The N-11: More Than an Acronym

April 2007

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BRICs and N-11 2006 Economic Snapshot

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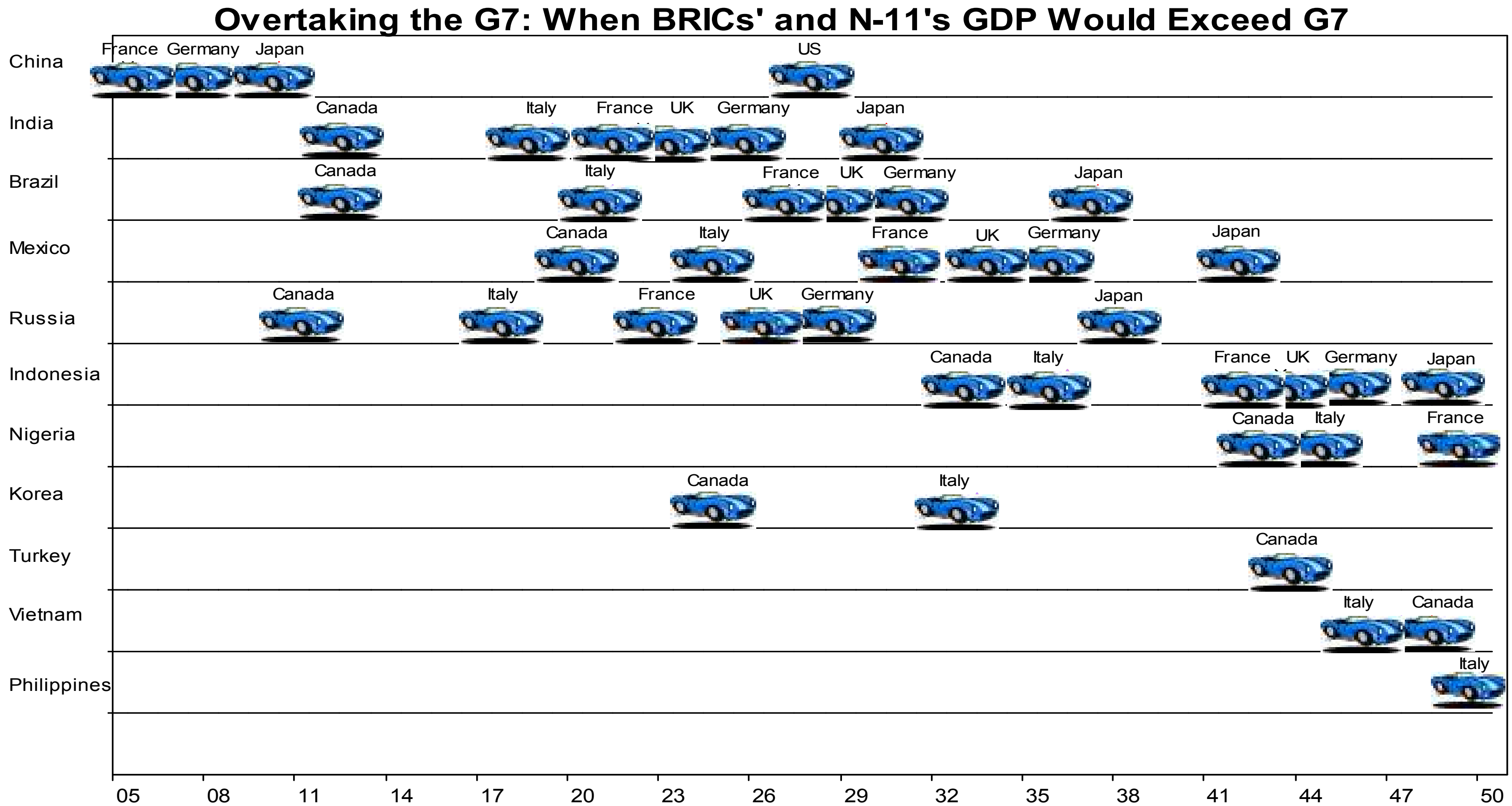
	GDP (US$bn)	2001-06 Average GDP Growth Rate (%)	GDP Per Capita (US$)	Population (mn)	Urbanisation (% Total)*	Trade openness (% GDP)*	FDI (% GDP)*	Current Account (% GDP)	Inflation (% yoy)
Bangladesh	65	5.7	427	144	25.0	36.5	1.1	-0.3	6.8
Brazil	1,068	2.3	5,085	187	84.2	22.7	1.7	1.4	4.2
China	2,682	9.8	2,041	1,314	40.5	62.5	3.2	8.6	1.5
Egypt	101	4.2	1,281	72	42.3	56.8	6.4	1.8	7.3
India	909	7.2	696	1,113	28.7	29.3	0.8	-2.4	5.6
Indonesia	350	4.8	1,510	222	47.9	51.2	1.9	2.4	13.1
Iran	212	5.7	3,768	70	68.1	52.6	0.0	10.0	14.0
Korea	887	4.5	18,484	48	80.8	68.5	0.9	0.7	2.2
Mexico	851	2.3	7,915	104	76.0	57.4	2.3	-0.4	3.6
Nigeria	115	5.6	919	150	48.3	72.3	3.5	15.7	9.4
Pakistan	129	5.3	778	155	34.8	35.5	2.0	-3.9	7.9
Philippines	117	5.0	1,314	87	62.6	90.7	1.2	3.1	6.3
Russia	982	6.2	6,908	143	73.3	44.1	1.9	10.3	9.9
Turkey	390	4.6	5,551	73	67.3	51.8	2.7	-8.0	10.2
Vietnam	61	7.6	655	84	26.7	128.1	3.8	0.1	7.6

* 2005 data; ** Latest reported
Source: IMF, World Bank, UN, GS

Overtaking the G6: China Moves into Pole Position



Note: Cars indicate when BRICs and N-11 US$GDP exceeds US$GDP in the G7. The N-11 countries not included in the chart do not overtake any of the G7 countries over the projection horizon. Source: GS

The Projections

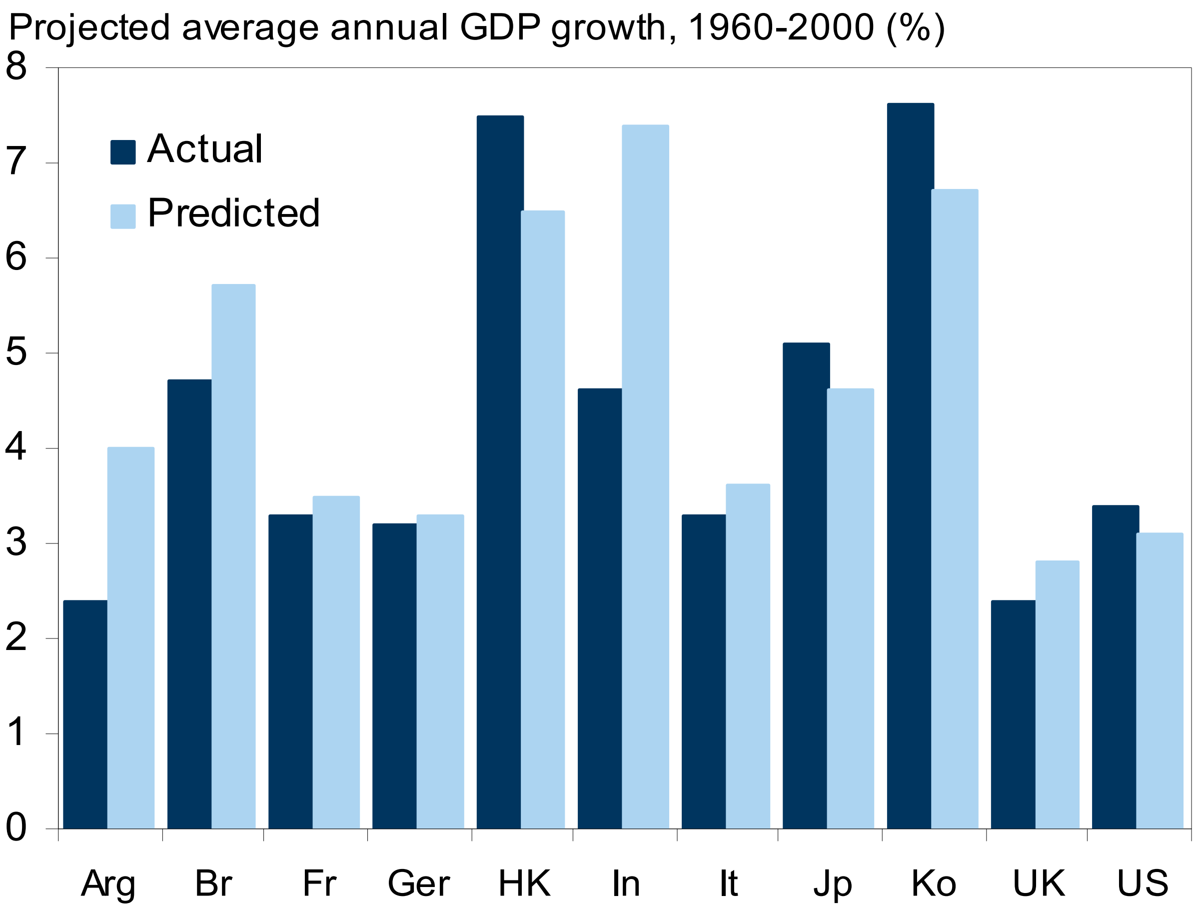
- The motivation: understanding shifts in global growth and spending power
- The goal: a 50-year roadmap of growth and incomes
- The model: three elements – labour force, investment and productivity catch-up
- The results: even on conservative assumptions, dramatic change if things go right
- The risks: conditions for converting potential to reality

The Model – Entirely Forward-Looking not Extrapolation

$$Y = a\,K^{\alpha} L^{1-\alpha}$$

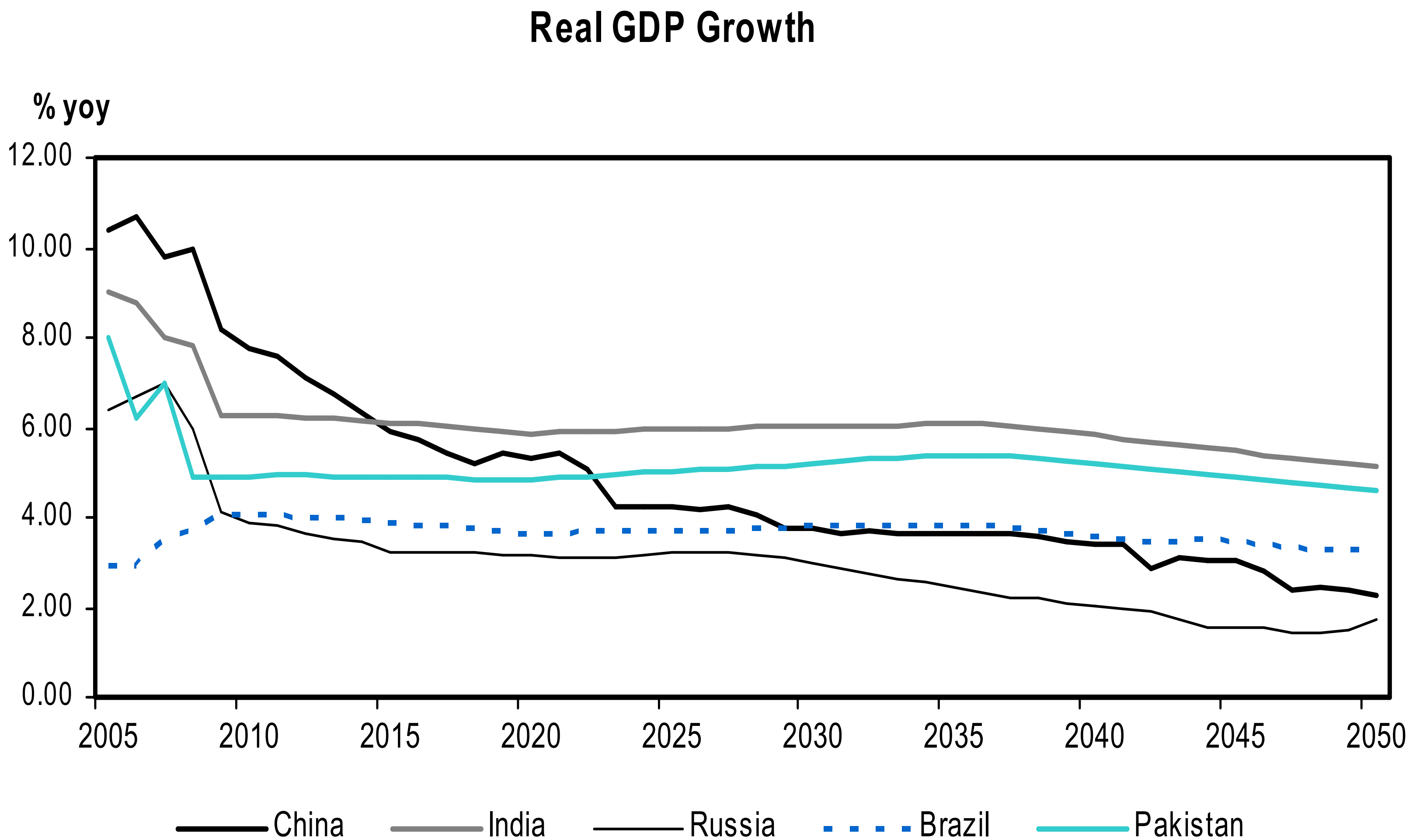
Labour:	US Census Bureau forecast for the 15-60 year old (2/3rds share)
Capital:	Stock less 4% depreciation plus investment (19% -36% of GDP)
TFP:	Speed of convergence a function of remaining gap to developed world - average 1.3%, but declining
Currency	Real appreciation = productivity growth gap

What The Model Would Have Said in 1960

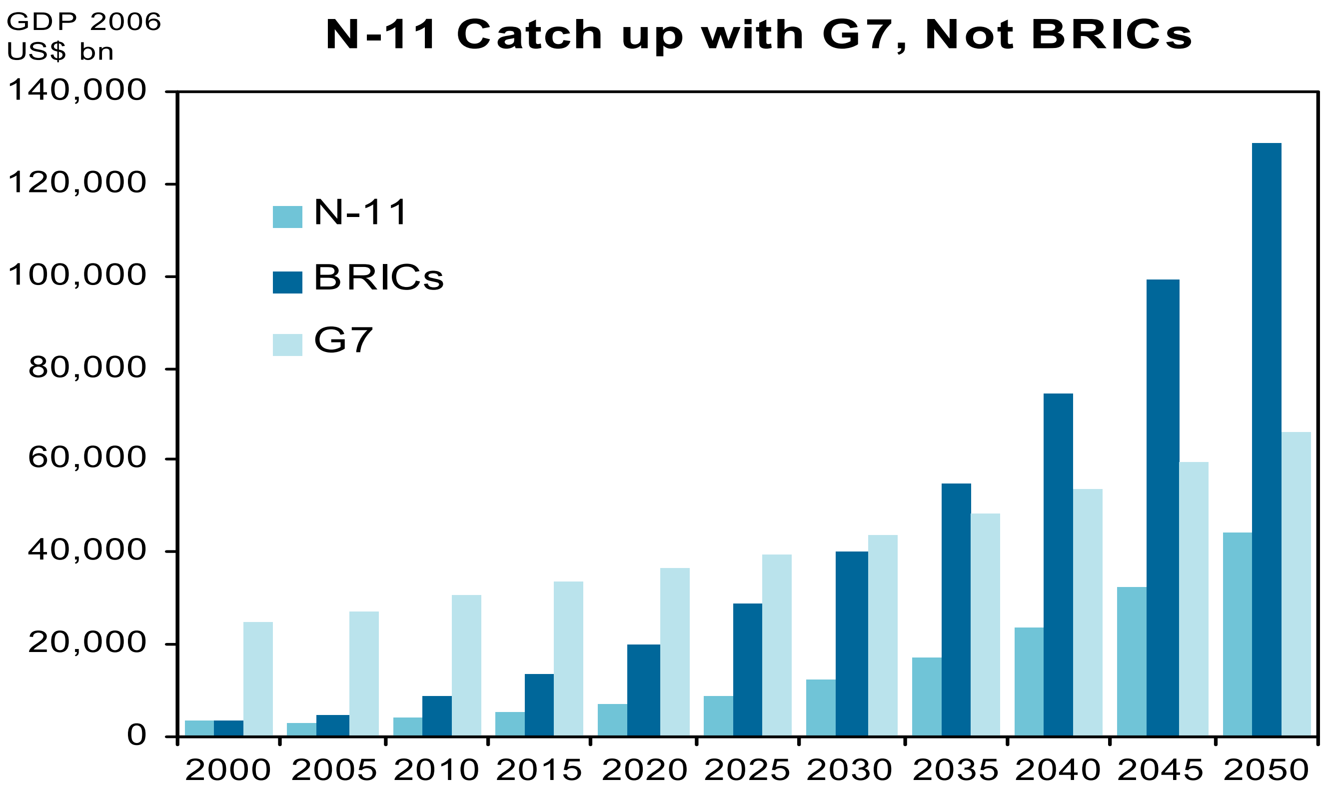


GS BRICs Model Projections.

Conservative Growth Forecasts - Solid but Declining

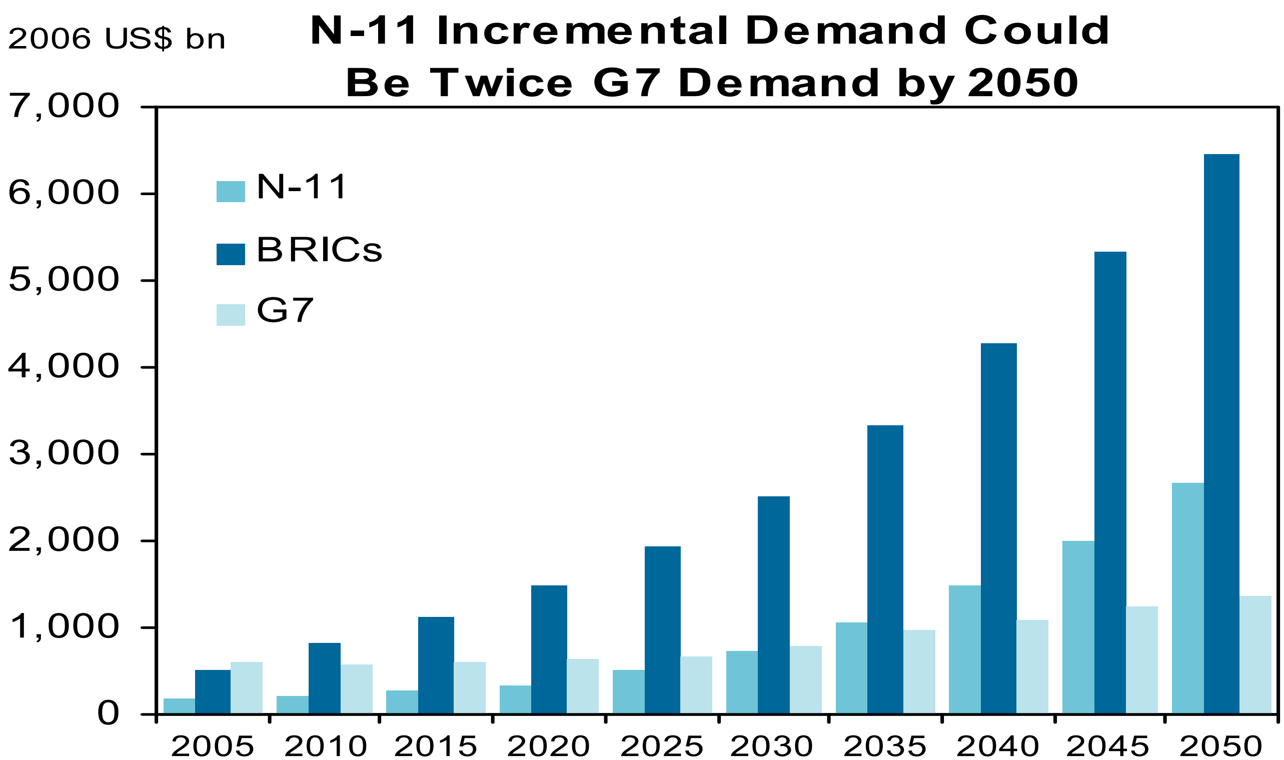


Major Shift in Economic Gravity



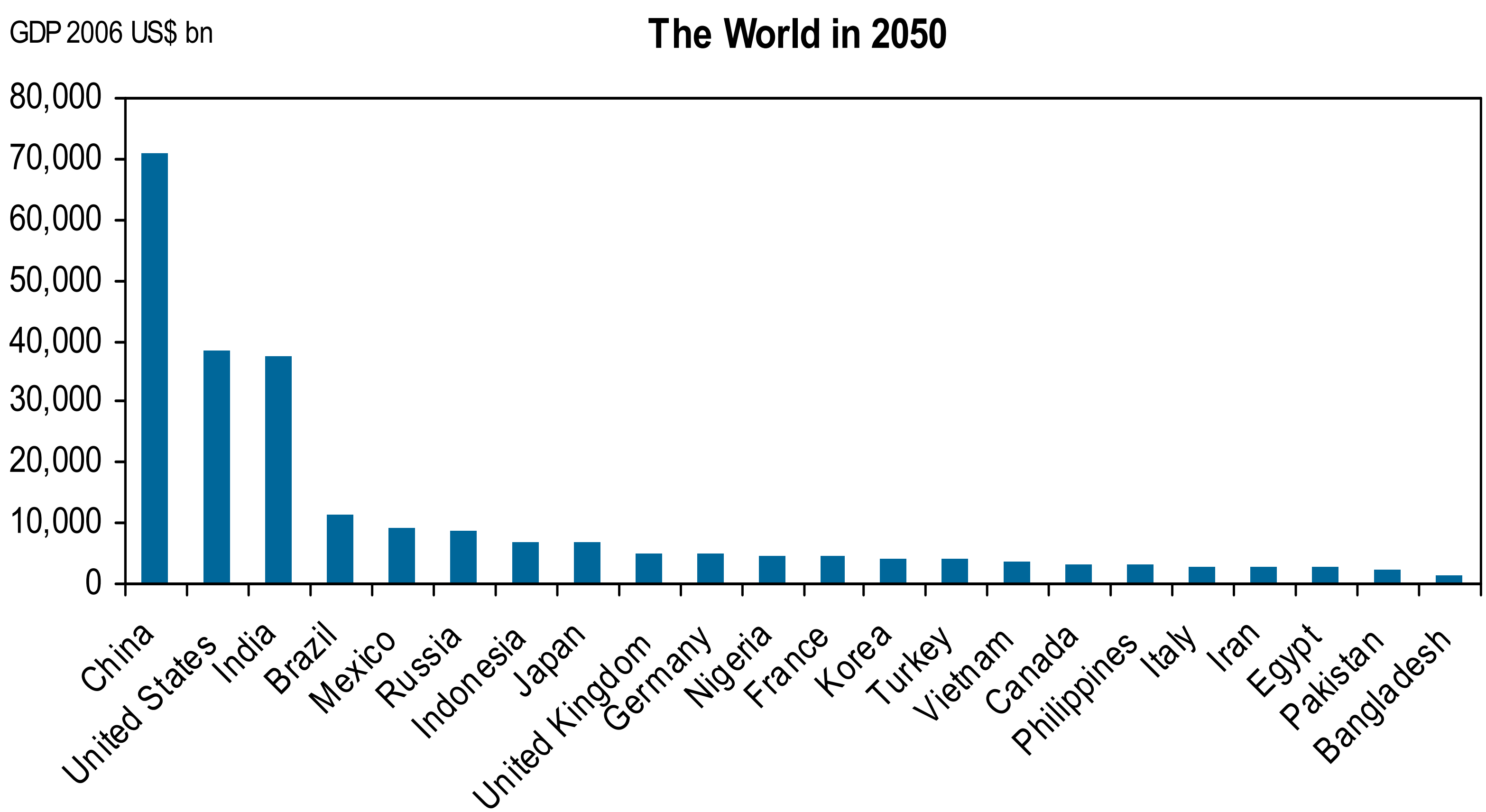
Source: GS

BRICs and N-11 would be Key Drivers of Global Demand in the Coming Decades

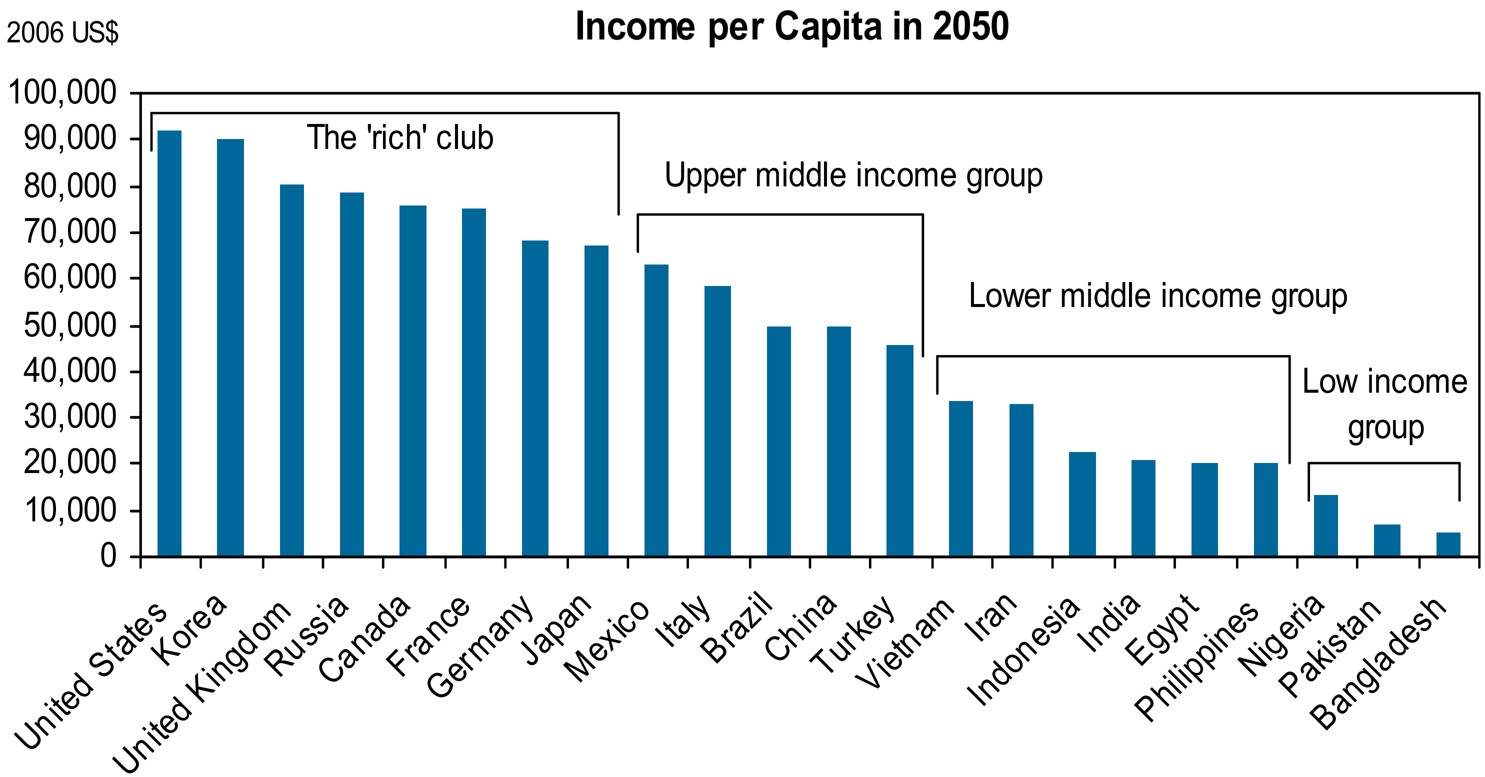


Source: GS

The Largest Economies in 2050 – including N-11



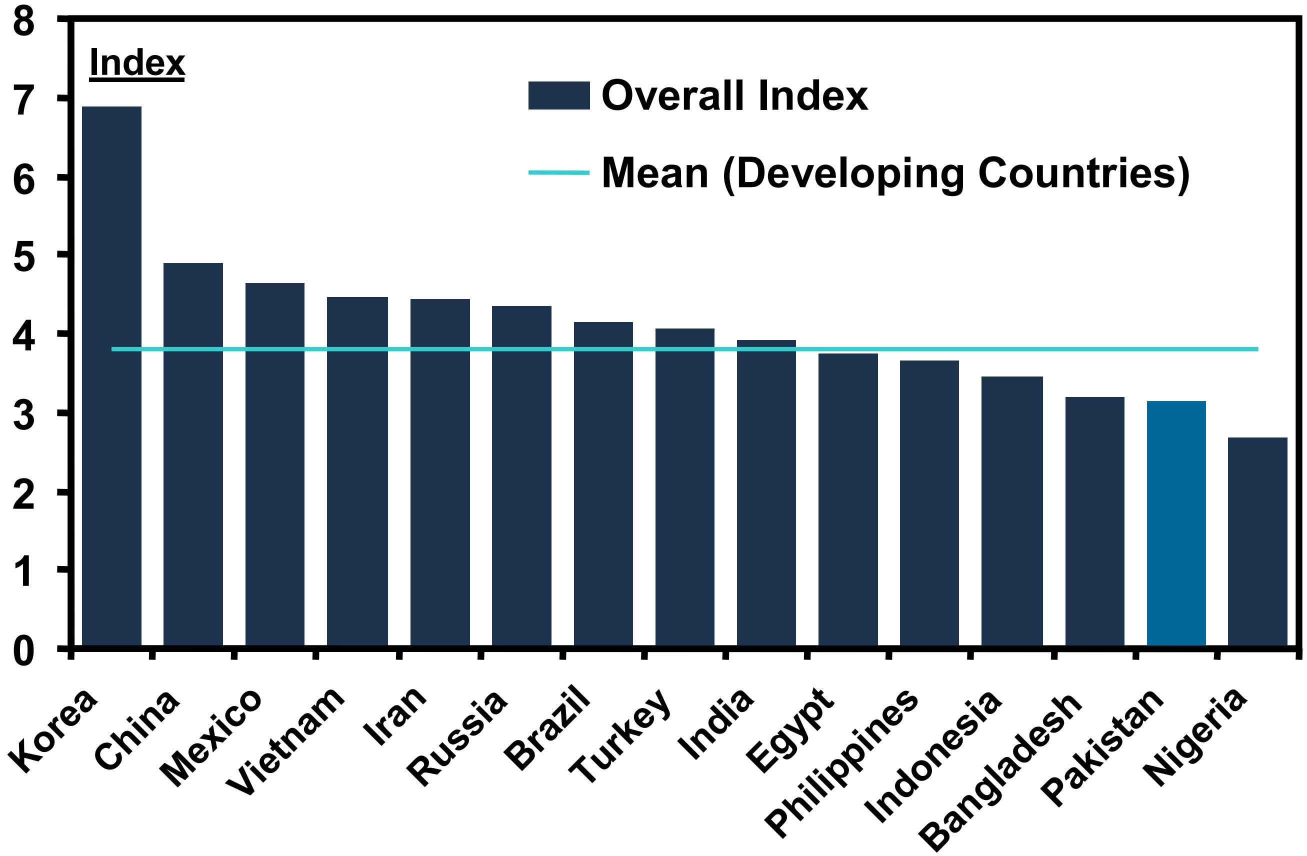
Wealth in 2050



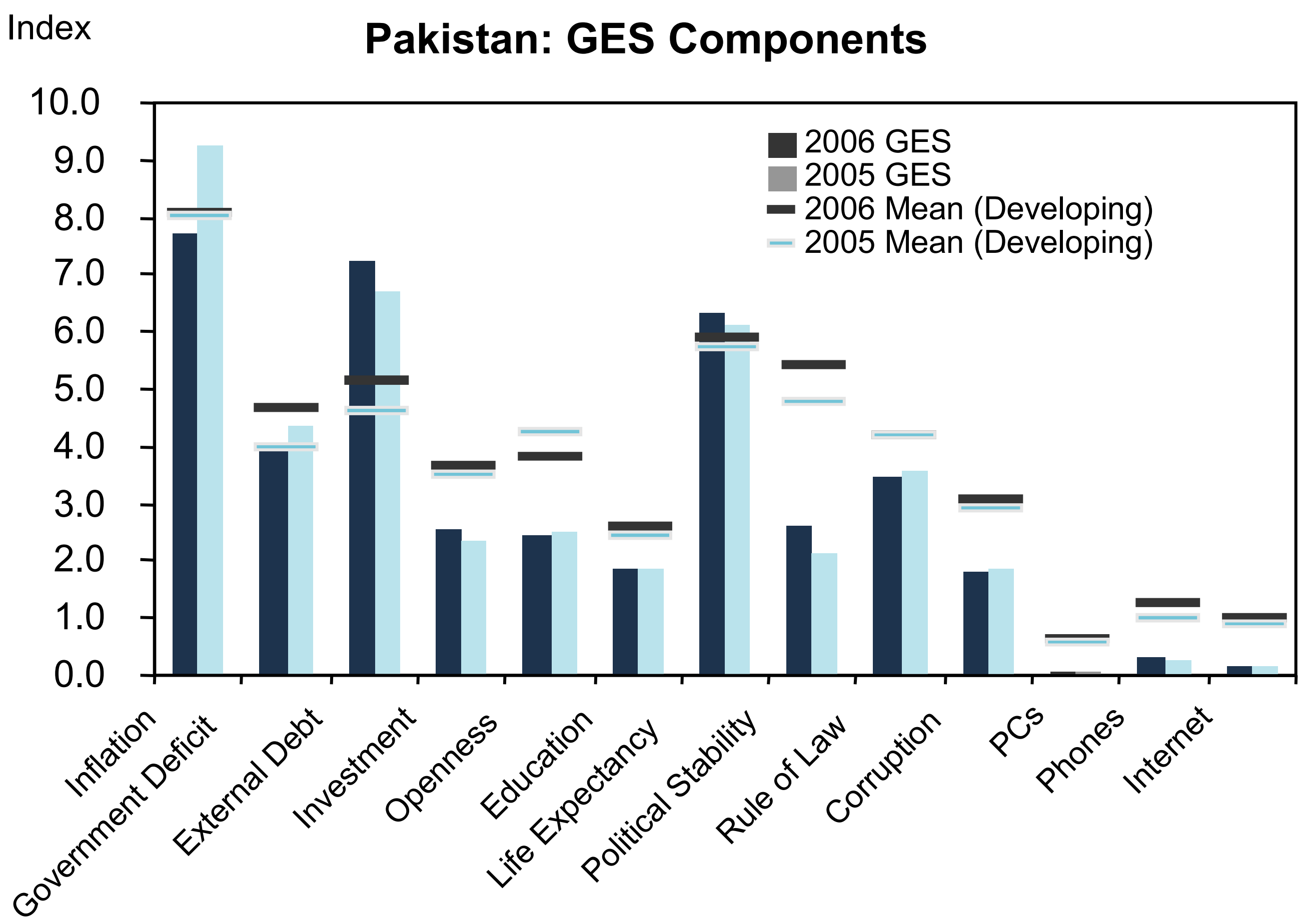
Getting Conditions Right- The Growth Environment Score (GES)

- **Macroeconomic Stability**: Inflation; government deficit; external debt
- **Macroeconomic Conditions**: Investment rates; openness of the economy
- **Technological Capabilities**: Penetration of PCs; phones; internet
- **Human Capital**: Education; life expectancy
- **Political Conditions**: Political stability; rule of law; corruption

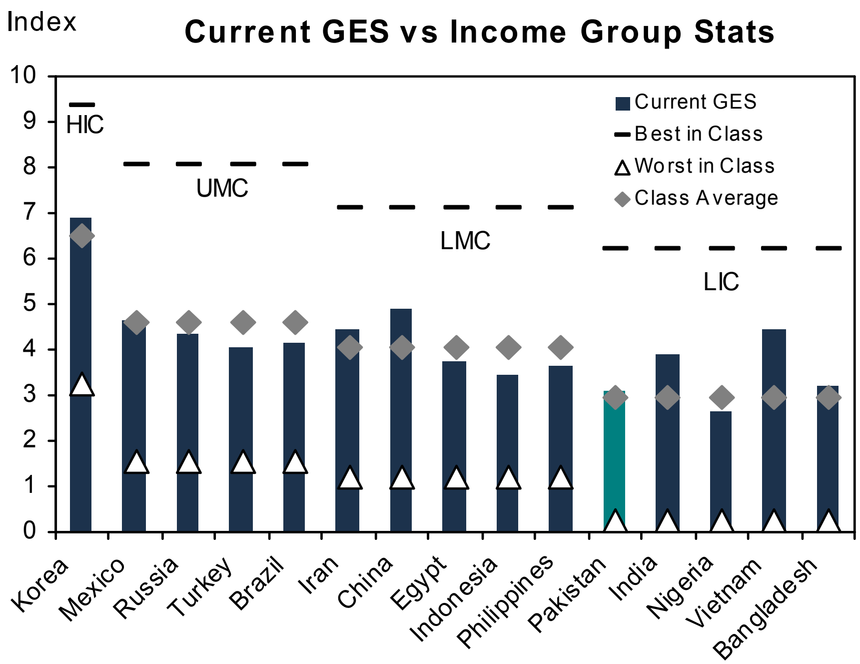
Growth Environment Score (GES) Index
- BRICs in top half of rankings, Pakistan below ave

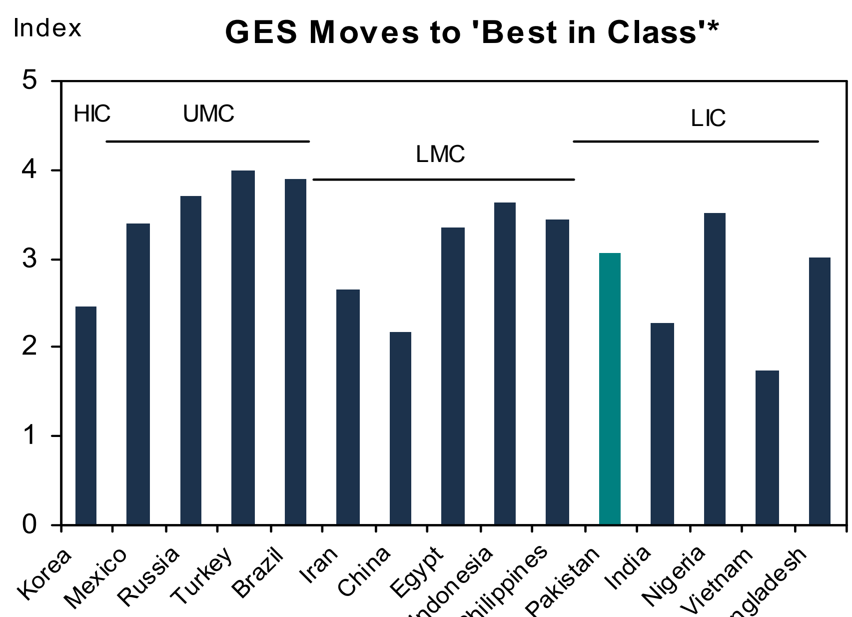


Pakistan: GES – macro stability +; tech, political conditions -



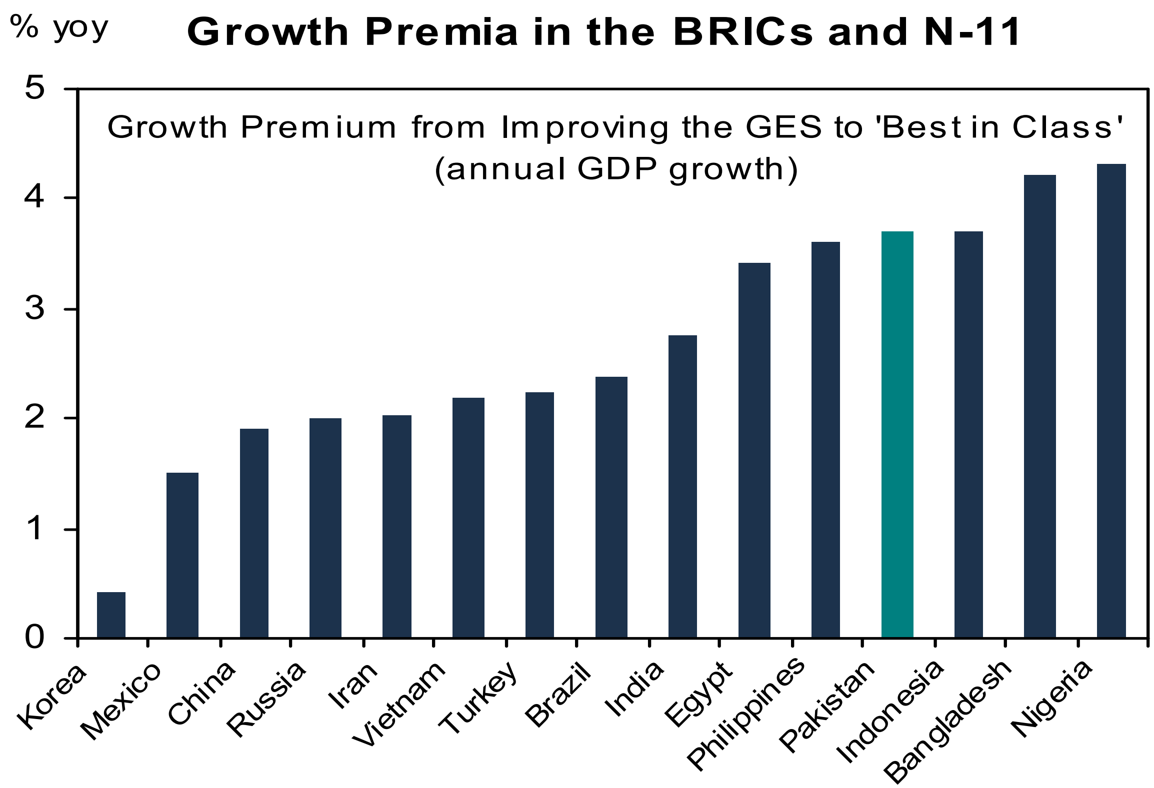
Current GES vs. Comparable Income Groups



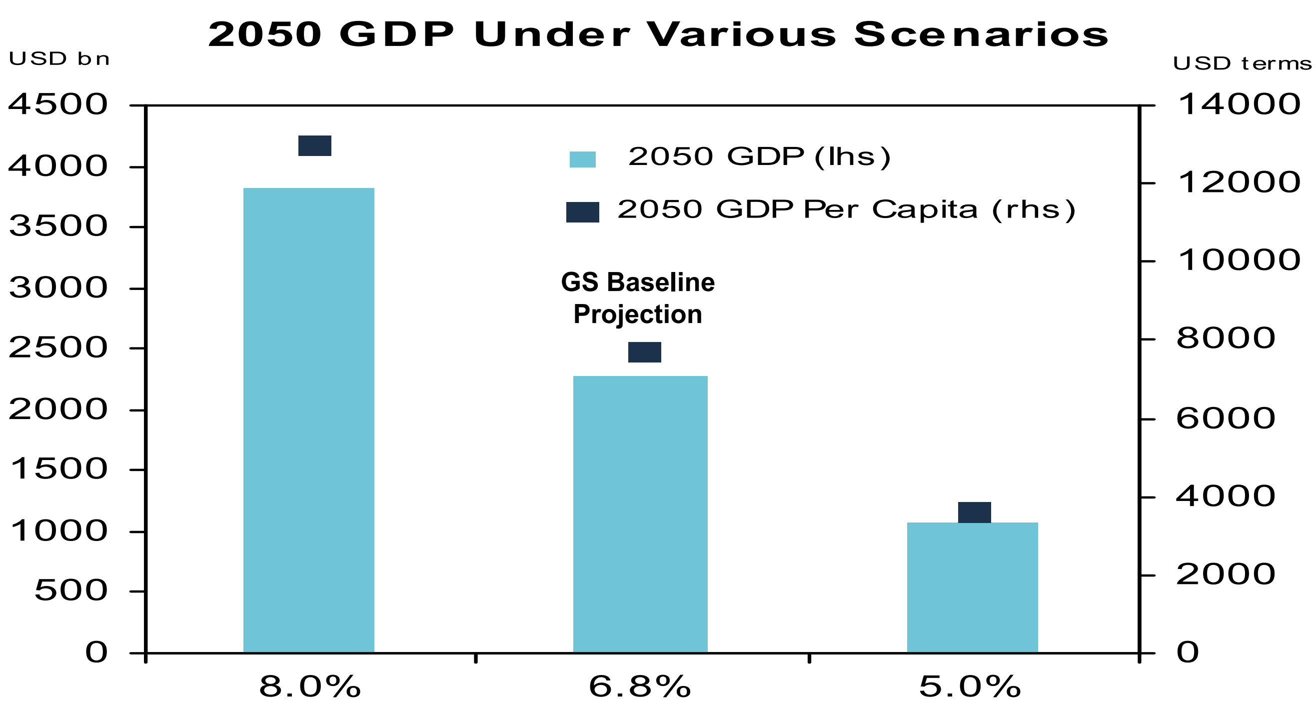


* 'Best in Class' GES - Current GES

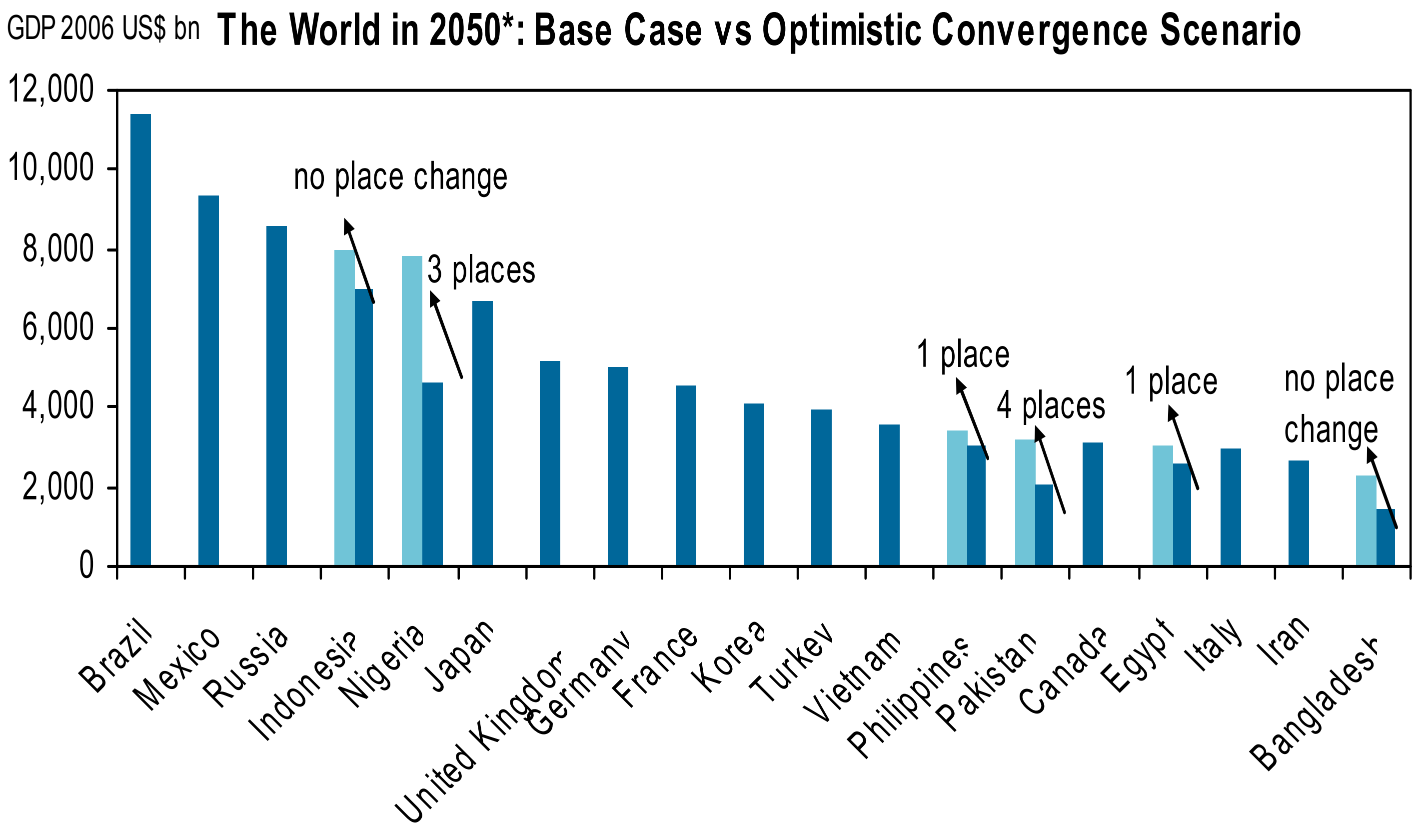
Raising GES Could Help Pakistan's Growth Significantly



Pakistan's Per Capita Income 70% Higher under 8% p.a. Scenario Compared to Baseline



Absolute Size Could be Much Larger If Conditions Improve



* Excludes China, US and India (top three). The chart shows how the world would look in 2050 if convergence speed in Period 1 increased to 0.8% in Egypt, Philippines and Indonesia, and to 0.6% in Bangladesh, Pakistan and Nigeria

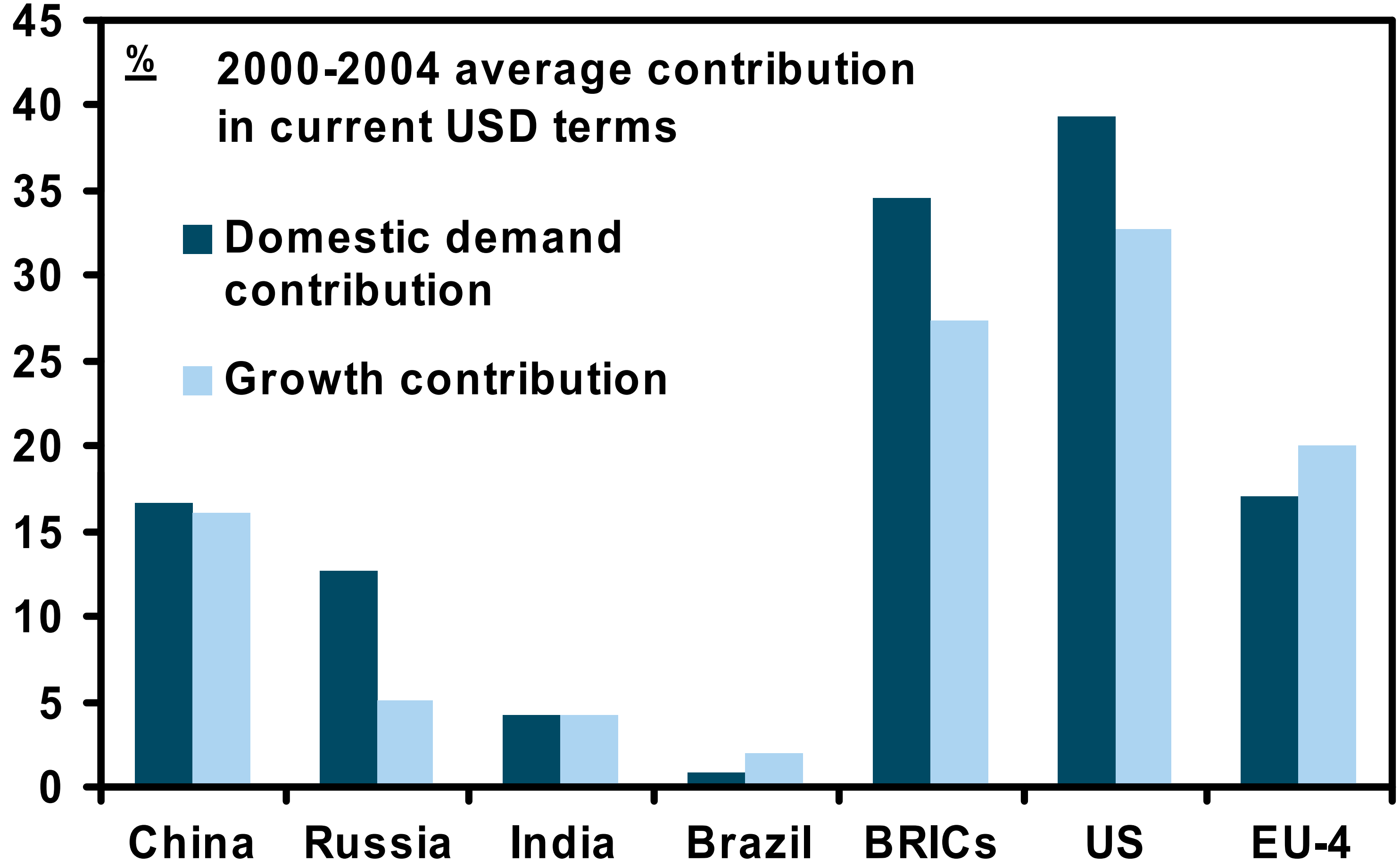
Reality Better than Dreams So Far...

%	2005-2050	2005-2010	2005	2006	2007 (F)
Brazil	3.7	4.0	2.9	3.7	4.0
Russia	2.8	4.5	6.4	6.7	7.0
India	5.6	6.2	7.3	8.8	8.0
China	4.6	7.6	10.2	10.7	10.8
Pakistan**	5.1	5.6	8.6	6.6	6.5

Fiscal Year for India and Pakistan

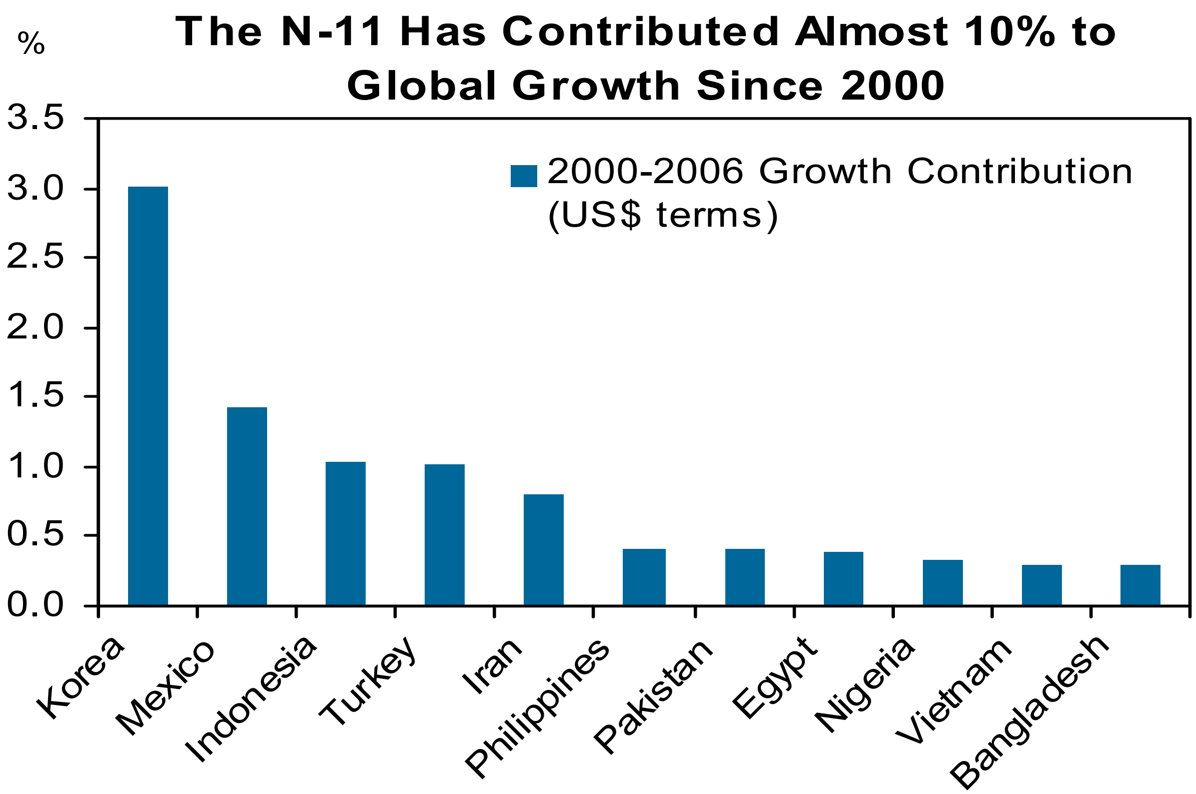
** IMF WEO Database

Domestic Demand and Growth- BRICS More Important than EU



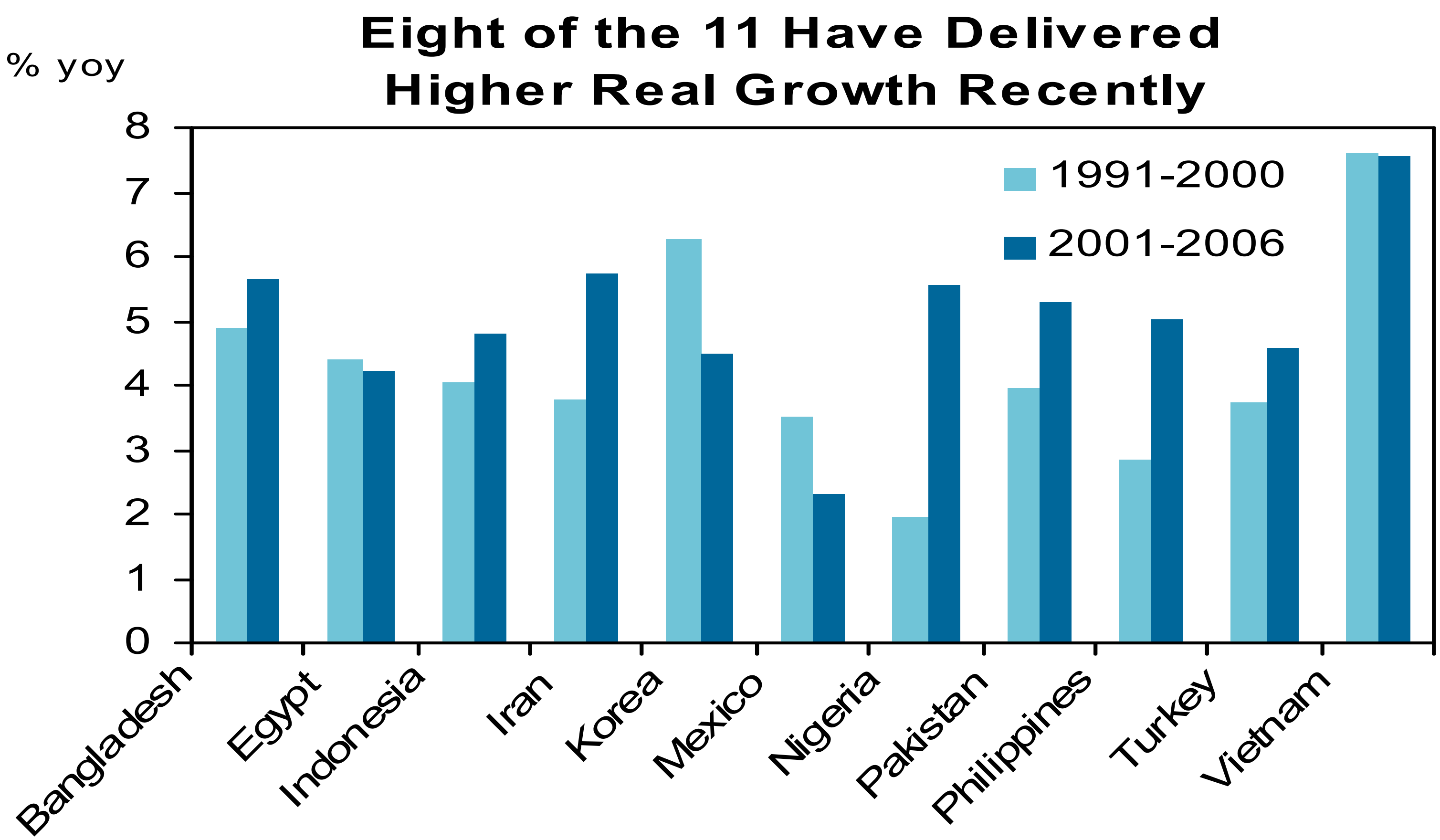
Source: World Bank, GS

N-11: A Significant Contribution to Global Growth



Source: GS calculations

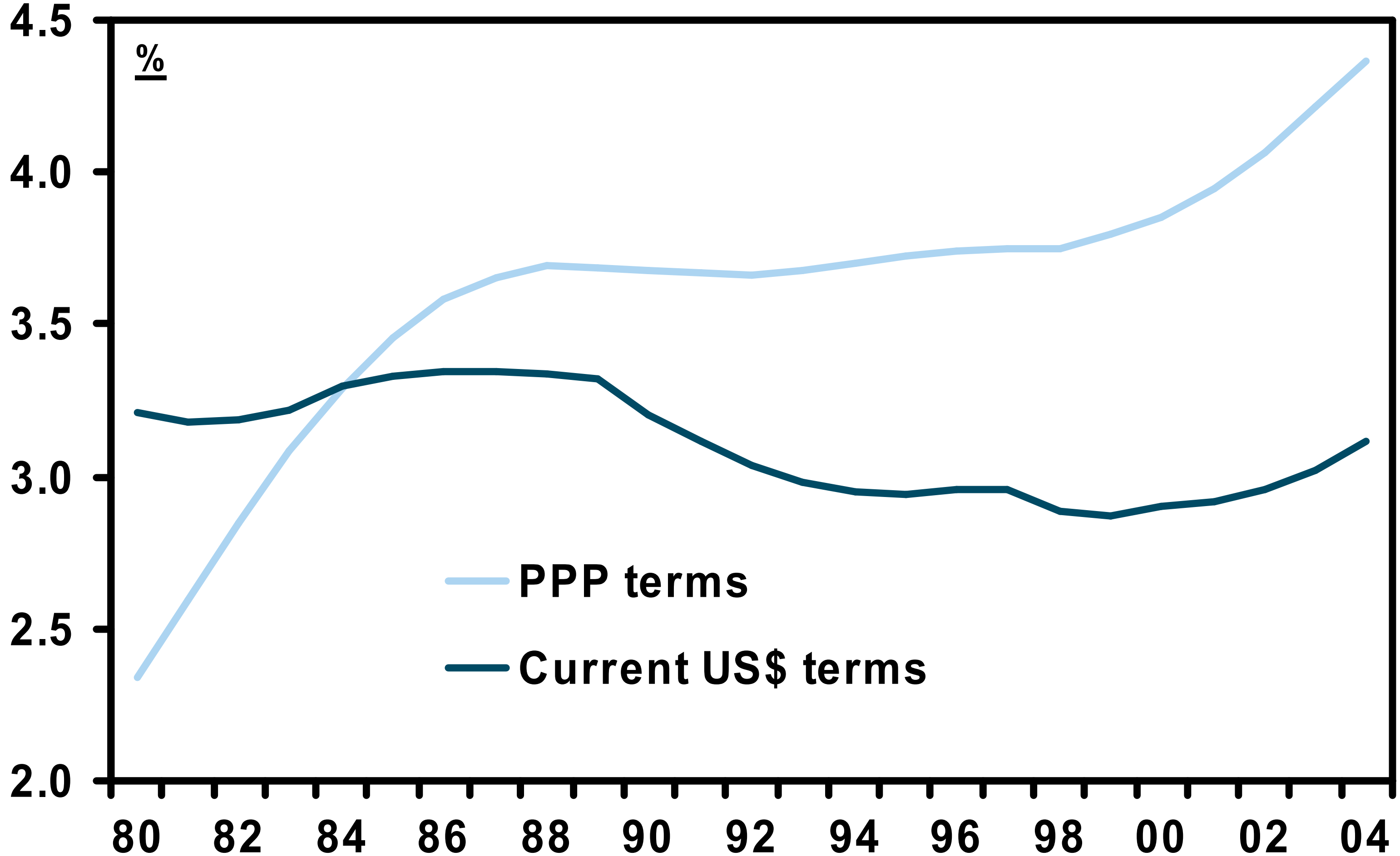
Also Recent Output Growth Performance Has Been Robust



Source: IMF, GS

N-11 and Pakistan

World Trend Growth Rising due to BRICs and N-11?



Source: World Bank, GS Calculations

Summary: BRICs & N-11— Implications of a Growing Force

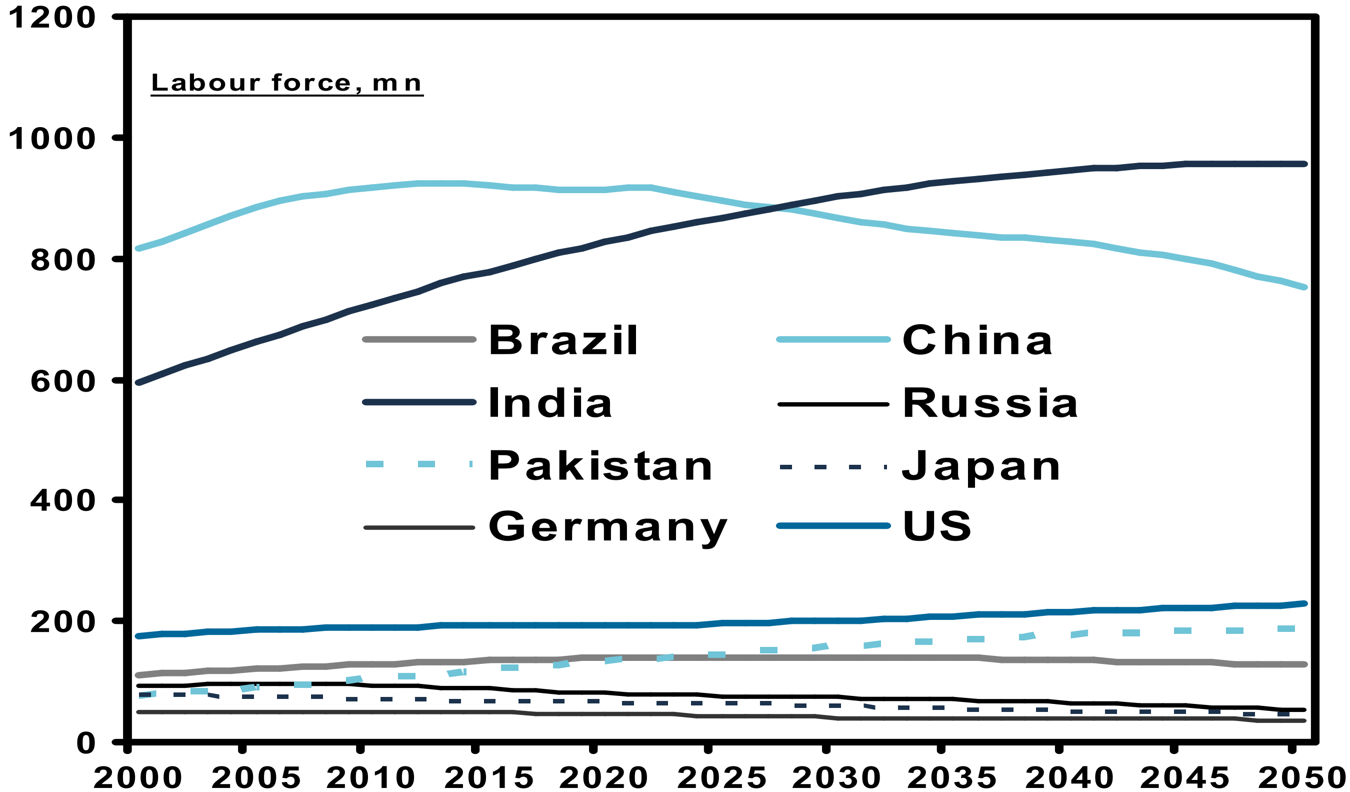
- In less than 40 years, the BRICs & N-11 could be larger than today's G7, with only the US and Japan remaining in top 6.

- New demand from the BRICs could rival the G6 within a decade, implying changing global consumption and production patterns.

- The size of the "middle-class" will mushroom – implying sharp increases in demand for consumer durables and energy.

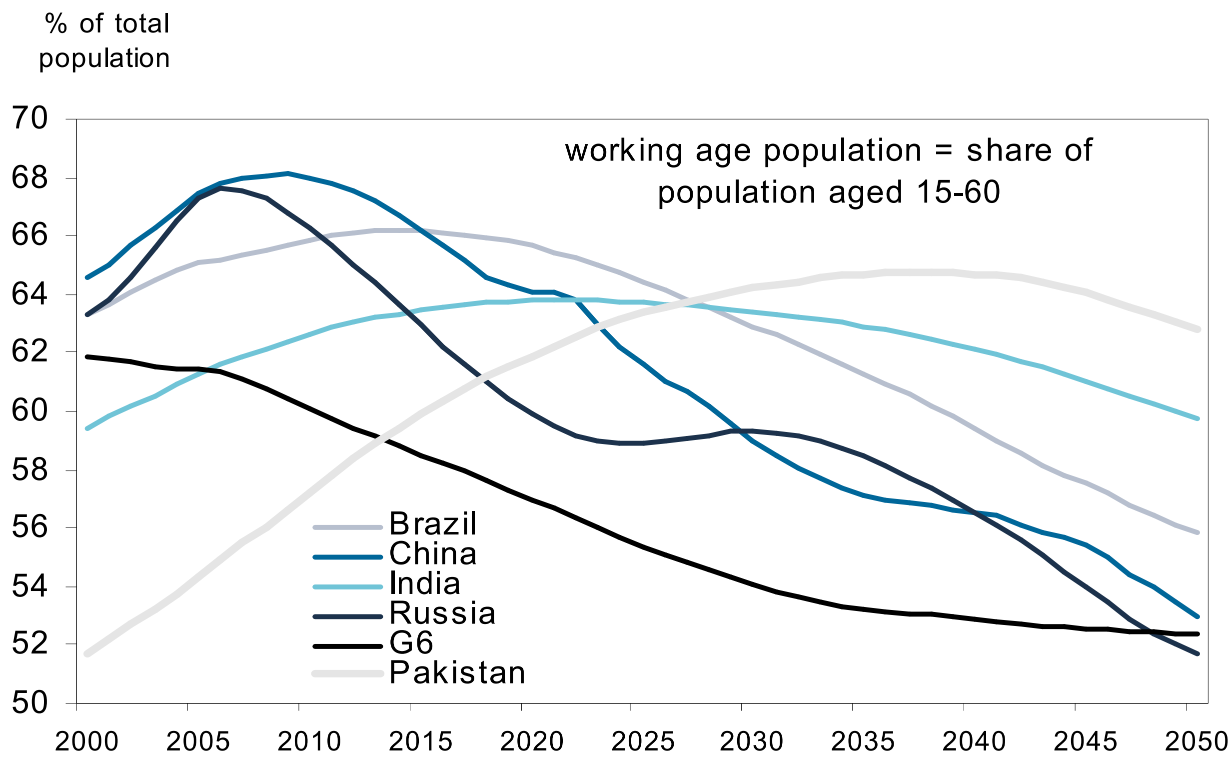
Young Pakistan’s “Window of Opportunity”

India's Labor Force Dominates the BRICs and Today's G6 By 2030



US Census projections; GS Economics

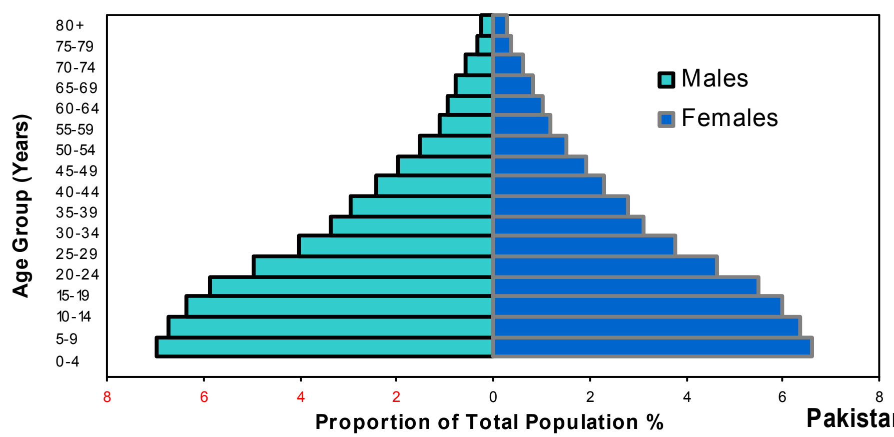
Labour-force: China Aging Rapidly, India and Pakistan Improve



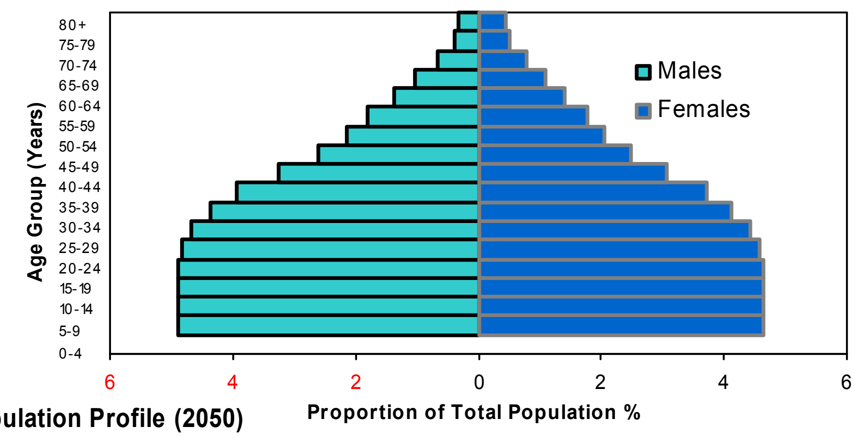
US Census Bureau

Population Pyramid Projections Show Increasing "Bulge" in the Working-Age Brackets

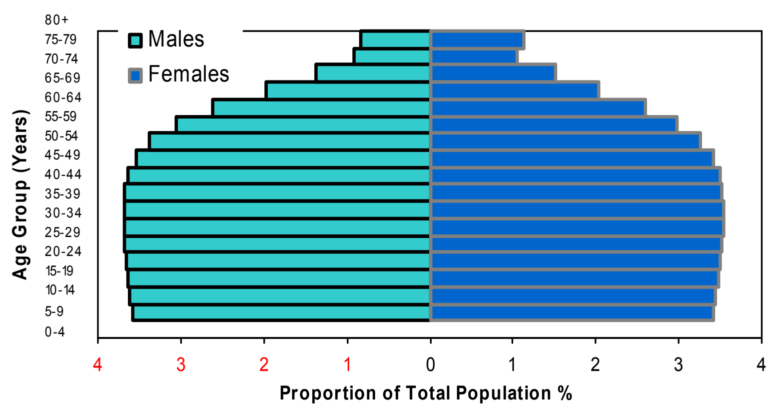
Pakistan Population Profile (2006)



Pakistan Population Profile (2025)



Pakistan Population Profile (2050)



US Census Bureau

Pakistan’s Working-Age Population Projected to Grow from 91 million Currently to 185 million in 2050

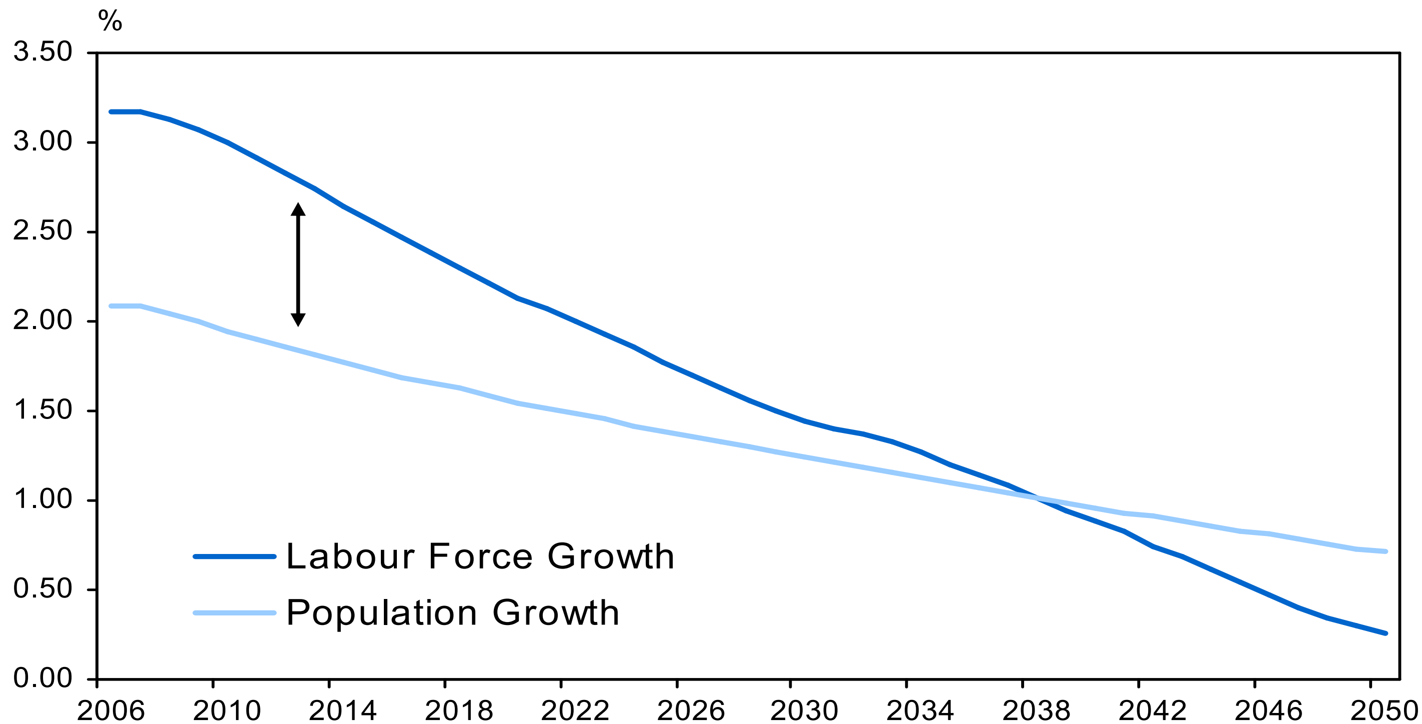
Labour force, mn											
mn	**Brazil**	**China**	**India**	**Russia**	**Canada**	**France**	**Germany**	**Italy**	**Japan**	**UK**	**US**
2006	123	894	669	97	21	37	50	35	76	37	187
2010	129	917	722	93	22	36	50	35	71	37	190
2015	135	920	789	86	22	36	49	34	68	38	192
2020	139	914	852	80	22	35	47	33	67	37	193
2025	140	896	907	76	22	35	44	31	64	36	195
2030	140	867	952	73	22	34	41	29	61	35	201
2035	139	841	988	70	22	33	40	27	56	35	208
2040	136	827	1,018	66	22	33	39	26	52	35	216
2045	132	800	1,042	61	22	32	38	25	49	35	222
2050	128	751	1,059	55	22	32	37	24	47	34	228

Source: US Census Bureau International Database

Labour force, mn											
mn	**Bangladesh**	**Egypt**	**Indonesia**	**Iran**	**Korea**	**Mexico**	**Nigeria**	**Pakistan**	**Philippines**	**Turkey**	**Vietnam**
2006	91	48	145	44	33	66	70	**91**	53	46	55
2010	97	52	154	48	34	70	77	**103**	58	49	59
2015	105	57	164	49	34	75	87	**118**	64	51	63
2020	115	61	172	50	32	78	98	**132**	69	53	64
2025	126	66	178	51	31	81	111	**145**	74	53	65
2030	137	69	182	52	29	83	126	**157**	79	53	66
2035	146	72	184	52	27	84	142	**167**	82	53	66
2040	153	74	184	51	25	84	160	**176**	85	51	65
2045	158	75	184	48	23	84	180	**182**	88	50	63
2050	163	76	184	44	22	83	201	**185**	90	48	60

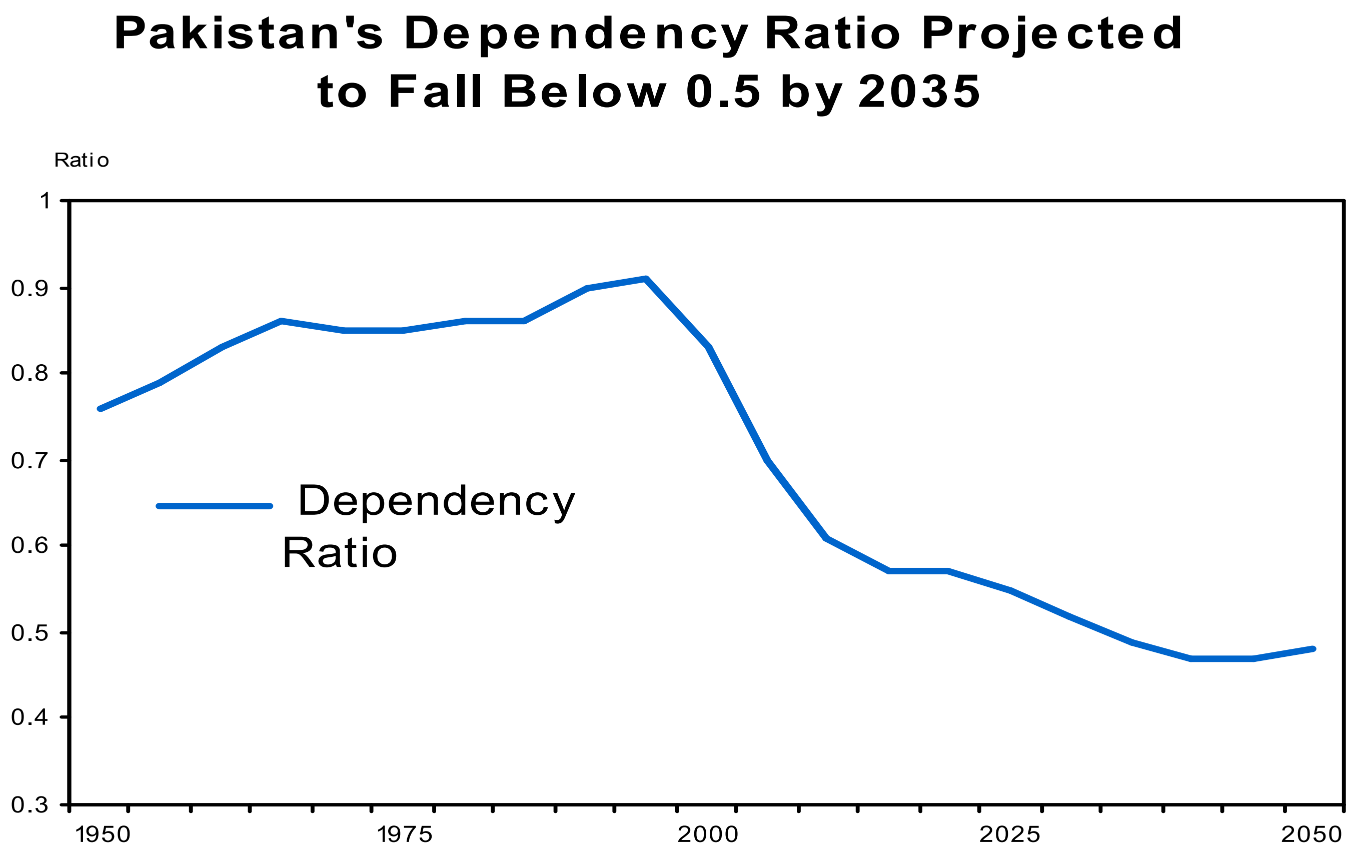
Source: US Census Bureau International Database

Pakistan's Labor Force Growth Projected to be Higher Than Population Growth Leading to ......



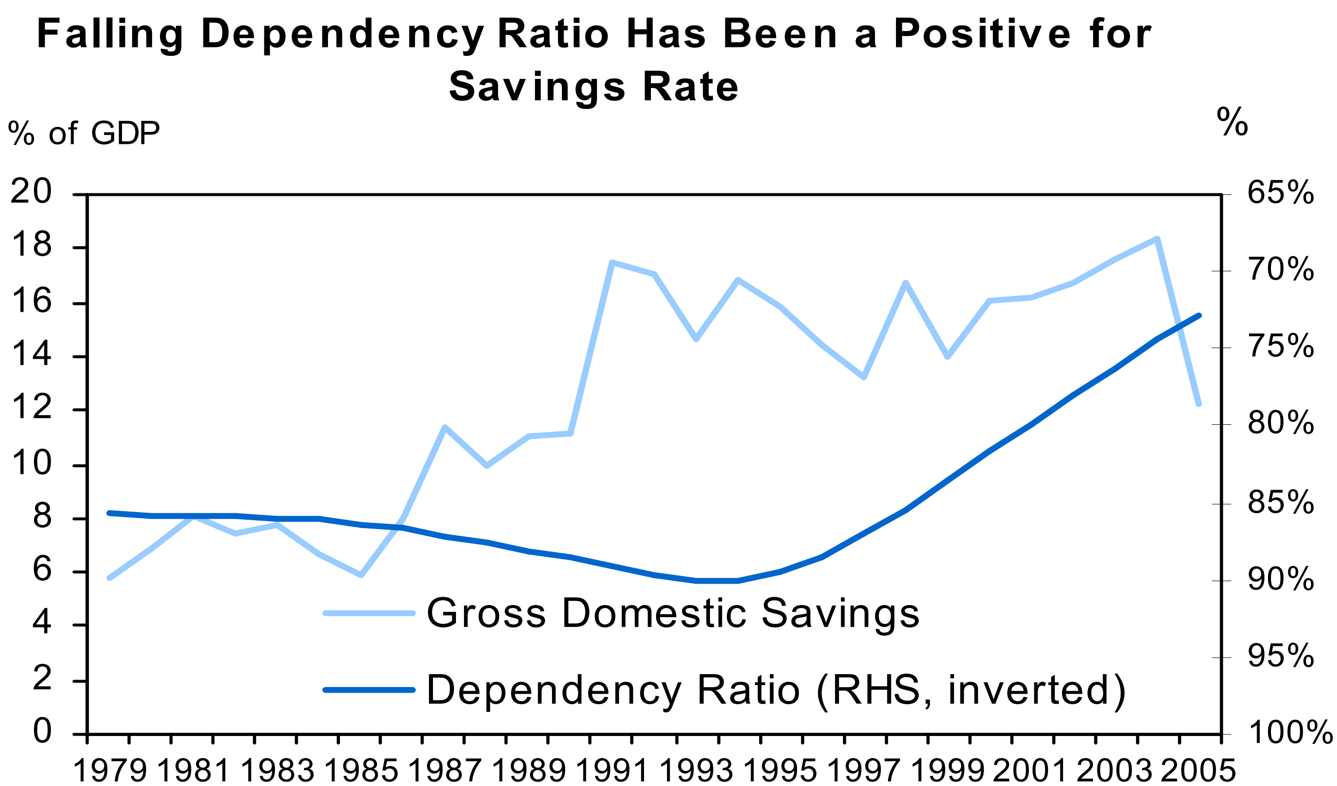
UN Population Information Network (2006)

Fall in Dependency Ratios Over Time



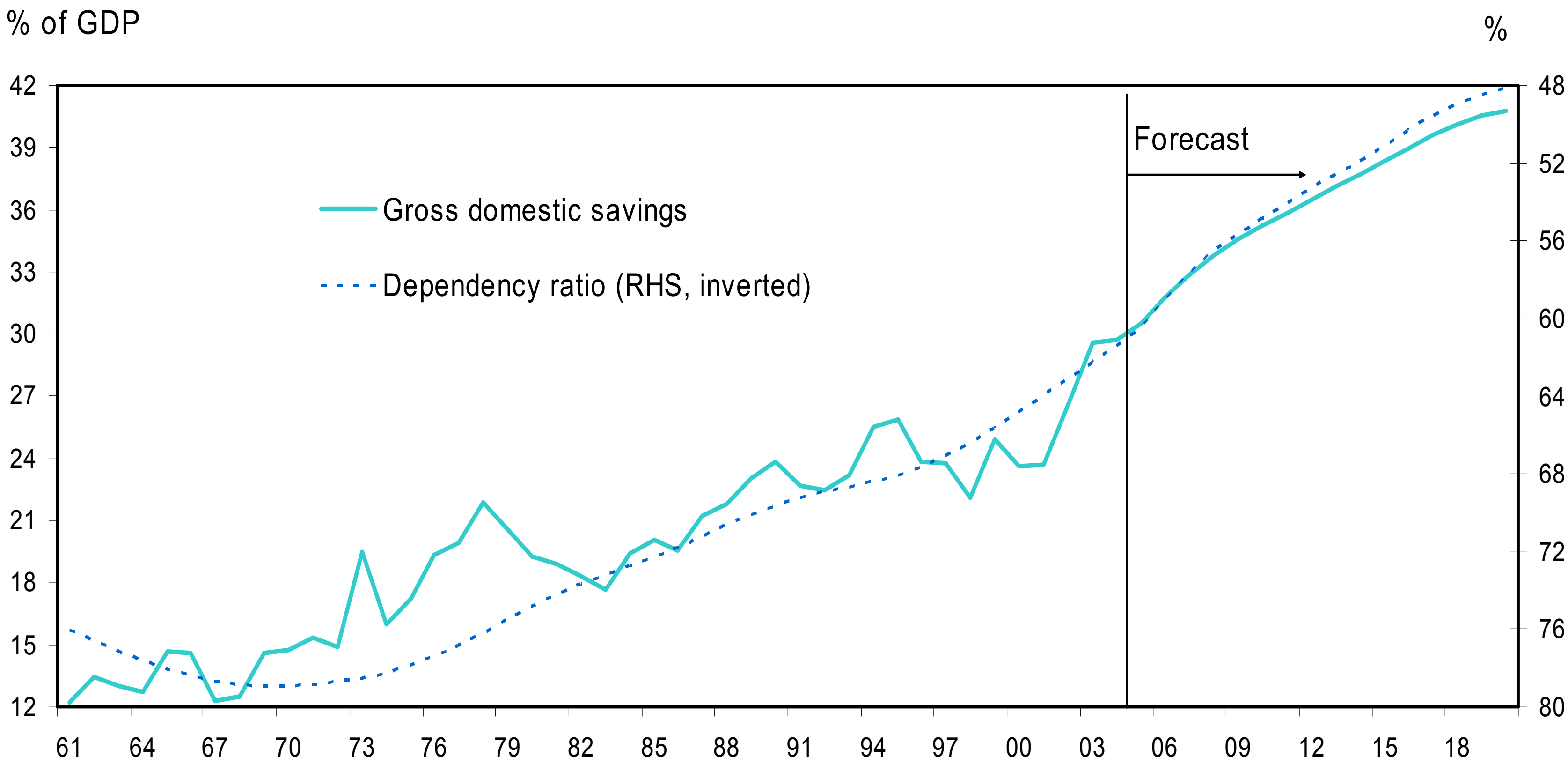
Source: UN

Fall in Dependency Ratio Associated with Rising Savings Rate



UN Population Information Network (2006)

Stronger Relationship in India's Case



UN Population Information Network (2006)

Role of "Demographic Dividend" in Driving Growth

- **Declining dependency ratios** offer potential economic benefits as working-age group tends to earn more relative to it's consumption and therefore contribute more to output and savings
- Numerous academic studies have identified the role of **favourable demographic transition** in driving East Asian economic growth (e.g. Bloom et al (1998))
- Positive impact on per capita income due to the increasing share of labor force as **productivity improves**
- **Falling fertility rates** encourages female participation in the labor force

The Three Main Transmission Channels....

- **Labor Supply**: As demographic transition runs it's course, increasing share of population enters the labor force, especially females, as fertility rates decline

- **Savings**: Working-Age population has the potential to earn more relative to it's consumption which promotes savings, thus improving investment rates. This effect is most powerful when share of population in the **35-60** age bracket rises

- **Human Capital**: Creates incentives to build human capital as dynamics such as increase in life expectancy and fewer children come into play

However, Demographic Dividend is Not *Automatic*

- **Policy environment** is crucial
- **Question of Employability**: Strong emphasis on quality, quantity and relevance of education is needed in order to exploit the demographic window of opportunity
- **Gender Angle**: Demographic transition sets greater challenges in the case of females. Change in attitude and perception of female's economic role necessary to maximise the gains
- **Health of the Population:** Unless, there is improvement in health status of the population increase in labor supply *may not* lead to productivity improvement

Conclusions

- **Young Pakistan’s demographic profile** offers significant source of potential economic benefits
- “**High Population**” argument fails to recognise the potential benefits of changing age structure, as excess workers can be put to work. On the other hand, “**Demographic Dividend**” thesis ignores the fact that available workers cannot be *automatically* absorbed to deliver additional growth
- However, various strategies (specifically targeting **education and health sectors**) exist, which can help exploit the opportunity offered by the demographic dividend window
- Implications for **fiscal policy and the role of the government**, as both health and education sectors suffer from the “public good” syndrome

N-11 and Pakistan