

Demographic Change and Business Valuation

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Importance of Demographics

- According to David K. Foot emeritus Professor of Economics at the University of Toronto:
 - “demographics explains about two thirds of everything”
- The most interesting thing it cannot explain are political actions.

Population Growth

- When I was born in 1934 I was number 2,156,271,260th.
(<http://www.bbc.co.uk/news/world-15391515>)
- Now according to the same source the world's population has increased from 2.1 billion in 1934 to 7 billion today.
- If I was born today I would be number 7,000,017,066th.
- These trends will not have the same effect on all nations.

Population Growth

				Annual
Date	Population	Growth	Period	Increase
CE	(millions)		(years)	(millions)
1	200			
1804	1,000	400%	1,803	0.44
1927	2,000	100%	123	8.13
1959	3,000	50%	32	31.25
1974	4,000	33%	15	66.67
1987	5,000	25%	13	76.92
1998	6,000	20%	11	90.91
2011	7,000	16.7%	13	76.92
2025E	8,000	14.3%	14	71.43
2051E	9,000	12.5%	26	38.46
2083E	10,000	11.1%	32	31.25
2100E	10,340	3.4%	17	20.00
Source:	Various			

Worldwide Situation

- The following tables deal with 45 countries in 3 groups:
 - A: benefitting from a demographic dividend (median age less the global average of 28.4 years)
 - B: suffering from a demographic deficit but few problems as median age is less than 40.0
 - C: awaiting demographic problems as median age is between 40 and 45

Worldwide Situation

Group A Country	2011 Population millions	Share	Birth Rate per '000	Fertility Rate per Woman	2012 Median Age - Years Overall	Female Excess	Life Expectancy at Birth Overall	Female Excess
Kenya	41.1	0.59%	36.64	4.38	18.9	0.2	54.1	2.2
Nigeria	155.2	2.23%	36.65	4.82	19.2	0.1	46.9	0.9
Ghana	24.8	0.36%	28.58	3.57	21.4	0.5	60.0	0.9
Pakistan	187.3	2.69%	27.62	3.28	21.6	0.1	65.5	0.6
Philippines	101.0	1.45%	26.01	3.23	22.9	1.0	71.7	4.4
Egypt	82.1	1.18%	21.70	3.01	24.3	0.6	71.3	4.5
Zuid Africa	49.0	0.70%	19.93	2.33	25.0	0.6	49.3	0.9
Saudi Arabia	26.1	0.37%	24.90	2.35	25.3	(2.5)	72.8	4.4
Venezuela	27.6	0.40%	20.61	2.45	26.1	1.4	73.7	5.9
India	1,189.2	17.06%	21.76	2.65	26.2	1.3	64.7	3.2
Iran	77.9	1.12%	17.17	1.89	26.8	0.5	71.0	7.7
Malaysia	28.7	0.41%	22.24	2.70	26.8	0.3	74.2	4.7
Mexico	113.7	1.63%	19.71	2.31	27.1	2.1	76.2	5.4
Vietnam	90.5	1.30%	16.31	1.93	27.8	2.1	74.2	3.9
Colombia	44.7	0.64%	19.57	2.18	28.0	1.9	72.9	7.4
Indonesia	245.6	3.52%	18.84	2.28	28.2	1.0	70.7	4.0
World	6,970.0	100%	19.95	2.56	28.4	1.3	67.2	4.5
Sources	CIA		CIA	CIA	CIA		CIA	

Worldwide Situation

		2011		Birth	Fertility	2012 Median		Life	
		Population	Share	Rate	Rate per	Age - Years	Female	Expectancy	Female
Group B		millions		per '000	Woman	Overall	Excess	Overall	Excess
Turkey		78.8	1.13%	18.66	2.18	28.5	0.7	71.8	4.9
Brazil		203.4	2.92%	18.43	2.19	29.3	1.6	72.4	7.3
Israel		7.4	0.11%	19.77	2.72	29.4	1.4	80.7	4.3
Argentina		41.8	0.60%	17.94	2.33	30.5	2.1	75.3	7.5
Chile		16.9	0.24%	14.64	1.90	32.1	2.0	78.6	6.0
Ireland		4.7	0.07%	14.23	2.03	34.8	0.6	78.9	4.8
China		1,336.7	19.18%	14.00	1.54	35.5	1.3	73.0	3.5
USA		313.2	4.49%	13.82	2.06	36.9	2.6	78.3	5.2
Taiwan		23.1	0.33%	8.99	1.15	37.6	1.4	78.3	5.9
Australia		21.8	0.31%	12.47	1.78	37.7	1.4	81.2	4.7
South Korea		48.8	0.70%	8.93	1.22	38.4	2.8	78.6	7.2
Poland		38.4	0.55%	10.04	1.29	38.5	3.5	75.6	8.5
Romania		21.9	0.31%	10.53	1.27	38.7	2.9	72.5	7.1
Russia		138.7	1.99%	11.10	1.54	38.7	6.4	65.5	10.8
France		65.3	0.94%	12.57	1.97	39.9	3.1	80.7	7.0
Sources		CIA		CIA	CIA	CIA		CIA	

Worldwide Situation

Group C	2011	Share	Birth Rate	Fertility Rate per Woman	2012 Median Age - Years Overall	Female Excess	Life Expectancy	
	Population millions						at Birth Overall	Female Excess
Britain	63.7	0.91%	10.65	1.92	40.0	2.3	79.6	4.4
Hungary	10.0	0.14%	9.51	1.39	40.2	4.7	72.3	8.2
Spain	46.8	0.67%	9.72	1.47	40.5	2.6	80.9	6.5
Czech Republic	10.2	0.15%	8.83	1.25	40.8	3.3	76.5	6.1
Denmark	5.5	0.08%	10.54	1.74	40.9	1.8	78.3	4.6
Canada	34.0	0.49%	10.28	1.58	41.0	2.3	80.7	4.6
Netherlands	16.8	0.24%	10.40	1.66	41.1	1.6	79.8	4.4
Sweden	9.1	0.13%	10.13	1.67	42.0	2.3	80.9	4.3
Belgium	10.4	0.15%	10.15	1.65	42.3	2.6	79.4	5.8
Finland	5.3	0.08%	10.38	1.73	42.5	3.5	79.3	6.3
Greece	10.8	0.15%	9.45	1.37	42.5	2.2	79.5	4.8
Austria	8.2	0.12%	8.65	1.39	43.0	2.1	79.8	5.7
Italy	81.0	1.16%	8.18	1.32	43.5	2.3	80.5	6.0
Japan	126.5	1.81%	7.64	1.39	44.8	3.5	82.6	7.1
Germany	81.5	1.17%	8.18	1.38	44.9	2.3	79.4	5.6
Sources	CIA		CIA	CIA	CIA		CIA	

Worldwide Situation

- Of the five most economically significant nations, India, China, USA, Japan and Germany:
 - Only one – India – is in group A.
 - China and the US are eerily similar in group B.
 - Japan and Germany fall into the end of group C.
- By 2025 India is expected to replace China as the most populous nation.

Worldwide Situation

- Three demographic trends will have important implications for decades to come.
 - Improving Health
 - Rising Median Age
 - Declining Fertility

Improving Health

- Due to continuing improvements in medicine the average retirement period is expected to last until 87.5 years by 2050 – 23% longer than now.
- By 2050 there will be a massive increase in the dependency ratio (elderly and young divided by working age) from longevity.
- All of us will work until at least 70 - I have done so for longer with great pleasure.

Improving Health

- Living longer is not always ideal.
- Extra years can cause personal and society-wide problems especially with fewer children being born.
- Older people are more likely to be burdened with functional impairments.
- I don't want to live to be 120 if my capabilities are diminished from 90.

Rising Median Age

- Today's workforce and tomorrow's retirees are the products of birth rates decades ago.
- Aging baby boomers who passed through the North American economy like a “pig in a python” mean more demanding elderly and fewer workers.

Rising Median Age

- Impact on pension plans is likely to result in substantially greater costs and funding requirements.
- Combined with expected lower interest rates the impact of retirement plans on the values of business is likely to be immense.

Declining Fertility

- During her fertile years (15 to 49) the average woman in a developed country must produce 2.1 children to maintain the population, one for each parent and 0.1 to cover the excess of boy babies over girls.
- For nations with higher infant mortality rates it is higher up to 3.3.
- The global estimate is 2.33.

Declining Fertility

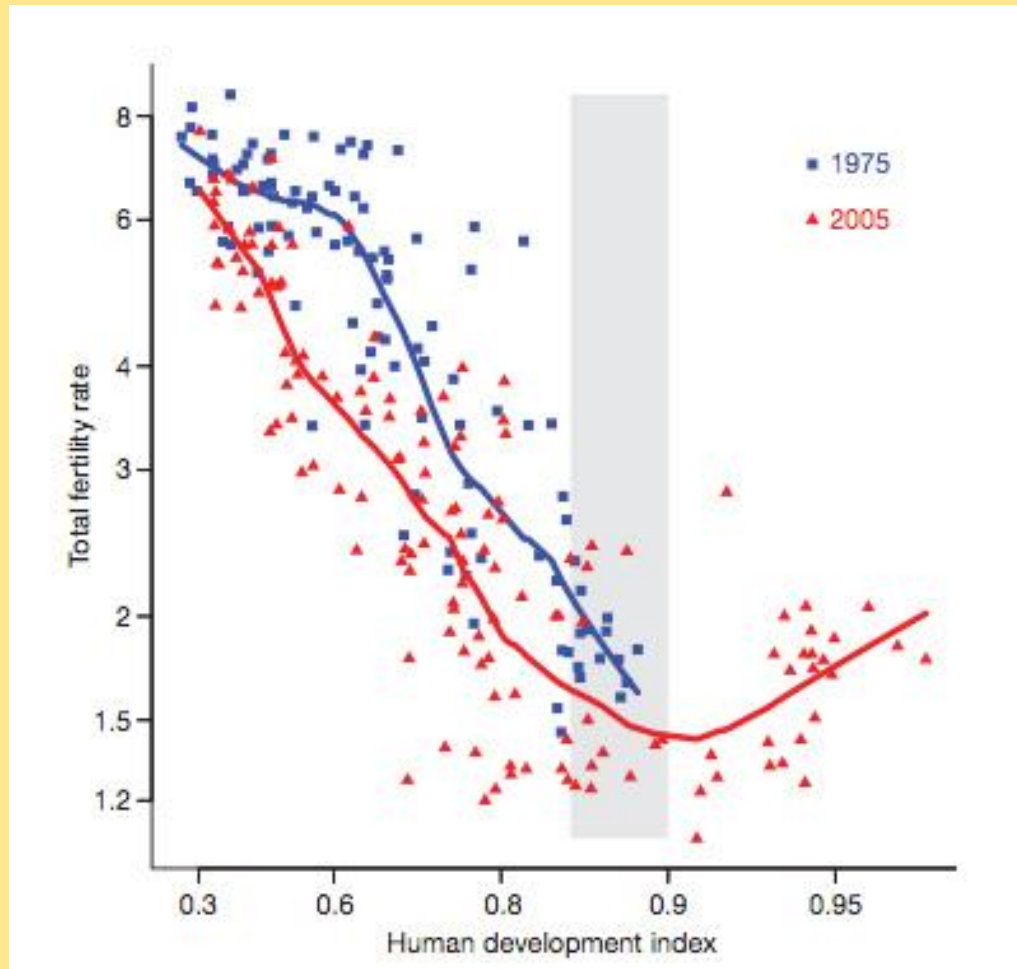
- Actual and estimated worldwide rates:

1950-1955	4.95	1985-1990	3.39
1955-1960	4.89	1990-1995	3.04
1960-1965	4.91	1995-2000	2.79
1965-1970	4.85	2000-2005	2.69
1970-1975	4.45	2005-2010	2.52
1975-1980	3.84	2010-2015	2.45 est
1980-1985	3.59	2015-2020	2.34 est

Declining Fertility

- According to *Nature* (2009) there may be a backward j-shaped relationship between fertility and development.
- Advances in economic development can reverse declining fertility rates.
- In countries with a Human Development Index (HDI) above 0.9 the previously negative development-fertility association appears to be reversing.
- The graph becomes a backward j-shape.

Declining Fertility



Source: United Nations

Declining Fertility

- This may be because developed societies provide people with extra chances to become parents to more children.
- It is a contentious argument.
- Most commentators say the correlation between a higher HDI and lower fertility merely weakens as human development rises.

Declining Fertility

- Another factor is television.
- Globally birth rates fall when TV is introduced .
- In some countries such as Brazil the number of hours a week a woman watches television is a strong predictor of how many children she will have.

Declining Fertility

- Because the base is so large even relatively trivial changes in fertility will produce enormous effects.
- In most European nations and countries like Japan and China birth rate are well below replacement levels.

Declining Fertility

- Birth rates in developing countries particularly Africa, have remained unexpectedly high.
- In wealthier countries like the US and Britain, fertility rates have increased.
- If the average family has just half a child more than current projections, there will be 16 rather than just over 10 billion people by 2100.

USA Situation

- Since 1940 when Social Security was introduced life spans in the US have increased by nearly 15 years.
- But retirement age for full benefits and Medicare has only risen from 65 to 66.
- As the last Baby Boomers reach “normal” retirement age in 2027 the population will have nearly half as many elderly (over 66) as those of working age (20-66).

USA Situation

- Moving from an estimated 3.7 workers per retiree in 2010 to an expected 2.0 in less than twenty years is a formula for intergenerational strife.
- Something has to give!
- Most probably the retirement age.

USA Situation

- When Bismarck introduced the first old age insurance program in 1889 he chose 70 years for Germany.
- The current age of 65 was only adopted in 1916.
- This now politically impossible adjustment would give the US 5.3 workers (20 to 70) per retiree.

USA Situation

- In 1940 there were about 42 workers per retiree as most people, particularly men who dominated the workforce, did not reach 65.
- Then life expectancy at birth was 63.6 years compared with 75.6 today.

USA Situation

- Current retiree's are fortunate.
- For the first time in history most live long enough to draw pensions and have them for a considerable length of time.
- In 2006, the ultimate age for Americans reaching 65 was 82 for men and 84.7 for women
- On average 17.5 years of retirement.

USA Situation

- In the United States between 1980 and 1990 a year of college added a year to longevity compared to those with only high school or less.
- The benefit became 1.6 years between 1990 and 2000.

USA Situation

- In 2000 the average life expectancy for a 25 year old American with a high school diploma or less was 50 years.
- For those with a college degree it was nearly 57.
- Early indications are that the trend is continuing mainly due to better health behaviour.

USA Situation

- Within the higher educated group there were improvements for both men and women but the gains for men were twice as great.

European Situation

- Difference in fertility among religious groups has narrowed consistently over time.
- Middle East and North Africa Immigrants are not the only people moving to Europe.
- It's component societies have global connections fostering migrations like Jamaicans to Britain, Ecuadorians to Spain, Vietnamese to Poland and Sri Lankan Tamils to Norway.

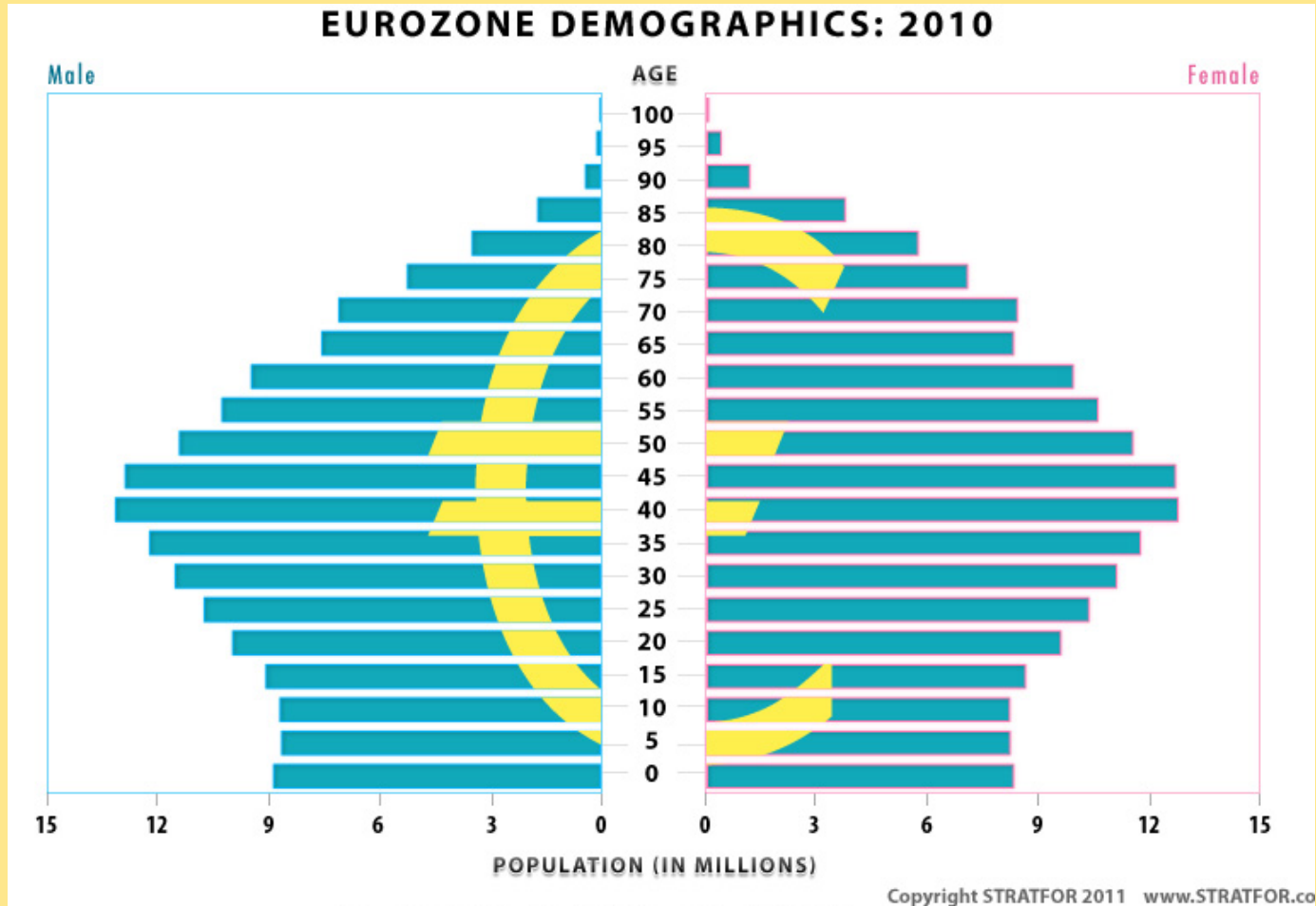
European Situation

- Since the early 1980s Germany had been a country of net immigration.
- Now more people are leaving Germany than choosing it as their new home.
- When the last decade started over 800,000 people choose to join Germany each year.
- In 2009, 721,000 arrived while 734,000 left.

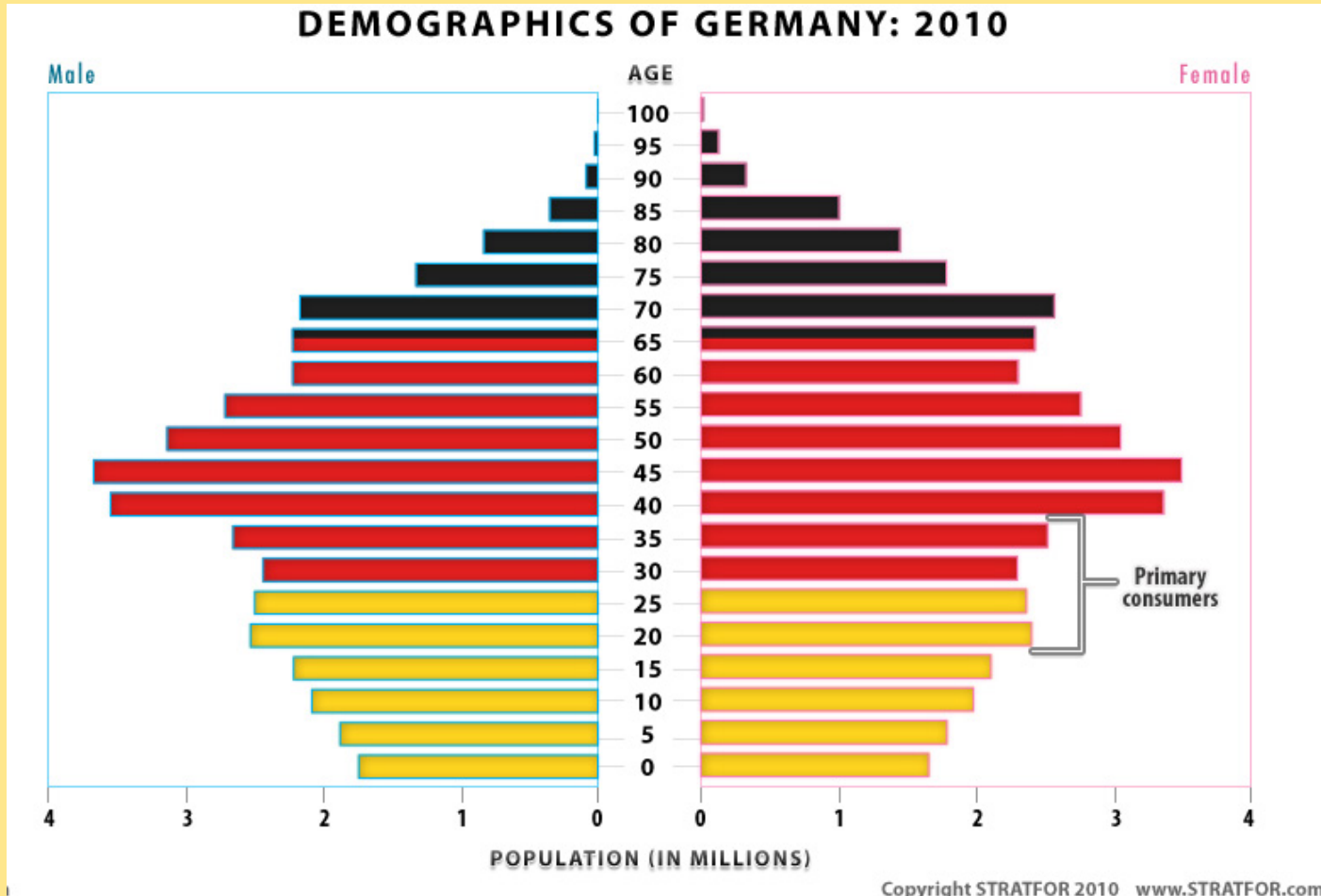
European Situation

- Most that left Germany in 2009 were returning to their homelands primarily:
 - Poland (123,000 - 16.8%)
 - Romania (44,000 - 6.0%)
 - Turkey (40,000 - 5.4%)
- Only 155,000 (21.1%) Germans decided to emigrate, mainly to the US (13%) and Switzerland (5%).

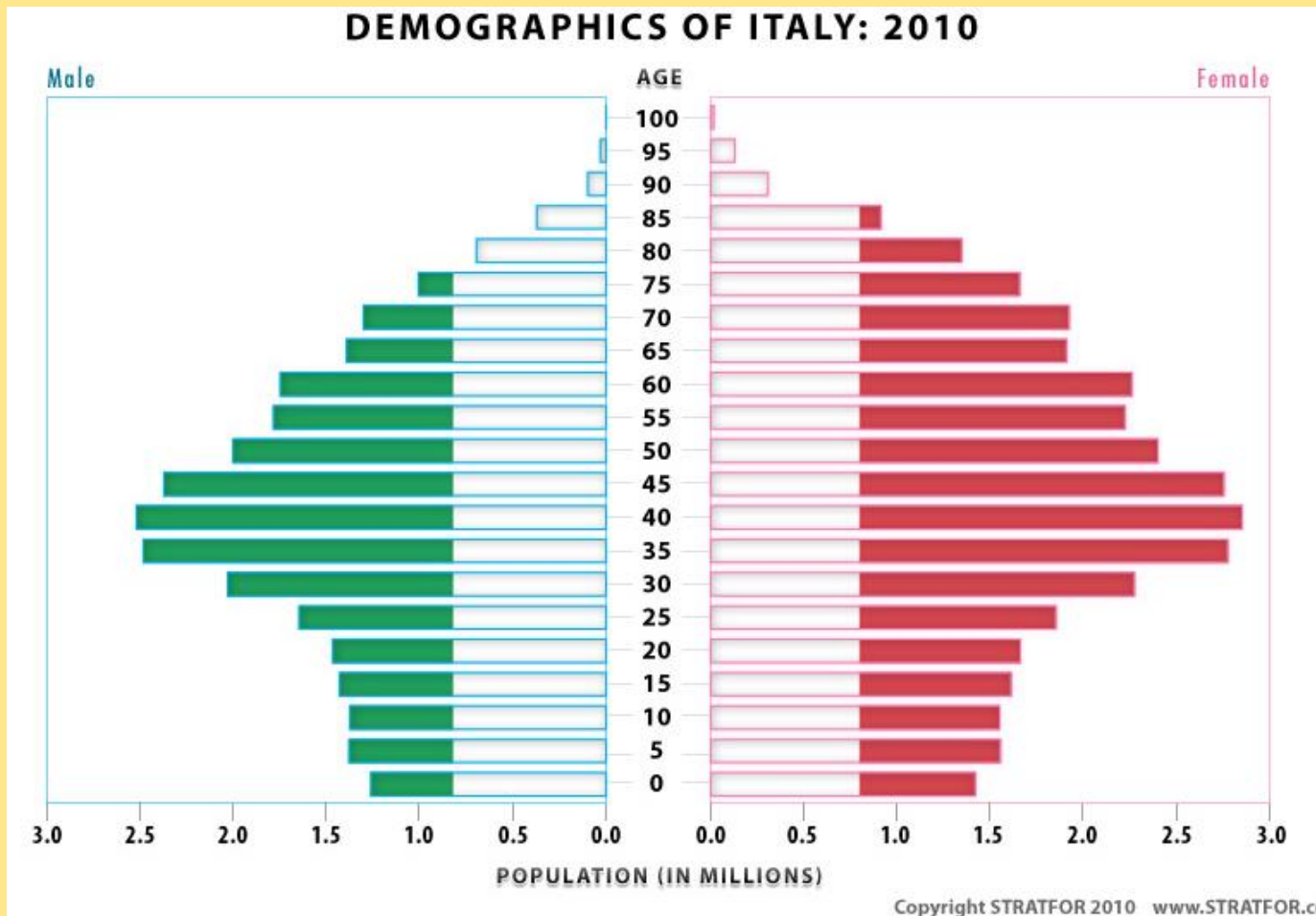
European Situation



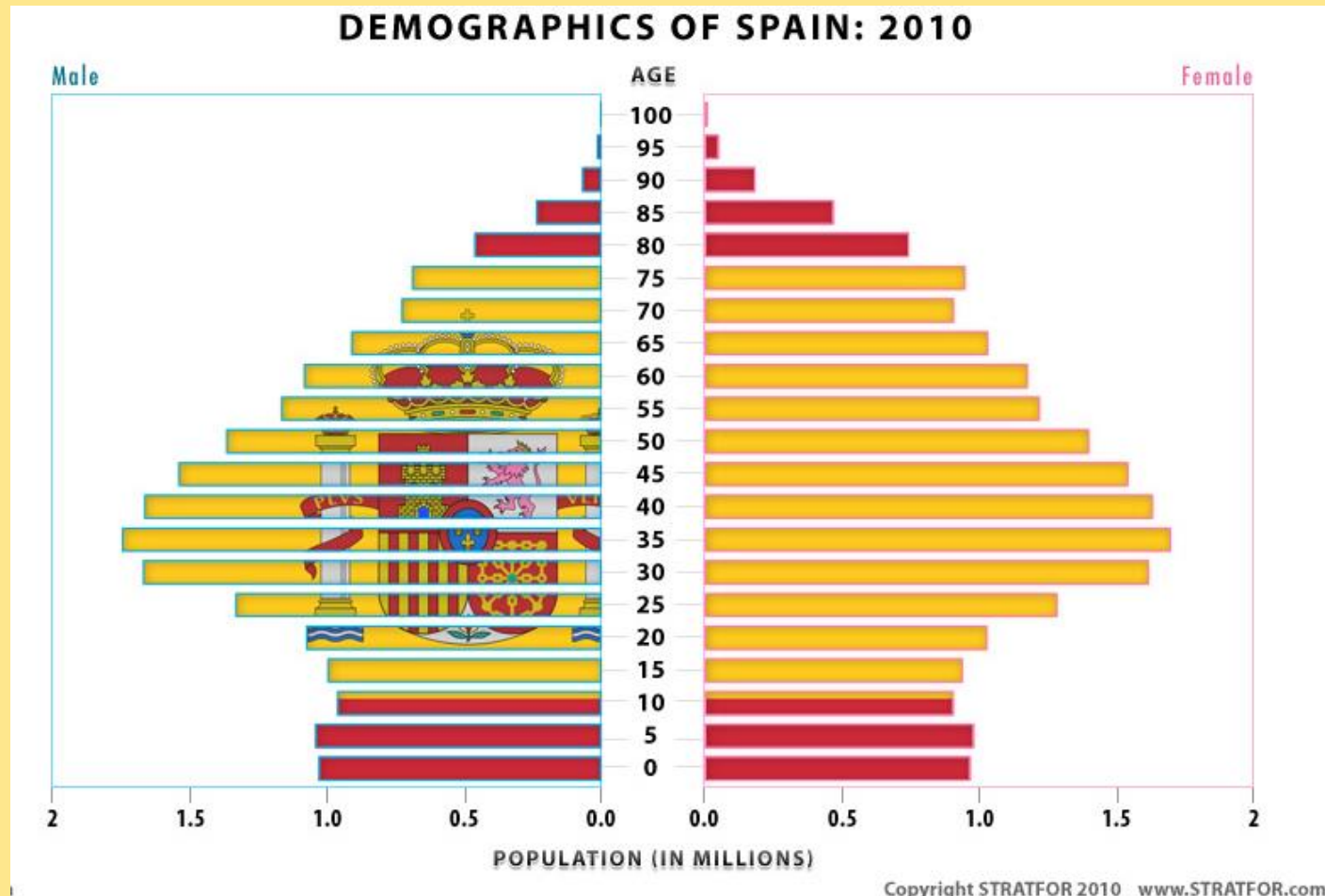
European Situation



European Situation

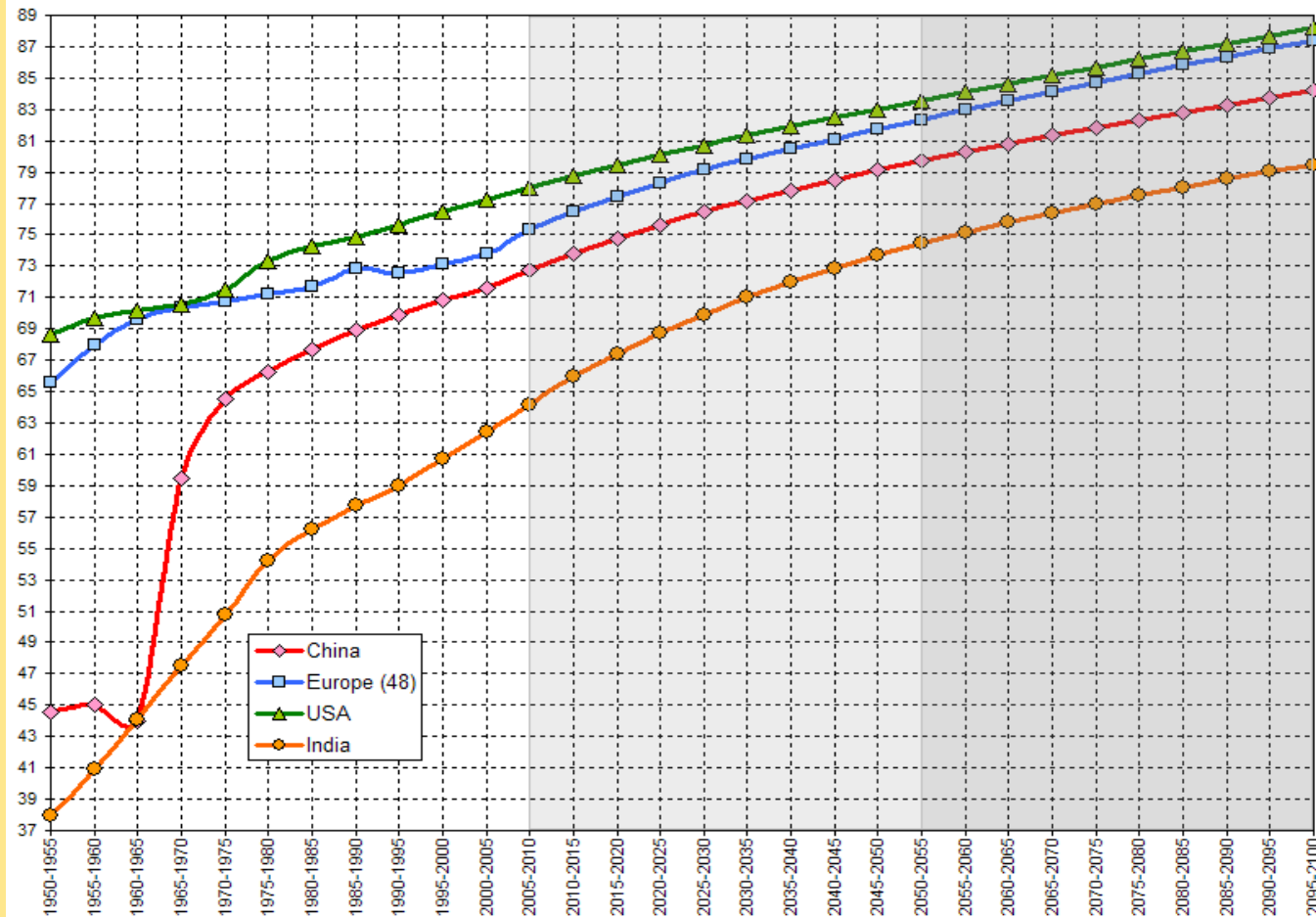


European Situation

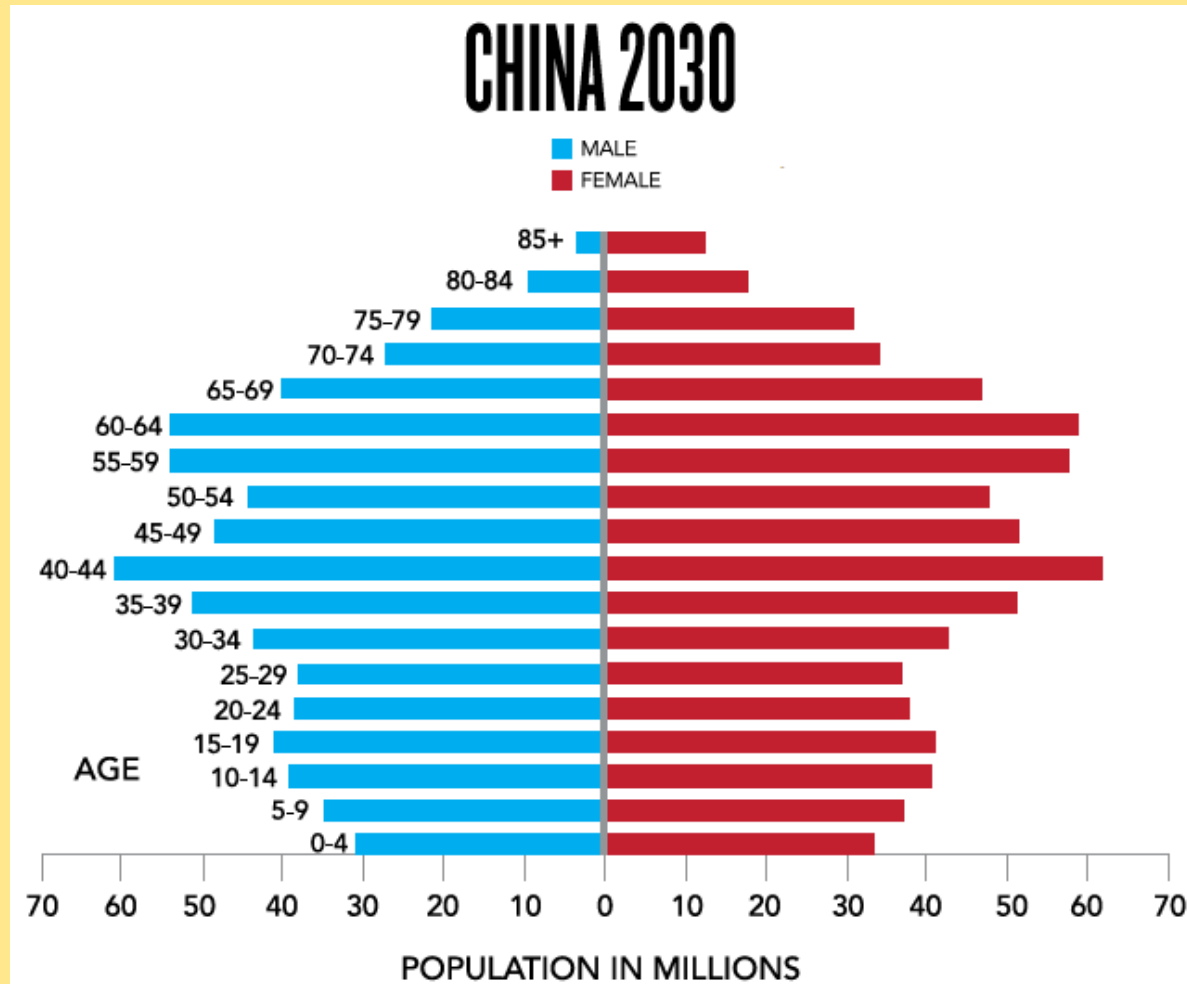


Asian Situation

- Life Expectancy at Birth in China, Europe, USA and India 1950-2100 (both sexes)



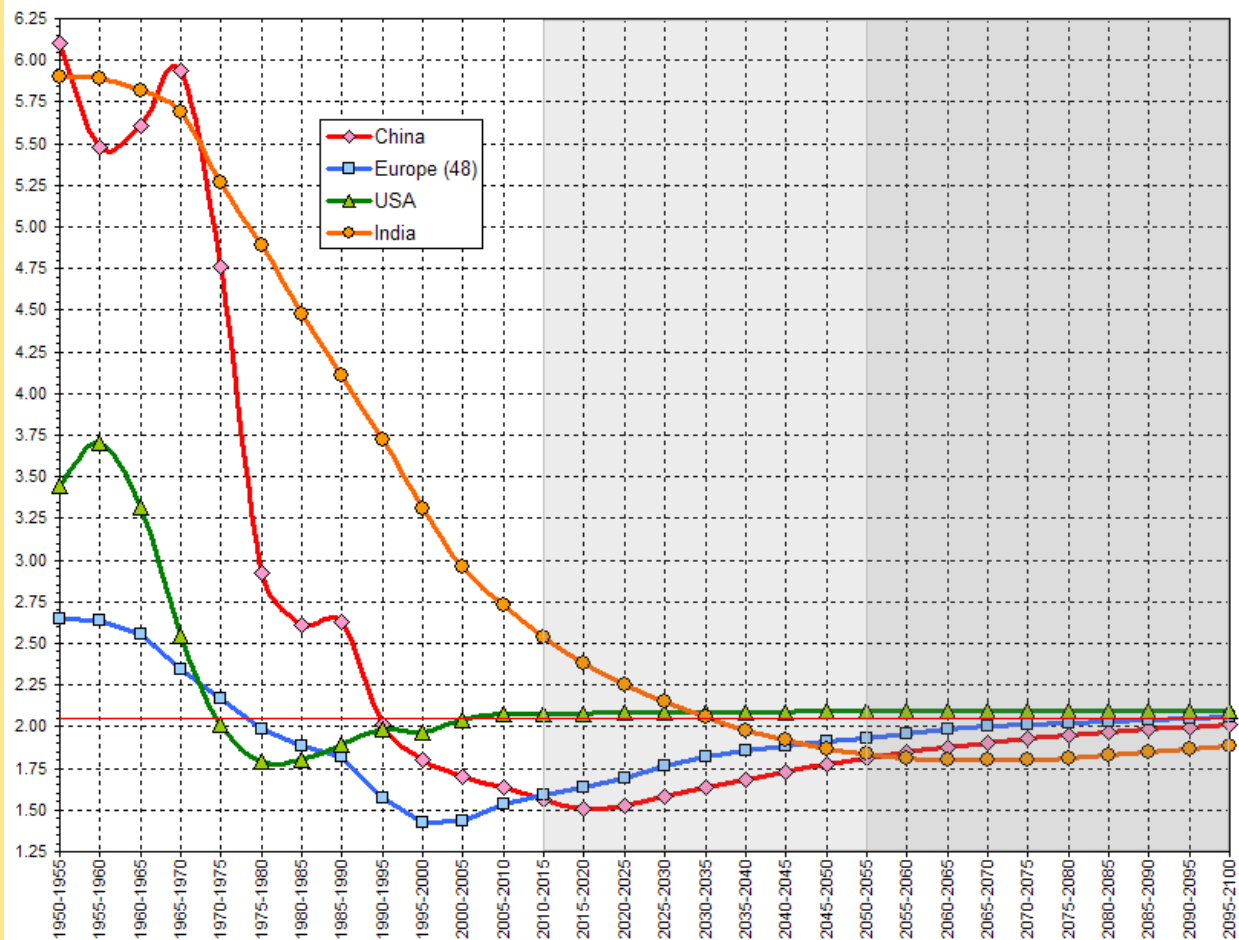
Asian Situation



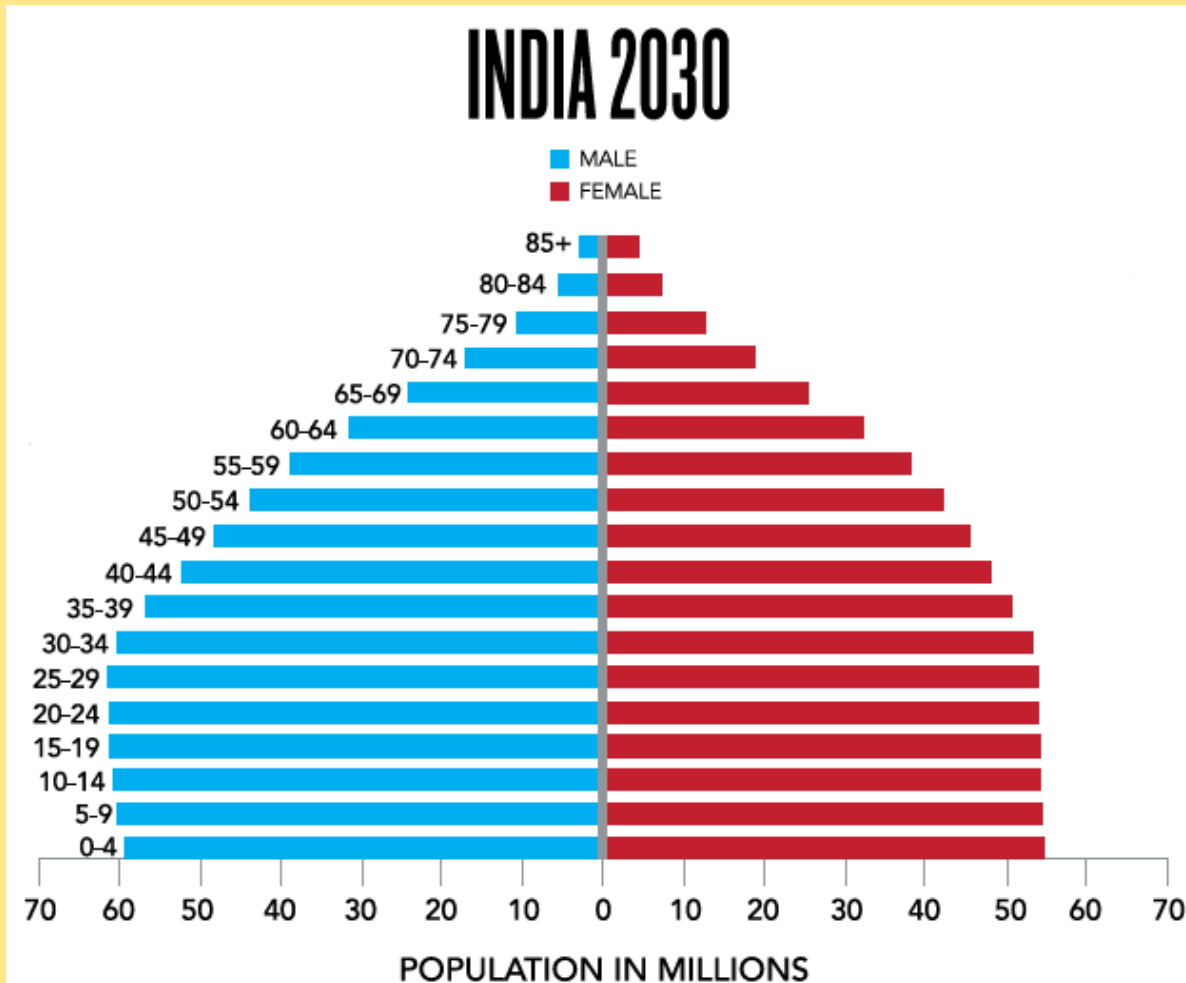
Source: US Census Bureau

Asian Situation

- Total Population and Average Number of Children per Woman in China 1950-2100



Asian Situation



Source: US Census Bureau

Food Outlook

- The great uncertainty is the world's ability to provide for all the additional people.
- Keeping per-capita food production constant in the coming decades will require a second “green revolution”.
- The first, increased global grain yields by about 2% a year from 1950 to 1990.
- Rising temperatures have already begun to depress global corn and wheat production.

Food Outlook

- An analysis in the *Proceeding of the National Academy of Sciences of the United States* warned that due to global warming US corn and soybean crops could decline as much as 80% by the end of the century.
- Part of the first green revolution was a sharp increase in phosphorous rich fertilizers.
- Now phosphorous reserves are being exhausted.

Food Outlook

- *Foreign Policy* magazine calls this “the gravest natural resource shortage you’ve never heard of”.
- Other essential reserves potentially affected are oil, water and arable land.
- Thomas Malthus in his 1798 “Essay on the Principle of Population” was basically correct.
- There is a limit to population growth – what it is, how many people the earth can support – is unknown.
- As we pass the 7 billion mark toward 8, 10 or even 16, sooner or later we will find out.

Economic Impact

Group A Country	Per Capita	Gini	Debt	Debt	HDI	Prosperity	Pension	GDP 2010-50 CAGR		
	ppp GDP 2010 US \$	Index	Rating US	Rating China		Score 2010	Assets /GDP	Population Growth	Real GDP /Capita	Real GDP
Kenya	1,676	42.5	B+	B	0.470	0.418				
Nigeria	2,437	43.7	B+	BB+	0.423	0.381		1.5%	5.0%	6.5%
Ghana	2,725	40.8	B	n r	0.467	0.691				
Pakistan	2,721	30.3	B-	B-	0.490	0.323				
Philippines	3,920	46.1	BB	B+	0.635	1.845				
Egypt	6,417	34.4	BB-	BBB-	0.620	0.777				
Zuid Africa	10,518	57.8	BBB+	A	0.267	1.701	72%	0.3%	3.6%	3.9%
Saudi Arabia	22,607	n a	AA-	n r	0.752	2.222		1.4%	2.7%	4.1%
Venezuela	12,048	44.1	B+	BB+	0.696	1.342				
India	3,408	32.5	BBB-	BBB-	0.519	0.788		0.8%	5.3%	6.1%
Iran	11,883	43.0	n r	n r	0.702	0.598				
Malaysia	14,744	49.2	A-	A+	0.744	2.461				
Mexico	14,406	49.5	BBB	BBB	0.750	6.061		0.5%	3.2%	3.7%
Vietnam	3,143	37.0	BB-	BB-	0.572	2.165		0.7%	6.1%	6.8%
Colombia	9,593	58.0	BBB-	n r	0.689	1.786				
Indonesia	4,347	34.3	BB+	BBB-	0.600	1.495		0.6%	4.1%	4.7%
World	10,922	40.6								
Sources	IMF	UN	S&P	Dagong	UN	Legatum	Watson	PwC	PwC	

Economic Impact

Group B	Per Capita	Gini	Debt	Debt	HDI	Prosperity	Pension	GDP 2010-50 CAGR		
	ppp GDP	Index	Rating	Rating		Score	Assets	Population	Real GDP	Real
	2010 US \$		US	China		2010	/GDP	Growth	/Capita	GDP
Turkey	13,577	43.6	BBB-	BB-	0.679	0.993		0.6%	3.4%	4.7%
Brazil	11,273	57.8	BBB+	A-	0.699	12.987	17%	0.6%	3.3%	4.7%
Israel	29,602	39.2	AA	A-	0.872	7.660				
Argentina	15,901	52.8	B	B	0.775	3.226		0.6%	3.0%	4.7%
Chile	15,040	56.4	A+	AA-	0.783	8.071				
Ireland	39,492	34.3	BBB+	n r	0.895	27.289	49%	0.1%	4.6%	4.7%
China	7,544	44.7	AA-	AAA	0.663	2.674	38%			
USA	46,860	40.8	AA+	A	0.902	27.762	104%	0.6%	1.8%	2.4%
Taiwan	35,604	32.6	AA-	AA-	0.868	15.354				
Australia	39,764	35.2	AAA	AA+	0.937	30.590	103%	0.7%	1.9%	2.6%
South Korea	29,997	31.6	A	AA-	0.811	12.077		-0.3%	2.6%	2.3%
Poland	18,981	34.5	A-	A-	0.795	11.365				
Romania	11,895	31.0	BB+	BB	0.767	1.515				
Russia	15,612	39.9	BBB	A	0.719	1.919		-0.7%	3.2%	2.5%
France	33,910	32.7	AAA	AA-	0.872	18.642	5%	0.2%	2.0%	2.2%
Sources	IMF	UN	S&P	Dagong	UN	Legatum	Watson	PwC	PwC	

Economic Impact

	Per Capita ppp GDP	Gini Index	Debt Rating	Debt Rating	HDI	Prosperity Score	Pension Assets	<u>GDP 2010-50 CAGR</u>			
								2010 US \$	US	China	2010
Group C											
Britain	35,059	36.0	AAA	A+	0.849	24.732	101%	0.3%	2.0%	2.3%	
Hungary	18,841	26.9	BBB-	BBB-	0.805	7.762					
Spain	29,830	34.7	AA-	A	0.863	15.310	13%	0.1%	1.8%	1.9%	
Czech Republic	24,950	25.4	AA-	n r	0.841	13.321					
Denmark	36,443	24.7	AAA	AAA	0.866	32.351					
Canada	39,171	32.6	AAA	AA+	0.888	29.790	73%	0.6%	1.7%	2.3%	
Netherlands	40,973	30.9	AAA	AA+	0.890	28.110	134%				
Sweden	38,204	25.0	AAA	AA+	0.885	29.948					
Belgium	36,274	33.0	AA+	A+	0.867	21.810					
Finland	34,918	26.9	AAA	AAA	0.871	30.862					
Greece	28,496	34.3	CC	CCC	0.855	4.022					
Austria	39,761	29.1	AAA	AA+	0.851	23.638					
Italy	29,480	36.0	A-	A-	0.854	13.072		-0.2%	1.9%	1.7%	
Japan	33,885	24.9	AA-	AA-	0.884	18.657	64%	-0.5%	2.1%	1.6%	
Germany	36,081	28.3	AAA	AA+	0.885	23.321	14%	-0.3%	1.9%	1.6%	
Sources	IMF	UN	S&P	Dagong	UN	Legatum	Watson	PwC	PwC		

Economic Impact

- The rapid growth enjoyed by East Asia in the second half of the last century was at least 25% due to a decline from 6 children per woman in 1950 to less than 2 now.
- India at 2.65 is the notable exception.
- China at 1.54 is surprisingly high – 11% greater than Japan.

Economic Impact

- Nations wanting to enjoy continued robust economic growth and maintain a viable welfare state must maintain, as the USA is trying to do, a fertility rate (2.06) high enough, with immigration, to avoid a shrinking workforce and an exploding aging population.

Economic Impact

- Successful families don't just reproduce themselves but raise a new generation with the requisite human capital to flourish when adults, as citizens, workers and consumers.
- The wealth of a nation depends in no small part on the health of its families.
- Urbanization is a key.

Economic Impact

- Currently more than 50% of the world population lives in towns and cities compared with less than 29% in 1950.
- This means most children are no longer an economic asset to their parents.
- Only an expensive and now an easily avoidable liability.

Economic Impact

- Increasing demand for education discourages fertility and increases longevity.
- In developed societies a college degree is now almost a prerequisite for a living wage.
- For many women the biological clock starts ticking to reduced fertility before education is complete.

Economic Impact

- Aging countries at the high end of group C, in particular Germany, Japan, perhaps Italy and Austria, will have a tendency to adopt policies oriented to exports and external surplus.

Economic Impact

- What conclusion can we draw from demography for company values in the future?
 - Changed concept of Risk Free Rate
 - Slower GDP Growth
 - Low Interest Rates
 - Higher Equity Returns

Risk Free Rate

- The concept of the risk free rate may change.
- A number of developed countries may no longer be investment grade by 2040 according to a 2005 study by the Reserve Bank of Australia.

Risk Free Rate

- Based on current criteria it listed: Australia, Britain, France, Germany, Italy, Japan, South Korea, Spain, Sweden and the USA.
- Exxon Mobile and Microsoft may be the last real AAA credits as that rating requires expectations of continued growth.
- A country needs assurances of growth in population and GDP/capita, thus it is easier for corporations.

Slower GDP Growth

- Growth in real GDP will be slower with two factors establishing the limits:
 - Population gains
 - Ability to increase real GDP per capita
- The latter varies with the starting point, degree of inequality (see Gini Index in tables), and median age.

Slower GDP Growth

- Estimates for a number of countries from PwC are included in the tables.
- They vary from a 2% range for Europe and 1.8% in North America to 6.1% for Vietnam.

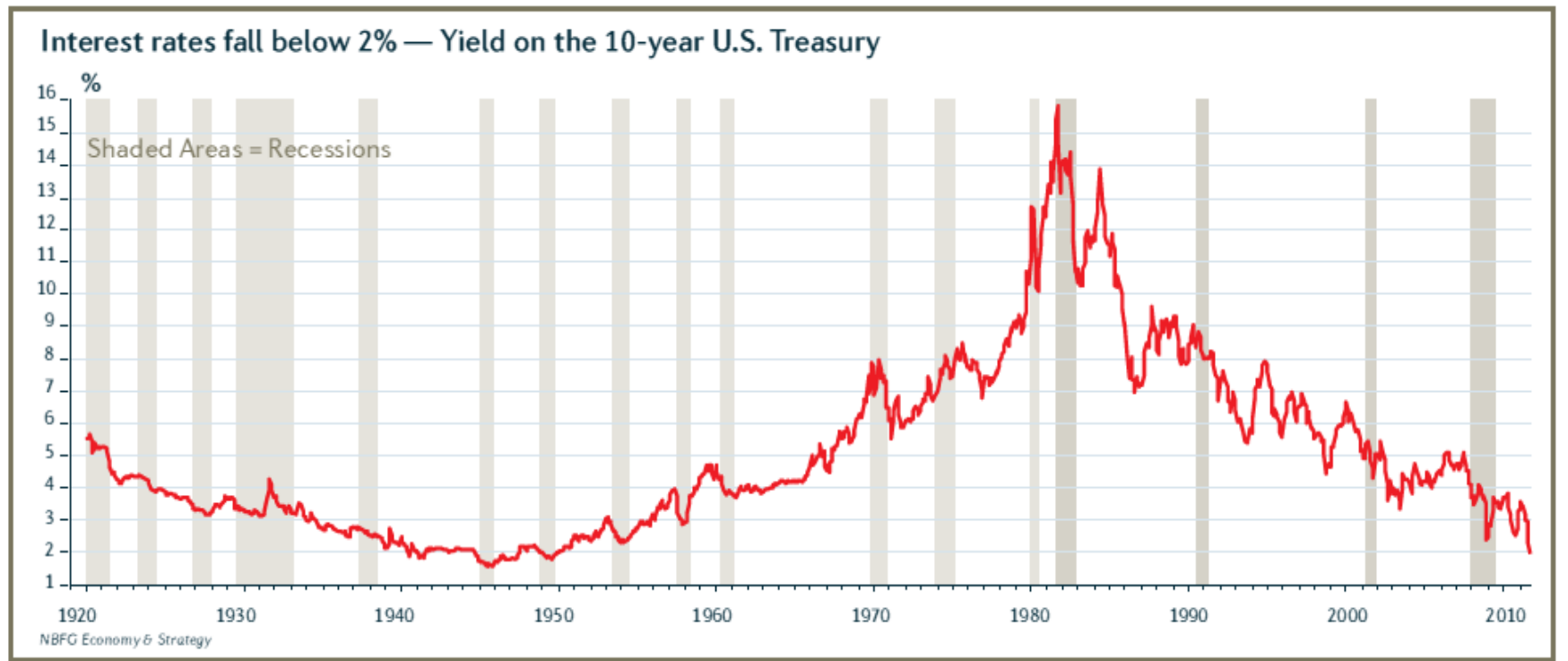
Low Interest Rates

- Since the development of broad equity markets in Europe and North America around 1870, investments other than residences available for individuals have been bonds, shares and real estate.
- The recommended portion invested in shares and real estate has been 100% less the individual's age.

Low Interest Rates

- Thus my portfolio at age 77 should be 23% equity with the balance in fixed income.
- As funds flow to such instruments yields will drop.
- With the median age growing and investors more risk averse as they age, a continuation of this trend is expected.

Low Interest Rates



Low Interest Rates

- On 20 October 2011 yields on US government securities were:

1 month	0.02%		5 years	1.07%
3 months	0.02%		7 years	1.64%
6 months	0.03%		10 years	2.20%
1 year	0.06%		20 years	2.92%
2 years	0.12%		30 years	3.19%
3 years	0.28%		CPI y/y Inflation	3.90%
Source:	Federal Reserve			

Higher Equity Returns

- Over 35 years (1975 to 2009) the total return on the MSCI world equity index was 11.1% a year in US dollars.
- In local currencies those of the five major markets exceeded this (Australia 14.3%, Britain 15.4% and USA 11.4%).
- However the performance of the various decades differed greatly.

Higher Equity Returns

- MSCI Local Currency Returns

Period	Australia	Britain	Europe	Japan	USA	World
	Au \$	Pounds	DM/Euro	Yen	US \$	US \$
1975-1980 - 5 years	25.8%	34.6%	11.2%	13.5%	13.3%	16.0%
1980-1989 - 10 years	17.8%	23.2%	18.3%	22.3%	17.1%	19.9%
1990-1999 - 10 years	10.6%	14.3%	16.1%	-4.0%	19.0%	12.0%
2000-2009 - 10 years	9.1%	0.8%	-2.0%	-4.7%	-1.9%	-0.2%
1975-2009 - 35 years	14.3%	15.4%	10.7%	5.2%	11.4%	11.1%
Source MSCI Barra						

Higher Equity Returns

Sources of 35 Year Stock Market Returns 1975-2009

	Australia	Britain	Europe	Japan	USA	World
	Au \$	Pounds	DM/Euro	Yen	US \$	US \$
Element						
Inflation	5.5%	5.4%	2.7%	1.8%	4.2%	4.2%
Price/Book growth	2.7%	4.2%	2.3%	-0.8%	1.7%	1.5%
Real Book Value Growth	1.2%	0.8%	1.7%	2.9%	1.8%	2.1%
Dividend Income	4.3%	4.1%	3.6%	1.3%	3.2%	2.9%
Residual	<u>0.6%</u>	<u>0.9%</u>	<u>0.4%</u>	<u>0.0%</u>	<u>0.5%</u>	<u>0.4%</u>
Gross Local Index Return	<u>14.3%</u>	<u>15.4%</u>	<u>10.7%</u>	<u>5.2%</u>	<u>11.4%</u>	<u>11.1%</u>
Source MSCI Barra						

Higher Equity Returns

Sources of 35 Year Stock Market Returns 1975-2009

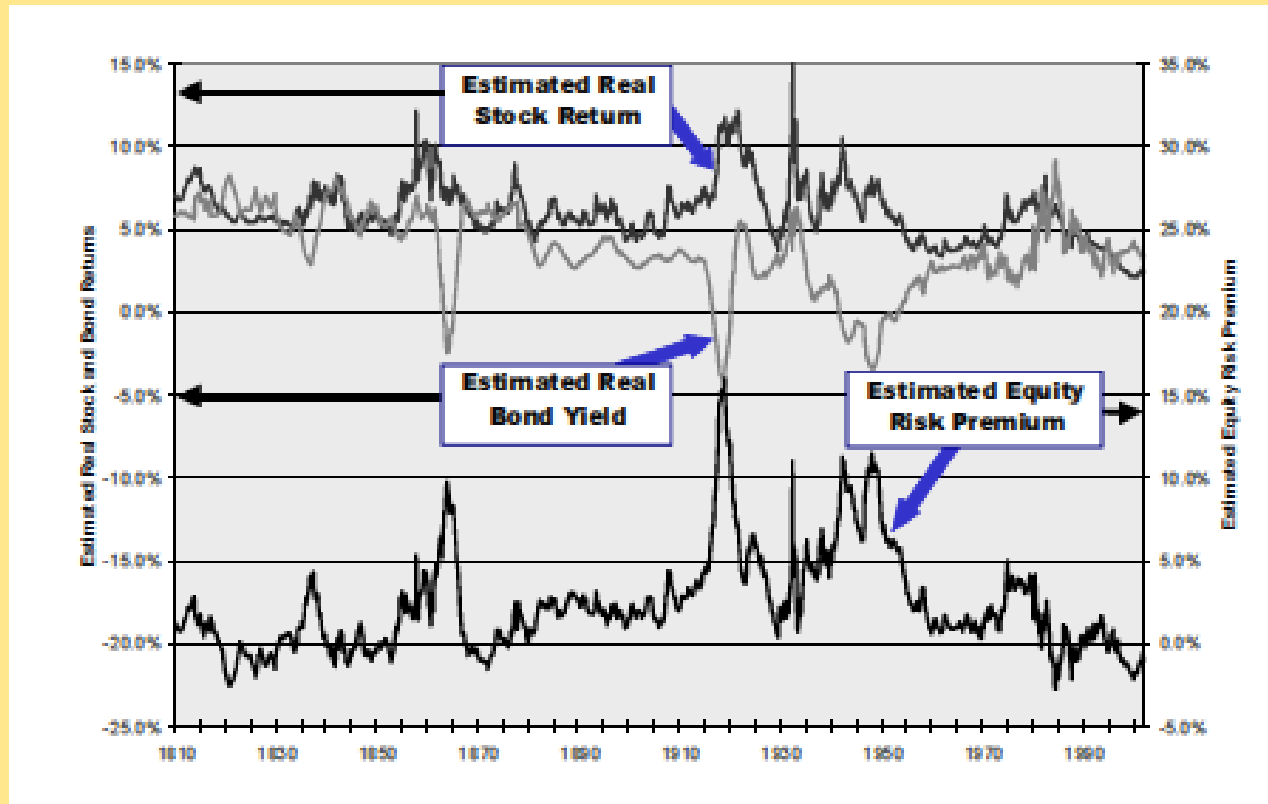
	Australia	Britain	Europe	Japan	USA	World
Volatilities						
Inflation	1.3%	2.3%	1.0%	1.9%	1.3%	1.3%
Price/Book growth	19.6%	20.4%	16.1%	18.9%	15.6%	14.0%
Real Book Value Growth	5.9%	7.3%	5.7%	5.2%	4.5%	5.6%
Dividend Income	0.6%	0.5%	0.6%	0.4%	0.4%	0.4%
Residual	0.8%	1.2%	0.3%	0.4%	0.4%	0.3%
Gross Local Index Return	18.4%	19.9%	16.6%	18.3%	15.4%	14.5%
Source MSCI Barra						

Higher Equity Returns

- With low returns nearly everywhere in the last decade the willingness of investors to continue to buy equities at current rates of return and attendant risks is in doubt.
- I expect decreases in the present Price/Book ratios over the next few years.

Higher Equity Returns

- Estimated Equity Risk Premium 1810-2001



Source: Financial Analysts Journal, 2002, Robert D. Arnott & Peter L. Bernstein

Demographic Change and Business Valuation

THANK
YOU

