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Demographics: The Ratio of Revolution

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2011/42/DS

Demographics: The Ratio of Revolution

Youth Protests in Japan (1968), the United States (1975), China (1989) and Egypt (2011) took place when both Youth Growth Rates and the Ratio of Revolution were high. Who's next?

by

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March 2011

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Introduction

The demographic metrics and inflationary circumstances that framed the January 2011 revolution in Egypt's Tahrir Square were almost identical to those prevailing in Japan during the violent 1968 student-led revolts, in the United States when millions demonstrated against the Vietnam War in the late 1960s to early 1970s, and in China when hundreds of thousands converged on Tiananmen Square in 1989.

Disenchantment among growing numbers of unemployed youth develops into anti-government revolutionary potential when rapidly rising inflation enters the picture. This paper identifies time periods when two demographic metrics suggest a nation is ripe for revolution:

- 1) The population of 15-29 year-olds ("Youth") grows at close to 50% over a 15 year period.
- 2) The ratio of "Youth" to 30-44 year-olds ("Job-Makers") exceeds 1.3.

Revolutions have a propensity to erupt when a nation is both ripe for revolution and beset by high inflation. A catalyst is necessary to bring the simmering revolutionary potential to the boil.

Based on the findings of this study, China's Jasmine Revolution will evolve into little more than an aromatherapy session, Saudi Arabia is a serious revolutionary risk if inflation jumps higher, Afghanistan has revolutionary demographic metrics from 1996 through to 2029, and the Philippines is the only Far Eastern country that is ripe for revolution.

Note on Nomenclature:

The word "Youth", when capitalized, refers specifically to the 15-29 year-old demographic. It is not meant to be a generic reference to young people.

The hyphenated "Job-Maker" refers specifically to the 30-44 year-old demographic. These are not government officials who run job creation programs, but individuals who organically create jobs, either as employees in companies that grow or as entrepreneurs who build businesses.

*For the first few pages, both **Youth** and **Job-Maker** references are in bold type and italicized.*

Egypt: Revolution is in the Air

Chanting masses of angry and defiant youth paint the picture of revolution – fists pump the air while burning effigies of their oppressors hang from trees and lampposts. Unify the crowd by waving that magic on-line social networking wand and the message becomes more defined and singular in purpose. "Down with Mubarak/Qaddafi/Ben Ali/xyz," the masses cry as the leaders they hold responsible for their plight become the targets of their resentment.

Political analysts, the media and the rioters themselves say that the crowds of frustrated youth want freedom of speech and assembly, a voice in their destiny, the eradication of corruption and a

true democracy.

Others claim that 30 to 40 years is the time limit for despotic rule in a resource-rich nation.

Yet another assessment, which gets closer to the real reason but skirts it, sees revolutions as a product of economic hardship. If you can feed, clothe and shelter your family, a radical change in lifestyle is not sought. Reverse those prospects – no job, no family, no future – and a revolution sounds like a reasonable path to follow. You have little to lose.



But why wait three to four decades? Why have the demonstrations in Northern Africa and the Middle East erupted now and not ten, twenty or thirty years ago? Egypt's GDP per capita (inflation-adjusted in USD) has crept up imperceptibly from \$500 thirty years ago to \$2300 now. That's an increase in personal production of just \$60 per year. Egypt is not a booming and productive nation that has recently come upon hard times; it has always been deprived of growth. As a curious backpacker in 1980, I was amused by the lavatories on the third-class Cairo to Luxor "express" – the space between train cars. Egyptians cannot claim that their fate has suddenly taken a turn for the worse.

Ripe for Revolution

Lack of GDP growth is not the reason for revolution. Nor is a desire for freedom and democracy, as noble as those aspirations may be. The underlying cause of revolution is a large and rapidly growing unemployed Youth population that constitutes a crowd (acting as one) in the face of rising inflation.

An expanding Youth demographic that follows a generation much smaller in size invariably leads to unemployment. Unemployment cannot be predicted with any degree of consistency or accuracy, but the demographic conditions that lead to unemployment are evident at least 15 years in advance.

A simple formula comprising readily available demographic and economic measures can forecast if a country is ripe for revolution. Protest before the revolutionary sweet spot and you will lack sufficient numbers to bring about a successful revolt. The incumbent government will turn on the water cannons, shoot a few people, toss the more vocal in jail, and life will continue as before. Make a call to arms after the window of revolution has passed, and your target revolutionary cohorts will have found jobs and started families. Instead of chanting in the streets, they will be changing diapers and suffering from sleep deprivation.

Revolutionary Ingredients

Job-Makers (30 – 44 year olds)

Job-Makers have been working for an average of 15 years. They tend to be married, have small families and their savings rise, on average, every year. They typically refrain from upsetting their

Revolution is a function of (Y, ΔY, Y/JM, I, C)	
Y	= Youth population (15-29 year olds)
ΔY	= 15-year rate of change in youth population
JM	= Job-Makers (30-44 years old)
Y/JM	= ratio of revolution (Youth divided by Job-Makers)
I	= Inflation
C	= Catalyst

idyllic sweet spot in life by igniting revolutions. The businesses they started and the jobs they gave rise to will be eventually be filled by the **Youth** generation. Egypt has 15.8 million **Job-Makers**.

Youth (15 – 29 year olds)

Our revolutionary core have just completed their education – or are about to do so – and are looking for a decent job that will allow them to dress well, buy a car, find a mate, buy a house, get married and start a family. The likelihood of these **Youth** finding a job depends to a very large extent on the size of the generation that preceded them (the **Job Makers**). Egypt has 23 million **Youth**.

ΔYouth (15-year rate of change in Youth population).

A large but stable **Youth** population will eventually find employment. Jobs will be created to match the demand for them by **Youth** who want to work. Wages may fall in this equation, but the **Youth** will be employed.

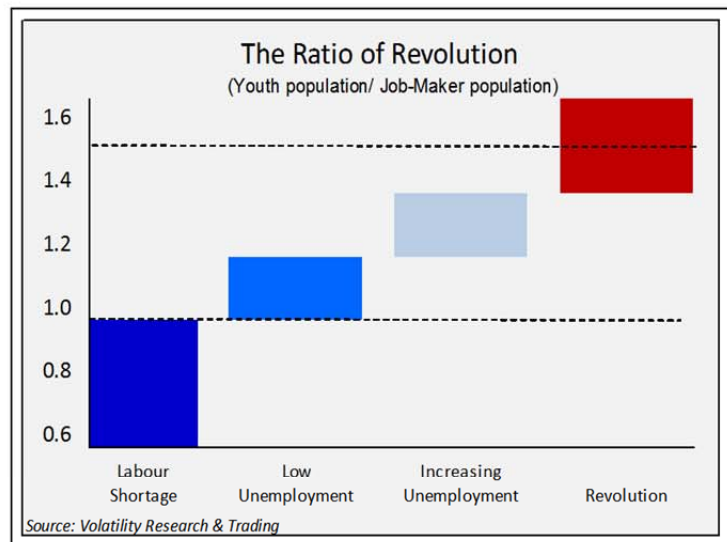
A rapidly increasing **Youth** demographic is dangerous for it invariably grows much faster than new jobs can be created. The 23 million **Youth** in 2011 exceeded the 1996 total by 7.2 million, resulting in a 46% increase in the **Youth** demographic over 15 years.

Even if Mubarak were a modern, growth-oriented leader who embraced economic stimulation via lower taxes, easier monetary policy, infrastructure spending, currency devaluation and subsidized trade, he would have been unable to significantly repel the tide of unemployment.

Japan's solution, followed by many other Asian countries, was over-employment; hire three workers to do the job of one and pay them peanuts. Unemployment rates fall, but the three workers are miserable and just as prone to revolutionary tendencies as the unemployed.

Y/JM - The Ratio of Revolution

The ratio of **Youth** to **Job-Makers** is the primary determinant of the level of youth unemployment. When the ratio is 1.0, the **Youth** population is the same size as the **Job-Maker** population. As the **Job-Makers** advance in their careers, the **Youth** fill their previous positions and there is full employment. A ratio of less than 1 indicates a shrinking **Youth** population and labour shortages. Immigrants generally fill this labour gap. A ratio of greater than 1 defines a **Youth** population that is larger in size than the generation preceding them.

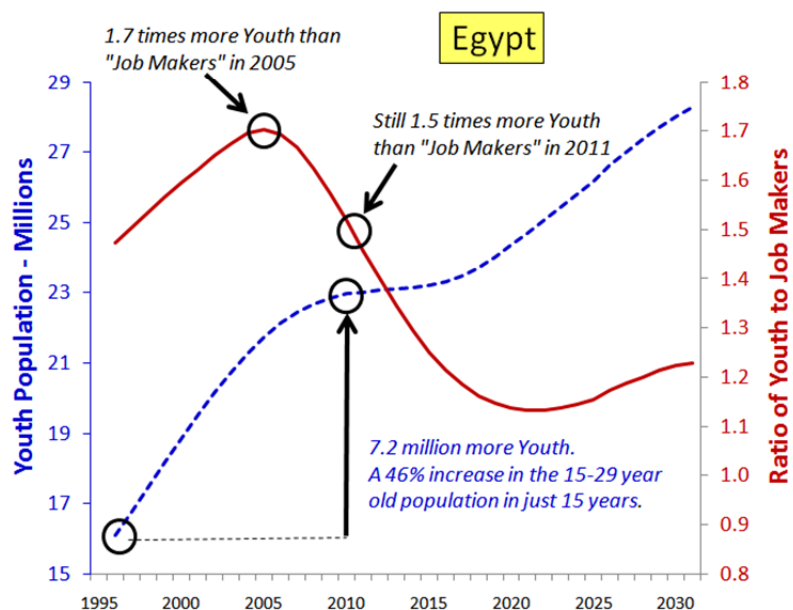


Egypt's **Youth/Job-Maker** ratio was an astounding 1.7 in 2005, the year the **Youth** revolution was ignited with protests in Tahrir square.

Revolutions take time to build. A nation does not just wake up one morning and, at the suggestion of a neighbor, decide to throw out its rulers. Egypt's ratio of revolution peaked almost six years ago.

Crowds of angry and predominantly unemployed **Youth** had shouted "Down with Hosni Mubarak" in Tahrir Square in 2005. They claimed that Mubarak was responsible for Egypt's 7 million unemployed (coincidentally, that number equaled the increase in the **Youth** demographic over the preceding 15 years.). The several hundred demonstrators were aware they could have been arrested (it was illegal to insult the president), but they said it was a risk they were happy to take. "We know there is a price to pay, and we know this is not the end of the road; this is just the beginning of the road." The protestor was spot-on in his analysis. Their road was six years long, and undoubtedly some twists and turns still lie ahead.

The Egyptian **Youth** population has increased by a destabilizing 46% in just 15 years (blue line in the chart), and it is the trend of this line that is important. As long as this trend rises—more **Youth** every year—jobs will have to be created to prevent rising unemployment. A flat trend (no growth) for the next 8 years will buy some time and give unemployment a chance to ease. In China, the trend is down hard. We will see shortly



Sources: Volatility Research & Trading & US Census Bureau

that China has the opposite of a **Youth** unemployment problem —characterized by labour shortages and escalating wage demands.

The absolute level of the **Youth/Job-Maker** ratio (red line) is important, not its trend. Once this ratio surpasses 1.3, **Youth** unemployment rises and sporadic **Youth** protests erupt. As the ratio crosses 1.5 **Youth** for every **Job-Maker**, **Youth** protests increase in severity and develop revolutionary potential. Egypt’s critical moment for these two ratios was in 2005 after a rapid increase in the **Youth** population and an extreme 1.7 **Youth/Job-Maker** ratio. Most revolutions occur several years after the peak in the **Y/JM** ratio.

Inflation and a Catalyst

After six years of protest (quashed to varying degrees by a strong government with a loyal military backing), our two revolutionary-seeking demographic metrics are supported by 33% Youth unemployment, inflation approaching 10%, and a Tunisian self-immolation catalyst. The recognition that the Egyptian economy has contracted relative to the stellar economic performance of other emerging economies (China, India, and Brazil) suggests that envy could have been an additional revolutionary catalyst. Egyptian Youth have underperformed economically on both an absolute and relative basis.

Revolution is a function of (Y, ΔY, Y/JM, I, C)	
Y	= 23 million
ΔY	= 7.2 million or + 46%
JM	= 15.8 million
Y/JM	= 1.5
I	= 9.70%
C	= Tunisia

Egypt 2011

A large Youth population, that is 7.2 million larger than the Job-Maker demographic, has undergone a rapid 46% increase in size over the past 15 years, creating a 1.5 ratio of revolution and 33% Youth unemployment. Add 9.7% inflation and a Tunisian catalyst and revolution was just a matter of time.

In 2008, an insignificant 1 out of 17 Egyptian men were unemployed, but a socially destabilizing 1 out of 3 young men (aged 15-24) could not find a job. The curse of Youth unemployment would be less dire if a strong social assistance environment existed, as it did for three millennia in ancient Egypt. In the days of the Pharaohs, taxes were high but they were used to stabilize society. Grain stored in times of plenty was distributed in times of famine and public works projects – usually infrastructure development – were paid out of the royal treasury. In modern Egypt, unemployment insurance does not exist and social insurance is poor.

The Youth demographic can survive unemployment without burning effigies of their leader if prices are stable and they expect the future to improve once jobs are finally found. But as inflation takes hold, the dwindling resources that the unemployed Youth use to sustain themselves disappear at a faster rate. The net present value of their ability to feed themselves rapidly erodes (though they

may not frame the problem as such). A bleak future, which unemployment and inflation presage, is a reason to revolt.

Twitter and Facebook are Just Communication Devices

Revolutions do not take flight because Twitter and Facebook facilitate the broadcast of incendiary messages to the masses. If tweets could incite a nation to revolt, Lady Gaga and Justin Bieber (the top two global “tweeters”) would be under constant security surveillance for fear the nation would spontaneously sport revealing cubist-bondage garments and a downwind mop of eye-framing locks.

Social media has frequently been cited as a reason why one revolution has followed closely on the heels of another. But Twitter and Facebook are just communication facilitators, as were telephones, televisions, radio and print for revolutions past. Millions demonstrated against the United States involvement in the Vietnam War on 15th October 1969, and 500,000 marched in Washington a month later. This was in the pre-mobile phone era. How did they ever organize themselves so efficiently, in such size and across multiple time zones (Bill Clinton organized a protest in England the same day) without the internet and other non-stationary communication devices? The Chinese managed to gather in hundreds of thousands at Tiananmen Square in 1989 in a similar show of efficient pre-internet organization.

The wheels of communication have certainly been greased by the use of social media, but Facebook and Twitter do not cause revolutions. The revolutions would have happened anyway.

A new book that takes advantage of the world’s fascination with tweeting, and the fact that it coincided with a ripeness for revolution across much of Northern Africa and the Middle East, will undoubtedly do a decent job of suggesting that henceforth revolutions will erupt because social media can efficiently organize the masses. Unemployment, Youth population size and growth rates, the ratio of Youth to Job-Makers and inflation, the underlying fundamentals of revolution, may unfortunately be thought of as inconsequential.

Western media continue to call Egypt’s January 25 revolution an “Internet Revolution” as the use of social media websites such as Twitter were in full force during the 18 days of protests that ousted former President Hosni Mubarak. Now, a publishing house is taking full advantage of the revolution bandwagon by publishing a volume of tweets from the revolution.

TWEETS FROM TAHRIR

EGYPT’S REVOLUTION AS IT UNFOLDED, IN THE WORDS OF THE PEOPLE WHO MADE IT

“Without the new media the Egyptian Revolution could not have happened in the way that it did. The causes of the revolution were many; deep-rooted and long seated. The turning moment had come – but it was the instant and wide-spread nature of the new media that made it possible to recognise the moment and to push it into such an effective manifestation.”—Ahdaf Soueif, from the foreword

China's Jasmine Revolution. At Best, Flower Power

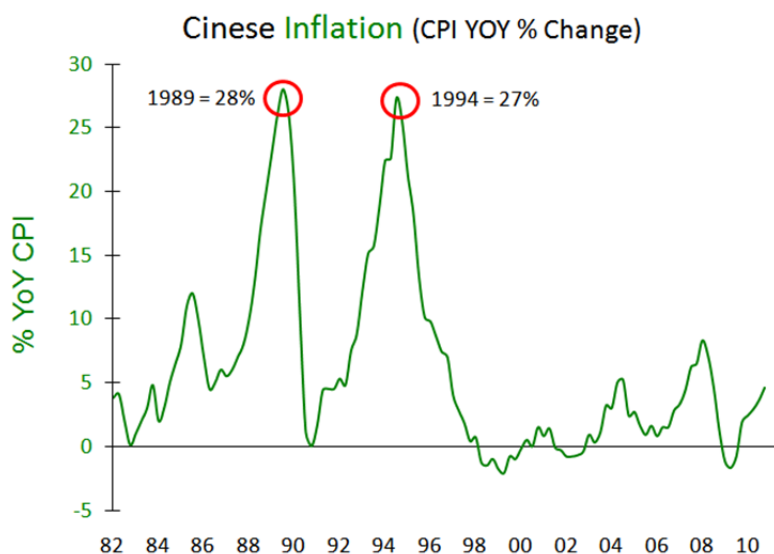


Jasmine apparently has anti-depressant, antiseptic and anti-spasmodic properties. We should add anti-revolutionary to that list. The probability of the current Jasmine Revolution developing into anything more than an aromatherapy session is close to nil. The Chinese Youth population is imploding, the ratio of Youth to Job-Makers has been at or below 1.0 since the turn of the century, wages are rising and most Youth are too busy being budding entrepreneurs and real estate speculators to even consider organized protests.

Inflation is increasing, but its potential to explode, as it did in 1989 (28%) and 1994 (27%), is minimal. The Government has a much better understanding of the mechanism of market-based price discovery than they did 30 years ago, and their ability to moderate price extremes suggests the current inflation rate of just below 5% is unlikely to develop into a revolutionary threat. Price controls, higher reserve requirements, higher interest rates, reduced credit and a stronger currency are all tools the Government has at its disposal (and now understands) to prevent hyperinflation.

A 1997 paper by Steven Cheung, who was then a Professor of Economics at the University of Hong Kong, relates how he and Milton Friedman may have encouraged Zhao Ziyang (General Secretary of the Communist Party of China from 1987-1989) and Deng Xiaoping to “bulldoze away price control” in 1988. Zhao considered a move to market-based pricing in 1987 when “the cost of financing price control had become an enormous burden to the Chinese government, with the corruption arising from it apparent to all.” About one half of all Chinese domestic products were under price control at the time, while the other half were subject to market forces. Zhao recognized that relative prices were “irrational” and identified the removal of price controls as the solution.

Zhao's meeting with Friedman in September 1988 apparently encouraged him to accelerate the removal of price controls, which lead to painful price increases. Estimates of inflation in 1989 range



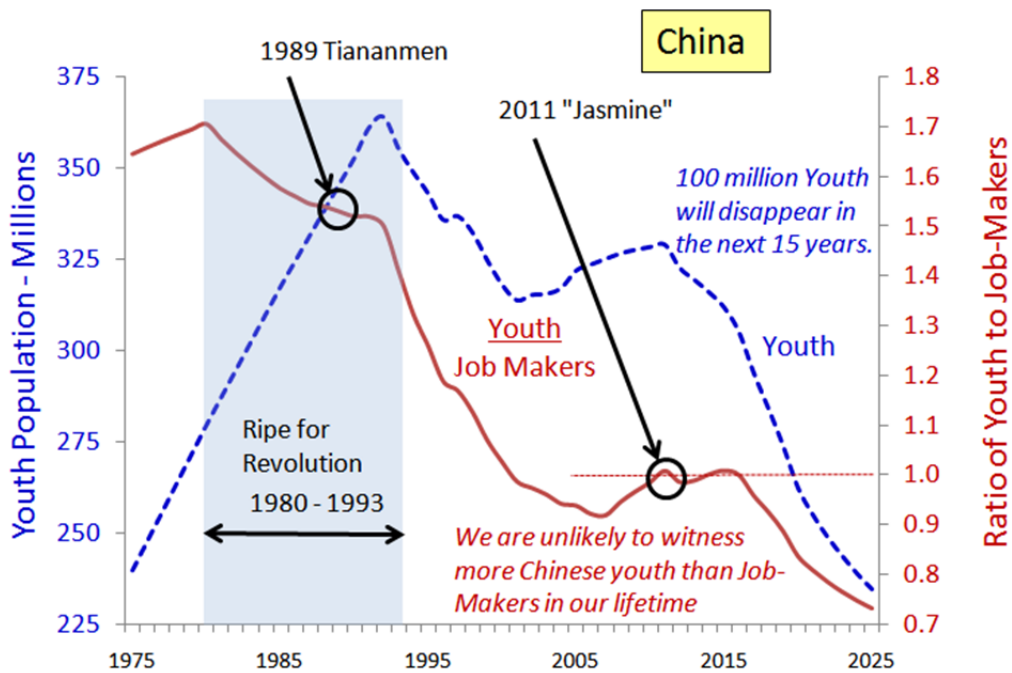
Sources: Volatility Research & Trading, Bloomberg, Hong Kong Monetary Authority

from 18% to 34%, (the Chinese are not renowned for data accuracy) and I have settled upon 28% as the likely number. Zhao was booted out in 1989 and placed under house arrest until his death in 2005. One can only assume that Chinese officials considered his unbridled leap into market pricing ill-advised, and at least partially responsible for Tiananmen.

Student protests began in 1986 and climaxed in the *Liù-Sì Shìjiàn* or the 4th June 1989 Tiananmen Square Massacre. The chart

below shows that demographic conditions had been ripe for revolution since 1980. The *Youth* population was increasing at a rate of 40% to 60% every 15 years, and there were more than 150 *Youth* for every 100 *Job-Makers*. Inflation was low in the early 1980s (chart on previous page) and jumped above 10% for the first time in 1986. The second inflation spike to 28% in 1989 was so severe that revolution was a *fait accompli*: almost any catalyst could have ignited *Youth* protests.

Also evident from the chart below is the impending implosion of China's 15-29 year old population. 100 million fewer *Youth* will populate China in 2025, a drop of 30%. The ratio of revolution will fall to 0.75 (75 *Youth* for every 100 *Job-Makers*). These are not forecasts. Everyone in the 2025 demographic numbers has already been born. Massive *Youth* net immigration (from India?) or a plague that attacks the middle aged would be required to alter the demographic path displayed below.



Sources: Volatility Research & Trading; UN Population Division; US Census Bureau

Suggested catalysts for the June 1989 Tiananmen uprising are:

- 1) The death of Hu Yaobang in April 1989 (Secretary General of the Communist Party of China from 1982-1987 – Zhao's predecessor). Hu had democratic leanings and supported economic and political reforms. On 22 April 1989, the day before Hu's funeral, 50,000 to 100,000 "students" marched on Tiananmen Square.
- 2) The visit of Russian President Gorbachev in May 1989 bearing the reform messages of perestroika (restructuring) and glasnost (openness, candor).
- 3) The 1988 pan-China tour by Milton Friedman and Steven Cheung where they challenged every official they met to allow private corporations to compete with state enterprises.
- 4) The April 1988 decision by Zhao Ziyang and Deng Xiaoping to do away with price controls.

The second inflationary spike in 1994 was not able to catalyze another attempt at revolution due to the falling youth population and the drop in the ratio of revolution (Y/J-M) below 1.3.

Comparing China 1989 to 2011

The two boxes below compare Chinese Youth and Job-Maker demographics, inflation and catalysts in 1989 and 2011.

Revolution is a function of (Y, ΔY, Y/JM, I, C)	
<p>Y = 346 million</p> <p>ΔY = 113 million or + 48%</p> <p>JM = 228 million</p> <p>Y/JM = 1.53</p> <p>I = 28.00%</p> <p>C = Inflation, Friedman Hu's death, Gorbachev</p>	<p><u>China 1989</u></p> <p>An enormous Youth population, 113 million larger than the Job-Maker demographic, increased by an amazing 48% in just 15 years and created a 1.53 ratio of revolution. Unemployment was below 3% but wages were extremely low. 28% inflation on top of low wages was the catalyst for revolution. (Inflation may have been partially due to Milton Friedman's advice to Chinese leaders on the wonders of free markets - they accelerated the removal of price controls)</p>



Revolution is a function of (Y, ΔY, Y/JM, I, C)	
<p>Y = 326 million</p> <p>ΔY = -10 million or - 3%</p> <p>JM = 326 million</p> <p>Y/JM = 1</p> <p>I = 4.60%</p> <p>C = House prices? No brides?</p>	<p><u>China 2011</u></p> <p>The Youth population has contracted, and is now the same size as the Job-Maker population.</p> <p>Inflation is reasonable. Unemployment is low Wages are increasing</p> <p>Conditions do not support a revolution. Jasmine is a flower.</p>

Once Upon a Time, Japan Had Youth

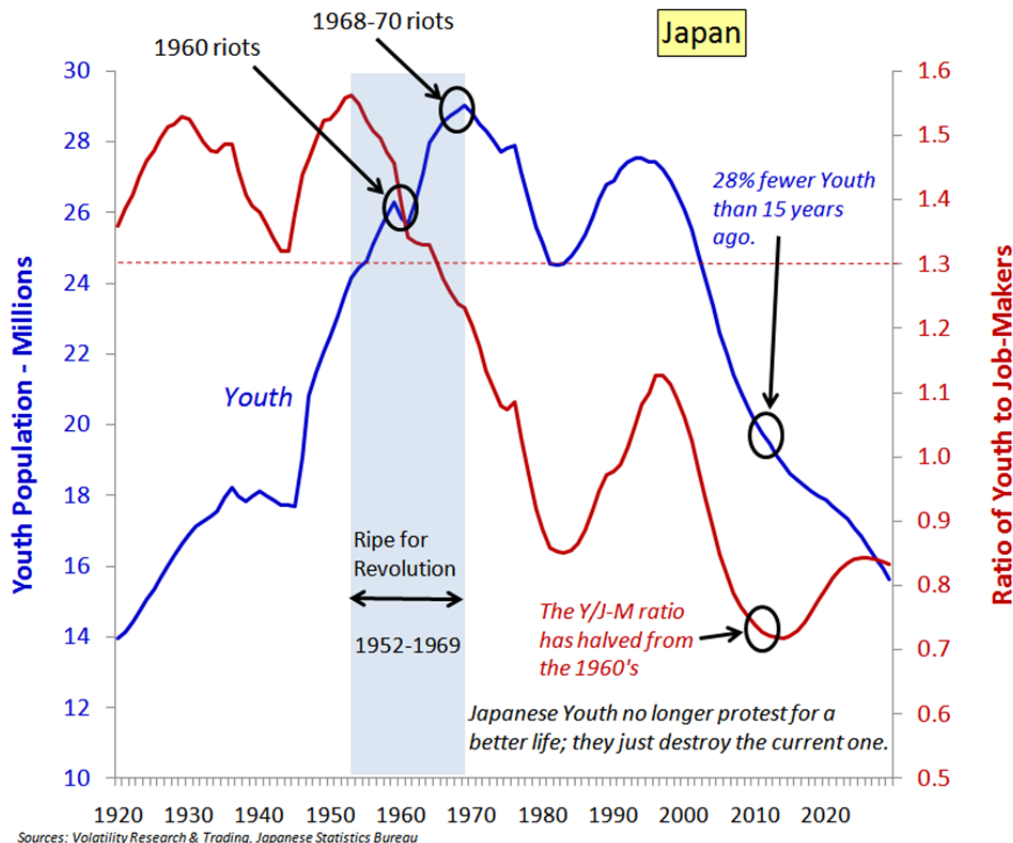
The Japanese are an enigma to most non-Japanese. I don't understand manga, anime, Gothic Lolita or Hello Kitty. The trend towards youth group suicides as the 15 to 24 year-old demographic contracts is the flip-side of the revolutionary protests that defined this population when it was soaring in numbers.

When Youth populations increase, crowds form and the Youth act as one. They express themselves demonstrably, prices rise, crime increases, and when the time is ripe, they start revolutions. The opposite—declining Youth populations—bring about malaise, depression, introversion and less crime, but random individual acts of violence. As their numbers fall with each passing year (there are 28% fewer 15-29 year-olds this year than there were 15 years ago), Japanese Youth nihilistically express themselves in sympathy with their dying demographic.

Japanese Youth were different half a century ago. Their numbers grew by 25% to 50% every 15 years from the mid 1950s to the late 1960s. The “open crowd,” to use Elias Canetti's terminology, wants to grow. “It wants to seize everyone within reach...and there are no limits whatsoever to its growth...the open crowd exists so long as it grows; it disintegrates as soon as it stops growing. The Japanese Youth “open crowd” grew for 50 years and then suddenly disintegrated in 1970. Japanese youth culture went from inclusive to exclusive, from the crowd to the individual, from power and dreams to weakness and nightmares, all in sympathy with the demographic trends.

Japanese Youth were as rebellious in the '60s as the Americans were in the '70s, the Chinese were in the '80s and as the Egyptians are now. Will Youth nihilist sentiment arise in other countries experiencing shrinking Youth populations (China over the next two decades) or is Japan just a one-off case?

Interesting to note that Japan's Youth/Job-Maker ratio was above the critical 1.3 level from 1920 until the late 1960s (including WWII). We may never again see that ratio above one.



Foreign Domination as a Catalyst

The first round of student protests arose from Japanese disdain at the signing of yet another security treaty with the United States, the Treaty of Mutual Cooperation and Security, in January 1960. Aside from the standard vows to jointly resist armed attack and to strengthen economic ties, the treaty made provisions for US forces to be stationed in Japan—a bone of contention to this day. The Japanese Socialist Party tried to prevent the LDP from entering parliament (the lower house) to ratify the Treaty, police tangled with the opposition and student rioting ensued. The Japanese youth of the '60s were babies during WWII and hated the prospect of paying the price for the folly of their parents.

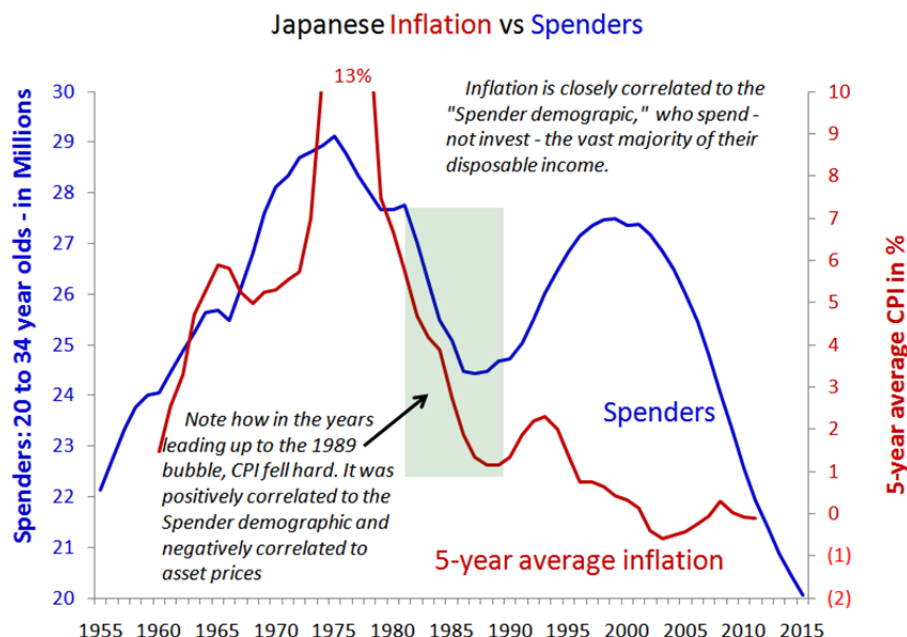
Protests erupted again later in the decade over the presence of the US Navy in Sasebo naval port (January 68), campus conflicts at Nihon University (May 68), and culminated in demands for the democratization of Yasuda Memorial Hall of Tokyo University (January 69).

As N. Kurita relates, "Beginning as moderate demonstrations and political meetings, youth protests developed into riotous demonstrations, sit-ins and occupation of buildings, often resulting in violent clashes with riot police. According to Backman and Finlay's (1973) cross-national study of 17 nations where student protests occurred in the late 1960s, the level of radicalization and violence in Japan's protests was among the highest.

Deflation to Inflation

By now we know to look for rising prices to complete the "ripe for revolution" picture, and Japanese inflation of the 1960s plays the role perfectly. From a low of 0.47% deflation in 1958, the CPI rose to +6.7% by 1965 (the red line in the chart below is the 5-year average CPI). The CPI rose to an amazing 23% in 1973, but by then the Youth demographic was in decline, having lost 1.2 million people over the previous 5 years, and the Youth-to-Job-Maker ratio was down to an unthreatening 1.08.

The chart below compares the CPI to the spending demographic (20-34 year olds), and shows, somewhat controversially I would expect, that inflation is firstly a demographic phenomenon. The monetary contribution to inflation is secondary. How else could one explain an inflation plunge during the bubble years?



Comparing Japan 1960 to 2011

The two boxes below compare Japanese Youth and Job-Maker demographics, inflation and catalysts in 1960 and 2011.

Revolution is a function of (Y, ΔY, Y/JM, I, C)	
<p>Y = 26.3 million</p> <p>ΔY = +8.6 million or +49%</p> <p>JM = 18.6 million</p> <p>Y/JM = 1.41</p> <p>I = 3.60%</p> <p>C = US-Japan Security Treaty</p>	<p><u>Japan 1960</u></p> <p>Rapidly expanding Youth population - up 49% in 15 years - and a Youth to Job-Maker ratio of 1.41.</p> <p>Inflation was moderate, but increased throughout the 1960s and helped reignite student protests in 1968.</p> <p>Japanese youth resented answering to the US for the actions of their parents during WWII.</p>



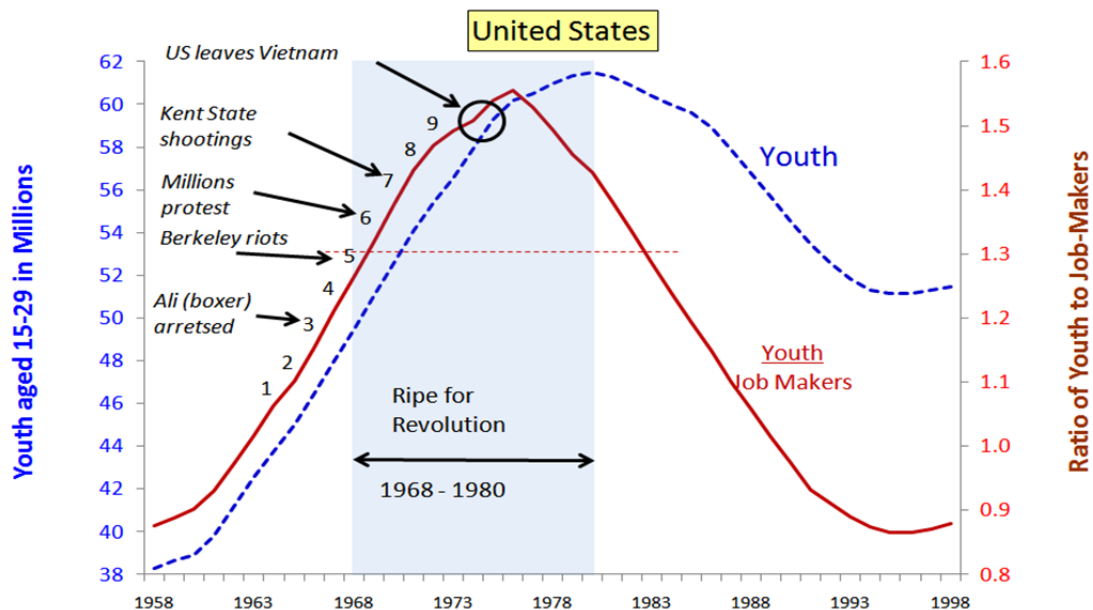
Revolution is a function of (Y, ΔY, Y/JM, I, C)	
<p>Y = 19.8 million</p> <p>ΔY = -7.7 million or -28%</p> <p>JM = 27.2 million</p> <p>Y/JM = 0.73</p> <p>I = 0.00%</p> <p>C = Austerity when unable to borrow.</p>	<p><u>Japan 2011</u></p> <p>Youth are disappearing faster than you can say low fertility.</p> <p>Inflation has averaged negative (-0.18%) for the past 10 years.</p> <p>Instead of revolting, youth remain locked in their rooms, and - unfortunately - many decide to end their lives prematurely.</p>

United States: Make Love, Then War

To fight a war, one first needs warriors. The lead time required to produce the front line of battle is 15 to 25 years. But not all of those babies turn into soldiers on foreign soil. Many direct their youthful energy towards domestic battles.

The US baby boom set the stage for eight years of student-led demonstrations that were astounding in their tenacity, violence and inclusiveness. Millions of people of all ages and walks of life took part in protests, but it was the students and university campuses where much of the action, outside Washington, took place.

Our demographic metrics show a youth population that was soaring skyward as the Vietnam War intensified. By 1973, the year the Vietnam War ended, the 15 year growth rate of the Youth demographic was 48% and the Youth/Job-Maker ratio reached 1.5. This ratio first passed the 1.3 hurdle in 1969. (Recall that we saw almost exactly the same Youth growth rates and Y/J-M ratios in China, Japan and Egypt).



Sources: Volatility Research & Trading, US Census Bureau,

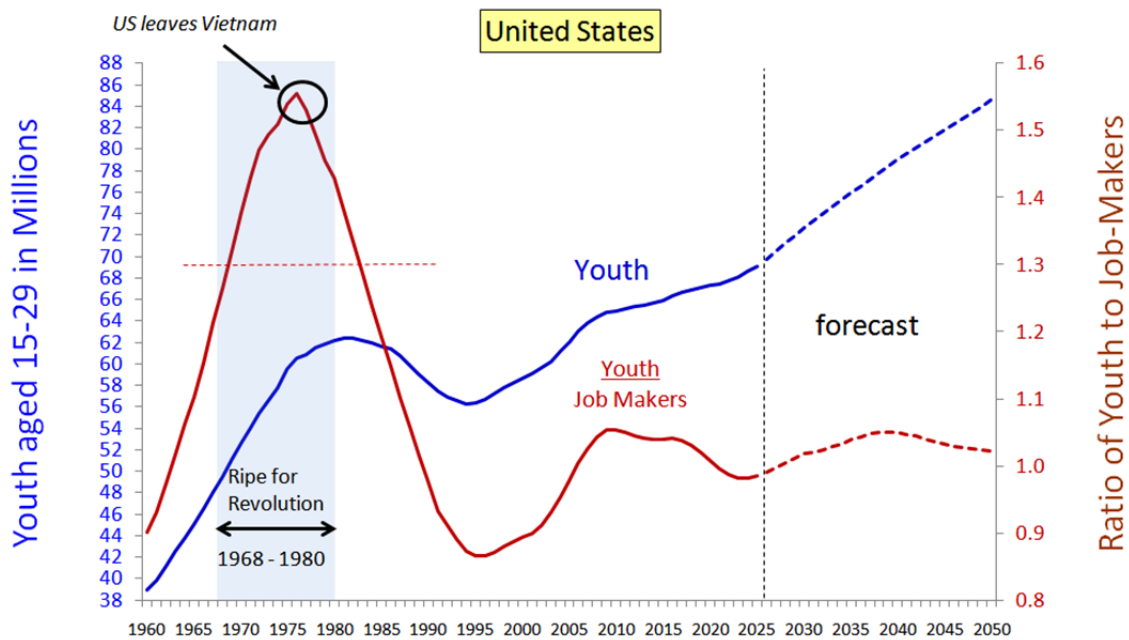
- 1) 1964 – First major US student demonstrations against the Vietnam War. Very small turnout.
- 2) 1965 – First draft card burning. 40,000 protest at the White House
- 3) 1966 – Protests, strikes and sit-ins at Berkeley. Muhammad Ali (the boxer) declares himself a conscientious objector.
- 4) 1967 – 400,000 march from Central Park to the UN building in NY. Muhammad Ali sentenced to 5 years in prison for draft evasion (overturned in 1971)
- 5) 1968 – Anti-war riots at Berkeley. The 1968 Democratic Convention in Chicago turns ugly.
- 6) 1969 – Millions take the day off work and school to protest. Half a million demonstrate in Washington.
- 7) 1970 – Kent State shootings. Hundreds of thousands demonstrate in Washington. Police circle the White House with buses to block demonstrators. Almost 500 college campuses closed as 4 million students protest.
- 8) 1971 – 12,000th war protest-related arrest. Demonstrations, marches and protests continue.
- 9) 1972 – Students break into college offices and threaten strikes. Protests in most major cities.

Inflation was an unknown word to many in 1961, when the annual increase in prices was a paltry 0.67%. By 1974, inflation had reached 12.3% and Hard Rock filled the airwaves.

We started our United States ratio of revolution analysis with the catalyst (Vietnam War), simply because it was so obvious and all-consuming to the people of that era. Nevertheless, the path that inflation took corresponds exactly with the theory.

The long-term chart below illustrates how unique the United States is relative to its Western World (and Chinese) peers. While Japan, China, Germany and Italy have declining Youth populations as far as the eye can foresee, the US Youth demographic will steadily increase in size. A fertility rate in excess of replacement and net immigration will ensure this path.

But since the increase is at a slower rate than in the 1960s, the Youth/Job-Maker ratio will not stray far from a balanced 1.0.



Sources: Volatility Research & Trading, US Census Bureau,

Revolution is a function of (Y, ΔY, Y/JM, I or A, C)	
Y	= 57.9 million
ΔY	= +19.7 million or +52%
JM	= 38.3 million
Y/JM	= 1.51
I	= 12.34%
C	= Vietnam War
United States 1974	
Rapidly expanding Youth population - up 52% in 15 years - and a Youth to Job-Maker ratio of 1.51.	
Inflation jumped to 12.34% from less than 1% in 1961.	
American Youth would undoubtedly have demonstrated against something. The Vietnam war was both fought and protested by the baby boomers.	

Forecast

The Ripe for Revolution Timeline on the following page highlights periods where rapid growth in the Youth population coincide with the potential for high Youth unemployment. Inflation, a necessary ingredient for most revolutions, is not represented in this chart. The darker highlights are periods where revolutionary demographics are most extreme. Some revolutions erupt close to this demographic extremity, while others take several years to mature. Inflation is often the deciding factor.

What becomes instantly clear from this chart is the immediate propensity for revolution in many countries in Africa, Middle East and the Indian sub-continent. Most Far Eastern countries passed their revolutionary sweet spots 10 to 15 years ago (with the exception of the Philippines) and there has been no threat in the developed West for 20 years.

Saudi Arabia's Youth population is 50% larger than it was 15 years earlier, there are 130 Youth for every 100 Job-Makers, and Youth unemployment is a massive 40%. Inflation reached 9.9% in 2009 but has eased to 5.7% this year. This country is ripe for revolution, but higher inflation is probably needed before nation-wide protests have a chance to bring about a change in rulers.

I have no idea why anyone would want to battle or occupy Afghanistan. It is about as ripe for revolution as a country can get. The Youth population is an incredible 66% larger than 15 years earlier and there are 181 Youth for every 100 Job-Makers. Inflation was 30.5% last year. There is no reliable Youth unemployment data, but it is safe to assume that most are unemployed (unless you count the Taliban as employers). Afghanistan has been ripe for revolution since 1996, and will remain so until 2029. This is not a military theatre one would rationally choose to be a part of. The only lasting solution to Afghanistan begins with contraception, and the social, medical and educational infrastructure required to encourage significantly lower fertility rates. The politically correct solution is to propose increased Youth employment and of course the education that will make them employable. But that solution must follow a lower birth rate. Contraception must come first. Better to plan for 20-30 years down the road.

The Democratic Republic of Congo holds the ripe for revolution record of 80 straight years; 60 in the past and 20 more in the future. They make babies as easily as China makes fake software. Italy and the United Kingdom never managed to come close to the Congo's (or Nigeria's) reproductive prowess. Neither of these two developed Western countries has ever entered the ripe for revolution zone (data from 1950)

The Philippines is the only country outside the African/Mid East/Indian sub-continent region where Youth demographics suggest ripeness for revolution.

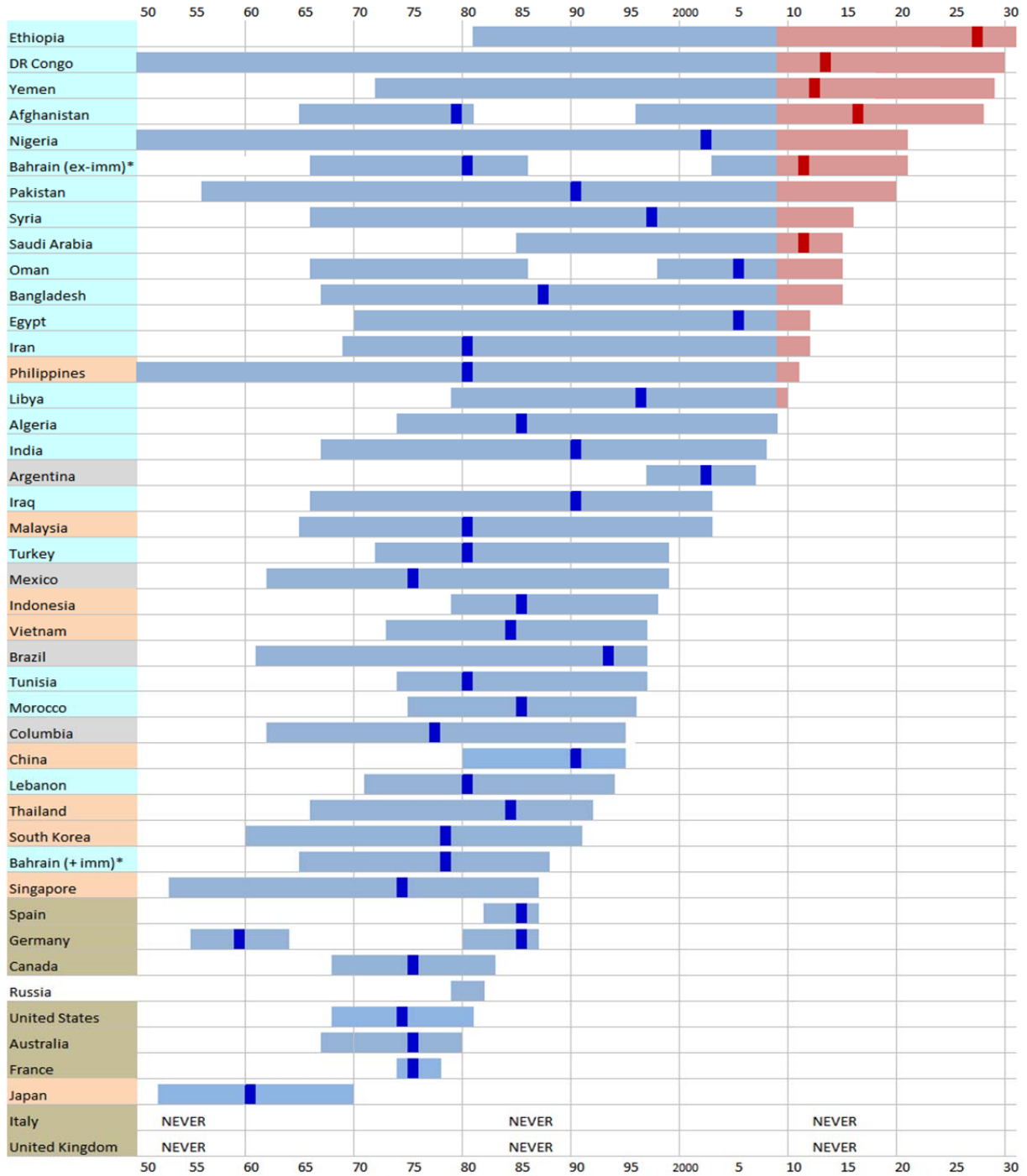
A final observation is that many countries soar economically for the 20-year period after ripeness for revolution has passed. Japan from 1970, the US from 1981, China from 1995, Southeast Asia from the mid to late 1990s, Turkey from the late 1990s and India from the mid 2000s.

Egypt and Iran could offer spectacular 10 to 20-year investment opportunities from 2012 onwards.

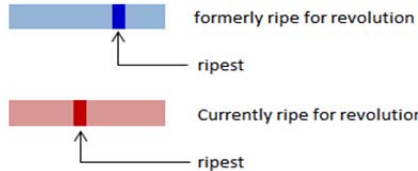


Ripe For Revolution Timeline

Rapid Youth Growth rate + high Youth/Job-Maker Ratio



	Africa, Middle East & Indian sub-continent
	Far East
	Developed West
	Latin America



* Almost 40% of Bahrain's population is immigrant stock. They are in Bahrain because they choose to be there, and most have jobs. The immigrants are predominantly in the Job-Maker demographic, not Youth demographic. Exclude these immigrants (almost 20,00 per year) and Bahrain is extremely ripe for revolution from 2008 until 2016.

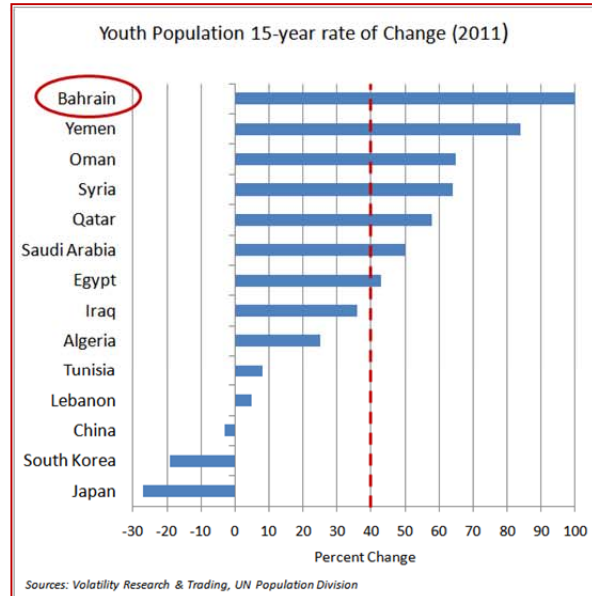
Sources: Volatility Research & Trading, UN World Population Prospects; US Census Bureau; Various Government statistics databases

Outliers

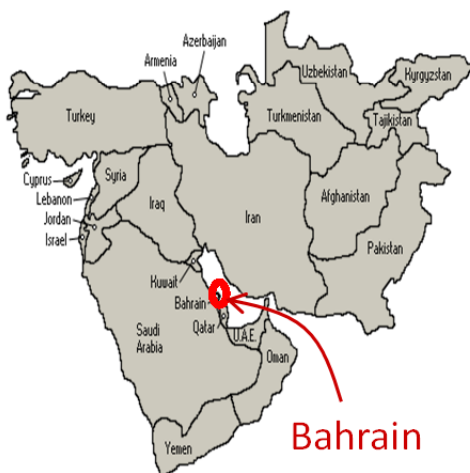
Bahrain

The 15 year growth rate of the Youth population crossed the 100% level in 2008 and will remain above 100% until 2016. This is an absolutely phenomenal and socially destabilizing rate of growth. Surprisingly, the Youth/Job-Maker ratio is quite low at 0.85, well below the 1.30 level necessary for a country to be considered ripe for revolution. Those two metrics are difficult to rationalize. How can you have a rapidly expanding Youth population that grows slower than the Job-Maker population?

The answer can be found in migration statistics. Twenty thousand immigrants arrive yearly and there are now over 300,000 immigrants in a population of 800,000. Forty percent of the Bahraini population was born elsewhere. Remove the immigrants (who are predominantly in the Job-Maker demographic but are actually job takers, not makers) and the Youth/Job-Maker ratio soars. The older immigrants choose to live in Bahrain and are there because of employment opportunities—often found in the financial sector. Excluding immigrants from the equation, (or classifying them as Youth if they have come to seek jobs, not fill them) and Bahrain will remain ripe for revolution until 2021. On the Ripe for Revolution chart on page 17, Bahrain is represented twice; once including immigrants and once excluding them.



Bahrain is an interesting story and of such geographic and political strategic significance that its revolutionary potential stems from more than demographics. Bahrain is a tiny country with a small population that is connected to Saudi Arabia by a causeway, is an important US military base (1,500 American troops stationed there), optimally positioned in the Gulf of Arabia, and surrounded by enormous Shi'ite populations in Iran and Iraq. The indigenous population is majority Shi'ite (thus the sympathy from Iran) while the rulers are Sunni (as in Saudi Arabia). The small 320,000 youth population gets strength and support from their much larger Iranian and Iraqi Shi'ite neighbors. Saudi Arabia considers Bahrain to be an appendage, which explains the presence of their troops on Bahraini soil. Control of the Straits of Hormuz, long a strategic objective of Iran in its larger apparent goal of controlling the Gulf, would be facilitated if they had greater influence over the tiny Island.



Bahrain's small population is subject to such cross currents of external influence—largely religious, but also geopolitical—that this country will remain a potential strategic battleground with or without a rapidly expanding unemployed Youth population.

Tunisia

Tunisia is a true outlier and its demographic metrics do not support the argument in favor of revolution. In another three years, Tunisia's Youth growth rate will turn negative and the Youth/Job-

Maker ratio will fall to 1.0 by 2016. Inflation is a mere 4.5% per annum. They are a homogeneous people with 98% of the population Muslim; either Arabs or Berbers who have become Arab. The only metric that supports revolution is the 15-25 year-old male unemployment rate, which has averaged over 30% for at least 15 years.

Our Youth/Job-Maker ratio is used to “predict” potential unemployment extremes. It does a very good job of that, but extreme unemployment can occur without being visible in the demographic statistics.

East Germany

The Wall came down in 1989. Germany (unified) left the ripe for revolution zone in 1987, but if detailed demographic statistics were available for East Germany, its ripeness would surely have carried over into 1989. East German fertility rates were about 25% higher than in West Germany until unification, when fertility plummeted.



France

Most of the countries we analyzed have a somewhat homogeneous population. That is definitely the case with Japan, China and Egypt. The United States is the opposite, but immigrants tend to assimilate easily and become Americans in spirit quite quickly.

France has a very large and growing subset in its Youth population. The fertility rate of first and second-generation African and Arab immigrants is at least twice that of the native French. Due to their poor cultural assimilation—one could argue this is largely due to France’s strong cultural and geographic boundaries—they tend not to be considered on an equal basis for employment or education opportunities, and thus remain a highly unemployed, disenfranchised and thus combustible demographic.

As a sub-set, the French African/Arab immigrant population has a very high Youth growth rate and a large Youth/Job-Maker ratio. Unemployment rates are extremely high. Their ripeness for revolution has been and remains critical, but this information is not visible from the gross demographic numbers. France prohibits the separation of statistics by ethnicity.

In 2005, the deaths of two French youths of Malian and Tunisian descent catalyzed protests and riots that lasted just under a month and involved almost 300 towns. It is estimated that 9,000 cars were damaged.

Ripeness for revolution in an ethnic subset of a population is not visible from the gross numbers. As Youth mobility and global migration increases, governments would be well advised to ensure the net human inflow is matched by education and employment opportunities. The alternative is to purchase more water cannons.



Conclusion

An open crowd needs to grow in order to survive. As soon as the crowd begins to shrink, its aspirations and ideals slip away, and it becomes ineffective as a force.

The ratio of the Youth population (15-29 year olds) to the Job-Maker population (30-44 year-

olds) can be forecast 15 years in advance in the absence of massive migration and age-targeting diseases. With a bit of fertility rate trend extrapolation, we can make relatively accurate predictions on the propensity for unemployment 25 years in advance.

Growing crowds of unemployed Youth will protest and organize demonstrations, but it is not until rapid price inflation takes hold that they become unmanageable and start revolutions that are difficult to stop.

In 2011, Egypt's youth population was 46% larger than 15 years earlier, there were 150 Youth for every 100 Job-Makers and inflation had jumped to almost 10%. Youth unemployment was 33%. A Tunisian catalyst ignited the revolution.

In 1989, China's youth population was 48% larger than 15 years earlier, there were 153 youth for every 100 Job-Makers and inflation was a whopping 28%. Four catalysts claim credit for Tiananmen Square.

In 1974, the United States' Youth population was 52% larger than 15 years earlier, there were 151 youth for every 100 Job-Makers and inflation leapt over 12%. The Vietnam War (exited the previous year) was a long-running catalyst.

In 1960, Japan's Youth population was 49% larger than 15 years earlier, there were 141 Youth for every 100 Job-Makers, though inflation was a mild 3.4%. The rapid inflationary jump throughout the 1960s was a catalyst for the 1968-70 student uprisings that were more violent and radical than protests in 17 other nations experiencing student unrest.

See the pattern? Mere coincidence or is there an underlying fundamental justification for employing demographics to identify when a nation is ripe for revolution?

Postscript One—Japan

After writing this article, Japan was struck by a 9.0 magnitude earthquake and many towns were washed away by the 9-meter high tsunami that followed. A nuclear meltdown remains a possibility and many are evacuating to safer locations.

Many editorials have been written suggesting that Japan is a resilient nation, having prospered economically and as a society since the WWII devastation, and again in the aftermath of the 1995 Kobe earthquake. Post-disaster rebuilding and economic success has been seen in many other countries too. The current hope of many sympathetic followers is that the Japanese will regroup, rebuild and eventually overcome what appear to be almost hopeless circumstances. I share their outlook, but how realistic are we in these hopes?

Japan's 15-29 year-old Youth demographic soared from 17.7 million to 24.4 million in the 10 years following WWII. Almost 7 million more strong, healthy and energetic people helped rebuild the nation. The same Youth demographic rose by over 10% in the decade before the 1995 Kobe earthquake (thanks to the echo baby boom). Once again, 28 million Youth were at hand to help rebuild.

But this time is different. Japan's youth population has dropped by 8 million over the past 10 years. How does one rebuild as effectively with the energy of 19 million as they did 15 years ago with the energy of 28 million? In modern times, we have never seen a country repair itself after a disaster coincident with a contracting Youth population. Extensive foreign resources, both human and monetary, will be needed to help Japan emerge from this disaster.

Postscript Two—The Economist

After reading this paper as a draft, a few people pointed me to a recent Economist article that attempted to predict which Arab countries were most likely to become revolutionary.

http://www.economist.com/blogs/dailychart/2011/02/daily_chart_arab_unrest_index

My immediate reaction was that my observations would be usurped by a publication of substance, but upon looking at the index of factors they consider important, I was surprised by what seem some obvious omissions.

The Economist's index of unrest in the Arab world, also known as the "Stone-thrower's index," included the following measures:

- The number of years a ruler has been in power
- Percent of the population under 25
- Total population under 25
- GDP per person
- Democracy ranking
- Corruption ranking
- Press freedom ranking
- Adult literacy and Internet users.

The Economist's multi-factor approach follows a style similar to that of an economist who includes as many variables as possible in formulating a multi-factor stock market prediction model, but fails to examine demand and supply or market positioning.

There are four demographic components to their index: percentage of population under 25, total population under 25, adult literacy and internet users. They do not examine whether this population is growing or shrinking, how much it has changed in recent years, nor how large it is in relation to the demographic group that precedes it. There were no internet users during the revolutions of the past, so I think this is purely a curve-fitting inclusion.

The rate of change of a demographic is very important. The fact that Bahrain has the highest 15 year Youth growth rate of all countries on the list yet is only ranked 13th by the Economist emphasizes this point. The Economist also omits Youth unemployment numbers and inflation, two factors that have a strong influence in molding the emotions of the Youth crowd.

Why focus on just Arab nations? Arabs are not inherently prone to start revolutions. Rapidly expanding and unemployed Youth crowds that face rising inflation have been susceptible to revolutionary tendencies for the past half century. Many African nations, in addition to the Arab countries on the Economist's list, are also ripe for revolution, as were the U.S., Japan and China in decades past.

Lastly, the Economist's methodology is a snapshot in time, not a predictive tool. It asks if revolution is likely now, not when.

Notes and Sources

Page 2. Egyptian GDP. World Bank. World Development Indicators.

Page 3. Population data used for Youth and Job-Maker analysis throughout the paper are from the U.S Census Bureau, International Data Base, the United Nations Population Division and individual government statistics databases.

Page 4. Video of reporter at Tahrir Square in 2005. (Unfortunately I have lost the link).

Page 5. Unemployment rates and Youth unemployment rates are from Bloomberg, the UN Statistics Division, and Individual Government Statistics databases.

Inflation rates have been sourced from Bloomberg, inflation.eu, Worldwide Inflation Data, and Individual Government Statistics databases.

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Page 13. Vietnam War time line. Wikipedia + various sources.

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