

Global Geopolitical Overview

Angelo Katsoras
Geopolitical Analyst

March, 2017

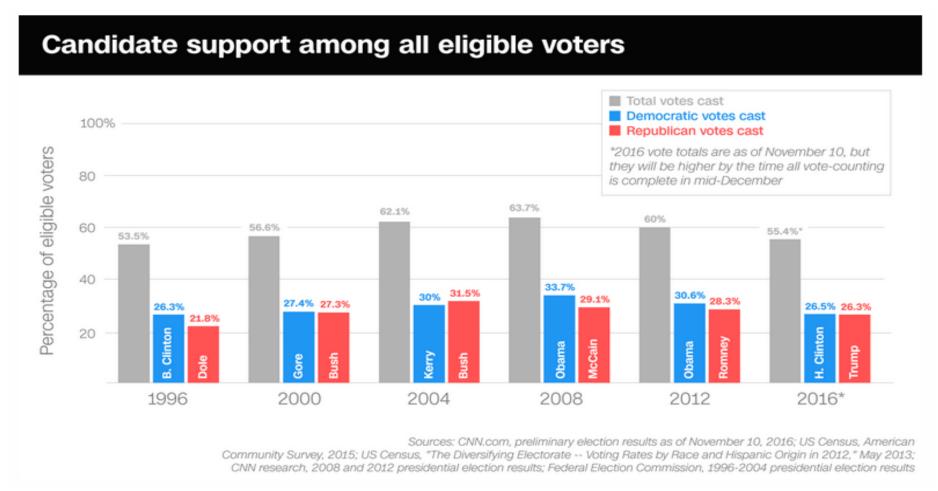


Geopolitical Menu

- ☐ An update on the Trump Presidency
 - The impact of his legislative agenda, protectionism and foreign policy
- The many geopolitical challenges facing Europe, including its busy electoral calendar
- A brief overview of the tensions/challenges surrounding key countries/regions
 - North Korea, China, Middle East, Russia and Mexico



How many votes does it take to win the U.S. Presidential election?



Can President Trump maintain his base of support?



The economic gap between Clinton and Trump voters

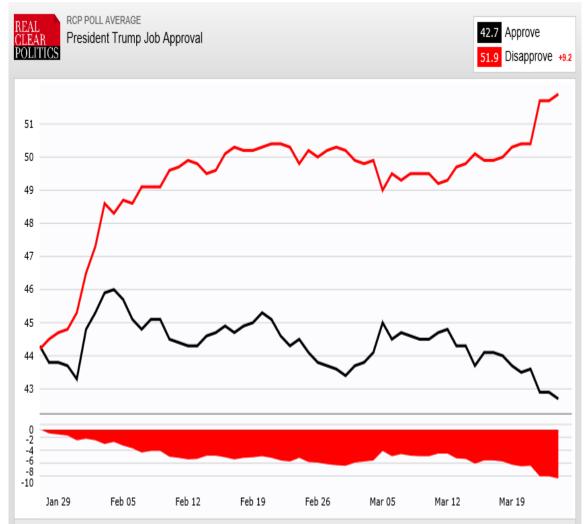
Candidates' counties won and share of GDP in 2000 and 2016

Year	Candidates	# of Counties won	Aggregate share of GDP
2000	Al Gore	659	54%
	George W. Bush	2397	46%
2016	Hillary Clinton	472	64%
	Donald Trump	2584	36%

Source: Brookings analysis of Moody's Analytics estimate



Date: November 29, 2016





Source: NBC News/WSJ Survey, Feb. 2017

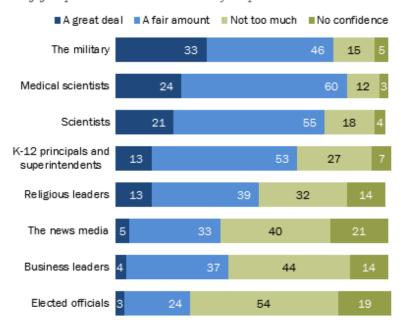
President Trump won the election with the lowest approval ratings in the polling era. Newly elected Presidents usually have an over 60% approval rating during the first few months. That said, for the time being he remains more popular than many other leading figures in Washington.



The massive U. S. backlash against the governing and media elite

Americans' trust in military, scientists relatively high; media, business leaders, elected officials low

% of U.S. adults who say they have _____ of confidence in each of the following groups to act in the best interests of the public



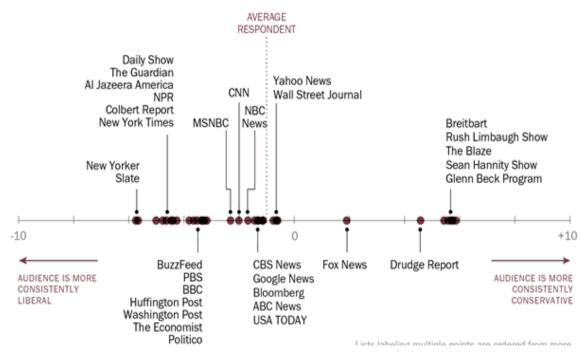
Note: One-third of respondents randomly assigned to rate "medical scientists"; two-thirds randomly assigned to rate "scientists." Other questions asked of all. Respondents who did not give an answer are not shown.

Source: Survey conducted May 10-June 6, 2016.

PEW RESEARCH CENTER

Ideological Placement of Each Source's Audience

Average ideological placement on a 10-point scale of ideological consistency of those who got news from each source in the past week...

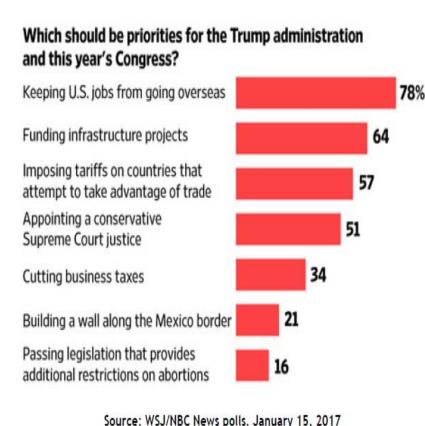


The same experts who now are sure the White House is in crisis were equally certain that Donald Trump could never win the election.

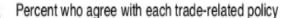


Sources: Pew Research, October 2016 & April 2014

Bipartisan support for Protectionism



Support for Trade Policies: Local Sourcing and Job Protection





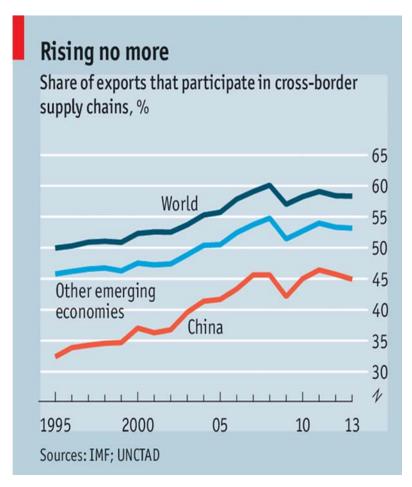
Certain of Trump's ideas are very popular.

Similar to China, the U.S. will increasingly use the leverage of its large market to extract better terms from countries on a bilateral basis.



Increased protectionism in era of global supply chains

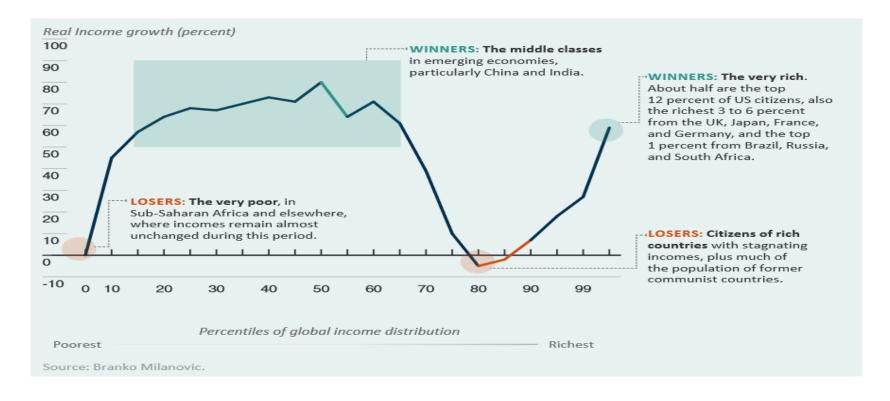




Global supply chains makes it difficult to implement a border tax.



Changes in Real Income by World Income Percentiles (at Purchasing Power Parity) From 1988 to 2008

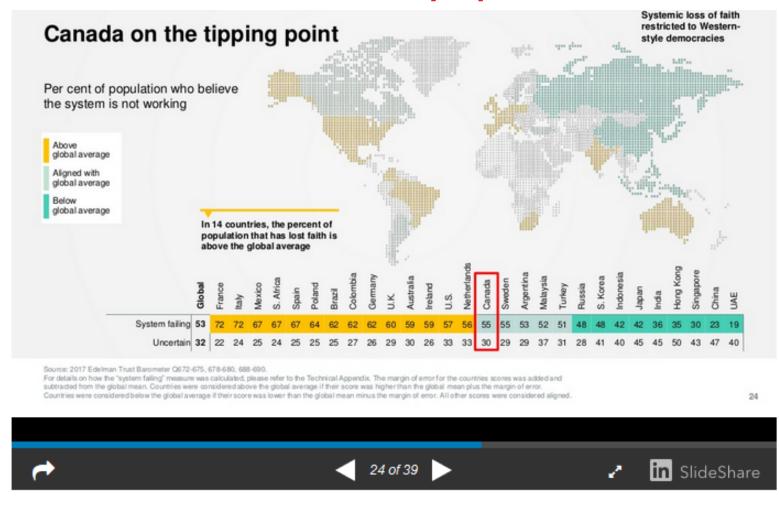


The World Bank estimates that people living in extreme poverty(below \$2 a day) declined from 35% to 10% of the world's population.

Steven Bannon (Trump advisor): "The globalists gutted the American working class and created a middle class in Asia."



Is Canada immune from a populist backlash?

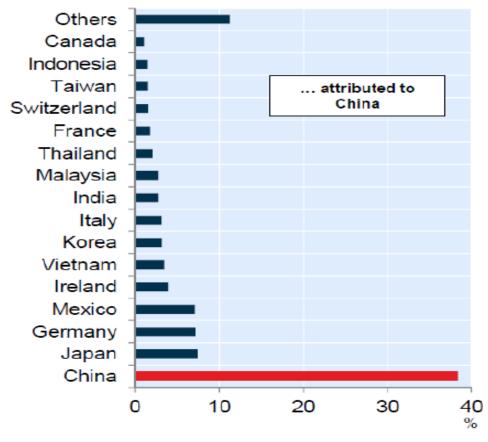


2017 Edelman Trust Barometer – Canadian Results

80% of people think the elites who run institutions are out of touch with regular people. 61% do not have confidence that leaders will be able to successfully address Canada's challenges. 2 in 5 say Canada shouldn't enter into free trade agreements because they hurt Canadian workers.



Share of 2016 U.S. trade deficit attributed to each trade partner



NBF Economics and Strategy (data via Datastream)

Canada will not be the primary target of U.S. protectionism because, unlike other countries, it does not run a large trade surplus with the United States.

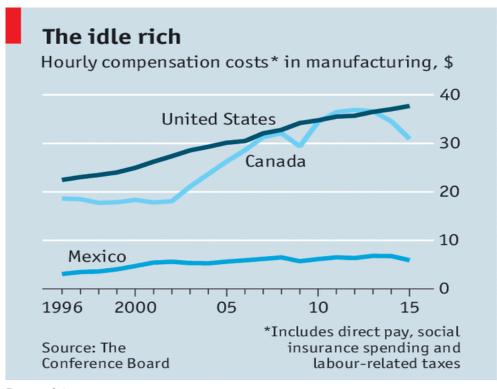


Trump and protectionism: Separating the rhetoric from reality

- Highly unlikely NAFTA will be revoked, but Canada will suffer collateral damage in upcoming trade negotiations
 The President has the authority to impose tariffs on a wide range of sectors without congressional approval
- Canada's agriculture and lumber sectors could be targeted
- Canadian firms could see access to U.S. government procurement contracts diminished
- ☐ The U.S. could push for stricter country-of-origin rules, which govern how much foreign components a product can contain.
- ☐ The authority of NAFTA arbitration panels could be reduced
- Although it is doubtful that President Trump holds the legal authority to unilaterally target specific companies, fear of being in his crosshairs will prompt some companies to take action in order to appease him
- President Trump's threat to hit U.S. companies with heavy tariffs if they send jobs abroad is of lesser concern to higher cost Canada.

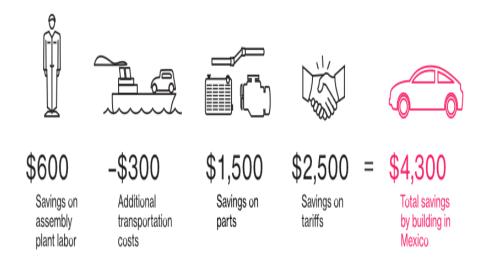


The basis of Mexico's competitive advantage



Calculating Mexico's cost advantages

Difference between per vehicle costs in Mexico versus the U.S. for small cars sold in European markets



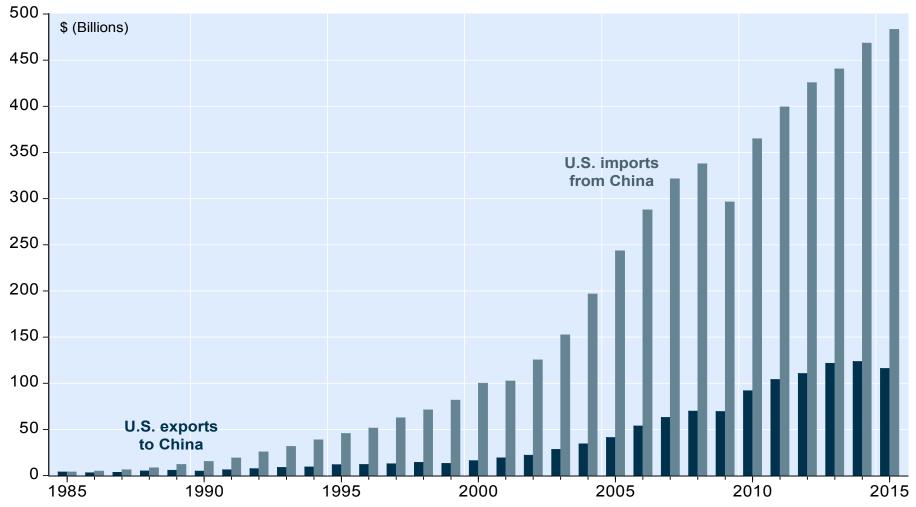
Economist.com

The risks of putting too much pressure on Mexico includes: economically hurting America's 2nd largest trading partner, creating renewed incentives for illegal immigration, reducing co-operation on crime/drug-smuggling and helping to increase support for the far-left candidate (Manuel Lopez Obrador) in the 2018 Presidential election. This could force Trump to moderate his stance vis-à-vis Mexico.



U.S.: trade balance with China keeps widening

U.S. imports from China and U.S. exports to China

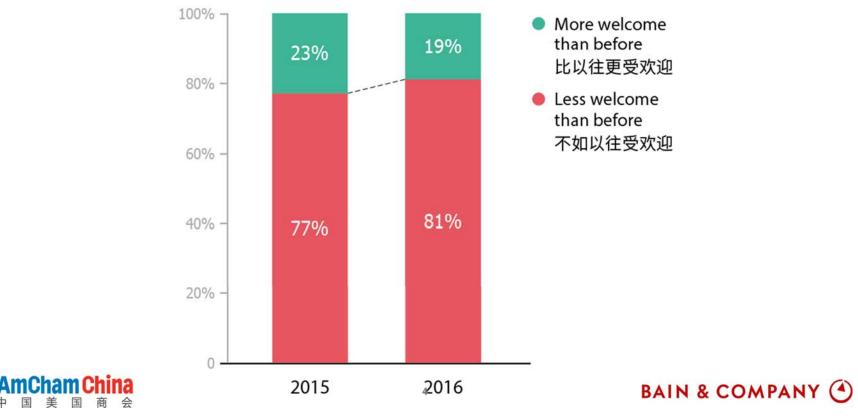


NBF Economics and Strategy (data via U.S. Census Bureau)



More than 4 out of 5 companies feel less welcome than before

Do you feel foreign businesses are more or less welcome in China than before?



US firms which have long fought against sanctions are now changing their tune. Their new position is increasingly reciprocity.

E-commerce giant Alibaba runs a data center in Silicon Valley, but Amazon can only run one with a local partner.

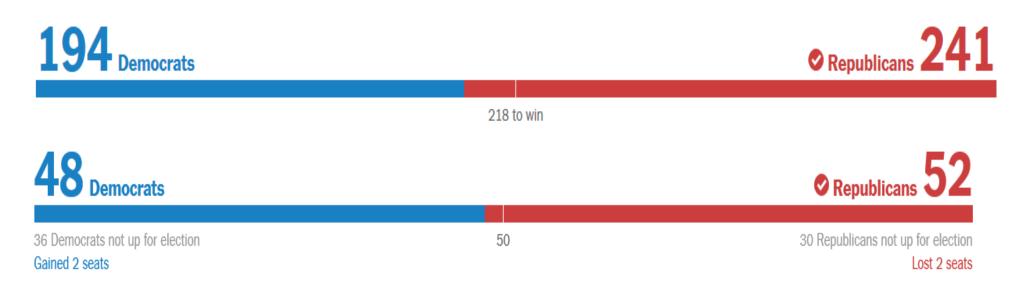
China's Geely Holding Group purchased Volvo from Ford in 2010, but foreign car companies cannot buy their Chinese counterparts. Must enter into joint ventures to build cars in China.



Seizing the legislative moment

House Election Results: G.O.P. Keeps Control

FEB. 10, 2017, 4:38 PM ET



Republicans feel that their control of both the executive and legislative branches of government represents a rare opportunity that should not be wasted.

Presidents have historically had the most success in implementing their agenda in the first two years of their mandate (before mid-term elections). After this period, the odds of signing major bills into law tends to drop significantly.



Health Care has the potential to make or break the administration

- ☐ The task of actually governing means that the GOP will politically own any changes made to the healthcare system.
- ☐ If millions of working class voters (Trump's electoral base) were to lose their health coverage and/or see their costs rise, this could create a major political backlash
- Republicans in a position to eliminate many components of Obamacare related to spending via a simple majority vote in Congress and Trump's signature
- Completely replacing Obamacare requires Democratic support to avoid a filibuster
- The components of Obamacare are more popular than Obamacare itself
- Although the Republicans' replacement will no doubt involve major changes in the end, many elements of Obamacare have been retained
- ☐ There will be increasing pressure on Trump to ensure the very final version of this bill includes measures to protect his electoral base from a dramatic rise in costs
- ☐ The decision to temporarily cancel the vote on healthcare reform in Congress due to a lack of Republican support could be a blessing in disguise for Trump



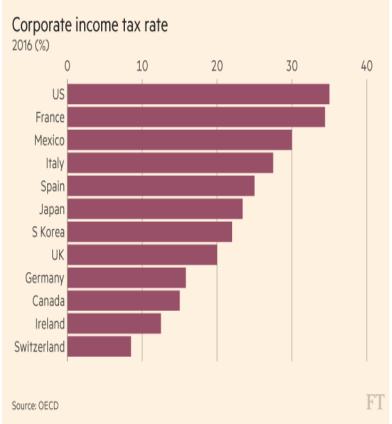
Tax cuts/reforms will be one of the first items on the legislative agenda

- ☐ Trump and House Republicans are in agreement that taxes must be cut/reformed, but disagree on certain details
- \Box There could be a cut in the headline corporate tax rate from 35% to either 15% or 20%
- Trump has proposed firms pay a one-time tax of 10% to repatriate their cash from abroad (the proceeds of which could fund infrastructure spending)
- ☐ House Republicans have proposed taxing imports, but not exports
 - Opposition is strong approval is far from assured
 - If implemented, several sectors could be exempted
 - If implemented, this could force Canada to rejig its own tax code
- ☐ The elimination or reduction of tax deductibility for corporate debt interest in exchange for being able to write off 100% of capital investment in the first year
 - Both House Republicans and Trump are broadly in agreement on at least limiting this deduction
 - Corporations would be incentivized to rely less on debt and more on equity financing
- □ Spending and taxation bills (via a process called reconciliation) cannot be filibustered
 - But resorting to reconciliation could impost a 10 year expiration date for the bill in question



The official and real U.S. corporate







Officially, America's 35% federal corporate tax rate is the highest of any major developed nation (38.9% when you include state taxes). Canada has a combined average federal-provincial corporate income tax rate of 26.7%. In practice, U.S. corporations take advantage of so many write-offs that the effective tax rate is much lower. S&P estimates the average effective tax for U.S. companies to be 29%.



Sources: S&P, Center for Automotive Research/Bloomberg Research, February 2017, The Economist, January 2017 & Fraser Institute, 2016

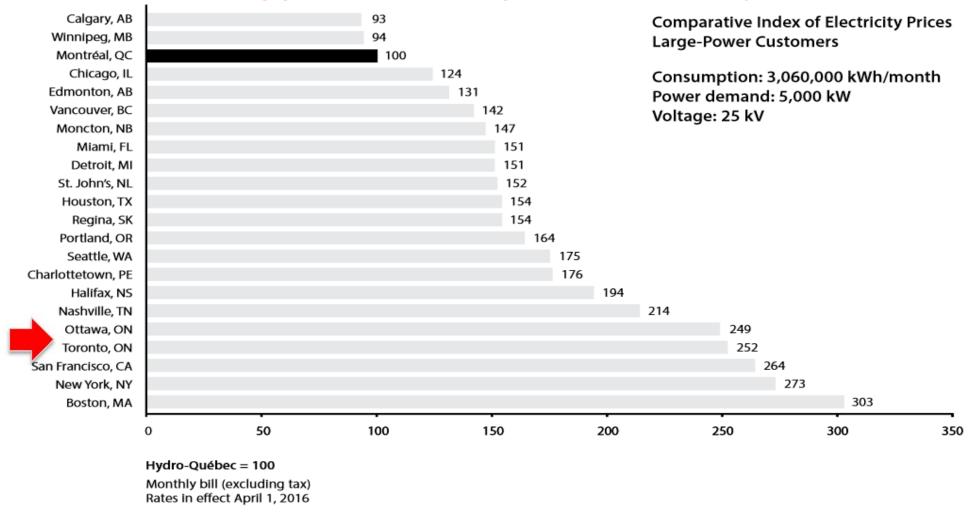
19

President-elect Trump's energy U-turn

Trump and House Republicans are in agreement when it comes to energy policy Trump has already rolled back many energy regulations via executive orders President Trump has pledged to withdraw from the Paris Climate Agreement and replace the Clean Power Plan ☐ But many rules can only be replaced by a long draft and review process Legal challenges are also inevitable The administration will be much less strict in enforcing rules Federal solar and wind tax credits are unlikely to be repealed due to bipartisan support Trump's pro-fossil fuels energy policy could further boost the supply of cheap natural gas and hasten coal's decline Trump's energy U-turn comes at a time when costs for many Canadian companies are set to rise due to the implementation of environmental regulations Passing a law preventing the EPA from unilaterally regulating carbon emissions would be stopped by a Democratic filibuster



Ontario struggles with high electricity prices



This new business landscape could be particularly challenging for Ontario and its struggling manufacturing sector given that electricity rates in the province are already among the highest in North America.

If an election were held in Ontario today, the Liberals would suffer an historic defeat.



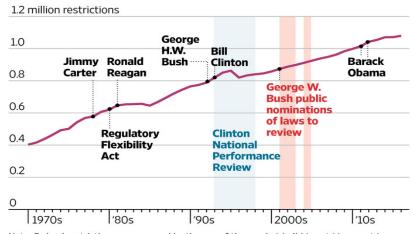
Source: Hydro-Quebec, April 2016

The often losing battle to reduce regulations

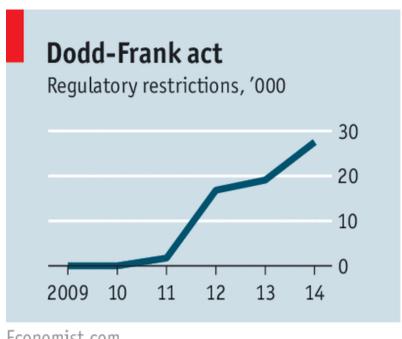
Relentless Rise

Total federal regulation has steadily risen despite efforts by every president back to Jimmy Carter to eliminate wasteful rules.

Cumulative number of federal restrictions and dates of legislation and presidential orders aimed at reducing regulations



Note: Federal restrictions as measured by the use of the words 'shall,' 'must,' 'may not,' 'required,' and 'prohibited,' in the Code of Federal Regulations. THE WALL STREET JOURNAL. Sources: Mercatus Center (federal restrictions); Cary Coglianese (presidential actions)



Economist.com

Every President since Carter has promised to reduce regulations. Trump issued an executive order requiring that all departments eliminate two rules for every new one created.

While larger companies can often afford to hire armies of compliance specialists to interpret these regulations, the same cannot generally be said for their smaller counterparts. A successful effort to cut back regulations would significantly boost the bottom line of smaller companies.



The promise and peril of the Trump Presidency

The U.S. has never witnessed such as contradictory mix of free market and anti-growth policies coming out of the White House Market optimism is based on the promise of major tax cuts/reforms, streamlining regulations and a major infrastructure program Trump's top team has spent a combined 83 years in business, versus only 5 for Obama's team To date, investors have focused much less on the risk of protectionism, scandals and deteriorating relations with allies A leading indicator of trouble could be the failure to pass (or at least be on the verge of passing) major legislation by the end of 2017 Obama had already passed his stimulus package during his 2nd month in office Reagan and Bush (son) had both proposed detailed tax cuts in the 2nd month of their 1st terms



The promise and peril of the Trump Presidency

- What could prevent Trump from implementing his pro-business agenda includes:
 - Disagreements among Republicans
 - Major scandals
 - Resignations of key cabinet members
 - Total lack of support from Democrats
 - Backlash over Obamacare
 - A non-cooperative bureaucracy
 - A major trade war or foreign policy crisis
- □ Is Trump really a Russian spy: increasing oil production, more military spending, encouraging NATO to spend more and greater tension with Iran, Russia's ally
 - All of these policies are not in Russia's best interests
- What if Mike Pence became President?
 - Those on the left side of the political spectrum hoping that Trump is forced to leave office should consider the day after

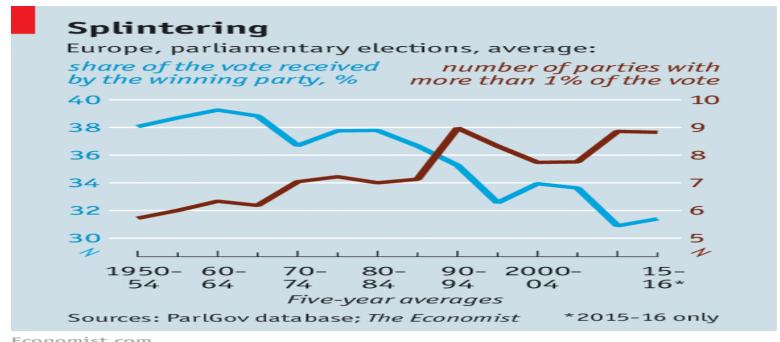


An overview of Europe's Geopolitical landscape

Anti-EU parties do not actually have to win elections (or even come close) to greatly influence the political landscape (e.g. United Kingdom Independence Party) The success of anti-establishment parties will force mainstream parties to take a harder line towards the EU This in turn will make it much more difficult for the EU/Eurozone to implement the reforms needed to overcome its many challenges The pressure will grow for greater repatriation of powers and border controls Governments will act unilaterally more often, and central institutions in Brussels will continue to lose influence Coercion is no way to maintain a healthy union (E.g., Brexit, Greece) Could QE inadvertently be helping anti-EU forces Trump effect on Europe: my election victory, your problem



Across Europe politics is becoming more fragmented



LCOHOIII SC.COIII

The trend of people reading social media that reinforce their views makes compromise difficult.

Mainstream parties have often responded by forming grand coalitions. The risk is that people will consider these parties to be one and the same and thus view anti-establishment forces as the only real alternative.

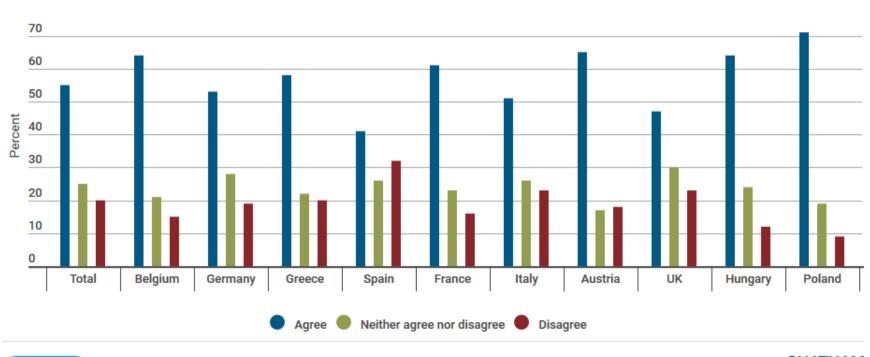
Having a first past the post Parliamentary system is a tremendous competitive advantage for Canada.



Unfortunately, anti-migrant sentiment appears to be increasing in Europe

'All further migration from mainly Muslim countries should be stopped'

Source: Chatham House, https://www.chathamhouse.org/expert/comment/what-do-europeans-think-about-muslim-immigration



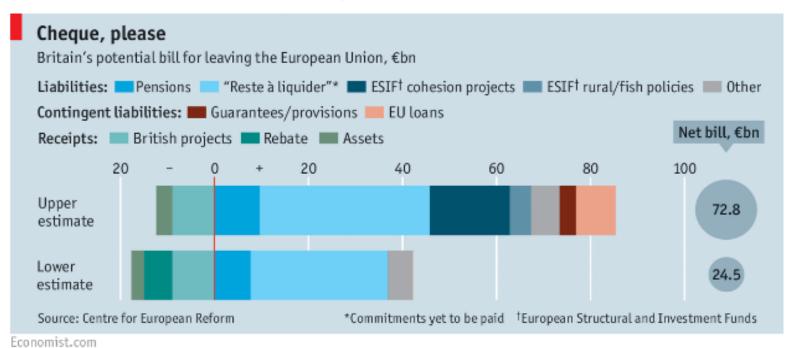




Source: Chatham House, February 2017



Difficult Brexit negotiations lay ahead



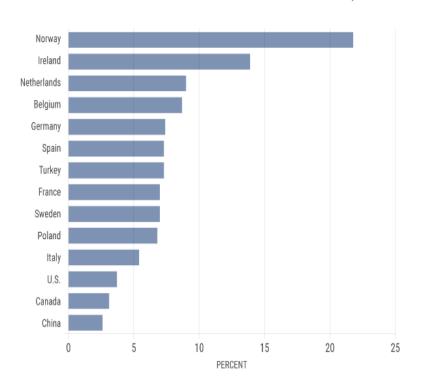
RISKS

- ☐ The EU Parliament's demand that UK pay 50-70 billion Euros before negotiations over market access even begin could be politically impossible for the UK government to accept
- ☐ Increases the risk negotiations could collapse before they even begin
- Even in the absence of this tension point, arriving at an agreement over access to EU markets that satisfies both sides would be difficult
- ☐ Positive scenario: Negotiations could be taken away from the European Parliament and given to EU country leaders in an effort to break the impasse
- Positive scenario: A compromise would be to gradually pay the bill in question over a long period of time



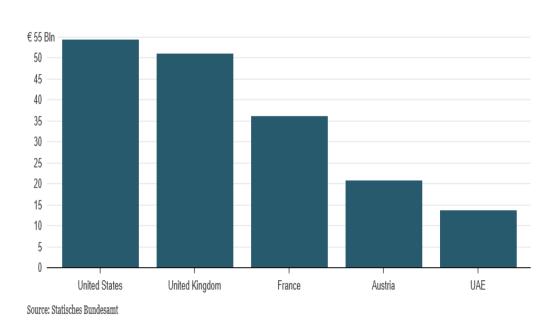
Countries with closer trade ties will push for a more lenient approach towards the UK

EXPORTS TO U.K. AS SHARE OF COUNTRY'S TOTAL EXPORTS, 2015



Surplus Nations

Germany's second largest trade surplus is with the U.K.



Would Germany really risks its access to the UK market in an increasingly protectionist world?

Peter Navaro, one of Trump's top trade advisors, has called for bilateral negotiations with Germany over trade. The U.S. has a \$65 billion trade deficit with Germany.

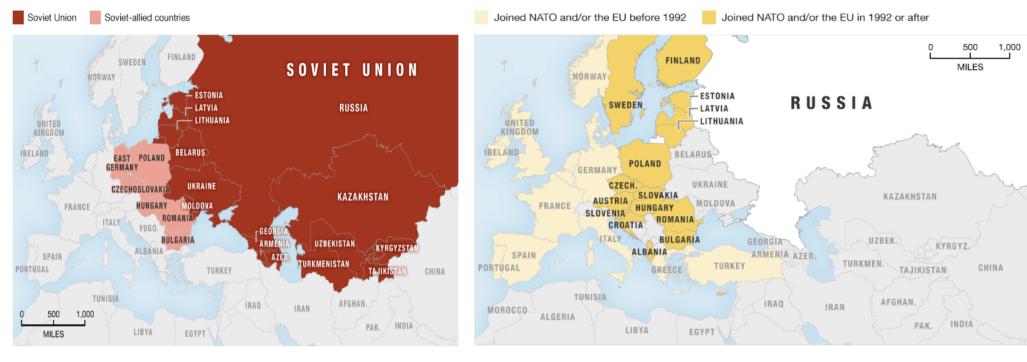
Germany's massive trade surplus (8.4% of GDP vs. only3% for China) is an increasing source of tension within Europe. Germany derives about 47% of its GDP from exports.



Putting Russia's actions into perspective

The Soviet Union In Its Prime

The EU And NATO Move East



Credit: Alvson Hurt/NPR

Russia's actions are in response to a perceived attempt by EU/NATO to shrink its sphere of influence. The last straw was the April 2008 declaration by NATO that Georgia and Ukraine would soon become NATO members. How would the U.S react if Canada joined a rival military organization?

Russia has a smaller economy than the U.K., France, Germany, or Italy.



How The Dutch Voted

2017 general election results

	Party	Leader	2017 seats won	2012 change
VVD	Liberals	Mark Rutte	33	4 8
PVV	Freedom Party	Geert Wilders	20	↑ 5
CDA	Christian Democrats	Sybrand van Haersma Buma	19	1 6
D66	Democrats	Alexander Pechtold	19	↑ 7
SP	Socialist Party	Emile Roemer	14	↓ 1
GL	Greens	Jesse Klaver	14	1 0
PvdA	Labor Party	Lodewijk Asscher	9	↓ 29
CU	Christian Union	Gert-Jan Segers	5	_
PvdD	Party for the Animals	Marianne Thieme	5	† 3
50PLUS	50Plus	Henk Krol	4	† 2
SGP	Reformed Political Party	Kees van der Staaij	3	_
DENK	DENK	Tunahan Kuzu	3	1 3
FVD	Forum for Democracy	Thierry Baudet	2	† 2

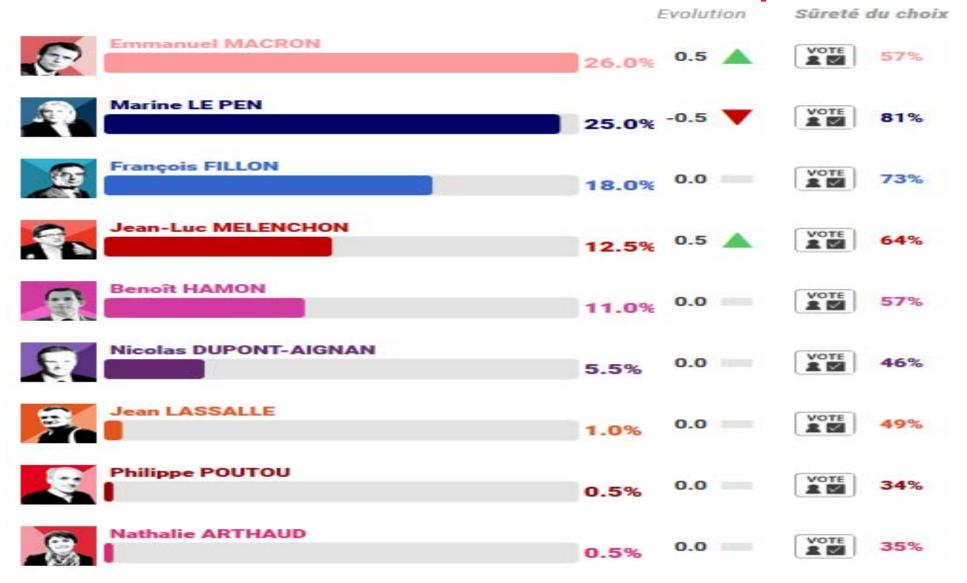
Source: NOS Bloomberg 💵

Even without coming close to winning, the far-right Freedom Party has pushed the Netherlands much further to the right on immigration and the EU.

The perils of proportional representation. The governing coalition could include up to 4 parties.



France: first round election polls

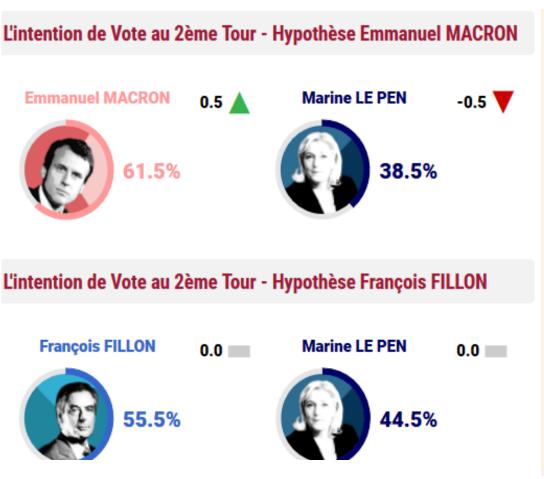


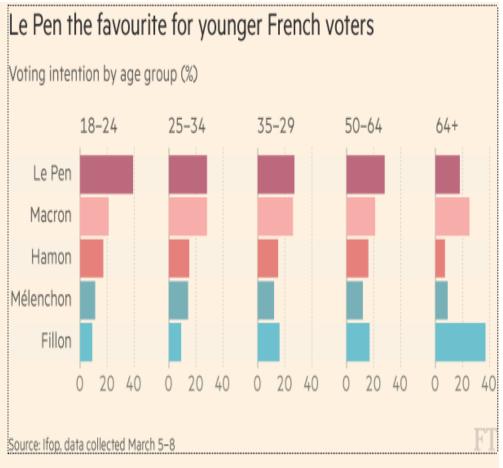
The Socialists and the Republicans, which have held power since the creation of the 5th Republic in 1958, could be eliminated in the first round of Presidential elections.



Source: IFOP

France: 2nd round elections





In 2002, Jean-Marie le Pen got to the second round with 17% of the vote. In the second round he won only 18.2% of the vote, versus 82% for the victor Jacques Chirac. Getting over 40% of the vote would be a tremendous moral victory that could transform France's geopolitical landscape.

While votes for Trump and Brexit were weakest among younger people, this is not the case when it come to support for the Front Nationale.



Millionaire migrants Net flows of millionaires between 2015-2016. = 100 millionaires LOSING MILLIONAIRES **GAINING MILLIONAIRES** France Australia -2,000 +3,000 2016: -12,000 2016: +11,000 2010: -10,000 2010: +8,000 China USA No change +3,000 2016: -9,000 2016: +10,000 2010: +7.000 2010: -9,000 Brazil Canada -6,000 +3.000 2016: -8,000 2016: +8,000 2010: -2,000 2010: +5,000 India UAE -2,000+2,000 2016: -6,000 2016: +5,000 2010: -4,000 2010: +3,000 Turkey New Zealand +2,000 -5,000 2016: -6,000 2016: +4,000

Source: New World Wealth

2010: +2,000

Certain analysts feel the movement of millionaires is a strong indicator of how worried they are about the current economic and political climate of their respective countries.

High-net worth individuals are defined as those with net assets of \$1 million, not including primary residence.

2010: -1,000



Other potential political events looming on the horizon

ITALY

- ☐ After a failed referendum Italy could hold an election this year
- □ Since 1999, its total cumulative (not annual) increase in GDP has been only 5.7%, vs. 26.4% for France and 40.7% for the U.S

CATALONIA

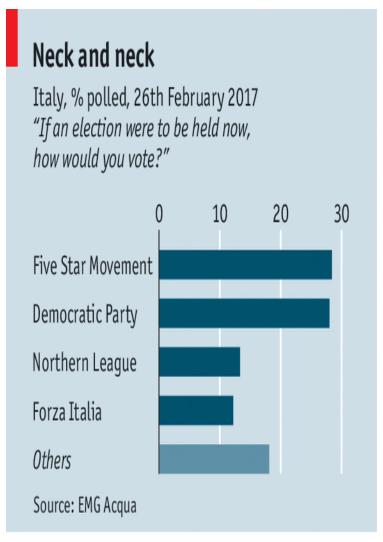
- □ Catalonia is planning to hold a referendum on independence on Sept. 2017
- Spain's top court ruled it unconstitutional
- ☐ A December poll by the Catalonia's Center for Opinion Studies showed 46.8% of the public would vote against independence and 45.3% would vote in favor

GREECE

☐ A continued debt standoff and worsening socioeconomic climate could lead to collapse of the government

TURKEY

- ☐ Referendum on April 15th over whether to abolish the job of Prime Minister and formally switch executive power to the President
- ☐ Roughly 40,000 people have been arrested across Turkey since the coup, including many top businessmen



Economist.com



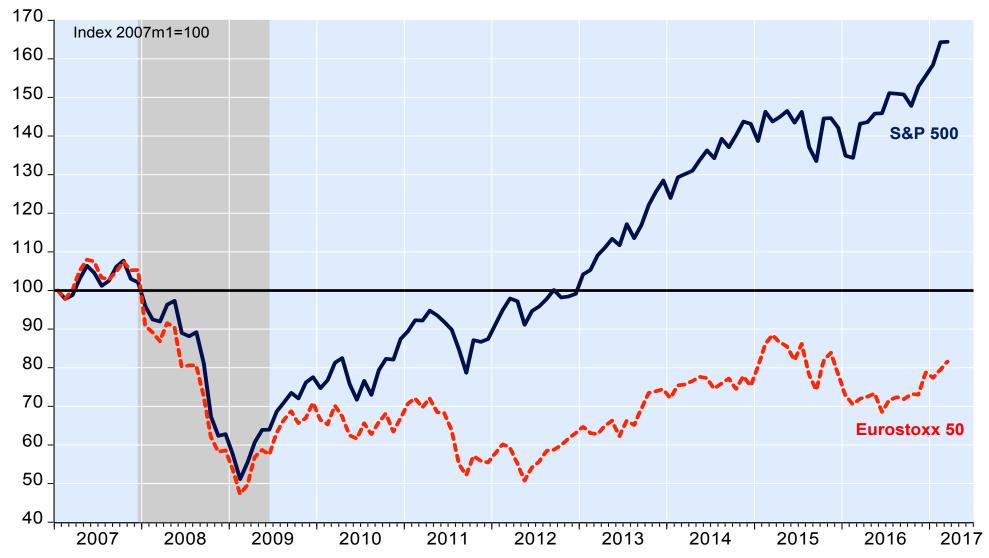
Europe & U.S: Conclusion

- Investors must be on the lookout for future tensions with trading partners, since such conflicts can significantly impede company access to key markets
- ☐ Trump would be in real political trouble if the right leaning media turned on him
- ☐ If the U.S. is successful in reducing corporates taxes and eliminating many regulations, Canadian businesses will face a much tougher competitive landscape
 - Canada moving towards tighter regulations in certain key sectors (i.e., energy)
- ☐ A leading indicator of future market turbulence could be the failure of the Trump administration to pass (or at least be on the verge of passing) major legislation by the end of 2017
- ☐ Sluggish growth, the migrant crisis, the rise of anti-establishment parties and a strong anti-EU/Eurozone sentiment are at the center of Europe's challenges
- Many experts feel the EU/Eurozone can only overcome its challenges through further integration, but if the elites attempt to push further integration without democratic consent they risk a political backlash of epic proportions



World: S&P 500 vs. Eurostoxx 50

Comparison between both major stock market indices indexed to 2007



NBF Economics and Strategy (data via Datastream)

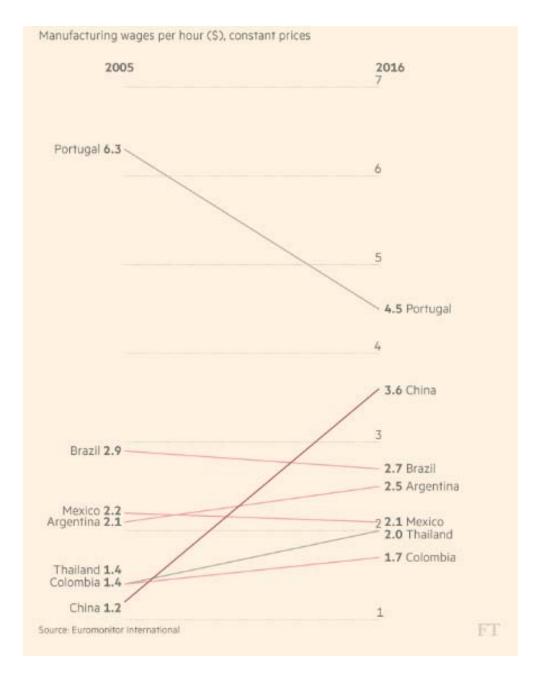


China's rising wages are a doubled-

edge sword

• On one hand, this raises living standards and encourages domestic consumption

- On the other, this makes it more difficult for China to compete globally in certain sectors
- This increases the urgency for China to move up the value chain in order to stay competitive
- But buying leading global corporations for their intellectual property will become increasingly difficult



Sources: Euromonitor & Financial Times, February 2017



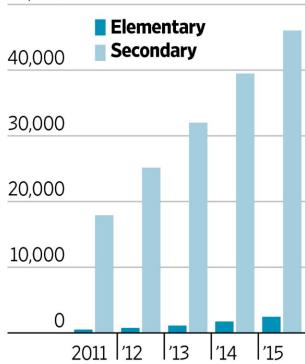
The net flow of millionaires between 2000-2014

Country	Net outflow of HNWIs	No. of HNWIs, 2014
China	91 000	608 500
India	61 000	226 800
France	42 000	323 400
Italy	23 000	198 300
Russia	20 000	117 600
Indonesia	12 000	48 500
South Africa	8 000	46 800
Egypt	7 000	20 200
Notes: HNWI numbers round	ed to nearest 1000.	

Young Scholars

Number of students from China at U.S. elementary and secondary schools

50,000



Source: Student and Exchange Visitor Program (SEVP), U.S. Immigration and

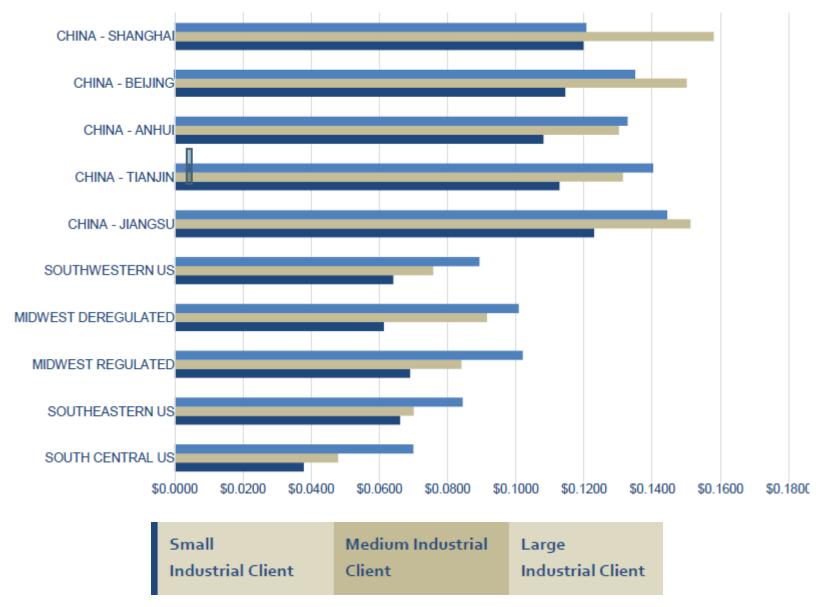
Customs Enforcement

THE WALL STREET JOURNAL.



A comparison of electricity costs in China and the United States

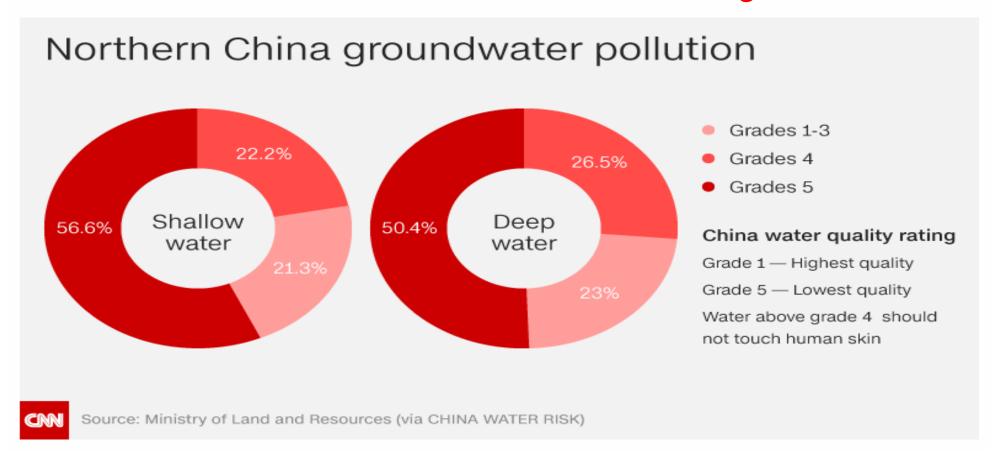




Source: A COMPARISON OF U.S. & CHINA ELECTRICITY COSTS, BLS Strategies, 2016



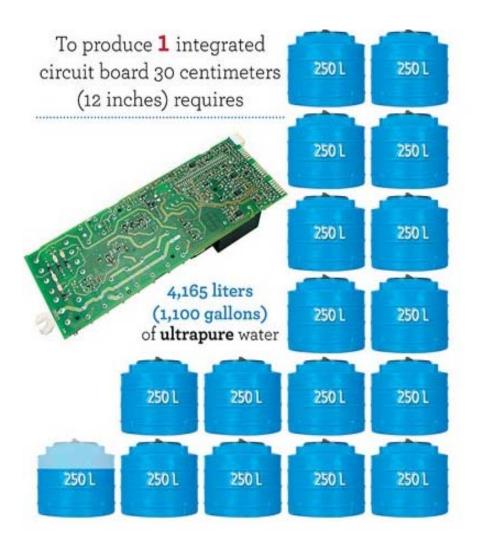
China's massive water challenge



China has 20% of the world's population but only 7% of its freshwater. Pollution only adds to its water-related challenges.

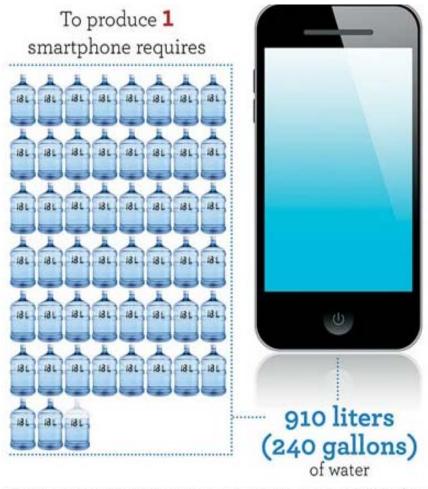
Many of the value-added sectors China is targeting are very water intensive.





To make microchips requires lots of water. Silicon semiconductors with integrated circuits must be scrubbed free of debris with the cleanest water possible. Ultrapure water (UPW), which is 10 million times cleaner than regular water, requires 12 filtration steps. One IBM microchip plant in Burlington, Vermont, makes 7.5 million liters (2 million gallons) of UPW a day.

SOURCES: Cope 2009; Fishman 2011; Shiva 2002



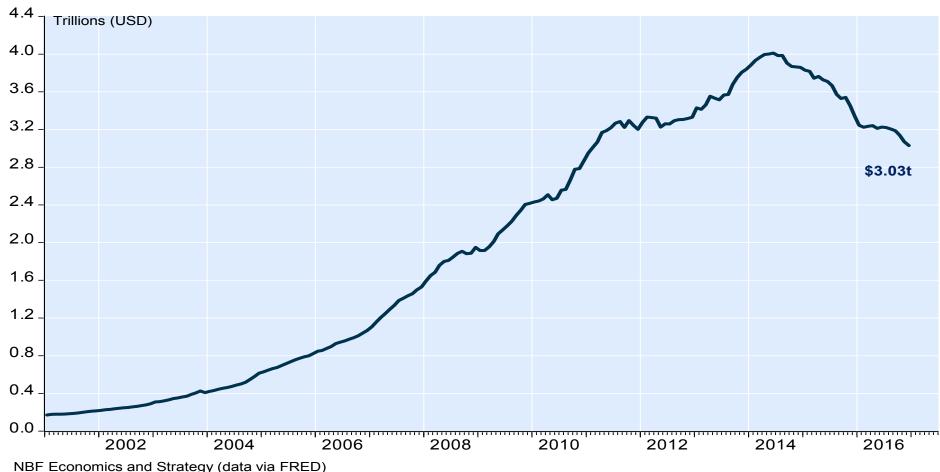
Cellphones and smartphones use water throughout their production process, from creating the microchips to mining the metals used in the batteries to polishing the silica glass used in their touch screens. In total, each phone requires about 910 litters (240 gallons) of water to manufacture. The number of activated cellphones is soon expected to exceed the world's population. To manufacture these phones will require 6.7 trillion liters (1.8 trillion gallons) of water, much of it blue and gray.

SOURCES: International Telecommunication Union 2013; Oki 2010



Sources: National Geographic & Your Water Footprint, Stephen Leahy, 2014

China: Foreign exchange reserves

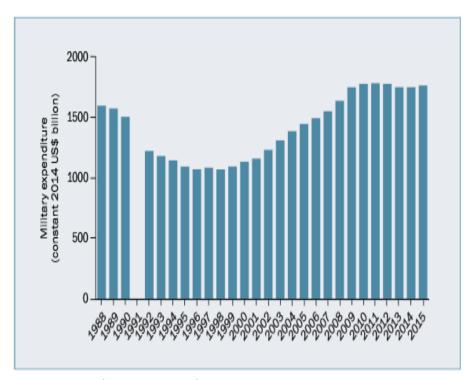


NBF Economics and Strategy (data via FRED)

China has long turned a blind eye to capital moving abroad. This could be changing. China recently imposed a series of new documentation requirements on currency transactions. The greater the loss of reserves, the more likely tighter controls will be implemented and enforced. What does this potentially mean for real estate sectors in certain countries?



Global military expenditures looks set to rise



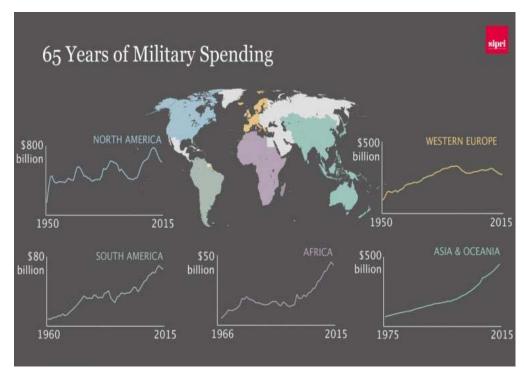


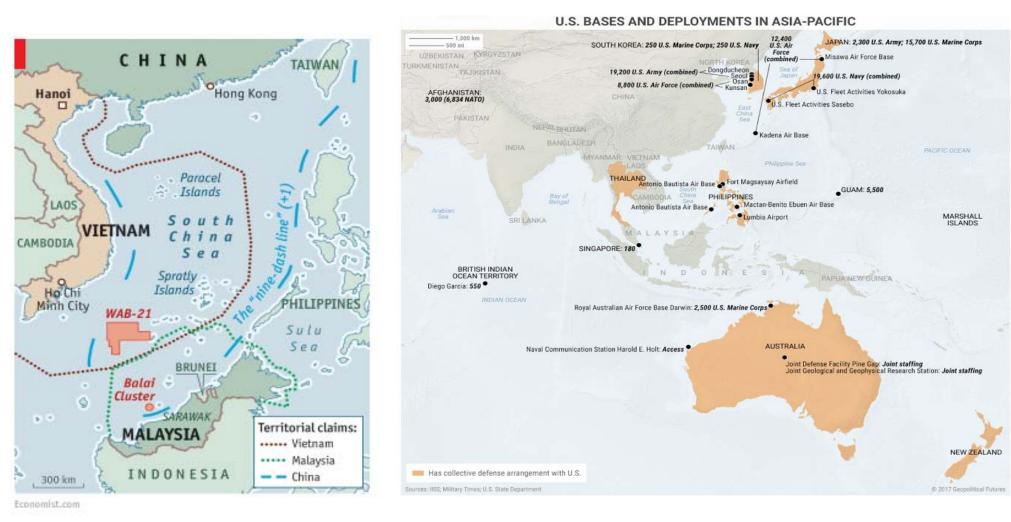
Figure 1. World military expenditure, 1988–2015

Global tensions, rising powers spending more on defense and fears the U.S. is withdrawing from its role of global policeman could encourage an increase global military expenditures. This trend could be reinforced by an increase in Western defense spending.

Defense Secretary General Mattis to NATO: "Americans cannot care more for your children's future security than you do." "America will meet its responsibilities, but if your nations do not want to see America moderate its commitment to this alliance, each of your capitals needs to show support for our common defence."



The battle for control of the Asia Pacific

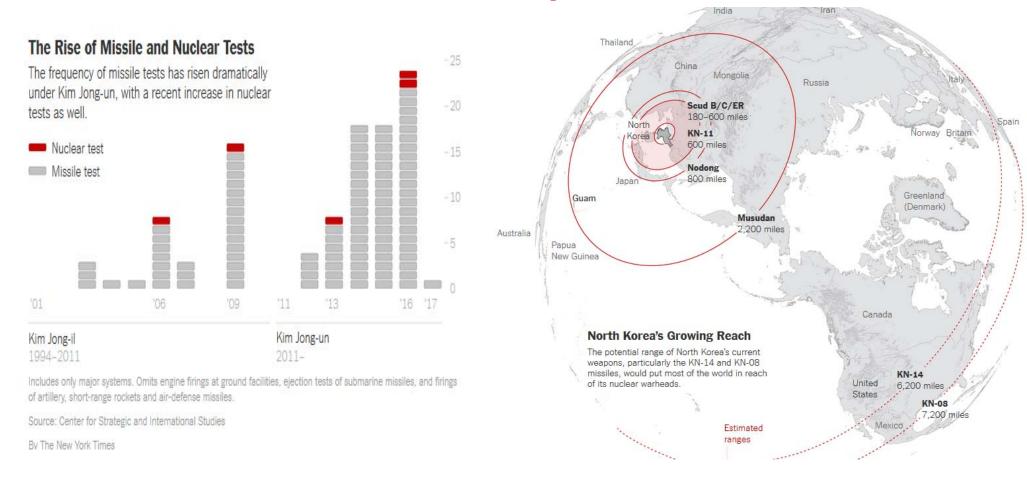


China will continue to try and expand its influence in this region. Would America tolerate this many army bases near its homeland?

Sources: The Economist, 2015 & Geopolitical Futures, 2017



America's North Korea challenge: what is the least bad option?

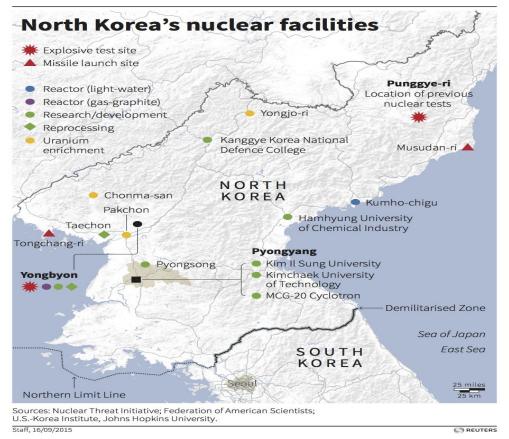


Fears have been rising that North Korea could develop a missile capable of hitting the U.S. in a few years.

Trump Tweet (January): China "won't help with Korea" even though "it has been taking massive amounts of money, wealth from the U.S."



North Korea: what is the least bad option?





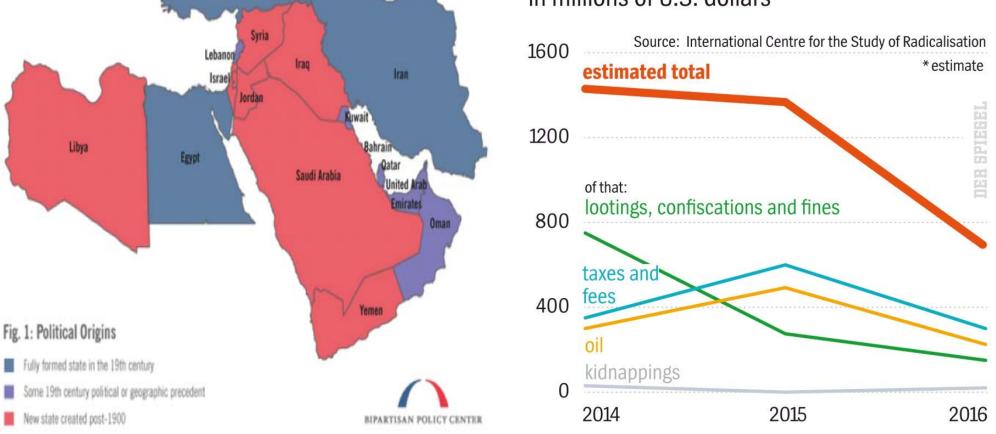
- Military strike: Clinton backed down from striking nuclear facilities in 90s after estimates that retaliatory strikes on Seoul would leave 1 million dead
- Talks: North Korea has said it has no intention of giving up it nuclear program. From the regime's perspective, does it make sense to give up its nuclear weapons?
- China: It has always stopped short of measures that could lead to collapse of N Korea. Its announcement of a temporary ban on North Korean coal imports could mean it has decided to take a harder line.
- Missile Defense/Cyber Warfare: Tests have showed an over 50% failure rate for interceptors based in Alaska/California.
- Tighter Sanctions: Completely cutting them off from the financial system (SWIFT); Putting greater pressure on China.



Islamic State revenues



in millions of U.S. dollars



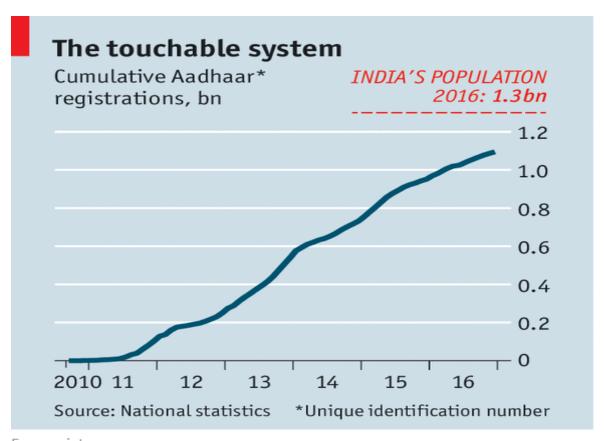
The countries created by the British and French after World War I are most at risk of fragmenting. In contrast, countries whose political or geographic origins stretch back to at least the 19th century are much less at risk of breaking up.

Why America has failed so badly in the Middle East

Turkey



India's potentially game changing breakthrough



Economist.com

By early 2017 all Indian adults should have provided their fingerprints, iris scans, name, birth date, address and gender in return for a single 12-digit number. Direct deposits would allow India and other countries to avoid losing funds to corruption.



How should societies adapt to increasing automation?

It took 50 years for the world to install the first million industrial robots • The next million is projected to take only eight years
A human welder earns \$25 per hour, while the equivalent operating costs for a robot is \$8 after the purchase costs have been amortized over 5 years
How should societies adapt: A Guaranteed annual income? Reform education?
Bill Gates and the leader of the Socialist Party in France both support taxing robots in order to finance retraining
Gates feels slowing the pace of automation would provide countries time to adapt and avoid a major political backlash
The increased use of robots threatens millions of jobs in developing countries by undermining the advantage of low wages
Most developing countries do not have the resources to finance a guaranteed income scheme or robust social safety net

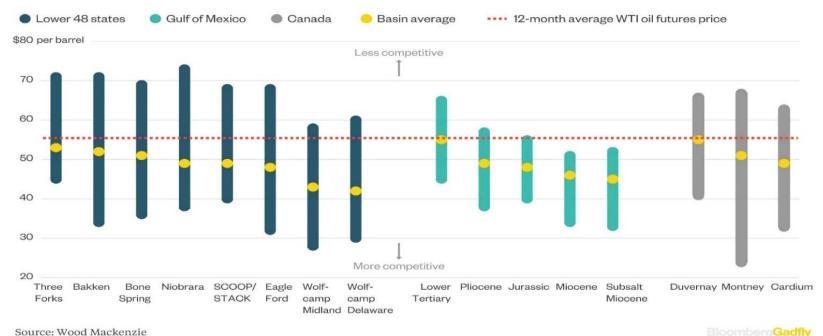
Sources: Macquarie Research, International Federation of Robots 2017 & Bain Consulting 2015



The breakeven price of shale oil production has declined substantially

Point Break

Breakeven oil prices for North America's shale basins and the Gulf of Mexico vary widely, but on average they look competitive even with oil below \$60 a barrel



Note: Breakeven prices reflect projected level needed to generate a 10 percent return on drilling and completion costs in 2017.

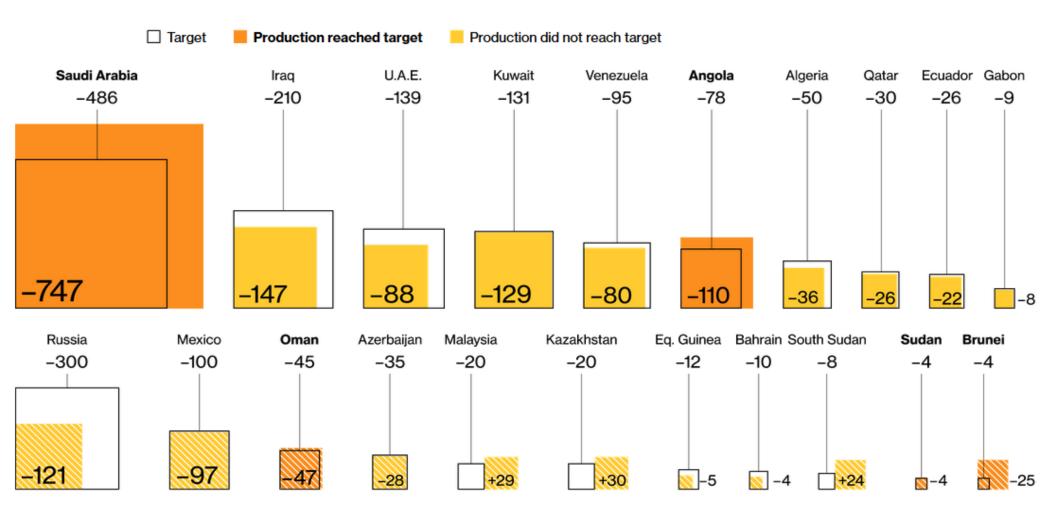
Only a few years ago, breakeven prices in shale basins were estimated to over \$80 to \$100. Wood Mackenzie estimates that many shale basins are now competitive at just below \$60. (February 2017)

Questions facing oil Canada's oil sands: Will shale oil production costs continue to decline; will shale oil production spread to other countries; will cost of regulation rise vis-à-vis their U.S. counterparts; and will OPEC's deal to cut production hold? Electric Vehicles: Will battery costs continue to fall?



Will the agreement to cut oil production hold?

Thousands of barrels a day



Sources: OPEC secondary-source estimates, IEA preliminary estimates

OPEC target: 1.1164 million bpd (attained in Feb); Non-OPEC target 558 thousand bpd (44% attained in Feb). Saudi Arabia is doing most of the heavy lifting.



Thank You

General - National Bank Financial (NBF) is an indirect wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on Canadian stock exchanges.

The particulars contained herein were obtained from sources which we believe to be reliable but are not guaranteed by us and may be incomplete. The opinions expressed are based upon our analysis and interpretation of these particulars and are not to be construed as a solicitation or offer to buy or sell the securities mentioned herein.

Research Analysts – The Research Analyst(s) who prepare these reports certify that their respective report accurately reflects his or her personal opinion and that no part of his/her compensation was, is, or will be directly or indirectly related to the specific recommendations or views as to the securities or companies.

NBF compensates its Research Analysts from a variety of sources. The Research Department is a cost centre and is funded by the business activities of NBF including, Institutional Equity Sales and Trading, Retail Sales, the correspondent clearing business, and Corporate and Investment Banking. Since the revenues from these businesses vary, the funds for research compensation vary. No one business line has a greater influence than any other for Research Analyst compensation.

Canadian Residents – In respect of the distribution of this report in Canada, NBF accepts responsibility for its contents. To make further inquiry related to this report, Canadian residents should contact their NBF professional representative. To effect any transaction, Canadian residents should contact their NBF Investment advisor.

U.S. Residents – With respect to the distribution of this report in the United States, National Bank of Canada Financial Inc. (NBCFI) is regulated by the Financial Industry Regulatory Authority (FINRA) and a member of the Securities Investor Protection Corporation (SIPC). This report has been prepared in whole or in part by, research analysts employed by non-US affiliates of NBCFI that are not registered as broker/dealers in the US. These non-US research analysts are not registered as associated persons of NBCFI and are not licensed or qualified as research analysts with FINRA or any other US regulatory authority and, accordingly, may not be subject (among other things) to FINRA restrictions regarding communications by a research analyst with the subject company, public appearances by research analysts and trading securities held a research analyst account.

All of the views expressed in this research report accurately reflect the research analysts' personal views regarding any and all of the subject securities or issuers. No part of the analysts' compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report. The analyst responsible for the production of this report certifies that the views expressed herein reflect his or her accurate personal and technical judgment at the moment of publication. Because the views of analysts may differ, members of the National Bank Financial Group may have or may in the future issue reports that are inconsistent with this report, or that reach conclusions different from those in this report. To make further inquiry related to this report, United States residents should contact their NBCFI registered representative.

UK Residents – In respect of the distribution of this report to UK residents, National Bank Financial Inc. has approved the contents (including, where necessary, for the purposes of Section 21(1) of the Financial Services and Markets Act 2000). National Bank Financial Inc. and/or its parent and/or any companies within or affiliates of the National Bank of Canada group and/or any of their directors, officers and employees may have or may have had interests or long or short positions in, and may at any time make purchases and/or sales as principal or agent, or may act or may have acted as market maker in the relevant investments or related investments discussed in this report, or may act or have acted as investment and/or commercial banker with respect thereto. The value of investments can go down as well as up. Past performance will not necessarily be repeated in the future. The investments contained in this report are not available to retail customers. This report does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for the securities described herein nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever.

This information is only for distribution to Eligible Counterparties and Professional Clients in the United Kingdom within the meaning of the rules of the Financial Conduct Authority. National Bank Financial Inc. is authorised and regulated by the Financial Conduct Authority and has its registered office at 71 Fenchurch Street, London, EC3M 4HD.

National Bank Financial Inc. is not authorised by the Prudential Regulation Authority and the Financial Conduct Authority to accept deposits in the United Kingdom.

Copyright – This report may not be reproduced in whole or in part, or further distributed or published or referred to in any manner whatsoever, nor may the information, opinions or conclusions contained in it be referred to without in each case the prior express written consent of National Bank Financial.

