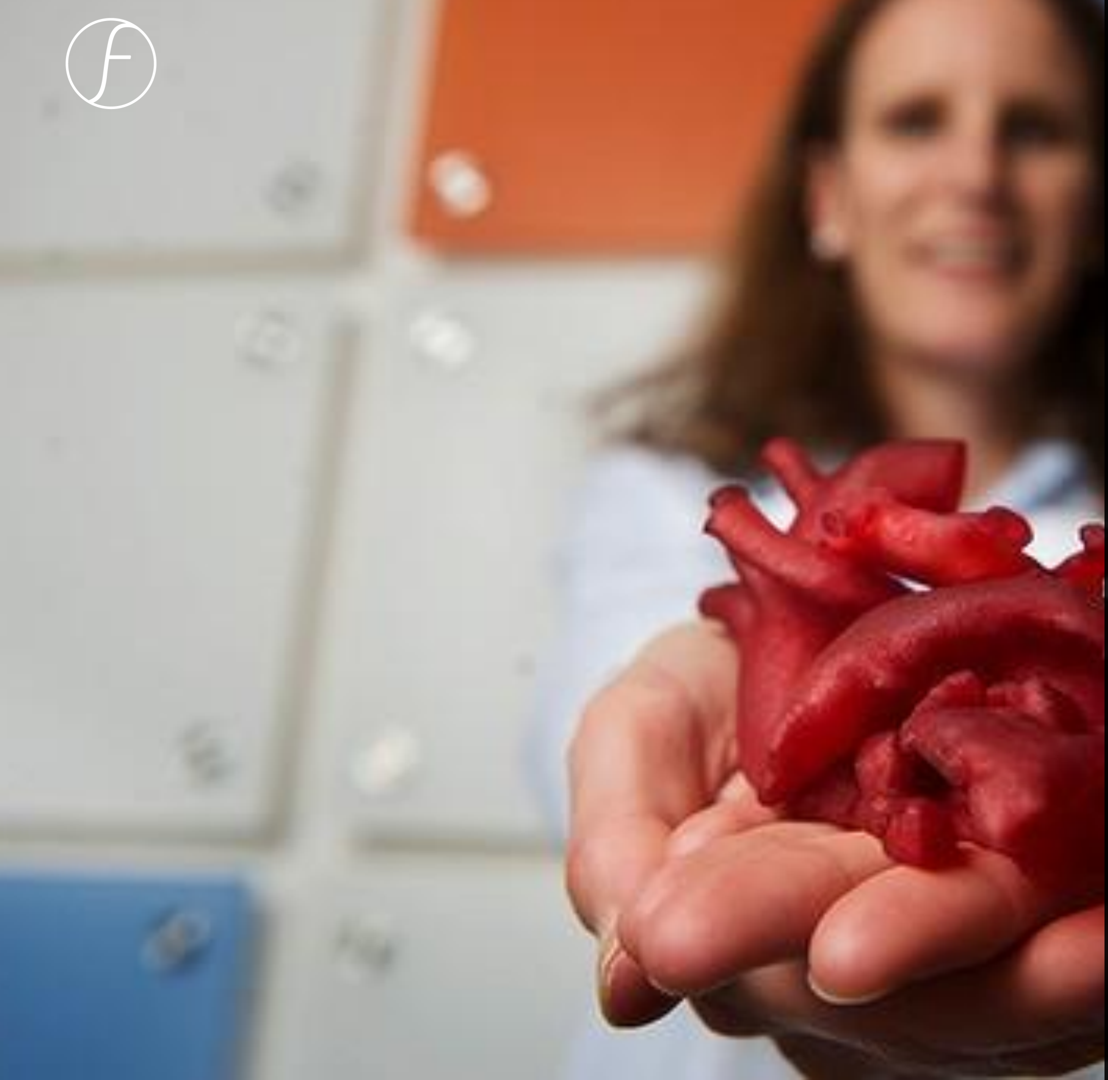
- Real-time healthcare
- Personal medicine and information


Medicine

CRISPR and Gene-editing have started reversing aging and are delivering personalized medicine

Nanotechnology is set to change the way we cure diseases and regenerate ourselves

AI is better than doctors at diagnosing illnesses including cancer



- 3D Printed organs is widespread and gives hope and a new life across the population


Space Exploration

Mars and Belt Colonies under way

Asteroid Mining
Is the new oil

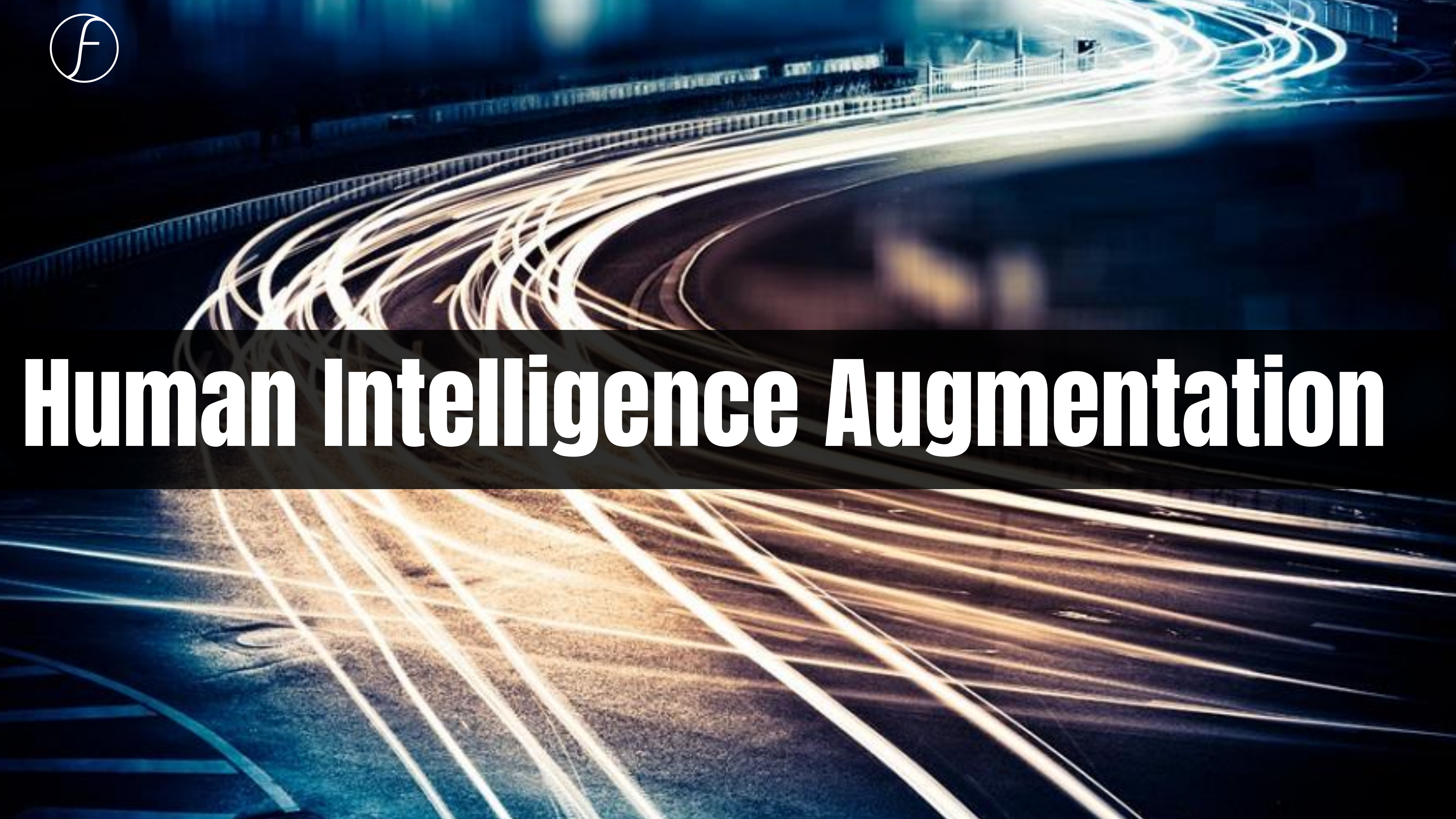
Work & Purpose

2030

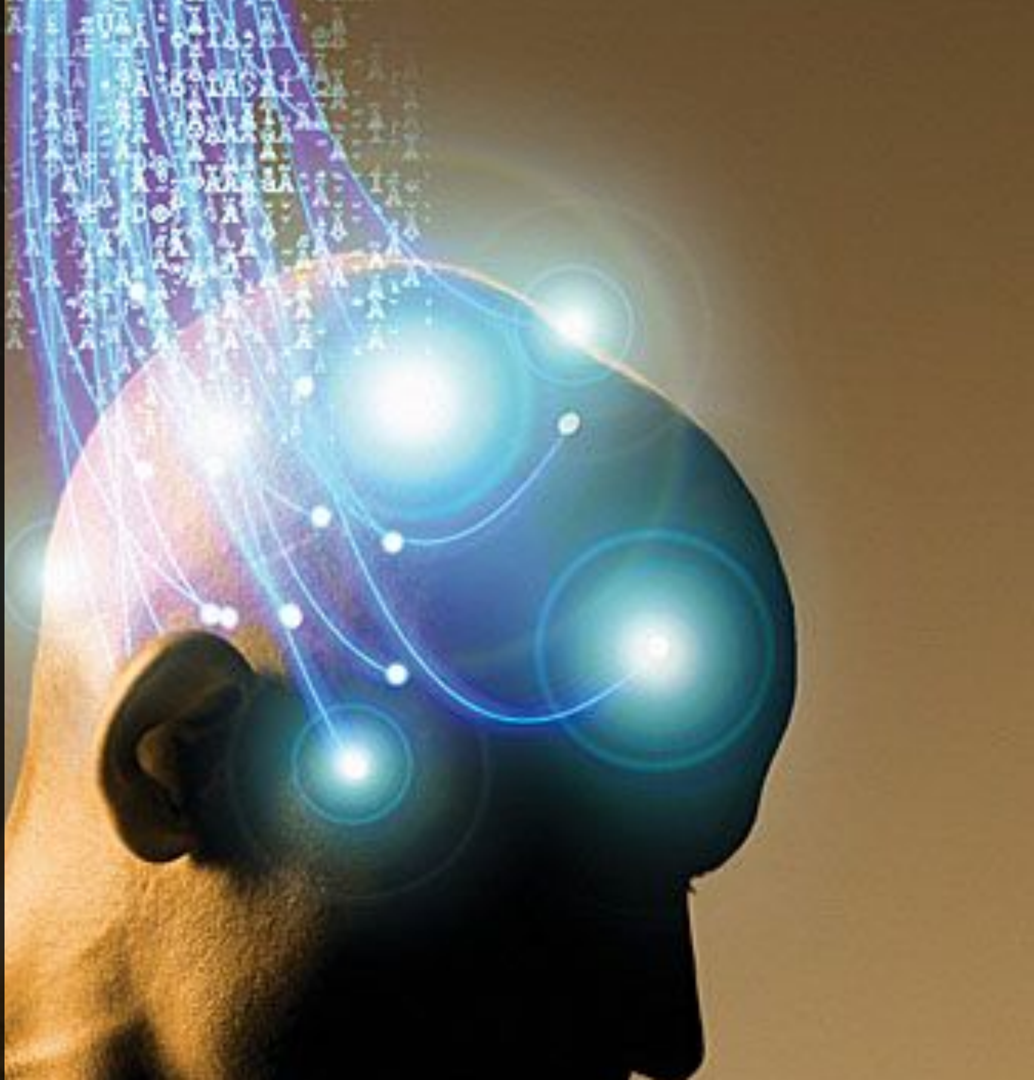
70% of the
Global workforce
will comprise of
Millennials

Millennials are steering developments for the upcoming 15 years

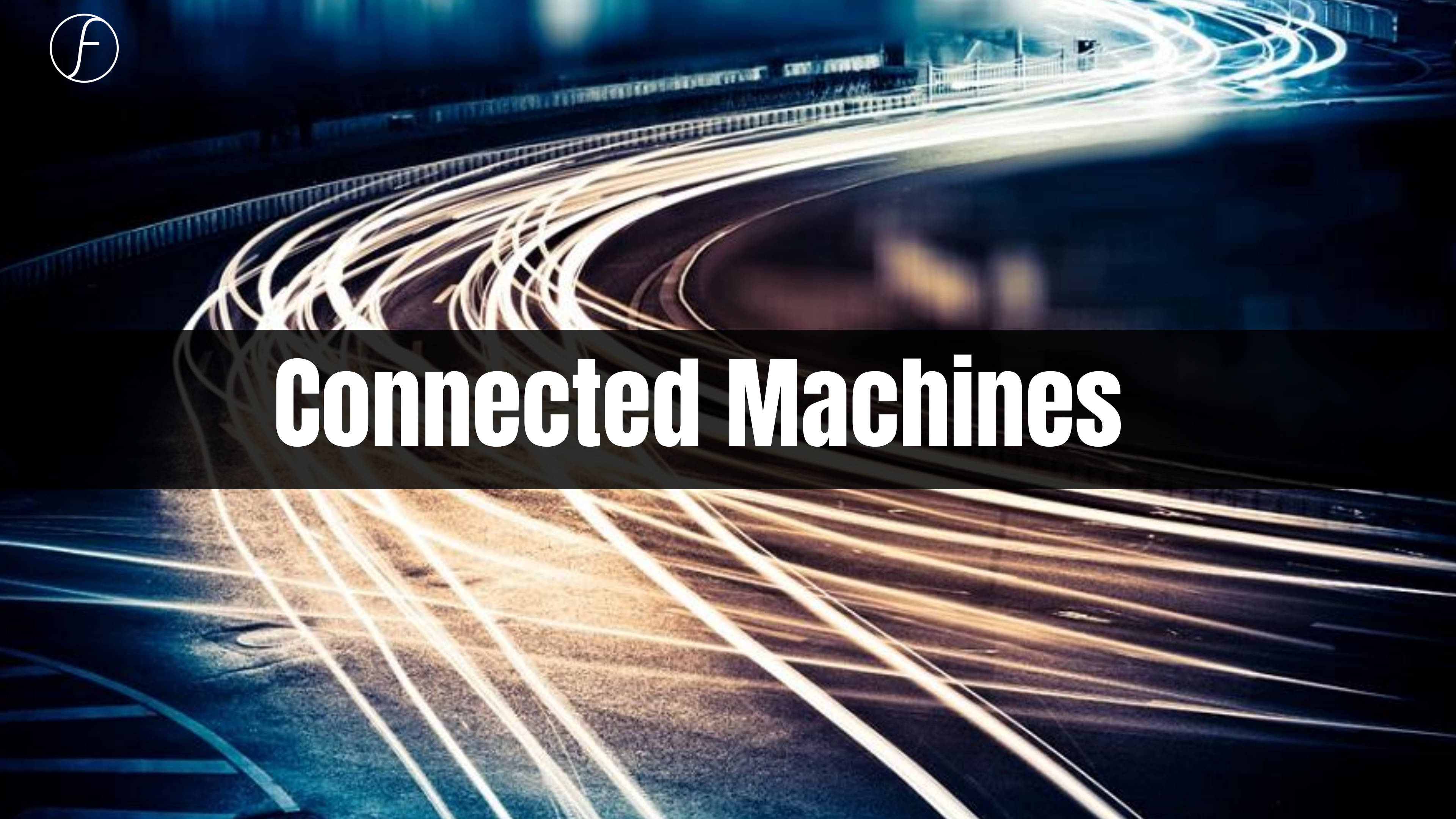
Generation Z will be too young to rule the world


Human Intelligence Augmentation

- Human Intelligence is augmented with direct brain implants



Connected Machines



- Digital ‘nervous system’ for interactions between people and machines
- Creating new kinds of applications and services

Number of ‘connected things’ in 2030:

+200 billion


2030: Asia Pacific will account for over 70% of mobile M2M connections

Transportation

Auto-nomous Vehicles

- 30-50% of cars using highly autonomous driving.


Increased safety, road capacity, fuel efficiency and reduced pollution

Risks

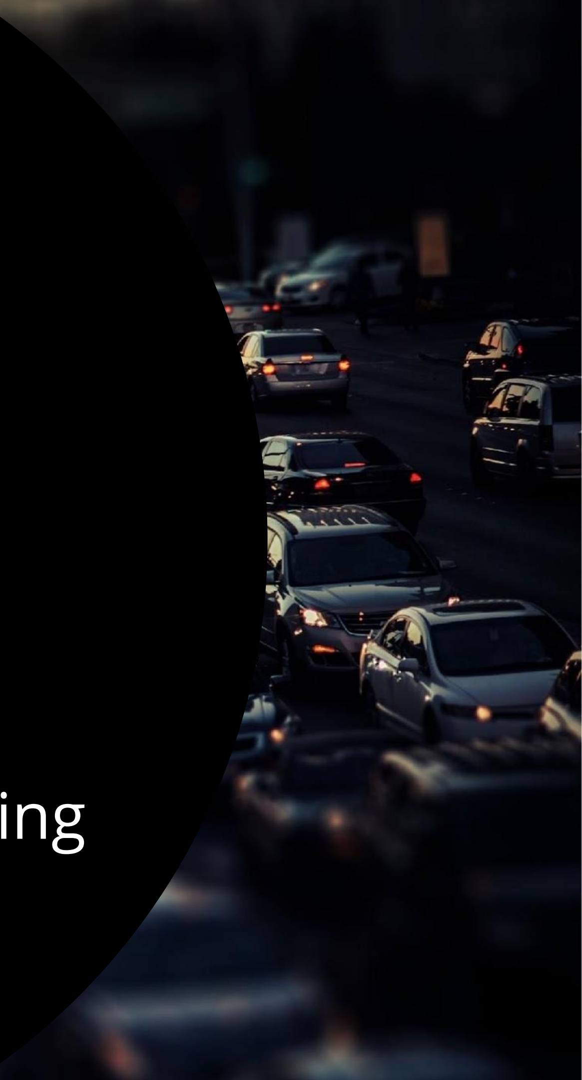
- System failures ("death by computer")
- Cyberterrorism
- Users taking additional risks when they feel safer.
- Increased travelling resulting from faster or cheaper cars

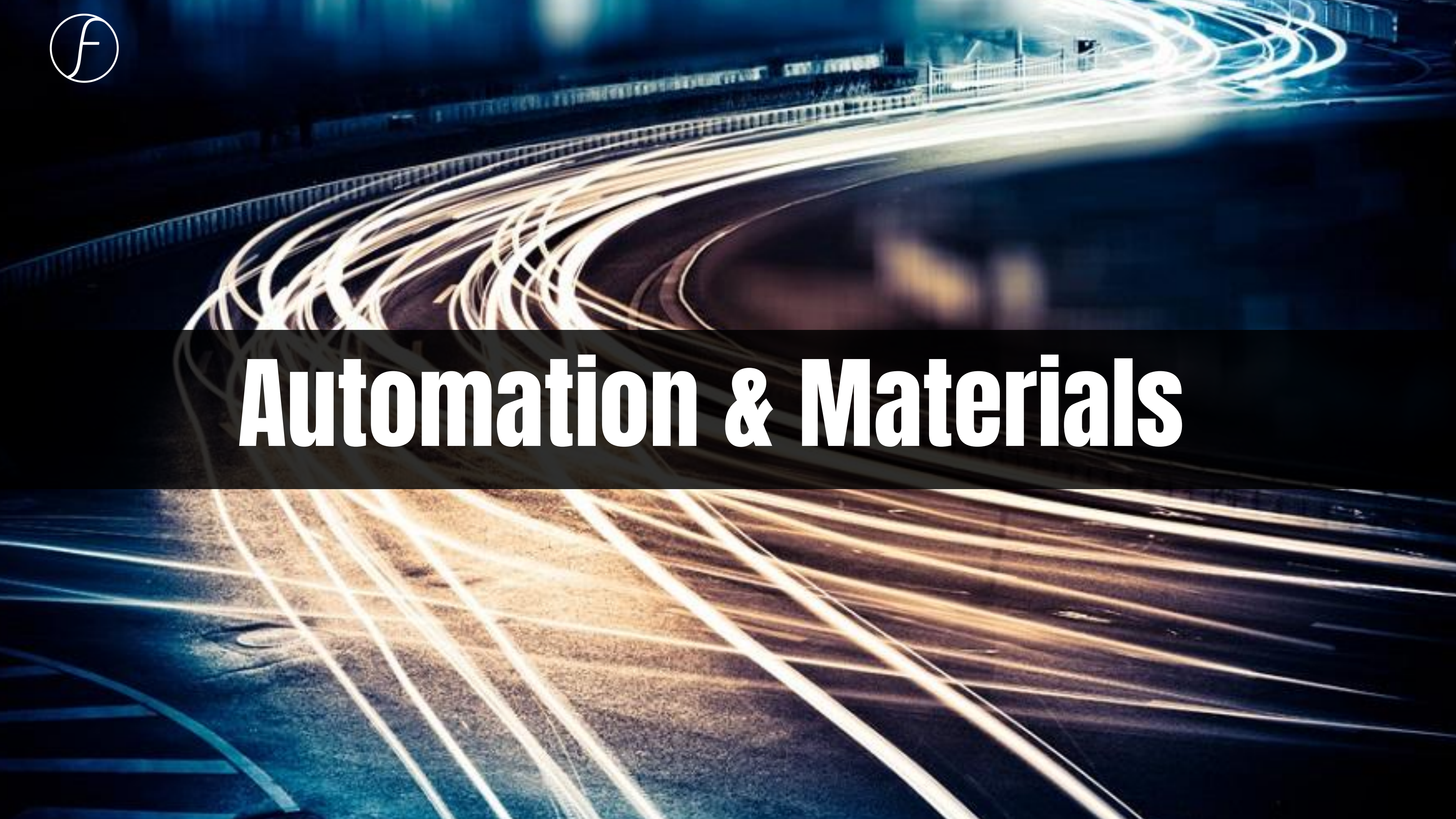
Industry will be key

- 2015: $77 billion
- 2030: $500 billion

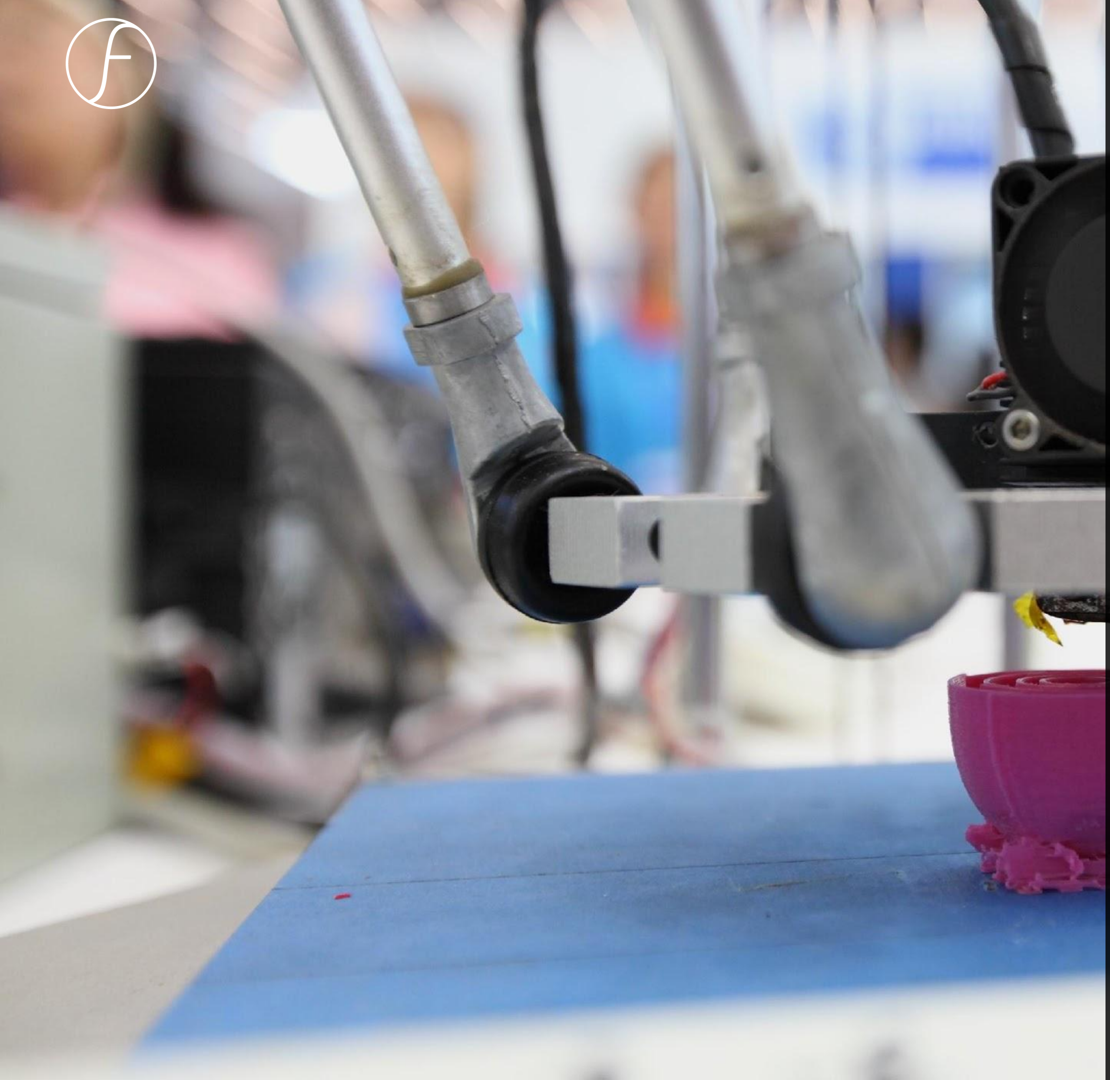
Future:

- 2030 - Implementation for taxis and car sharing
- 2040 - Dedicating some highway lanes
- 2050 - Change roadway design and management practices
- 2060 - Restrict human-driving





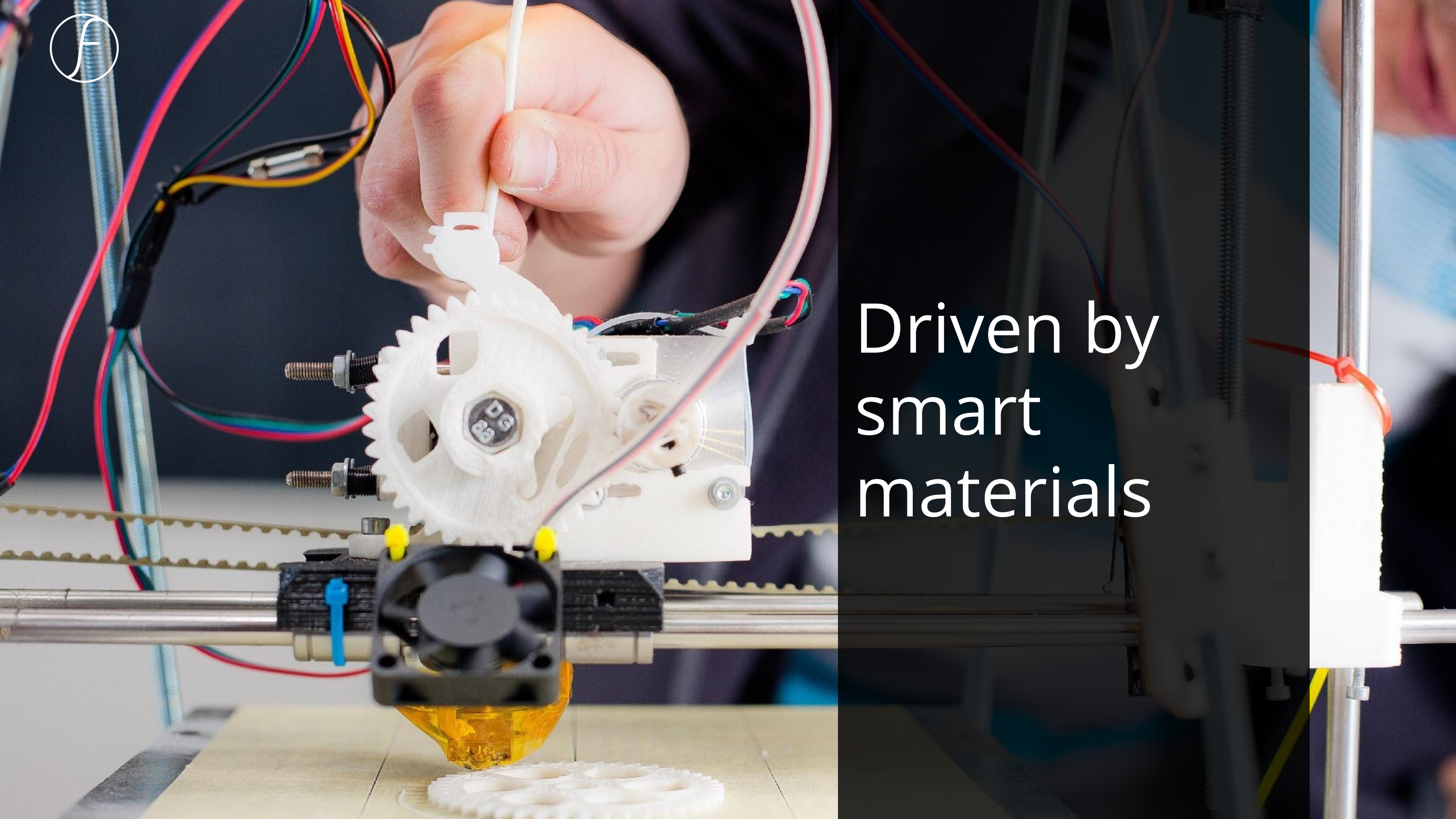
Automation & Materials

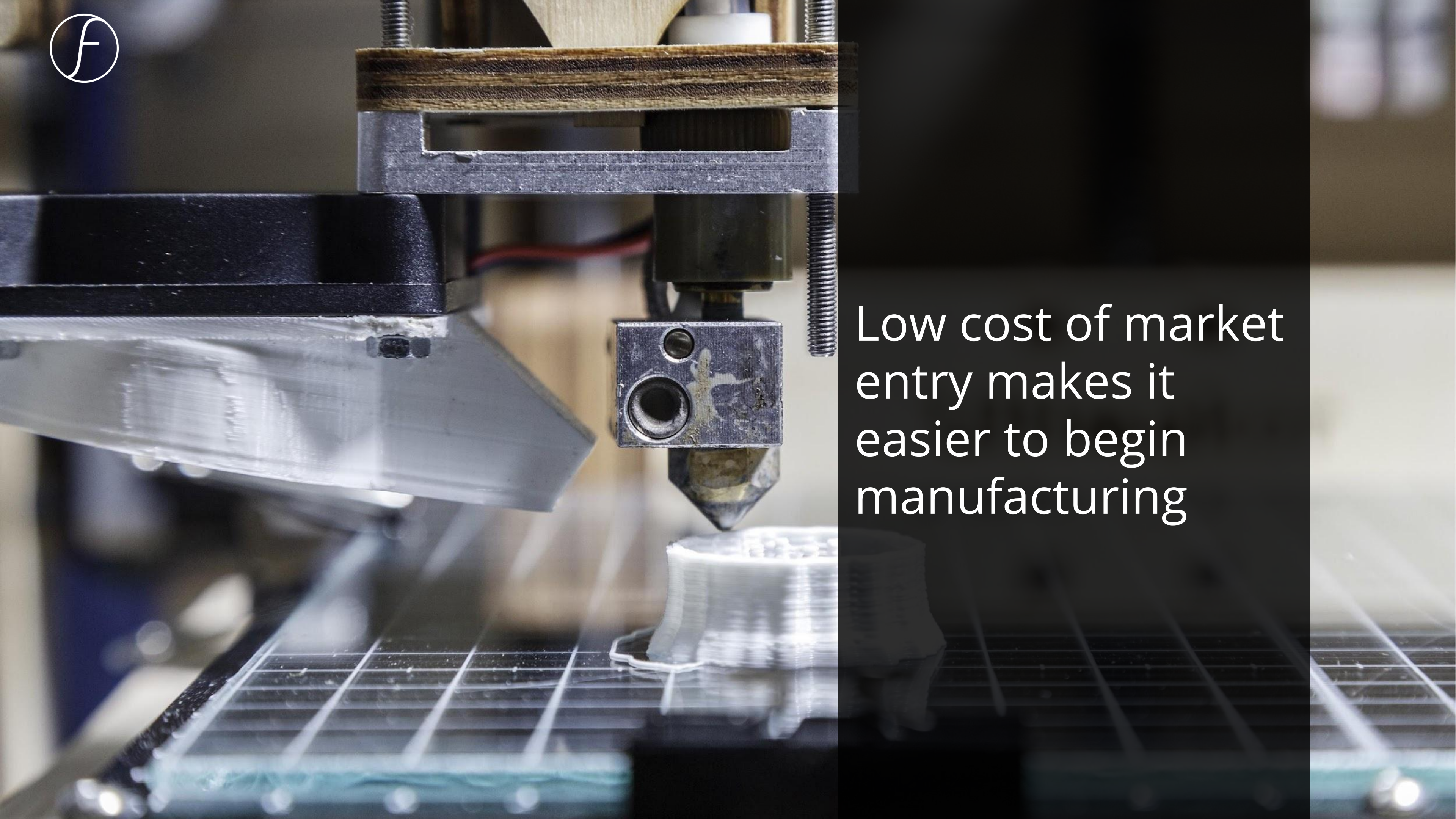


3D-printing

At a tipping point, in 2030 will be the main way of manufacturing

Driven by smart materials





Low cost of market entry makes it easier to begin manufacturing

DRONES

The drone invasion will be completed

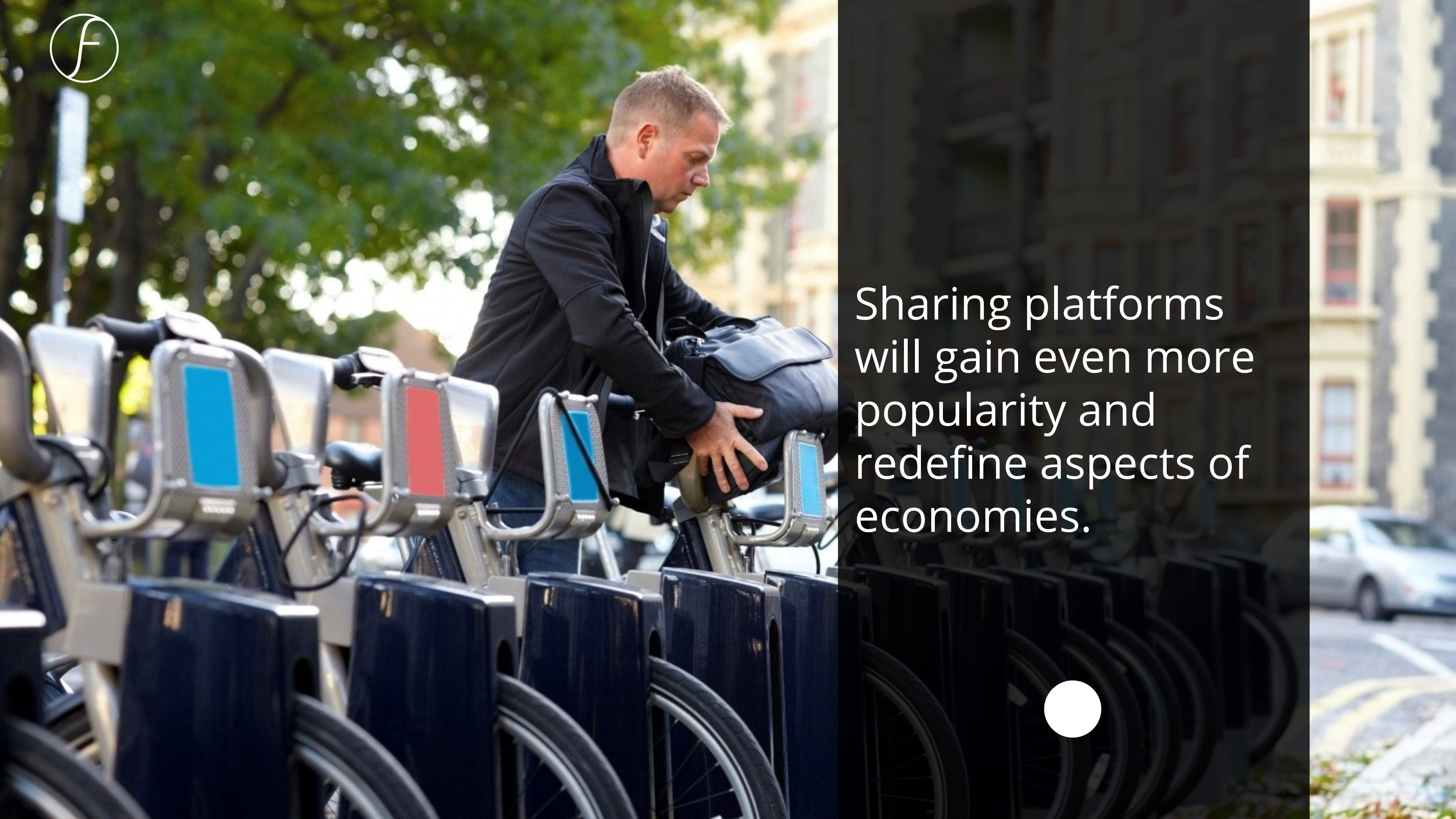
Driven by consumers looking for instant gratification

- 10 times cheaper and faster than any alternative
- Ideal for less developed countries

- 2030: $440 billion market
- 50% US, 50% China

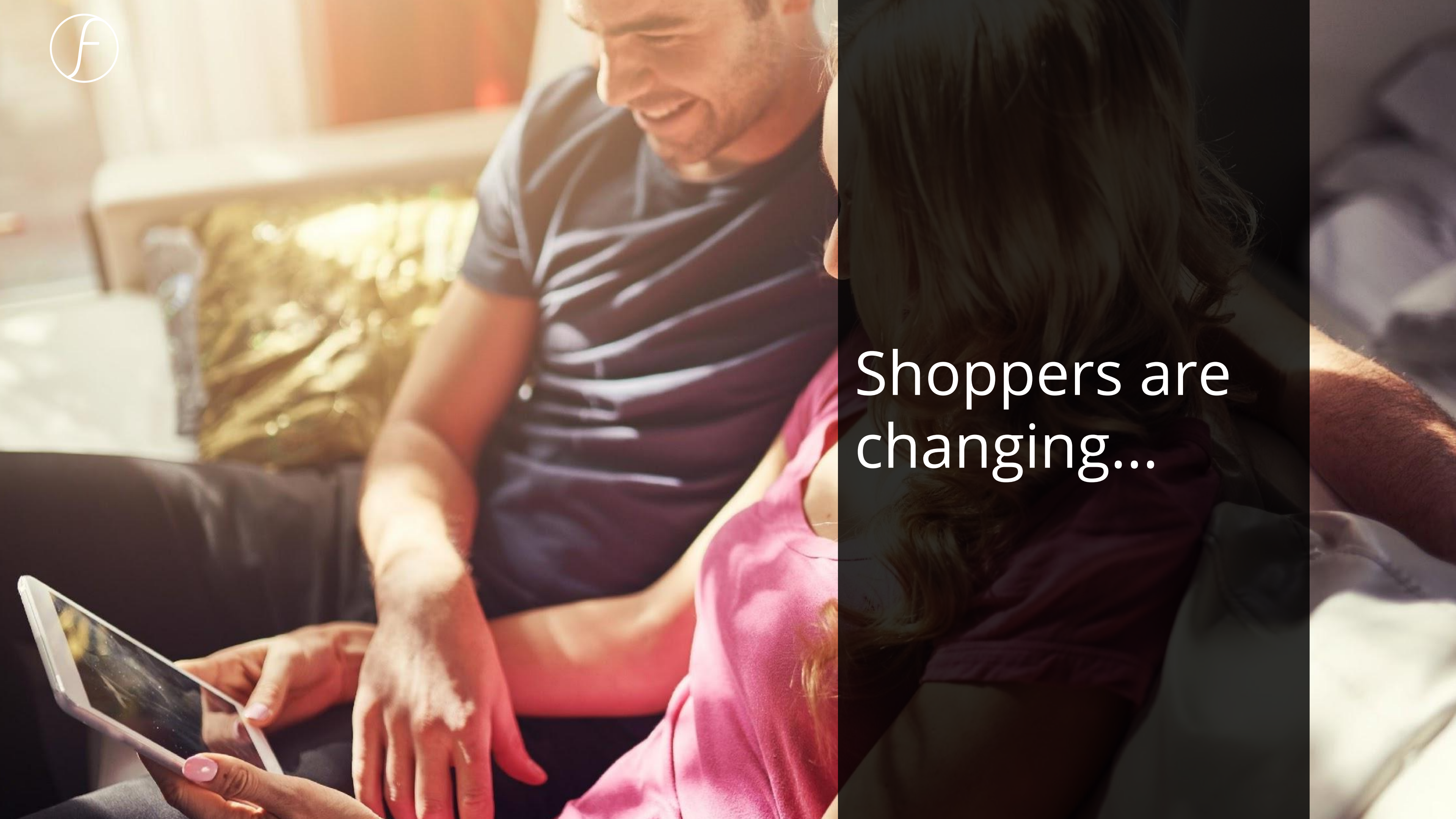
- The web took the cost of moving information to almost zero
- Drones will do the same for physical items

E-Commerce



Sharing platforms will gain even more popularity and redefine aspects of economies.

VR would have overtaken mobile as best shopping experience & seamless online/offline E-commerce



Shoppers are changing…

- But key aspects of shopping remain the same
- Social activity, particularly for the younger age group

Logistics, Huge need for new supply chain

- Same-day delivery means new air freight facilities will be needed
- Fulfilment centres will be built next to airports


This will change the landscape around them

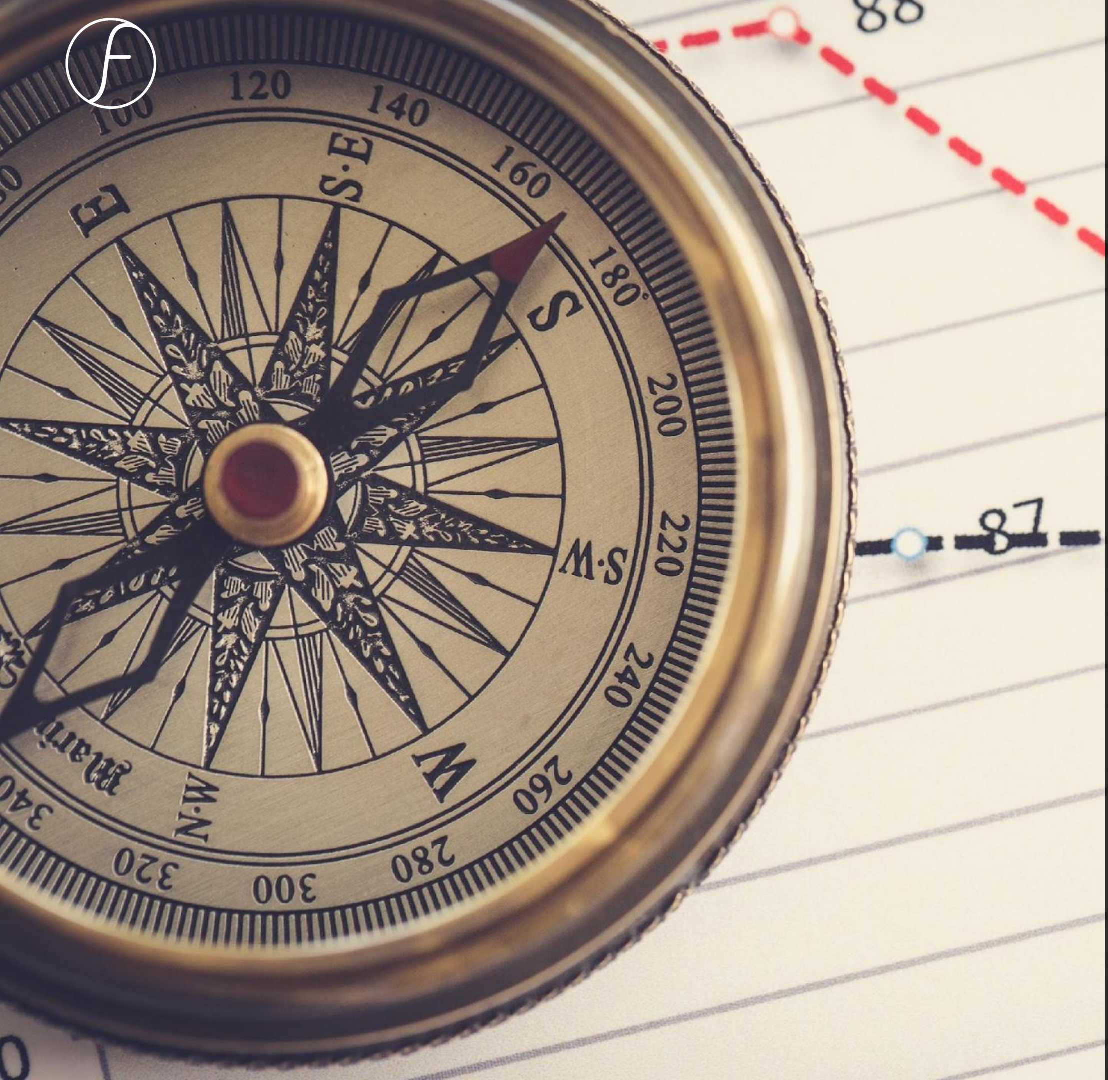
- From mega distribution facilities to smaller fulfilment centres
- Package pick-up options covering the last mile

FINTECH

Peer 2 Peer and banking as a platform becoming widespread

- P2P lending. The fastest growing category in lending. . The

- Alternative payment methods grow at an incredible rate
- Crowdfunding is the norm



Automated Investment Management is the new normal

- Regulations were designed for a different era
- But where are the insurance tech entrepreneurs?

The sharing economy pushes new insurance products that are pay-per-use, not pay-per-year

- Big Data easier measures risk and locate stolen goods
- Risk shifts away from individuals and traditional companies to software providers

MEDIA

- Non-digital will still contribute well over 30% of global consumer revenues in 2030
- But new products expand the number of multitasking moments

- Content experience trumps delivery platforms
- Empowered consumers seek inspiring content transcending platforms

Streaming audio wirelessly

Brain implants will become common


Life in 2030 - Consumer Behaviours

- Millennials paving the way
- Sharing more then others
- Lower prices, Higher demand for work

Used to ***free*** Economy:

- Free Energy
- Free Food
- Free Water
- Free Housing
- Free Transportation
- Free Schools
- Free Working Spaces
-

Co-Living is the most popular form of Living for Millennials.

2015: Italy 69% of 25-35 yrs live with their Parents

2040: Italy 30% of 25-35 yrs live with their parents

Digital Nomads make up 40% of the population.

Focus is not on the place or the company but on the experience

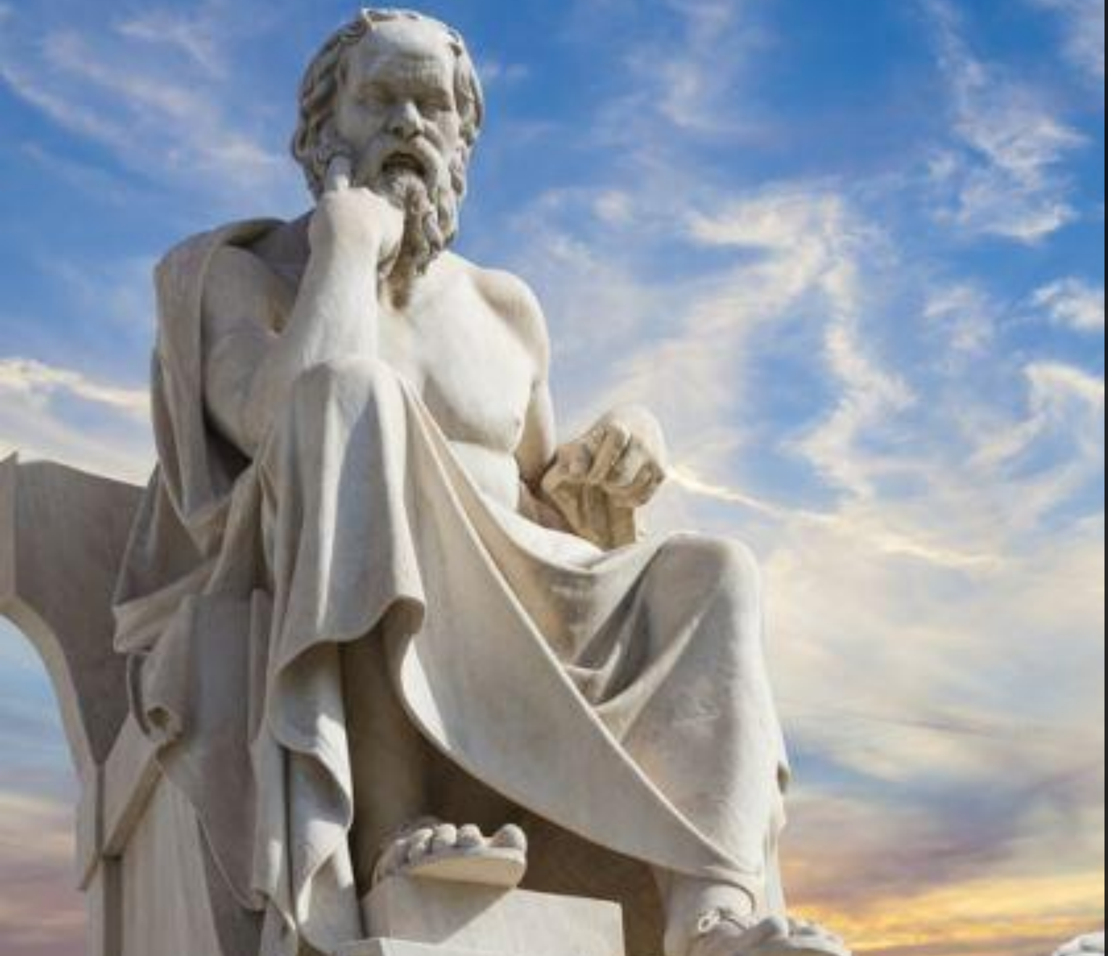
- Access instead of ownership
- Technology savvy
- Emphasis on general wellness (Health, Food)
- Flexible workplaces

speak tech!
or stay behind


MOOCs have become the main form of education for Millennials


Creativity & Design Thinking will be skills needed to interpret the AI-aided world


Feeding the mind with Medidation and Lifelong learning



Redefinition of Morals, Religion, Rules & Regulations

Re-definition of Democracy & how the world is managed.

An amazing world awaits.

More surprising than we've ever seen

Life in 2030


SUPERCHARGING INNOVATORS

NOTZ STUCKI

ASSET MANAGERS

SINCE 1964