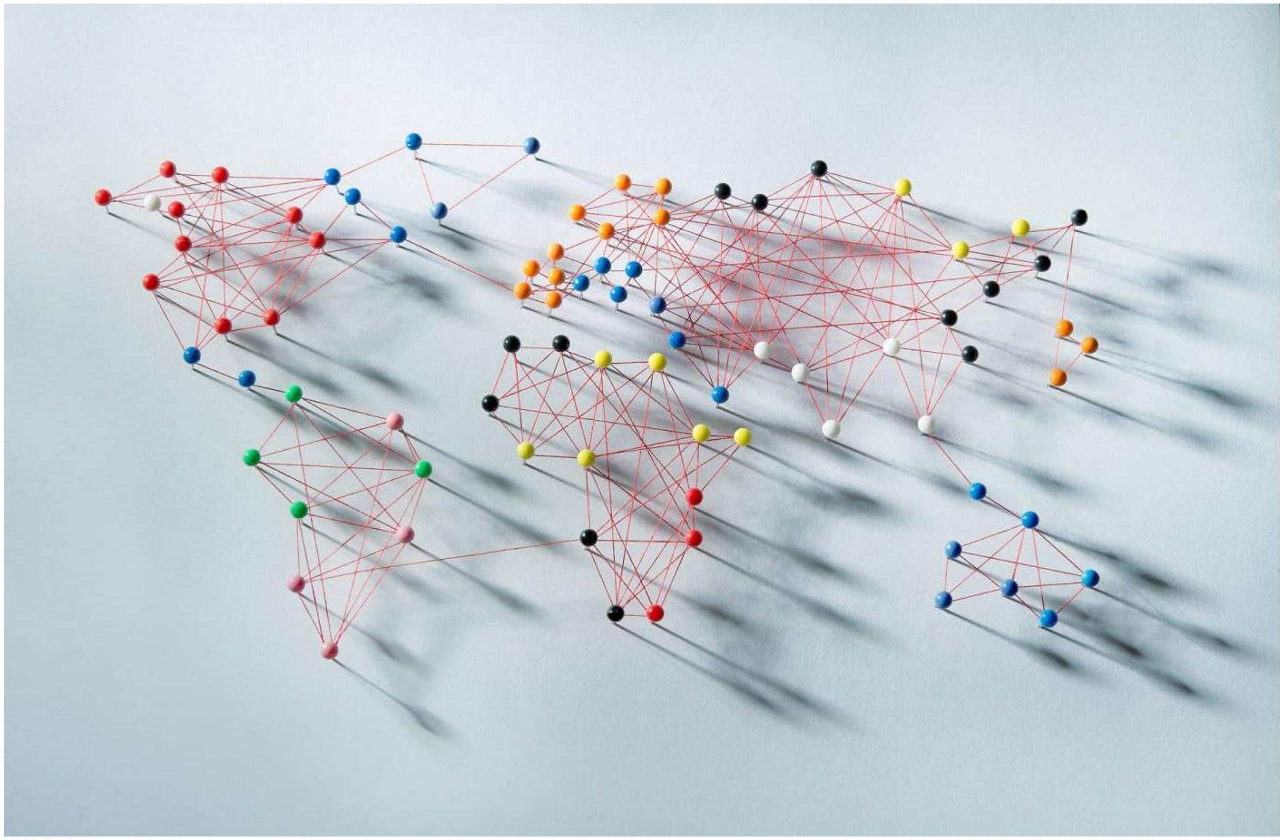
Cross-Asset Strategy

07 May 2019



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A primer on geopolitics for global investors and risk managers

See the end pages of this presentation for analyst certification and important disclosures.

Slide index

Click icon for an audio summary of key slides in this presentation

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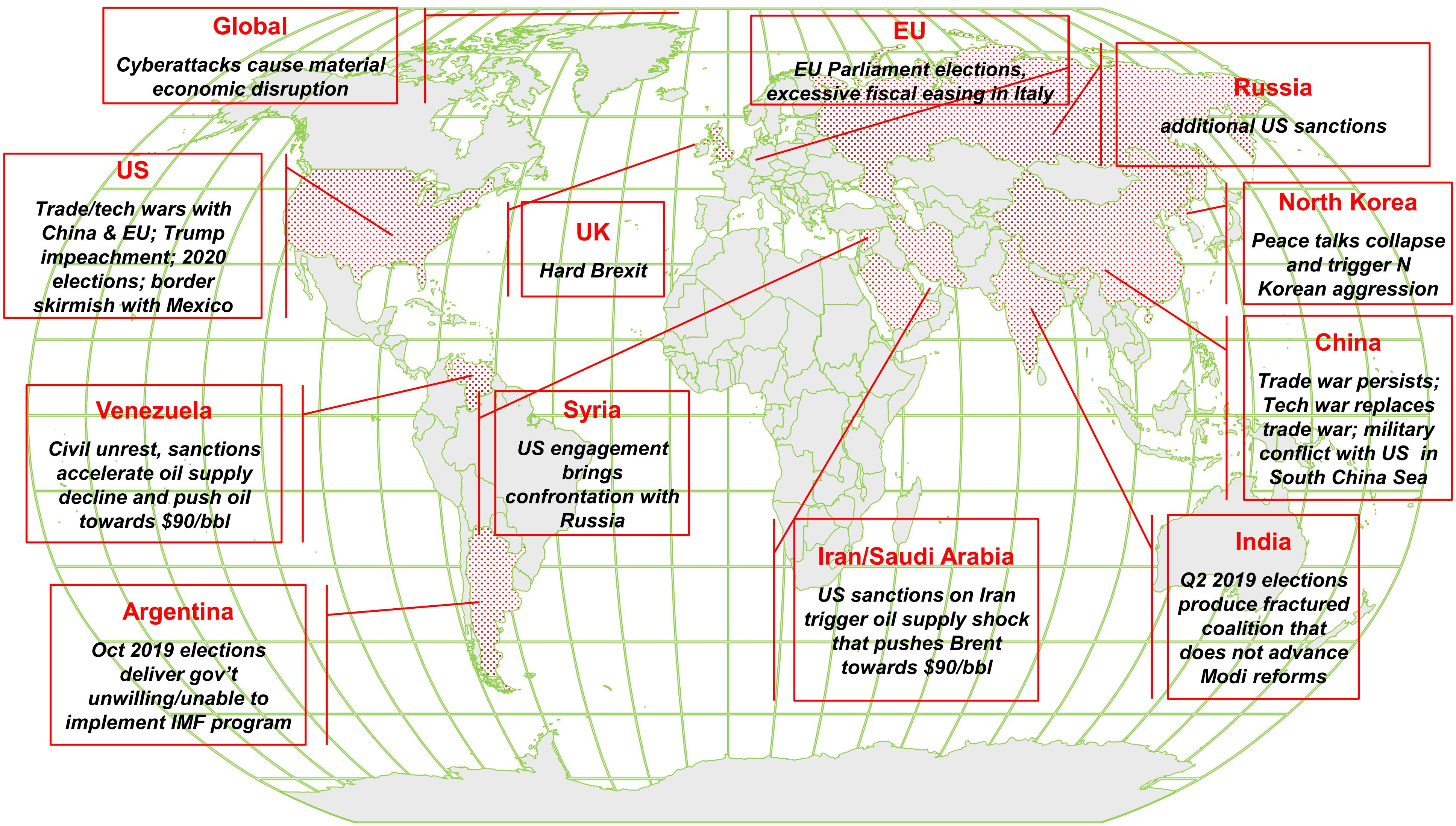
Current flashpoints: a mixture of longstanding and emerging threats

Major political and geopolitical flashpoints through 2020



Source: J.P. Morgan

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Always a risk factor, sometimes an alpha opportunity

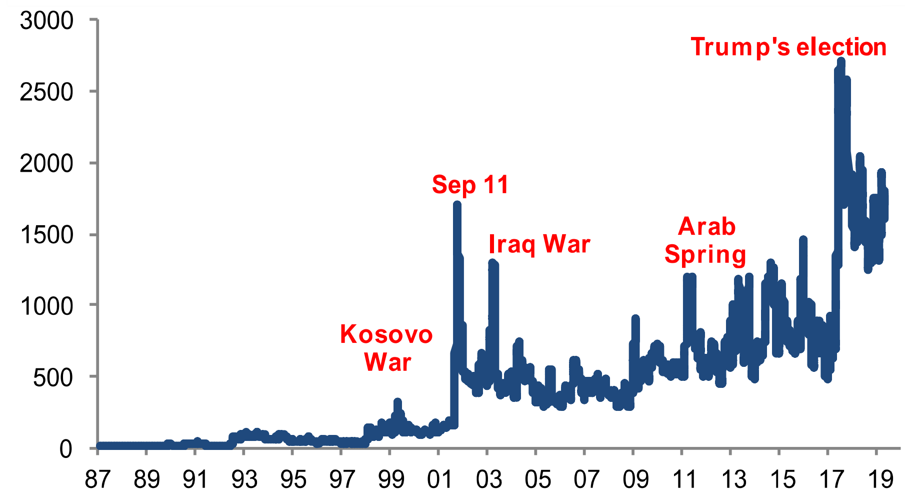
- **Geopolitics is a recurring theme in global markets, usually as a downside risk scenario** for cyclical assets when their performance has been strong and volatility has been low. Since President Trump's election in late 2016, discussion around such themes as trade war, terrorism, missile tests and cyberattacks has gone hyperbolic on some measures.

- **Given limited resources, how can investors and risk managers prioritize** political and geopolitical flashpoints globally to determine which are worth trading or hedging? This presentation outlines a **framework** drawing on numerous JPM Research reports published over the past decade (**slide 39**) on topics such a military conflict, oil shocks, trade wars, populism, cyberattacks, EMU breakup and US Presidential impeachment.

- **Section I** (**slides 4 & 5**) discusses the distinction between politics and geopolitics, then proposes criteria for prioritizing risks and deciding which to trade or hedge. **Section II** (**slides 6 to 9**) quantifies how much geopolitical events have impacted markets historically, and whether the conventional wisdom of more-volatility-than-trend still holds through more recent episodes like Trump's trade wars and a surge in global populism. **Section III** (**slides 17 to 34**) scores the high, moderate and low-risk events through 2020, and highlights preferred cross-asset trades and hedges. The presentation also discusses **two sentiment measures** based on high-frequency alternative data – a **Geopolitical Anxiety Index and** a **Populist Sentiment Index –** to inform tactical decision-making around extremes in complacency and fear (**slides 14 & 20**).

News flows around geopolitical themes has surged since Trump's election in 2016

Story count mentioning geopolitical keywords like "war", "terrorism", "military attack", "cyberattack"



- **A disclaimer for those who think normatively:** Political/ geopolitical themes are amongst the most emotive issues market participants encounter. Since this primer's objective is to inform risk management and highlight trading opportunities, it avoids normative discussions around whether certain political outcomes are desirable. Instead, it focuses on whether outcomes will be material for economic performance, asset valuations and volatility within global portfolios over a one to two year horizon. Framing geopolitics in this way creates a bias towards events in large countries, or in small ones with significant economic, financial or security linkages to larger ones.

Defining terms and establishing materiality

Politics versus geopolitics: the distinction matters for timing and skew

- Political and geopolitical risk are often used **interchangeably**, but for analytic purposes, it can be useful to distinguish between the two.
- **Political risks** often refer to changes in a country's leadership or institutions that in turn impact the policy environment, macroeconomic outlook and the returns plus volatility of financial assets.
  - Political risk tends to focus on **domestic issues** impacting local markets, and sometimes the currency.
  - **Timing** is somewhat calendar-driven**: elections and referenda** are primary catalysts.
  - **Some regime changes enhance returns** and reduce volatility, but investors and risk managers more often focus on adverse scenarios than constructive ones.
- **Geopolitical risks** tend to refer to economic and military **conflict** between countries
  - **Multinational** in scope and often focus solely on **adverse scenarios** like war, trade disruption or oil supply shocks. Hence global markets can be impacted as much as local ones, with currencies and commodities particularly in play.
  - **Timing** is somewhat random
  - Any stress involving a **major oil producer**, since supply shocks have contributed to three of the last six US recessions (those that began in 1973, 1980 and 1990).
  - **Elections and referenda** can trigger geopolitical events too (like Trump's election), but so can a change in thinking by a long-serving leader (Putin since 2012).
- Because the line between politics and geopolitics can be blurry and because investors are often more concerned with threats than opportunities, J.P. Morgan Research has tended to frame such risk factors simply as **geopolitical ones.**
- Many issues that are discussed in financial circles are **more emotive than they are material for markets.** To distinguish major from minor events, consider the issues on slide 5.

What matters in politics & geopolitics: a framework for prioritizing risks

Type	What makes politics material	Historical examples
Political (primarily domestic)	• Can the outcome **alter** fiscal, monetary and/or regulatory **policy,** particularly given **institutional constraints**? • Can the outcome trigger a **secular shift in capital flows**? • How **skewed** are **valuations** (risk premia) and **positioning** ahead of the event? • Would the outcome reinforce or reverse a market's **underlying direction**?	• **High impact:** Obama's election in 2008 (US), Abe's election in 2012 (Japan), Trump's election in 2016 (US) • **Low/no impact:** Merkel's re-election in 2017 (EMU), many Euro elections where populist parties fail to enter government
Geopolitical (primarily international, involves economic and/or military conflict)	• Does the conflict involve a major **oil producer**? • Could the conflict damage a **systemically-important economy**? • Does the US or another large country have the **incentives** to use military force pre-emptively? • How **skewed** are **valuations** (risk premia) and positioning ahead of the event? • Would the outcome reinforce or reverse a market's **underlying direction**?	• **High impact:** Yom Kippur War in 1973 (Israel), Iranian Revolution in 1979 (Iran), Iran-Iraq War in 1980, US-Iraq Wars in 1991 and 2003, Arab Spring in 2011, Brexit in 2016 • **Low/local impact:** N Korea since 1990s, Syrian civil war since 2011, Russian annexation of Crimea in 2014

Current example: scoring risks by likelihood and market impact

	Country, event and date	Current cross-asset trades/hedges
POLITICAL	**US:** Congressional investigations trigger Trump impeachment (ongoing)	**long Gold, long 5Y USD/JPY vol**
	US: Negotiations over debt ceiling and spending caps revive risk premia (by end-Sept)	**long Gold, long 5Y USD/JPY vol**
	US: Democrats win White House and Congress in 2020, repeal Trump's tax cuts and regulate Healthcare plus Big Tech (Nov 2020)	**UW US Healthcare, long Gold, long 5Y USD/JPY vol**
	Euro area: snap election in Italy, or funding crisis on overly-loose fiscal policy; EU Parliament elections results in populist coalition majority (May 26)	**2Y swap spread wideners in Euros; short EUR/CHF; UW EMU in MSCI ACWI**
	UK: Tory-led gov't opts for hard Brexit; early elections deliver Labour gov't with significant fiscal easing (Q2/Q3)	**UW UK Equities in MSCI ACWI; short some UK credits (banks, retailers)**
	Argentina: general election (Oct 27) delivers a government unwilling/unable to implement IMF program	**UW Argentina in MSCI EM**
	India: general election (May) delivers more fractured gov't unable to further Modi's reforms	**neutral India within MSCI-EM, and INR within GBI-EM**
GEOPOLITICAL	**Iran/Venezuela:** US sanctions over-tighten an oil market already balanced by OPEC/Russia production cuts (ongoing)	**long Brent futures; OW US Energy Equities**
	US-EU: US imposes significant tariffs on auto sector following Section 232 investigation (May 19)	**short EUR/CHF; UW EMU in MSCI ACWI**
	Russia: US imposes more punitive sanctions due to US election interference and chemical weapons use, triggering funding stress for banks and/or corporates (pending)	**UW some Russia bank credits; no hedges in Equities or FX given the offset from cartel's support for oil price**
	US-China: trade war persists, or evolves into a tech war involving export bans/investment restrictions; military conflict in South China Sea (ongoing)	**short stocks exposed to protectionism (JPUSTRDP) vs S&P500; short AUD & NZD vs USD**
	North Korea: Peace talks collapse and trigger Korean act of war (ongoing)	**long 5Y USD/JPY vol**
	Global: Cyberattack disrupts economic & market activity (random timing)	**OW selective US & UK cybersecurity stocks**

Red = high likelihood, high impact
Orange: moderate likelihood, moderate impact

Yellow: low likelihood, low impact
Grey: low likelihood, high impact

Source: J.P. Morgan *What matters in politics & geopolitics: a framework and watchlist for 2019* by Normand from Nov 2, 2018

How geopolitical events move markets

Major geopolitical events and developments since World War II

Shaded rows indicate events involving oil producers. US Presidents coded by party.

Events/Development	Date(s)	Type	US President	Foreign leader/organization
Korean War	Jun 1950 - Jul 1953	war	Truman/Eisenhower	Kim Il-Sung
Vietnam War	Nov 1955 - Apr 1975	war	Eisenhower/Kennedy/Johnson/Nixon	Ho Chi Minh
Cuban Missile Crisis	Oct 16-28, 1962	near-war	Kennedy	Fidel Castro
Six Days War	Jun 5-10, 1967	war	Johnson	Gamal Nasser
Yom Kippur War	Oct 6-25, 1973	war	Nixon	Anwar Sadat
First Oil Shock	Oct 1973 - Mar 1974	oil supply shock through embargo	Nixon	OPEC
Iranian Revolution/Second Oil Shock	Jan 1978 - Feb 1979	war & oil supply shock	Carter	Ayatollah Khomeini
Iran-Iraq War	Sep 1980 - Aug 1988	oil supply shock	Reagan	Khomeini, Saddam Hussein
Chernobyl	Apr 26, 1986	nuclear accident/environmental disaster	Reagan	Mikhail Gorbachev
Perestroika	1987 to 1991	regime change	Reagan	Mikhail Gorbachev
Tiananmen Square	Apr 15 - Jun 4, 1989	political protest	Bush	Deng Xiaoping, Li Peng
Fall of Berlin Wall	Nov 9, 1989	regime change	Bush	Erich Honecker, Helmut Kohl
US invasion of Panama	Dec 20, 1989 - Jan 31, 1990	war	Bush	Manuel Noriega
Baltics declare independence from USSR	Jan - May 1990	regime change	Bush	Mikhail Gorbachev
Iraqi invasion of Kuwait	Aug 2, 1990	war & oil supply shock	Bush	Saddam Hussein
German Reunification	Oct 3, 1990	regime change	Bush	Helmut Kohl
Operation Desert Storm (First Iraq War)	Jan 17 - Feb 28, 1991	war	Bush	Saddam Hussein
Yugoslav Wars	Mar 1991 - Nov 2001	war	Bush/Clinton	Slobodan Milosovic
Russia declares independence from USSR	Jun 12, 1991	regime change	Bush	Boris Yeltsin
Soviet coup attempt	Aug 19, 1991	attempted regime change	Bush	Yeltsin, Gorbachev
South Ossetia (Georgia) War	Jan 1991 - Jun 1992	war	Bush	Yeltsin
Dissolution of Soviet Union	Dec 26, 1991	regime change	Bush	Yeltsin, Gorbachev
Bosnian War (NATO bombing Aug 95)	Apr 1992 - Dec 1995	war	Clinton	Slobodan Milosovic
Kosovo War (NATO bombing Mar 99)	Mar 1998 - Jun 1999	war	Clinton	Milosovic
NATO enlargement (PO, HU, CZ)	Mar 12, 1999	new alliances	Clinton	Yeltsin
Chechen War	Aug 1999 - Apr 2009	war	Clinton/Bush/Obama	Yeltsin/Putin
Sept 11 attack	Sept 11, 2001	terrorist attack	Bush	Al Qaeda
NATO enlargement (Baltics, BU, RO, SL, SK)	Mar 29, 2004	new alliances	Bush	Vladimir Putin
Afghanistan War	Oct 7, 2001 - Dec 2014	war	Bush/Obama	Taliban
(Second) Iraq War	Mar 20, 2003 - Dec 2011	war	Bush/Obama	Hussein
Nigerian oil security	2006 - present	oil supply stress	Bush/Obama/Trump	MEND, Niger Delta Avengers
Russia-Georgia conflict	Aug 7-12, 2008	war	Bush/Obama	Putin
EMU Crisis	Dec 2009 - Jul 2012	regime change	Obama	Angela Merkel
Arab Spring	Dec 17, 2010 - Aug 2011	oil supply stress	Obama	Mubarak, Gaddafi, Saleh, Assad
Syrian Civil War	Mar 2011 - present	war	Obama/Trump	Bashar al-Assad
Fukushima	Mar 11, 2011	nuclear accident/environmental disaster	Obama	Naoto Kan
Venezuela civil unrest	Apr 2013 - present	oil supply stress	Obama/Trump	Nicolas Maduro
Russian annexation of Crimea	Feb - Mar 2014	regime change	Obama	Vladimir Putin
Brexit	Jun 23, 2016 - present	regime chage	Obama	David Cameron, Theresa May
Trump trade wars	Jan 2018 - present	trade war	Trump	Xi Jinping, EU, NAFTA partners
US sanctions on Iran	May 2018 - present	oil supply stress	Trump	Rouhani

Source: J.P. Morgan

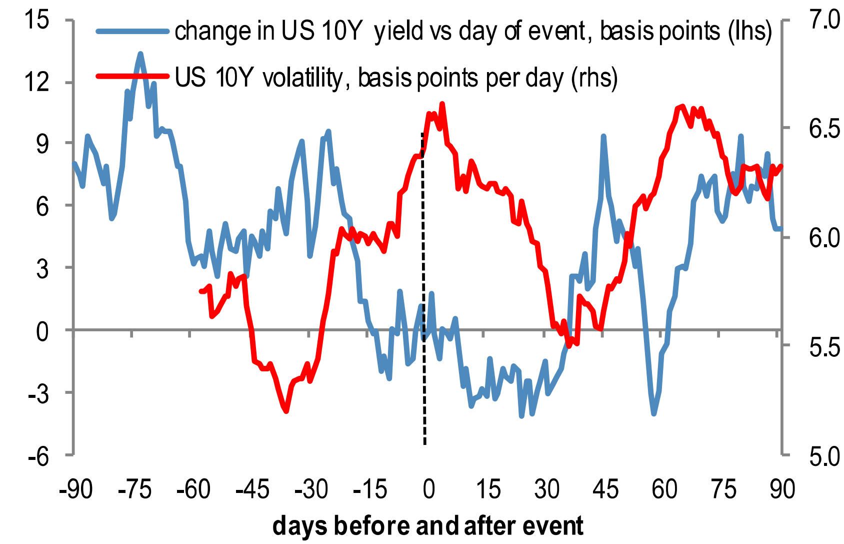
- **Event study** on most significant geopolitical events of past 50 years, which is more manageable than tracking every election in dozens of countries
  - Some are one-day, some protracted. **Includes** all major US military conflicts and all conflicts involving major oil producers. **Excludes** many civil wars because they did not entail significant foreign military involvement, and most terrorist attacks that did not invite a protracted (US) military response. **Coded** by US Presidents' party affiliation
  - See *Hedging and fading geopolitical risk in global markets* by Normand from May 23, 2017

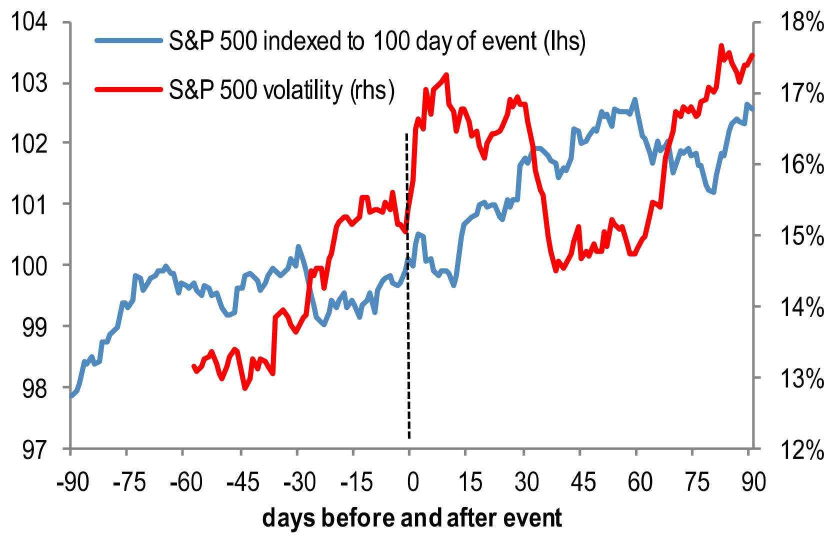
Patterns across events and asset classes over the past 50 years

- Geopolitical **stress has been the norm not the exception** for decades
  - Though no **two large countries** have been in direct conflict since WWII (due to mutual fear/respect), large countries routinely quarrel with smaller ones
    - Recall **Hobbes**: the strong do as they will, the weak do as they must
  - **Democracies**, regardless of size, don’t tend to engage each other militarily
  - It isn’t clear that **Republican administrations** are always more assertive that Democratic ones.
    - Republican Presidents are more often associated with the event listed on slide 7, but amongst a subset of wars, Democrats led the US into WWI, WWII, Korea, Vietnam and Kosovo/Bosnia, while Republican led on Panama, Iraq (twice) and Afghanistan
  - **Until the Trump’s election**, geopolitical events of systemic consequence – so an event that might trigger a 5-10% drop in Equities or +30% rise in Oil – would occur **about twice a decade**. Now, incidents arise more frequently.
- Geopolitical stress has triggered **three of the past six US recessions** though oil shocks (1973, 1980, 1990)
- **Otherwise, these events have tended to trigger more short-term volatility than long-term trend reversal,** which suggests the global economy’s **resilience** to political cycles and more geopolitical stress.

Market reactions: Bonds and Equities

Market movements three months before and after major geopolitical shocks

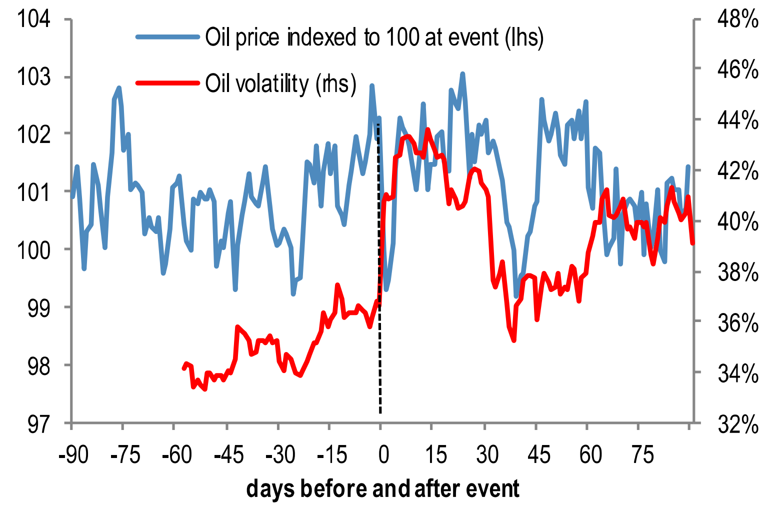


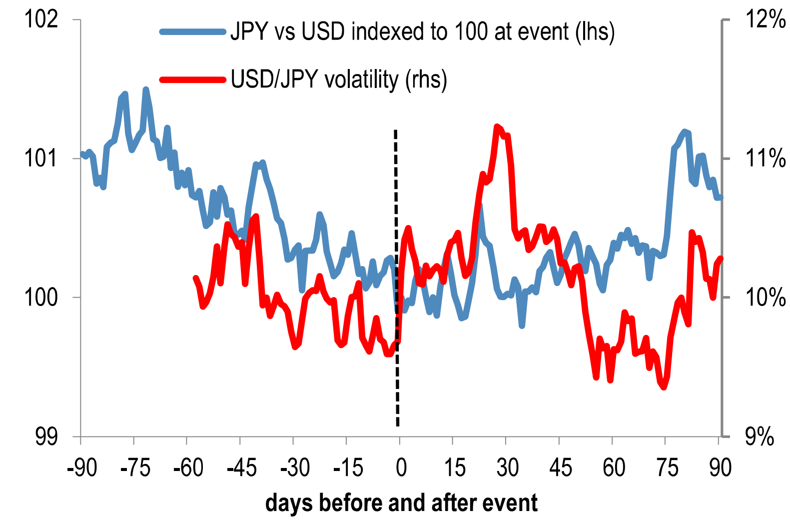


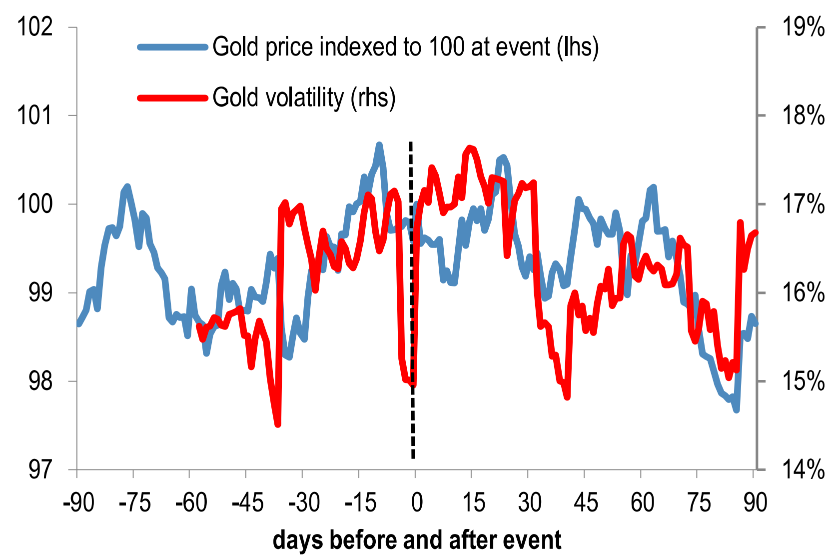
- **Bonds**
  - 10Y yields decline about 10bp on average in the month ahead of the event and another 5bp after
  - Full **retracement** usually occurs within three months
  - Yield moves are inconsistent around oil shocks, given conflict between higher inflation but slower growth
- **Equities**
  - Average declines of a few percent before the event and full **retracement** within a month
  - **Huge variance** across episodes, with 5% to 8% drops around conflicts like Iran/Iraq, Iraq/Kuwait and Sept 11th
  - **Volatility** rises about 5% on average around these episodes

Market reactions: Commodities and Currencies

Market movements three months before and after major geopolitical shocks







- **Oil:** run-up in price in anticipation of event, followed by Day 1 drop in prices. Choice of 3M lookback window obscures trend rise in price during prolonged conflicts
- **Gold:** like Oil, modest price rise before the event followed by Day 1 drop, with results understated due to choice of 3M window
- **JPY:** a counter-intuitive decline in yen, possibly due to oil's impact on Japan's trade balance, but an expected rise in vol

Big Data & quant models vs discretion for anticipating shocks

- **The Big Data approach to geopolitics** can be as big as the Pentagon, CIA and FBI collectively. But for investors and risk managers, analyzing these flashpoints tends to be more qualitative than quantitative. The rationale is more than just a resource constraint.
  - Many events are the products of somewhat **unique historical contexts and leaders**, so predicting the **location and timing** of the next crisis with much precision is challenging.
    - **Best effort** is identify flashpoints, understand institutional mechanisms that facilitate or impede policy changes, and trade/hedge risks when valuations and position are skewed (see slide 5)
  - **Systematic strategies** should also struggle out of sample, given both context-dependent events and the emergence of newer threats each decade (like cyberattacks and trade wars).
    - But don't ignore a **data-driven process**. The burgeoning field of Environmental, Social and Governance investing also lacks the high-frequency metrics over long samples to state much with confidence, particularly for global macro investors (see *ESG & global macro investing: Potential profits vs practical challenges* by Normand from May 10th). Instead, data limitations imply that analysts should begin with low expectations, emphasize qualitative over quantitative frameworks for now, and **rebalance factors within the framework** as metrics evolve.
    - For those familiar with **ESG data sources**, the publicly-available indicators listed on next three slides could prove useful in tracking slow-moving, fundamental forces driving the domestic and international conflicts that heighten the odds of a geopolitical crisis.
    - Many such indicators are useful for their broad country coverage of DM and EM countries as well as their long sample period (some since 1970s), but **universal shortcomings** are low frequency (typically just annual) and long reporting lags (sometimes up to two years).

Adapting ESG indicators for geopolitical analysis: Environmental factor

Publicly-available ESG indicators that could be adapted for tracking long and short-term geopolitical risks

Indicator	Source (website hyperlink)	Description	Country coverage, frequency and sample length	Advantages and disadvantages
Environmental factor				
Global Food Security Index	Global Food Security Index	Food security measured on three dimensions of affordability, availability and quality	113 countries across DM and EM; annual data since 2012	**Advantages**: comprehensive measures of food security, broad country coverage **Disadvantages**: low frequency; short sample
Yale Environmental Performance Index	Yale Environmental Performance Index	Index of environmental health based on 24 indicators across 10 categories	180 countries across DM and EM; biennial data since 2002	**Advantages**: comprehensive measure, broad county coverage, relatively long sample period **Disadvantages**: low frequency (every two years), inconsistent methodology across years
Energy Trilemma Index	World Energy Council	Index of country's ability to provide sustainable energy through three dimensions: energy security, energy accessibility/affordability and environmental sustainability	125 countries across DMs and Ems; annual data since 2010.	**Advantages**: comprehensive measure, broad county coverage **Disadvantages**: low frequency, short sample; low granularity beyond the three dimensions of composite score

Source: J.P. Morgan

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Adapting ESG indicators for geopolitical analysis: Social factor

Publicly-available ESG indicators that could be adapted for tracking long and short-term geopolitical risks

Indicator	Source (website hyperlink)	Description	Country coverage, frequency and sample length	Advantages and disadvantages
Social factor				
Freedom in the World	Freedom House	Composite measures based on political liberty and civil rights	195 countries across DM and EM; annual data since 1973	**Advantages**: very long and large sample of globally consistent data **Disadvantages**: low frequency
Social Progress Index	Social Progress Index	Composite measure of 50 indicators of social and environmental outcomes.	236 countries across DM and EM; annual data since 2014	**Advantages**: large dataset with consistent data over time **Disadvantages**: short sample, low frequency
Human Development Index	United Nations Development Programme	UNDP's composite measure of indicators on life expectancy, education and per capita income	188 countries across DM and EM; annual data since 1990	**Advantages**: globally consistency, long sample period **Disadvantages**: low (annual) frequency and long lag for updates
Sustainable Development Goals Indicators	United Nations SDG Indicators	Over 200 indicators of sustainable development, most of which focus on the social pillar but some of which are environmental	Over 200 countries across DM and EM, annual data since 1990	**Advantages**: globally consistency, long sample period, numerous indicators **Disadvantage**: low (annual) frequency and long lag for updates (last observations in 2015)

Source: J.P. Morgan

Adapting ESG indicators for geopolitical analysis: Governance factor

Publicly-available and subscription-based ESG indicators that could be adapted for tracking long and short-term geopolitical risks

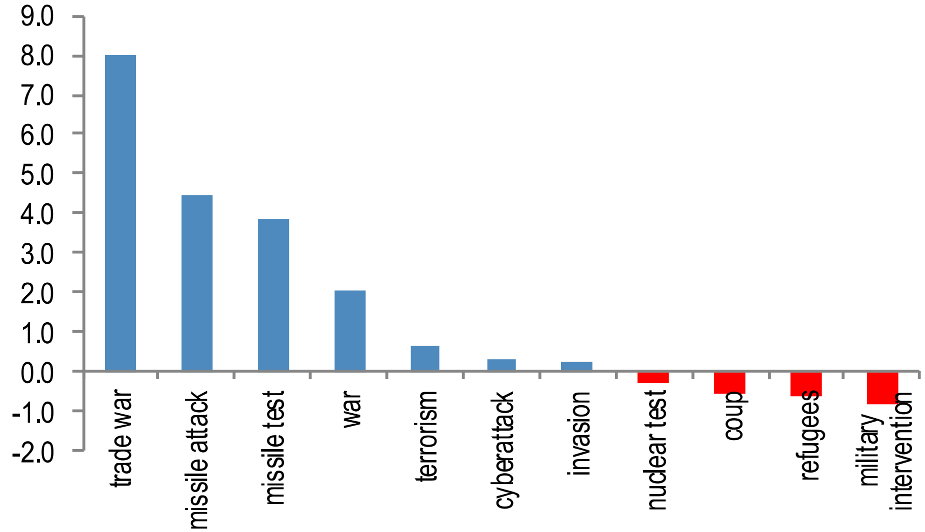
Indicator	Source (website hyperlink)	Description	Country coverage, frequency and sample length	Advantages and disadvantages
Governance factor				
Global Competitiveness Index	World Economic Forum	Composite measures of competitiveness based on 12 pillars covering institutions and factors associated with productivity and growth	138 countries across DM and EM, annual data since 2007	**Advantages**: long and large sample **Disadvantages**: low frequency
Worldwide Governance Indicators	Worldwide Governance Indicators	World Bank's aggregate and individual governance indicators for six country-level dimensions: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption	200 countries across DM and EM, annual data since 1996	**Advantages**: globally consistent and long sample period for aggregate WGI and sub-indicators **Disadvantage**: low frequency
Aggregate indicators				
RavenPack	RavenPack	Big Data sourced from newswires and social media, and restructured into indicators and analytics for topics like politics/geopolitics	Newswire data since 2003, social media data since 2016	**Advantages**: real-time frequency and breadth of data coverage. **Disadvantage**: mainly a sentiment gauge
RepRisk Index and RepRisk Rating	RepRisk	Country ESG score and rank based on number and severity of ESG incidents	174 countries, daily data since 2007	**Advantage**: daily frequency **Disadvantage**: moderately-long sample period

Source: J.P. Morgan

Alternative data approach: sentiment via a Geopolitical Anxiety Index

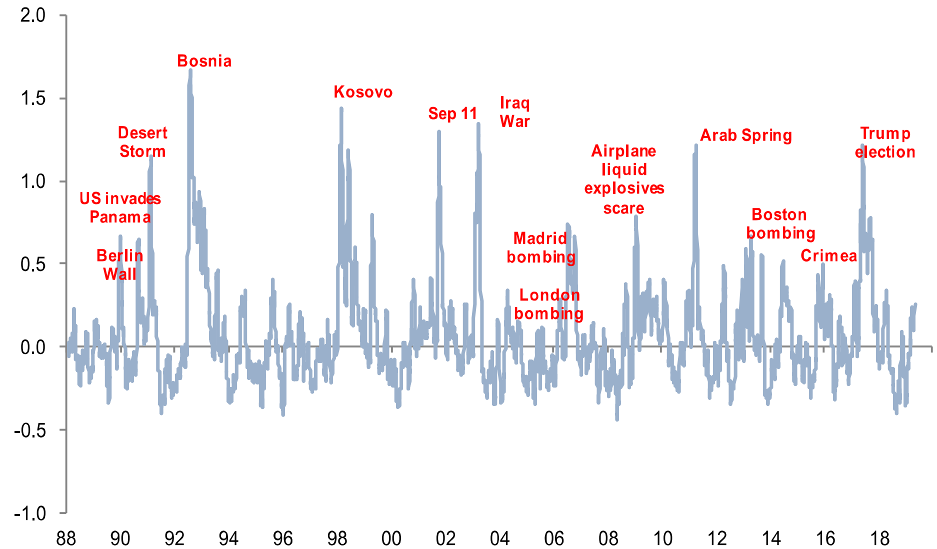
Trade wars and missile attacks are more talked-about than cyberattacks currently

Standardized story count across geopolitical topics. Higher levels indicate greater fear



Geopolitical Anxiety Index tracks complacency and fear

JPM GAI constructed as average, standardized story count across geopolitical topics. Higher levels indicate greater fear



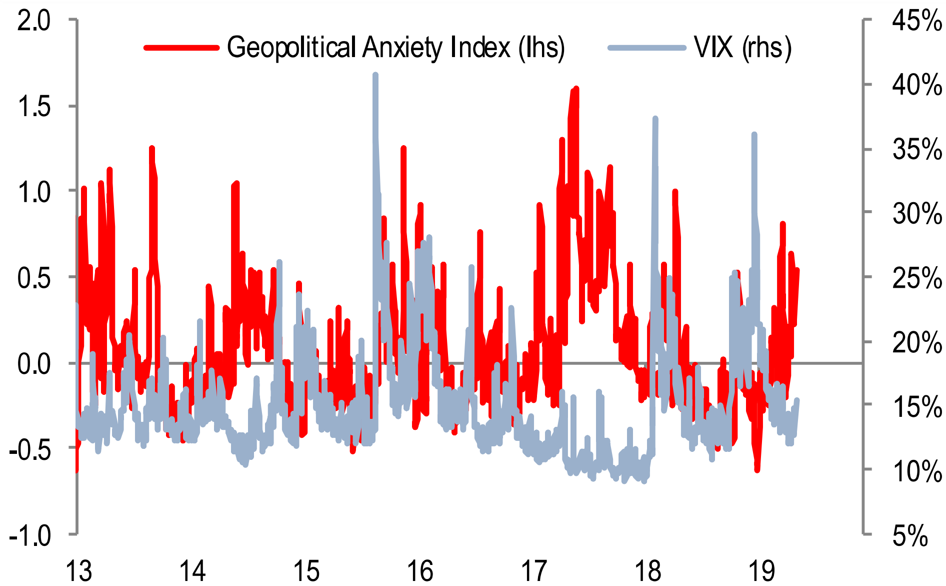
Source: J.P. Morgan

- **A second-best, data-driven alternative to tracking fundamental drivers focuses instead on sentiment.** JPM's **Geopolitical Anxiety Index tracks oscillations between complacency and fear** with the following approach: **(1)** use **search engines** to track each day the number of news stories published with any of a dozen or so keywords associated with geopolitical risk, such as "invasion", "coup", "missile attack", "refugee" and even "cyberattack"; **(2) standardize** each keyword time series relative to its medium-term moving average to control for the trend rise in news coverage over time; **(3)** combine these standardized variables into a **composite index** using equal weights to avoid over-fitting the data; and **(4) examine the performance** of various asset prices at extreme levels of the index, to test a prior that less news flow implies complacency and therefore vulnerability to spikes in volatility/selloffs in risky markets, whereas high news flows implies extreme anxiety and therefore vulnerability to a collapse in volatility/rallies in risky markets (see *Hedging and fading geopolitical risk in global markets* by Normand from May 23, 2017).

Extremes of fear & complacency sometimes align with extremes in vol

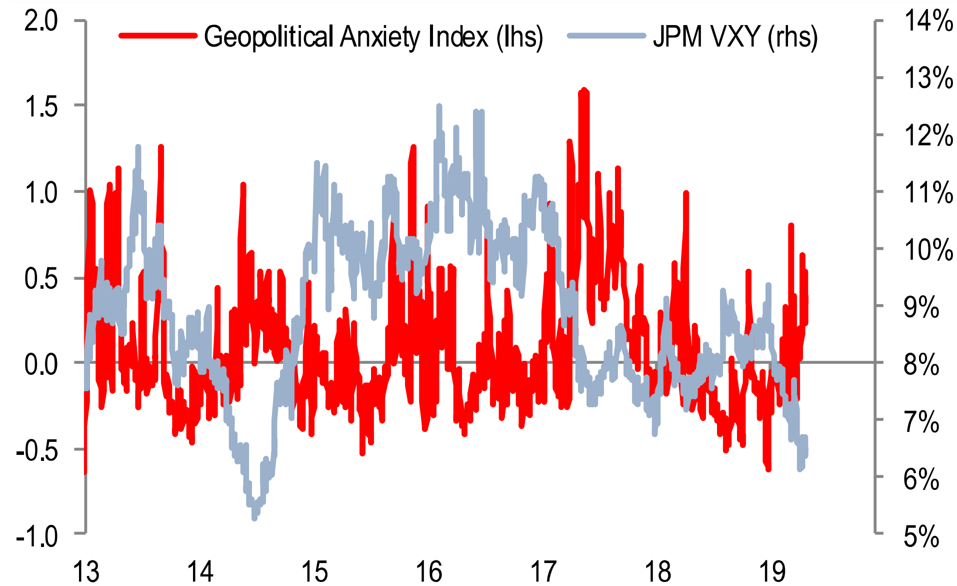
Equity volatility: Some spikes correspond to surges in geopolitical focus

Geopolitical Anxiety Index versus equity implied volatility (VIX)



FX volatility: Extremes in fear and complacency sometimes align with turning points

Geopolitical Anxiety Index versus FX implied volatility (VXY)

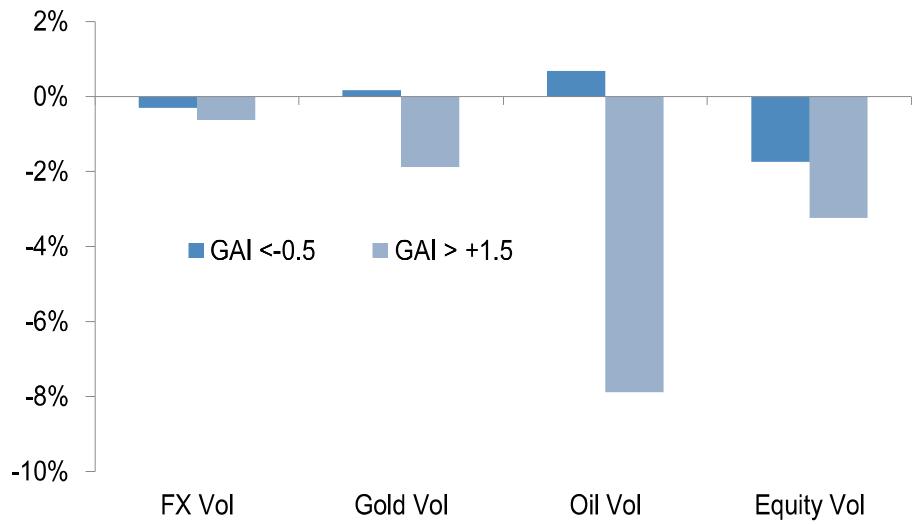


Source: J.P. Morgan

- **Geopolitical shocks are one of several drivers of market volatility,** which also correlates inversely with the pace of global growth and positively with the volatility of the global business cycle and of central bank actions.
- **Still, extremes on the GAI sometimes align with turning points in equity and currency volatility,** so could be used to inform investment opportunities when risk premia are high or hedging strategies when risk premia are extraordinarily low. Fading highs in geopolitical anxiety is appealing for those who think that few events meet the criteria for materiality discussed n slide 5.

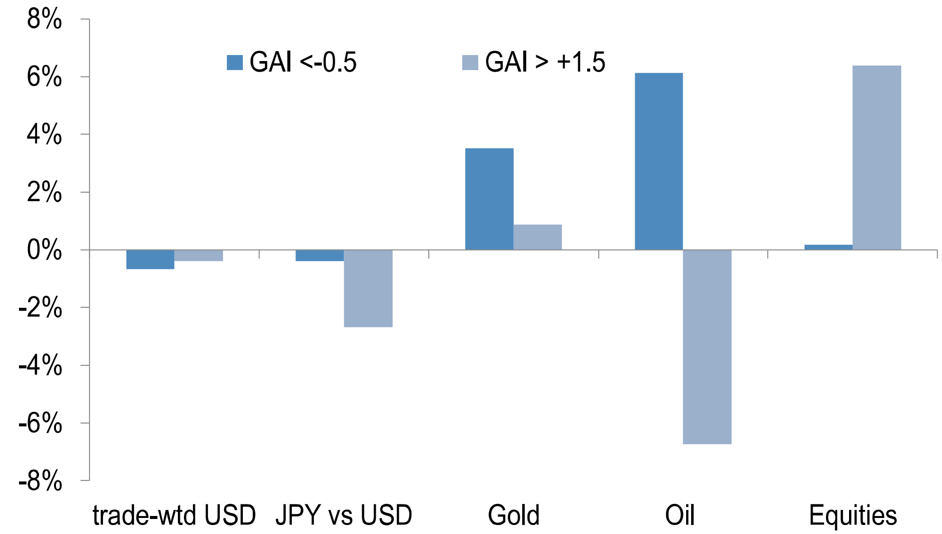
Extreme sentiment can be used to time mean-reversion trades

Volatility declines in the three months following a spike in geopolitical stress
Change in 3M implied volatility for FX, Gold, Oil and Equities in three months after Geopolitical Anxiety Index first crosses top and bottom 2.5 percentiles of fear and complacency. 20Y sample



Source: J.P. Morgan

Oil & Equities show largest and most consistent reaction to extremes in geopolitical sentiment
Returns on trade-weighted USD, JPY, Gold, Oil and S&P500 in three months after Geopolitical Anxiety Index first crosses top and bottom 2.5 percentiles of fear and complacency. 20Y sample



- **A contrarian trading rule illustrates the mean-reversion properties of geopolitical risk.** The upper and lower 2.5 percentiles (corresponding to GAI levels of +1.5 and -0.5) represent the extremes of fear and complacency. The trade rule positions for mean reversion lower in volatility, gold, the yen and oil, and mean reversion higher in Equities when the upper threshold is breached. The holding period if three months. The opposite trades are held when the GAI breaches the lower threshold. On average after breaks below -0.5, equity and gold vol firm about one point over the subsequent three months while FX and oil vol are stable. Oil tends to rise about 10%, gold rise 4% and equities fall 2%. These results therefore caution again selling volatility or adding exposure to risky markets when the GAI signals complacency. On average when the GAI first breaks above +1.5, the decline in volatility over the subsequent three months has been about one point on FX and gold vol, six points on oil vol and four points on equity vol. Oil tends to fall about 8% and equities rise about 4%, thus cautioning against hedging when the GAI is already elevated.

Think the unthinkable: most material (geo)political risks into 2020

	Country, event and date	Current cross-asset trades/hedges
POLITICAL	**US:** Congressional investigations trigger Trump impeachment (ongoing)	**long Gold, long 5Y USD/JPY vol**
POLITICAL	**US**: Negotiations over debt ceiling and spending caps revive risk premia (by end-Sept)	**long Gold, long 5Y USD/JPY vol**
POLITICAL	**US**: Democrats win White House and Congress in 2020, repeal Trump's tax cuts and regulate Healthcare plus Big Tech (Nov 2020)	**UW US Healthcare, long Gold, long 5Y USD/JPY vol**
POLITICAL	**Euro area:** snap election in Italy, or funding crisis on overly-loose fiscal policy; EU Parliament elections results in populist coalition majority (May 26)	**2Y swap spread wideners in Euros; short EUR/CHF; UW EMU in MSCI ACWI**
POLITICAL	**UK**: Tory-led gov't opts for hard Brexit; early elections deliver Labour gov't with significant fiscal easing (Q2/Q3)	**UW UK Equities in MSCI ACWI; short some UK credits (banks, retailers)**
POLITICAL	**Argentina:** general election (Oct 27) delivers a government unwilling/unable to implement IMF program	**UW Argentina in MSCI EM**
POLITICAL	**India:** general election (May) delivers more fractured gov't unable to further Modi's reforms	**neutral India within MSCI-EM, and INR within GBI-EM**
GEOPOLITICAL	**Iran/Venezuela:** US sanctions over-tighten an oil market already balanced by OPEC/Russia production cuts (ongoing)	**long Brent futures; OW US Energy Equities**
GEOPOLITICAL	**US-EU**: US imposes significant tariffs on auto sector following Section 232 investigation (May 19)	**short EUR/CHF; UW EMU in MSCI ACWI**
GEOPOLITICAL	**Russia**: US imposes more punitive sanctions due to US election interference and chemical weapons use, triggering funding stress for banks and/or corporates (pending)	**UW some Russia bank credits; no hedges in Equities or FX given the offset from cartel's support for oil price**
GEOPOLITICAL	**US-China**: trade war persists, or evolves into a tech war involving export bans/investment restrictions; military conflict in South China Sea (ongoing)	**short stocks exposed to protectionism (JPUSTRDP) vs S&P500; short AUD & NZD vs USD**
GEOPOLITICAL	**North Korea:** Peace talks collapse and trigger Korean act of war (ongoing)	**long 5Y USD/JPY vol**
GEOPOLITICAL	**Global**: Cyberattack disrupts economic & market activity (random timing)	**OW selective US & UK cybersecurity stocks**

Red = high likelihood, high impact
Orange: moderate likelihood, moderate impact

Yellow: low likelihood, low impact
Grey: low likelihood, high impact

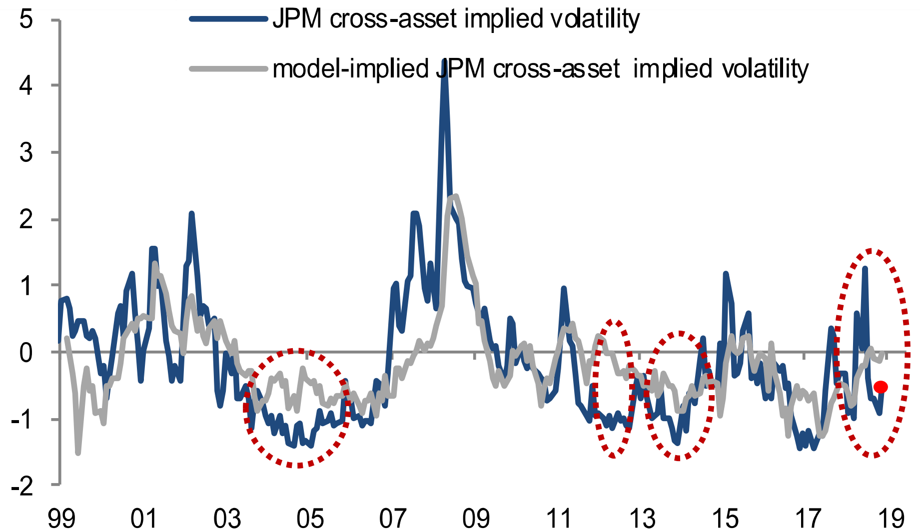
Source: J.P. Morgan *What matters in politics & geopolitics: a framework and watchlist for 2019* by Normand from Nov 2, 2018

J.P.Morgan

Market context – Complacency indicators: (1) Low volatility

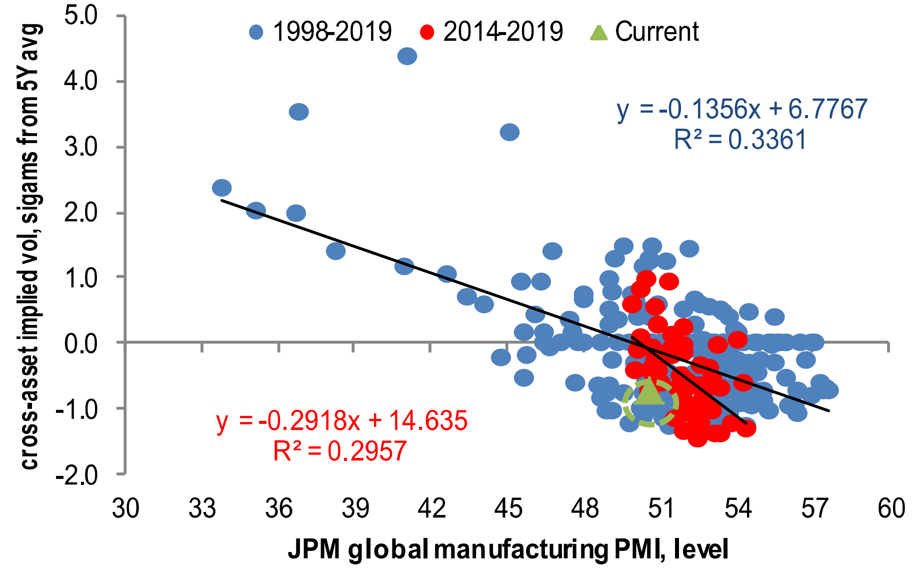
Cross-asset volatility almost as underpriced as in 2013 and 2014

Actual vs predicted cross-asset implied vol from regressing on level and volatility of JPM global manufacturing PMI and JPM cross-asset positioning measure.



Global growth is single most important driver of cross asset vol (stronger growth, lower vol)

JPM cross-asset volatility (weighted avg of Equity, Rates, Credit, FX, Oil and Gold 3M implieds) vs JPM global manufacturing PMI

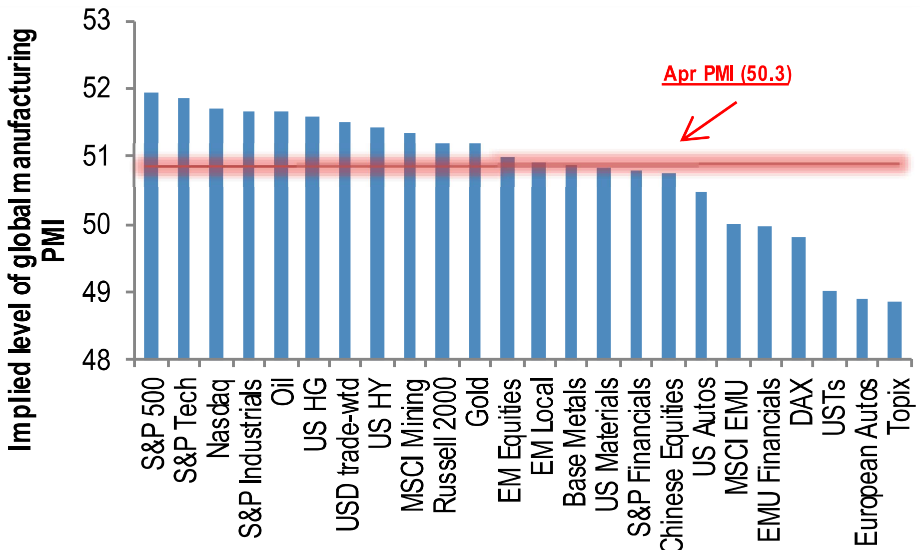


Source: J.P. Morgan

- As discussed on slide 5, **political and geopolitical shocks carry more impact when risk premia are low/valuations high and investor positioning extreme.** There are various **measures of such complacency,** including**:** sentiment measures like the Geopolitical Anxiety Index (slides 15-16), implied volatility, market valuations (P/Es, credit spreads, real exchange rates, real yields, real commodity prices), positioning (based on futures data, surveys or hedge fund betas) and flows (based on ETF data). **JPM's cross-asset measure of volatility** – weighted average of 3M implieds across G3 Equities & Rates, US HG Credit, G10 & EM currencies, Oil and Gold – **has been below average since March.** Vols are not only abnormally low in level terms but also relative to fundamental drivers such as the rate of global growth (stronger growth, lower vol), the volatility of global growth (more unstable growth, higher vol) and investor positioning (more cyclical exposure, lower vol). Underpricing are common during Fed pauses like 2006 (pre-Lehman), 2013 (pre-taper tantrum) and 2014 (pre Fed hikes). See *The rolling bear market in volatility* in the Mar 15th *J.P. Morgan View.*

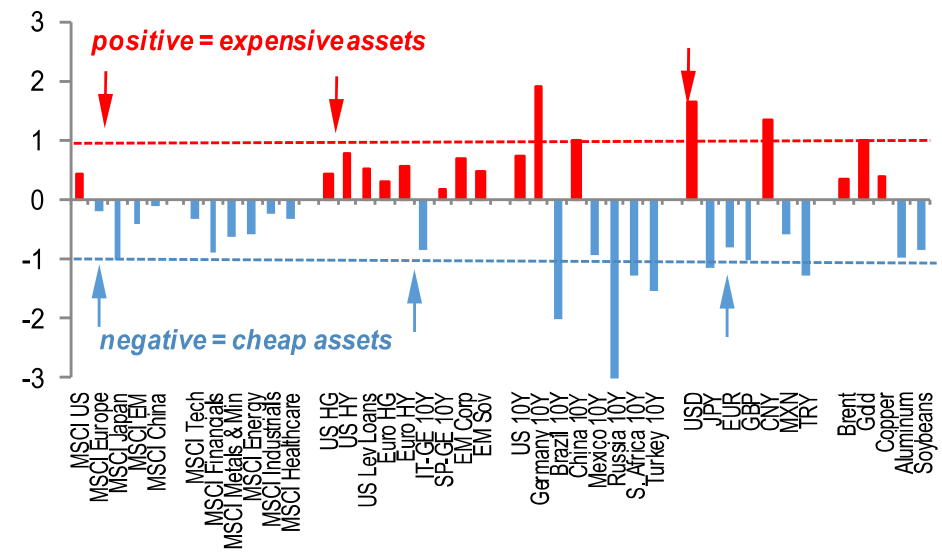
Complacency indicators: (2) high valuations

Most markets price upturn in global growth
Implied PMI reading based on residual from regressing past year's returns on JPM global manufacturing PMI over 20Y sample. Positive residuals signify rich markets, or those trading as if PMI level had already risen to levels in graph.



Source: J.P. Morgan

Valuations by asset class
Deviation from long-term average for forward P/Es, credit spreads, real bond yields, real commodity prices & real FX rates

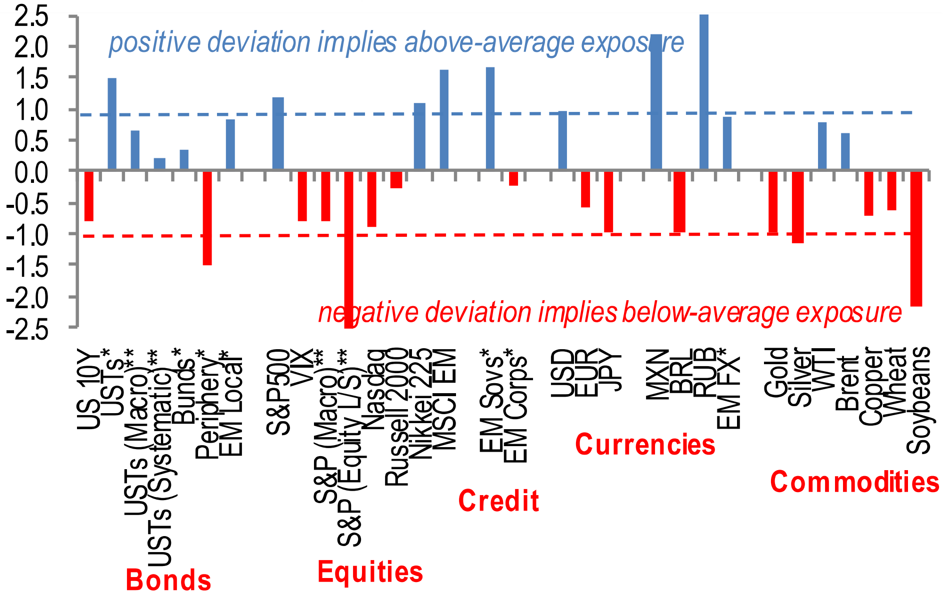


- **Extreme valuations also signal complacency.**
  - **Single-factor valuation models:** Regressing returns on level of global manufacturing PMIs indicates that about half of cyclical assets already price in a upturn in global growth. This differential equates to about 5% richness, compared to about 20% to 30% cheapness at the end of 2018.
  - **Market-specific valuations** (based on forward P/Es, credit spreads, real bond yields, real commodity prices & real FX): **rich assets** are DM and EM Credit; G3 Bonds; the trade-weighted USD and CNY; Oil and Gold. **Cheap assets** are Equities in Europe, Japan and EM; 10Y Italy; EM local currency bonds in Mexico, Russia and South Africa; the trade-weighted JPY, EUR, GBP, MXN and TRY; and Agricultural commodities.

Complacency indicators: (3) extreme positions & (4) extraordinary flows

Positioning across asset classes, measures and investor types

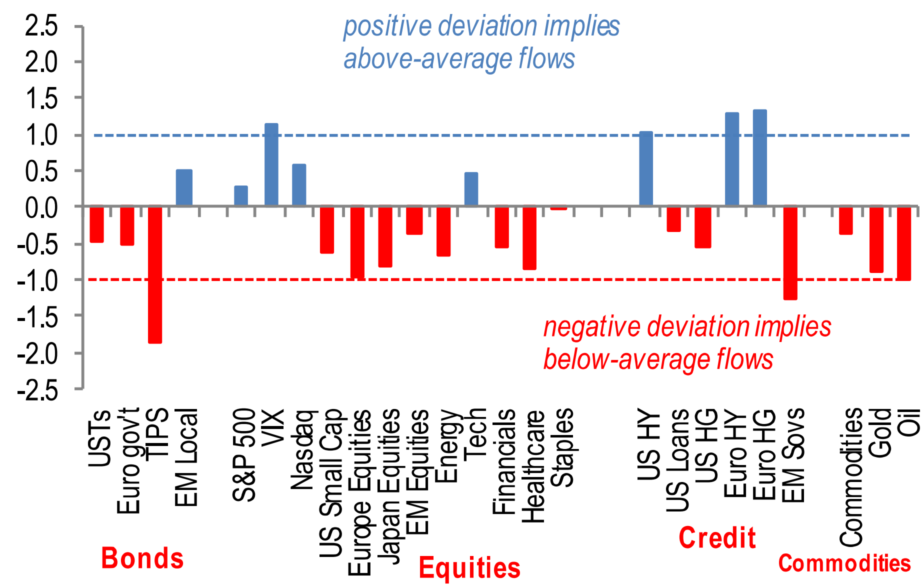
Positioning metrics based on futures data (no asterisk), JPM client surveys (*) and HFR hedge fund betas (**). All expressed as sigmas from 5Y average.



Source: J.P. Morgan, HFR, Bloomberg

ETF flows across asset classes and sectors

Net ETF purchases over past 3M as percentage of ETF market cap, then expressed as sigmas from 5Y average.



- **The investor base is heterogeneous, which is why positioning and flow measures must be broad to be meaingful**
  - **Cross-asset positioning:** Based on futures exposure, hedge fund betas and JPM client surveys, longs are above-average for most EM assets but mixed for US Equities (above-average longs for CTAs, below-average longs for hedge funds) and mixed for Commodities (above-average exposure for Oil, below average for others).
  - **Cross-asset ETF flows as a positioning proxy:** Extraordinary flow momentum (measured as 3M net purchases as a percentage of ETF market cap, then standardized versus a 5Y average) proxies market positioning. This momentum has been strongest this year for EM Local Bonds, Euro govies and DM Credit, but not for DM Equities or Commodities.

Risk #1: Populist-driven regime changes

Populist victories have been equally common in DMs and EMs over the past decade

Major populist victories in post-GFC era	
Hungary	Fidesz (Orban) victory in parliamentary elections (Apr 2010)
Greece	Syriza (Tsipras) victory in parliamentary elections (Jan 2015)
UK	Brexit referendum (Jun 2016)
US	Trump elected President (Nov 2016)
Italy	Lega-Five Star coalition formed after Mar elections (May 2018)
Mexico	AMLO elected President (Jul 2018)
Brazil	Bolsonaro elected President (Oct 2018)
Major populist failures in post-GFC era	
France	Le Pen loses French Presidential election (2017)
Spain	Podemos fails to enter gov't after parliamentary elections (2015, 2016)
Germany	AfD fails to enter gov't after parliamentary elections (2013, 2017)
Upcoming flashpoints	
EU	EU Parliament elections (May 2019)
UK	hard Brexit (Oct 31)
Italy	possible early elections (fall 2019)
Argentina	Presidential/Congressional elections (Oct 2019)
US	Presidential/Congressional elections (Nov 2020)

Source: J.P. Morgan

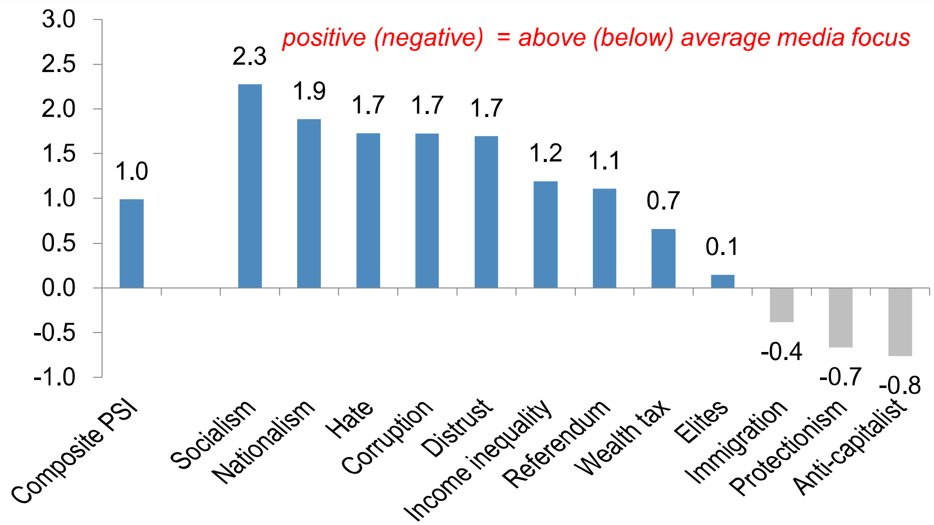
- Unlike previous eras when markets' geopolitical focus tended to be wars and oil supply shocks, **the past decade's preoccupation has been populism.** This phenomenon is newer to most investors than to political scientists, however.
- **Since the GFC**, populists from the right-of-center have entered government in Hungary, the US and Brazil, and reoriented policy in the UK; while those from the left-of-center lead governments in Greece and Mexico. Italy's current government coalition comprises populists from both sides of the spectrum.
- **In the next 18 to 24 months,** populist challenges confront the EU (parliamentary elections in May 2019), UK (possible hard Brexit), Italy again (possible early elections), Argentina (Presidential/Congressional elections in October 2019) and the US (Presidential/Congressional elections in November 2020).
- See *The paradigm shift towards populism: Market implications since the GFC, and risks worth hedging into 2020* by Normand from Apr 5, 2019.

Defining populism from the left and the right

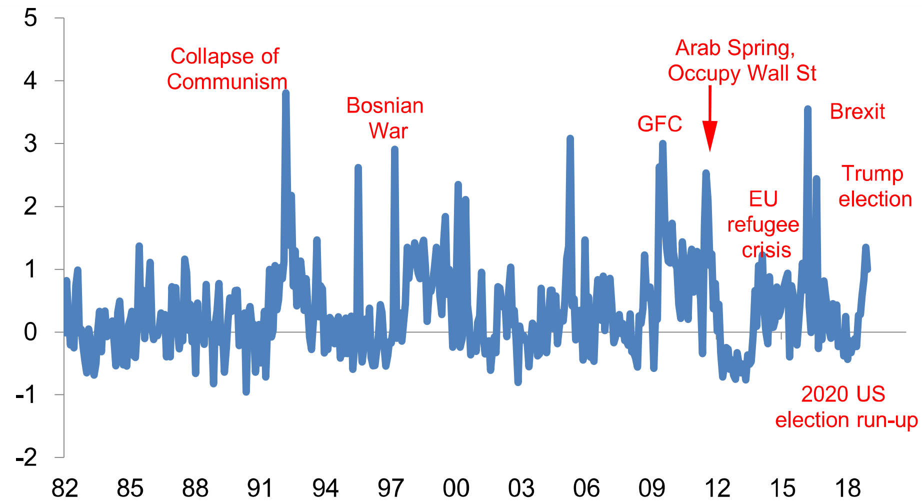
- **To political scientists, the term populism has existed for over a century but means different things to the right and left of the political spectrum.** Traditionally, populism is defined by at least **three traits**:
  - **(1)** an ideology that **divides a country stereotypically into just two groups** of virtuous people and corrupt elites, where elites can be individuals, their political parties and/or a country's institutions;
  - **(2)** a **prioritization of national interests** and citizens over international ones and immigrants; and
  - **(3)** and tendency to frame political relationships **in highly antagonistic** terms.
- **In terms of their economic policies, populists from the left** tend to favor nationalization of private industry and/or services and much more progressive tax regimes than populists from the right, whereas **populists from the right** tend to be more anti-immigration.
  - Populists from both sides can be **hostile to institutions** that are domestic (courts, universities) or international (EU, WTO, UN), because they are thought to represent the power and privileges of elites.
  - Both often argue for more **direct democracy** via referenda (used recently in Greece, UK and Mexico) to shift more authority to individuals, and both often **elevate non-politicians/newcomers** over those with political or sector-relevant experience.
- **These perspectives contrast with those of liberal democracies,** where opposing views are considered equally legitimate as long as all sides respect the rule of law, and where public institutions like legislatures, courts and multilateral organizations are considered the legitimate and indispensable forums for dispute resolution.
- **More recently, many populist leaders have developed a codependency with social media**, in which the former use the latter as the primary tool for propagating views and mobilizing followers, while the latter rely on the former to drive traffic and user engagement. Thus the mud pit of politics has been made modern and real-time via smartphones. Somewhat lost on populists and their followers is the irony that social media providers rank amongst the largest US corporates, and that the Tech sector's ascent has been associated with some of the US's greatest regional sources of income inequality. But that internal contradiction is beyond the scope of this primer.

Tracking surges in populist sentiment

Amongst most-discussed themes are socialism, nationalism, corruption & income inequality
Standardized level of JPM Populist Sentiment Index and thematic components. Expressed as sigmas from 5Y average



Populist tendencies surge every few years, and are rising again in run-up to US elections
JPM Populist Sentiment Index constructed as average standardized level of news count across 12 themes

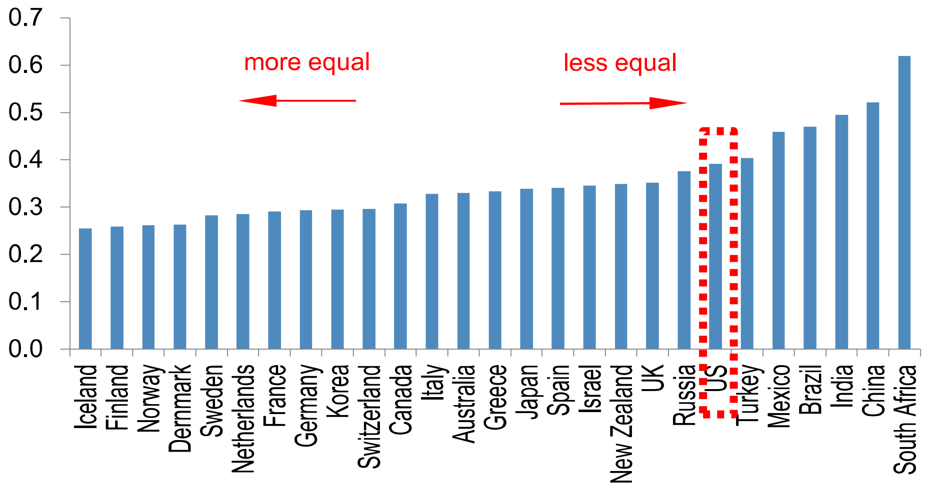


Source: J.P. Morgan

- **News flow can be used to track the global ebb and flow of populist sentiment.** Following the methodology proposed in JPM's Geopolitical Anxiety Index (see slides 14 and 15) developed two years ago, we develop a **Populist Sentiment Index** as the standardized average of news stories in the financial and non-financial press globally around themes such as Socialism, Income Inequality, Wealth Taxes, Corruption, Immigration, Nationalization, Elites and Distrust.
- **Currently, the most talked-about issues include Socialism, Nationalism, Corruption, Income Inequality and Wealth Taxes**, driven in part by proposals from an unusually left-of-center field of hopefuls for the Democratic nomination in the US Presidential campaign. But judged along a longer time series of such tendencies since the early 1980s (chart 2), the current surge falls short of those in 1991 (collapse of Communism), 2011 (Arab Spring, Occupy Wall Street) and 2016 (Brexit, Trump's election).

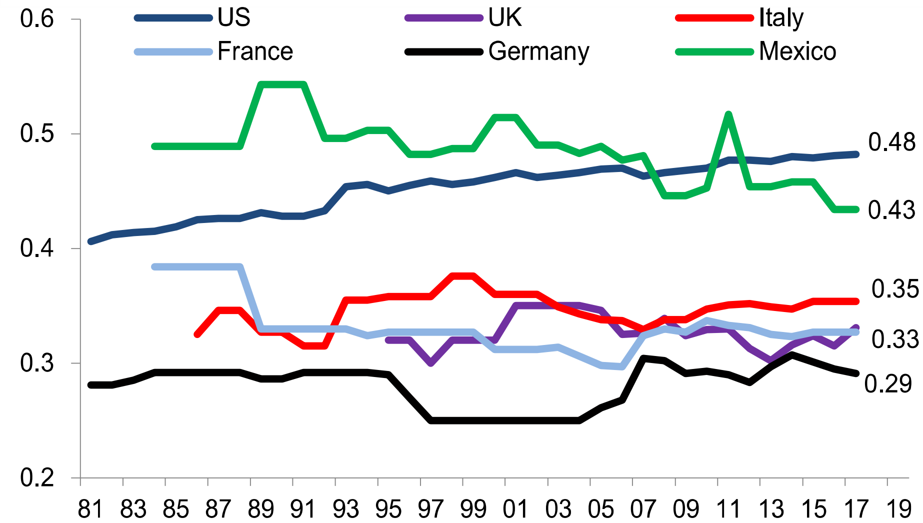
Predicting populist victories: no common thresholds

US income inequality is worst within the DMs and comparable to Russia and Turkey
GINI coefficient, where 1 represents maximum inequality and 0 represents maximum equality



Source: J.P. Morgan, World Bank, Eurostat

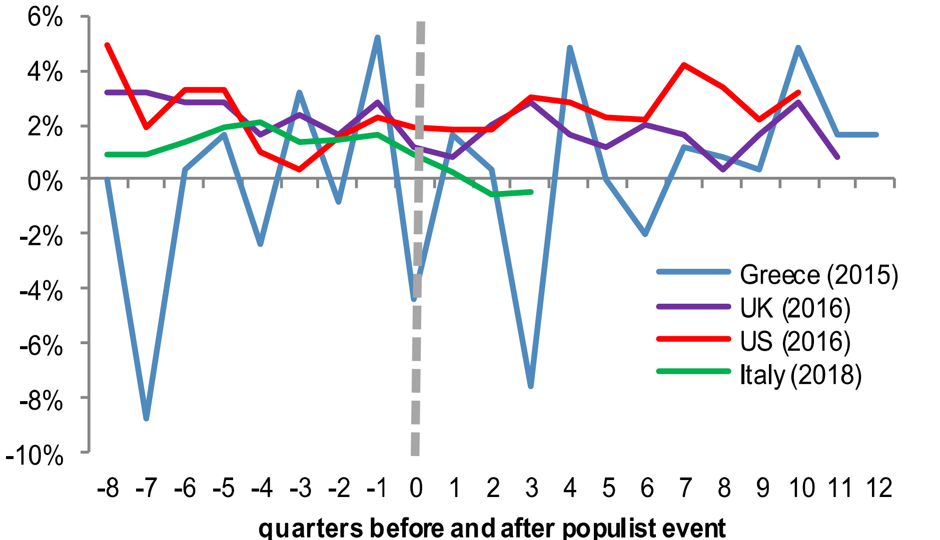
Income inequality has been rising more in the US than in most other large countries
GINI coefficients, where higher values indicate higher inequality



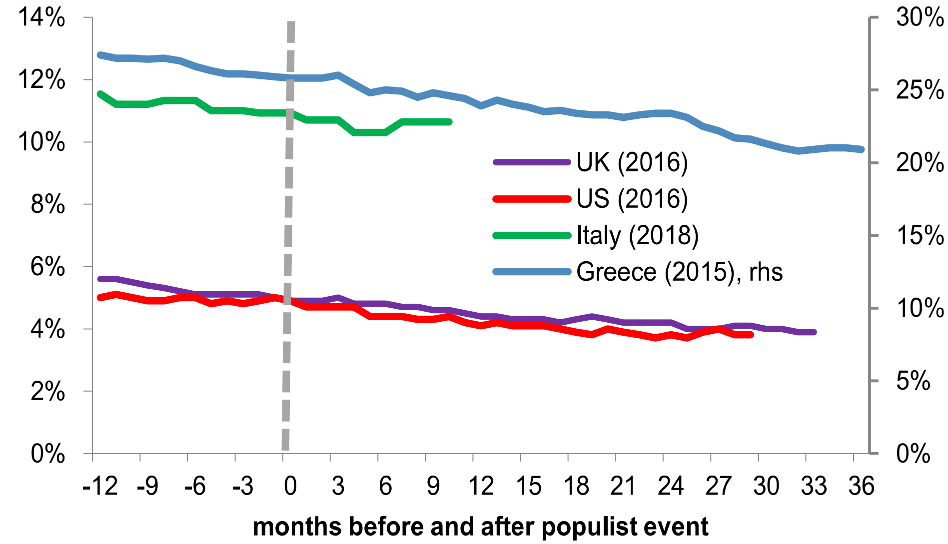
- **What accounts for the timing of populist advances in certain countries?** The conventional wisdom has been that extreme economic and social conditions foster extreme political outcomes. This principle satisfies as an ex post explanation for the collapse of traditional parties in Greece (depression during EMU Crisis) or Italy (record unemployment post-crisis). But other countries that suffered unprecedented economic stress during the EMU Crisis (Spain) haven't elected populists in successive elections, while the US and UK delivered populist shocks without obvious extremes in major macroeconomic indicators. **The newer focus on income inequality isn't helpful either for timing these populist surprises**. The US has the most unequal income distributions of the major economies and one of the most skewed distributions in the world, but this imbalance is longstanding. So the question is more complex than political discourse and chatrooms can process. Depressed economic conditions and social stress raise the odds of populist success, but there are **no consistent thresholds** for any such indicators that make these electoral outcomes certain. Thus our inability to predict timing must be balanced against other considerations like valuations, positions and costs in deciding whether an election is worth hedging (see slide 5).

Economic consequences of populism since GFC: mild or fleeting

Populist events damaged growth the most in Greece and Italy, and the least in UK and US
Real GDP growth (quarter-on-quarter annualized) before and after populist events in Greece, UK, US and Italy



Except in Italy, populist events haven't altered the long-term downtrend in unemployment
Unemployment rate before and after populist events in Greece, UK, US and Italy

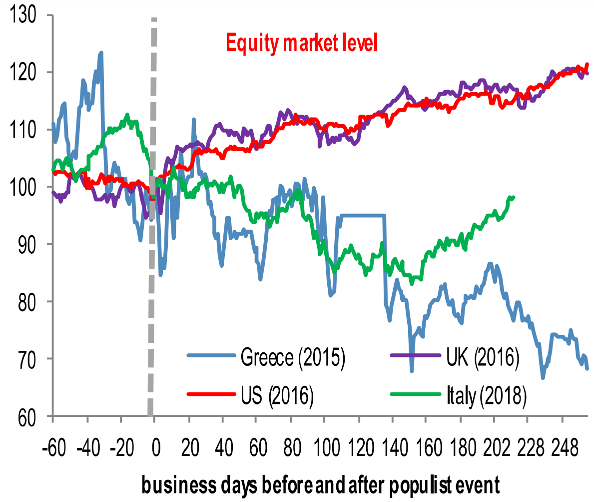


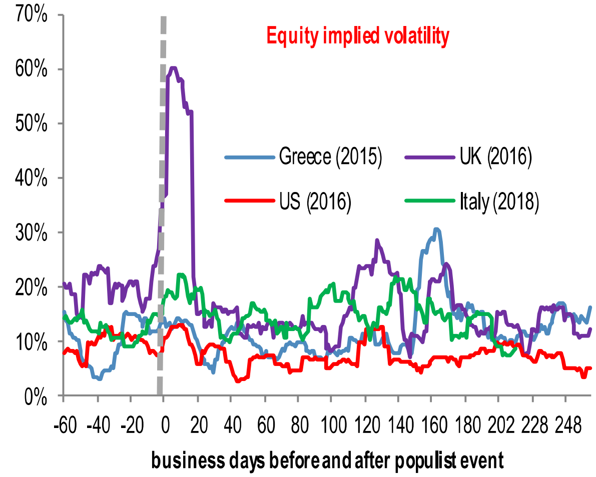
Source: J.P. Morgan

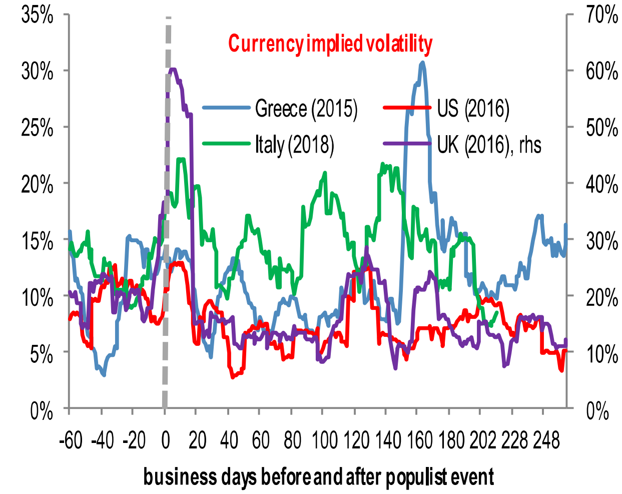
- **Based on the four most-watched populist events of the past decade – Greece**'s election of Syriza in 2015, the **UK**'s Brexit referendum in 2016 **Trump**'s election as President in 2016; and the formation of **Italy**'s Lega/Five Star coalition in 2018 – **economic impacts have been mild or temporary, but only because market stress has caused every populist government to deliver much less than it initially promised or threatened.** Judge by GDP growth, three of these four economies have experienced slowdowns or renewed recessions due to policy uncertainty from new populist governments. Greece suffered a triple dip recession due to the bank runs triggered by the Syriza government's referendum on the troika program. The Italian economy contracted in Q3 and Q4 2018 as concerns about fiscal sustainability boosted bond yields and tightened financial conditions. The UK economy has simply slowed rather than contracted – from a roughly 2% pace pre-referendum to about 1% currently – though some housing indicators have only been this weak during recessions. The US has proven the most resilient to populist policies like Trump's trade war because the consumption boost from tax cuts has neutralized the hit to manufacturing and capex from tariffs.

Market consequences of populism since GFC: volatility, not trend

Doubling or tripling of equity and currency volatility, but eventual recovery in equity levels
Equity markets indexed to 100 on the day of the elections in Greece, US and Italy, and Brexit referendum in UK. 3M realized volatility of local equity markets before and after populist events..







Source: J.P. Morgan

- **Because all populist government have dialed down their ambitions in response to economic and market stress, asset prices have delivered extraordinary volatility but mostly recovered prior losses.** Equity markets have recovered beyond their pre-election/referendum levels in the US and UK, and are nearing pre-election levels in Italy. Chinese Equities have retraced two-thirds of last year's trade war-induced losses. **The more material issue has been volatility**: 3M implied **equity volatility** more than doubled around events in Greece, and rose by about 50% from their pre-event lows in the UK and Italy. S&P500 implied nearly doubled ahead of US elections, but quickly mean-reverted lower because President Trump prioritized constructive policies in his first year of office (tax cuts) over destructive ones (tariffs). The more significant volatility shocks came later in 2018 as protectionist policies damaged the growth and earnings outlook: a VIX at 35% then was comparable to levels witnessed during US recessions. **Currency volatility** was relatively tamer: it surged around Brexit and Greek elections but not around the Italy. Trump's trade war has impacted specific currency pairs (USD/CNY, USD/MXN) more than aggregate measures of risk like JPM's VXY index. **One shouldn't assume the next class of populist leaders will prove as sensible (eventually**), particularly when operating in a crisis environment with more limited monetary and fiscal policy options.

Risk #1(a): Trump's unfinished trade and tech wars with China & EU

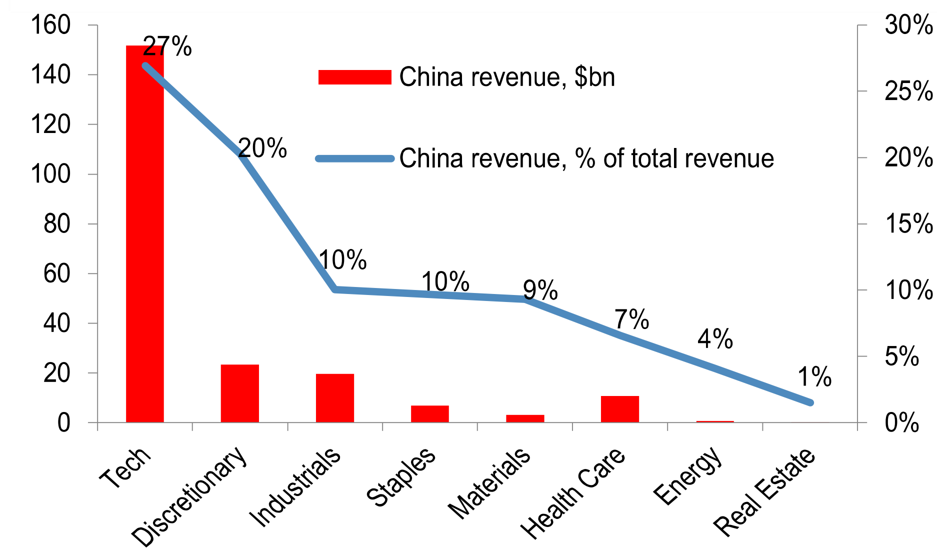
Tariffs still damaging confidence and trade

Business confidence as sigmas from long-term average

Source: J.P. Morgan

Unresolved China tech war remains a threat to earnings

S&P500 sectors annual revenue exposure to China in $bn and as % of total



- **Trump's trade and technology wars remain a live issue,** as highlighted by his early-May Twitter threats to raise tariffs on China for reneging on pledge made during current negotiations. Even if an agreement is reached, missteps during the surveillance and compliance preserve the risk of further sanctions indefinitely, perhaps even under a Democratic President (see slide 29). The US-China tech war, which is being waged through restrictions on US exports to China and Chinese investment in the US tech sectors, can persist independent of a truce on trade in general. Also, by May 19th Trump should decide whether conclusions from the Commerce Department's **Section 232 investigation into autos** merits tariffs, particularly towards the EU.
- **Trade conflict has been the single-biggest driver of the collapse in global business confidence, manufacturing, capex and exports,** and thus a truce is essential for the durable upturn in global growth many markets now discount (see slide 20).

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Risk #1(b): US Presidential/Congressional elections in 2020

Democratic candidate	Polling	Populist proposals
Joe Biden	38%	none
Bernie Sanders	16%	Medicare for All, free college tuition, opposition to free trade deals, supports Green New Deal
Elizabeth Warren	8%	wealth tax, Big Tech break up, free tuition at public colleges, college debt forgiveness, opposition to free trade deals, supports Green New Deal
Kamala Harris	7%	supports Green New Deal
Beto O'Rourke	4%	none
Pete Buttigieg	7%	supports Green New Deal and single-payer health care system
Andrew Yang	1%	Universal basic income

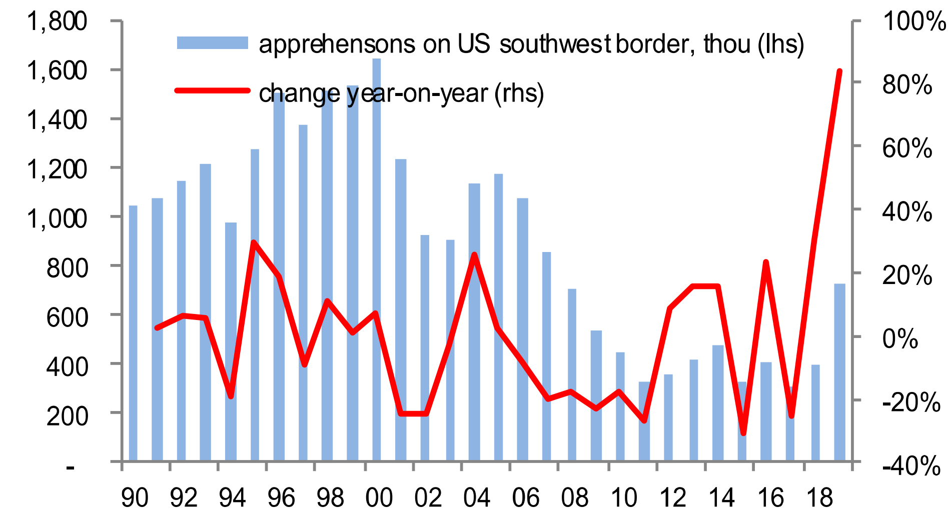
Source: J.P. Morgan, campaign websites

- **The 2020 US Presidential election could be historic** (and reminiscent of Italy) **by pitting a right-of-center populist** (Trump) **against a left-of-center one** (notably Sanders, Harris and Warren). Not all Democratic proposals – like raising taxes – qualify as populist, because these ideas work within established norms and institutions. Those that imply **systemic change** – like Sanders' Medicare for All, Warren's Big Tech break up and wealth taxes, multiple candidates' suport for the Green New Deal – more deserve the label. **Trade** isn't a signature issue for any Democratic candidate as it has been for Trump. But the lack of much Democratic Congressional opposition to Trump's tariffs suggests that he has successfully mainstreamed protectionist thinking in the US, which represents turn from the more globalist thinking of the last two Democratic Presidents (Clinton on NAFTA, Obama on TP). **Caucuses** begin in February 2020 and the nominating convention is July. Of course, any **Democratic populist President would require a Democratic House and Senate to enact most of these proposals,** unlike Trump's ability to shape his signature trade policies through executive order.

Risk #1(c): US/Mexico border skirmish over immigration

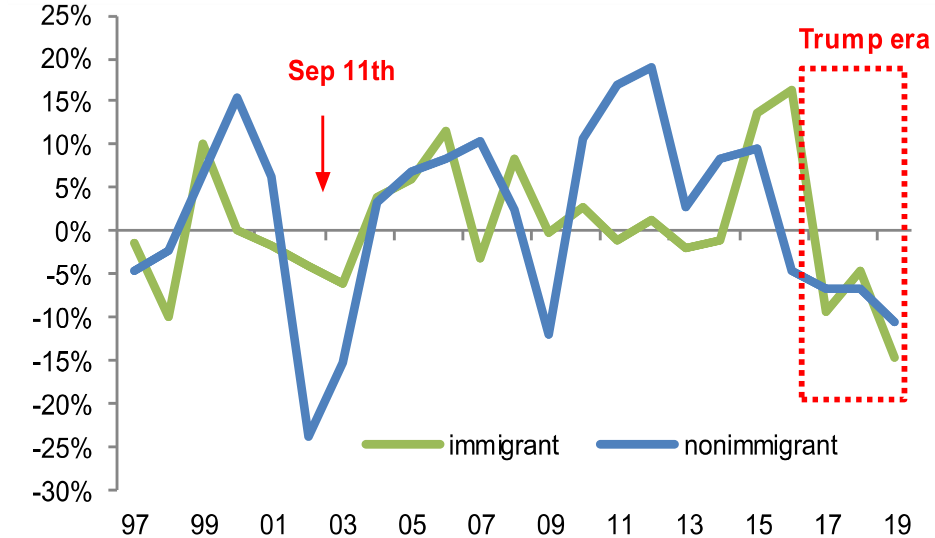
US Customs apprehensions along Mexican border have surged to a decade high

Number of US Customs & Border Protection apprehensions along Southwest border each year. FY19 figure is H1 annualized



US visa issuance is contracting more under Trump than it did after the Sept 11th attack

Year-on-year change in number of immigrant and non-immigrant visas issued annually. 2019 figure is annualized.



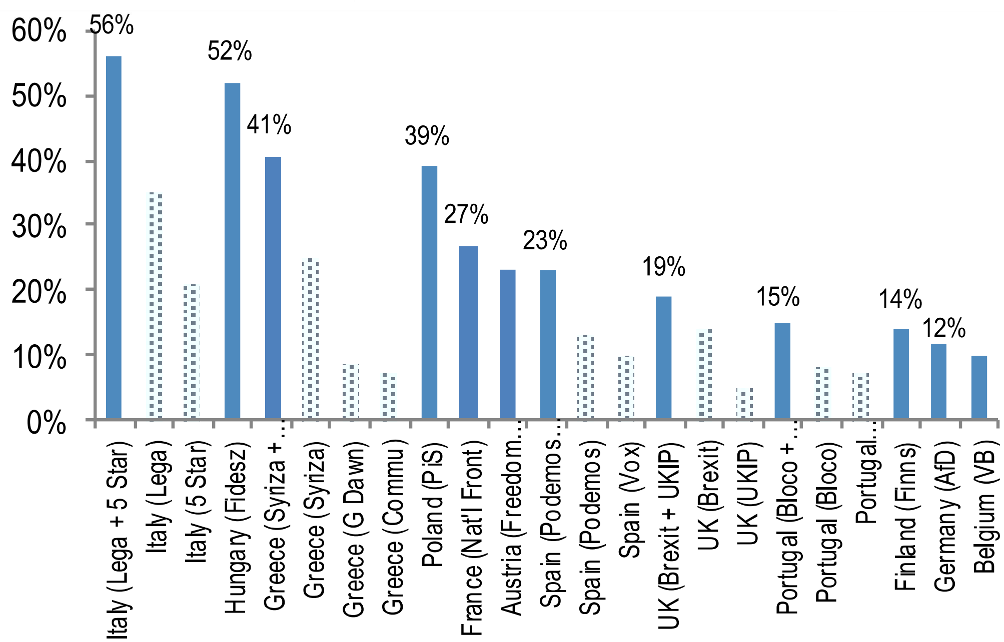
Source: J.P. Morgan, US Department of State, US Customs & Border Protection

- **The US/Mexican border issue is one of Trump's few unfulfilled campaign promises,** but one that he is has focussed on increasingly into the 2020 election. Apprehensions along the Southwest border have surged in 2019 to a decade high, even if traffic is well below the levels witnessed before immigration controls were first tightened after the Sept 11th attacks. A border skirmish over the next 18 months is not inconceivable given the surge in traffic and the President's penchant for theatre.

- **Broader trends in US immigration may be worrying to supply-siders focussed on slack in the US labor market, but are more an issue for wages costs and labor quality than for geopolitics.** The Administration's strategy to reduce immigration through a border wall, raids and deportations, enhanced vetting procedures for visas, limitations on the number visa approvals (particularly for refugees) and a travel ban has delivered three consecutive years of declining visa approvals. The US hasn't experienced a rethink on this scale since the September 11th attacks, after which total visa approvals declined for two years.

Risk #1(d): Broader and deeper European populism

Populist parties lead or support coalition governments in several European countries
Voting intentions by country in latest opinion polls



Source: J.P. Morgan

- **Populist parties have coexisted with more centrist ones for decades in Europe,** but have only entered governing coalitions or driven significant referenda (Brexit) in the past decade. Populists from the right lead governments or form part of governing coalitions in Austria, Poland and Hungary, while the Italian coalition comprises populists from the left and right.
- The presence of established or upstart populist parties throughout the region makes **every election a flashpoint,** though two factors constrain market impacts: market stress tames policy ambitions (Italy), and relatedly, populist leads have abandoned, de-emphasized or diluted calls to exit EMU or the EU.
- **The significance of EU Parliament elections will be diminished by** the institution's limited powers and the unwieldiness of a populist grand coalition. The Parliament names the EU Commission President and approves the ECB President nominee, but all legislation must be co-decided with the EU Council. Also, parties whose common theme is dislike of foreigners might find it tough to caucus with other foreigners. The real risk is that populists eventually control the majority of EU governments. The greatest certainty is **EU gridlock** which will complicate crisis management eventually.
- For UK, **hard Brexit** remains a decent risk under different Tory leadership.

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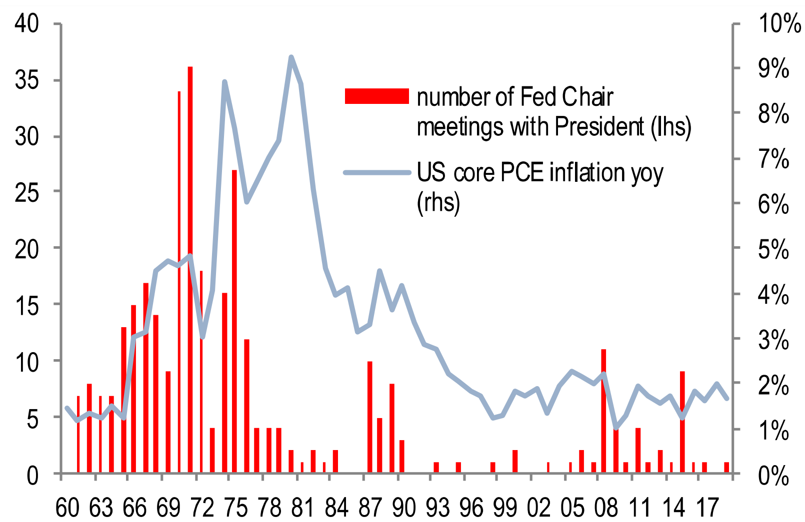
Risk #1(e): Populism and central bank independence

In earlier eras, Presidents influenced the Fed via meetings rather than tweets

Annual number of meetings between Fed Chair and President versus US core PCE inflation



Source: J.P. Morgan, Federal Reserve, Twitter

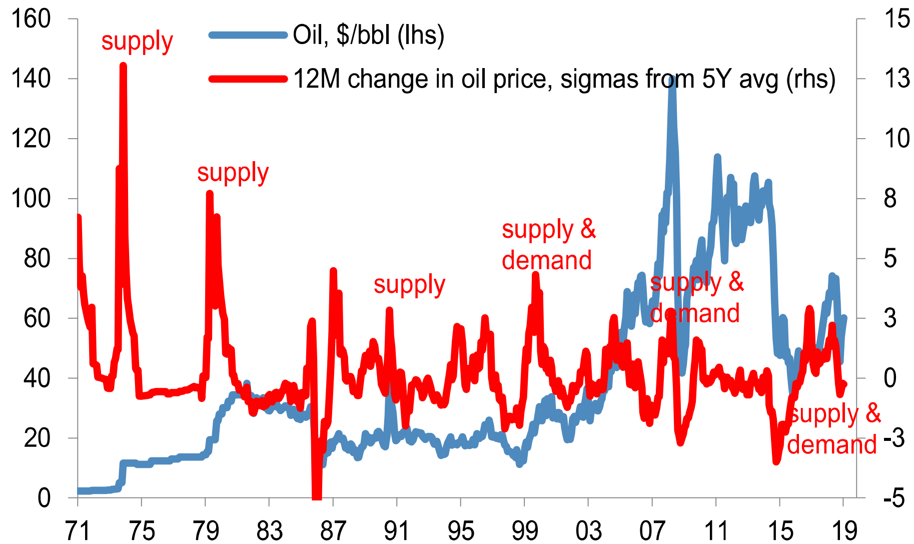
Date	Trump tweet about Fed policy
30 Apr 19	China is adding great stimulus to its economy while at the same time keeping interest rates low. Our **Federal Reserve** has incessantly lifted interest rates, even though inflation is very low, and instituted a very big dose of quantitative tightening.
14 Apr 19	If the **Fed** had done its job properly, which it has not, the Stock Market would have been up 5000 to 10,000 additional points, and GDP would have been well over 4% instead of 3%...with almost no inflation. Quantitative tightening was a killer, should have done the exact opposite!
4 Apr 19	Despite the unnecessary and destructive actions taken by the **Fed**, the Economy is looking very strong, the China and USMCA deals are moving along nicely, there is little or no Inflation, and USA optimism is very high!
29 Mar 19	Had the **Fed** not mistakenly raised interest rates, especially since there is very little inflation, and had they not done the ridiculously timed quantitative tightening, the 3.0% GDP, & Stock Market, would have both been much higher & World Markets would be in a better place!
24 Dec 18	The only problem our economy has is the **Fed**. They don't have a feel for the Market, they don't understand necessary Trade Wars or Strong Dollars or even Democrat Shutdowns over Borders. The Fed is like a powerful golfer who can't score because he has no touch - he can't putt!
18 Dec 18	I hope the people over at the **Fed** will read today's Wall Street Journal Editorial before they make yet another mistake. Also, don't let the market become any more illiquid than it already is. Stop with the 50 B's. Feel the market, don't just go by meaningless numbers. Good luck!
17 Dec 18	It is incredible that with a very strong dollar and virtually no inflation, the outside world blowing up around us, Paris is burning and China way down, the **Fed** is even considering yet another interest rate hike. Take the Victory!
25 Nov 18	So great that oil prices are falling (thank you President T). Add that, which is like a big Tax Cut, to our other good Economic news. Inflation down (are you listening **Fed**)!

- **Until the GFC, central bank independence went relatively unquestioned** as essential to achieving and maintaining macroeconomic stability. Since then, central banks have been accused of acting recklessly and beyond their mandates both when easing (QE critiques) and tightening (QT critiques). Some policies have also been conflated in the debate over the causes of income inequality.
- **There is now little pretence about independence in some countries** (Japan, some EMs). Others (**Fed**) can only be influenced gradually (Powell's term expires in 2022), but given that most of the US presidential spectrum for 2020 is populist, policies previously considered unthinkable (like MMT) could become mainstream in only a few years.

Risk #2: A minor oil shock (by historical standards)

A two to three sigma price move driven purely by supply stress qualifies as disruptive

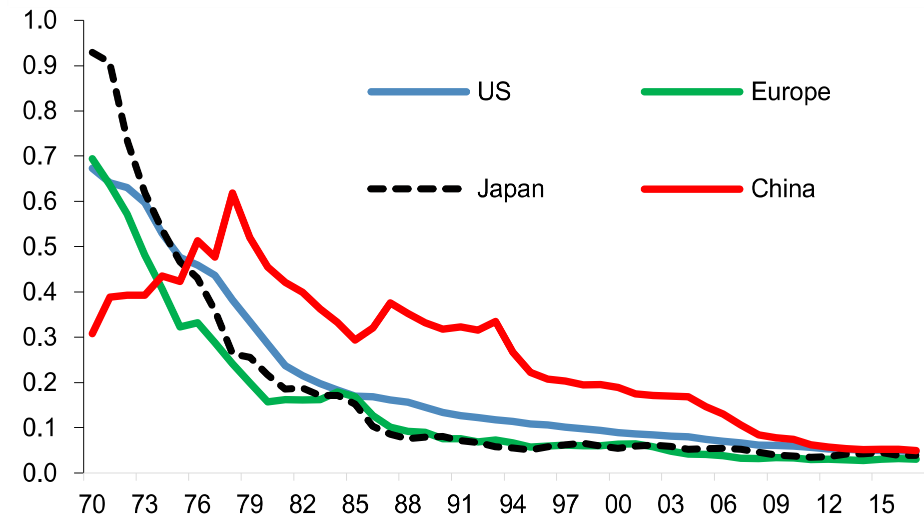
Oil price in $/barrel and as 12M change in standardized terms



Source: J.P. Morgan

Intensity of oil consumption has been declining for decades

Millions tons of oil equivalent consumed annually per USD billion of GDP

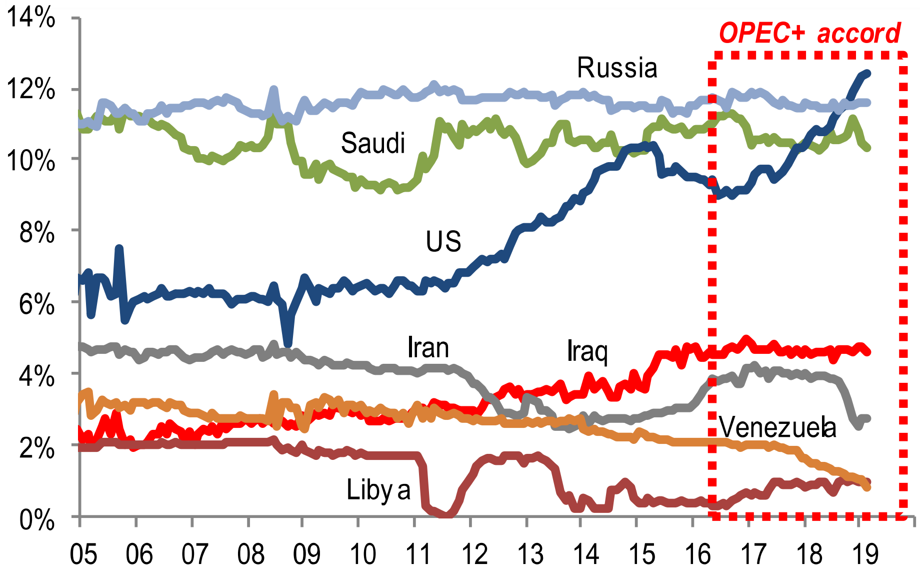


- **Oil shocks,** defined loosely as a multi-sigma rise in prices due to a supply-driven tightening in market balances**, have triggered three US recessions** (1973, 1980, 1990) plus other less-intense market stresses (Arab Spring in 2011).
- **Price spikes still occur but are less pronounced now** due to three structural changes:
  - **greater diversity of supply,** with OPEC's share of global production down from 50% in the 1970s to 30% currently
  - **the boom in short-cycle production** via US shale, which has made the US the world's largest oil producer; and
  - **record-low oil intensity of consumption** in major economies due to policies to promote energy efficiency.

Translating output cuts into oil price moves

Below-average oil volatility belies an unstable equilibrium due to OPEC loss of market share

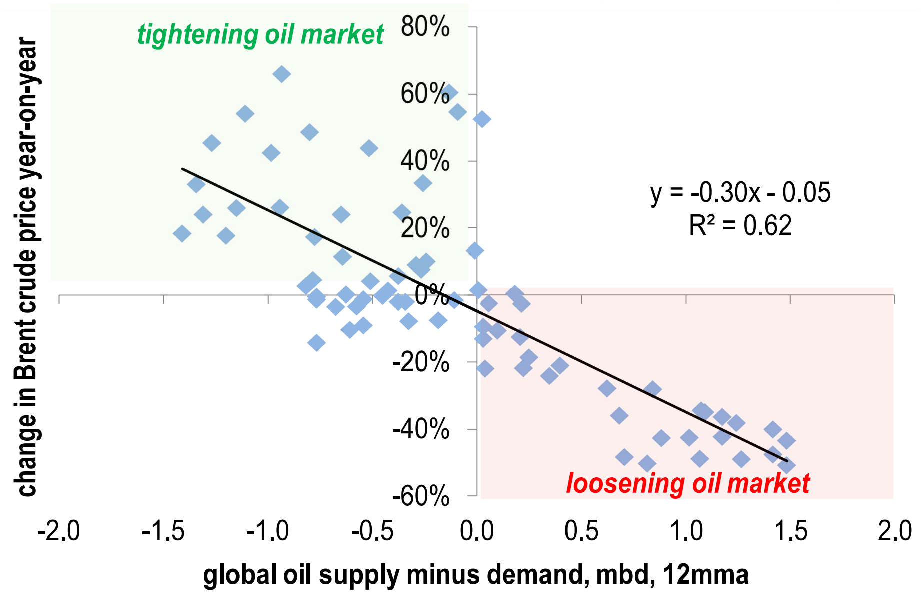
Crude oil production as percentage of global total



Source: J.P. Morgan

Every 1mn barrels per day swing in market balance worth 30% price change

Global supply minus demand vs Brent oil price (% change yoy)



- **Still, below-average volatility in oil markets** (25% on OIV vs average of 35%) **belies an unstable, policy-driven equilibrium.** Since OPEC+ announced production cuts in Dec 2016, Brent has risen 50% but at a cost of a substantial market share loss to the US. All producers have managed to lower their fiscal breakeven oil price since the 2014 market crash, but Saudi Arabia still requires about $80/bbl Brent to balance its budget, and most other producers require prices near $60/bbl. Hence the incentive to cut production further to reverse the market's recent return to surplus. Countries must always choose between meeting fiscal objectives and retaining market share, though their policy pivots are difficult to time and create recurring spikes in volatility.

- **Supply risks are more from Venezuela** (producing 600kbd) **than Iran** (exports already down by 1mbd due to US sanctions). Every 1mbd swing in market balance is worth a 30% price change, which is small by historical standards but still unhelpful to the global economy.

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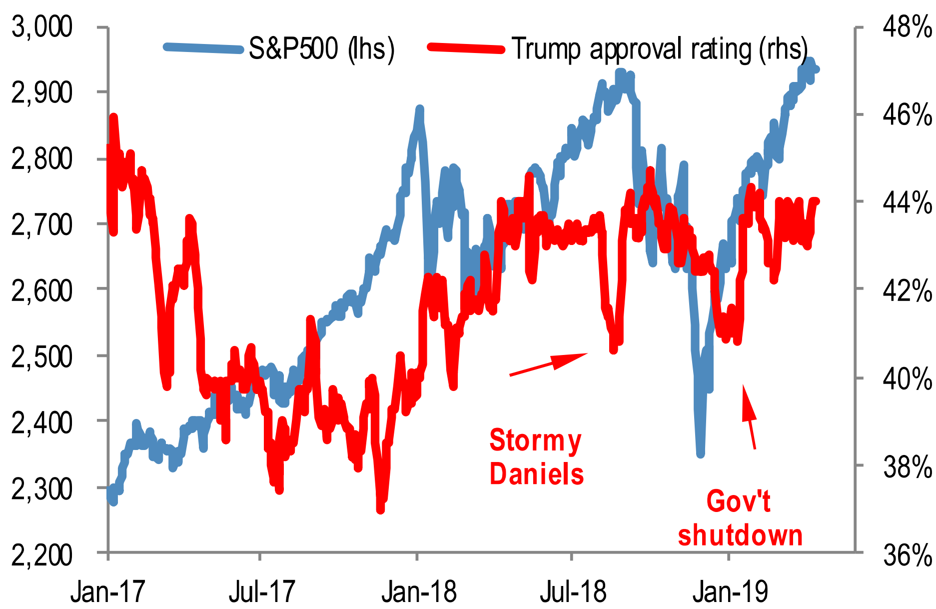
Risk #3: US debt ceiling and fiscal cliff redux

Hopefully, Trump will avoid a debt ceiling drama to preserve the boost in his approval rating

President Trump's average approval rating across polls vs S&P500



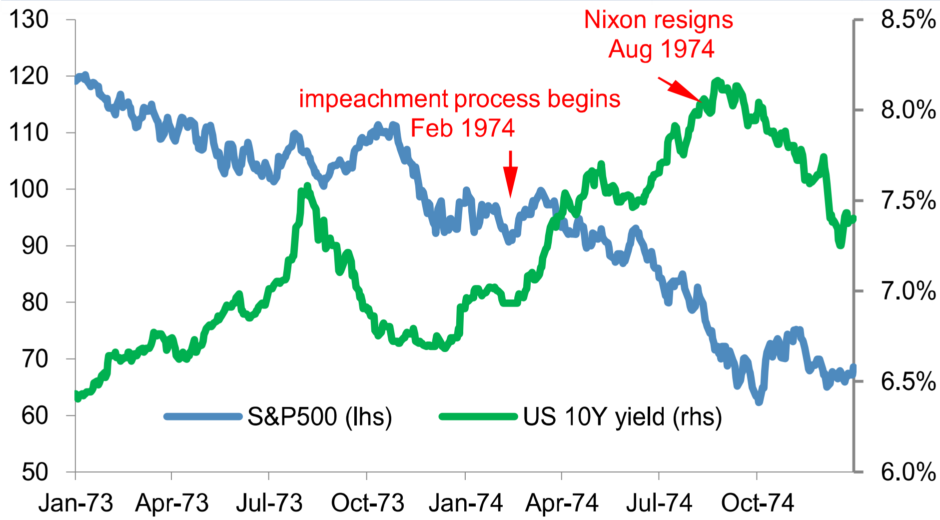
Source: J.P. Morgan, Real Clear Politics

- **US domestic politics runs alongside international risks** like the US-China trade war as a potential volatility generator.
- **A sleeper issue for global – or at least US markets – is the debt ceiling debate,** given that the US Treasury should exhaust extraordinary measures by late September. Recall that the August 2011 tussle between Obama and a Republican Congress, which culminated in a US sovereign credit downgrade, drove a much larger declines in stocks (-11%) and rally in gold (+11%), albeit with the EMU Crisis intensifying simultaneously (see *What happens when Washington gets rough* by Normand from May 11, 2016; and *One more time around: A deep dive on the debt ceiling debate and the impact on US Treasuries* by Barry from Feb 27, 2019).
- **Concurrent with the debt ceiling debate runs discussions about extending the increase in federal spending caps** (worth about 0.7% of GDP per annum), which was first approved in February 2018 through the Bipartisan Budget Act. Legislation must be renewed by late 2019 (fiscal year begins in October) to avoid additional fiscal tightening at a time when the boost from tax cuts will be fading.

Risk #4: Trump's eventual impeachment

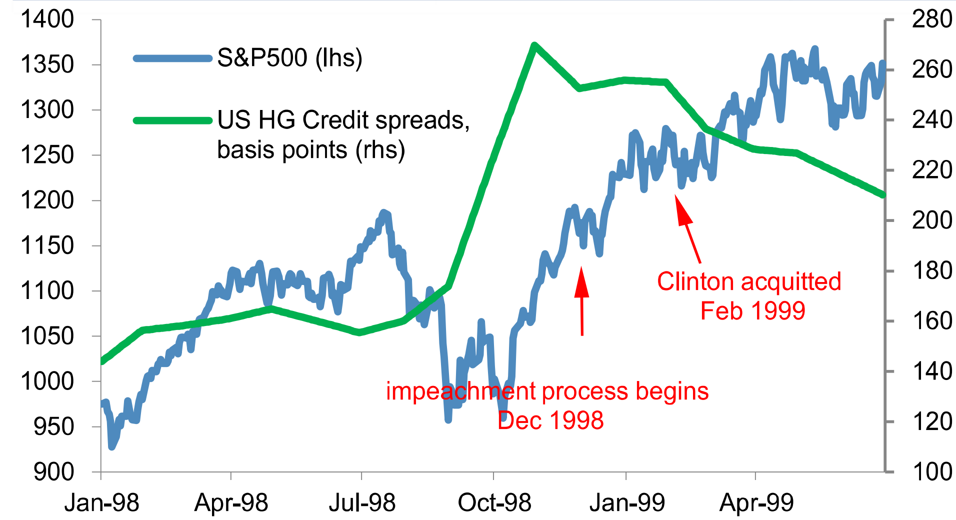
Nixon impeachment: tough to disentangle movements from 1973 Oil shock/US recession

S&P500 and US 10Y yield around Nixon's impeachment saga



Clinton impeachment: Equities & Credit were rebounding from Asian Crisis & LTCM collapse

S&P500 and US HG Credit spreads around Clinton saga



Source: J.P. Morgan

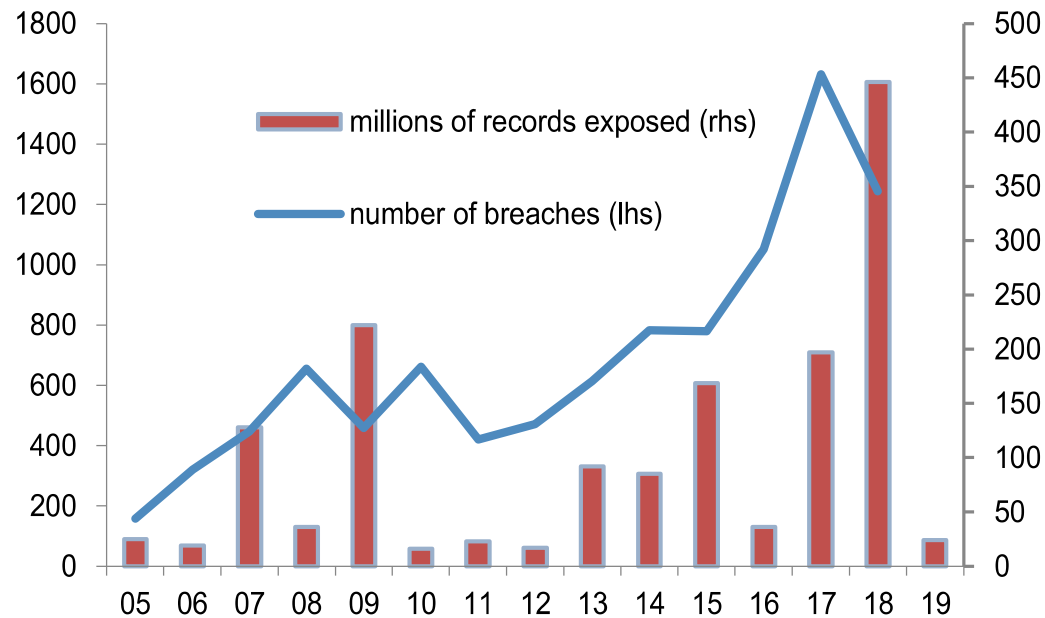
- A range of New York State and US Congressional investigation, only some of which are linked to the Mueller report could trigger an **impeachment process against the President.** Eventually, a less aggressive foreign policy should lift US Equities given the impact that Trump's trade war has had on Cyclicals. But the interim impact should be negative for stocks and positive for reserve assets (JPY, CHF, EUR, gold) through several channels: **(1)** lengthy impeachment process creates generalized policy uncertainty; **(2)** Trump's temperament raises the odds that he creates disruptions domestically or internationally to divert attention from proceedings; and **(3)** successful impeachment raises the odds of Democratic sweep in 2020 followed by rollback of Trump's tax cuts. High equity valuations and long positions in equities plus the dollar (vs JPY and EUR) magnify these risks.

- **Do US constitutional crises impact financial markets?** They are rare events within unique macroeconomic contexts, so should be evaluated on their own terms rather than generalized. With Nixon, market movements were more a function of the 1973 oil shock and recession, and with Clinton, the recovery from the Asian Crisis/LTCM. With Trump, the context will be late cycle dynamics. See *Nixon, Clinton & Trump: impeachment sagas and portfolio hedges* by Normand (Aug 23, 2018).

Risk #5: Cyberattacks with systemic rather than stock-specific impact

2018 was a record year for records exposed through data breaches

US breaches include insider theft, hacking, unauthorized access and physical theft. 2019 figures are Q1 annualized.



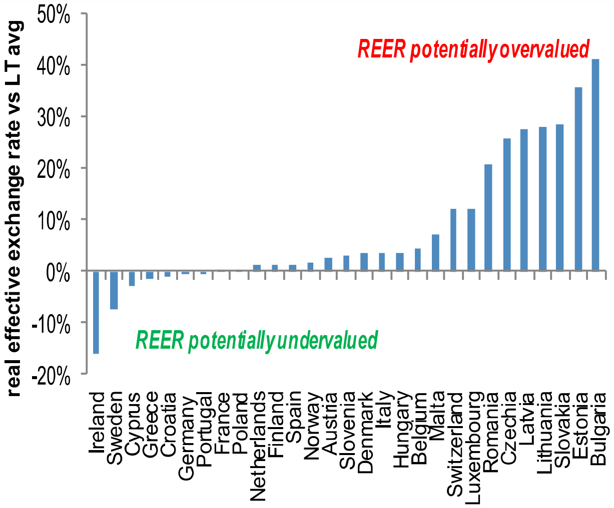
Source: J.P. Morgan, Identity Theft Resource Center

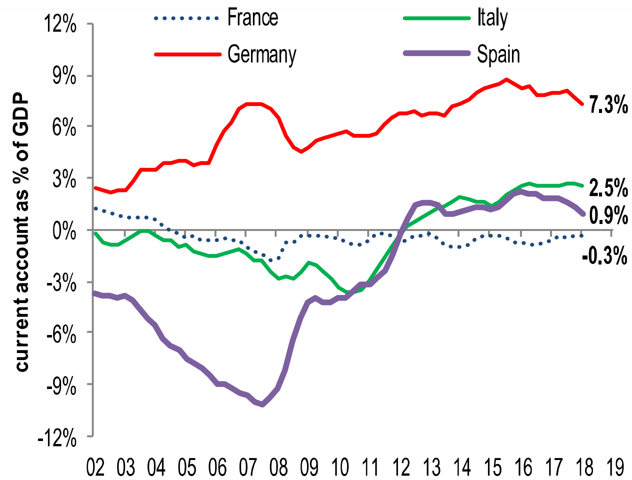
- **Cybercrime has evolved quickly from a company-specific issue to a geopolitical one.**
- **For companies,** the number of data breaches has been trending higher over the past decade, with 2018 delivering a new high in records exposed as well. Disclosure of these attacks has damaged share prices but usually only intra-month.
  - The **risk** is that a cyberattack causes broader economic and financial disruption.
- **For sovereigns,** allegations of state-sponsored cyberattacks have been elements of US/China/Russia/N Korea conflicts and have partly motivated US sanctions that proved market-moving
  - **China**: cybersecurity is a major component of the US/China conflict, as discussed in US Trade Representative's Nov 2018 update.
  - **Russia:** Cyber theft and dissemination of fake news are amongst the allegations detailed in the April 2019 Mueller report
  - The **risk** is that US sanctions broaden and intensify in response to previous or future incidents.

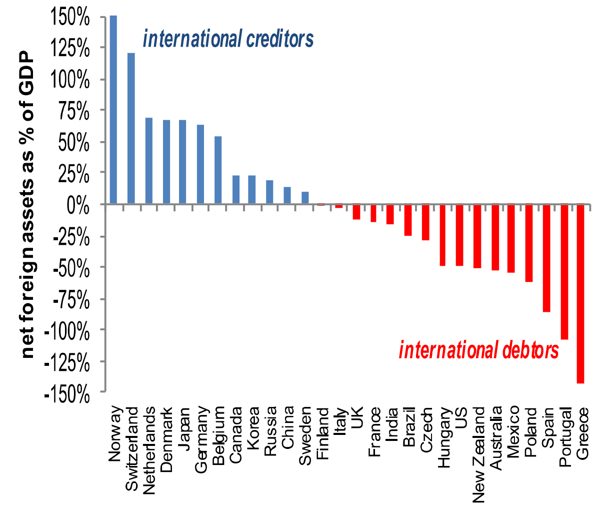
Risk #6: A country's desperation to exit EMU during a recession

Three measures of currency vulnerability if a country exited EMU

Real effective exchange rate (average of CPI and ULC-based measures) deviation from long-term average; current account balance as percentage of GDP; and net foreign assets as percentage of GDP.







Source: J.P. Morgan

- **EMU breakup has been a recurring risk scenario for European markets,** either because recession creates extraordinary economic and financial stress in a monetary union; or because some populist leaders have propose exiting as part of a nationalist, anti-establishment platform. But recently most populist leaders have gone quiet on EMU exit given either election losses (Le Pen in France) or market stress (Italy).

- **This issue is very likely to resurface during the next European recession** since Europe has either few policy tools to revive growth (given the level of policy rates and size of the balance sheet) and one untested mechanism for managing large-scale sovereign stress (the ECB's OMT program). There would also be less willingness to burden share in a Europe dominated by populists.

- Several JPM Research notes have explored the issue of valuing **successor currencies** of both strong and weak sovereigns (slide 39). The most important macro determinants of an over or undershoot will be real exchange rate misalignment, current account balance, net foreign asset position and degree of foreign ownership of domestic stocks, bonds and direct investment.

J.P. Morgan Research referenced in this presentation (click links)

On general geopolitical risk

Geopolitical Flashpoints webpage on www.jpmm.com for ad hoc update on geopolitical issues impacting economies and markets

Populism and the European Parliament elections by Mackie (May 7, 2019)

The paradigm shift towards populism: Market implications since the GFC, and risks worth hedging into 2020 by Normand (Apr 5, 2019)

J.P. Morgan Perspectives: Paradigm Shifts – What lies ahead by Loeys, Chang et al (Apr 4, 2019)

What matters in politics & geopolitics: A framework and watchlist for 2019 by Normand (Nov 2, 2018)

J.P. Morgan Perspectives: Geopolitics & Markets: Risks on the rise by Loeys, Chang et al (Nov 1, 2018)

Eroding the benefits of tax reform through America First policies by Normand (Apr 17, 2017)

Hedging and fading geopolitical risk in global markets: A framework for managing inevitable volatility by Normand (May 23, 2017)

On trade wars, US government shutdowns, the debt ceiling debate and US Presidential impeachment

One more time around: A deep dive on the debt ceiling debate and the impact on US Treasuries by Barry from Feb 27, 2019)

J.P. Morgan Perspectives: Made in China 2025 – A new world order? by Loeys, Chang et al (Jan 31, 2019)

Nixon, Clinton & Trump: impeachment sagas and portfolio hedges by Normand (Aug 23, 2018)

What happens to the dollar when Washington gets rough: conflict is another reason to like yen, euro & gold by Normand (May 11, 2016)

Yes, Mr. (Madam) President: US elections, executive orders and markets by Normand (Oct 3, 2016)

On EMU breakup

Franc fort ou franc faible? A valuation framework for successor currencies in the event of EMU exit by Normand (Mar 9, 2017)

Has the euro outgrown political risk? by Normand (Dec 6, 2016)

Exiting EMU from the core by Panigirtzoglou and Normand (Nov 22, 2012)

Answers to 10 common questions on EMU breakup by Normand and Sandilya (Dec 7, 2011)

Exiting EMU: the legal, the likely and the ludicrous by Normand (Feb 19, 2010)

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