

# Shifting Sands and Silk Roads: Global Energy Markets, Geopolitical Risk and Insurance in the Middle and Far East

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Darla Moore School of Business

# Overview

- **The Global Economy, Energy and Insurance**
  - ◆ **Growth, Emerging market challenges**
  
- **Populism, Trade Wars and Energy**
  - ◆ **Recent issues and developments in the energy producing world**
  - ◆ **Consequences for insurers**
  
- **Energy Nationalism**
  - ◆ **The combustible mixture of energy, influence and politics**
  
- **Energy and Insurance Market Overview and Outlook**
  - ◆ **Energy market supply, demand, investment opportunities and threats**
  
- **China's Ambitious Belt and Road Initiative**
  - ◆ **Energy investment and insurer opportunities**
  
- **Q&A**

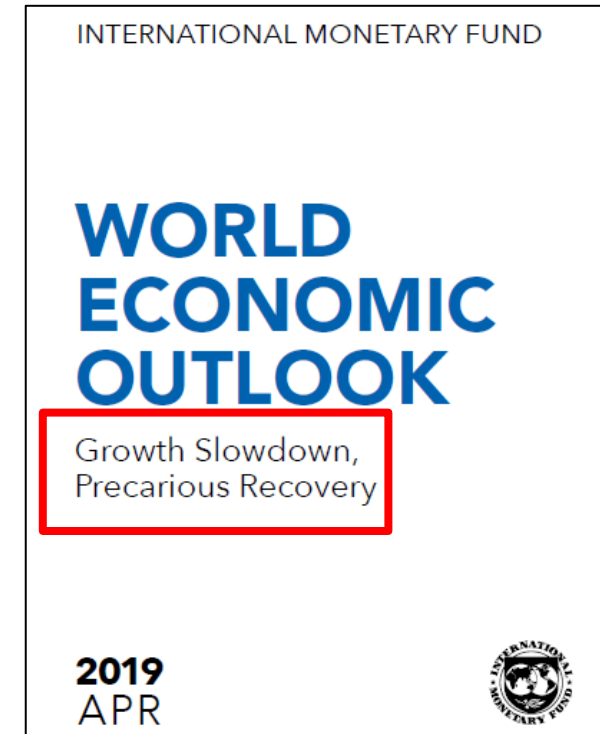
# THE GLOBAL ECONOMY, ENERGY AND INSURANCE

**The Strength of the Global Economy  
Will Greatly Influence Insurance  
Industry Growth**

***The Global Energy Sector Is Vulnerable  
to Many Risks—So Too Are Their  
Insurers***

# Global Growth Concerns: Energy and Insurance Market Impacts

- 2019 began with significant concerns about the strength of the global economy
- Major indices related to manufacturing, international trade, consumer and business confidence and financial market volatility turned adverse in late 2018/early 2019
- Consider the following:
  - ◆ 70% of the global economy is expected to decelerate in 2019
  - ◆ Global real GDP growth will fall to 3.3% in 2019 from 3.6% last year and 3.9% in 2017
  - ◆ US-China trade tensions are running high and trade volumes are falling
  - ◆ Industrial production and investment are weak globally
  - ◆ Geopolitical uncertainty remains high throughout much of the MENA region, in the US (Trump policies) and UK (Brexit) and parts of Latin America (Venezuela)



# Global Growth Concerns: Energy and Insurance Market Impacts

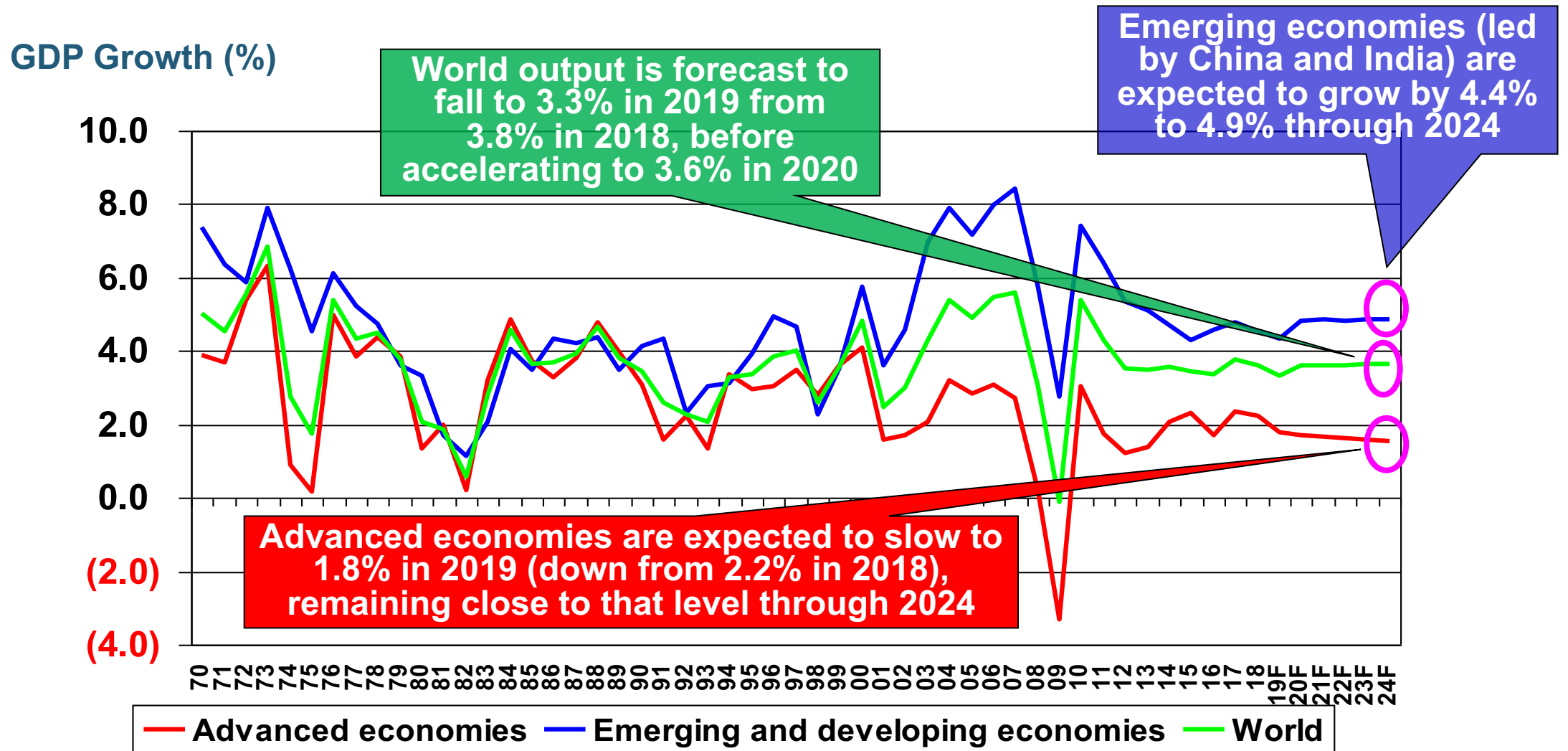
## ■ There are major implications for Energy and Insurance markets alike

- ◆ Supply
- ◆ Demand
- ◆ Price
- ◆ Investment (Upstream and Downstream)
- ◆ Regulatory Environment
- ◆ Geopolitical Implications

■ But to understand the many implications, we need to understand the underlying drivers and the associated geopolitical environment



# GDP Growth: Advanced & Emerging Economies vs. World, 1970-2024F



Source: International Monetary Fund, *World Economic Outlook*, Apr. 2019;  
 Univ. of South Carolina, Risk and Uncertainty Management Center.

# Global Growth Concerns: Where Are the Weaknesses and Why?

- Weaknesses are widespread but are focused on “Advanced Economies”

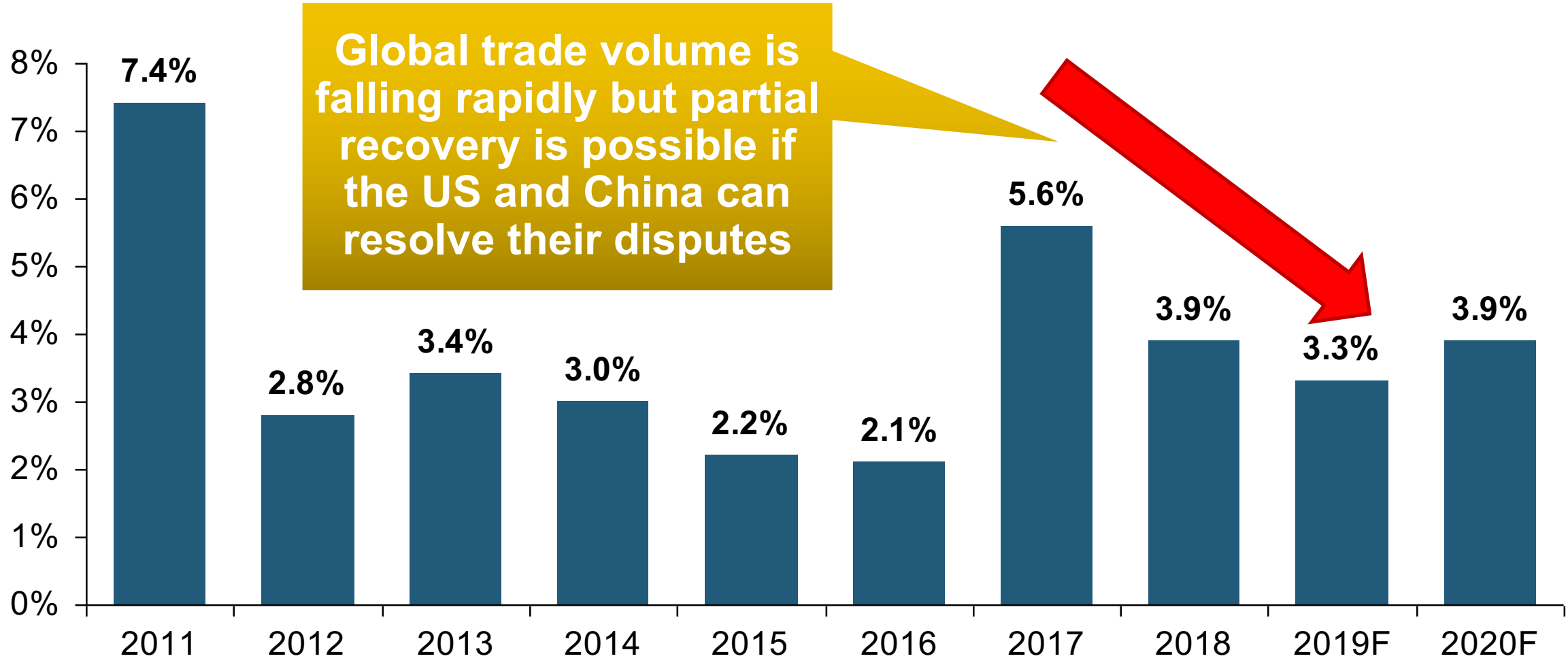
## Five Major Sources of Weakness

1. US – China Trade Tensions and Protectionism in General
2. Disruptions in German Auto Sector
3. Tightening of Credit Standards in China
4. Normalization of Monetary Policy in Larger Advanced Economies
5. Macroeconomic Distress in Turkey and Argentina

***Notably:*** Rising energy prices, particularly for crude oil, are not (yet) among the top factors holding back growth—but this could change.

# Growth in Global Merchandise (Goods) Trade : 2011 – 2019F

(Annual Change)



Source: IMF, *World Economic Outlook*, April 2019.

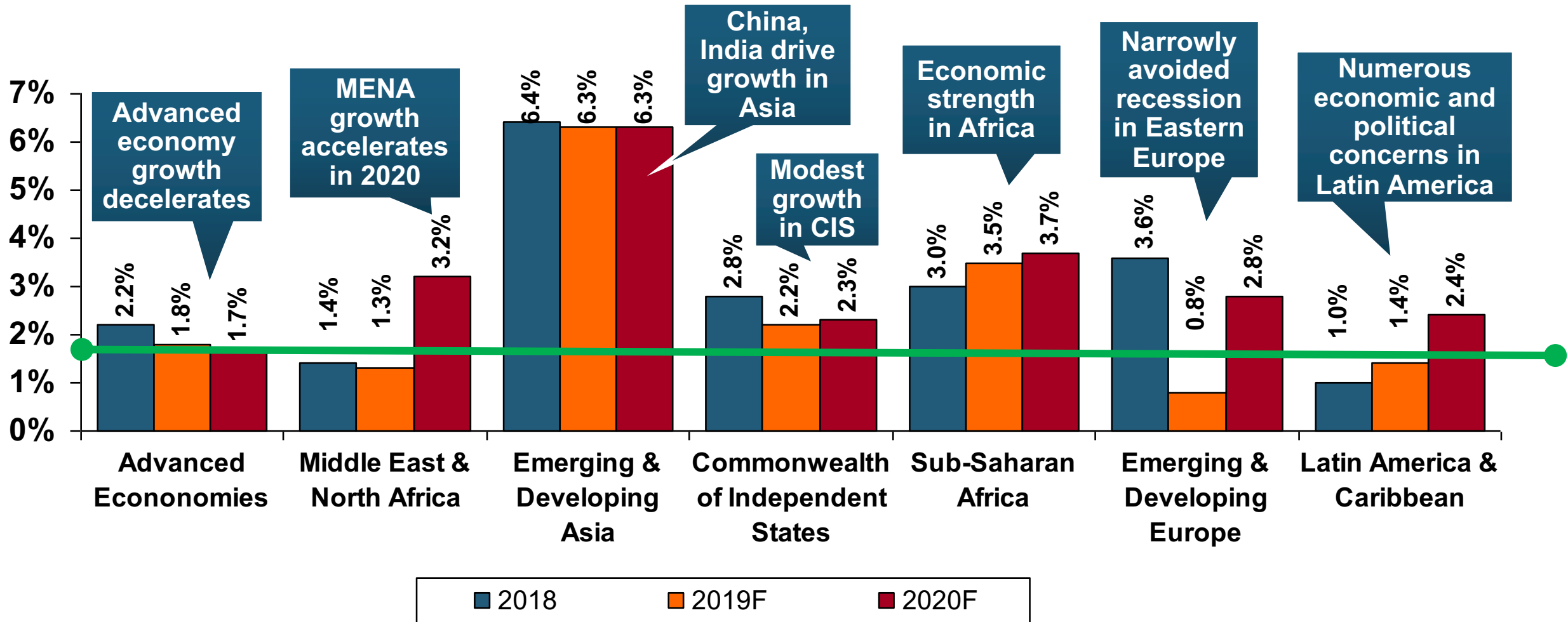


# REGIONAL ECONOMIC REVIEW AND OUTLOOK

**Focus on MENA, Emerging and Developing  
Asia, Sub-Saharan Africa**

***Contrasts to Major “Advanced” Economies***

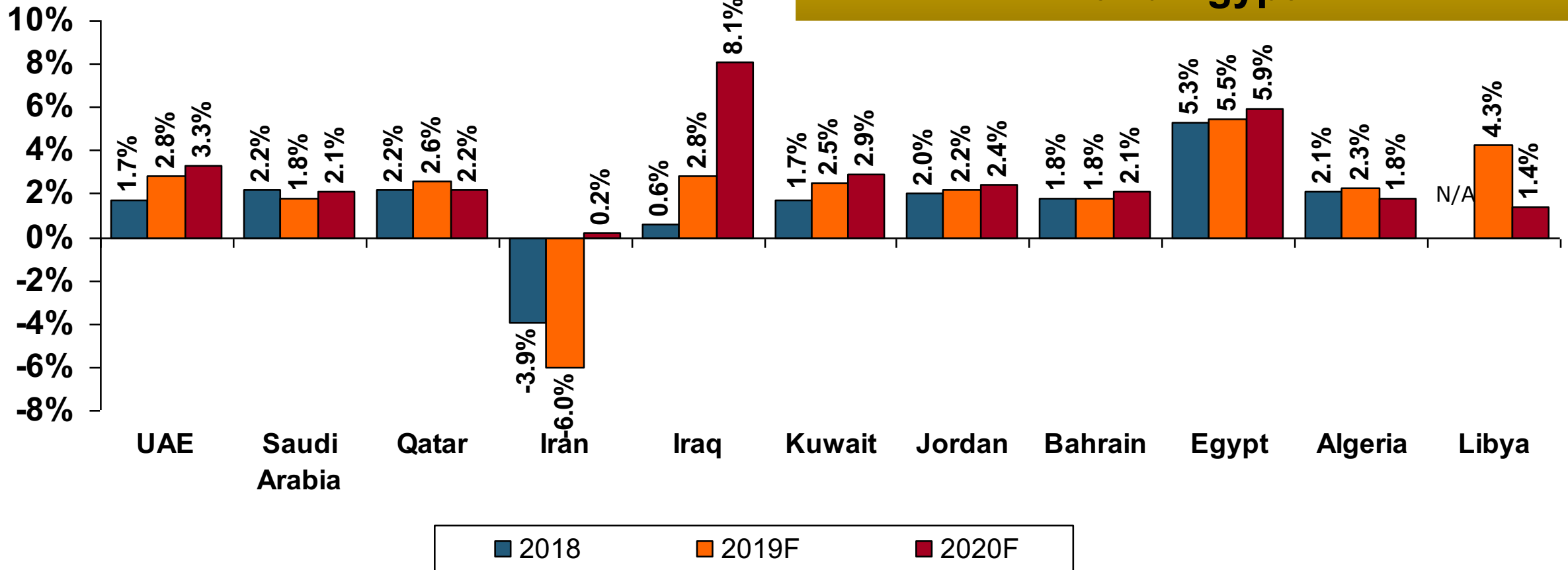
# Real GDP Growth Forecasts: Major Regions: 2018 – 2020F



**Global Growth Prospects Vary Widely by Region but by 2020 Are Universally Stronger Outside the “Advanced Economies”**

# Real GDP Growth Forecasts, Key MENA Countries: 2018 – 2020F

**GDP growth is fairly consistent across the MENA region, with some notable exceptions, including Iran, Iraq, Libya and Egypt**

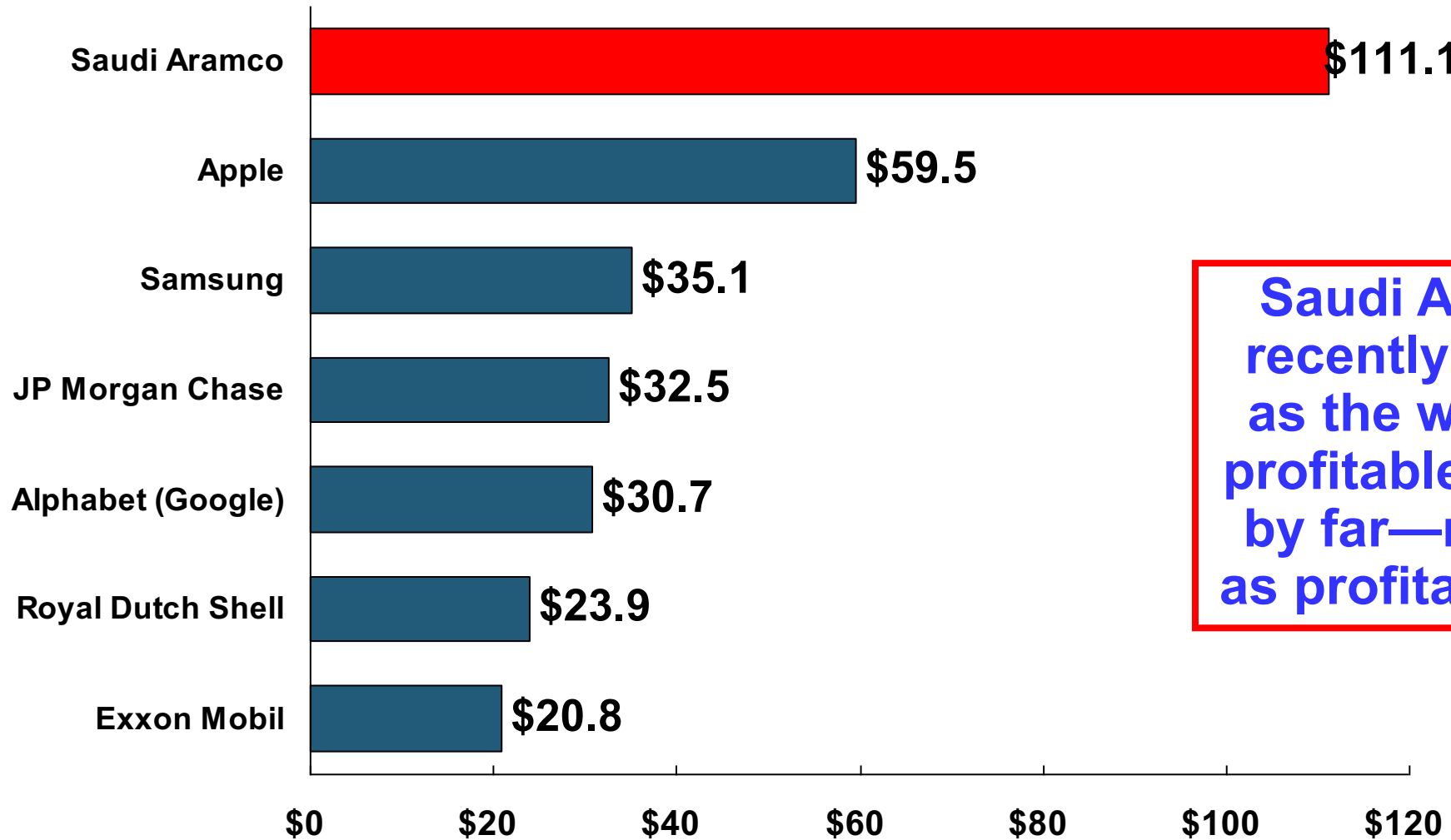


# World's Most Profitable Companies, 2018

## Saudi Aramco Leads the Way\* (\$ Billions USD)



أرامكو السعودية  
Saudi Aramco

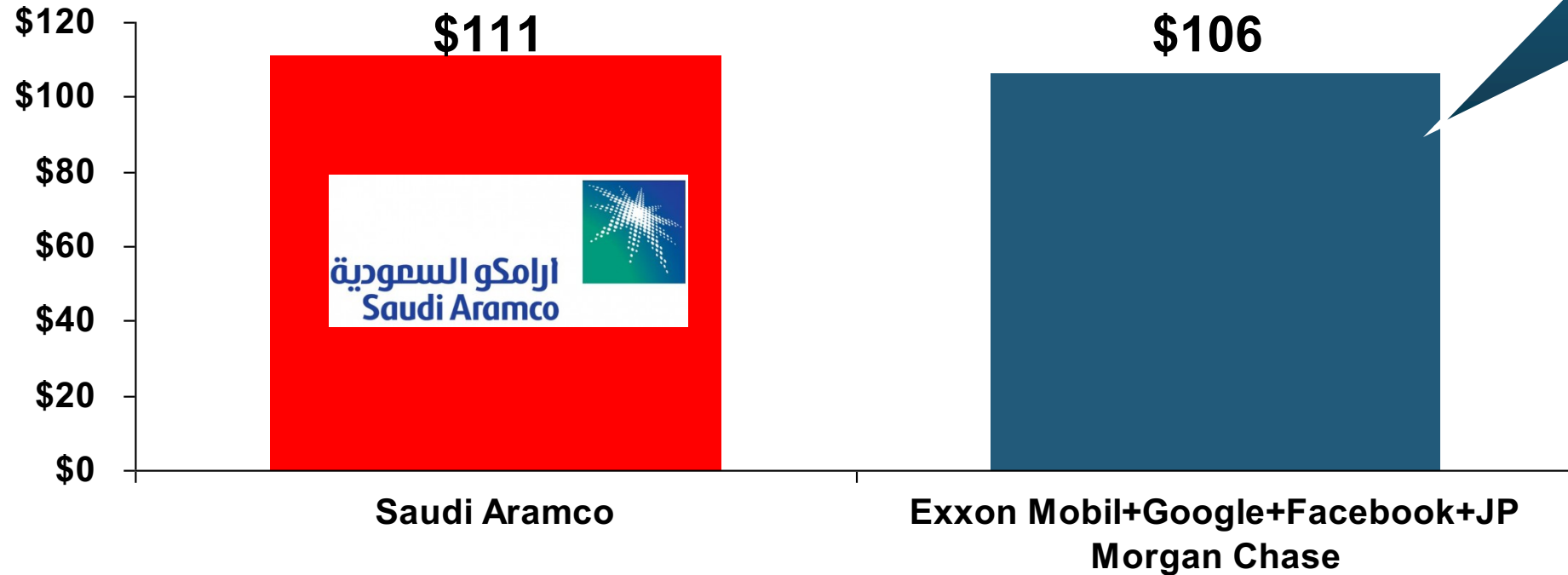


**Saudi Aramco was recently recognized as the world's most profitable company—by far—nearly twice as profitable as Apple**

\*Net income after tax  
Sources: Bloomberg; University of South Carolina, Risk and Uncertainty Management Center.

# Saudi Aramco's Profits Exceed those of Many of World's Largest Companies—Combined!

Net Income  
After Tax  
(USD Billions)



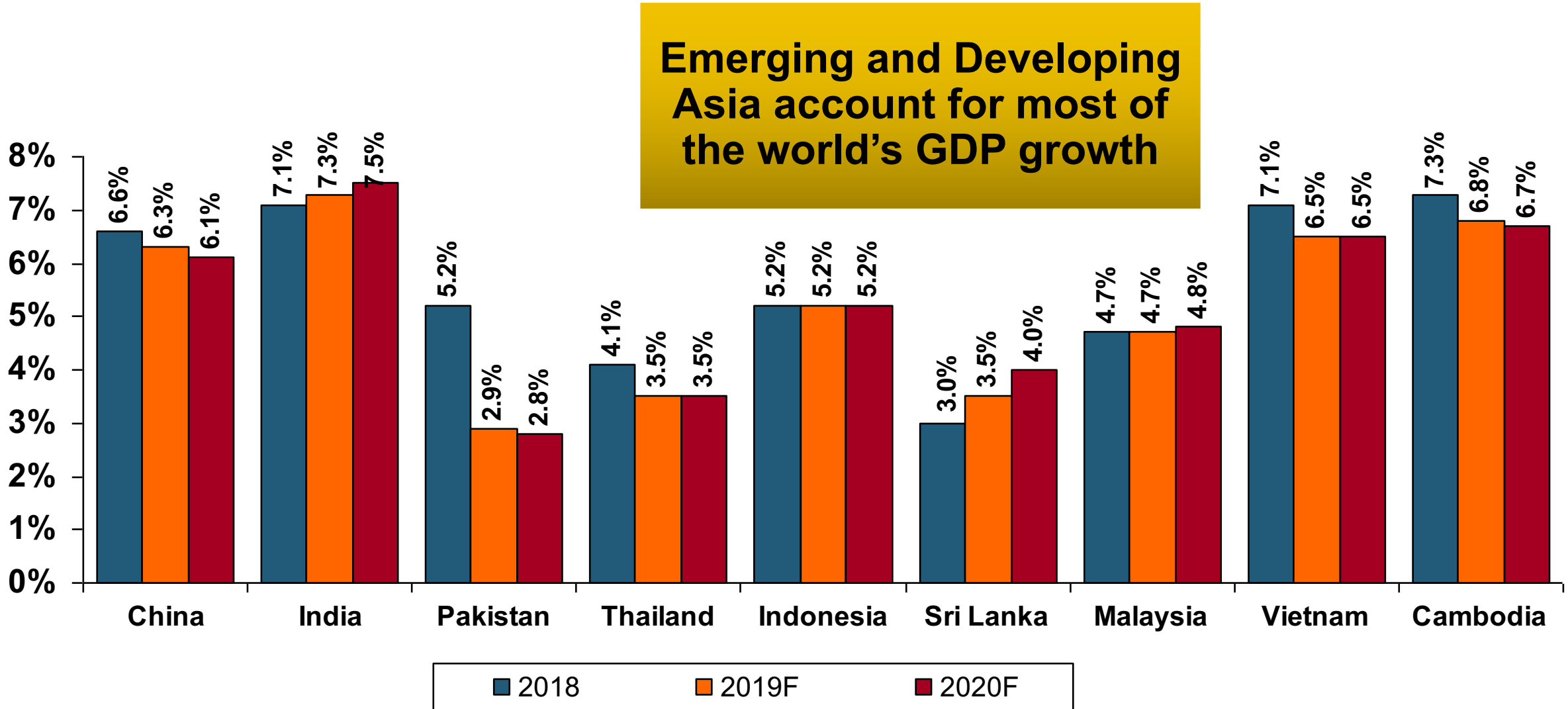
In 2018, Saudi Aramco was more profitable than Exxon Mobil, Google, Facebook and JP Morgan Chase—*combined*

Saudi Aramco's financial were revealed ahead of its first-ever debt offering. The \$10B offering drew \$30B in demand and an A1 rating from Moody's

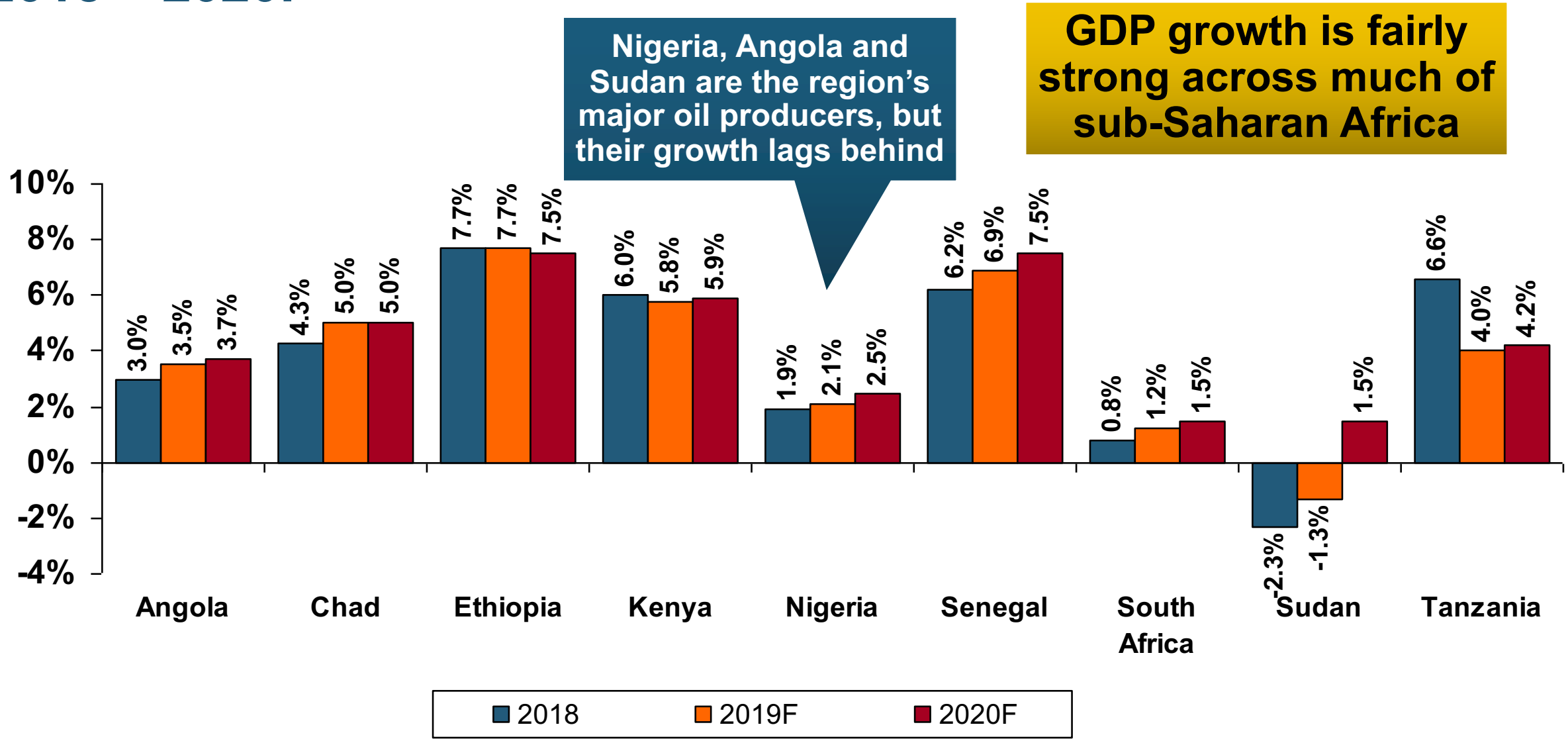
\*Net income after tax

Sources: Bloomberg; University of South Carolina, Risk and Uncertainty Management Center.

# Real GDP Growth Forecasts, Emerging & Developing Asia: 2018 – 2020F



# Real GDP Growth Forecasts, Sub-Saharan Africa & Sudan: 2018 – 2020F

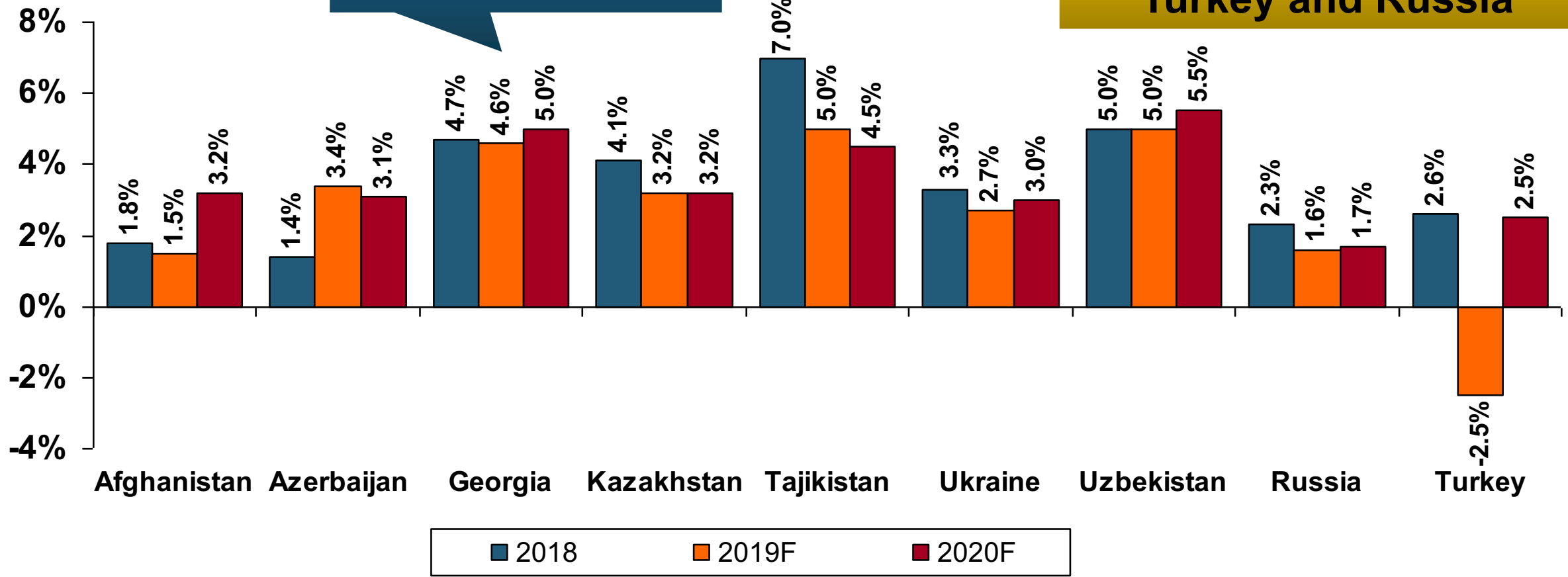


Source: International Monetary Fund, *World Economic Outlook*, Apr. 2019, Table A4; Univ. of South Carolina, Risk and Uncertainty Management Center.

# Real GDP Growth Forecasts, Central/Western Asia, Turkey & Russia: 2018 – 2020F

Georgia and Tajikistan and Uzbekistan are the regional growth leaders

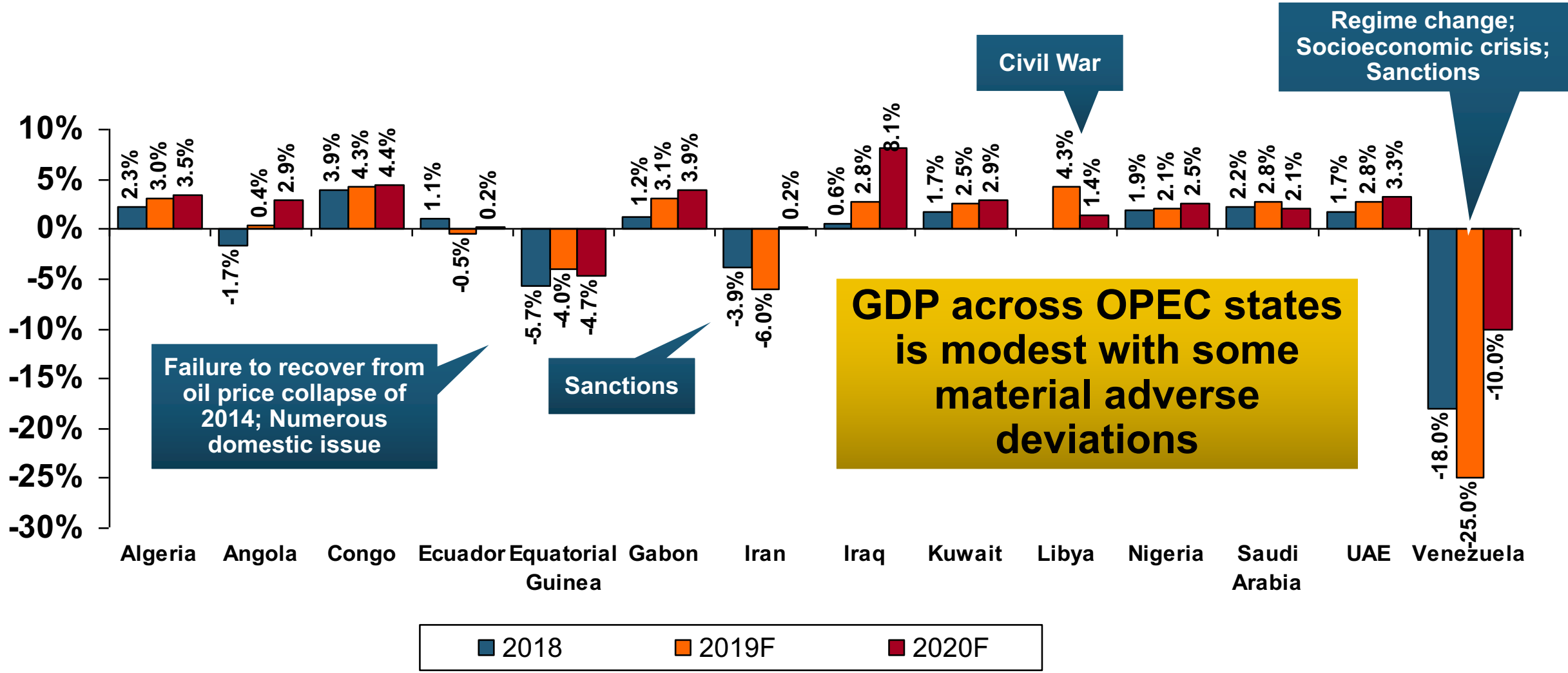
GDP growth varies widely across Central/Western Asia, Turkey and Russia



Source: International Monetary Fund, *World Economic Outlook*, Apr. 2019, Table A4; Univ. of South Carolina, Risk and Uncertainty Management Center.

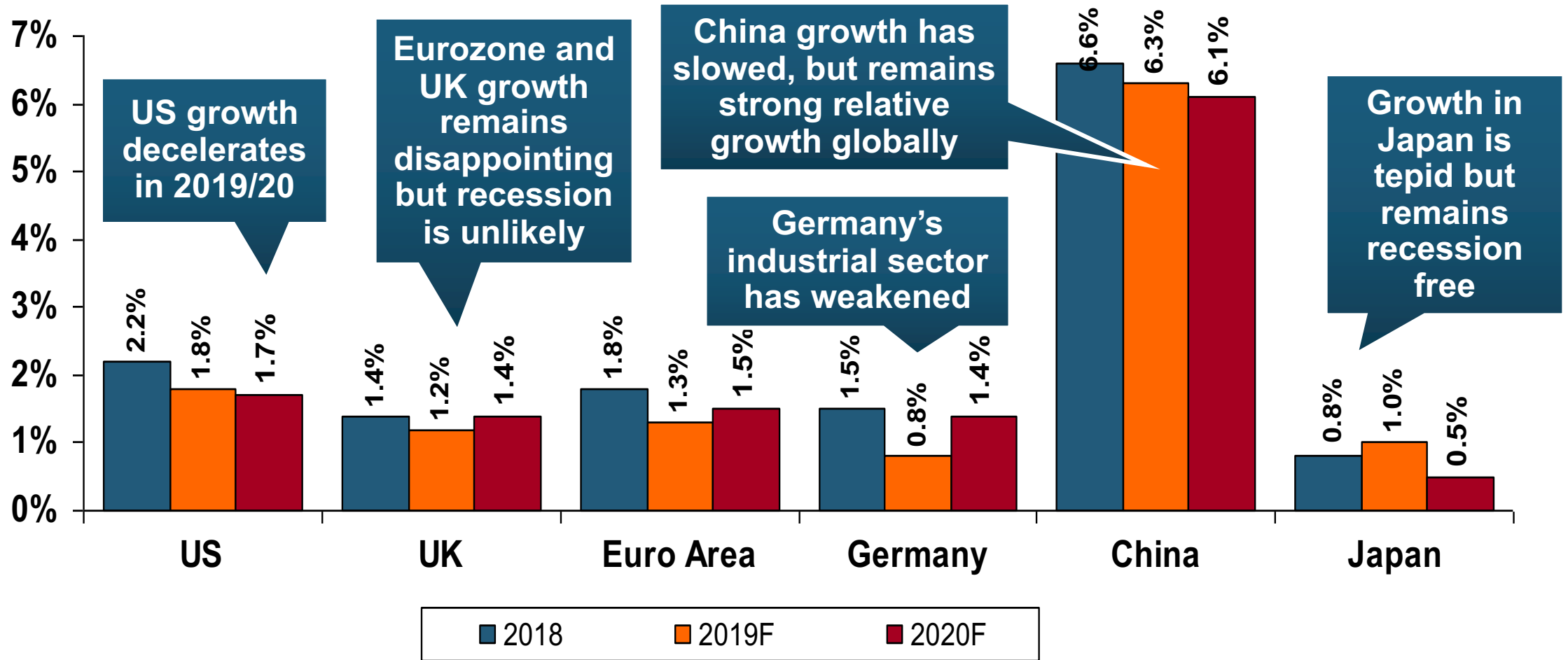


# Real GDP Growth Forecasts, OPEC States: 2018 – 2020F



Source: International Monetary Fund, *World Economic Outlook*, Apr. 2019, Table A4; Univ. of South Carolina, Risk and Uncertainty Management Center.

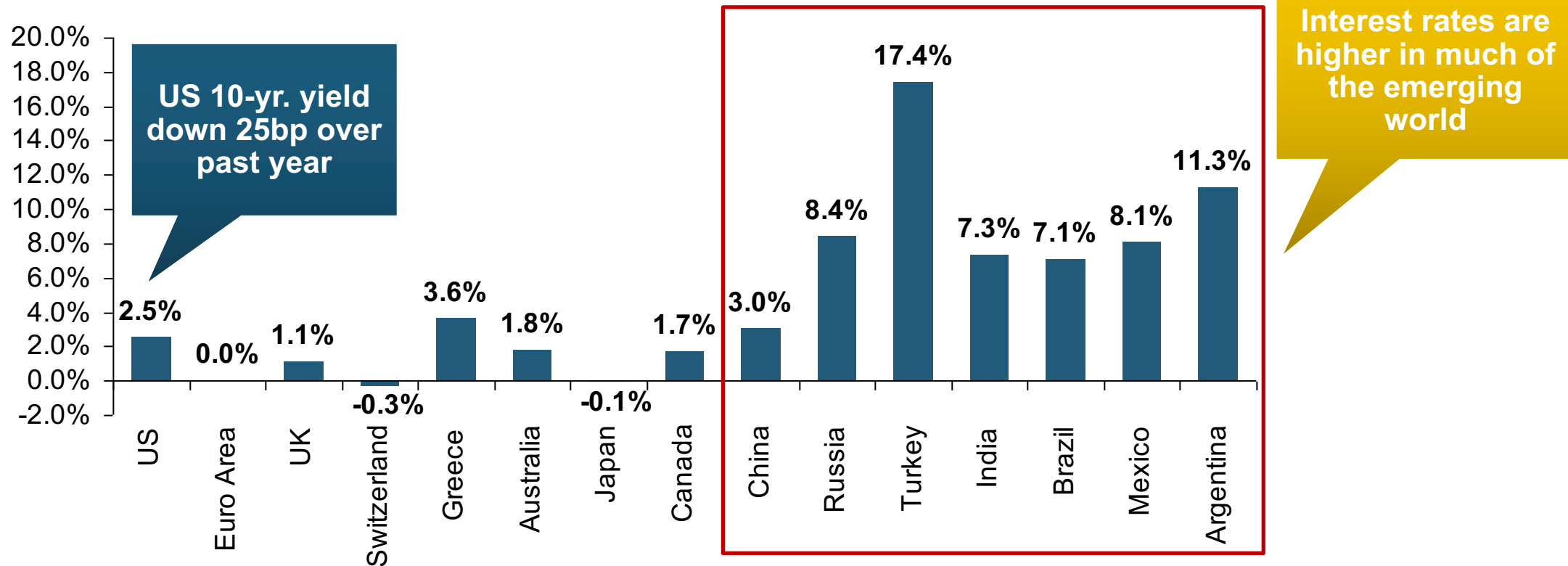
# Real GDP Growth Forecasts: “Advanced Economies”: 2018 – 2020F



**Growth Prospects Among “Advanced Economies” Has Weakened While China Continues to Lead Among “Emerging Economies”**

# Global Interest Rates Remain Low Except in Emerging Markets Facing Currency Crises and Inflation Threats

Rate on 10-Year Government Bonds as of 31 March 2019



# GEOPOLITICS, POPULISM AND ECONOMICS IN THE ENERGY PRODUCING WORLD

**Geopolitics and Populist  
Movements Are Impacting Global  
Energy Hubs Around the World**

***Insurers, Energy Industry Will  
Be Impacted***

# Geopolitics and Uncertainty in the Energy Producing World



There is no shortage of geopolitical uncertainty in the energy producing world, impacting global supply and price for oil and gas. Arguably, the most meaningful implications today arise from Iran, Venezuela and Libya.



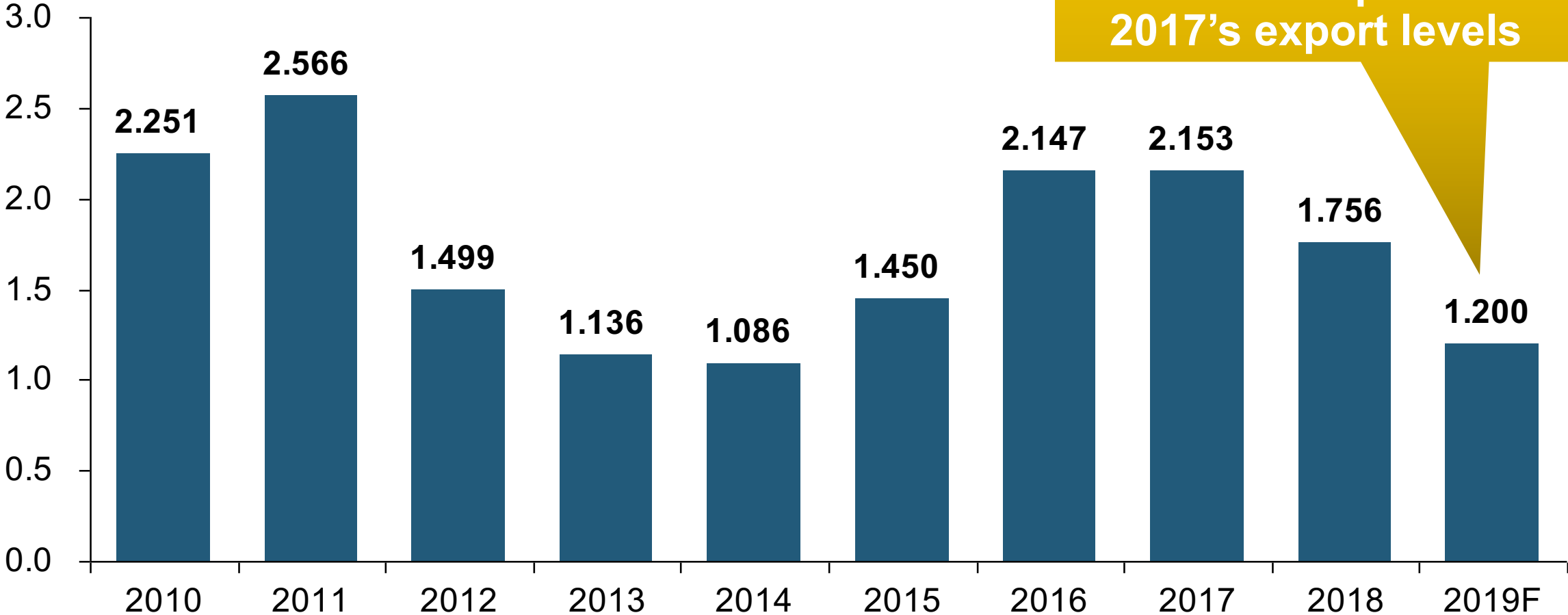
# Geopolitics and Uncertainty in the Energy Producing World: Iran



- **International sanctions are the primary stressor in Iran, the most important of which restrict the importation of Iranian oil and petrochemicals**
- **The Iranian economy has suffered as a result:**
  - ◆ **Real GDP growth was -3.9% in 2018 and -6.0% in 2019 (IMF est.)**
  - ◆ **Inflation is running 30%+ per yr.**
  - ◆ **Collapse in the Iranian rial, reaching record lows**
- **Oil exports are falling, though waivers to the importation of oil for some countries continue**

# Iranian Oil Exports, 2010 – 2019F

(Millions of Barrels per Day)



Iranian oil exports are expected to fall by 46% in 2019 compared to 2017's export levels

Source: IMF

# Geopolitics and Uncertainty in the Energy Producing World: Libya

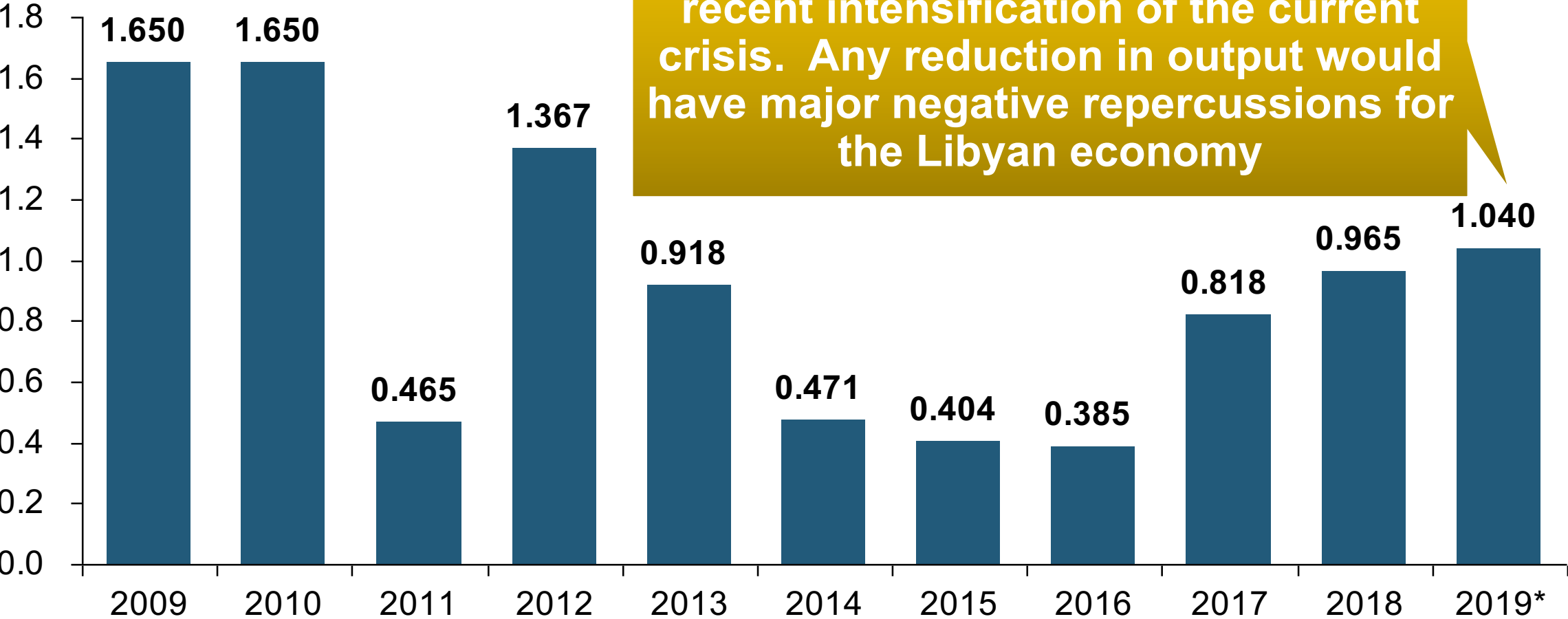


- Libya has effectively been a bifurcated state since the collapse of the Gaddafi regime amid the “Arab Spring” uprisings in 2011, with rival factions in the east and west
  - ◆ The current status is often described as a civil war
- Currently, Tripoli is under siege by the forces of Gen. Khalifa Haftar, who controls much of eastern Libya
- 60% of Libya’s GDP stems from oil production
- The economy collapsed after 2011 as oil production collapsed
  - ◆ Inflation is running at 25%+



# Libyan Oil Production: 2009 – March 2019

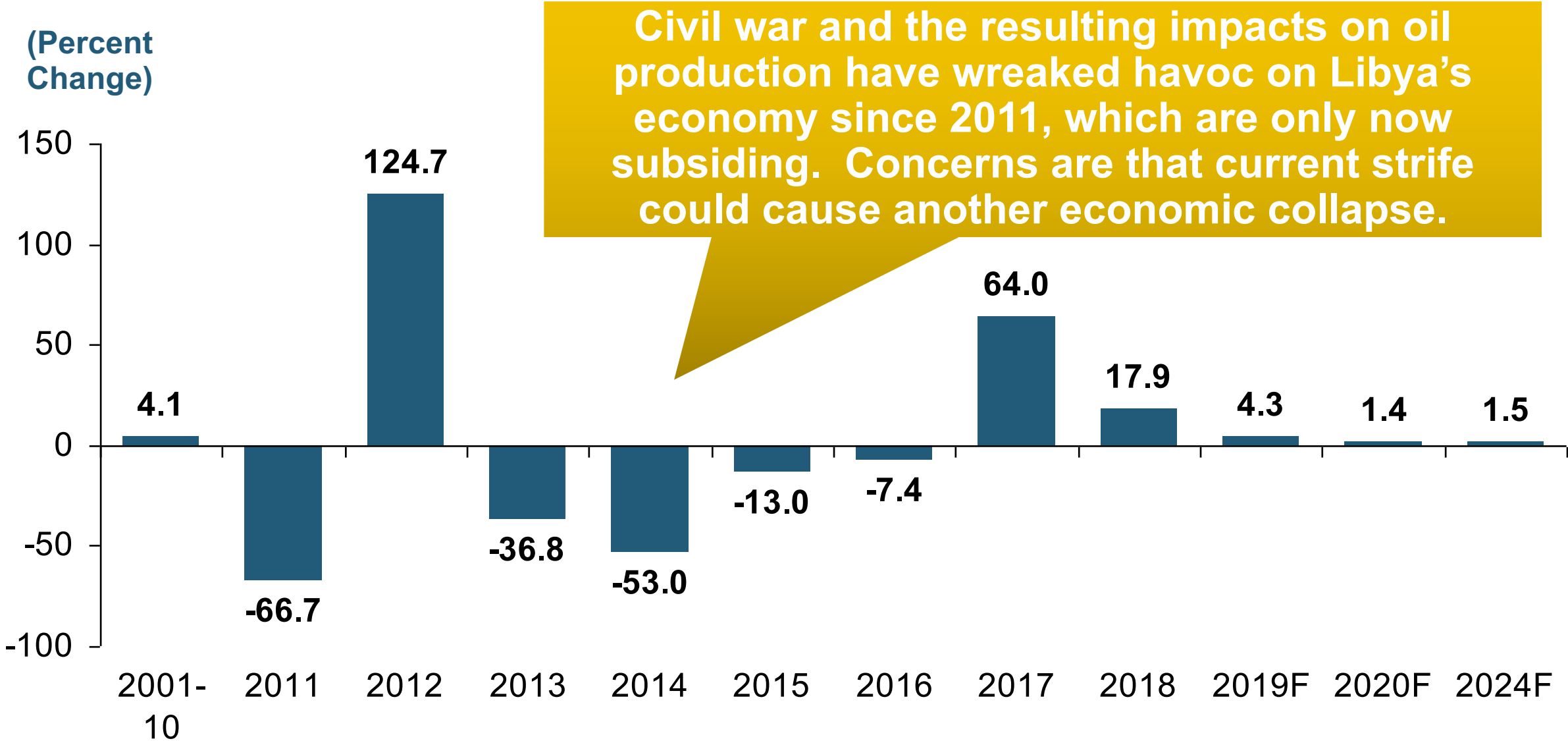
(Millions of Barrels per Day)



Despite civil war and OPEC caps, Libyan oil production is rising, though the trend is in jeopardy given the recent intensification of the current crisis. Any reduction in output would have major negative repercussions for the Libyan economy

Source: US Energy Information Administration accessed at: <https://www.eia.gov/opendata/qb.php?category=1039874>

# Libyan Real GDP Growth (% Change): 2011 – 2024F



Source: IMF

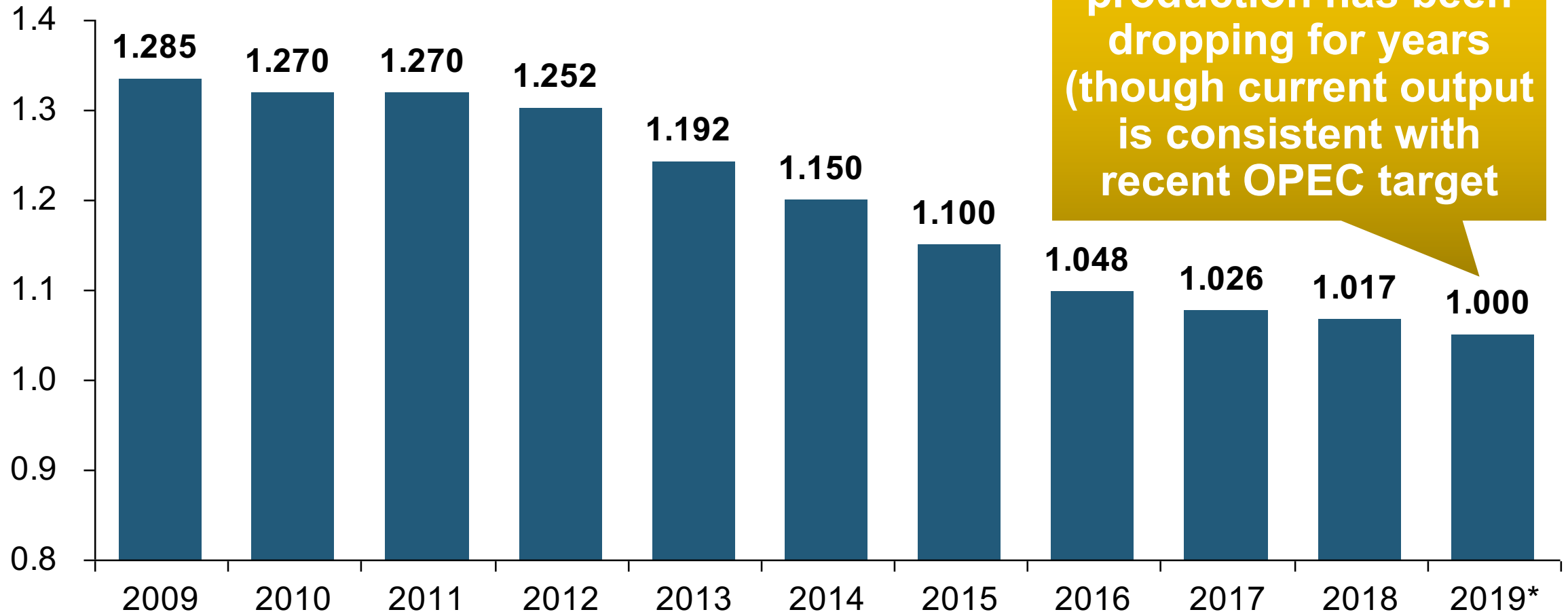
# Geopolitics and Uncertainty in the Energy Producing World: Algeria



- Through early 2019, frequent protests against the government erupt
- On 1 April, long-time President Abdelaziz Bouteflika resigns after 20 years in power
- Constitution requires and election within 90 days
  - ◆ Want to avoid situations such as an in neighboring Libya or Egypt in 2011

# Algerian Oil Production: 2009 – March 2019

(Millions of  
Barrels per Day)



\*As of March 2019.

Source: US Energy Information Administration accessed at: <https://www.eia.gov/opendata/qb.php?category=1039874>

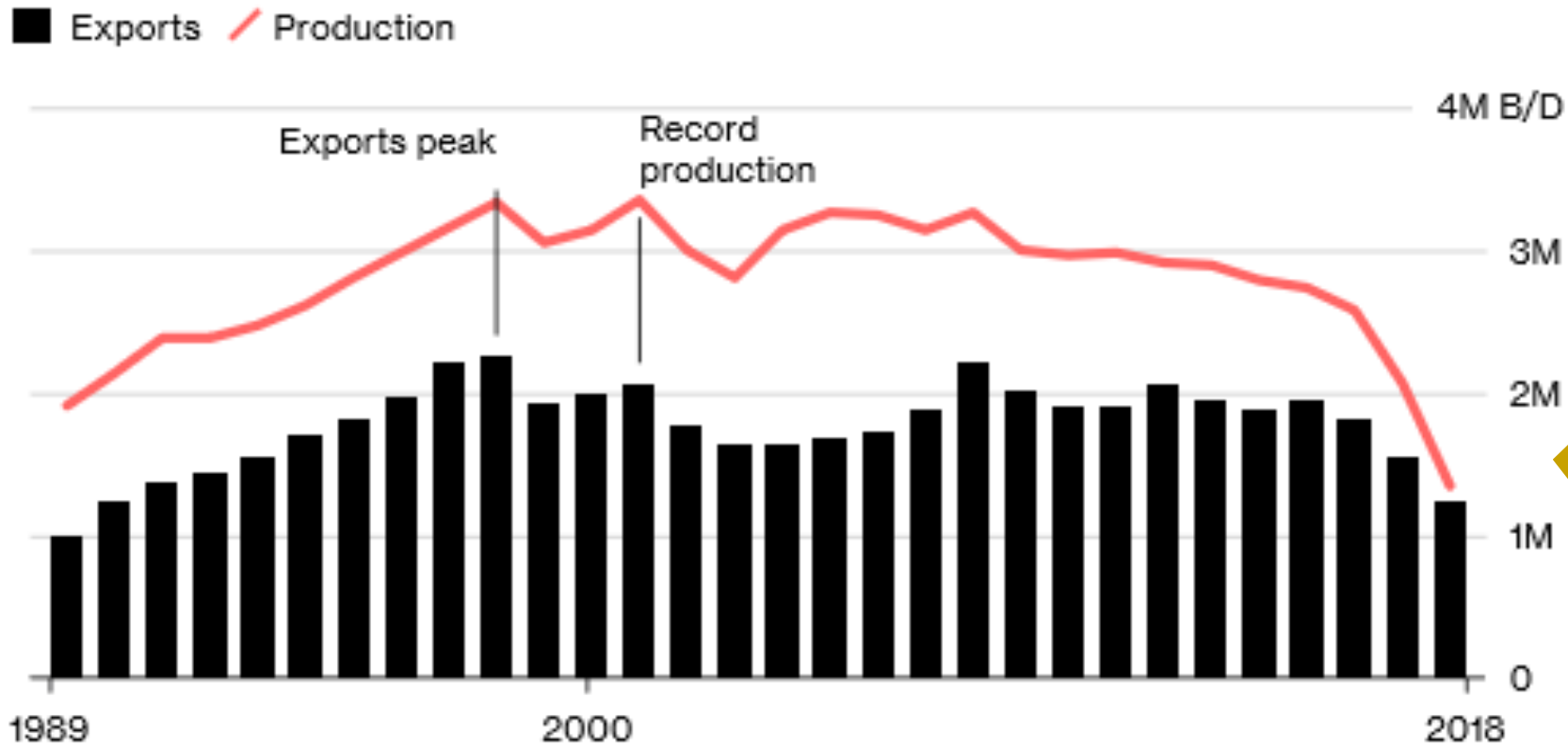
# Geopolitics and Uncertainty in the Energy Producing World: Venezuela



- The regime of Nicolas Maduro is being challenged by rival Juan Guaido, each of whom views themselves as the legitimate leader of the country
- Venezuela has been hit with heavy sanctions, largely focused on stifling its oil industry.
- The economy is in freefall:
  - ◆ Real GDP growth was -18% in 2018 and -25% in 2019 (IMF est.)
  - ◆ Hyperinflation has taken hold, with prices rising at an annual pace of 1 million percent
- Oil exports are nearing 30-year lows

# Venezuelan Oil Exports and Production, 1989 – 2018

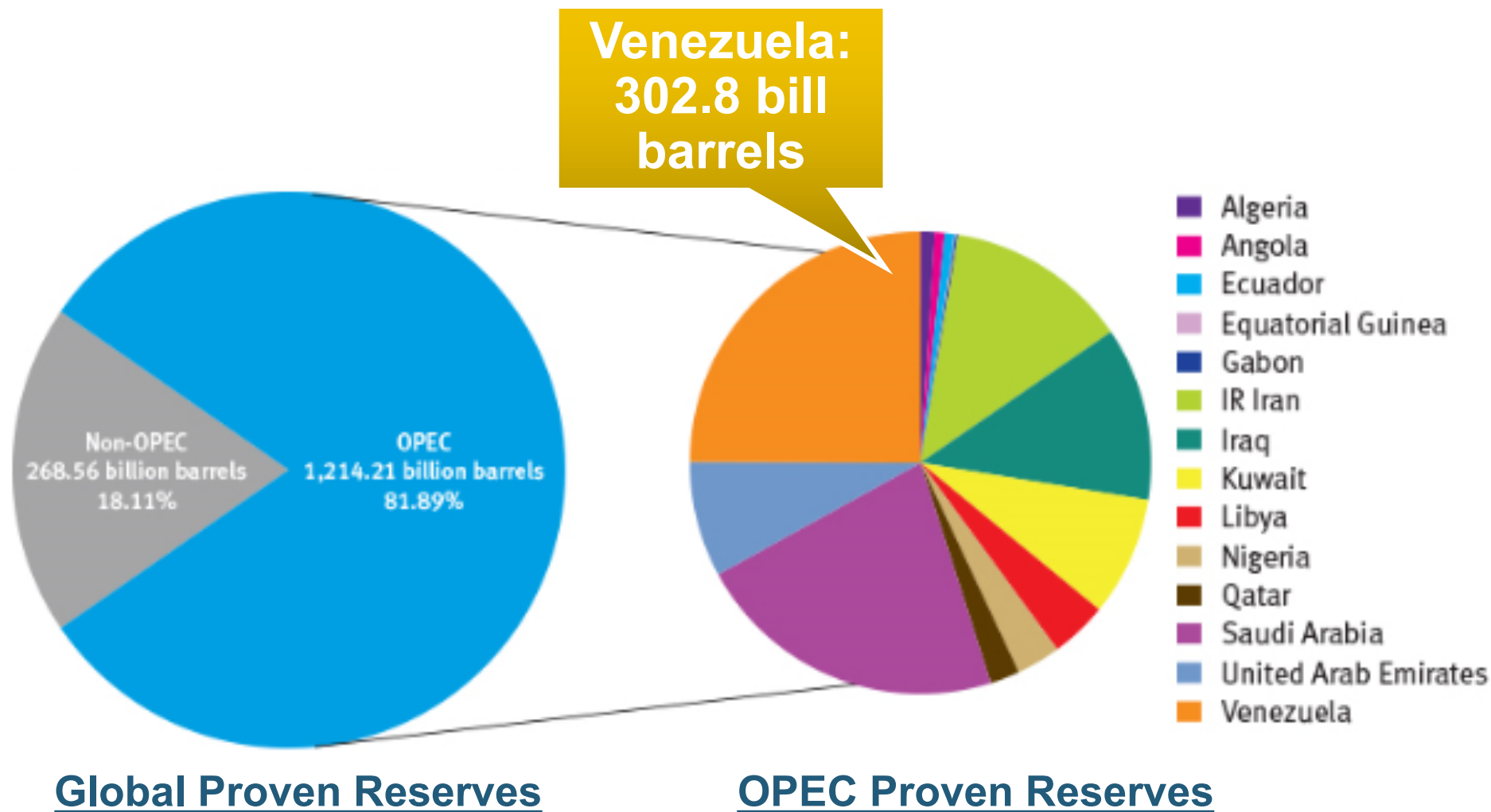
(Millions of Barrels per Day)



Amid a domestic political and humanitarian crisis, mounting sanctions and decades of neglect of the nation's energy infrastructure, Venezuela's oil production and exports are falling rapidly, contributing to higher global prices

Source: Bloomberg, Venezuela Oil Exports Slump to 28-Year Low, 2 Jan. 2019 accessed at: <https://www.bloomberg.com/news/articles/2019-01-02/venezuela-oil-exports-slump-to-28-year-low-on-falling-output>

# Venezuela's Proven Crude Oil Reserves Are the Largest Among OPEC States



Venezuela's proven reserves at 302.8 billion barrels (24.9% of OPEC's total) are large enough to have a major impact on global supply (and price) if the country can overcome its domestic political and economic challenges

# Geopolitics and Uncertainty in the Energy Producing World: Sudan



- **Popular uprisings began in December 2018 against Sudanese leader Omar al-Bashir**
  - ◆ **Bashir seized power in a military coup in 1989**
  
- **On 11 April, Sudan's military seized power from Bashir, placing him under arrest**
  - ◆ **Military says it will remain in power for two years**
  - ◆ **Constitution suspended**
  - ◆ **Government and parliament dissolved**
  
- **Economy is in poor condition**
  - ◆ **Real GDP growth was -2.1% in 2018, with expected growth of -2.3% and -1/3% in 2019 and 2020, respectively**



# OPEC+ Compliance with Oil Production Cuts Agreement (as of Feb. 2019)

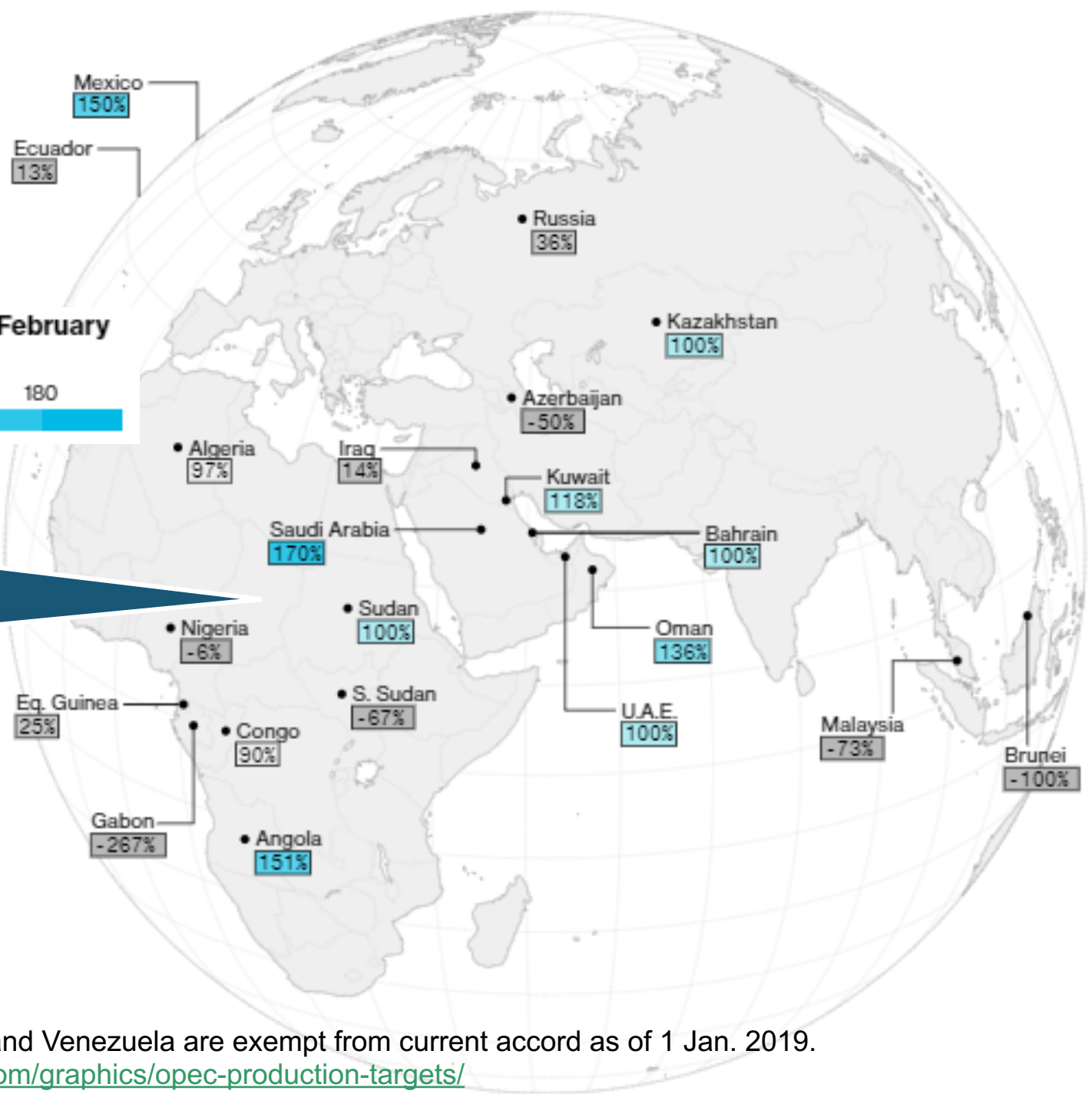
## OPEC+ Countries' Compliance With Oil-Cuts Agreement in February

Percentage of cutback target reached

0 20 40 60 80 100 120 140 160 180



Many Middle Eastern states have met or exceeded their agreed upon cuts, most outside of that region have not. But Saudi Arabia's cuts have far exceeded its agreed limit, thereby absorbing the burden of others



Note: Cuts are to be achieved in first half 2019. Iran, Iraq and Venezuela are exempt from current accord as of 1 Jan. 2019.

Source: Bloomberg accesses at: <https://www.bloomberg.com/graphics/opec-production-targets/>

# OPEC+ Compliance with Oil Production Cuts Agreement (as of Feb. 2019, 1<sup>st</sup> Half 2019 Target Achievement)

## OPEC Countries

Country ▼	Reference Output	Pledged Cut	Output Target	Feb. 2019	Jan. 2019
Algeria	1,057	-32	1,025	1,026	1,024
Angola	1,528	-47	1,481	1,457	1,435
Congo	325	-10	315	316	317
Ecuador	524	-16	508	522	517
Eq. Guinea	127	-4	123	126	112
Gabon	187	-6	181	203	197
Iraq	4,653	-141	4,512	4,633	4,702
Kuwait	2,809	-85	2,724	2,709	2,723
Nigeria	1,738	-53	1,685	1,741	1,731
Saudi Arabia	10,633	-322	10,311	10,087	10,172
U.A.E.	3,168	-96	3,072	3,072	3,075
<b>Total OPEC</b>	<b>26,749</b>	<b>-812</b>	<b>25,937</b>	<b>25,892</b>	<b>26,005</b>

## Non-OPEC Countries

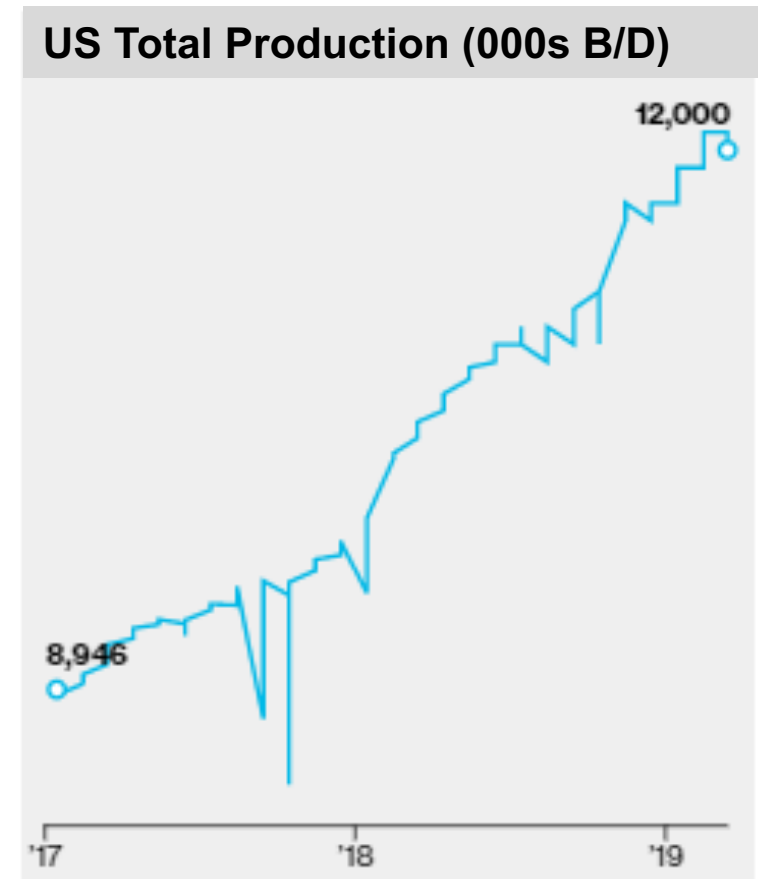
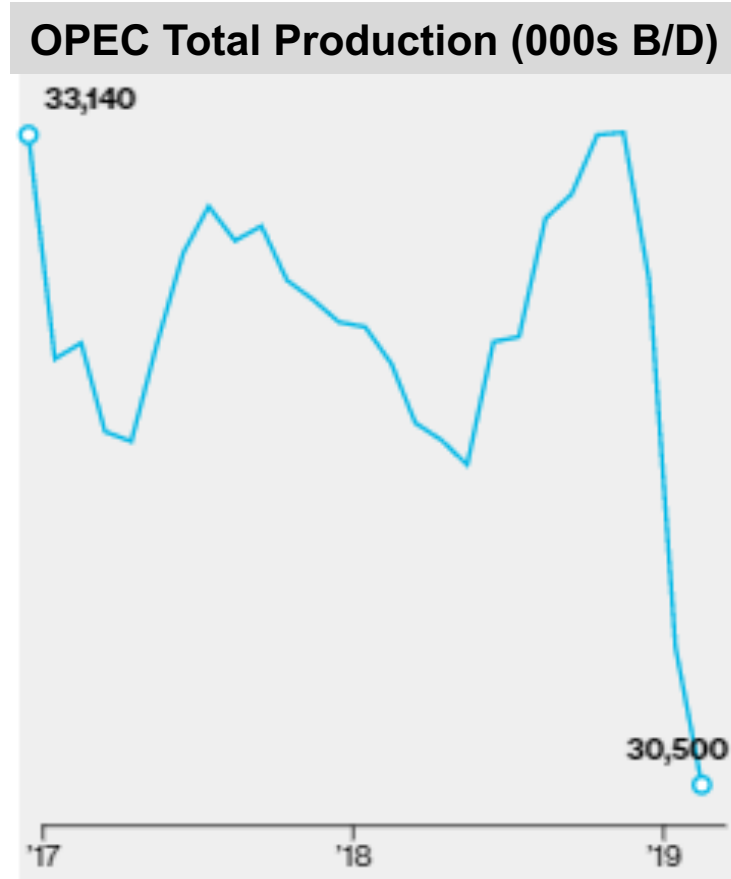
Azerbaijan	797	-20	777	807	794
Bahrain	217	-5	212	212	212
Brunei	115	-3	112	118	117
Kazakhstan	2,028	-40	1,988	1,988	2,012
Malaysia	698	-15	683	709	724
Mexico	1,993	-40	1,953	1,933	1,863
Oman	1,003	-25	978	969	978
Russia	11,747	-230	11,517	11,665	11,705
South Sudan	124	-3	121	126	126
Sudan	74	-2	72	72	73
<b>Total Non-OPEC</b>	<b>18,796</b>	<b>-383</b>	<b>18,413</b>	<b>18,599</b>	<b>18,604</b>
<b>Total OPEC+</b>	<b>45,545</b>	<b>-1,195</b>	<b>44,350</b>	<b>44,491</b>	<b>44,609</b>



**Total cuts are just under 2 M/BD  
or 2.7% of OPEC+ output**



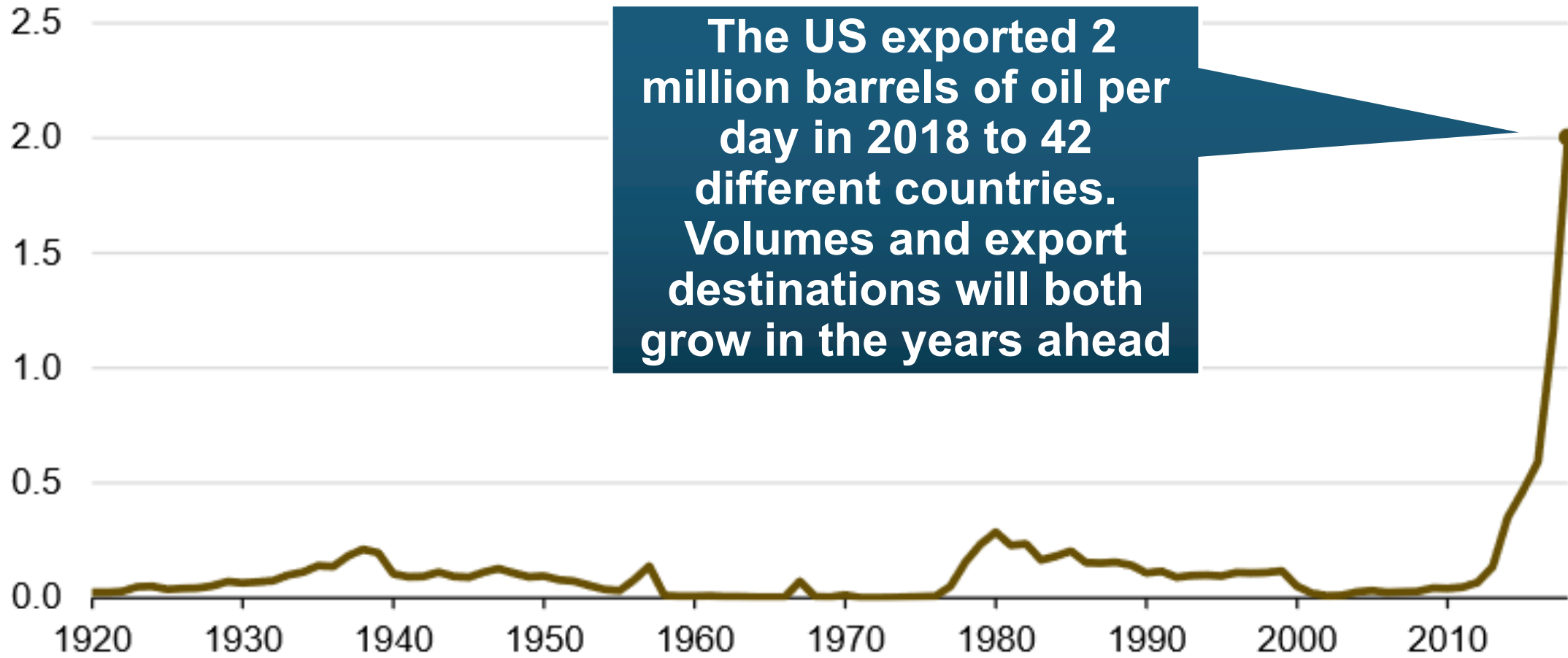
# But OPEC+ Efforts Confront US Production Headwinds



**Total cuts are just under 2 M/BD  
or 2.7% of OPEC+ output**



# US Crude Oil Exports—One Century of History: 1920 – 2018



Source: US Energy Information Agency accessed 15 April 2019 at:  
<https://www.eia.gov/todayinenergy/detail.php?id=39072>

# Geopolitics and Uncertainty: Turkey Adds to Uncertainty

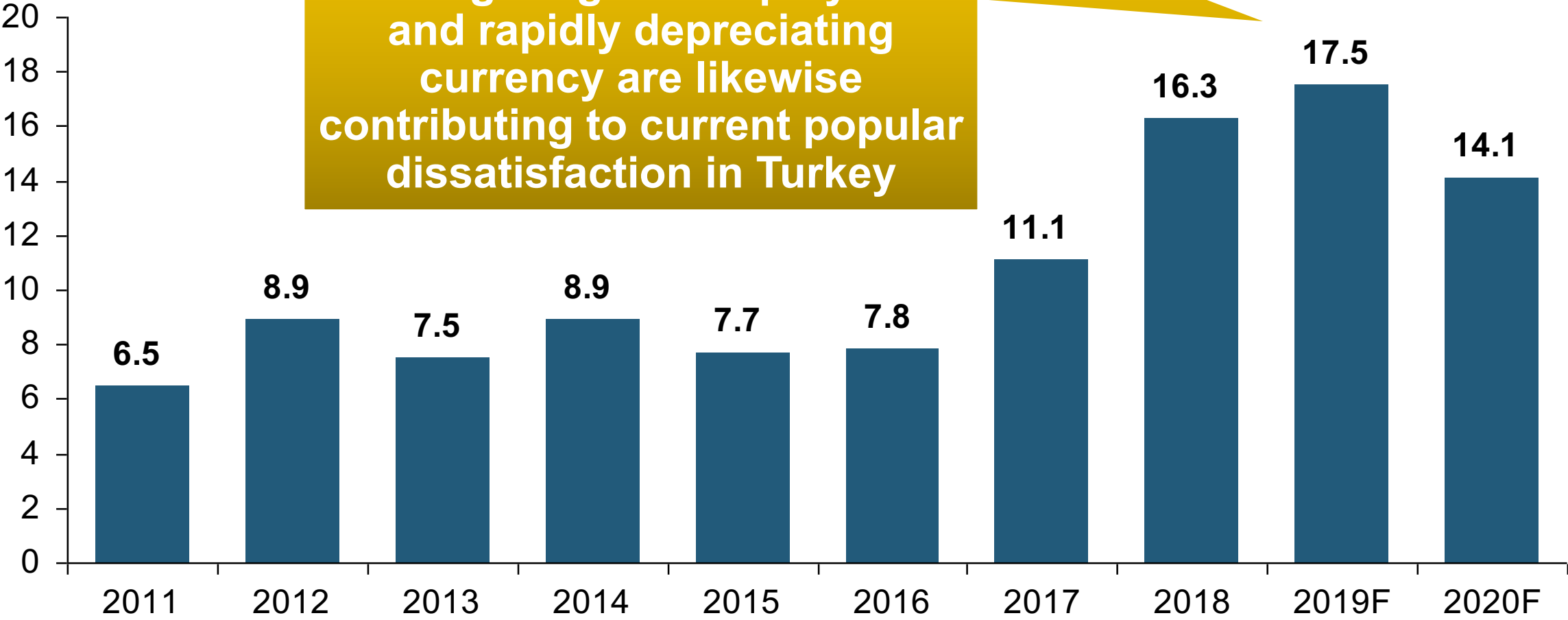


- **Turkish local elections on 30 March saw the party of President Tayyip Erdogan, the AKP, lose its hold on several key cities, including Istanbul and the capital, Ankara**
  - ◆ **The AKP will appeal the elections in both cities and is pushing for a recount in Istanbul**
- **The immediate driver of dissatisfaction is the poor state of the Turkish economy**
  - ◆ **Economy fell into recession this year, with GDP growth expected at -2.5%**
  - ◆ **Unemployment rate > 10%; >30% for young people**
  - ◆ **Inflation is approaching 20%**
  - ◆ **Turkish lira collapsed, down 28% in 2018 against USD**

# Turkish Inflation Rate: 2011 – 2020F

(Inflation Rate, %)

Persistently high inflation erodes incomes and standard of living. High unemployment and rapidly depreciating currency are likewise contributing to current popular dissatisfaction in Turkey



Source: IMF, *World Economic Outlook*, April 2019.

# Populist Movements

***Not Limited to Emerging Markets—With Additional Regional and Global Energy and Insurance Market Implications***

# Populism Spans the Globe



Trumpeters



Brexiters

- There many differences but also many differences in between the populist movements in the US and UK and elsewhere around the world
- All represent a threat to globalization—the free flow of goods, services and people across borders
- This can only be a negative for global industries such as insurance and energy



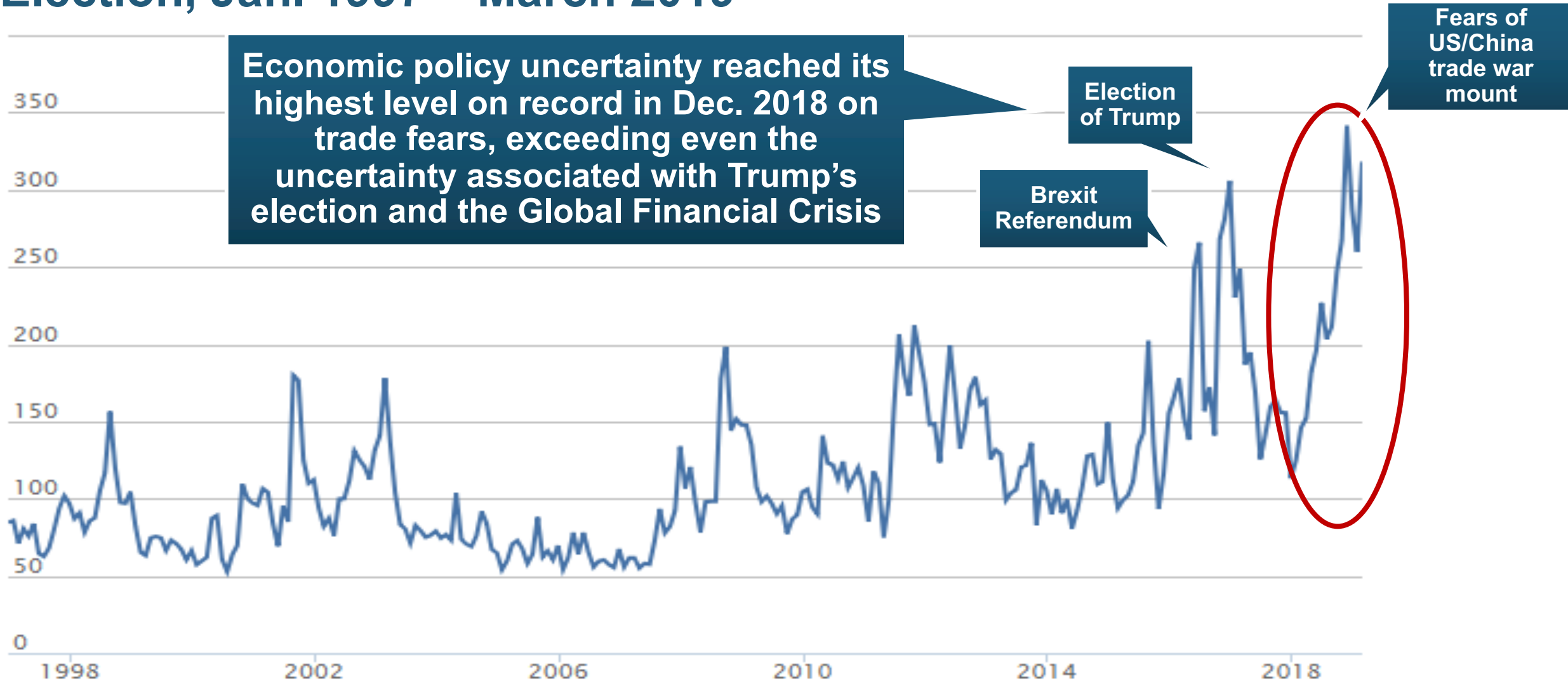
# Trump's Trade War: "America First" Policy

- **The United States has levied or threatened to levy tariffs against all \$262 billion of Chinese imports to the US**
  - ◆ Major products impacted include solar panels, steel, aluminum, motor vehicle parts, electronics, home appliances, clothing
  - ◆ China has strategically matched US tariffs, dollar for dollar; Cut back on oil imports
- **Tariffs also been levied against many US trade partners incl. Canada, Mexico, South Korea, Turkey and the EU**
  - ◆ Most have retaliated
- **The US has dissolved NAFTA in favor of a new agreement known as USMCA—US Mexico Canada Agreement**
- **The US has threatened to pull out of the WTO**
- **The US withdrew from the TPP (2017)**
- **The US withdrew from the Paris Climate Accord**

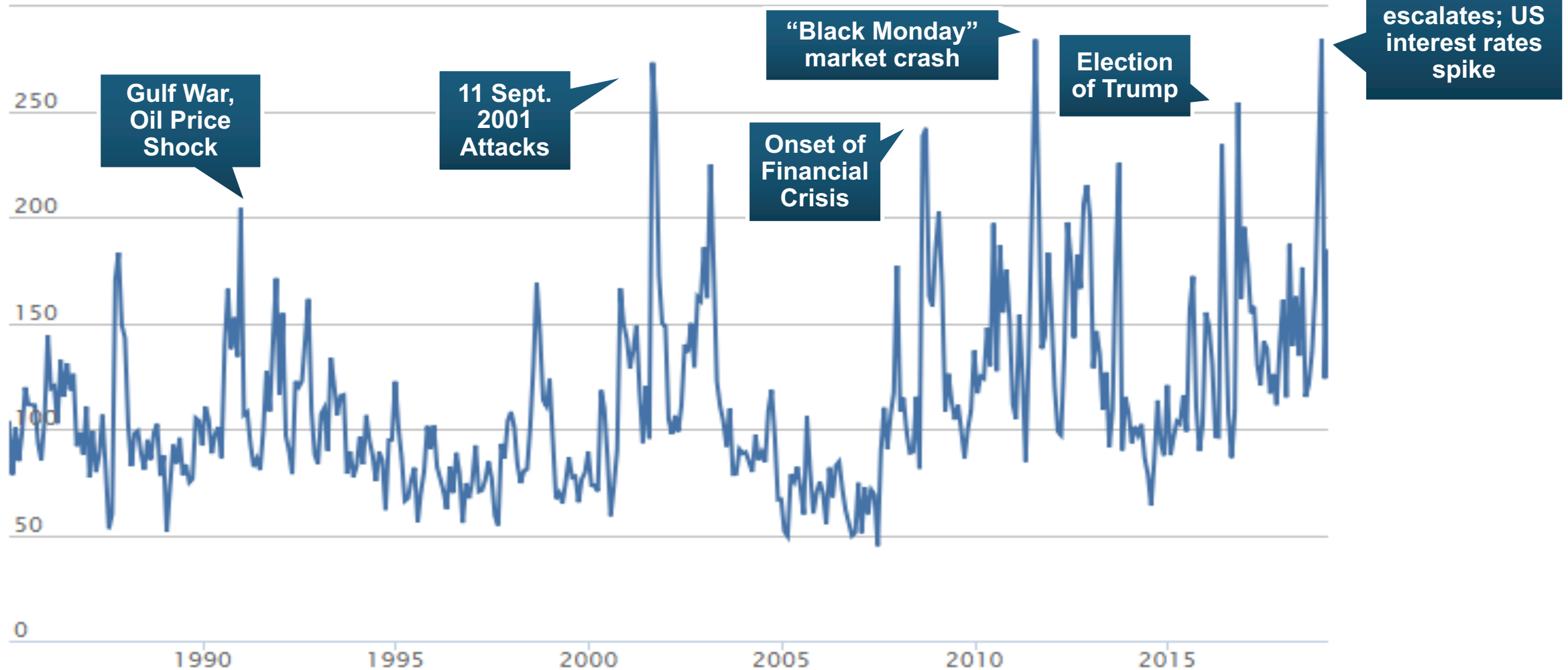
# Brexit and Energy

- **Brexit and the uncertainty it has brought to the UK, EU and world have unquestionably been a net economic negative**
- **Questionable whether a comprehensive deal can be reached by the new 31 October 2019 deadline**
- **That said, the consensus is that the impact of Brexit on the UK's energy markets should be less disruptive than on many other markets**
- **But concerns remain as the UK is a net importer of energy:**
  - ◆ **Ensuring ongoing investment (replacing EU investment)**
  - ◆ **Maintaining stable energy prices**
  - ◆ **Adhering to climate goals**
  - ◆ **Achieving the appropriate balance of support between climate and energy goals**

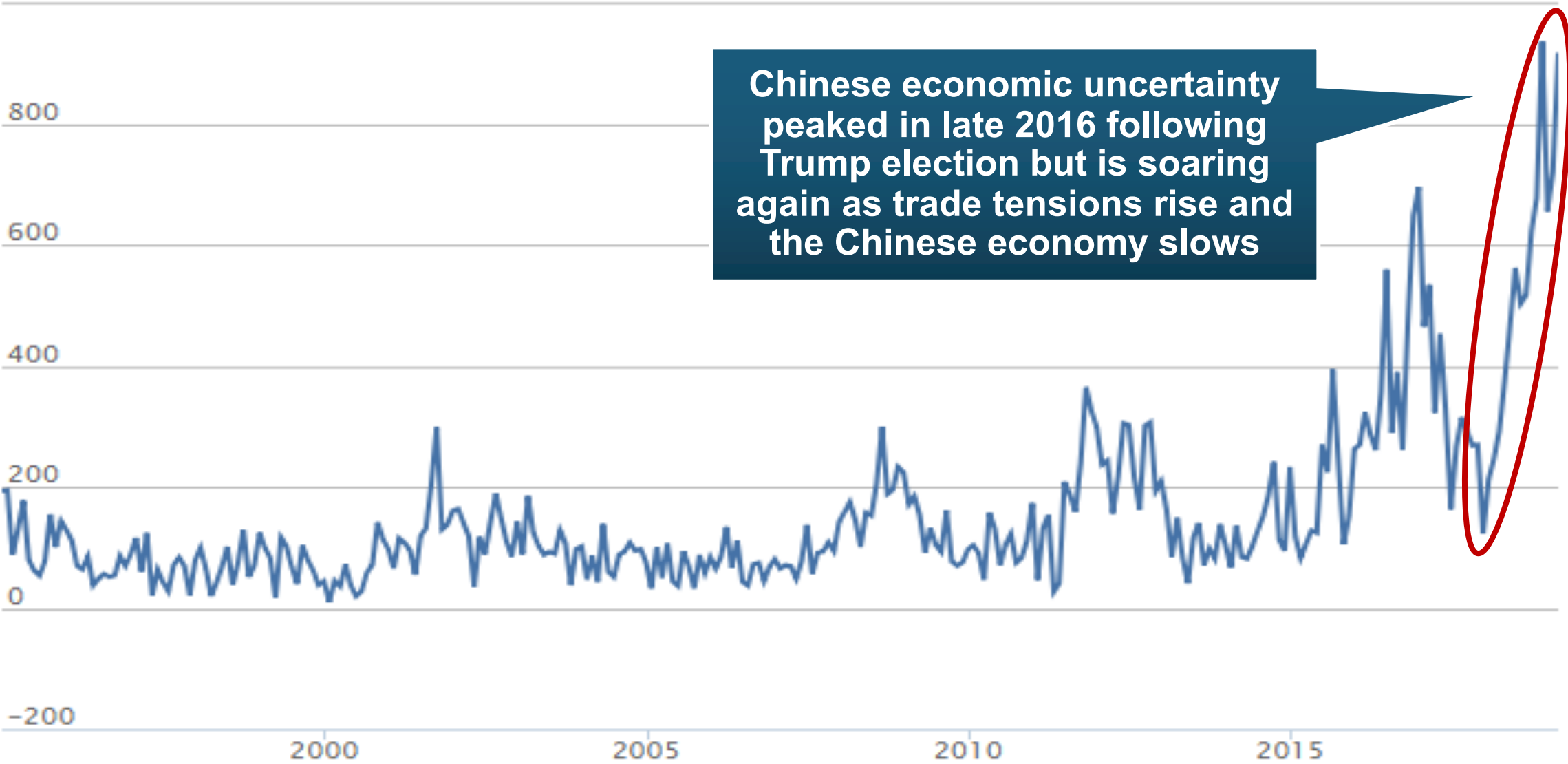
# Global Economic Policy Uncertainty Index: Global Economic Uncertainty Has Increased Significantly Since Trump's Election, Jan. 1997 – March 2019



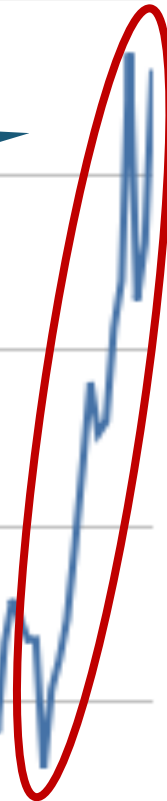
# US Economic Policy Uncertainty Index: US Has Been Elevated Since the Advent of the Global Financial Crisis, Jan. 1985 – March 2019



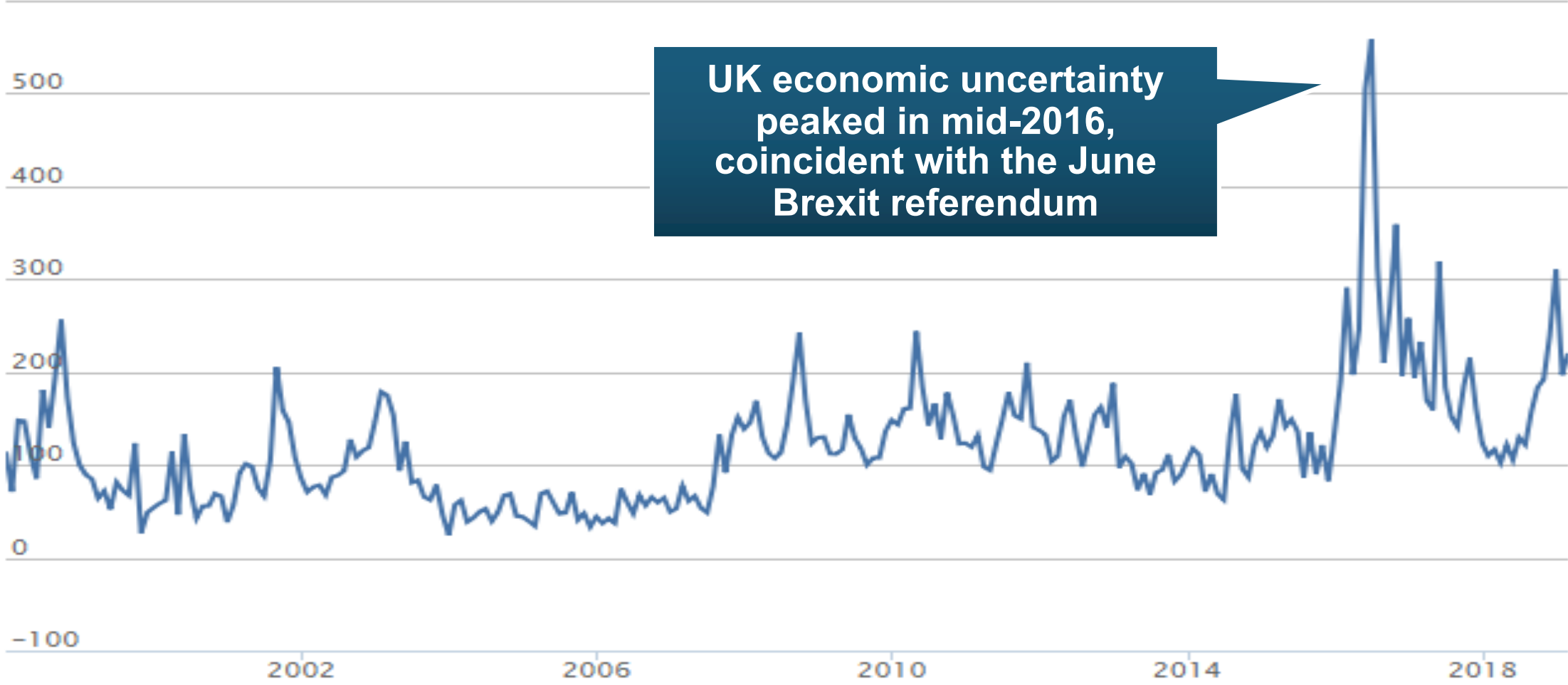
# China Economic Policy Uncertainty Index: Chinese Uncertainty Tied to Escalating Trade War, Jan. 1995 – March 2019



Chinese economic uncertainty peaked in late 2016 following Trump election but is soaring again as trade tensions rise and the Chinese economy slows



# UK Economic Policy Uncertainty Index: UK Uncertainty Tied to Brexit, Jan. 1998 – March 2019



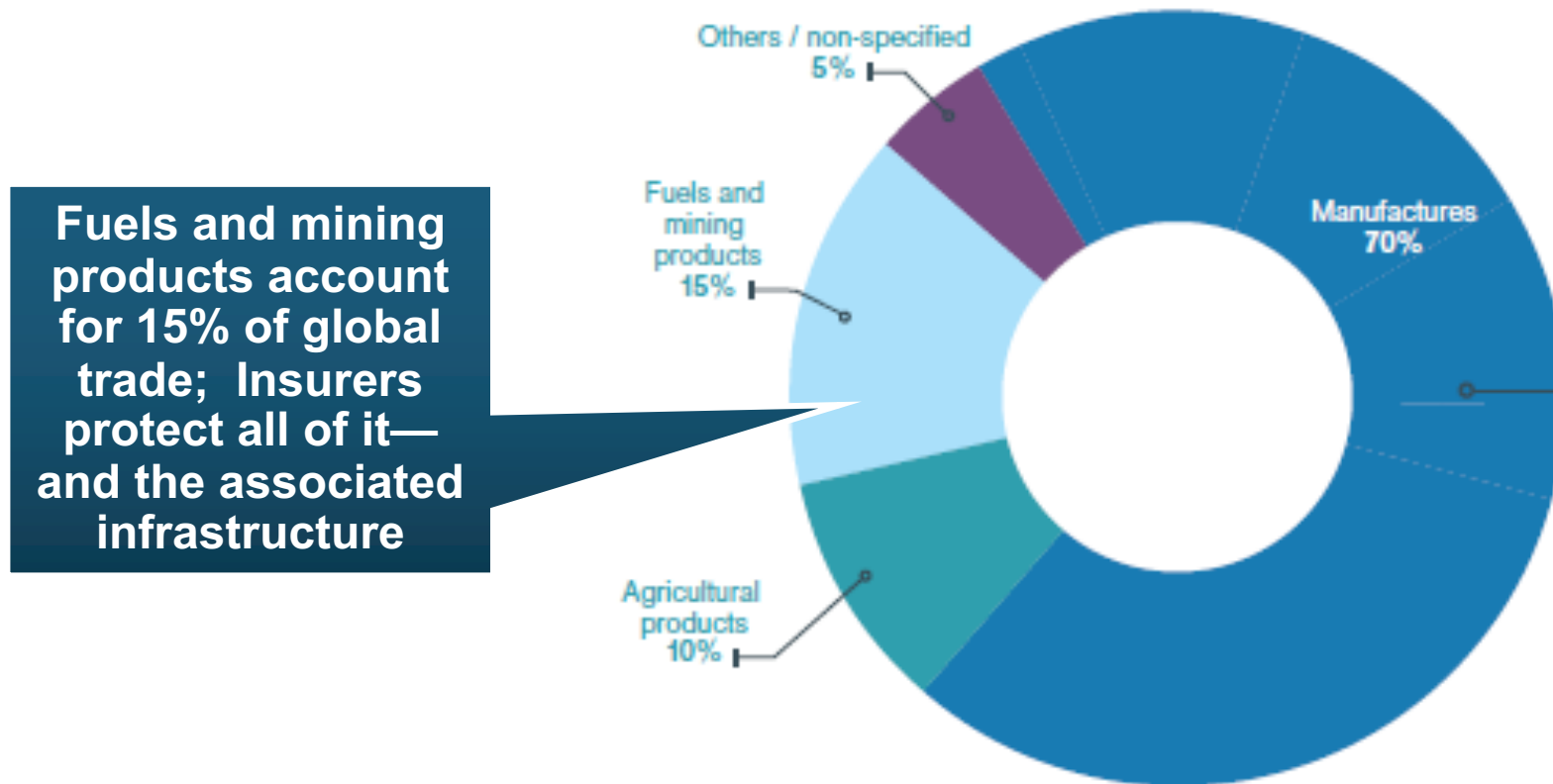
Source: *Economic Policy Uncertainty*, PolicyUncertainty.com accessed 12 Apr. 2019 at: <http://www.policyuncertainty.com/index.html>

# ENERGY NATIONALISM

**The Use of Energy Resources to Exert  
Political and Economic Influence Is  
on the Rise—But Is Not New**

***Nationalism and Energy Are a Volatile  
Combination***

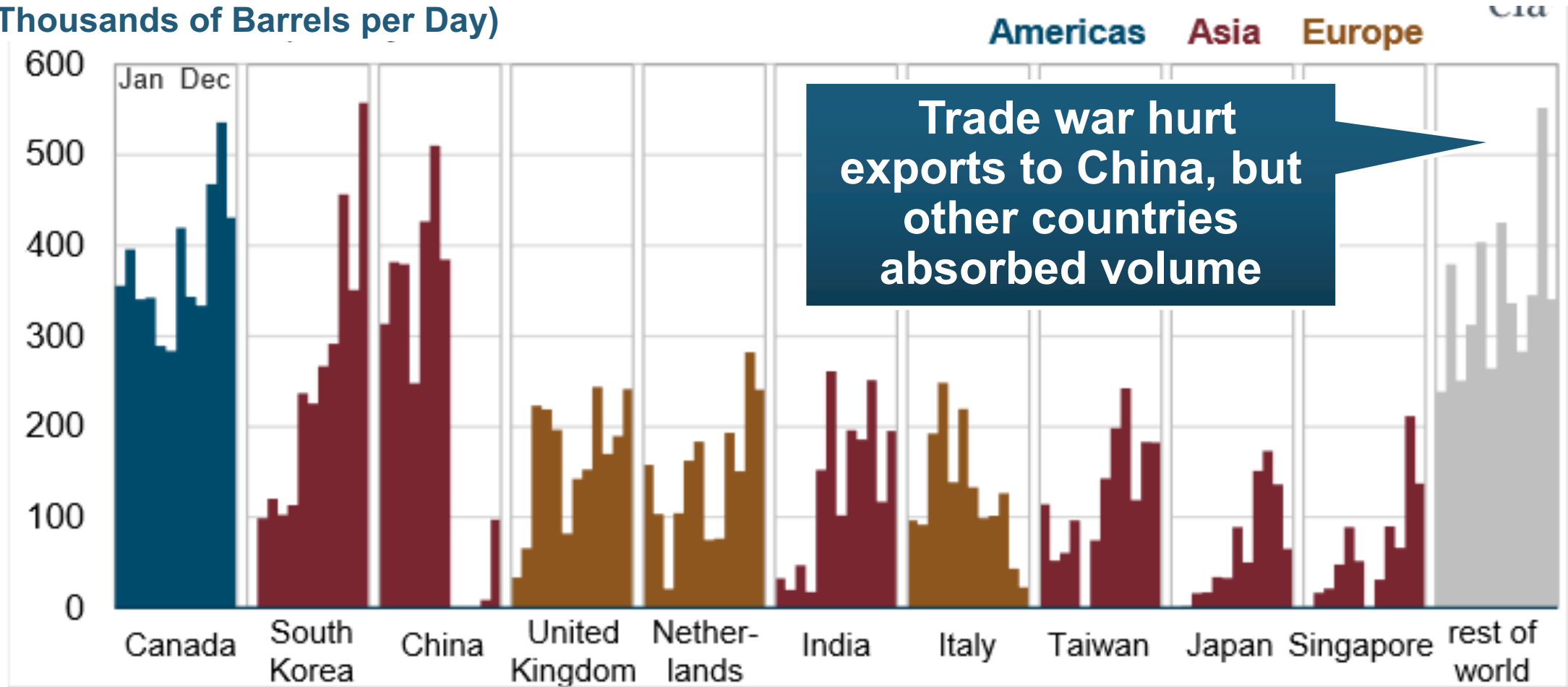
# Energy Products (Fuels) Account for a Significant Share of Global Trade Volume, 2018





# US Crude Oil Exports by Leading Destination, 2018

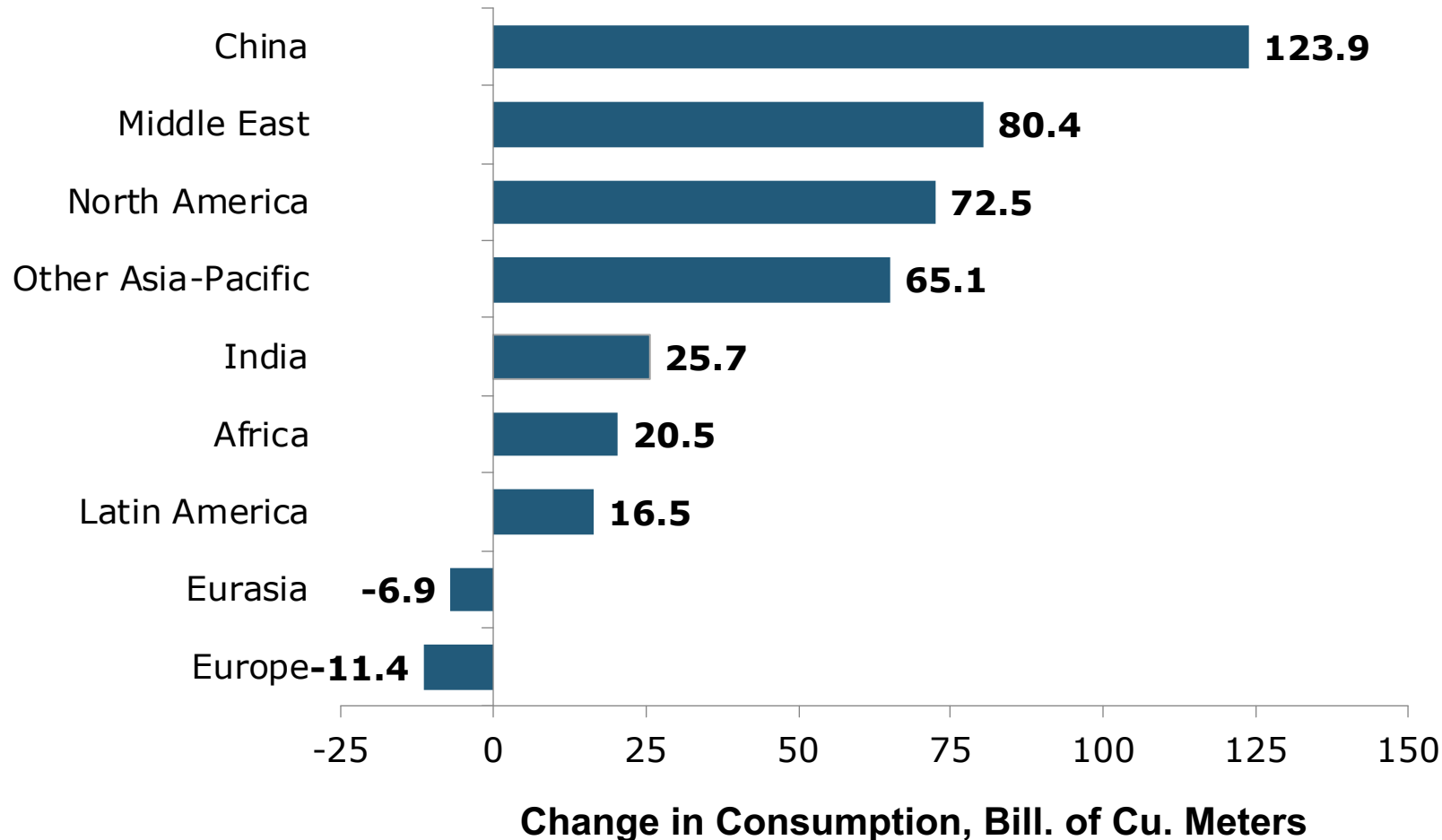
(Thousands of Barrels per Day)



Source: US Energy Information Agency accessed 15 April 2019 at:  
<https://www.eia.gov/todayinenergy/detail.php?id=39072>

# Natural Gas Consumption Growth: 2017 – 2023

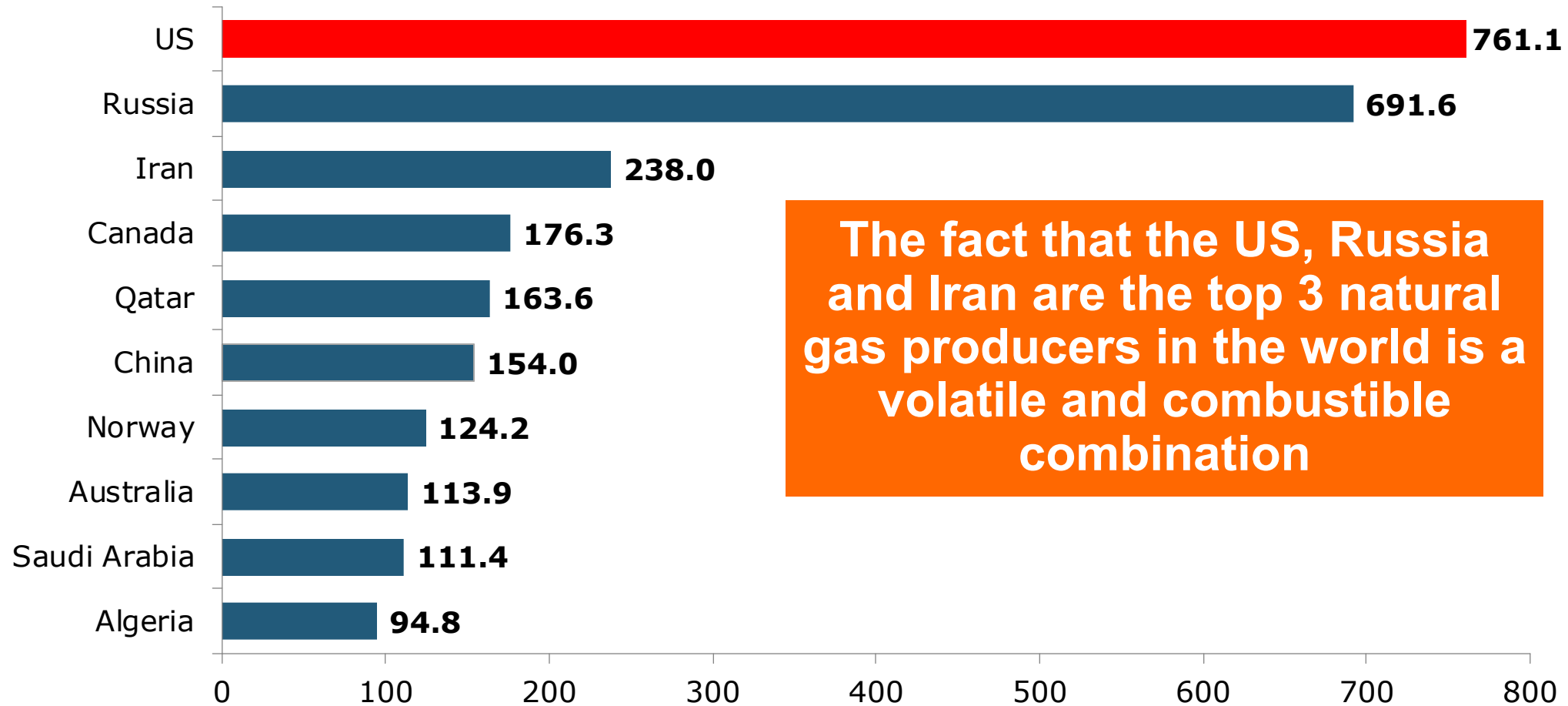
(Billions of Cubic Meters)



- China will account for the largest share of gas consumption growth through 2023
- Natural gas is becoming more globalized due to rising availability of shale gas and increasing supplies of LNG
- The globalization of gas, while positive overall, means that supply shocks in one region are more easily transmitted to other regions—as has been the case for oil for many decades

# Top 10 Producers of Natural Gas: 2017

(Billions of Cubic Meters)



# Energy Nationalism—Back Again

- **The United States is using its newfound energy riches to restructure the global energy hierarchy**
  - ◆ The rapid transition from a net energy importer to a major exporter has:
    - Reduced dependence on volatile sources in the Middle East and greatly weakened the OPEC cartel
    - Allowed the US to gain leverage over Iran, Russia, Saudi Arabia and as well as “thorns in the side” such as Venezuela
    - Allowed the US to insert itself into Western Europe’s relationship with Russia
- **Russia itself seeks to use its energy resources to exert greater influence in European affairs**
  - ◆ **Nord Stream 2 pipeline**



# Energy Nationalism—Conflict and Climate

- **Various oil and gas rich states in the Middle East are battling for influence across the MENA region**
- **Venezuela's problems adding to US/Russia and US/Cuba tensions**
- **Energy nationalism is carbon-focused and could slow the movement toward renewables**
  - ◆ **Oil and gas are potent economic weapons. Countries with these resources have a vested interest in maintaining their hegemony for both economic and political reasons**
    - US: Trump withdrawal from the Paris Climate Accord
    - Rapid US growth in carbon energy exports
    - Scaling back of domestic regulation to support this sector
    - Reduction/elimination of subsidies for renewables
    - Easing of restrictions on coal sector

# Energy Nationalism: Insurance Industry Concerns

## ■ Growth: Opportunities and Threats

- ◆ Aggressive efforts to expand global energy influence (e.g., as with the US and Russia) can create growth opportunities as investments in energy infrastructure grow
  - Pipelines, LNG facilities, tankers, rail networks, new on/offshore capacity and associated casualty exposures
- ◆ Growth can be harmed if insurers are dragged into enforcing sanctions or energy infrastructure is nationalized
  - Iranian sanctions
  - US sanctions against shipping of Venezuelan oil

## ■ Financial Market Volatility

- ◆ Insurers are among the largest institutional investors in the world; Uncertainty has historically had an adverse impact on investment returns

# Energy Nationalism: Insurance Industry Concerns

## ■ Energy Insurance Markets of the Future

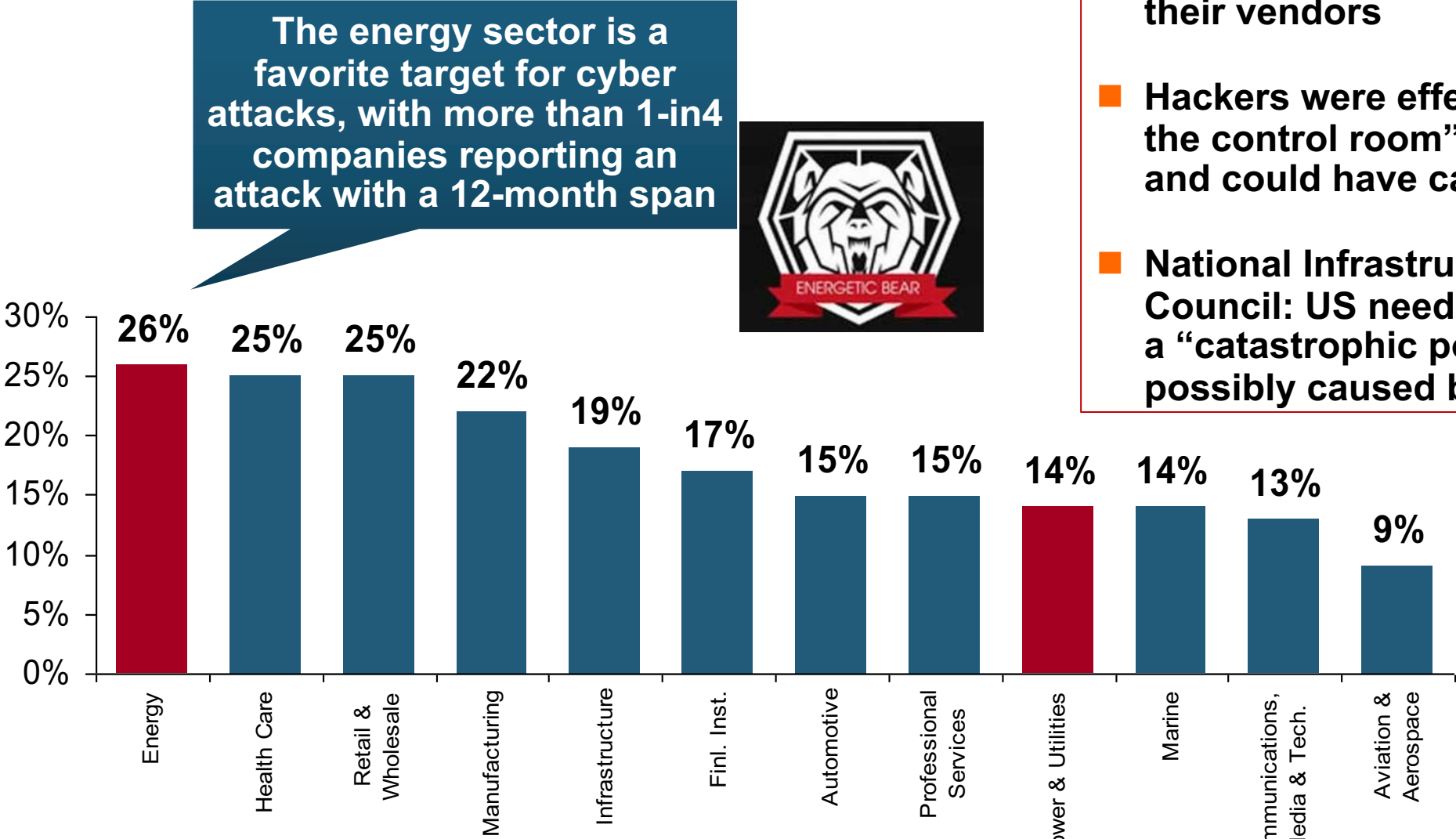
- ◆ Carbon vs. Renewables?
- ◆ Should insurers play an active role?

## ■ The Weaponization of Energy Infrastructure

- ◆ Increasing nationalism, coupled with other geopolitical threats, makes energy infrastructure a vulnerable and high-value target
- ◆ Cyber attacks are the major threat
- ◆ Major attacks on energy infrastructure could produce catastrophic insured losses for (re)insurers



# Percentage of Firms Indicating They Were Victims of Cyber Attacks\*



The energy sector is a favorite target for cyber attacks, with more than 1-in-4 companies reporting an attack with a 12-month span



- Russian hackers have penetrated hundreds of US utilities and/or their vendors
- Hackers were effectively “inside the control room” of many utilities and could have caused blackouts
- National Infrastructure Advisory Council: US needs to prepare for a “catastrophic power outage” possibly caused by a cyber attack

\*Survey conducted in 2017.  
Source: Marsh Cyber Handbook 2018; USC RUM.

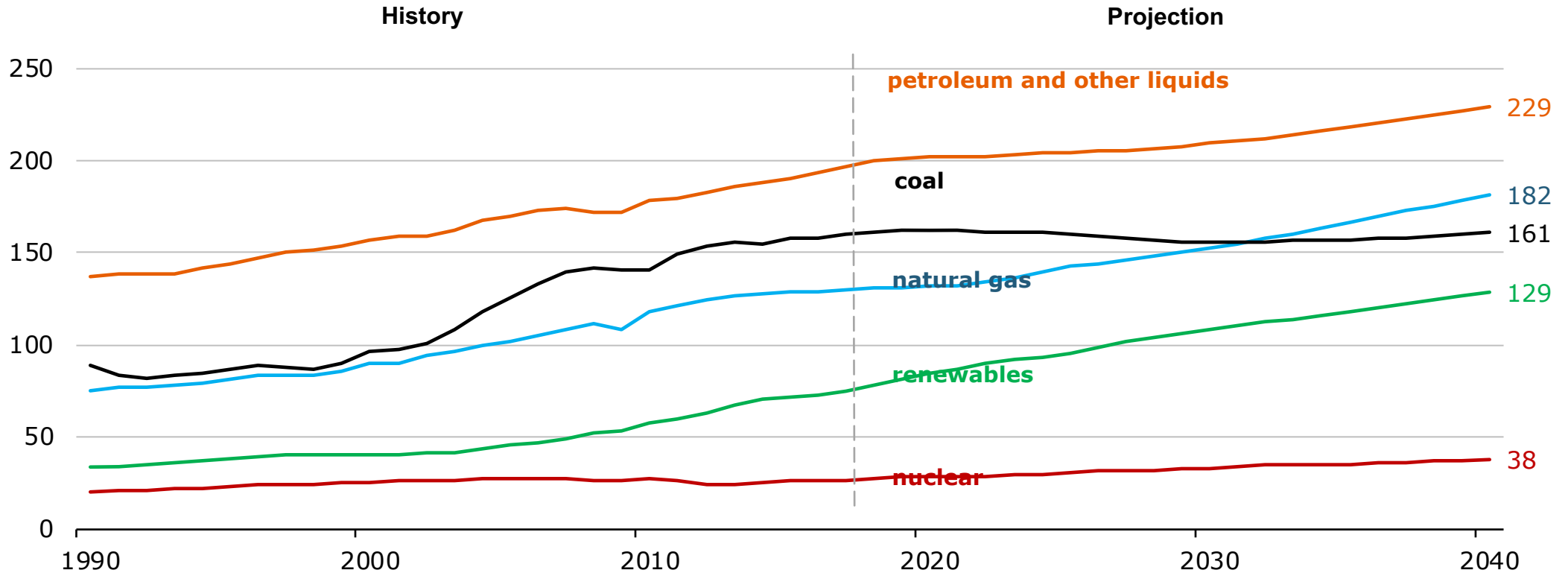


# Global Perspective: We Live in an Energy- Hungry World

**Demand for Energy Will Increase  
Robustly on a Global Scale for the  
Foreseeable Future**

***Near and Long-Term Growth  
Opportunities for (Re)Insurers***

# World Energy Consumption Continues to Increase for Fuels—*Other than Coal*

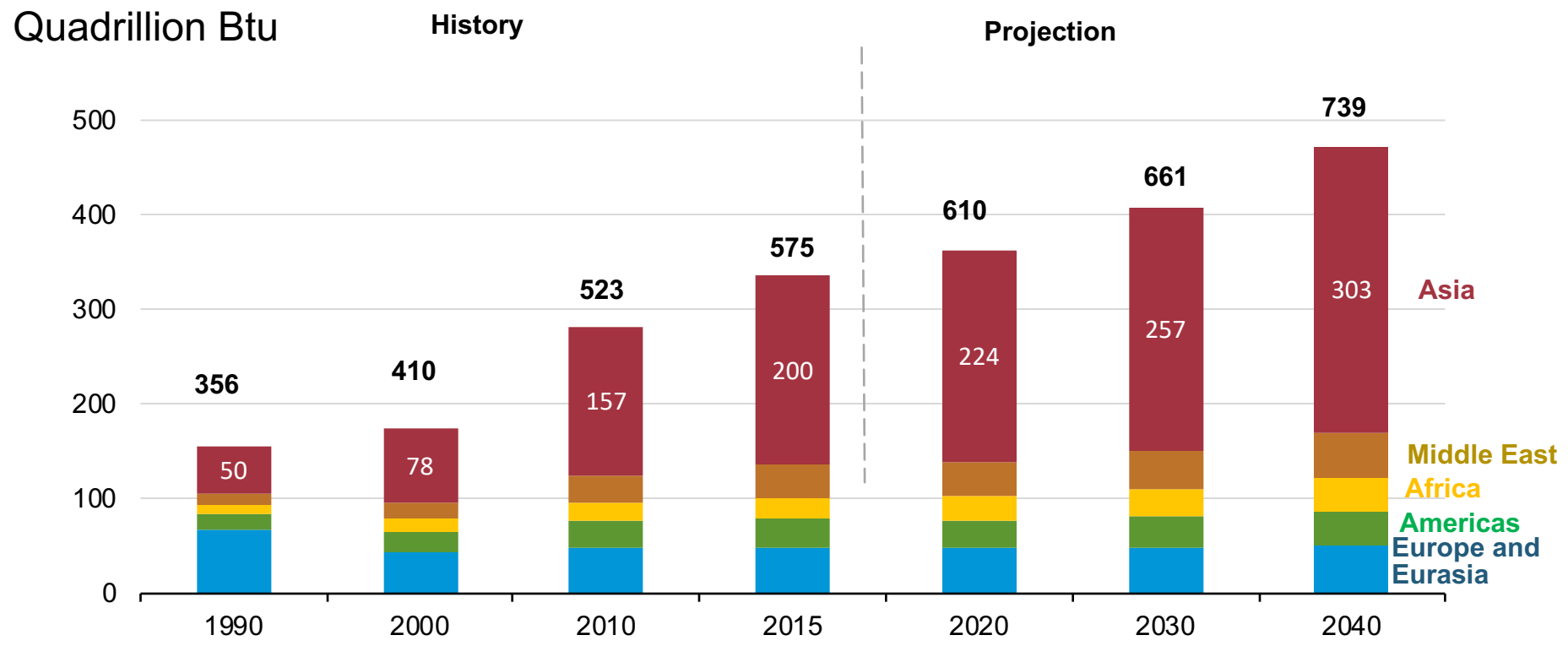


\*Based on IEO2018 reference case.

Source: EIA, International Energy Outlook 2018

# Asia is Projected to Have the Largest Increase in Energy Use of non-OECD Regions

## Non-OECD energy consumption, by region



\*Based on IEO2018 reference case.

Source: EIA, International Energy Outlook 2018

# Energy Investment Trends

## Energy Investment Drive Insurable Exposures

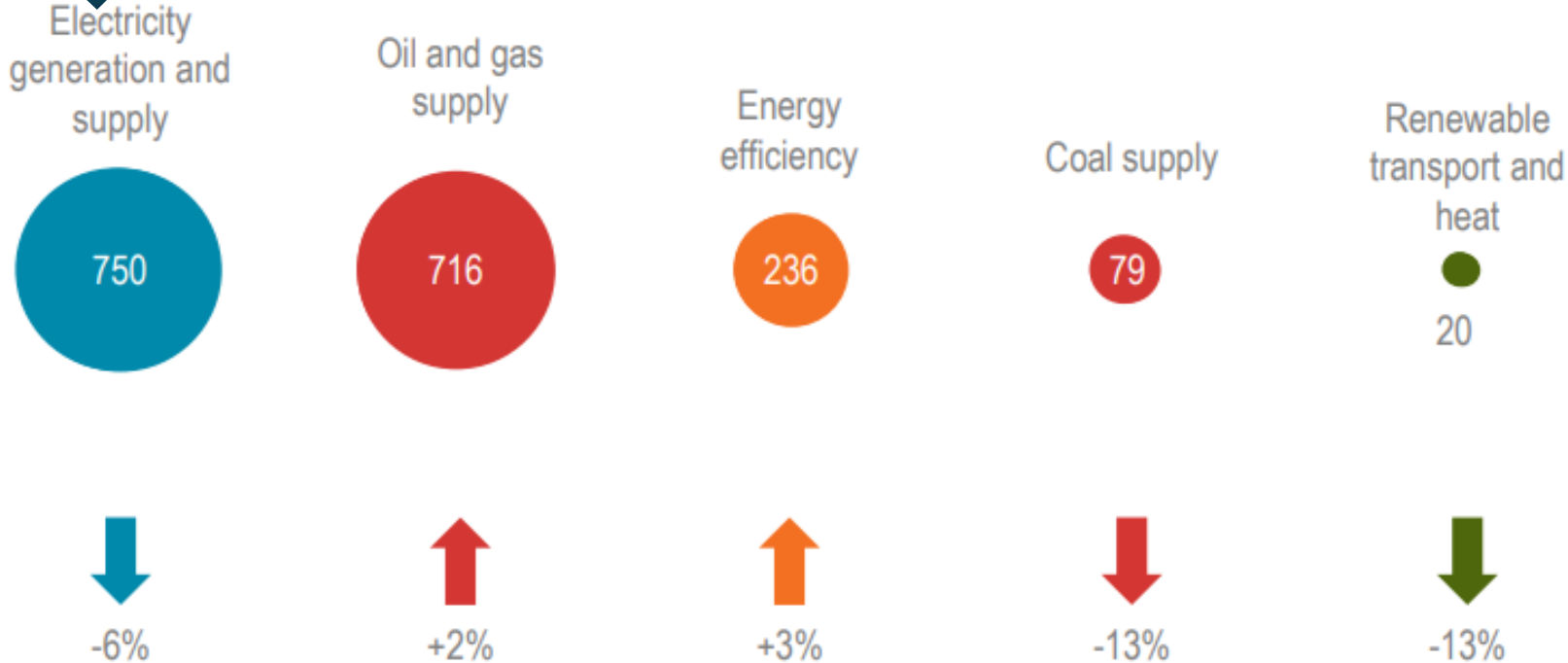
*Investment Trends Have Shown Some  
Weakness in Recent Years, but Longer  
Terms Trends Bode Well for Energy Insurers*

# Global Energy Investment, 2017

(\$ Billions)

Electricity generation and supply invested the most in 2017, though investment was down by 6%

Global energy investment fell by 2% in 2017, the 3<sup>rd</sup> consecutive year of decline



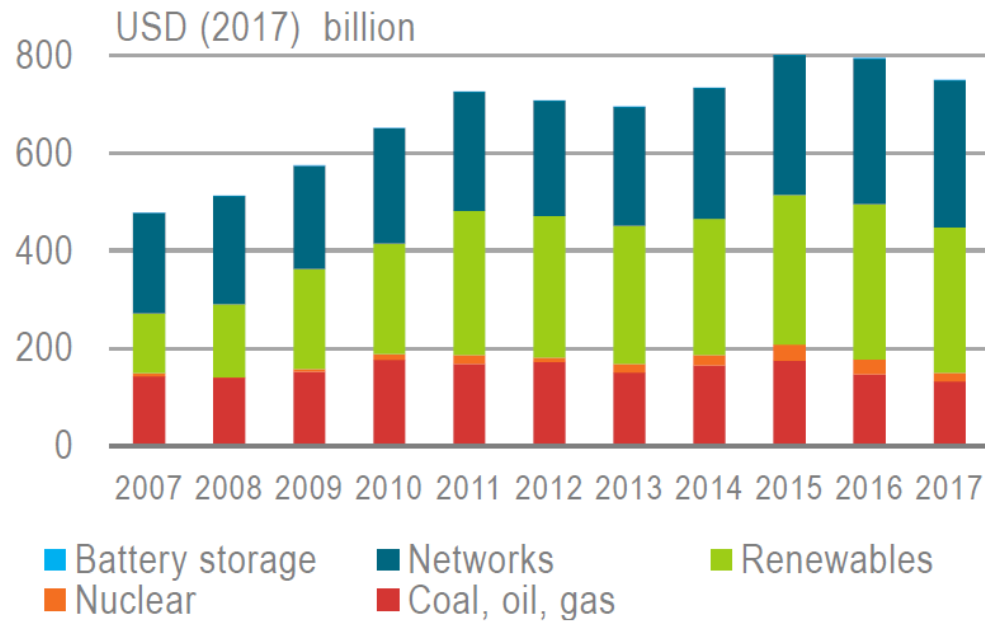
Source: International Energy Agency, *World Energy Investment 2018*, at: <https://www.iea.org/wei2018/>

# Global Energy Investment, 2017 (\$ Billions)

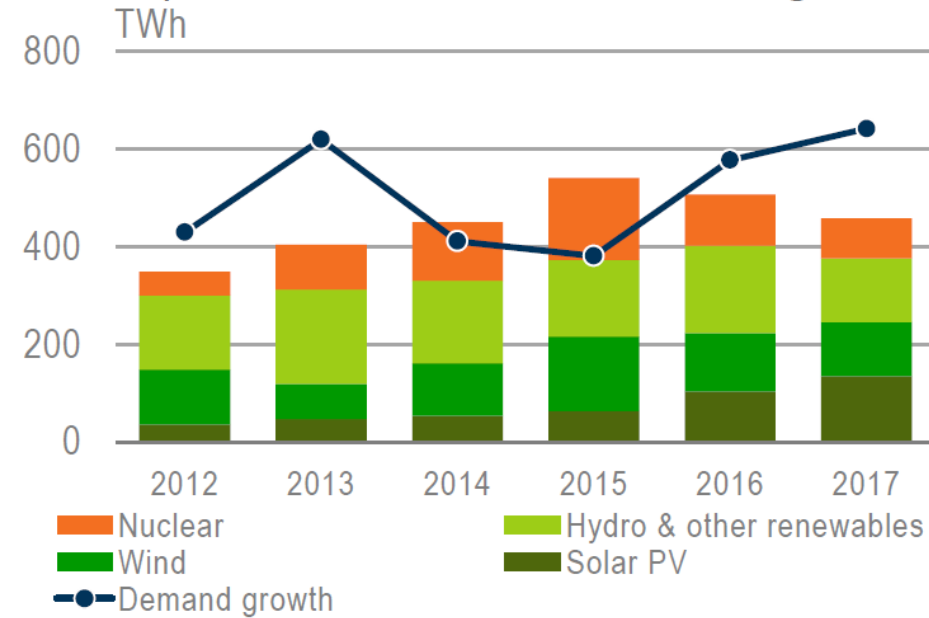
Renewables and networks/grid investments are increasing as carbon-based investments decline proportionately

Low carbon generation is actually falling largely due to decommissioning of numerous nuclear facilities

Global power sector investment



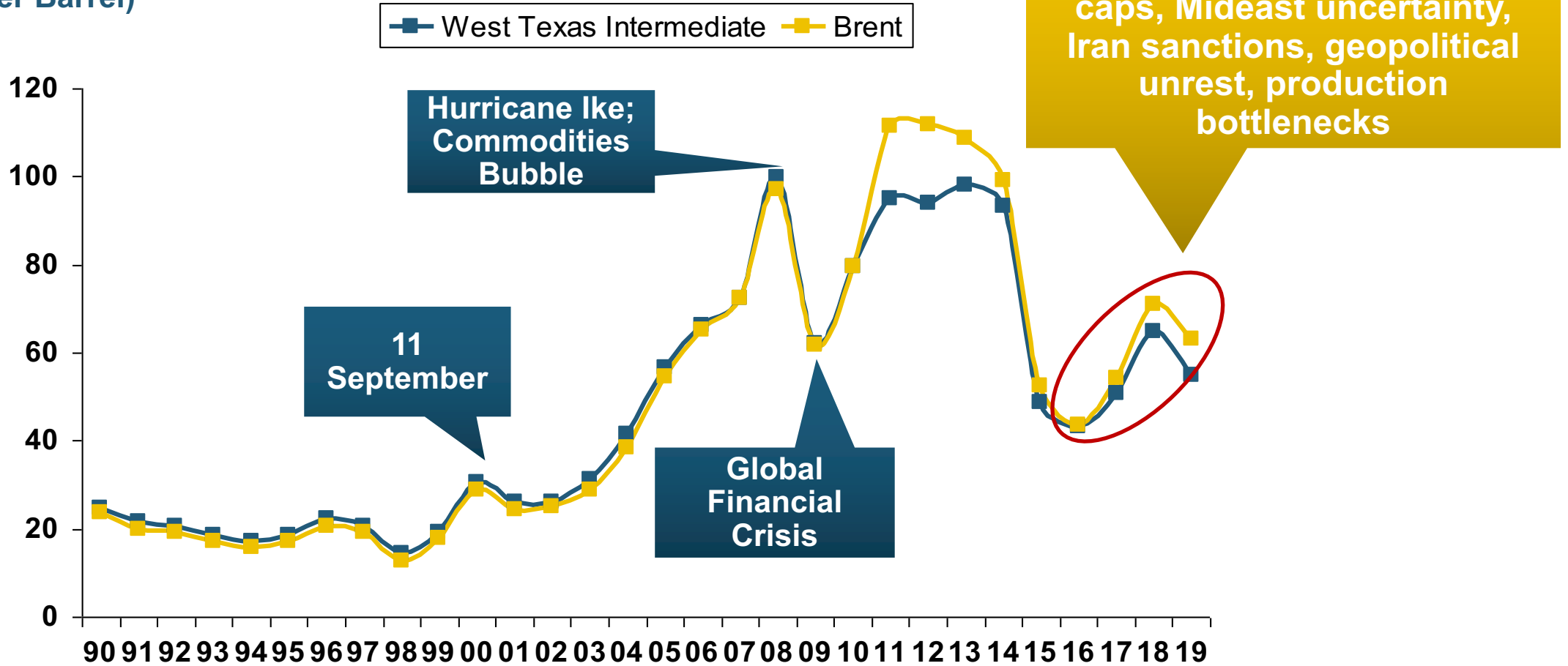
Expected generation from low-carbon power investments vs demand growth



Source: International Energy Agency, *World Energy Investment 2018*, at: <https://www.iea.org/wei2018/>

# Crude Oil Prices: 1990 – 2019\*

(\$USD Per Barrel)



**Crude Oil Pricing Remains Volatile—Impacted by US Capacity Additions, OPEC/Russia Supply Agreement, Economic, Political and Geopolitical Issues Among Some Major Producers**

\*2019 figure is the average of monthly figures through March 2019.  
Source: US Energy Information Administration.

# Energy Supply: The Transformation Continues

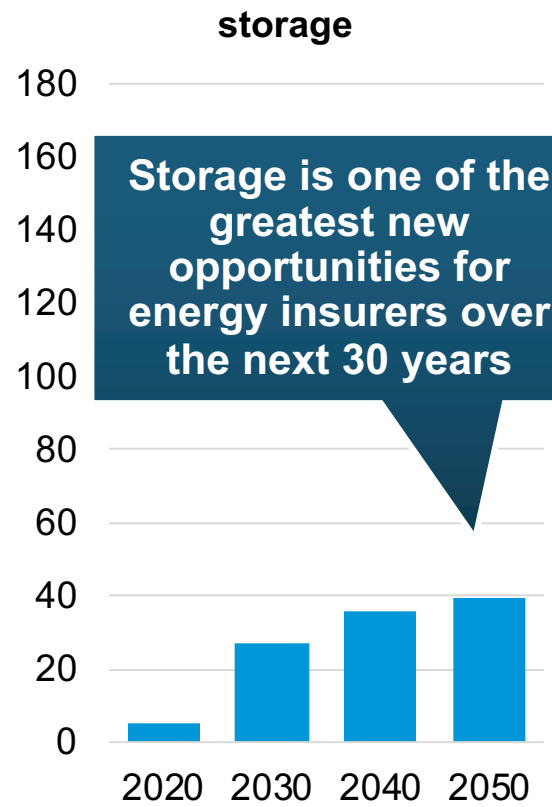
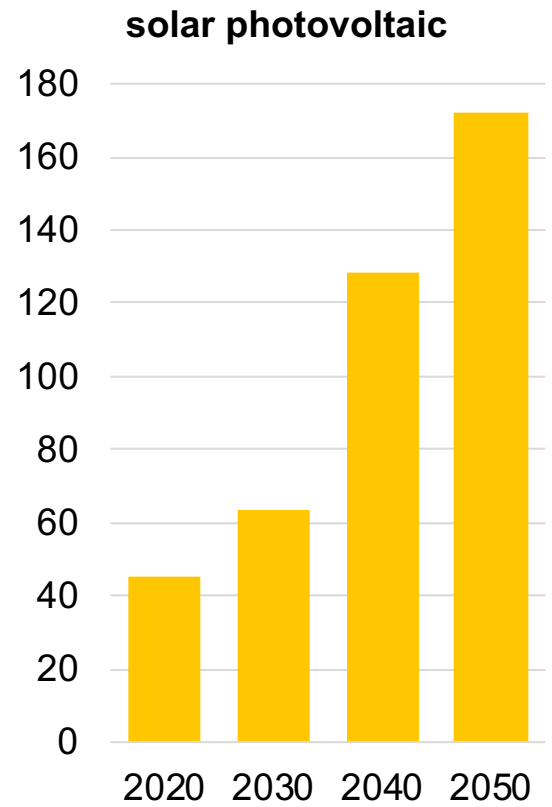
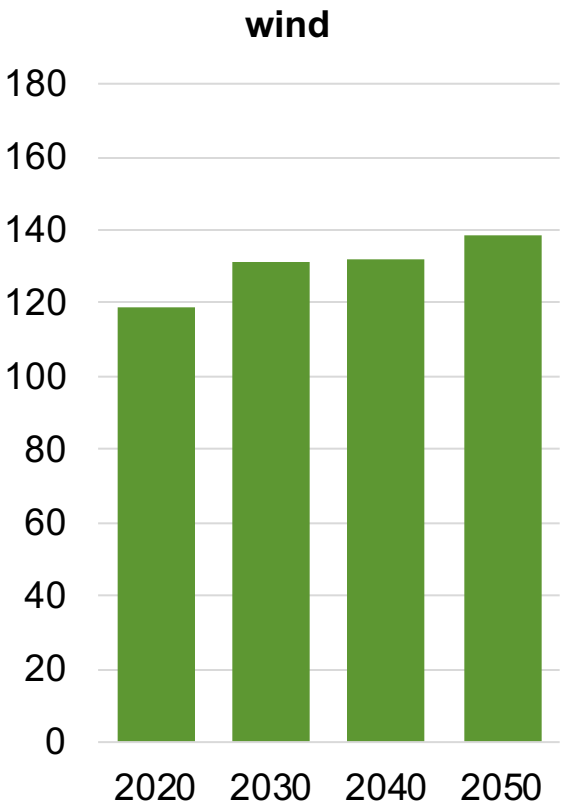
**Economics, Technology, Politics and  
Regulation Will Reshape Energy Supply,  
Generation and Transmission for Decades  
to Come**

***A Peek into the Industry at Mid-Century***



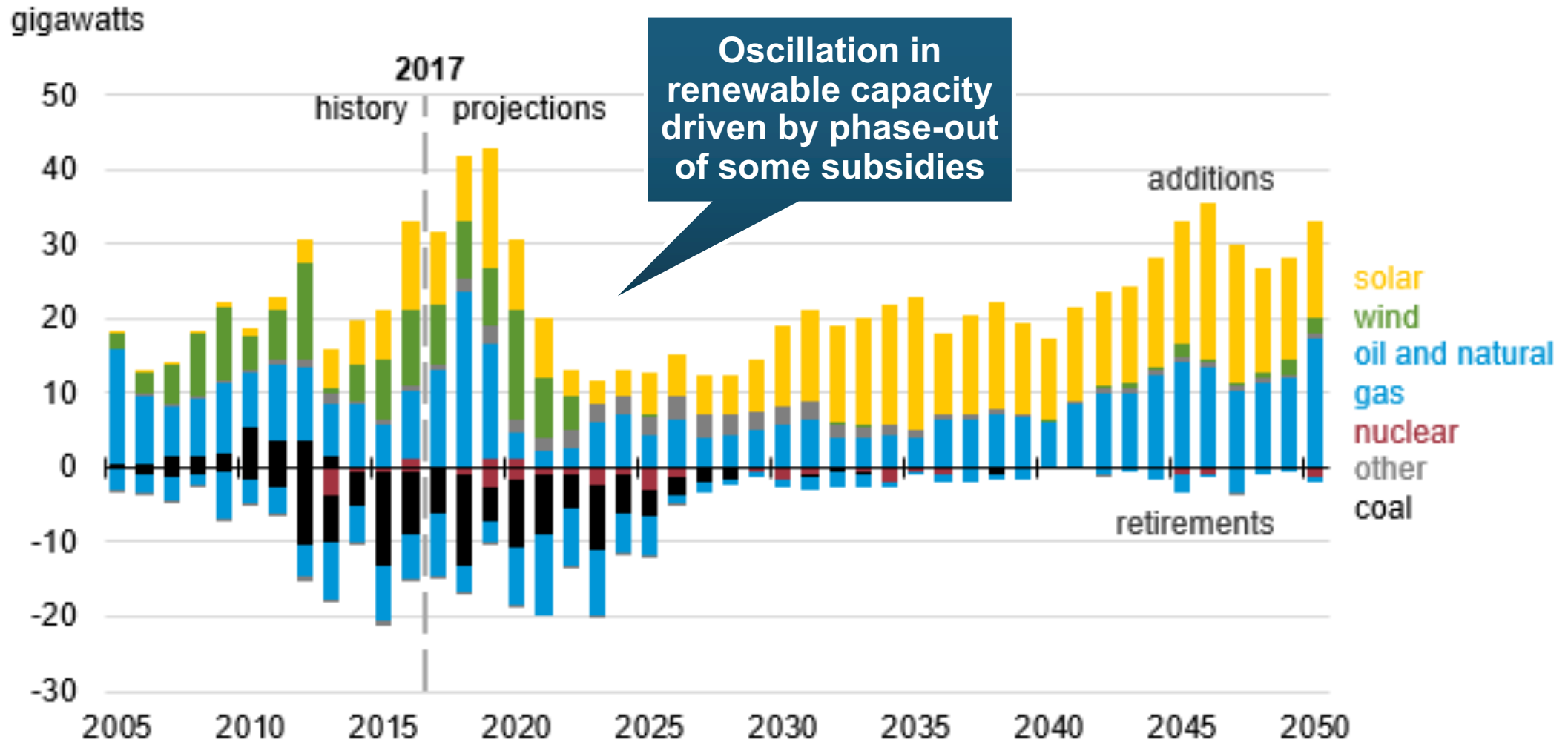
# Increasing Wind and Solar Capacity Additions...Necessitates More Storage Investment

Utility-scale wind, solar, and storage operating capacity gigawatts



Source: Energy Information Administration, Annual Energy Outlook 2018 at [www.eia.gov/aeo](http://www.eia.gov/aeo)

# Renewables and Natural Gas Comprise Most of the Generation Capacity Additions through Mid-Century

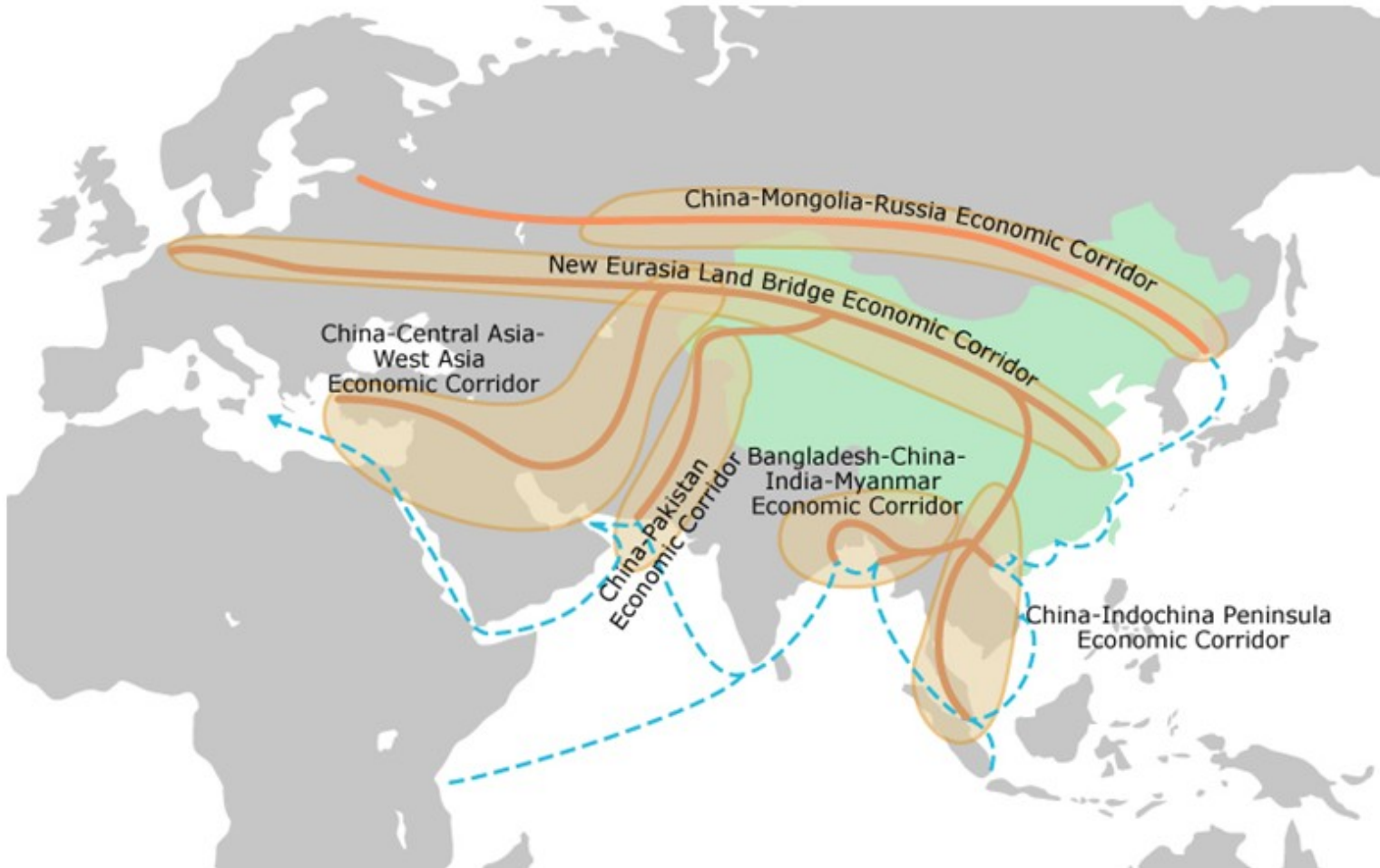


# The New Silk Road: China's Belt Road Initiative

**China's Bold and Global Investment Initiative Has Major Implications for Energy Markets**

# China's Belt and Road Initiative

The Belt and Road Initiative: Six Economic Corridors Spanning Asia, Europe and Africa



## ■ China's Belt and Road Initiative

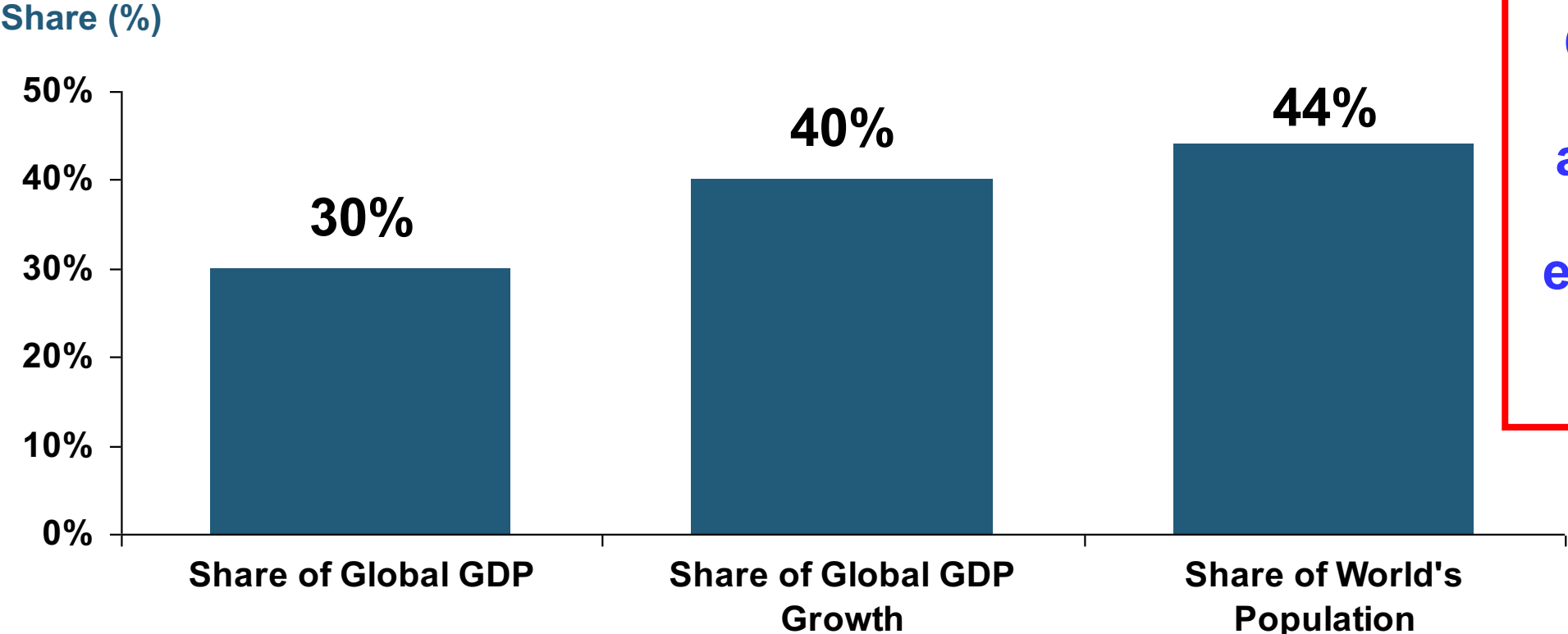
- ◆ Announced in Late 2013
- ◆ 6 Economic Corridors
- ◆ 70+ Countries in Asia, Africa and Europe

## ■ \$1 Trillion+ Total Investment Envisioned by 2027

- ## ■ Focused on Infrastructure Investments
- ◆ Roads and Railways
  - ◆ Ports and Airports
  - ◆ Pipelines and Power Plants

# The Belt and Road Initiative's Economic Footprint is Enormous

## Countries involved in China's Belt Road Initiative Possess...



**Countries participating in China's Belt and Road Initiative account for large shares of global economic activity, growth and population**

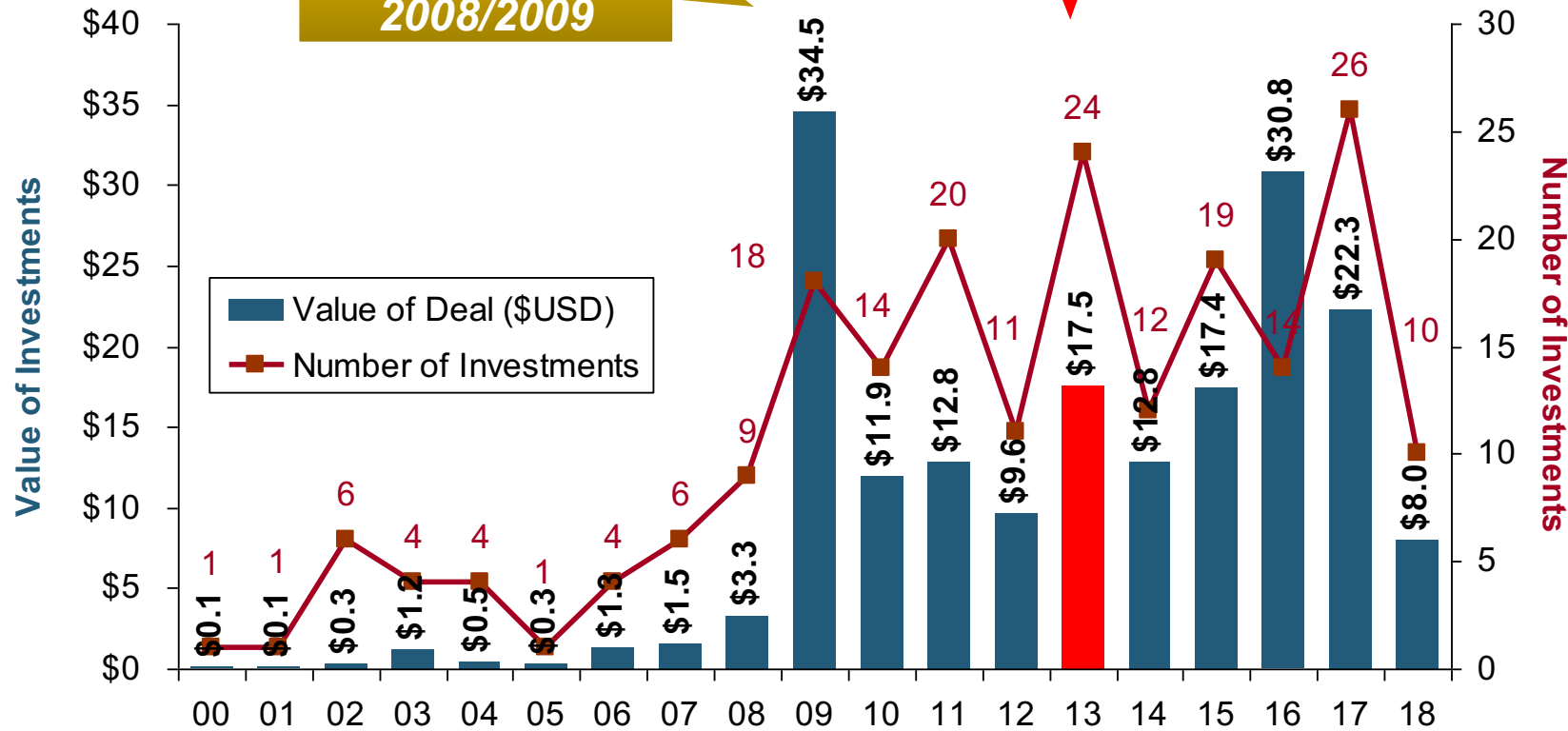
Sources: Morgan Stanley, *Inside China's Plan to Create a Modern Silk Road*, 14 March 2018 at: <https://www.morganstanley.com/ideas/china-belt-and-road>; University of South Carolina, Risk and Uncertainty Management Center.

# China Foreign Energy Investment: Investment in BRI Countries, 2000 – 2018\*

(\$USD, Billions)

Energy investment initiatives accelerated in 2008/2009

BRI Announced



China has targeted foreign energy investment for nearly 20 years

Sharp increase in investment began in 2009, pre-dating 2013 BRI announcement by 4 years

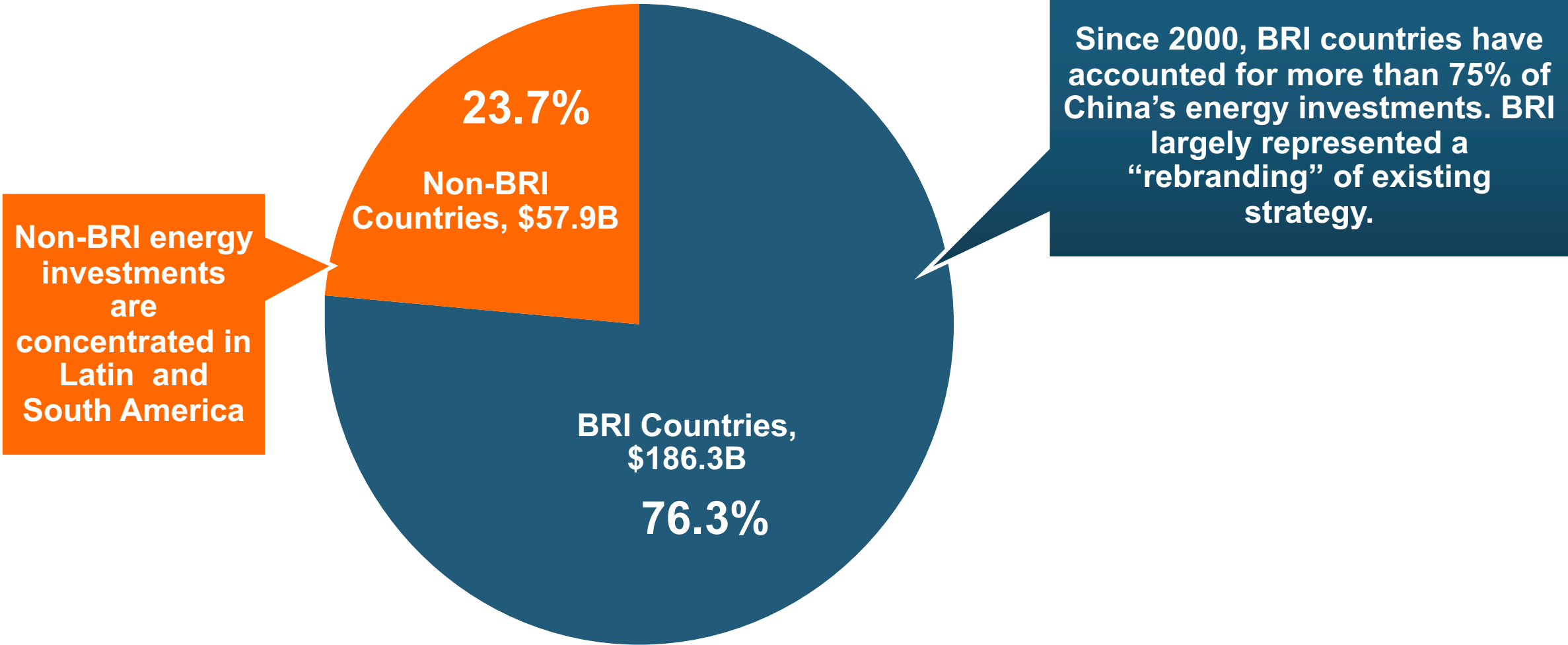
Belt and Road initiatives reflect continuation and “rebranding” of existing strategies, including:

- Securing resources for domestic Chinese economy
- Expanding economic and political influence

\*Financing through Chinese Development Bank and the Export-Import Bank of China.

Source: Boston University, Global Development Policy Center: China's Global Energy Finance accessed 8 Apr. 2019 at <https://www.bu.edu/cgef/#/2018/Country/Global>; Risk and Uncertainty Management Center, University of South Carolina.

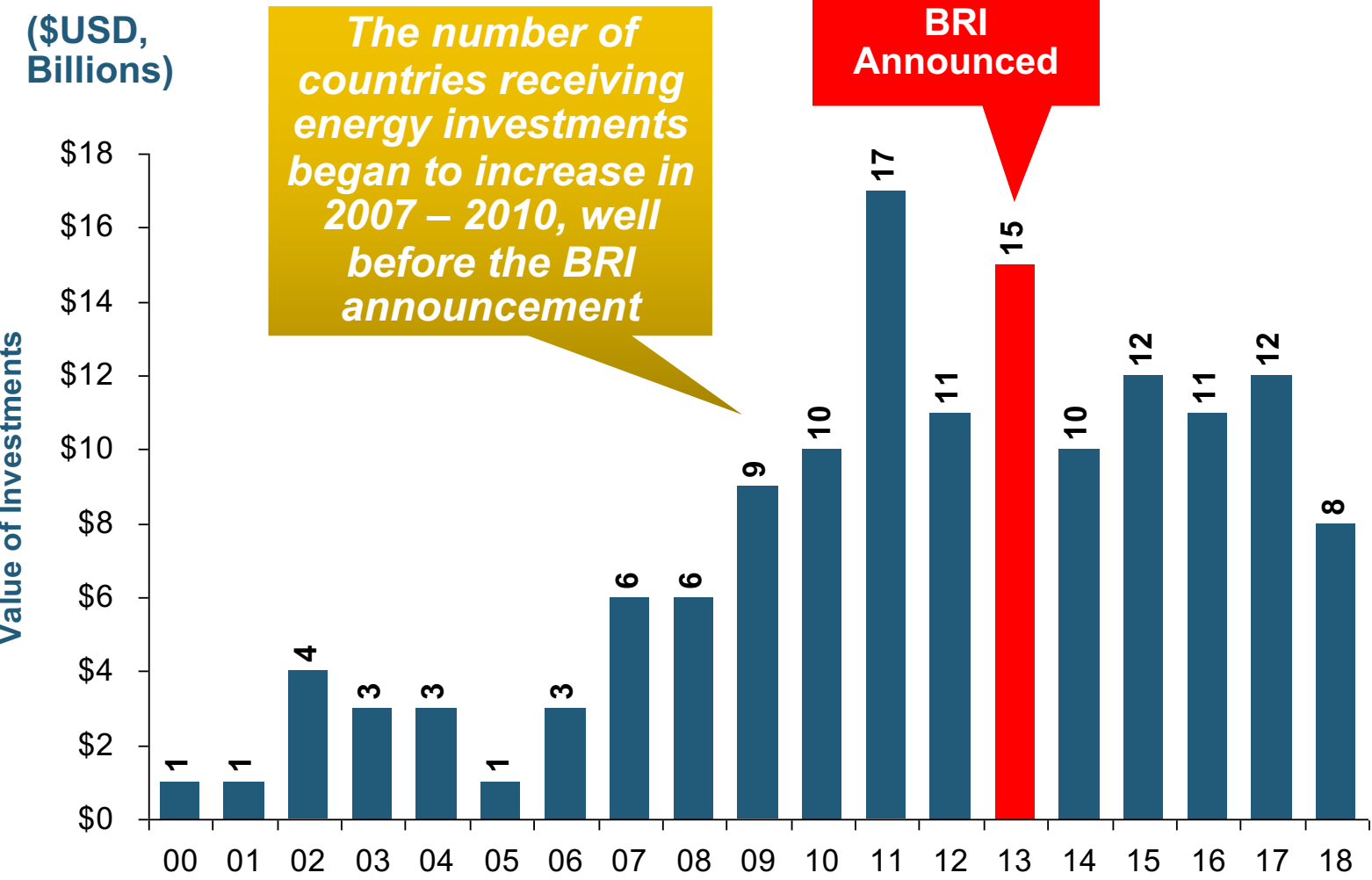
# Chinese Energy Investments: BRI Countries vs. Non-BRI Countries, 2000 – 2018\*



\*Measured as a share of USD invested.

Source: National Association of Insurance Commissioners (NAIC) Annual Statement Database, via Highline Data LLC.

# China Foreign Energy Investment: Number of BRI Countries Involved, 2000 – 2018\*



■ **China began to increase energy investments more than a decade ago**

- ◆ **Sharp increase in investment began in 2009, pre-dating 2013 BRI announcement by 4 years**
- ◆ **Since 2000, an average of 7.5 countries per year received Chinese energy investments**
- ◆ **Since 2009, 11.5 countries per year receive energy investments (actual number is higher if non-BRI countries included)**

\*Financing through Chinese Development Bank and the Export-Import Bank of China.  
 Source: Boston University, Global Development Policy Center: China's Global Energy Finance accessed 8 Apr. 2019 at <https://www.bu.edu/cgef/#/2018/Country/Global>; Risk and Uncertainty Management Center, University of South Carolina.

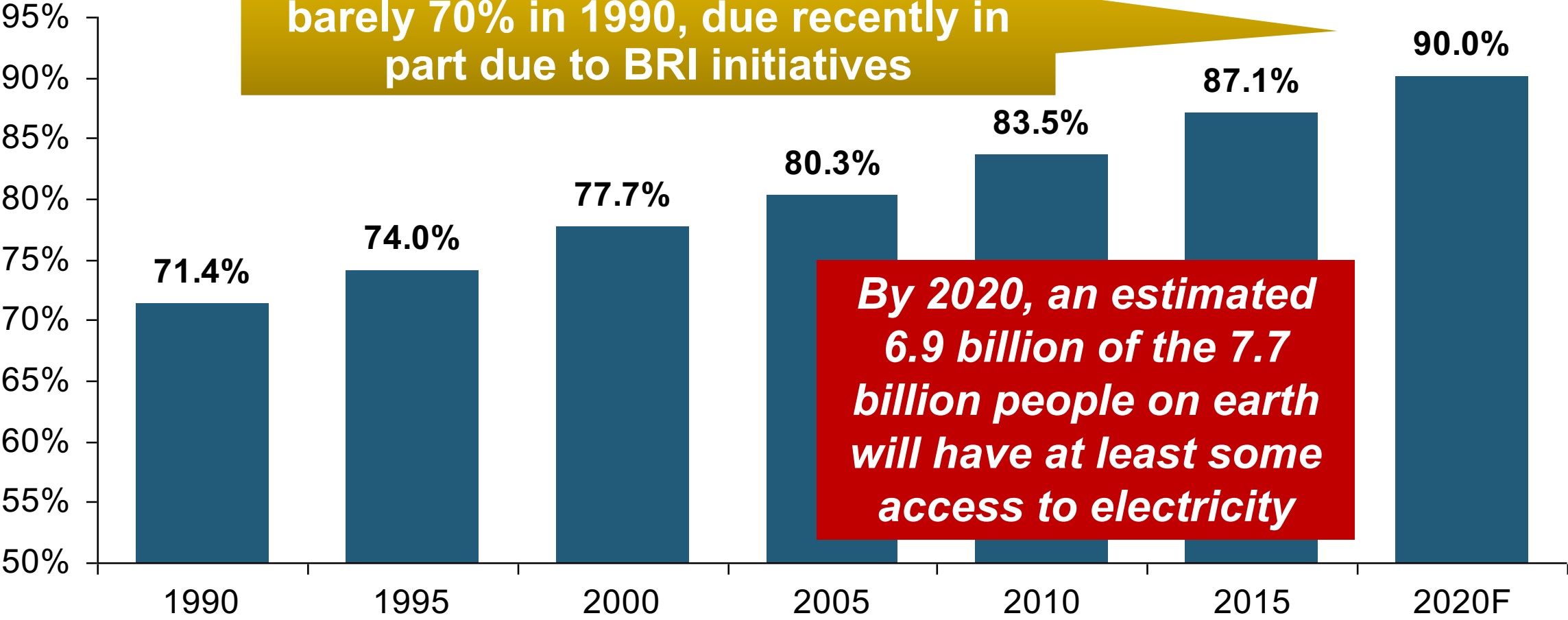


# Access to Electricity: Percent of World Population, 1990 – 2020F

(Share of World Population)

The share of the world's population with access to electricity will reach 90% for the first time in 2020, up from barely 70% in 1990, due recently in part due to BRI initiatives

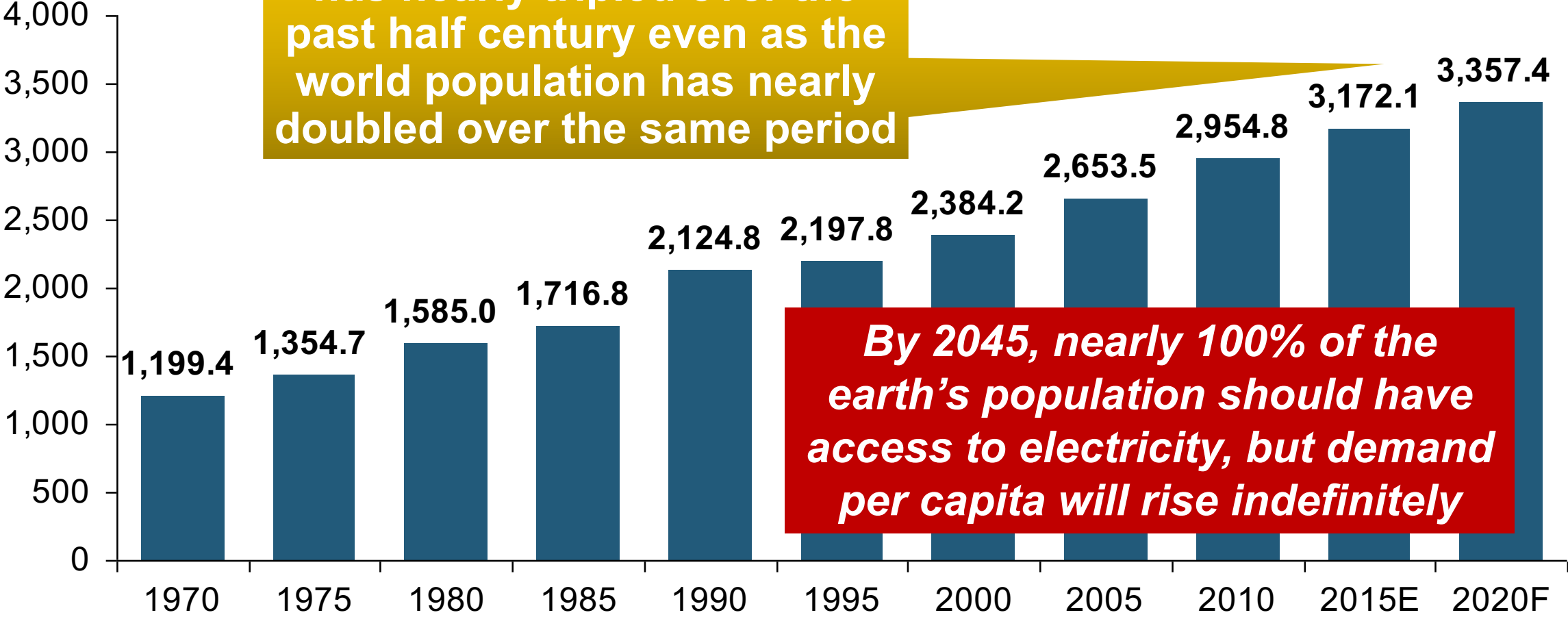
*By 2020, an estimated 6.9 billion of the 7.7 billion people on earth will have at least some access to electricity*



Source: World Bank (1990-2016); 2020F (est.) Risk and Uncertainty Management Center, University of South Carolina.

# Global Electric Power Consumption per Capita, 1970 – 2020F

(kWh/Capita per Year)

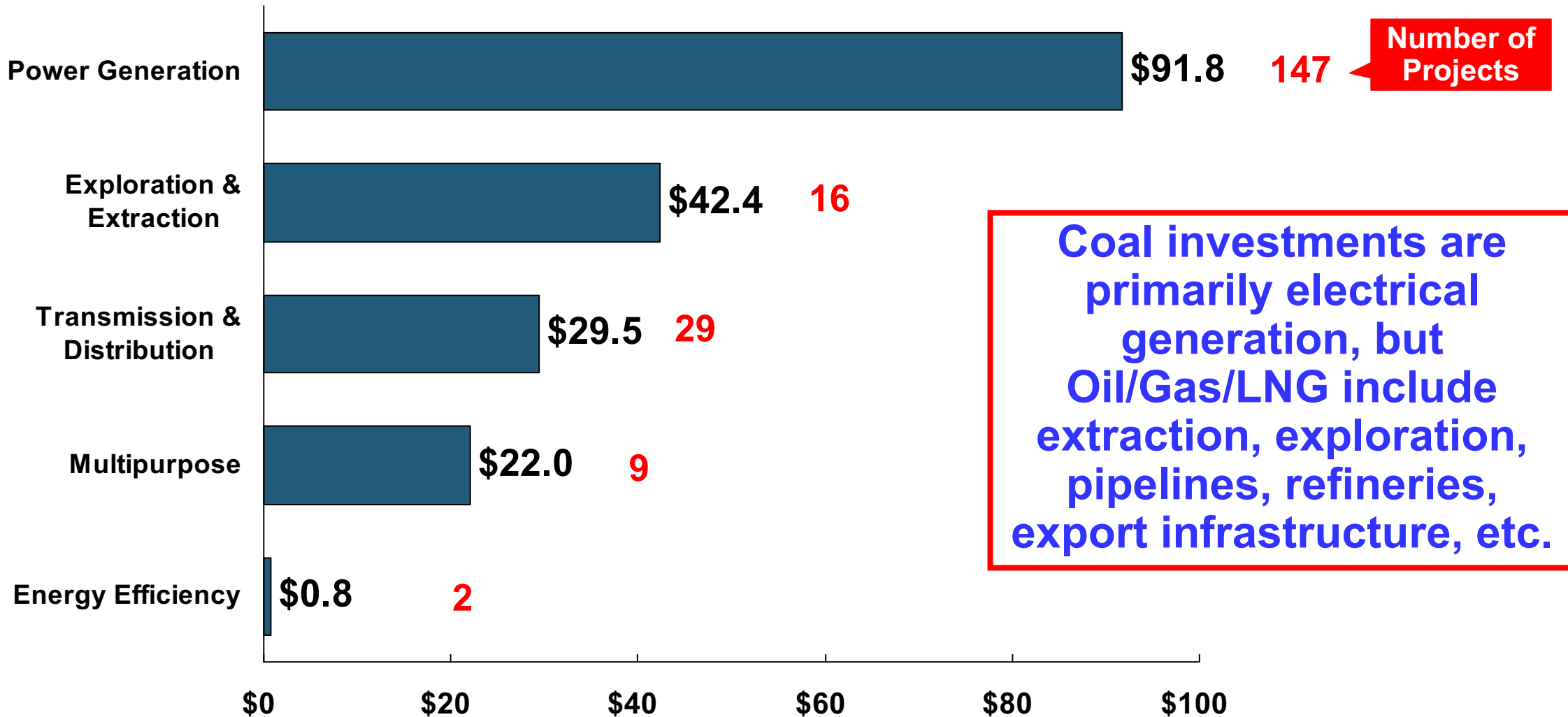


Consumption of electricity has nearly tripled over the past half century even as the world population has nearly doubled over the same period

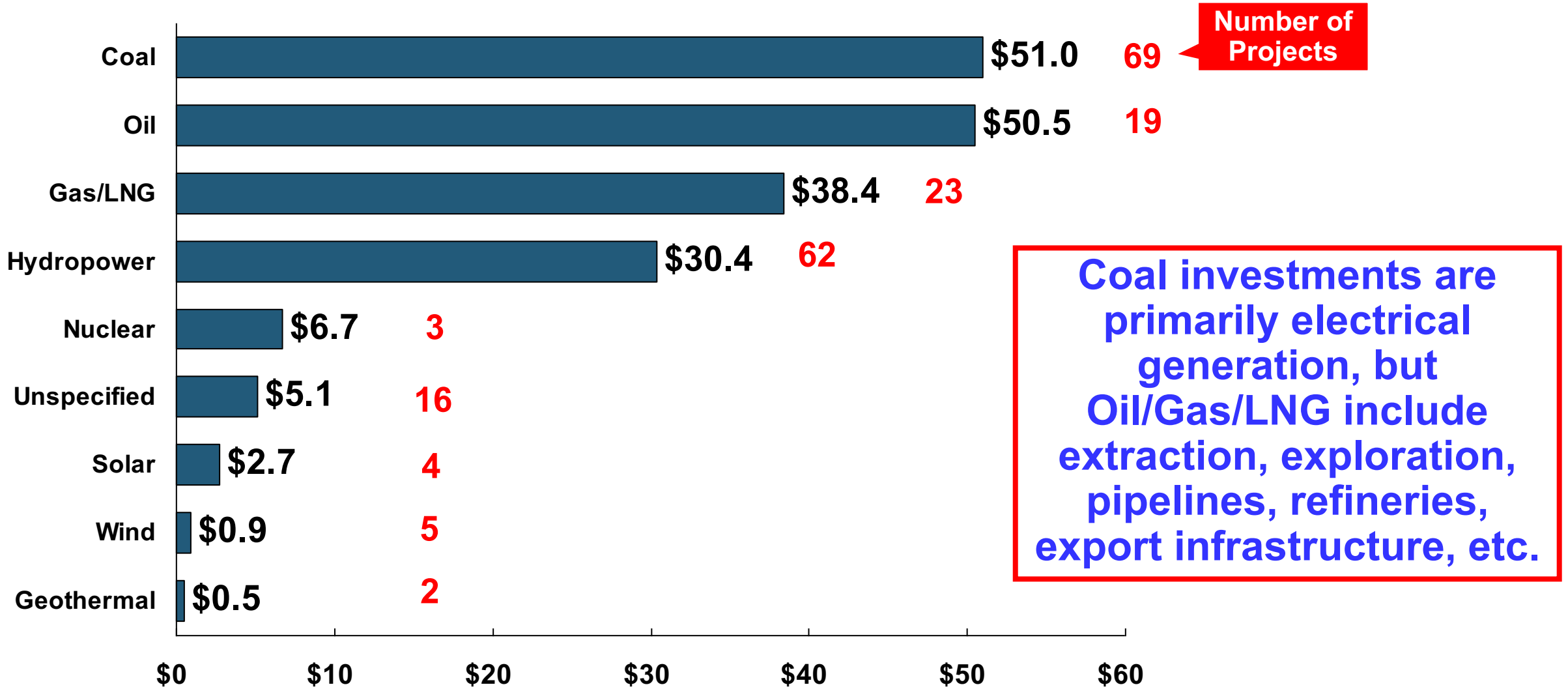
*By 2045, nearly 100% of the earth's population should have access to electricity, but demand per capita will rise indefinitely*

Source: World Bank (1990-2014); 2015E and 2020F Risk and Uncertainty Management Center, University of South Carolina.

# China BRI Initiatives by Energy Sub-Sectors: Power Generation Leads the Way (\$ Billions USD)

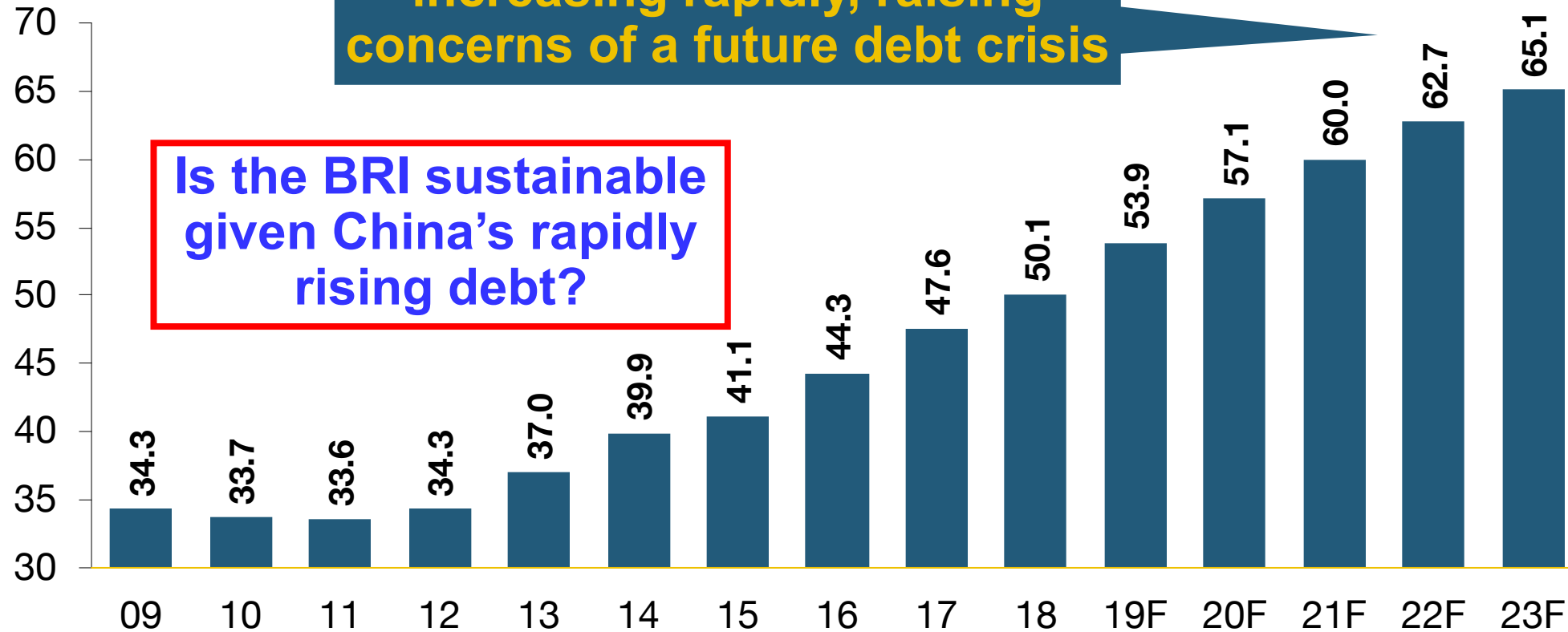


# China BRI Initiatives by Fuel Type: Coal Remains King (\$ Billions USD)

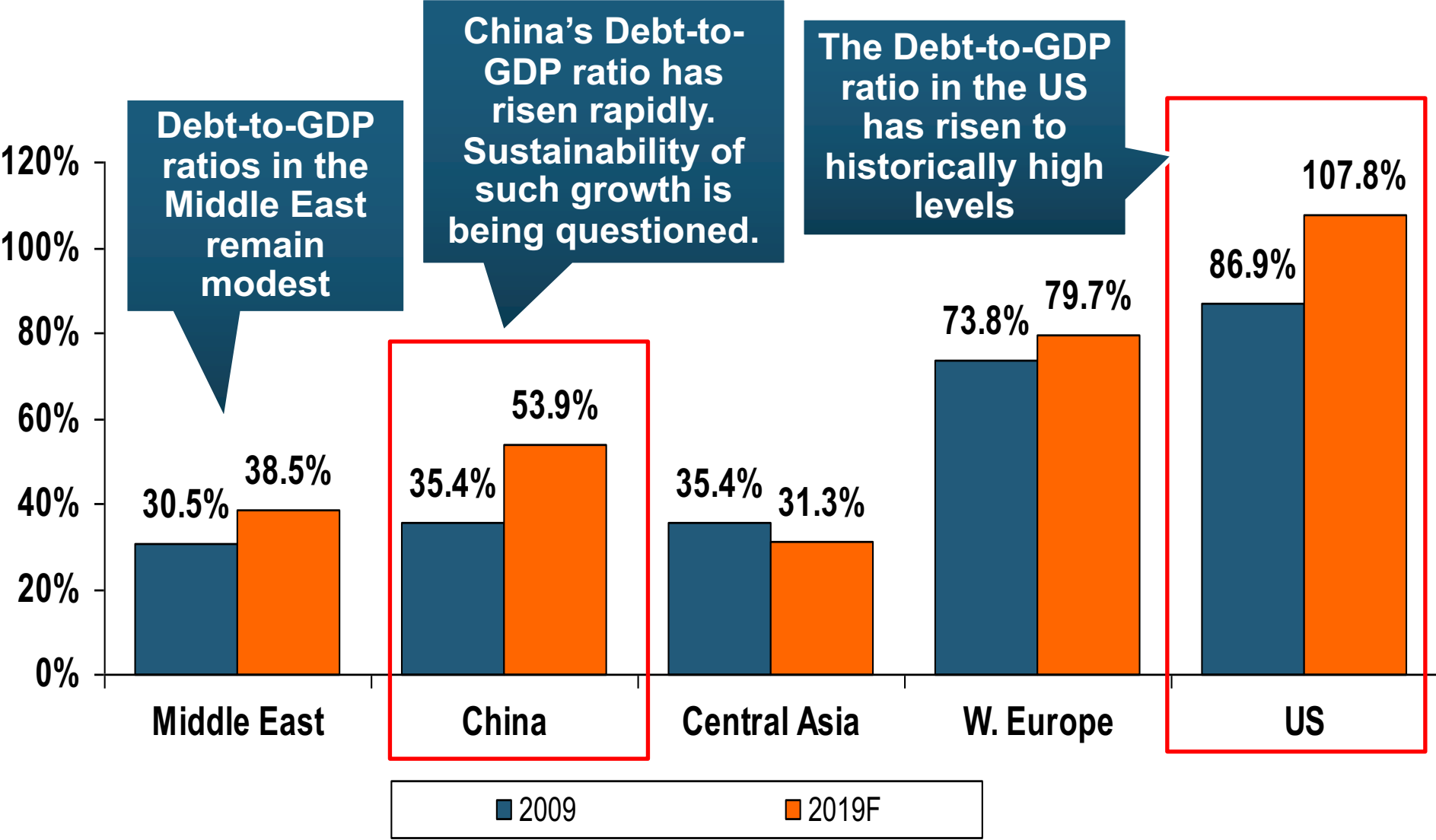


# Debt-to-GDP Ratio: China, 2009-2023F

Percent of  
GDP (%)



# Debt-to-GDP Ratio by Key Region, 2009 vs 2019F



Source: IMF, data accessed 4/4/10 at: [https://www.imf.org/external/datamapper/GGXWDG\\_NGDP@WEO/OEMDC/ADVEC/WEOWORLD/CHN](https://www.imf.org/external/datamapper/GGXWDG_NGDP@WEO/OEMDC/ADVEC/WEOWORLD/CHN) ; University of South Carolina Risk Management and Uncertainty Center.

# Summary

- **The Long-Run Growth Outlook for the Global Energy Sector is Favorable**
- **Suggests that (Re)Insurers Will Benefit as the Property and Casualty Exposures Base Expands**
- **Geopolitical Risks Are Elevated but this Is Unavoidable in the Energy Sector**
- **Nationalism, Populism, Protectionism Threats Are Elevated Too, but Remain Manageable**
- **China's BRI includes long-term opportunities for (re)insurers**



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