

Global Macro-Demographics & Investment Implications (Middle-East Focus)

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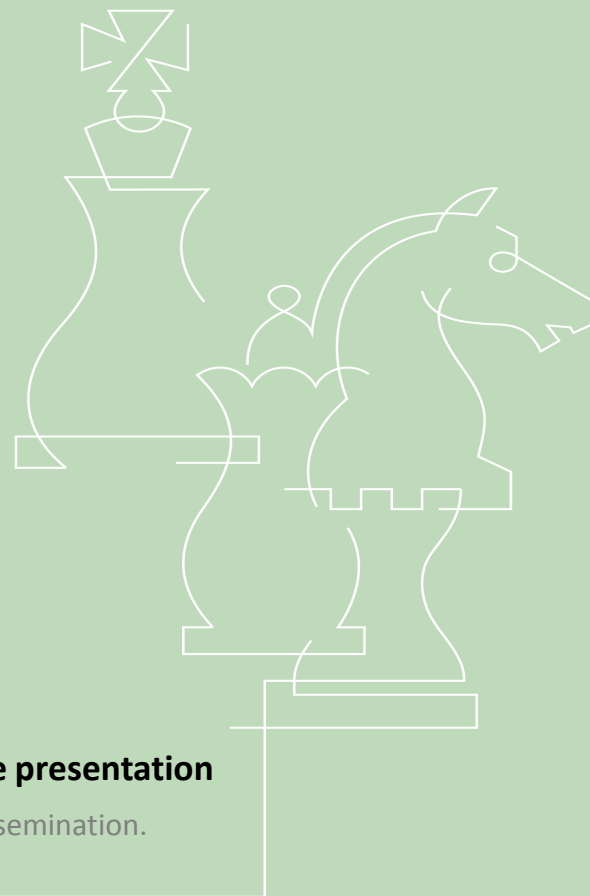
Middle East Investment Conference

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For Contact details of team members please see contacts page at the back of the presentation

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Demographics: A Different Perspective

WHAT IT CONNECTS TO & INFLUENCES

D: Discount rates, Debt

E: Economic Growth, Efficiency, Structure

M: Mortality

O: Organisation Behaviour, Structure

G: Geography, Geopolitics, Governance

R: Robotics, Real Estate

A: Asset Prices, Asset Allocation

P: People, Pensions, Politics

H: Heterogeneity, Households

I: Inflation, Inequality, Institutions

C: Consumers, Culture, Cities

S: Sustainability

WHO DOES IT PERTAIN TO?

All the “People” in the world and their characteristics. From an economic perspective, we restrict attention to them as “consumers and workers” in the world.

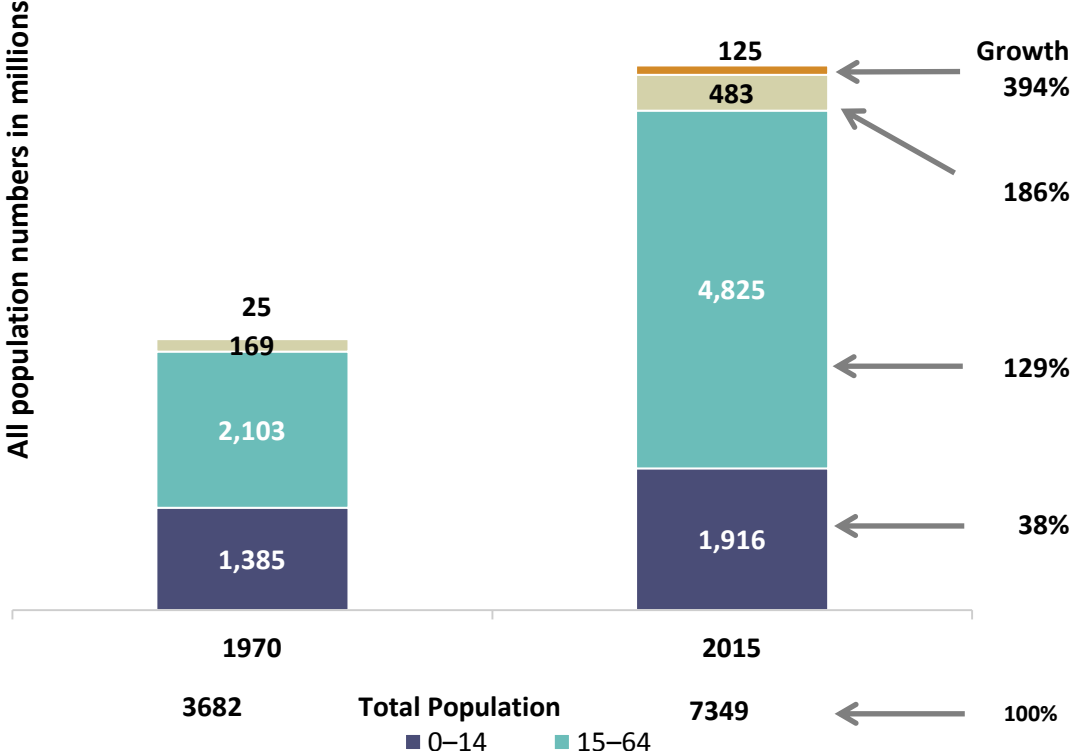
It affects all Income Statements & Balance sheets in the world for

- Individuals
- Households
- Corporates
- Nations

Unless otherwise stated, all data and all data sourced to "UN" is the most current data attributable to the United Nations Population Division. Data shown beyond 2015 is a UN projection.

Super-old (80+) Age Group Fastest Growing

World Population: 1970 versus 2015



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, CS, SSGA Demographics

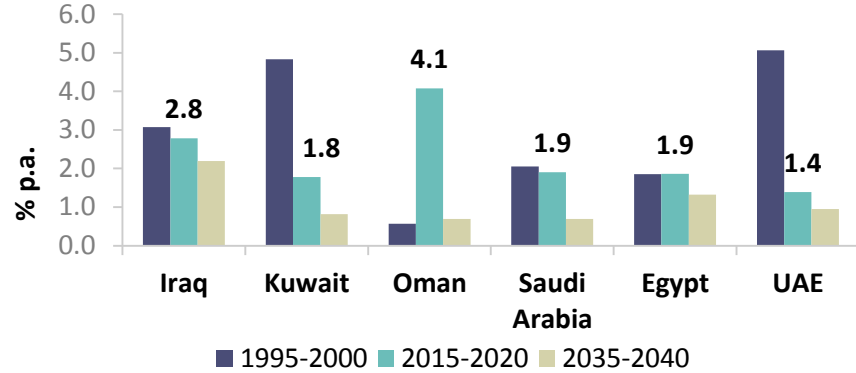
The Demographic Manifesto (2000)

Radical Policy Actions to mitigate the Ageing Time Bomb

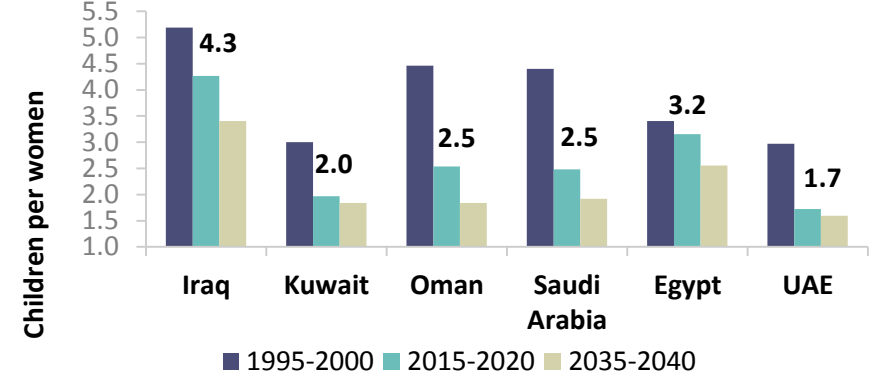
- **Abolish Mandatory retirement ages.** Adopt Flexible retirement.
- **Close** gender gaps to better utilize female work potential
- **Rethink & implement** immigration policies
- **Outsource and off-shore** non-core jobs based on costs and benefits

Core Demographics: Middle East

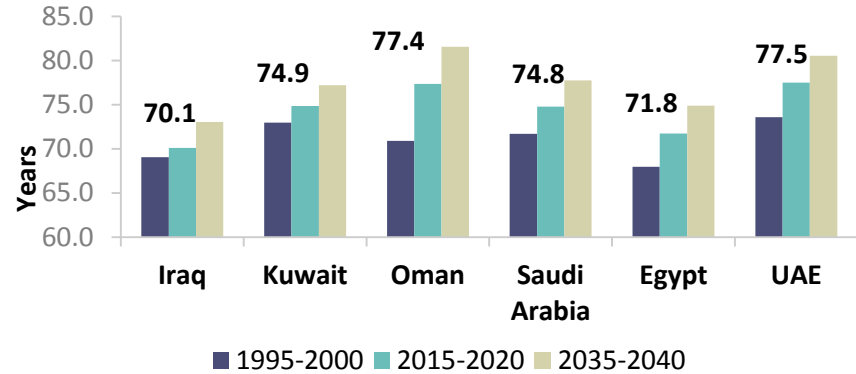
Annual Population Growth



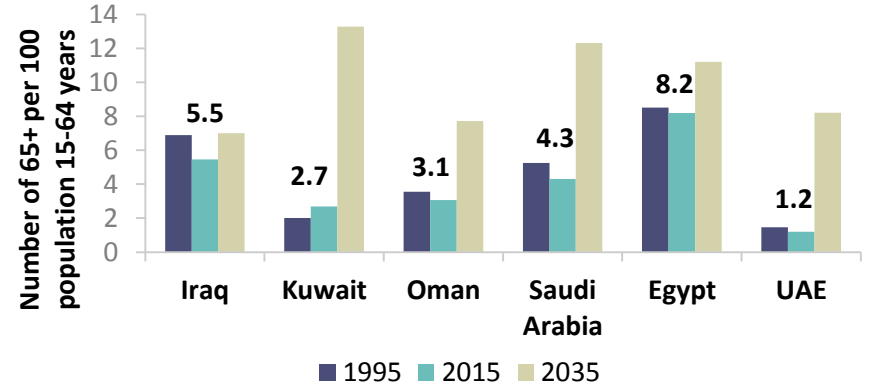
Fertility Rate



Life Expectancy at Birth



Old Age Dependency Ratio



Source: UN, SSGA Demographics

How Increasing Longevity Affects Us All?

Individuals & 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., banks, SWFs etc.

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

Significant change in thinking and mind-set needed

Source: IPE Pension Awards Speech (2013)

Demographic Components of 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

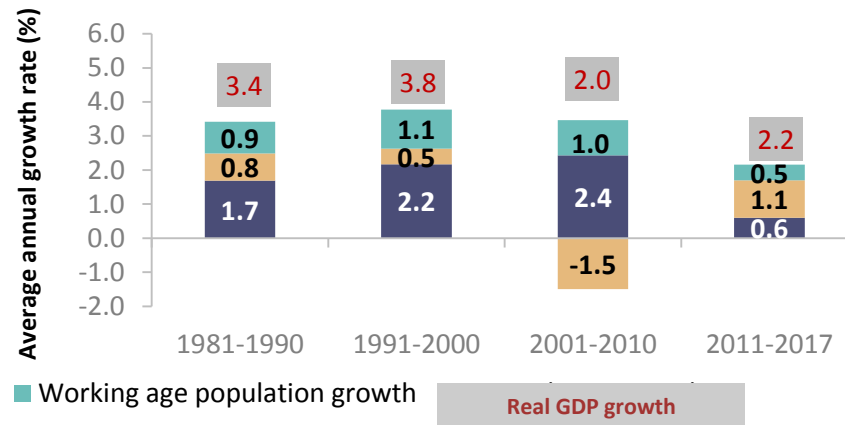
labour utilisation = hours worked / working-age population

G6 GDP growth rate has fallen dramatically. Main cause is declining labour productivity growth.

Japan Real GDP growth: Contributions



US Real GDP growth: Contributions



Source: SSGA Demographics, GGDC, UN

GDP Structure: Middle East

National Income Identity (expenditures method): $C + G + I + (X - M) \equiv GDP$

C = Consumption, I = Investment, G = Government, X = Exports, M = Imports

GDP Breakdown (% of GDP)

	Kuwait		Oman		Saudi Arabia	
	2005	2015	2005	2015	2005	2015
Household Consumption	32.1	41.3	30.6	33.1	26.3	40.3
Government Consumption	15.7	24.6	20.8	27.4	21.3	30.0
Gross Capital Formation	16.4	25.0	21.4	35.9	20.2	35.1
Exports	64.0	54.4	58.3	56.1	57.1	33.3
Imports	28.3	45.3	31.1	52.5	24.9	38.8

	United Arab Emirates		Iraq		Egypt	
	2005	2015	2005	2015	2005	2015
Household Consumption	56.3	57.1	64.9	59.3	71.6	82.4
Government Consumption	7.9	13.6	20.0	22.3	12.7	11.8
Gross Capital Formation	20.2	24.9	22.2	24.4	18.0	14.3
Exports	67.6	100.4	54.3	35.0	30.3	13.2
Imports	52.0	96.0	61.4	41.0	32.6	21.7

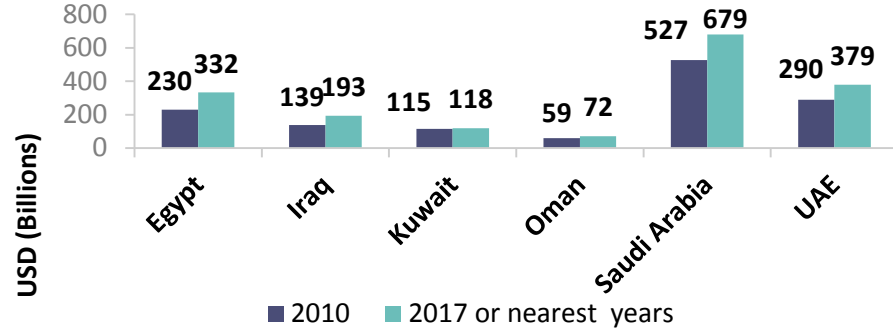
Openness of an economy is measured by the sum of exports + imports as a ratio of GDP:

100% (Kuwait), 109% (Oman), 72% (Saudi Arabia), 196% (UAE), 76% (Iraq), 35% (Egypt)

Source: World Bank, SSGA Demographics

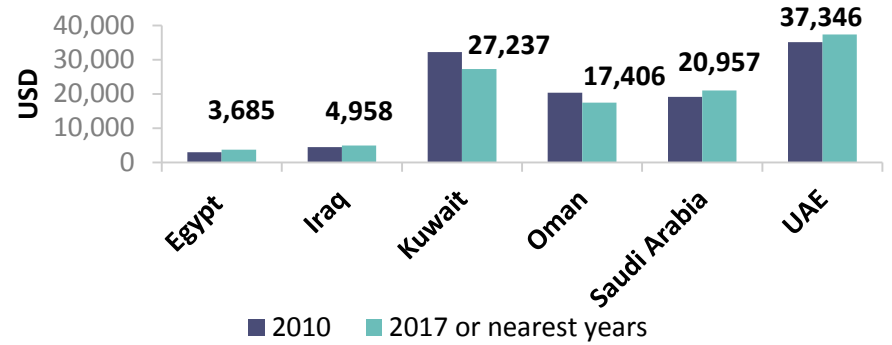
Middle East: Core Economic Indicators

GDP, current prices



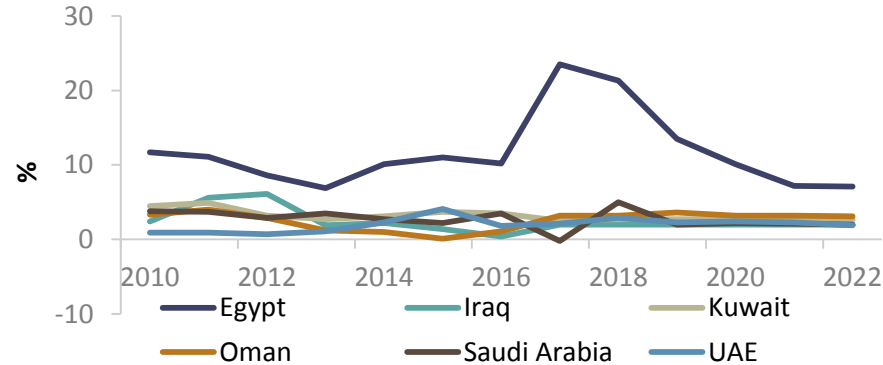
Egypt data relates to 2016. Others refer to 2017.

GDP per capita, current prices

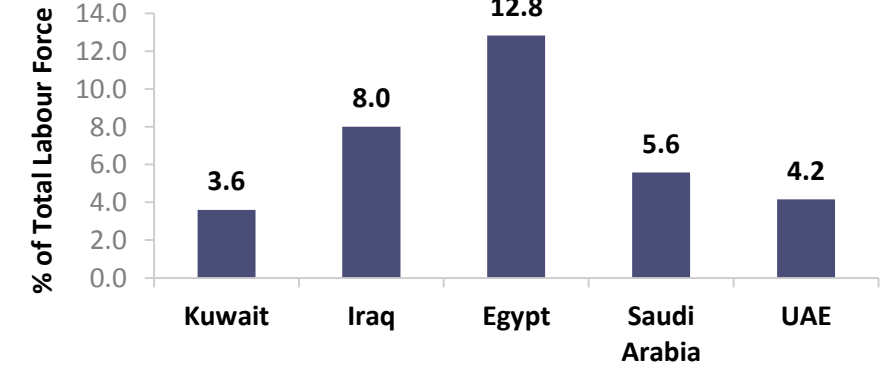


Egypt data relates to 2016. Others refer to 2017.

Average Consumer Prices (Annual Change %)



Total Unemployment Rate

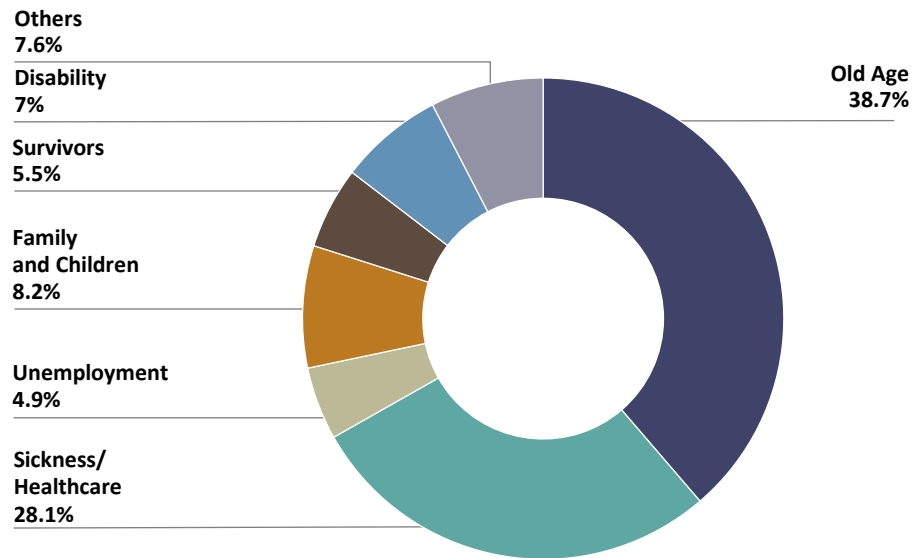


Data for Saudi Arabia and Egypt is as of 2015. Data for Kuwait and Iraq is as of 2011. Data for UAE is as of 2009.

Source: IMF, WB, SSGA Demographics

Unsustainable Fiscal Strains (Ageing Related)

EU28, 2014, % of total benefits



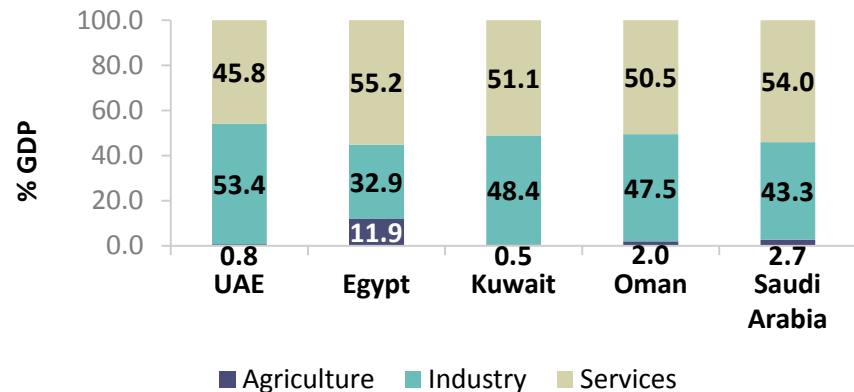
- In most EU countries, age related expenditures currently account for 20% + of GDP
- This is **unsustainable currently and in future** without radical reform

Source: EC, SSGA Demographics

		Pension (%)	Health Care (%)	Long-term Care (%)
UK	2020	7.4	8.1	1.2
	2060	8.4	9.1	1.5
France	2020	14.6	8.0	2.1
	2060	12.1	8.6	2.8
Italy	2020	15.3	6.2	1.9
	2060	13.8	6.7	2.7
Germany	2020	10.3	7.9	1.7
	2060	12.7	8.2	2.9
Denmark	2020	8.7	8.5	2.7
	2060	7.2	9.0	4.5
Greece	2020	15.5	6.6	0.5
	2060	14.3	7.9	0.9
Netherlands	2020	7.1	7.5	3.8
	2060	7.8	8.1	7.1
EU28	2020	11.2	7.2	1.8
	2060	11.2	7.8	2.7

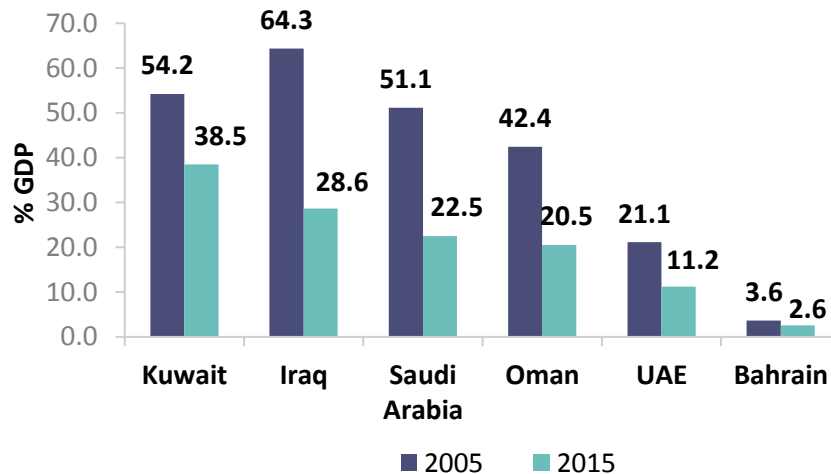
Middle East: Value Added & Oil Rents

Value added for different sectors, % GDP



UAE data relates to 2010. Others refer to 2016.

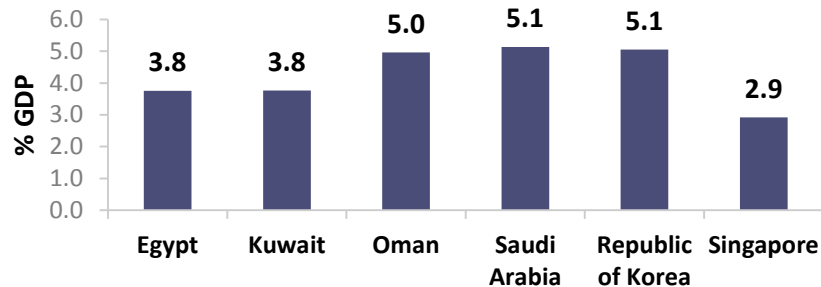
Oil rents (% GDP)



Source: World Bank, SSGA Demographics

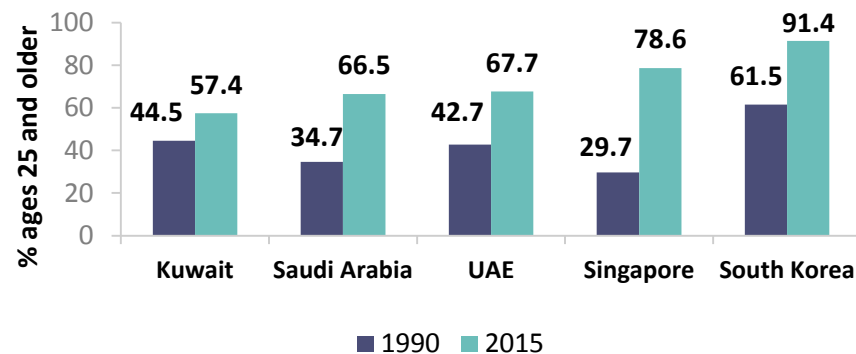
Education Indicators

Government expenditure on education, Total (% of GDP)

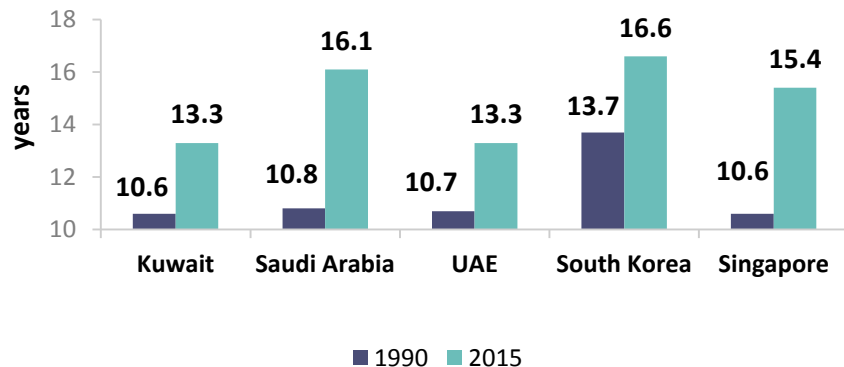


Data last updated: Egypt (2008), Kuwait (2006), Oman (2013), Saudi Arabia (2008), Republic of Korea (2015), Singapore (2013)

Population with at least some secondary education (% ages 25 and older)



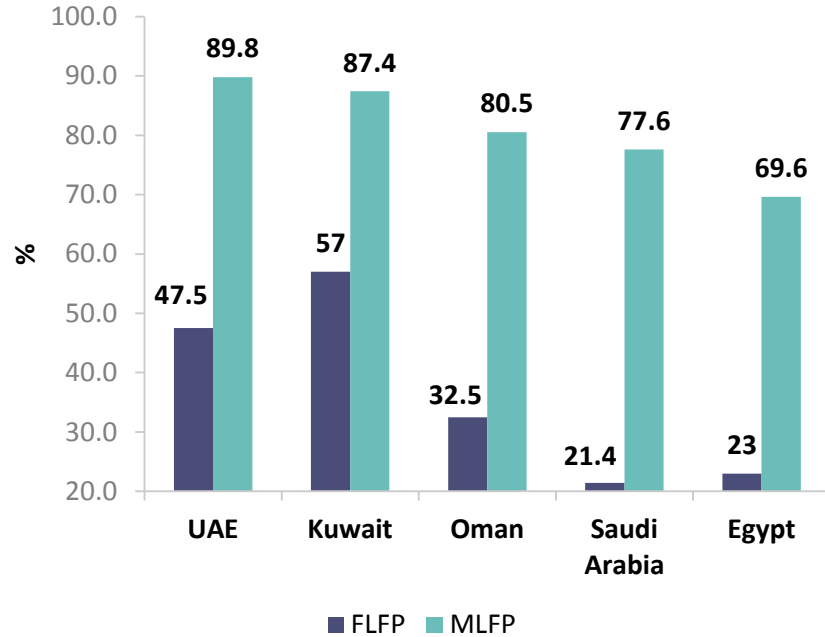
Expected years of schooling (years)



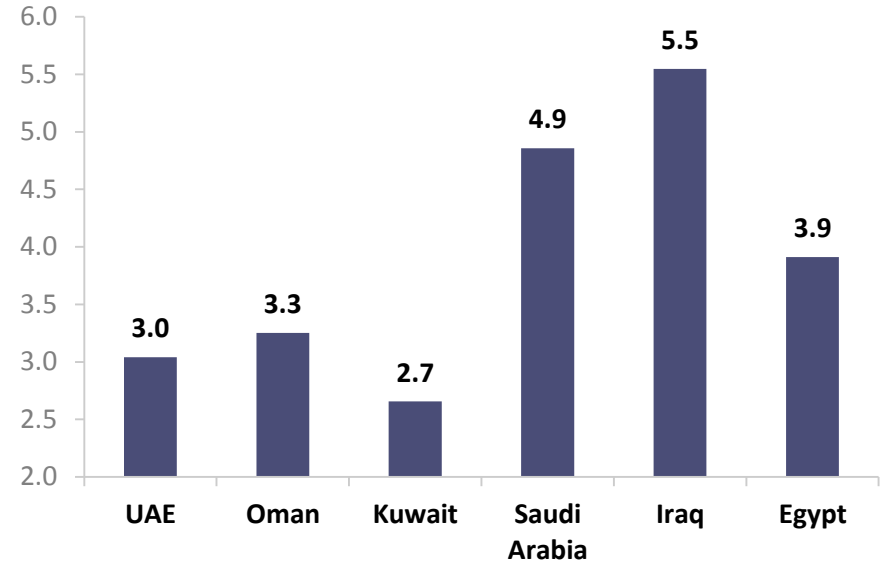
Source: UN, World Bank, SSGA Demographics

Middle East: Gender Differences

Gender Labour Participation Differences



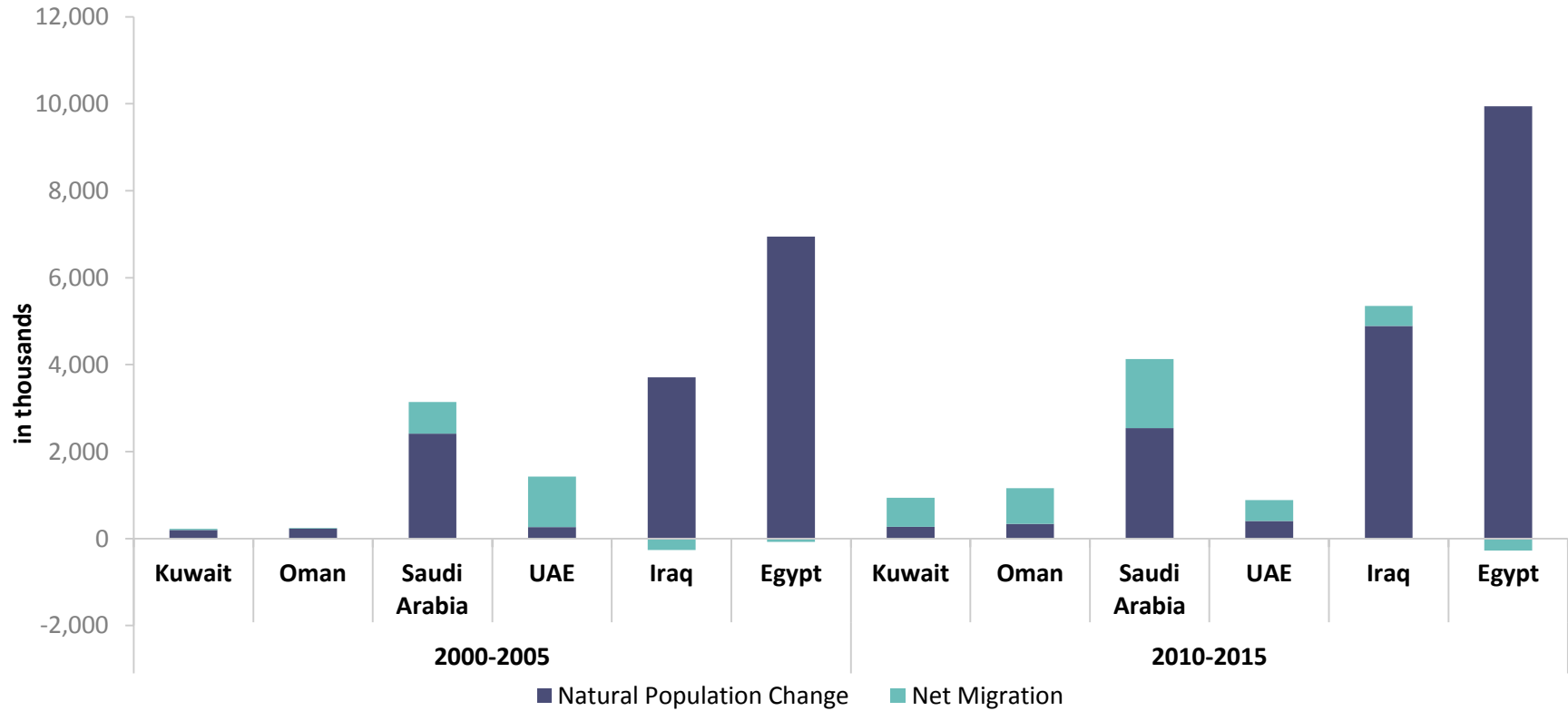
Ratio of Male GNI per capita to female GNI per capita 2013 in 2011 PPP



All data is as at 2016 except Saudi Arabia (2015).

Source: UN, SSGA Demographics

Middle East: Population Change Decomposed



Source: UN, SSGA Demographics

Demographics & Monetary Policy

My view since 2005

Effects of Interest Rates:

The **young**: Long on human capital & short on assets

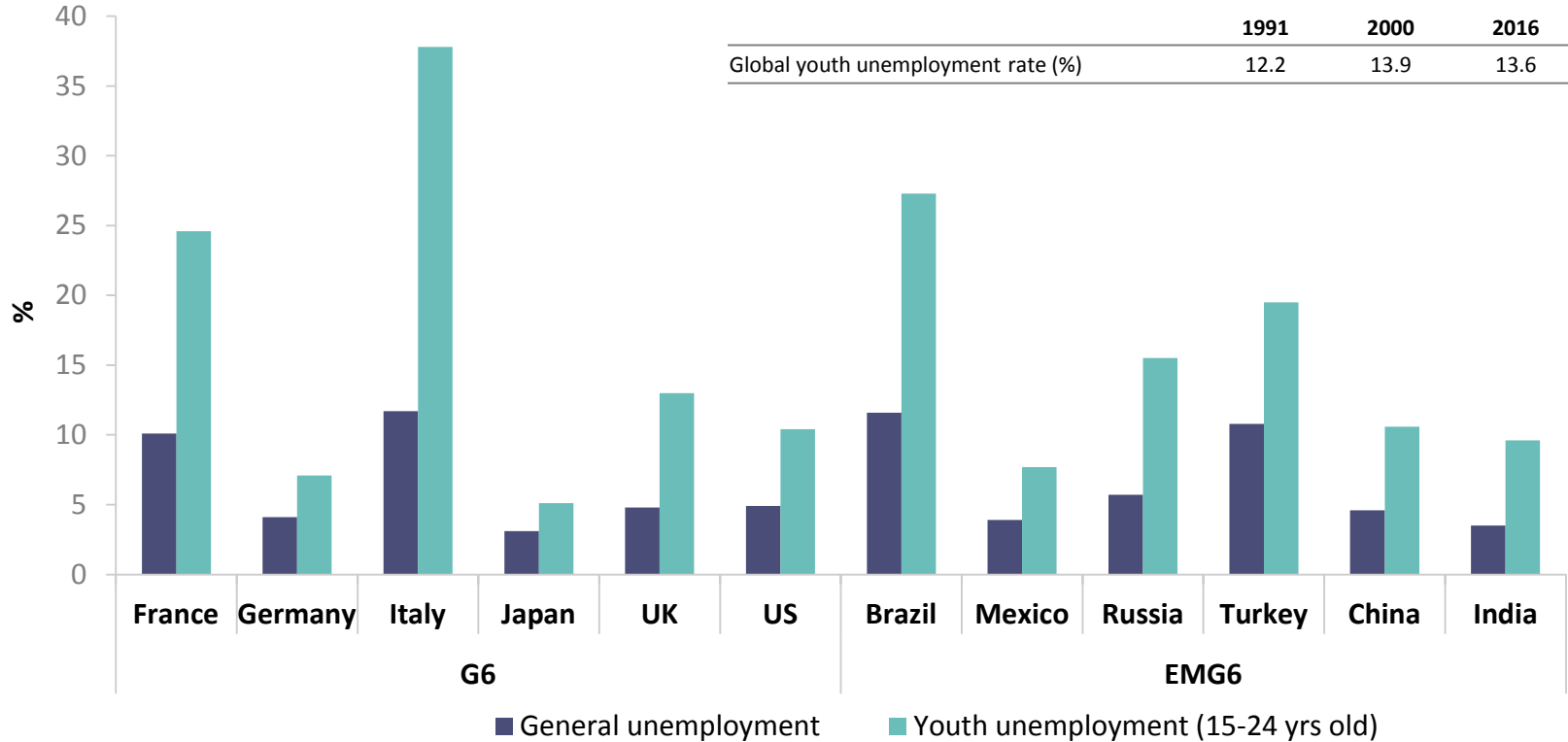
The **old**: Long on assets & short on human capital

Monetary policy impact is different based on **relative fractions of young & old**

Credit Restrictions

The more people in the latter parts of their working lives and in retirement and the fewer the young workers — the less important are credit constraints

Rising Youth Unemployment



Source: ILO, World Bank, SSGA Demographics

Sectors Demographically Advantaged

Changing consumers and workers in a global and technologically advancing world. Not just people numbers, but groups and behaviours impact these sectors.

INFRASTRUCTURE

NATURAL RESOURCES

LEISURE & LUXURY

EMERGING MARKETS

PHARMA & *BIOTECH*

FINANCIAL SERVICES

Demographics & Asset Pricing Fundamentals

Research has shown demographics to affect the following which are fundamentals of asset prices.

- GDP growth
- Inflation
- Sovereign Spreads
- Sovereign Ratings
- Long-term interest rates
- Equity premia
- Credit spreads
- Real Estate

Therefore it is essential to understand the dynamics of both behaviour and fundamentals in asset allocation.

Pension Fund Asset Allocation Trends

	2001				2016			
	Equities (%)	Bonds (%)	Cash (%)	Other (%)	Equities (%)	Bonds (%)	Cash (%)	Other (%)
Australia	62	19	5	14	49	14	16	21
Canada	62	26	2	10	46	33	1	20
Japan	52	46	0	2	28	59	4	10
Netherlands	44	44	11	1	32	54	0	14
Switzerland	36	35	20	9	30	37	5	28
UK	67	18	5	10	47	36	1	16
US	65	28	2	5	49	22	2	27

Source: Willis Towers Watson (2017)

Development, Governance, Corruption & Gender Balance Indicators

Countries	Human Development Index Score (%)	Human Development Index Rank	Gender Gap Index Score (%)	Gender Gap Index Rank	Corruption Perception Index Score	Corruption Perception Index Rank	Sustainability	Percentile Rank
Norway	94.9	1	83.0	2	85	6	1.17	91.4
Switzerland	93.9	2	75.5	21	86	5	1.32	95.7
Germany	92.6	4	77.8	12	81	10	0.76	71.0
Netherlands	92.4	7	73.7	32	83	8	0.89	77.6
Iceland	92.1	9	87.8	1	78	14	1.33	96.2
US	92.0	10	71.8	49	74	18	0.35	58.6
Canada	92.0	10	76.9	16	82	9	1.24	93.3
Sweden	91.3	14	81.6	5	88	4	0.98	82.4
UK	91.0	16	77.0	15	81	10	0.38	59.0
Japan	90.3	17	65.7	114	72	20	1.01	86.2
Israel	89.9	19	72.1	44	64	28	-0.83	18.6
France	89.7	21	77.8	11	69	23	-0.06	44.3
Finland	89.5	23	82.3	3	89	3	0.96	81.0
Italy	88.7	26	69.2	82	47	60	0.35	58.1
Saudi Arabia	84.7	38	58.4	138	46	62	-0.50	28.6
UAE	84.0	42	64.9	120	66	24	0.44	61.0
Russia	80.4	49	69.6	71	29	131	-0.89	16.7
Kuwait	80.0	51	62.8	129	41	75	-0.15	41.4
Oman	79.6	52	N/A	N/A	45	64	0.80	71.9
Iran	77.4	69	58.3	140	29	131	-0.74	20.5
Turkey	76.7	71	62.5	131	41	75	-2.00	5.7
Mexico	76.2	77	69.2	81	30	123	-0.77	20.0
Brazil	75.4	79	68.4	90	40	79	-0.45	30.0
China	73.8	90	67.4	100	40	79	-0.52	27.1
India	62.4	131	66.9	108	40	79	-0.95	14.3

Source: WB, WEF, UN, TI, SSGA Demographics

Conclusions

Understanding of demographics, behaviour, market and institutional evolution will be key.

Strategic asset allocation & ALM must holistically consider the **drivers of inflation risk, interest rate risk, longevity risk and market risk.**

Demographics affects investment fundamentals and therefore must be factored into investment analysis. **Changing behaviour of consumers and workers** is rendering many old models invalid

In Middle East countries, **structural policy changes** towards education, labour, health and pensions need to be coordinated to generate higher sustainable and equitable growth.

Open balanced economy with better developed financial markets will enhance their global position.

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Biography



Amlan Roy, PhD

Dr. Amlan Roy is the Global Chief Retirement Strategist and Senior Managing Director at SSGA since April 2017. He is an experienced Global Macro Researcher specializing in Demographics & Pensions related to Economics, Investments and Public Policy. He highlights structural issues related to gender disparity, youth unemployment, system risks due to policy interactions with ALM & SAA. He is a Senior Research Associate at LSE and Guest Finance Professor at LBS.

Prior to joining SSGA, he was Head of Global Demographics & Pensions Research and Managing Director at Credit Suisse having joined there in 1998. At Credit Suisse, Amlan was a client facing Researcher presenting to clients in 25+ countries and speaking at 60+ global conferences/events. In a prior role he developed global risk and asset allocation models serving as an international expert on Financial System Architecture.

His big-picture macro strategic research in Global Demographics & Pensions is used by policy makers and investors and draws on the fields of Macroeconomics, Portfolio Theory, Behavioral Economics, Statistics, Derivatives and Econometrics.

Prior to joining Credit Suisse, he spent over a decade in academia with a distinguished teaching career in the US and the UK. He was UK ESRC Research Fellow, Ponders Fellow, a Boston University Doctoral Scholar and a Government of India National Scholar. Amlan has a PhD and an MA in Financial Economics from the University of Iowa, an MBA from Indian Institute of Management Ahmedabad and a BA Honours in Economics from St. Stephen's College, University of Delhi.

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