

Why Global Demographics Matters? A Latin American Perspective with Insurance Focus

7th CONSEGURO

Sao Paulo, Brazil (15-16 Sep 2015)

Dr. Amlan Roy

Global Demographics & Pensions Research

Credit Suisse Securities (Europe) Limited, London

Phone: +44 20 7888 1501, Email: amlan.roy@credit-suisse.com

DISCLOSURE APPENDIX AT THE BACK OF THIS REPORT CONTAINS IMPORTANT DISCLOSURES AND ANALYST CERTIFICATIONS.

Demographics is about “People as Consumers & Workers”

Peter Drucker (1999): “Demographics is the single most important factor that nobody pays attention to, and when they do pay attention, they miss the point.”

- D** • Discount rates, **Deficits and Debt**
- E** • **Economic growth**, **Emerging markets**
- M** • Mortality risk, Mega-cities
- O** • Organisation structure & behaviour
- G** • Geopolitical Risks
- R** • Retirement risk, Real estate, Ratings
- A** • **Asset prices**, **Asset allocation**
- P** • Pensions
- H** • **Health**, Housing
- I** • **Inflation**, Infrastructure, Individuals
- C** • **Commodities**, **Current account**
- S** • **Sectors**, Society, **Sustainability**

Popular misconceptions

1. Demographics is Long-term
2. Age-related
3. Predictable

It affects

**income statements and
balance sheets**

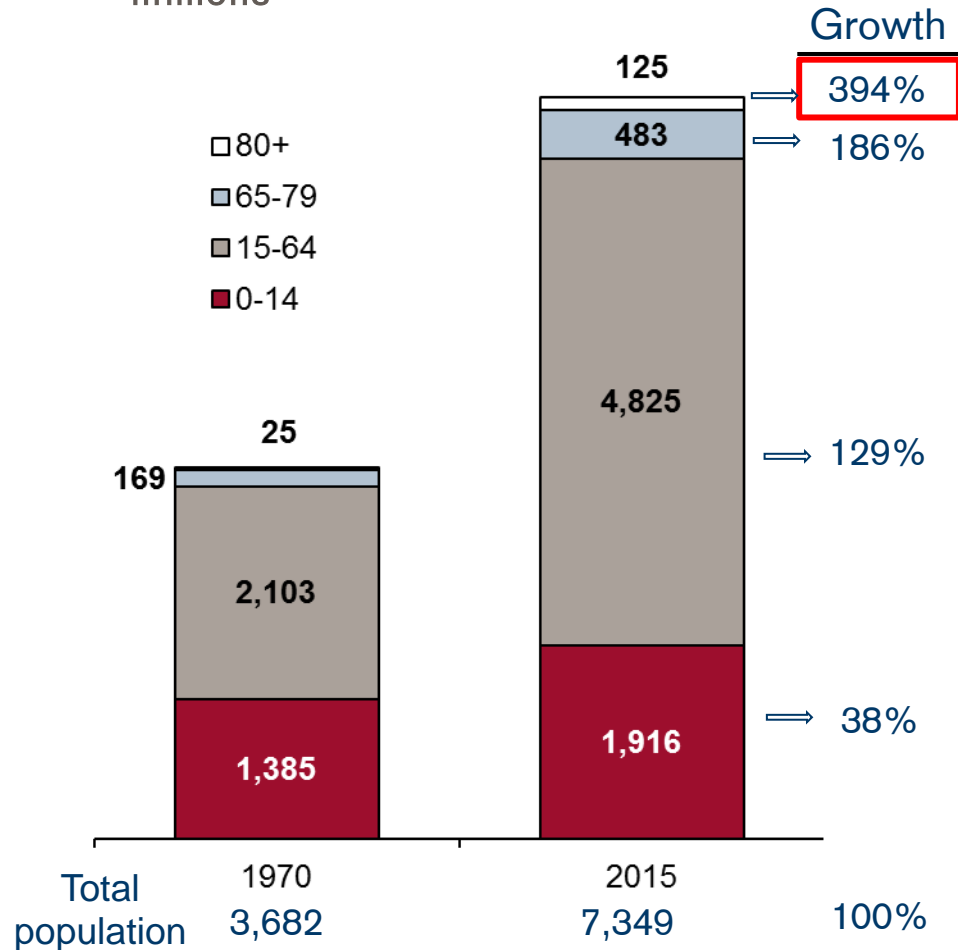
of

**households, corporates
and countries.**

The Growth of the Super-old (80+): a new challenge

World Population Change: 1970 vs. 2015

millions



Share of 60+ population

| | 1970 | 2015 |
|---------|------|------|
| UK | 19% | 23% |
| US | 14% | 21% |
| Germany | 20% | 28% |
| Japan | 11% | 33% |
| France | 18% | 25% |
| Italy | 16% | 29% |

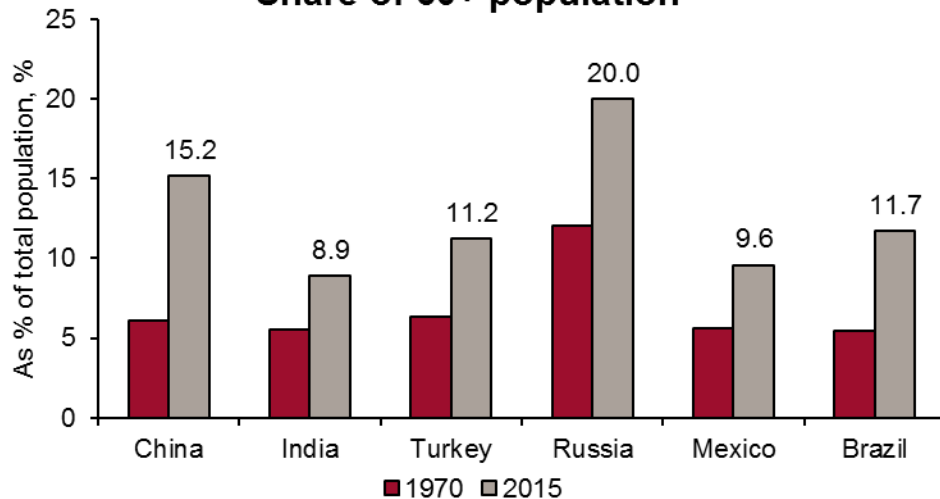
Share of 80+ population

| | 1970 | 2015 |
|---------|------|------|
| UK | 2% | 5% |
| US | 2% | 4% |
| Germany | 2% | 6% |
| Japan | 1% | 8% |
| France | 2% | 6% |
| Italy | 2% | 7% |

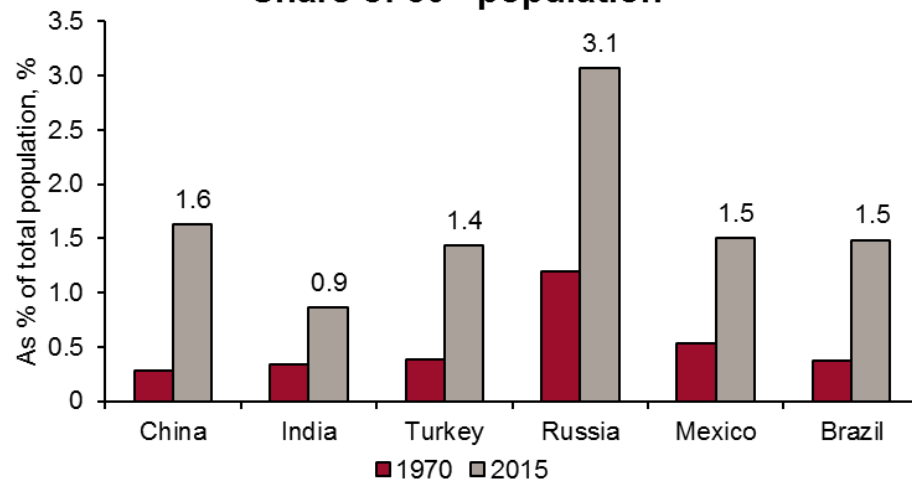
Source: UN, Credit Suisse Demographics Research

Population increase EMG6 (1970-2015)

Share of 60+ population



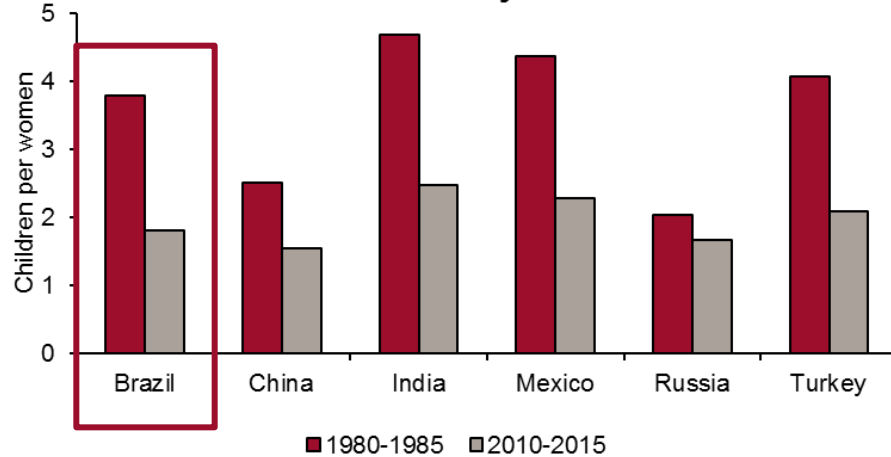
Share of 80+ population



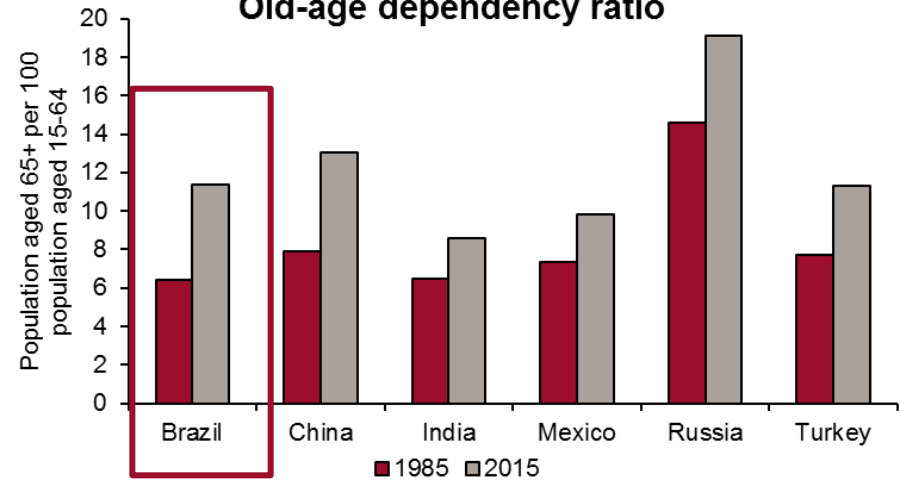
Source: UN, Credit Suisse Demographics Research

Core demographics: EMG6

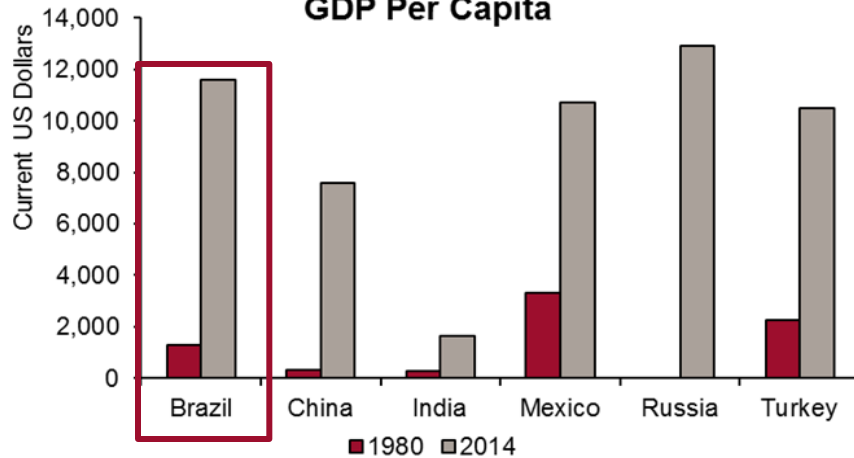
Total fertility rate



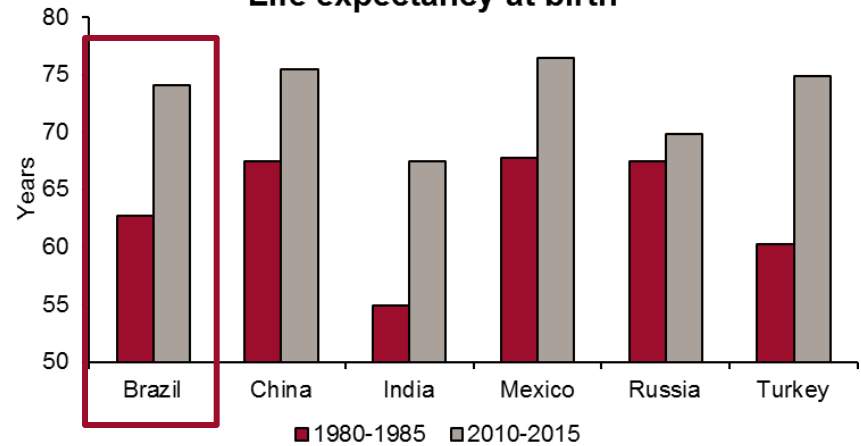
Old-age dependency ratio



GDP Per Capita



Life expectancy at birth



Source: UN, IMF, Credit Suisse Demographics Research

Credit Suisse's Demographic Manifesto (2000)

Policy prescriptions for the mitigation of the demographics time-bomb by aging advanced countries

Abolition of mandatory retirement ages combined with flexible enabled retirement

Increased female labour participation rates with use of technology to facilitate women to better balance work and family

Outsourcing and off-shoring

Selective immigration policies

Retirement ages: effective & official

| | Men | | Women | |
|-------------|------------------------|------------------|------------------------|------------------|
| | Effective 2007-2012 | Official 2012 | Effective 2007-2012 | Official 2012 |
| Mexico | 72.3 | 65 | 68.7 | 65 |
| Korea | 71.1 | 60 | 69.8 | 60 |
| Chile | 69.4 | 65 | 70.4 | 60 |
| Japan | 69.1 | 65 | 66.7 | 65 |
| Portugal | 68.4 | 65 | 66.4 | 65 |
| New Zealand | 66.7 | 65 | 66.3 | 65 |
| Switzerland | 66.1 | 65 | 63.9 | 64 |
| Sweden | 66.1 | 65 | 64.2 | 65 |
| US | 65.0 | 66 | 65.0 | 66 |
| Norway | 64.8 | 67 | 64.3 | 67 |
| Canada | 63.8 | 65 | 62.5 | 65 |
| UK | 63.7 | 65 | 63.2 | 61.2 |
| Netherlands | 63.6 | 65 | 62.3 | 65 |
| Denmark | 63.4 | 65 | 61.9 | 65 |
| Turkey | 62.8 | 60 | 63.6 | 58 |
| Spain | 62.3 | 65 | 63.2 | 65 |
| Germany | 62.1 | 65.1 | 61.6 | 65 |
| Greece | 61.9 | 65 | 60.3 | 63.5 |
| Finland | 61.8 | 65 | 61.6 | 65 |
| Italy | 61.1 | 66 | 60.5 | 62 |
| France | 59.7 | 65 | 60.0 | 65 |

*Grey cells: effective retirement age > official retirement age

Source: UN, OECD, Credit Suisse Demographics Research

How Increasing Longevity Affects Us All?

Individual & families

- Challenge existing asset & time allocation frameworks & intergenerational dynamics

Governments & Societies

- Policy changes in labour, education, health, pensions & social benefits necessary

Asset managers, pension funds, insurance cos., SWFs.

- Re-assess frameworks & assumptions. Develop new solutions for clients & new approaches to understanding longevity

Significant change in thinking and mind-set needed

Source: Credit Suisse Demographics Research, ADBInstitute "Innovative Approaches to Managing Longevity Risk in Asia: Lessons from the West" (2012)

Demographic Drivers of Real GDP Growth

Working-age Population Growth

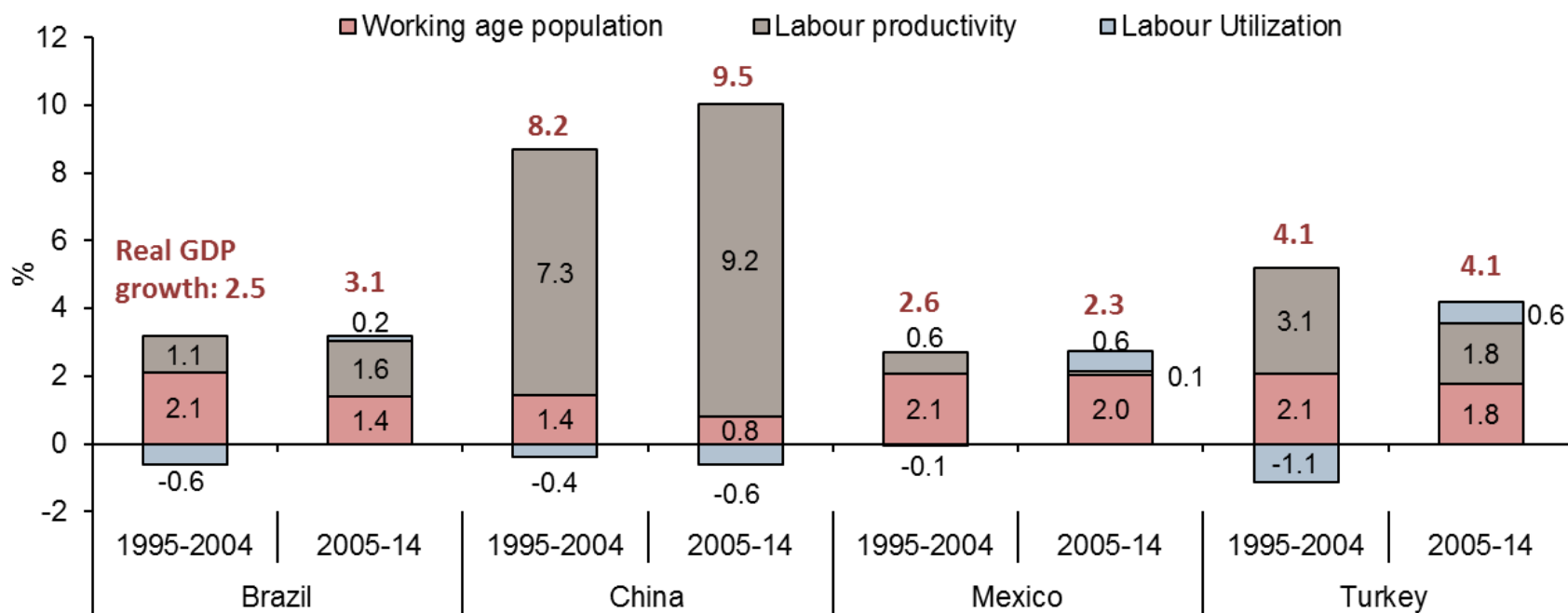
working-age population =
population aged 15-64

Labour Productivity Growth

labour productivity = real GDP/
hours worked

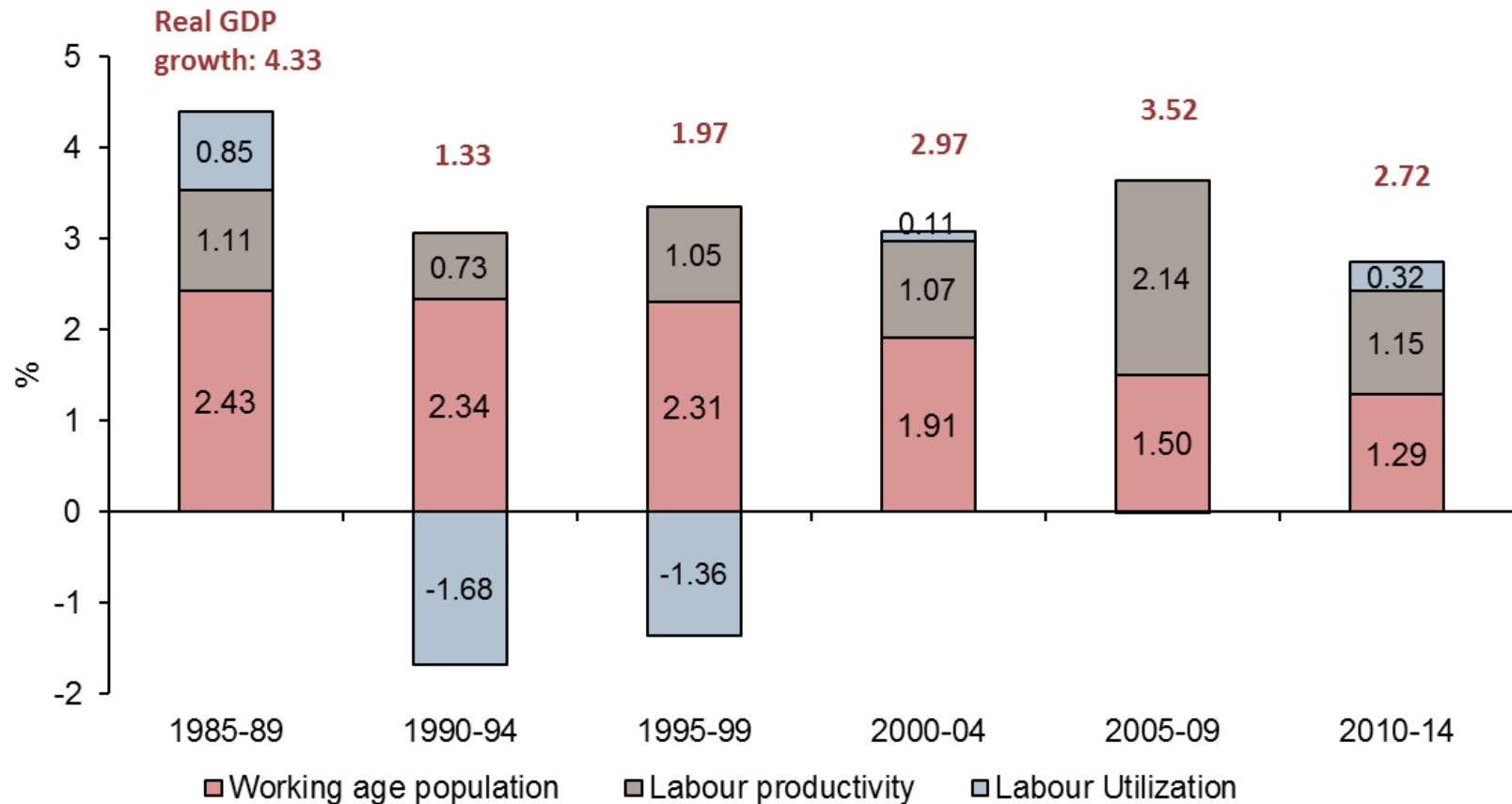
Labour Utilisation Growth

labour utilisation = hours
worked/working-age population



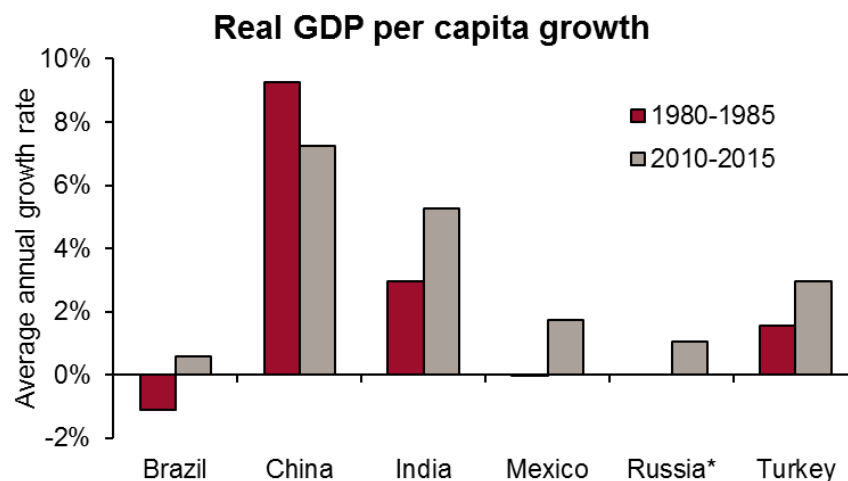
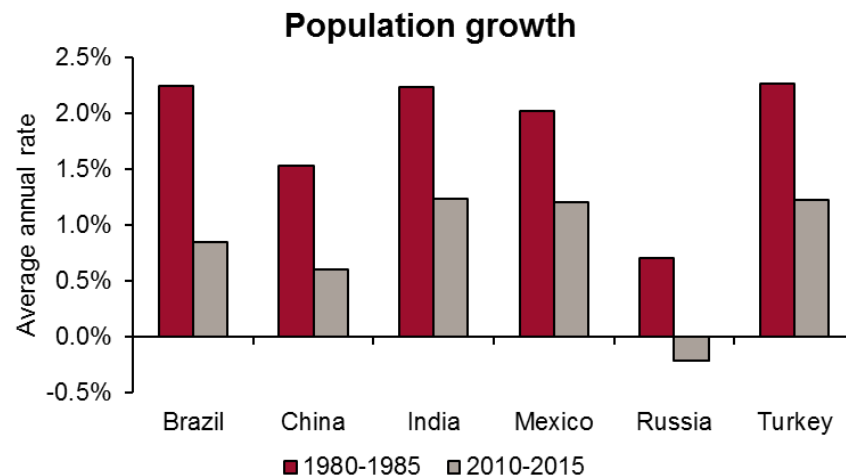
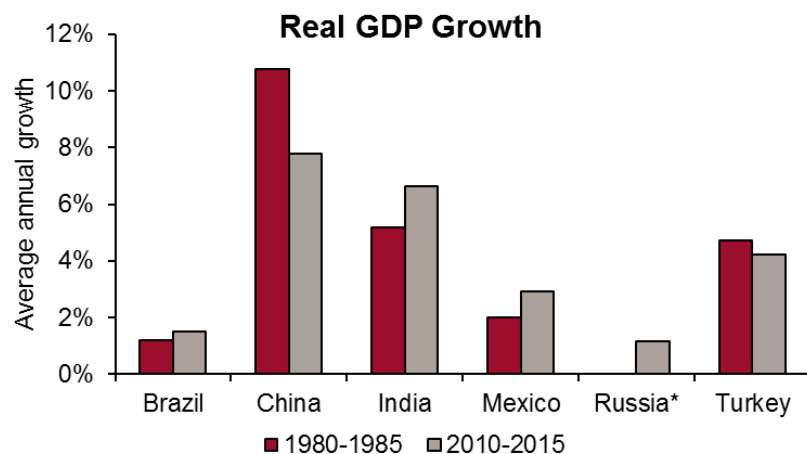
Source: UN, GGDC, Credit Suisse Demographics Research

Demographics drivers of real GDP growth



Source: UN, GGDC, Credit Suisse Demographics Research

GDP, Population and Per Capita GDP Growth

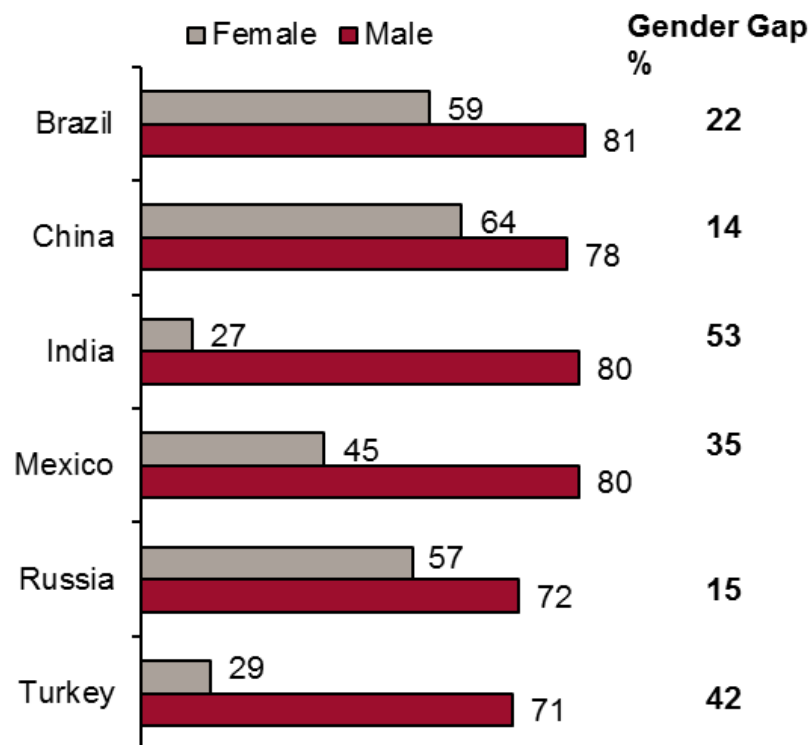


*Data for Russia during 1980-1985 is not available

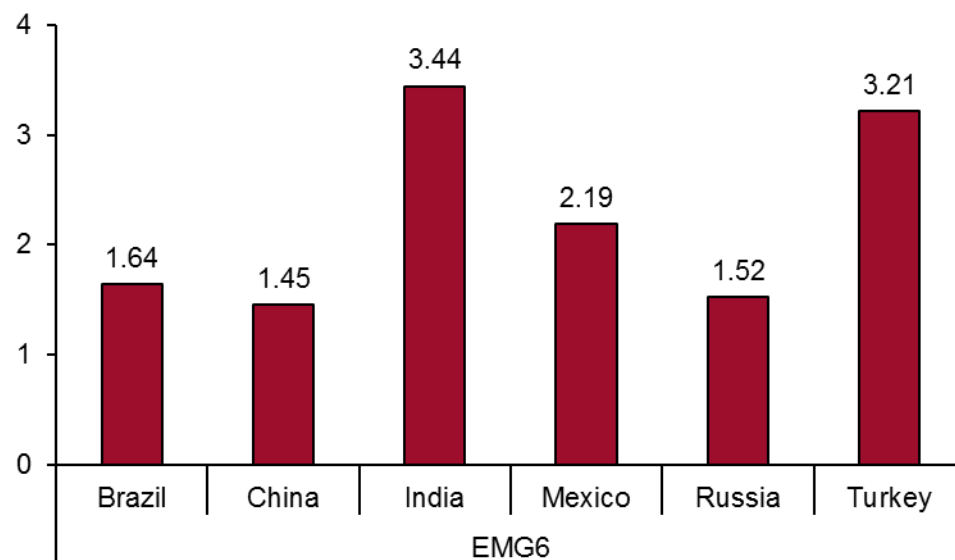
Source: UN, IMF

Gender: Men vs. Women

Labour force participation rate,
in percentage
EMG6, 2013



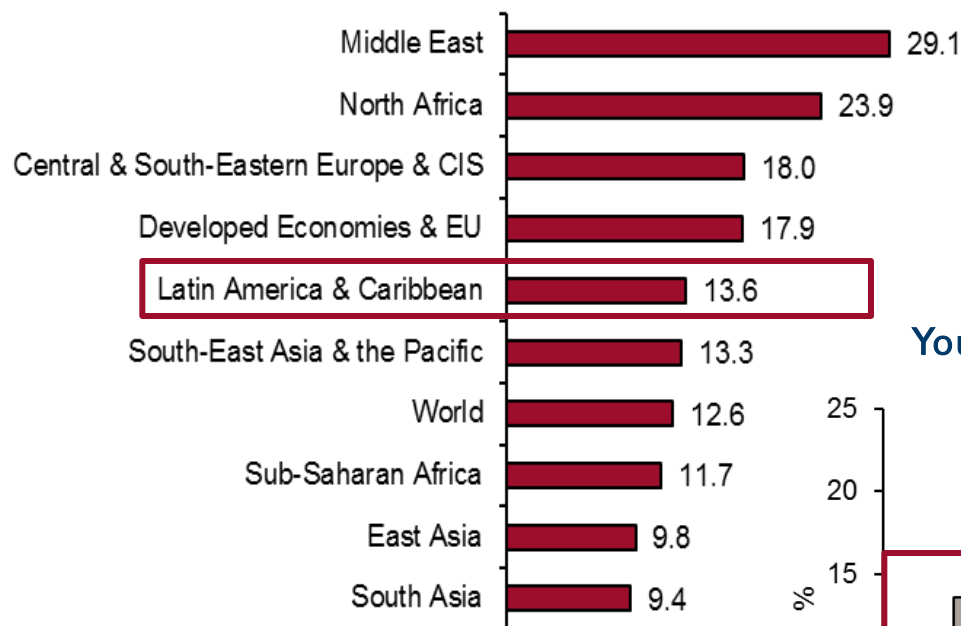
Income multiples of men over women, 2013
Income measure: GNI per capita in US\$,
constant 2011 PPP



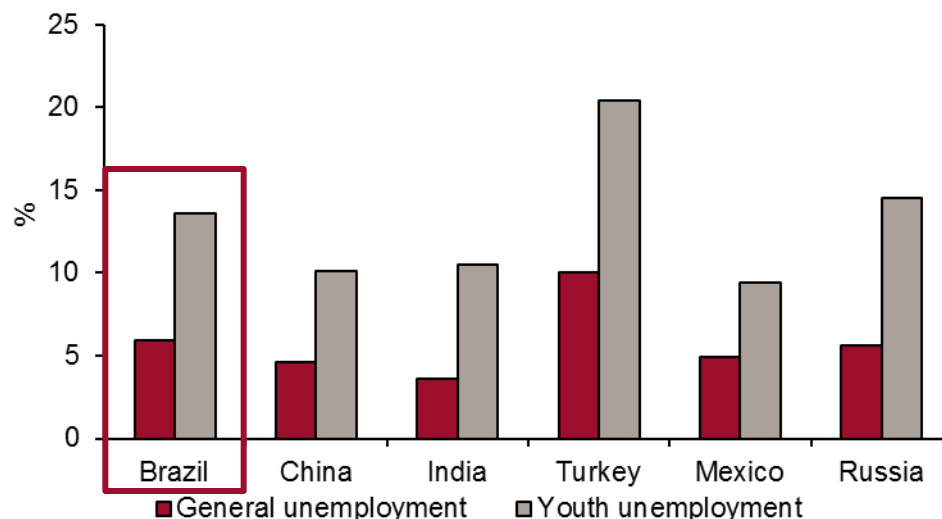
Source: ILO, UNDP, Credit Suisse Demographics Research

Rising Youth Unemployment

Youth unemployment by region, 2013



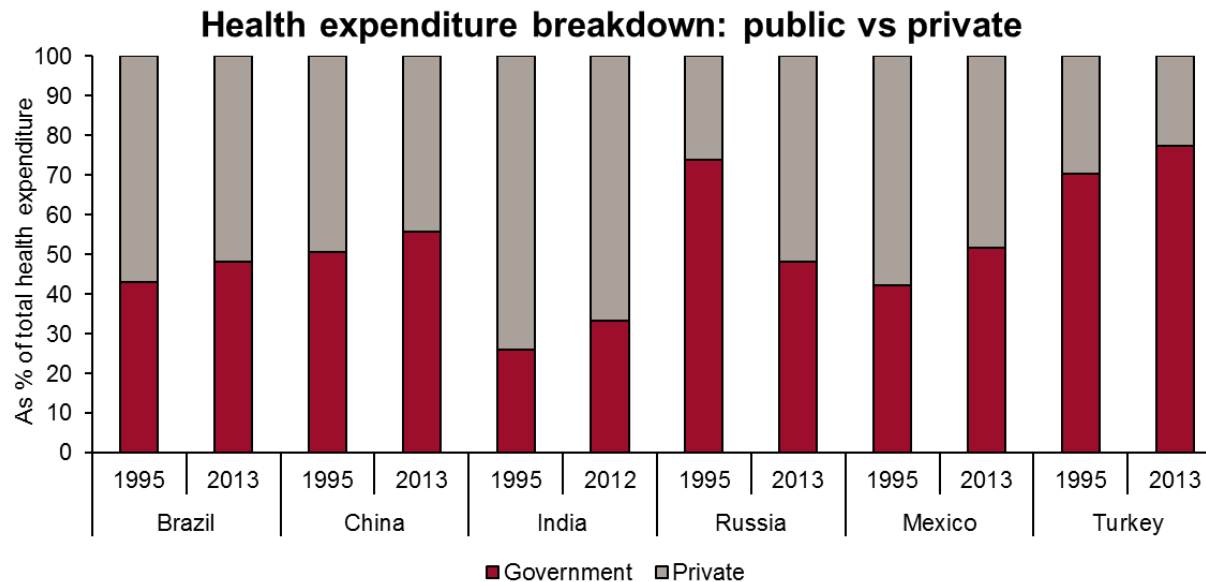
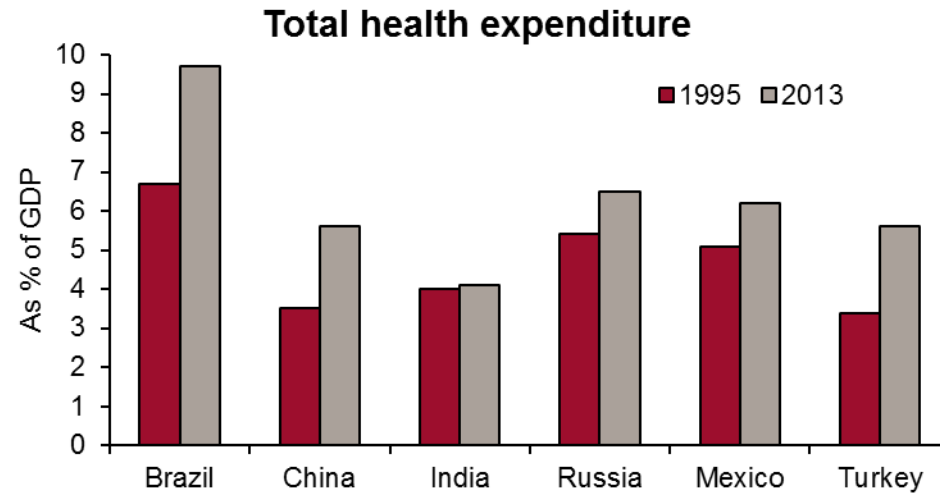
Youth unemployment EMG6, 2013



* Data for youth unemployment rate in China is not available

Source: OECD, ILO, Credit Suisse Demographics Research

Health expenditure

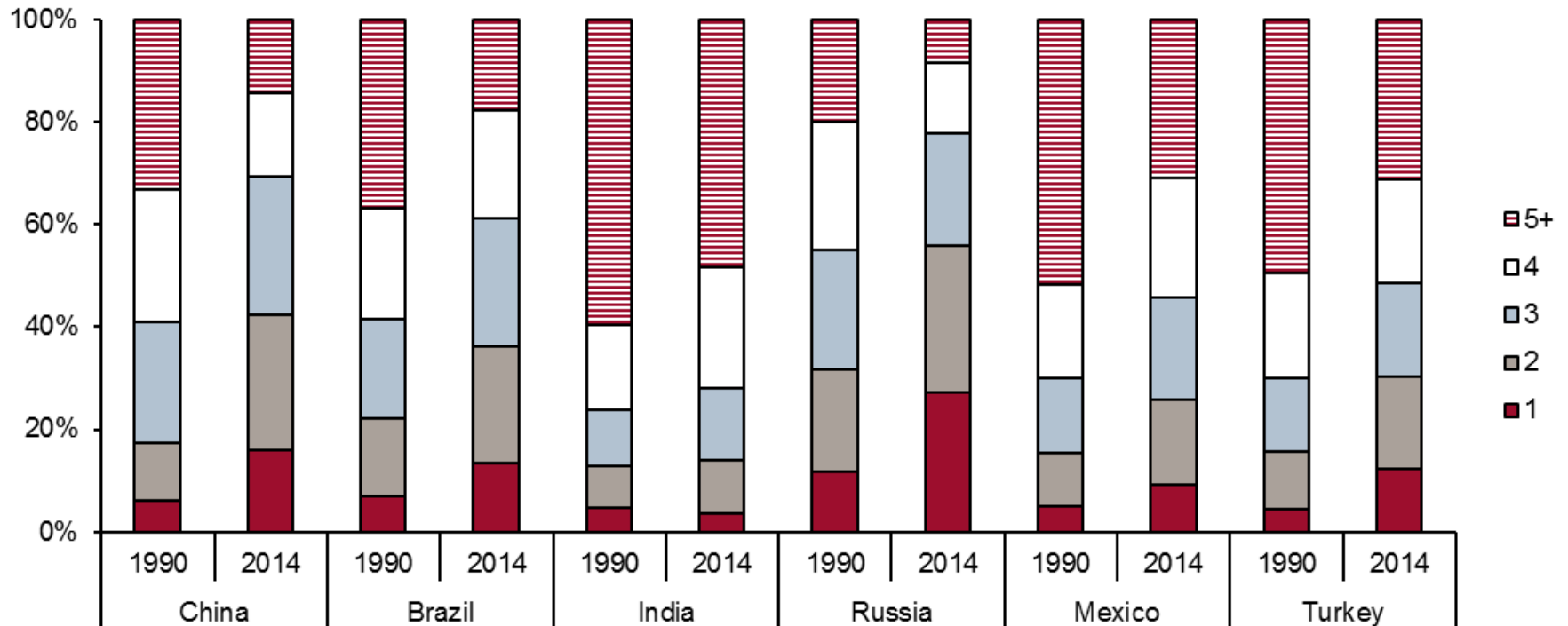


*Data is for 1997 and 2012

Source: WHO, IHME, Credit Suisse Global Demographics Research

Consumers: The Changing Family Structure

Share by household size (number of members in household) in percentage



Source: Euromonitor, Credit Suisse Demographics Research

The “Limits to Life Expectancy” Debate

Professor James Vaupel’s view

- Life expectancy has increased steadily over last 160 years & slowdown is not evident. Life expectancy is “not approaching a limit”.
- Increases are largely attributable to improvements in old-age survival. If trend continues, life expectancy in Europe will exceed 90 by 2050.

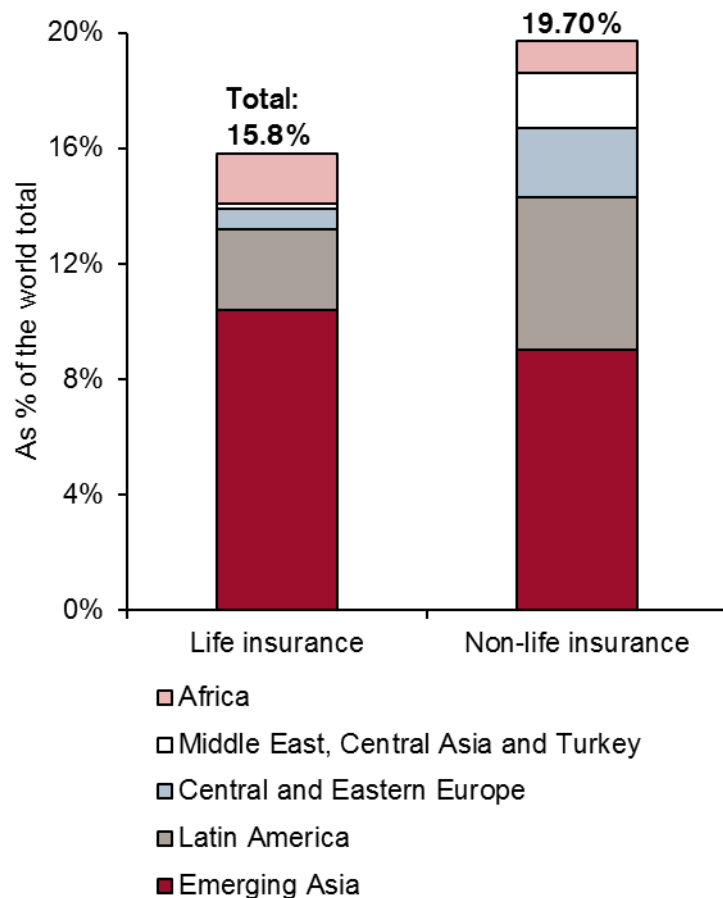
Professor Jay Olshansky’s view

- The prediction by Oeppen & Vaupel that human life expectancy will rise to 100 years in this century is astonishing & lacks scientific evidence.
- Mortality declines in past due to reduction in early age mortality & may not repeat.
- Prediction that pace of biomedical advances will accelerate depends on technologies that slow the ageing process & reduce deaths

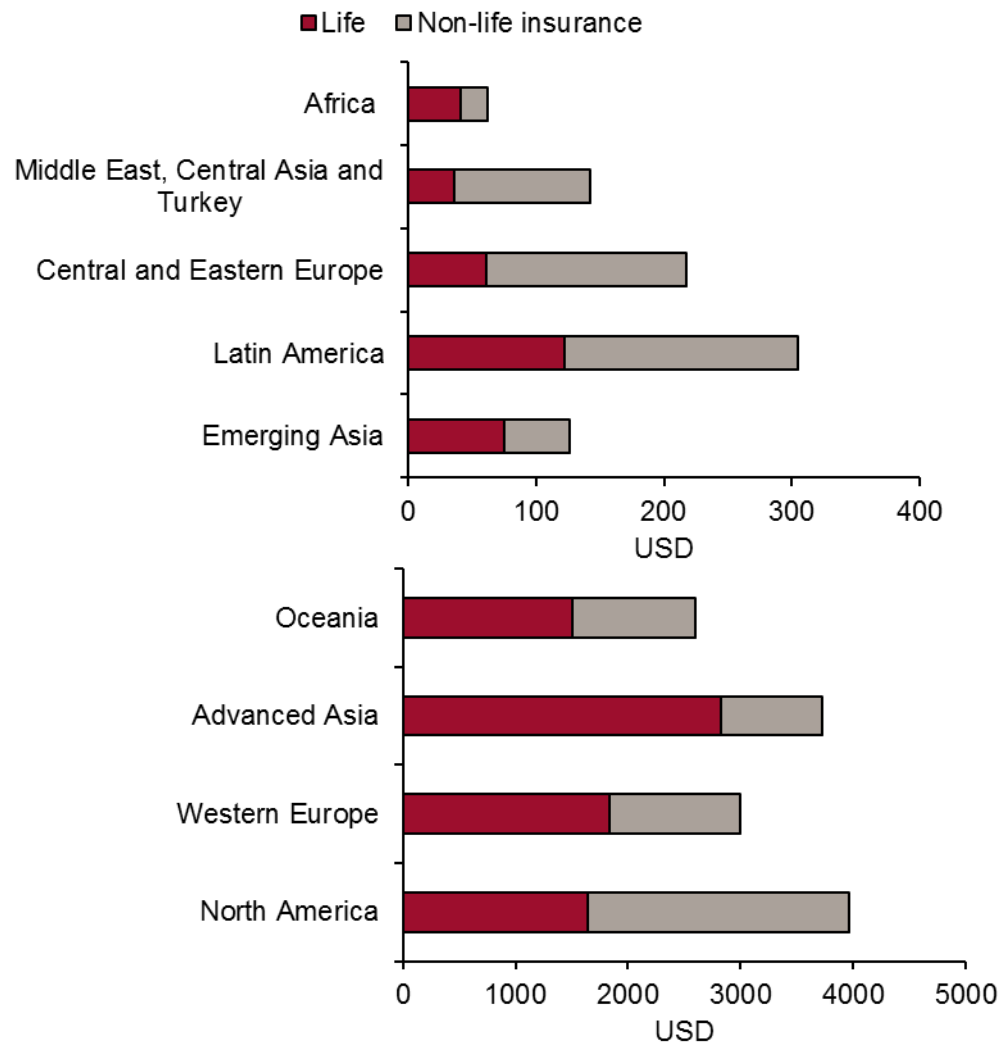
Source: Watson Wyatt, Cass Business School

Global insurance industry

World Market Share, 2014



Premiums per capita, 2014



Source: Swiss Re, Credit Suisse Demographics Research

Global insurance industry

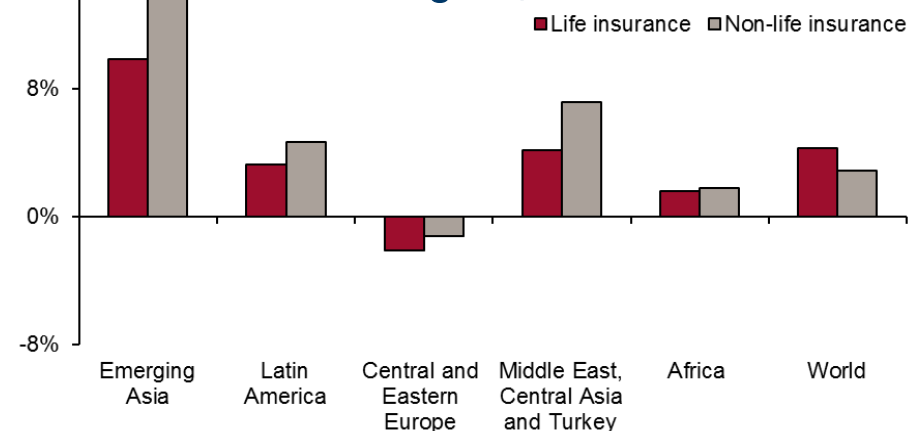
Factor affecting demand for insurance

- Insurance premium
- The level of income & wealth
- Degree of risk aversion
- Probability of risks
- Financial/Insurance market development
 - availability and awareness of insurance products
- Macroeconomic factors:
 - Inflation & social welfare & legal environment
- Social factors:
 - Culture & number of dependents & life expectancy

Global real premium growth rates, 2014

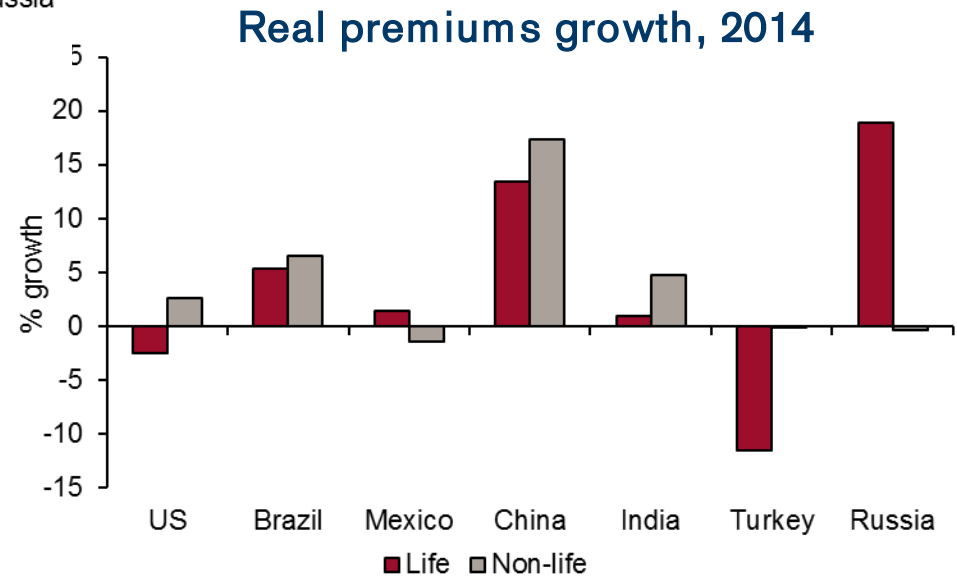
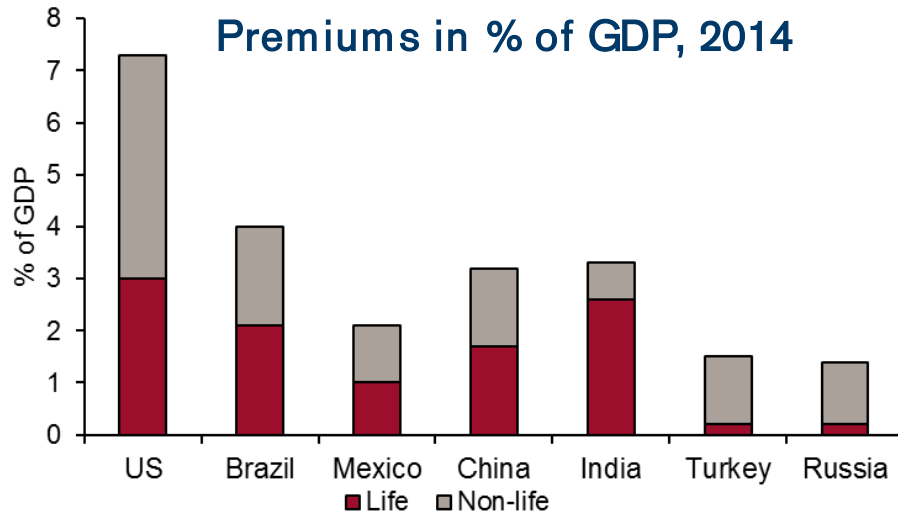
| | Life | Non-life | Total |
|------------------|------|----------|-------|
| Advanced markets | 3.8% | 1.8% | 2.9% |
| Emerging Markets | 6.9% | 8.0% | 7.4% |
| World | 4.3% | 2.9% | 3.7% |

Real premiums growth rates by region, 2014



Source: Swiss Re, Credit Suisse Demographics Research

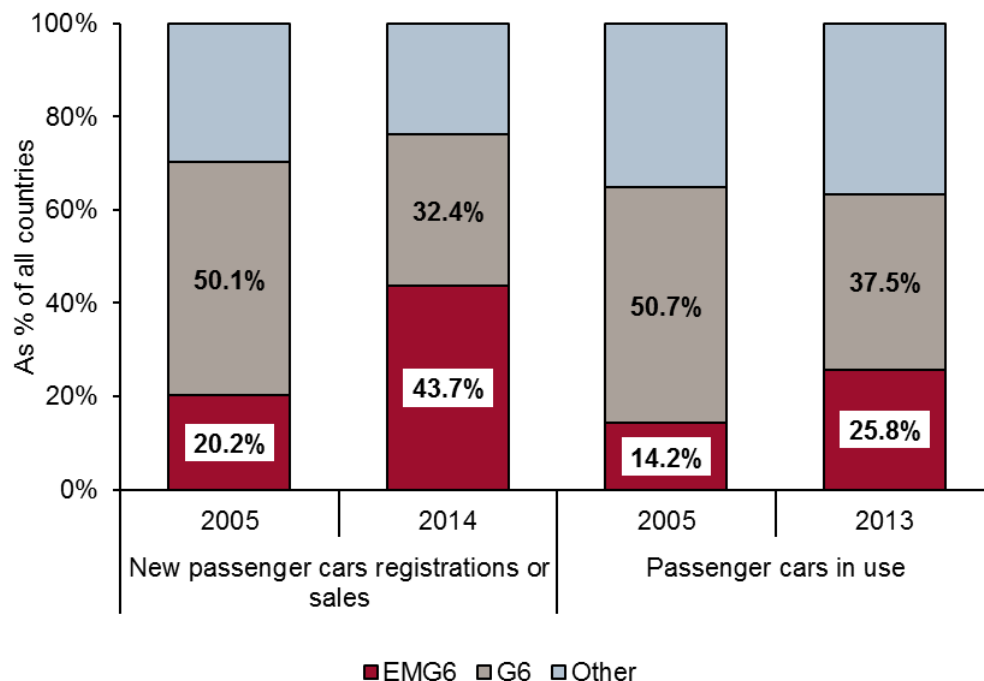
Insurance industry – EMG6



Source: Swiss Re, Credit Suisse Demographics Research

Emerging consumers – opportunities (Non-life insurance)

Passenger cars growth and ownership



International Tourism

| International Tourism – number of departures | | | |
|--|--------|--------|------------|
| In thousands | 2000 | 2013 | % increase |
| Brazil | 3,228 | 8,666 | 168% |
| China | 10,473 | 98,185 | 838% |
| India | 4,416 | 16,626 | 276% |
| Mexico | 11,079 | 15,911 | 44% |
| Russia | 18,371 | 54,069 | 194% |
| Turkey | 5,284 | 7,526 | 42% |

Source: OICA, World Bank, Credit Suisse Demographics Research

Key Sectors Impacted by Demographic Change

INFRASTRUCTURE

- Changing needs for infrastructure in developed world
- Mega-cities growing in the developing world
- Residential, manufacturing, transport, environmental considerations to name a few

NATURAL RESOURCES

- Changing manufacturing processes/locations
- Demands for new products very different from the demand for older products—derived demands too
- Increased demands for hard and soft commodities. Water/Drinking water supplies

LEISURE & LUXURY

- Work-Leisure trade-off changes for old as well as young.
- Wealth of retirees, ease of travel, ease of shopping
- Lower costs of communication, travel and insurance
- Information and Technology advances

EMERGING MARKETS

- Growing importance due to economic power
- Global labour force
- Global manufacturing locations
- Outsourcing
- Demand side

PHARMA & BIOTECH

- Longer post-retirement life of growing number of retirees.
- Desire of retirees to enjoy a good quality of life
- New pharma and biotech needed for mental health and new illness
- Genomics, pharma and biotech research need to find new cost-effective drugs and treatments

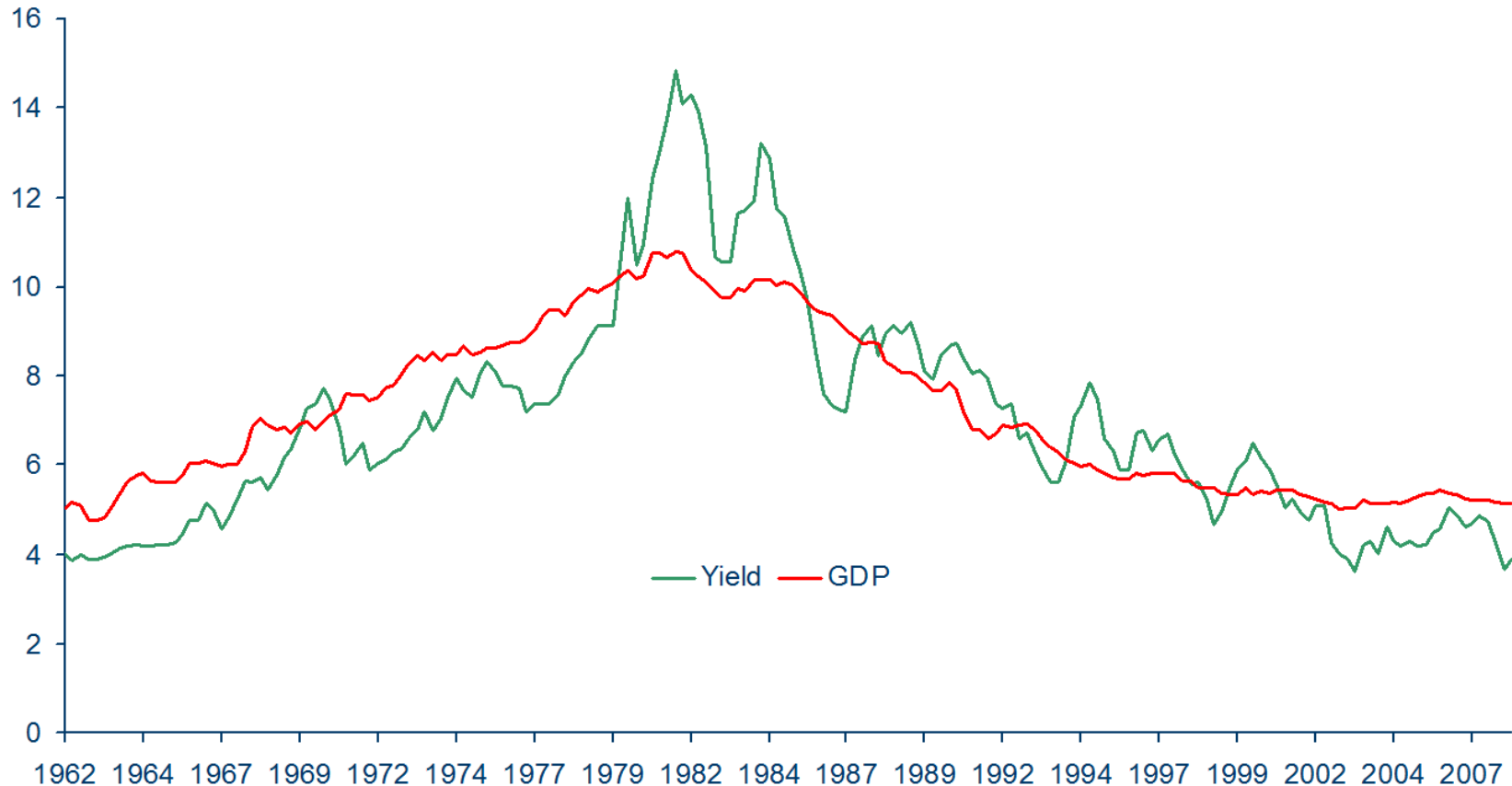
FINANCIAL SERVICES

- Active Asset allocation, New product development and Risk Management will be cornerstones
- DB to DC shifts
- Newer ways of delivering pensions and insurance
- Technology

“The reason these sectors are positively affected is not merely due to the fact that the number of people in the elderly population has increased, but also that the composition, family structure and behavioural characteristics of the elderly, as well as the young population, is vastly different compared to the past”

Long Bond Yield and Nominal GDP (smoothed) Growth

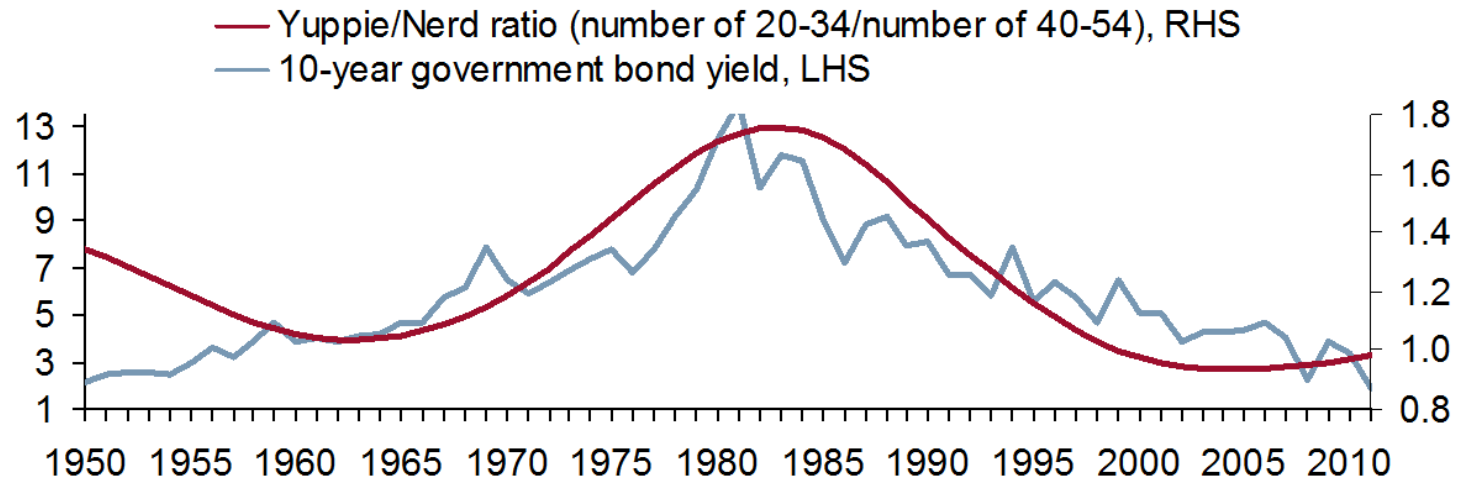
Interest rate; growth
In percentage



Source: US Department of Commerce, DataStream, Credit Suisse Demographics Research

Demographics & Interest Rates

Yuppie/Nerd ratio & nominal 10-year government bond yield: US



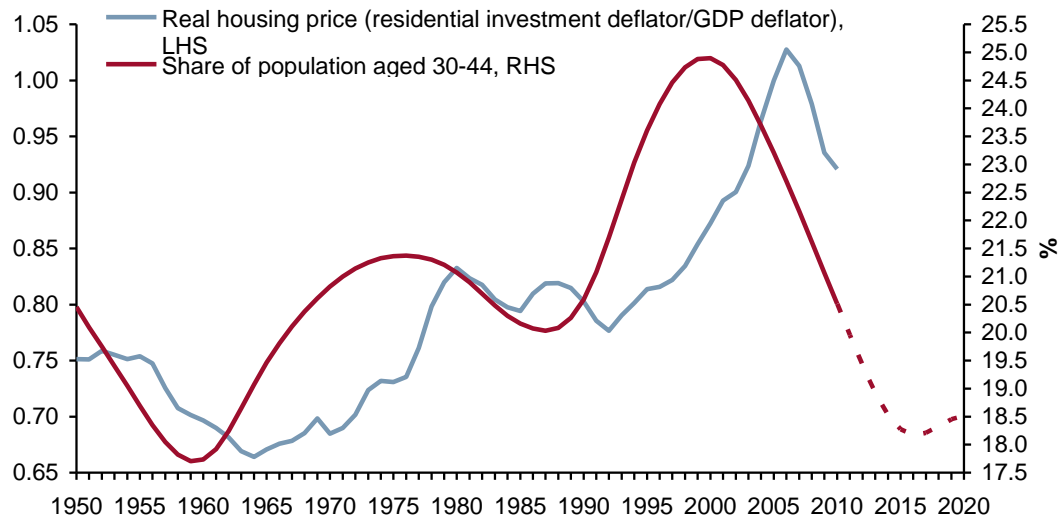
Correlation between Yuppie/Nerd ratio & nominal 10-year government bond yield

| | US | UK | Japan | France | Germany |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| Time period | 1950-2011 | 1958-2011 | 1972-2011 | 1950-2011 | 1950-2011 |
| Correlation | 0.8 | 0.81 | 0.57 | 0.83 | 0.69 |

Source: Global Financial Data, UN, Credit Suisse Demographics Research

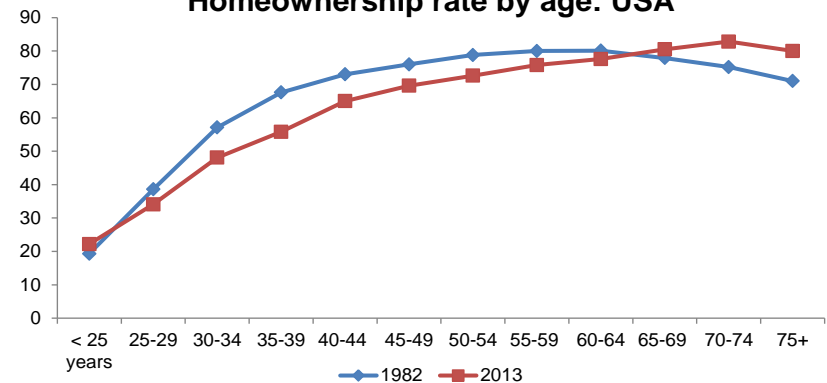
Housing and Share of Population Aged 30-44, US

Real housing price & share of population aged 30-44, US



Real housing price is the residential investment deflator divided by the GDP deflator

Homeownership rate by age: USA



Source: Bureau of Economic Analysis, US Census Bureau UN, Credit Suisse

Beyond GDP & GDP per capita: Qualitative Indicators

| Human Development Index | | | | Global Gender Gap Index 2014 | | | Corruption Perception Index | | | Democracy Index 2014 | | |
|-------------------------|--------------|--------|------|------------------------------|------|-------|-----------------------------|------|-------|-----------------------|------|-------|
| Rank | Country | Values | | | Rank | Score | 2014 | Rank | Score | | Rank | Score |
| | | 1990 | 2013 | | | | | | | | | |
| 1 | Norway | 0.84 | 0.94 | Finland | 2 | 0.85 | Denmark | 1 | 92 | Full Democracies | | |
| 3 | Switzerland | 0.83 | 0.92 | Norway | 3 | 0.84 | Sweden | 4 | 87 | Norway | 1 | 9.93 |
| 4 | Netherlands | 0.83 | 0.92 | Sweden | 4 | 0.82 | Norway | 5 | 86 | Sweden | 2 | 9.73 |
| 5 | US | 0.86 | 0.91 | Denmark | 5 | 0.80 | Switzerland | 5 | 86 | Iceland | 3 | 9.58 |
| 6 | Germany | 0.78 | 0.91 | Switzerland | 11 | 0.78 | Singapore | 7 | 84 | New Zealand | 4 | 9.26 |
| 9 | Singapore | 0.74 | 0.90 | Germany | 12 | 0.78 | Netherlands | 8 | 83 | Germany | 13 | 8.64 |
| 10 | Denmark | 0.81 | 0.90 | Netherlands | 14 | 0.77 | Germany | 12 | 79 | UK | 16 | 8.31 |
| 12 | Sweden | 0.81 | 0.90 | France | 16 | 0.76 | UK | 14 | 78 | US | 19 | 8.11 |
| 14 | UK | 0.78 | 0.89 | South Africa | 18 | 0.75 | Japan | 15 | 76 | Japan | 20 | 8.08 |
| 20 | France | 0.78 | 0.88 | US | 20 | 0.75 | US | 17 | 74 | France | 23 | 8.04 |
| 24 | Finland | 0.80 | 0.88 | Australia | 24 | 0.74 | France | 26 | 69 | Flawed democracies | | |
| 26 | Italy | 0.77 | 0.87 | UK | 26 | 0.74 | Spain | 37 | 60 | India | 27 | 7.92 |
| 27 | Spain | 0.76 | 0.87 | Singapore | 59 | 0.70 | Turkey | 64 | 45 | Italy | 29 | 7.85 |
| 29 | Greece | 0.75 | 0.85 | Italy | 69 | 0.70 | South Africa | 67 | 44 | South Africa | 30 | 7.82 |
| 57 | Russia | 0.73 | 0.78 | Brazil | 71 | 0.69 | Brazil | 69 | 43 | Brazil | 44 | 7.38 |
| 69 | Turkey | 0.57 | 0.76 | Russia | 75 | 0.69 | Greece | 69 | 43 | Indonesia | 49 | 6.95 |
| 71 | Mexico | 0.65 | 0.76 | Mexico | 80 | 0.69 | Italy | 69 | 43 | Mexico | 57 | 6.68 |
| 79 | Brazil | 0.61 | 0.74 | China | 87 | 0.68 | India | 85 | 38 | Hong Kong | 66 | 6.46 |
| 91 | China | 0.50 | 0.72 | Greece | 91 | 0.68 | Thailand | 85 | 38 | Hybrid regimes | | |
| 108 | Indonesia | 0.53 | 0.68 | Indonesia | 97 | 0.67 | China | 100 | 36 | Turkey | 98 | 5.12 |
| 118 | South Africa | 0.62 | 0.66 | Japan | 104 | 0.66 | Mexico | 103 | 35 | Iraq | 111 | 4.23 |
| 135 | India | 0.43 | 0.59 | India | 114 | 0.65 | Indonesia | 107 | 34 | Authoritarian regimes | | |
| | | | | Turkey | 125 | 0.62 | Russia | 136 | 27 | Russia | 132 | 3.39 |
| | | | | | | | | | | China | 144 | 3 |

Source: Economist Intelligence Unit, UNDP, World Economic Forum, Transparency International

Pension Fund Asset Allocation: Largest 7 Pension markets

| Pension Fund Asset Allocation (2001 vs. 2014) | | | | | | | | |
|---|----------|-------|------|-------|----------|-------|------|-------|
| | 2001 | | | | 2014 | | | |
| | Equities | Bonds | Cash | Other | Equities | Bonds | Cash | Other |
| Australia | 62% | 19% | 5% | 14% | 51% | 15% | 8% | 26% |
| Canada | 62% | 26% | 2% | 10% | 41% | 35% | 2% | 22% |
| Japan | 52% | 46% | 0% | 2% | 33% | 57% | 3% | 7% |
| Netherlands | 44% | 44% | 11% | 1% | 30% | 55% | 0% | 15% |
| Switzerland | 36% | 35% | 20% | 9% | 29% | 36% | 7% | 28% |
| UK | 67% | 18% | 5% | 10% | 44% | 37% | 3% | 16% |
| US | 65% | 28% | 2% | 5% | 44% | 25% | 2% | 29% |

| DB-DC Asset Split (2001-2014) | | | | |
|-------------------------------|------|------|------|-----|
| | 2001 | | 2014 | |
| | DC | DB | DC | DB |
| Australia | 83% | 17% | 85% | 15% |
| Canada | 3% | 97% | 4% | 96% |
| Japan | 0% | 100% | 3% | 97% |
| Netherlands | 2% | 98% | 5% | 95% |
| Switzerland* | 49% | 51% | | |
| UK | 8% | 92% | 29% | 71% |
| US | 52% | 48% | 58% | 42% |

*DC assets in Switzerland are cash balance plans and are excluded from the analysis in 2014.

| Total Pension Assets - 2014 | | |
|-----------------------------|-------------------------------|----------|
| | Total Assets (USD billion) | % of GDP |
| Australia | 1,675 | 113% |
| Canada | 1,526 | 85% |
| Japan | 2,862 | 60% |
| Netherlands | 1,457 | 166% |
| Switzerland | 823 | 121% |
| UK | 3,309 | 116% |
| US | 22,117 | 127% |
| Total global pension assets | 36,119 | 84% |

Source: Towers Watson (2015)

Conclusions

- Global demographics **affect fundamentals** that influence GDP growth and asset prices
- Financial services industry faces new opportunities and challenges in terms of **new product development, risk management and asset allocation**
- **EM Challenges:** employment, education, infrastructure key to generating productivity
- **Distributions matter** (gender, age, income, technology access, education, employment).
People behaviour matters.
- **Brazil's growth** challenges require labour market reforms to increase working age population growth and labour utilization growth with increased skills/technology use.
- **Fiscal sustainability** challenges require means-tested benefits on pensions and health promises that are income, wealth and human capital dependent.
- **Income and wealth distributions** need balance as key to generate stability and revenues

Credit Suisse Demographics Research

- World Population Changes & UN Forecasts 2015
- Demographics of Australia and New Zealand (2015)
- UK's demographic dynamics and their implications (2015)
- Demographic Focus – Changing Global Consumers (2015)
- EU's evolving demographics & pensions need attention (2015)
- China's structural priorities: A progress report in the context of its 12th Five-year plan (2015)
- Joint report with Redington & other partners, "The age of responsibility" (2015)
- Indonesia: Are good core demographics adequate for growth and investments? (2015)
- Why has recent macro-policy not been that effective? A demographic view (2015)
- Thailand's Aging Society: Economic & Equities Implications (2015)
- Ebola: Current situation, history & lessons (2014)
- A Demographic View: Do not write off US GDP growth (2014)
- World Cup 2014 Countries: Spotlighting Demographics (2014)
- Exploring how demographics affects sovereign spreads (2014)
- Americas' Demographics & their effects (2014)
- A comparative demographic analysis of EU28 (2013)
- China: Abolishing the one child policy (2013)
- Can the "Asian Tigers" roar back? Demographic insights (2013)
- Demographics, Debt & Sovereign Ratings (2013)
- Demographic insights into policy: Asia's Big 3 (China, India & Japan) (2013)
- Chinese Demographics – Labour mobility, migration, urbanization & reforms (2013)
- Global Demographics: Spotlight on UN revisions, Conditional longevity and Economic growth (2013)
- Demographic dynamics over business cycles and crises: What matters is how different (2013)
- Rising youth unemployment: A threat to growth & stability (2013)
- European Demographics & Fiscal Sustainability (2013)
- ASEAN's Positive Demographics Underpins Stable Growth (2012)
- Africa's Demographic Promise: Opportunities & Challenges (2012)
- Assessing Asia's Demographic Promise (2012)
- ADBInstitute, "Innovative Approaches to Managing Longevity Risk in Asia: Lessons from the West" (2012)
- How Increasing Longevity Affects Us All?: Market, Economic & Social Implications (2012)
- How Demographics Affect Asset Prices (2012)
- Spotlighting The European Union's Demographics (2011)
- Assessing Latin America's Demographic Prospects (2011)
- Macro "Fiscal Sustainability" to Micro "Economic Conditions of the Old" in the "Oldest Five" Countries (2011)
- Longer Lives, Changing Life Cycles: Exploring Consumer & Worker Implications (2011)
- Getting Counted in the Demographic Giants- China & India (2011)
- Middle East & North Africa: Demographic Highlights (2011)
- China: The turning point of the labour market (2011)
- Spotlight on Demographic Giants: China & India (2010)
- The Republic of Korea: Demographic Opportunities & Challenges (2010)
- US Demographics – Favourably Poised for the Future (2010)
- Vietnam: Demographics continue to drive long-term growth (2010)
- European Demographics at the Core- Consumers & Workers (2010)
- A Demographic Perspective of Fiscal Sustainability: Not Just the Immediate Term Matters (2010)
- Demographics, Japanese Current account & a Disappearing Savings Rate (2009)
- A Demographic Perspective of Economic Growth (2009)
- Demographics, Capital Flows & Exchange Rates (2007)
- Global Demographic Change & Sector Implications (2007)
- Demographics, Productivity & Technology (2001)
- New Jobs, New People: Demographic Manifesto (2000)

Dr. Amlan Roy, amlan.roy@credit-suisse.com

Anais Boussie, anais.boussie@credit-suisse.com

Mengyuan Yuan, mengyuan.yuan@credit-suisse.com

Disclosure Appendix

Analyst Certification

The analysts identified in this report each certify, with respect to the companies or securities that the individual analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

Disclaimer

References in this report to Credit Suisse include all of the subsidiaries and affiliates of Credit Suisse operating under its investment banking division. For more information on our structure, please use the following link: https://www.credit-suisse.com/who_we_are/en. This report may contain material that is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Credit Suisse AG or its affiliates ("CS") to any registration or licensing requirement within such jurisdiction. All material presented in this report, unless specifically indicated otherwise, is under copyright to CS. None of the material, nor its content, nor any copy of it, may be altered in any way, transmitted to, copied or distributed to any other party, without the prior express written permission of CS. All trademarks, service marks and logos used in this report are trademarks or service marks or registered trademarks or service marks of CS or its affiliates. The information, tools and material presented in this report are provided to you for information purposes only and are not to be used or considered as an offer or the solicitation of an offer to sell or to buy or subscribe for securities or other financial instruments. CS may not have taken any steps to ensure that the securities referred to in this report are suitable for any particular investor. CS will not treat recipients of this report as its customers by virtue of their receiving this report. The investments and services contained or referred to in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about such investments or investment services. Nothing in this report constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances, or otherwise constitutes a personal recommendation to you. CS does not advise on the tax consequences of investments and you are advised to contact an independent tax adviser. Please note in particular that the bases and levels of taxation may change. Information and opinions presented in this report have been obtained or derived from sources believed by CS to be reliable, but CS makes no representation as to their accuracy or completeness. CS accepts no liability for loss arising from the use of the material presented in this report, except that this exclusion of liability does not apply to the extent that such liability arises under specific statutes or regulations applicable to CS. This report is not to be relied upon in substitution for the exercise of independent judgment. CS may have issued, and may in the future issue, other communications that are inconsistent with, and reach different conclusions from, the information presented in this report. Those communications reflect the different assumptions, views and analytical methods of the analysts who prepared them and CS is under no obligation to ensure that such other communications are brought to the attention of any recipient of this report. Some investments referred to in this report will be offered solely by a single entity and in the case of some investments solely by CS, or an associate of CS or CS may be the only market maker in such investments. Past performance should not be taken as an indication or guarantee of future performance, and no representation or warranty, express or implied, is made regarding future performance. Information, opinions and estimates contained in this report reflect a judgment at its original date of publication by CS and are subject to change without notice. The price, value of and income from any of the securities or financial instruments mentioned in this report can fall as well as rise. The value of securities and financial instruments is subject to exchange rate fluctuation that may have a positive or adverse effect on the price or income of such securities or financial instruments. Investors in securities such as ADRs, the values of which are influenced by currency volatility, effectively assume this risk. Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility, and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct their own investigation and analysis of the product and consult with their own professional advisers as to the risks involved in making such a purchase. Some investments discussed in this report may have a high level of volatility. High volatility investments may experience sudden and large falls in their value causing losses when that investment is realised. Those losses may equal your original investment. Indeed, in the case of some investments the potential losses may exceed the amount of initial investment and, in such circumstances, you may be required to pay more money to support those losses. Income yields from investments may fluctuate and, in consequence, initial capital paid to make the investment may be used as part of that income yield. Some investments may not be readily realisable and it may be difficult to sell or realise those investments, similarly it may prove difficult for you to obtain reliable information about the value, or risks, to which such an investment is exposed. This report may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the report refers to website material of CS, CS has not reviewed any such site and takes no responsibility for the content contained therein. Such address or hyperlink (including addresses or hyperlinks to CS's own website material) is provided solely for your convenience and information and the content of any such website does not in any way form part of this document. Accessing such website or following such link through this report or CS's website shall be at your own risk. This report is issued and distributed in Europe (except Switzerland) by Credit Suisse Securities (Europe) Limited, One Cabot Square, London E14 4QJ, England, which is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. This report is being distributed in Germany by Credit Suisse Securities (Europe) Limited Niederlassung Frankfurt am Main regulated by the Bundesanstalt fuer Finanzdienstleistungsaufsicht ("BaFin"). This report is being distributed in the United States and Canada by Credit Suisse Securities (USA) LLC; in Switzerland by Credit Suisse AG; in Brazil by Banco de Investimentos Credit Suisse (Brasil) S.A or its affiliates; in Mexico by Banco Credit Suisse (México), S.A. (transactions related to the securities mentioned in this report will only be effected in compliance with applicable regulation); in Japan by Credit Suisse Securities (Japan) Limited, Financial Instruments Firm, Director-General of Kanto Local Finance Bureau (*Kinsho*) No. 66, a member of Japan Securities Dealers Association, The Financial Futures Association of Japan, Japan Investment Advisers Association, Type II Financial Instruments Firms Association; elsewhere in Asia/Pacific by whichever of the following is the appropriately authorised entity in the relevant jurisdiction: Credit Suisse (Hong Kong) Limited, Credit Suisse Equities (Australia) Limited, Credit Suisse Securities (Thailand) Limited, regulated by the Office of the Securities and Exchange Commission, Thailand, having registered address at 990 Abdulrahim Place, 27th Floor, Unit 2701, Rama IV Road, Silom, Bangkok, Bangkok 10500, Thailand, Tel. +66 2614 6000, Credit Suisse Securities (Malaysia) Sdn Bhd, Credit Suisse AG, Singapore Branch, Credit Suisse Securities (India) Private Limited (CIN no. U67120MH1996PTC104392) regulated by the Securities and Exchange Board of India (registration Nos. INB230970637; INF230970637; INB010970631; INF010970631), having registered address at 9th Floor, Ceejay House, Dr.A.B. Road, Worli, Mumbai - 18, India, T- +91-22 6777 3777, Credit Suisse Securities (Europe) Limited, Seoul Branch, Credit Suisse AG, Taipei Securities Branch, PT Credit Suisse Securities Indonesia, Credit Suisse Securities (Philippines) Inc., and elsewhere in the world by the relevant authorised affiliate of the above. Research on Taiwanese securities produced by Credit Suisse AG, Taipei Securities Branch has been prepared by a registered Senior Business Person. Research provided to residents of Malaysia is authorised by the Head of Research for Credit Suisse Securities (Malaysia) Sdn Bhd, to whom they should direct any queries on +603 2723 2020. This report has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (each as defined under the Financial Advisers Regulations) only, and is also distributed by Credit Suisse AG, Singapore branch to overseas investors (as defined under the Financial Advisers Regulations). By virtue of your status as an institutional investor, accredited investor, expert investor or overseas investor, Credit Suisse AG, Singapore branch is exempted from complying with certain compliance requirements under the Financial Advisers Act, Chapter 110 of Singapore (the "FAA"), the Financial Advisers Regulations and the relevant Notices and Guidelines issued thereunder, in respect of any financial advisory service which Credit Suisse AG, Singapore branch may provide to you. This research may not conform to Canadian disclosure requirements. In jurisdictions where CS is not already registered or licensed to trade in securities, transactions will only be effected in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable exemptions from registration or licensing requirements. Non-U.S. customers wishing to effect a transaction should contact a CS entity in their local jurisdiction unless governing law permits otherwise. U.S. customers wishing to effect a transaction should do so only by contacting a representative at Credit Suisse Securities (USA) LLC in the U.S. Please note that this research was originally prepared and issued by CS for distribution to their market professional and institutional investor customers. Recipients who are not market professional or institutional investor customers of CS should seek the advice of their independent financial advisor prior to taking any investment decision based on this report or for any necessary explanation of its contents. This research may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority or in respect of which the protections of the Prudential Regulation Authority and Financial Conduct Authority for private customers and/or the UK compensation scheme may not be available, and further details as to where this may be the case are available upon request in respect of this report. CS may provide various services to US municipal entities or obligated persons ("municipalities"), including suggesting individual transactions or trades and entering into such transactions. Any services CS provides to municipalities are not viewed as "advice" within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. CS is providing any such services and related information solely on an arm's length basis and not as an advisor or fiduciary to the municipality. In connection with the provision of the any such services, there is no agreement, direct or indirect, between any municipality (including the officials, management, employees or agents thereof) and CS for CS to provide advice to the municipality. Municipalities should consult with their financial, accounting and legal advisors regarding any such services provided by CS. In addition, CS is not acting for direct or indirect compensation to solicit the municipality on behalf of an unaffiliated broker, dealer, municipal securities dealer, municipal advisor, or investment adviser for the purpose of obtaining or retaining an engagement by the municipality for or in connection with Municipal Financial Products, the issuance of municipal securities, or of an investment adviser to provide investment advisory services to or on behalf of the municipality. If this report is being distributed by a financial institution other than Credit Suisse AG, or its affiliates, that financial institution is solely responsible for distribution. Clients of that institution should contact that institution to effect a transaction in the securities mentioned in this report or require further information. This report does not constitute investment advice by Credit Suisse to the clients of the distributing financial institution, and neither Credit Suisse AG, its affiliates, and their respective officers, directors and employees accept any liability whatsoever for any direct or consequential loss arising from their use of this report or its content. Principal is not guaranteed. Commission is the commission rate or the amount agreed with a customer when setting up an account or at any time after that. Copyright © 2015 CREDIT SUISSE AG and/or its affiliates. All rights reserved.

Investment principal on bonds can be eroded depending on sale price or market price. In addition, there are bonds on which investment principal can be eroded due to changes in redemption amounts. Care is required when investing in such instruments.

When you purchase non-listed Japanese fixed income securities (Japanese government bonds, Japanese municipal bonds, Japanese government guaranteed bonds, Japanese corporate bonds) from CS as a seller, you will be requested to pay the purchase price only.