

EM Equity in Two Decades: A Changing Landscape

- **Significant shifts in global equity markets:** Over the next two decades, emerging equity market capitalization could increase substantially in absolute terms and overtake developed markets. The primary drivers are rapid economic growth and capital market deepening. China may exceed the US in market cap terms by 2030.
- **The EM landscape in two decades:** Emerging equity cap could rise from \$14tr to \$37tr in 2020 and \$80tr by 2030, bringing the EM share of global equity cap from 31% to 44% and 55% by these respective dates. The EM weight in the MSCI AC World index may also increase from 13% to 19% and 31% by 2020 and 2030. The BRICs' share of world equity cap may be 30% by 2020 and 41% by 2030 vs. 18% now. For the N-11, the share could rise to 6% in 2030, from 5% now.
- **DM savings pools will need to own more EM:** We estimate that developed market institutional asset managers currently hold 6% in EM equities within their total equity portfolio. This weighting may rise to 18% by 2030, implying net purchases of \$4tr. The institutionalization of EM savings pools will also gather pace; this may help dampen EM equity volatility and valuation swings.
- **EM opportunities and challenges:** EM equities offer investors attractive potential returns, but will require a greater allocation of business resources. Financial intermediaries have substantial revenue opportunities, but will need to localize further; operating costs and competitive pressures will rise.

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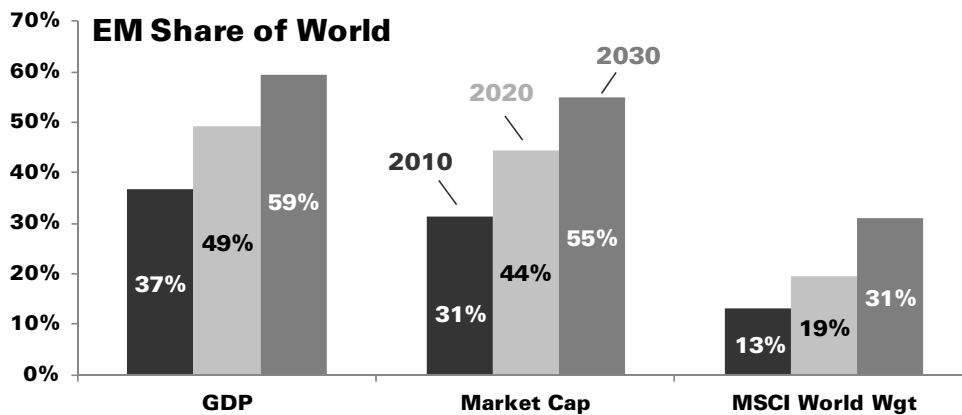
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Contents

Main Points	3
Emerging markets: Larger share of a bigger global equity pie	5
Analytical insights	14
Ramifications of a changing EM equity landscape	22
1. DM Savings Pools: Current arena and future developments	22
2. Institutionalization of EM savings pools	30
3. Implications for investors, financial intermediaries, corporates	36
Risks and caveats to our forecasts	41
Appendix I: Panel model details	43
Appendix II: Our Growth Environment Scores (GES)	45

EM equities may represent 55% of global market cap by 2030



Source: IMF, MSCI, Goldman Sachs Global ECS Research estimates.

Main Points

Substantial changes to the size and composition of global equity markets are likely over the next two decades

Based on our long-term GDP growth forecasts and our expectations for equity market deepening, we believe the following changes may take place:

Significant expansion in global equity market cap

- **Global equity market** cap may rise from \$43tr presently to \$83tr in 2020 and \$145tr in 2030 (in fixed USD).
- **Emerging market** (EM) equity cap could increase from \$14tr to \$37tr and \$80tr in 2020 and 2030, respectively.
- **Developed market** (DM) equity cap may expand from \$30tr now to \$46tr in 2020 and \$66tr in 2030.
- We estimate that the \$65tr increase in EM market cap will subdivide into \$39tr of **organic growth**; \$14tr of **new issuance**, and \$12tr from gains on that issuance.
- **China's** market cap (on-shore as well as off-shore listed equities) is likely to rise from \$5tr now to \$41tr in 2030. This would make China the largest individual equity market globally. For comparison, the **US** may expand from \$14tr now to \$34tr in two decades.
- The **BRICs** market cap may rise from \$8tr to \$25tr and \$59tr in 2020 and 2030. The **N-11** market cap could grow from \$2tr to \$4tr and \$8tr over this period.
- The **20-year CAGRs** for global, DM and EM equities are 6.2%, 4.0% and 9.3%. The **BRICs** and **N-11** CAGRs are 10.6% and 7.3%. Note these are market cap projections, which include primary issuance; investment returns will be driven by earnings and valuation change and may vary widely from market cap growth.

Marked increase in the EM share of the global market pie

- **EM** market cap as a share of global market cap may increase from 31% now to 44% by 2020 and 55% by 2030.
- The **BRICs'** share could grow from 18% to 30% in 2020 and 41% in 2030. The **N-11** share may rise from 5% to 6% in 2030.
- **China** could rise from 11% to 20% in 2020 and 28% in 2030. The **US** may fall from 32% to 27% in 2020 and 23% in 2030.

EM share of the global index will also rise, but not quite as much

- The **EM** weight in the MSCI AC World index may rise from 13% to 19% in 2020 and 31% in 2030.
- The **DM** weight could moderate from 87% to 81% in 2020 and 69% in 2030.
- **China** may rise from 2% to 4% in 2020 and then expand to 13% in 2030. The key issue is when the **A-share market** becomes more accessible to foreign investors; we assume this happens after 2020.
- The **BRICs** index weight may rise from 6% to 11% in 2020 and 22% in 2030. The **N-11** weighting may increase from 3% currently to 4% in 2030.
- We have used **conservative assumptions** for our EM market projections; if underlying economic growth occurs as we forecast, the EM vs DM splits could be greater.

Ramifications of a changing EM equity landscape

The potential increase in the size and relative importance of EM equities has important ramifications for DM institutional asset management pools, EM savings pools, and for investors, financial intermediaries and DM corporates.

DM savings pools will need to own more EM equities

- **Total assets under management** of the conventional DM fund management industry (pension funds, insurance companies, and mutual funds) are currently about \$70tr. This could rise to \$120tr by 2020 and \$190tr by 2030.
- We estimate that DM investment funds currently hold **6% in EM equities** out of their total equity allocation (31% of total AUM). This may rise to **10%** and **18%** by 2020 and 2030 (the respective benchmark EM weights in the MSCI AC World index are 13%, 19% and 31%).
- DM institutions are apt to **purchase \$4tr of EM equities** over the next 20 years. This figure could be twice as large with only moderately higher assumptions for real AUM growth and EM allocations.

Institutionalization of EM savings likely to gather pace

- Rapid economic growth and financial market deepening will drive further **institutionalization of EM savings pools**. The US provides a good example: households directly owned 91% of the equity market in 1950 vs. 29% now.
- A deeper institutional ownership base may impact the **behavior of EM equity markets**. Potential changes include lower volatility and less extreme swings in valuation.

Implications for investors

- **Potentially attractive absolute and relative returns** from EM equities.
- **Avoid overpaying for growth:** rolling 5 and 10-yr EM returns are positively correlated to earnings growth but negatively correlated to starting valuations.
- **Greater allocation of business resources** to EM.

Implications for financial intermediaries

- Substantial **revenue opportunities:** over the next 20 years, there could be **\$420bn** of revenues just from primary issuance and secondary market commissions; related businesses (derivatives, etc.) could increase this figure significantly.
- **Competitive pressures** are likely to rise, especially from stronger local players.
- **Localization** will increase and **operating costs** will rise.

Implications for DM corporates

- These include access to diverse EM-based **capital pools**, changes to their **shareholder base** as EM investors increase holdings, and changing **industry competitive dynamics** as EM companies become larger in absolute and relative terms.

Caveat

These projections assume that fundamental conditions remain conducive to the realization of each country and market's growth potential, which may not necessarily hold true over a two decade span. This analysis therefore highlights the central tendency for market development and is subject to considerable variance.

A Changing Equity Landscape

Over the next two decades, the emerging equity markets are likely to increase substantially in absolute terms and overtake developed markets in terms of capitalization. The primary drivers are rapid economic growth and the maturing of equity markets that are at earlier stages of development. The rising importance of emerging market equities will have several important ramifications. First, DM institutional asset management pools will need to increase their holdings of EM equities. Second, the institutionalization of EM savings pools is likely to gather pace. Third, investors, financial intermediaries and DM corporates will have significant opportunities as well as challenges from these shifts in the equity landscape. We encourage readers to anticipate rather than react to the changes that are likely to occur.

Emerging markets: Larger share of a bigger global equity pie

Framework

Our framework is straightforward, and revolves around a) our long-term GDP growth expectations, including currency changes; and b) an assumption that market cap to GDP ratios will tend to increase as per capita income rises, with allowances for structural differences between some markets as we discuss below. We also include ‘sanity checks’ of our market cap projections in terms of the underlying earnings growth and new issuance that would be consonant with the growth in markets that we project.

We are fully aware of the uncertainty surrounding long term forecasts, but think that setting out logically-reasonable estimates of the direction and magnitude of change can help investors anticipate and prepare for the substantial shifts in the investment environment that we envision.

Conclusions first

Before presenting the details, we summarize the main conclusions from our long-term market cap analysis.

- **Significant increase in the size of emerging equity markets.** Over the next 20 years, global equity capitalization (in fixed 2010 USD) is likely to increase from \$43tr to \$145tr. Within this, the capitalization of the emerging market subset may rise from about \$14tr to \$80tr, whereas the developed markets are likely to grow from \$30tr to \$66tr.
- **Higher EM market cap CAGRs are driven by real GDP growth and market deepening.** Compared to a 6.2% CAGR for global markets overall, the EM growth of 9.3% is likely to be more than twice the DM rate of 4.0% (in fixed 2010 USD). For comparison, on a nominal basis, DM equity cap has grown at a CAGR of 6.5% over the past twenty years and EM has expanded at a clip of 15.9%. Our forecasted market cap CAGRs are moderately higher than the real GDP growth rates we project (global 4.1%, EM 6.7%, DM 1.8%). The difference is largely due to further capital market deepening via primary issuance; we have conservative assumptions on EM valuations.
- **Significant shifts in the mix of global market cap.** Emerging equity markets currently account for 31% of global equity market cap, but they may overtake the developed markets and represent 55% of the world’s capitalization by 2030.

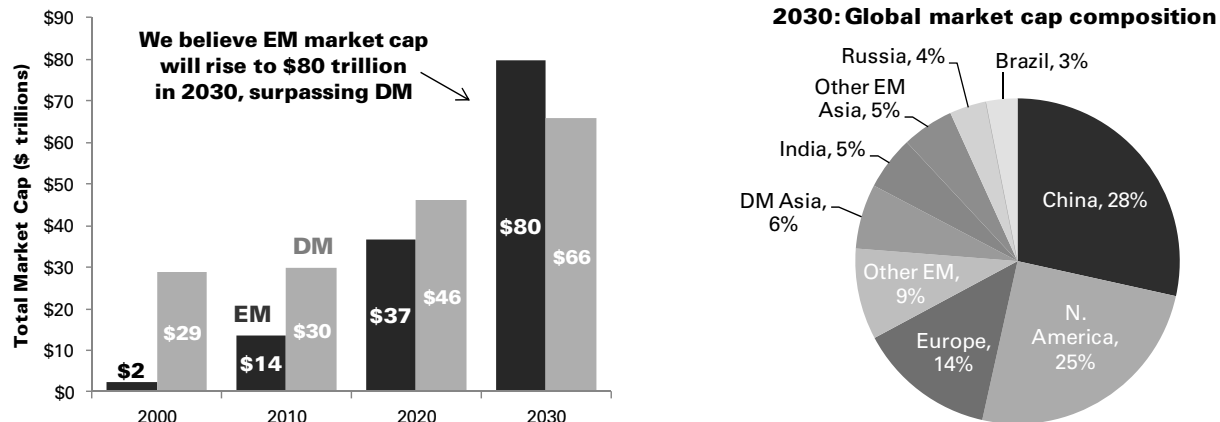
- Substantial, although not as dramatic, changes in benchmark index composition.** Emerging markets currently comprise 13% of the MSCI All Countries World Index. We expect this share to rise to 19% by 2020 and 31% by 2030. The lower index weight compared to the EM share of global market cap is because of lower free float ratios and foreign investment restrictions, notably for China.
- The ascent of the BRICs equity markets.** The BRICs' equity market cap may rise from \$8tr to close to \$59tr by 2030, which is equivalent to a CAGR of 10.6% in fixed USD terms. This would take their share of global market cap from 18% to 41% and their share of the MSCI AC World index from 6% to 22%.
- China's market cap may outstrip that of the US by 2030.** China's aggregate market cap (both mainland equities as well as offshore HK-listed stocks) may rise from \$5tr now to \$41tr in 2030, at which point it would exceed our \$34tr US equity market cap projection. China, which was just 1% of global market cap ten years ago and is 11% currently, could rise to 28% in the next two decades. Depending on how access to the mainland market evolves, China could account for 13% of the MSCI AC World index, up from 2% currently.

Exhibit 1: We forecast EM will represent 59% of global GDP, 55% of market cap and 31% of MSCI AC World in 2030
 Summary statistics of Goldman Sachs Global ECS Research estimates

	Gross Domestic Product (\$ tril)				Equity Market Capitalization (\$ tril)				Share of Global Total								
	2010	2020	2030	CAGR (%)	2010	2020	2030	CAGR (%)	GDP (USD)			Mkt Cap			MSCI AC World		
									2010	2020	2030	2010	2020	2030	2010	2020	2030
EM	22	45	82	7%	14	37	80	9%	37%	49%	59%	31%	44%	55%	13%	19%	31%
DM	39	47	56	2%	30	46	66	4%	63%	51%	41%	69%	56%	45%	87%	81%	69%
USA	15	18	23	2%	14	22	34	5%	24%	20%	17%	32%	27%	23%	44%	42%	38%
China	6	16	32	9%	5	16	41	11%	9%	17%	23%	11%	20%	28%	2%	4%	13%
BRICs	11	26	50	8%	8	25	59	11%	18%	28%	36%	18%	30%	41%	6%	11%	22%
N-11	5	9	15	6%	2	4	8	7%	8%	9%	11%	5%	5%	6%	3%	4%	4%
World	61	92	138	4%	43	83	145	6%	100%	100%	100%	100%	100%	100%	100%	100%	100%

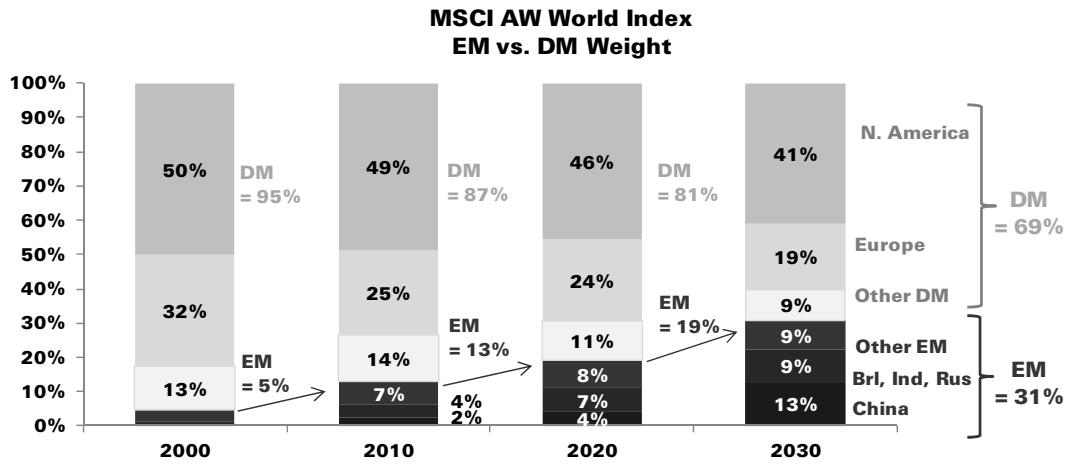
Note: Figures shown in fixed 2010 USD
 Source: World Federation of Exchanges, MSCI, Goldman Sachs Global ECS Research

Exhibit 2: Emerging markets could account for over half the global market cap in 20 years
 Global market cap distribution, 1990-2030E



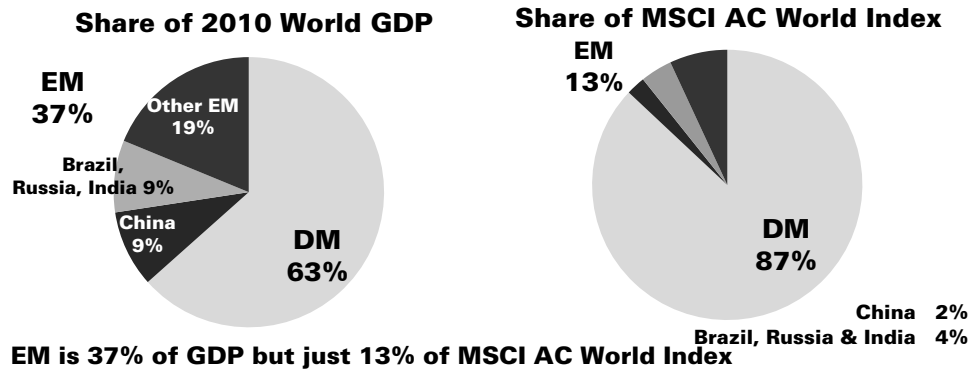
Source: FactSet, IMF, Worldbank, World Federation of Exchange, Goldman Sachs Global ECS Research estimates.

Exhibit 3: Emerging markets' share in the MSCI AC World index could rise significantly over the next 2 decades
Country weights in MSCI AC World index, 2000-2030



Source: FactSet, IMF, MSCI, Worldbank, World Federation of Exchange, Goldman Sachs Global ECS Research estimates.

Exhibit 4: There are large differences between the economic importance of the EM group and their index weights
Weights of EM vs. DM in the economy and equity market



Source: MSCI, FactSet, World Federation of Exchanges, Goldman Sachs Global ECS Research estimates.

Core assumptions: Macro projections, market cap/GDP estimates, index changes

Our projections of the rising share of EM equities in the overall global equity market pie rest on the basic premise that capital markets tend to deepen as economies mature. More specifically, we make three sets of assumptions:

1. We use our long-term projections of GDP growth and currency change;
2. We estimate how equity market capitalization may evolve relative to the size of the underlying economy; and
3. We estimate how the proportion of market cap that is included in the MSCI All Countries World Index may change as markets develop.

This analysis builds upon and updates our work on the BRICs, notably *Global Economics Paper No: 99, Dreaming with BRICs: The Path to 2050*, 1 Oct 2003, and *Global Economics Paper No: 118, The BRICS and Global Markets: Crude, Cars and Capital*, 14 Oct 2004.

We note that our equity market cap projections are meaningfully higher than the ones in our 2004 Global Paper. The variances are mainly due to a) significantly higher GDP forecasts now vs. then; and b) higher market cap to GDP ratios, the rationale for which we discuss in this piece. For reference, the current market caps for China and the BRICs are already above the previous 2020 projections, and the market cap/GDP ratio for China and the BRICs is already above the previous 2030 projected level. Moreover, the past 20-year MC/GDP range for the US, China and the BRICs has a high end that is well above the ratios we are projecting in 2030. Please refer to Exhibits 42 and 43 in Appendix I for this comparison.

Macro forecasts: Demographics, capital, productivity

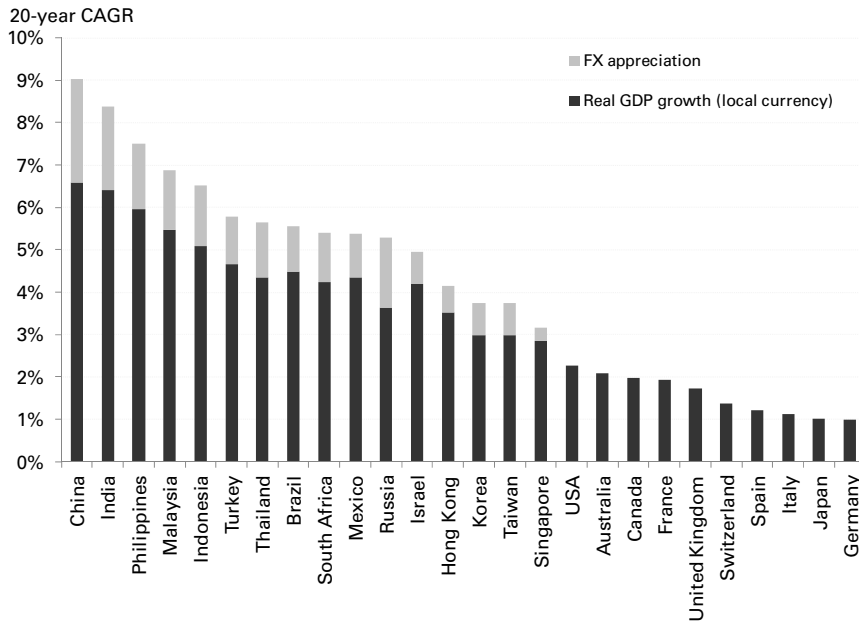
We have long-term GDP growth projections for the developed and emerging economies and have published extensively on the reasons why we anticipate higher trend rates of growth for many emerging economies over the next several decades. In essence, the forces driving faster emerging market growth are capital deepening (more rapid accumulation of capital per worker given lower starting points) and rising productivity. This is enhanced in many cases by growth in the working age population from the progression of various age group cohorts (populations with more young people have a greater 'demographic dividend' in future years) as well as changes in labor force participation rates (notably higher participation by women as education and income levels rise).

The framework for our forecasts is a formal model that defines GDP growth as a function of **growth in employment, growth in capital stock, and growth in total factor productivity**. To arrive at comparable forecasts of GDP levels and per capita income in USD terms, we also project currency changes. Currencies of rapidly growing emerging economies tend to appreciate as higher productivity drives convergence towards Purchasing Power Parity (PPP) exchange rates. Countries with higher income/capita levels tend to have exchange rates closer to PPP levels, so the trended move in their exchange rates tends to be less than in emerging economies, which often have more significant deviations from PPP rates (see Exhibit 6).

We summarize our forecasts of real USD GDP levels, growth rates, per capita income and currency change in Exhibits 5, 7 and 8. Over the longer term, we expect about 2/3 of the increase in real USD GDP for the successful emerging market economies (notably the BRICs) to come from economic growth and about 1/3 from real currency appreciation.

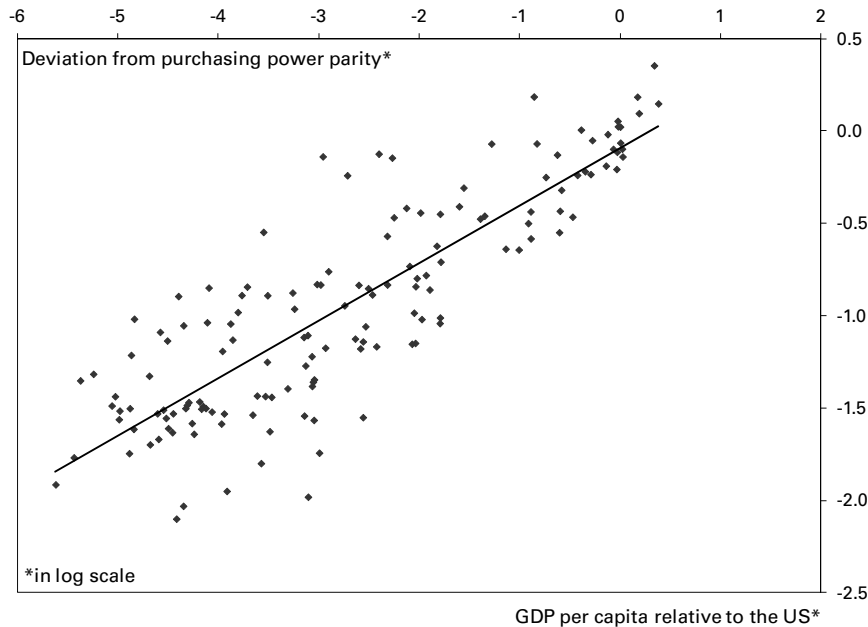
We also explicitly recognize that these projections rest on an assumption that fundamental conditions remain conducive to the realization of each country's growth potential. This is why we annually assess 13 factors relating to macro stability, macro conditions, political conditions, human capital, and technology to calculate **Growth Environment Scores** for 179 countries (see *Global Economics Paper No: 193, Introducing our 2009 GES: Growth Conditions Get a 'Stress Test'*, Dec 16, 2009).

Exhibit 5: We expect faster growth from many emerging economies during the next 2 decades
 Goldman Sachs forecasts for GDP growth and currencies (vs. USD): 20-year CAGR



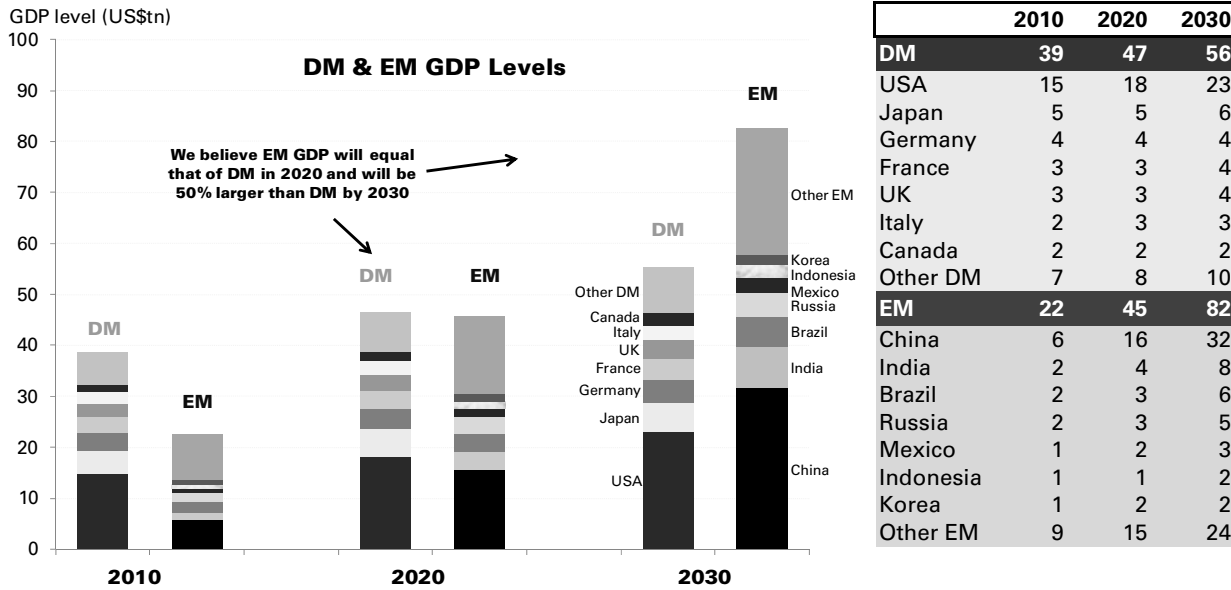
Source: Goldman Sachs Global ECS Research estimates.

Exhibit 6: Exchange rates tend to move closer to PPP levels as income per capita rises
 Deviation from purchasing power parity vs. GDP per capita relative to the US



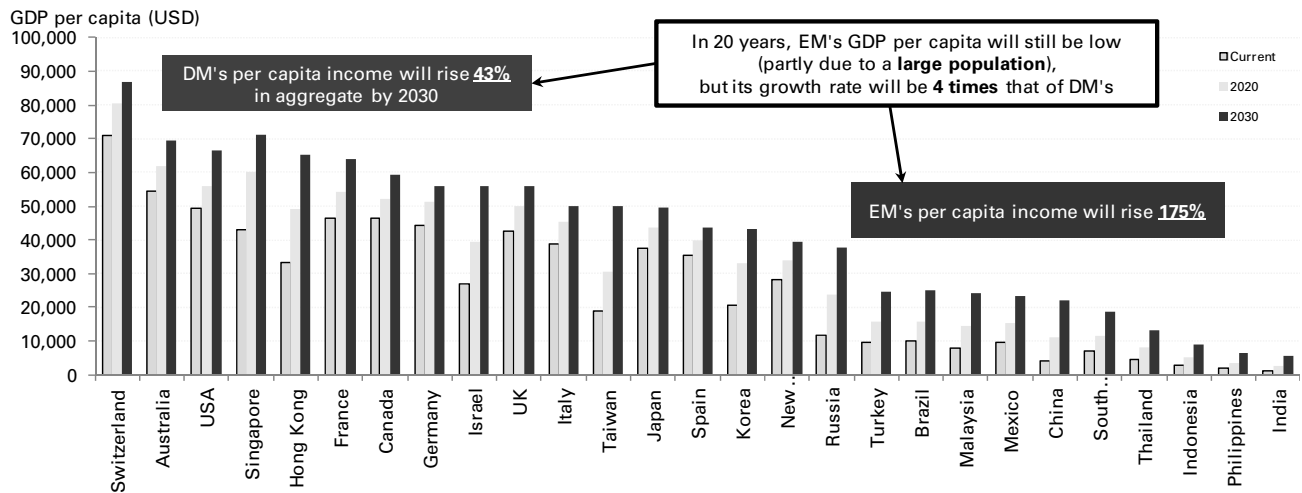
Source: Goldman Sachs Global ECS Research.

Exhibit 7: We expect GDP in EM to be similar to DM in 10 years, and be greater by half in 20 years
 Comparison of DM and EM's GDP levels (current, 2020, 2030)



Source: IMF, Goldman Sachs Global ECS Research estimates.

Exhibit 8: Although we believe EM economies will represent a larger portion of aggregate GDP compared with DM by 2030, per capita income levels, which are an important driver of our market cap projections, will still be lower than in DM economies
 USDGDP per capita estimates in 10 and 20 years



Source: IMF, Goldman Sachs Global ECS Research estimates.

Market cap/GDP: capital deepening as economies mature

To arrive at estimates of how the emerging market share of the global equity pie may evolve in coming years, we apply market cap-to-GDP ratios (MC/GDP) to the GDP estimates we have described above. We extend this foundation of our previous analysis, primarily through adding valuation insights to the analysis to isolate the capital deepening process more clearly.

More specifically, our analysis includes the following steps, logic and assumptions:

- **Data set: significant majority of global economy and current market cap.** We selected 26 developed and emerging countries that account for 85% of the aggregate global GDP, 92% of global equity market cap and 95% MSCI AC World index weight (see Exhibit 9). These countries also account for over 90% of their respective DM and EM sub-categories.
- **Valuation-adjusted market cap/GDP analysis.** The time series of MC/GDP ratios shows very significant fluctuations that cannot be explained by changes in per capita income levels or other structural factors. For example, even in the US, which is the largest and most mature equity market globally, the MC/GDP ratio has ranged from 180% to 80% during the past 10 years and presently stands around 100%. We find greater stability in this ratio when we adjust for the wide oscillation in valuations during the pronounced bull and bear phases that global equity markets have experienced in recent years. Specifically, we normalize each country's MC/GDP time series by the global mid-cycle price/book ratio, which produces a clearer and more consistent picture of capital deepening within and across countries. In effect, we are focusing on the evolution of listed book value and avoiding the noise of variations in how that book value is priced.
- **Acknowledging structural differences.** Even after we strip out valuation disparities, there are some persistent and significant differences between various countries' MC/GDP ratios. We posit three main reasons for this.
 - **Openness.** Many smaller and more open economies with high trade/GDP ratios, such as Hong Kong, Singapore, Switzerland and Taiwan, have much higher MC/GDP ratios than the developed market norm. This likely reflects the fact that the companies listed on their exchanges are driven by a broader set of fundamentals than just their home economy's domestic demand.
 - **Financial center.** Some markets, such as the UK, are well-developed financial centers and serve as the listing base for a good array of companies with a wide span of international businesses. This leads to a higher MC/GDP ratio than their peers (this is clear for the UK on a valuation-adjusted basis).
 - **Corporate financing.** Our economics colleagues have previously noted that there appear to be substantial differences in the MC/GDP ratios for economies that have a greater capital market component to their corporate financing compared to those where banks play a dominant role in financing. For example, Germany has a persistently low MC/GDP ratio even on a valuation adjusted basis, which may reflect less reliance on capital markets than in other economies at comparable stages of economic development.

- **Panel regression.** We conducted a panel regression on the countries we selected to formally examine the relationship between per capita GDP and MC/GDP ratios, with the valuation transformations we note above. This approach allows for structural differences between markets, and the relationships we estimate from this model drive our MC/GDP projections, with some adjustments as we discuss later. Our final numbers are expressed in each market's own mid-cycle PB valuation, with some allowance for structural de- or re-rating.
- **Index changes.** The MSCI AC World Index is likely to respond to the growth and deepening of the EM equity markets that we envision. In addition to the changes in index weights that will stem from more rapid underlying EM growth, we expect two added changes to index weights: a) higher free float percentages for a number of EM markets, and b) the inclusion of China A shares, once the capital account opens up and foreign access to mainland-listed equities increases. This is likely to result in meaningful changes to benchmark index weights, which investors will need to anticipate and respond to.
- **'Sanity check'.** We decompose our market cap forecasts into their underlying components, which are real earnings growth, valuation change, currency change and new issuance. This serves both as a check that our overall market cap forecasts are plausible and also isolates the amount of likely market cap and index cap that investors are underexposed to, even if they are at current benchmark weights.
- **Implications.** The implication of our market cap and index analysis is that investment flows into the rapidly maturing emerging markets will be structurally positive, notwithstanding normal cyclical fluctuations. This serves as a bridge to our ensuing analysis of developed market savings pools and the institutionalization of domestic savings in emerging markets. We also examine the implications of a rapidly evolving EM equity landscape for investors, financial intermediaries and DM corporates.

Exhibit 9: Our analysis focuses on the economies and markets that comprise the bulk of the world's GDP and market cap
Snapshots of statistics of the 26 economies we selected

EM/DM	Gross Domestic Product				Equity Market Capitalization				Index Inclusion					
	2010E (USD bn)	2030E (USD bn)	% of World 2010	% of World 2030	20-yr CAGR	2010E (USD bn)	2030E (USD bn)	% of World 2010	% of World 2030	20-yr CAGR	MSCI Cap (USD bn)	MSCI AC World 2010	MSCI AC World 2030	wgt.
USA	14,614	22,920	24%	20%	17%	13,850	33,792	32%	27%	23%	10,524	44%	42%	38%
China	5,633	31,731	9%	17%	23%	4,716	41,397	11%	20%	28%	541	2%	4%	13%
Japan	4,773	5,852	8%	6%	4%	3,157	4,779	7%	5%	3%	2,150	9%	7%	5%
Germany	3,640	4,441	6%	4%	3%	1,106	2,483	3%	2%	2%	722	3%	3%	2%
France	2,866	4,205	5%	4%	3%	1,539	4,700	4%	4%	3%	917	4%	5%	4%
UK	2,582	3,644	4%	3%	3%	2,407	5,000	6%	5%	3%	1,914	8%	8%	6%
Italy	2,295	2,868	4%	3%	2%	477	1,519	1%	1%	1%	272	1%	2%	1%
Brazil	1,990	5,862	3%	4%	4%	1,117	4,522	3%	3%	3%	469	2%	3%	3%
Russia	1,689	4,730	3%	3%	3%	767	5,316	2%	4%	4%	195	1%	2%	3%
Canada	1,583	2,346	3%	2%	2%	1,593	2,585	4%	2%	2%	1,080	5%	3%	3%
India	1,594	7,972	3%	4%	6%	1,341	7,797	3%	4%	5%	243	1%	2%	3%
Spain	1,542	1,966	3%	2%	1%	1,018	1,927	2%	2%	1%	322	1%	1%	1%
Australia	1,191	1,802	2%	2%	1%	1,059	2,239	2%	2%	2%	769	3%	3%	2%
Mexico	1,050	2,391	2%	2%	2%	350	1,441	1%	1%	1%	139	1%	1%	1%
Korea	1,014	2,112	2%	2%	2%	836	2,452	2%	2%	2%	409	2%	2%	2%
Turkey	704	2,169	1%	1%	2%	245	1,221	1%	1%	1%	50	0%	0%	0%
Indonesia	692	2,446	1%	1%	2%	363	1,315	1%	1%	1%	66	0%	0%	0%
Switzerland	524	886	1%	1%	0%	990	1,705	2%	2%	1%	710	3%	3%	2%
Taiwan	436	907	1%	1%	1%	589	1,566	1%	1%	1%	340	1%	2%	1%
South Africa	349	1,002	1%	1%	1%	666	2,331	2%	2%	2%	224	1%	1%	1%
Thailand	302	904	0%	1%	1%	200	714	0%	0%	0%	46	0%	0%	0%
Hong Kong	236	531	0%	0%	0%	488	1,285	1%	1%	1%	222	1%	1%	1%
Malaysia	235	889	0%	1%	1%	292	1,018	1%	1%	1%	96	0%	1%	1%
Israel	210	553	0%	0%	0%	177	599	0%	0%	0%	88	0%	0%	0%
Singapore	229	427	0%	0%	0%	472	1,046	1%	1%	1%	150	1%	1%	1%
Philippines	186	793	0%	0%	1%	102	437	0%	0%	0%	14	0%	0%	0%

26-Country sample included in panel model

Total26 (% of World)	52,156	116,749	85%	85%	85%	39,917	135,184	92%	93%	93%	22,670	95%	96%	96%
26 - DM (% of DM Total)	36,072	51,688	93%	93%	93%	28,156	63,059	95%	96%	96%	19,750	95%	96%	97%
26 - EM (% of EM Total)	16,084	65,061	72%	77%	79%	11,761	72,126	87%	89%	90%	2,920	94%	95%	96%

Global Totals

World	61,340	137,848	100%	100%	100%	43,325	145,429	100%	100%	100%	23,822	100%	100%	100%
DM	38,906	55,851	63%	51%	41%	29,741	65,673	69%	56%	45%	20,726	87%	81%	69%
EM	22,435	81,997	37%	49%	59%	13,571	79,756	31%	44%	55%	3,096	13%	19%	31%
BRIcs	10,906	50,295	18%	28%	36%	7,941	59,032	18%	30%	41%	1,449	6%	11%	22%
N-11	4,828	15,106	8%	9%	11%	2,065	8,404	5%	5%	6%	695	3%	4%	4%

Note: Figures shown in fixed 2010 USD

Source: MSCI, FactSet, Goldman Sachs Global ECS Research

Analytical insights

Below, we explore the issues influencing our MC/GDP analysis in greater detail.

1. Adjusting market cap/GDP ratios for valuation changes

The basic premise underlying our long term market cap projections is that financial market deepening occurs as economies mature. Thus, we would expect market cap/GDP ratios to rise as per capita income levels increase, and the empirical evidence across developed and emerging markets generally supports this.

However, **the unadjusted MC/GDP ratios are quite unstable over time**, as we noted above. This is true not just for the US, but for all the 26 developed and emerging markets we focused on.

The main ‘distorting’ factor seems to be changes in valuation, which have been quite pronounced in recent years. We focus on price/book ratios because they are more stable than price/earnings ratios, give clearer valuation signals, and are easier to use for data adjustment purposes. As an example of how significant the fluctuations have been, the US has seen its trailing P/B ratio range between 2-6x in the past decade.

In Exhibits 10-12, we show the range of MC/GDP ratios over the past 20 years and the range of price/book ratios for the markets we have examined. We then show the range of MC/GDP ratios over the past 10 years adjusted two ways: 1) using each market’s average P/B ratio (to show the valuation-neutral MC/GDP ratio for that market); and 2) using the global average P/B ratio (about 2.2x) for each market, which sets all the markets on a consistent valuation footing and thereby eliminates any systematic valuation differences between them.

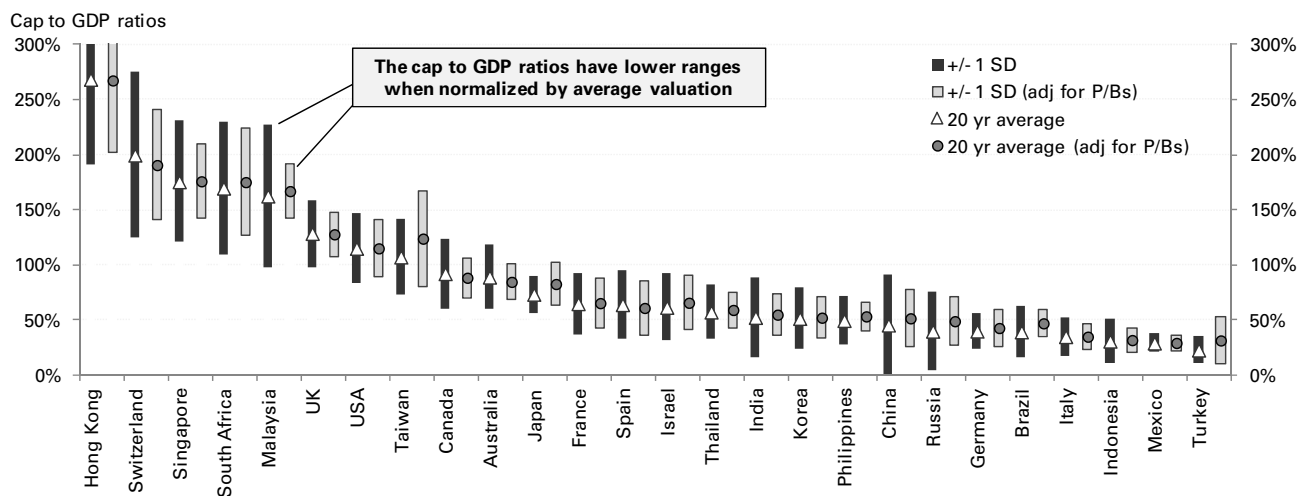
These adjustments help focus on the underlying issue of capital deepening to a better degree, which is clearly shown in the illustrative example of the comparative unadjusted and adjusted MC/GDP time series of the US and China (Exhibit 13).

This analysis also highlights several additional points that give added perspective:

- **Adjusted developed market MC/GDP ratios cluster around and somewhat above 100%.** Adjusting for average PB ratios, many developed economies have MC/GDP ratios in the low 100% range. This includes the US, Australia, Canada, the UK and France (we note that the ratio has increased significantly during the past 2 decades on an adjusted basis).
- **China’s capital deepening has been very rapid in the past decade.** On a global PB-adjusted basis, China’s MC/GDP ratio has risen from about 10% in 1995 to close to 80% now (the unadjusted figure is currently 94%). This, along with a time series analysis of the sectoral composition of the equity market, suggests that the capital deepening process has advanced rapidly, although we expect further deepening both in terms of overall capitalization as well as trading volumes (see Global Economics Paper No. 198, Shanghai in 2020: Asia’s Financial Centre, June 2010). Note that for all our analysis we combine the on-shore ‘A’ shares with the HK-listed offshore ‘H’ and ‘red chip’ shares as well as Nasdaq-listed ‘N’ shares.

- Japan is close to other developed markets after adjustment.** Although Japan’s MC/GDP ratio is only around 70% on a raw basis, it is over 100% when adjusted to global valuation norms. As we note in a recent valuation study, Japan has chronically low profitability and has undergone a structural de-rating in the past two decades: it currently trades at a low 1.1x PB ratio (see Asia: Portfolio Strategy: Reconciling the ‘enigma’ of Japanese valuation, May 5). By normalizing valuations, we look through the issue of low returns and focus more clearly on the relation between the capital market and the economy, which is less at variance with other developed markets than it appears at first pass.
- Further capital deepening likely for the BRICs and several N-11 markets, notably Indonesia and Mexico.** On an adjusted basis, both Brazil and India have MC/GDP ratios of roughly 60%, which suggests further capital deepening lies ahead. Russia is a slightly odd case: its raw MC/GDP ratio is about 60%, but on a valuation-adjusted basis it is well over 100% because of the market’s low current valuation. Several other promising emerging economies that we have included in our ‘N-11’ group (the ‘Next 11’ potentially rapidly growing countries) may also see meaningful capital market development in coming years. These include Indonesia (46% raw, 24% adjusted) and Mexico (33% raw, 28% adjusted).
- Caveats: sector composition differences; index vs. aggregate market mapping.** While the global valuation adjustment to MC/GDP ratios places markets on a comparable footing, this process may introduce some upward bias for markets whose sector composition is oriented toward asset-intensive industries (e.g. Russia, with a significant energy and materials weight). We have accounted for this in the judgmental overlay to our model output that we discuss below (see Exhibit 14 for a cross-market sectoral comparison). Also, we note that our PB adjustments are based on index valuation data. Thus, there will be some analytical bias to the extent that the index is a less than perfect reflection of the aggregate market.

Exhibit 10: Most developed and emerging markets have had substantial fluctuations in their MC/GDP ratios in the past decade, but are more stable when normalized by average valuation
 Cap to GDP ratios of markets, adjusted and unadjusted for valuation, relative to range



Source: IMF, FactSet, MSCI, World Federation of Exchanges, Goldman Sachs Global ECS Research.

Exhibit 11: Wide fluctuations in valuation are the main reason for the instability in MC/GDP ratios
P/B multiples of markets relative to range

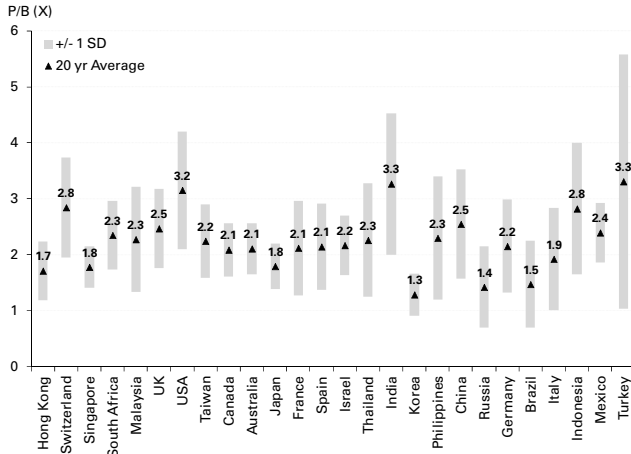
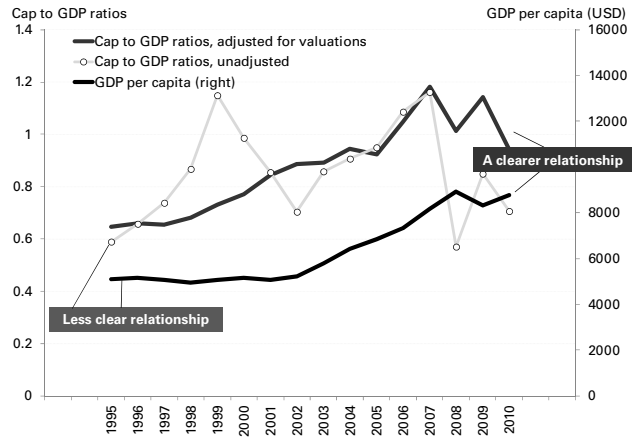
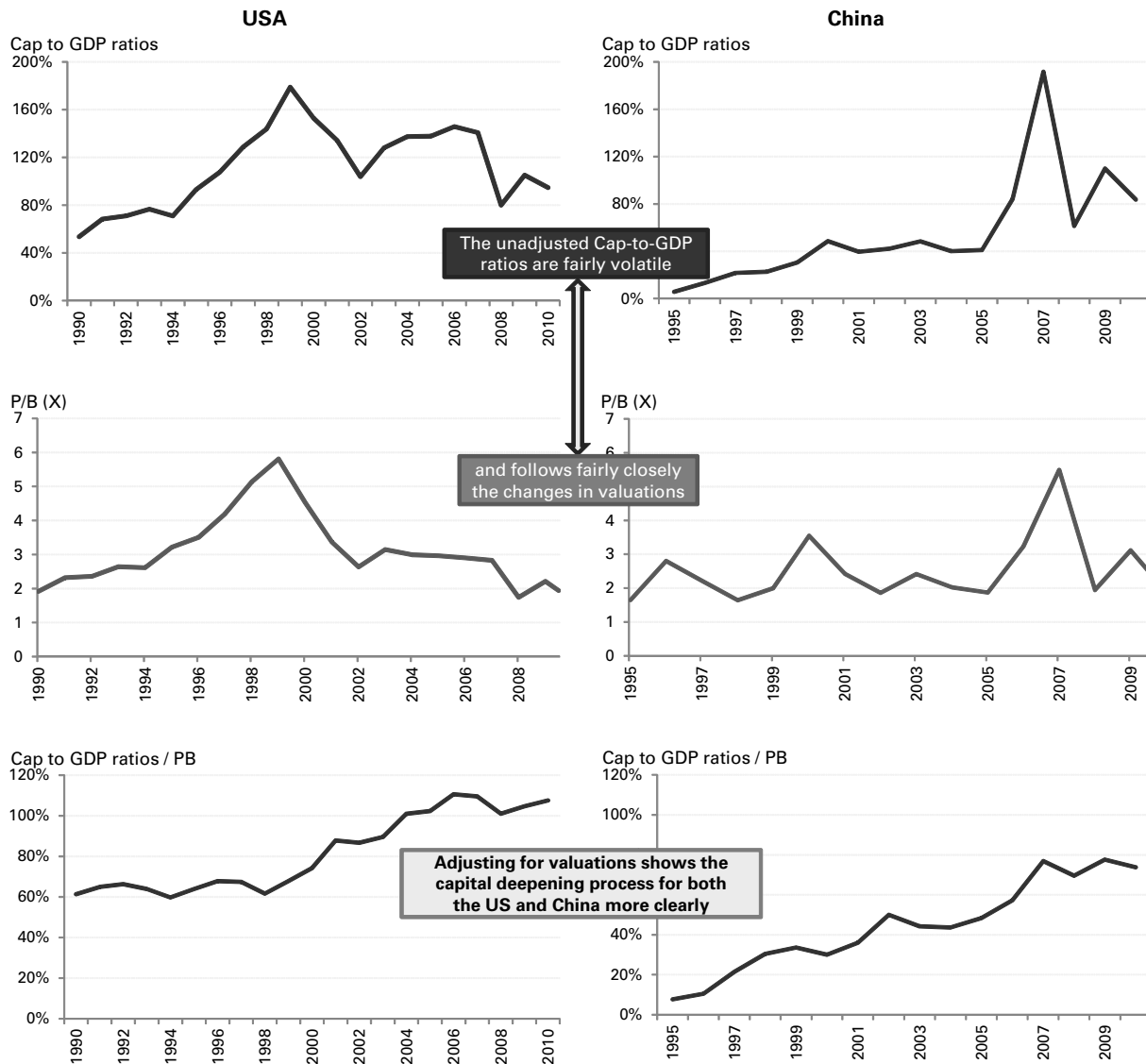


Exhibit 12: A clearer relationship can be seen between cap to GDP and income when the ratio is adjusted for valuations
Cap to GDP ratios vs. GDP per capita of world aggregate



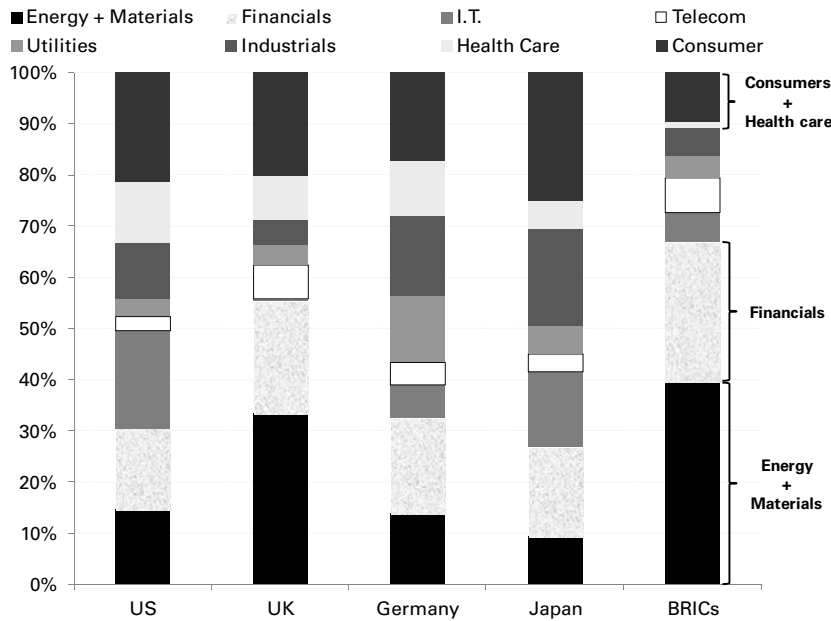
Source: IMF, FactSet, MSCI, World Federation of Exchanges, Goldman Sachs Global ECS Research.

Exhibit 13: US and China: Adjusting market cap/GDP ratios for valuation changes isolates the capital deepening process more clearly



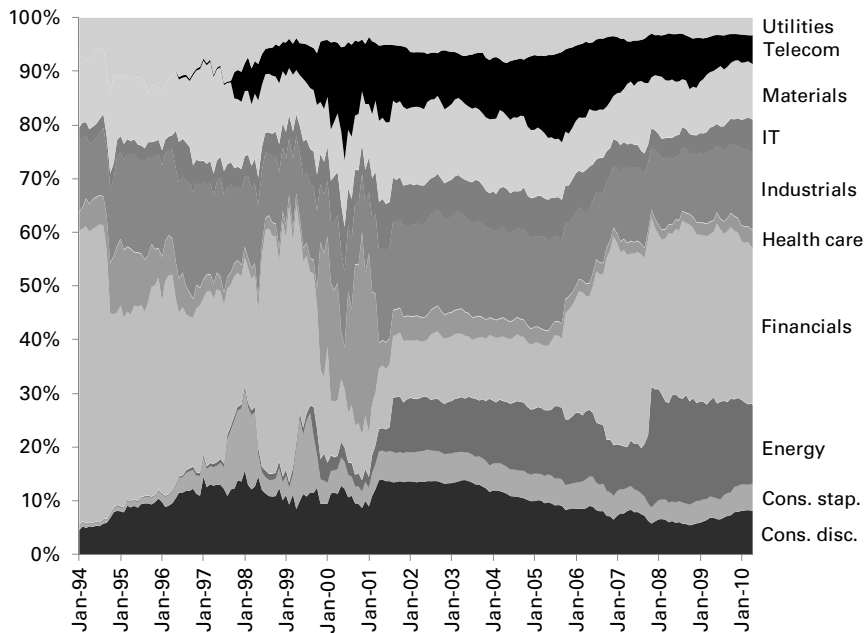
Source: IMF, FactSet, MSCI, World Federation of Exchanges, Goldman Sachs Global ECS Research.

Exhibit 14: The sectoral composition of equity markets can vary significantly, depending in part on their level of maturity
 GICS sector distribution of MSCI indices



Source: FactSet, MSCI, Goldman Sachs Global ECS Research.

Exhibit 15: China's equity market has become more balanced as the capital market deepening process has progressed
 GICS sector distribution of China equity market (domestic and offshore combined)



Source: FactSet, MSCI, Goldman Sachs Global ECS Research estimates.

2. Forecasting the size of equity markets

■ **Modeling adjusted market cap/GDP ratios.** We model the adjusted market cap/GDP ratios (capital market deepening) as a function of per capita income (economic development), with an assumption that the pace of capital deepening will attenuate as the economy matures. For the mathematical representation and technical details of the model, please refer to Appendix I.

■ **Results: substantial increase in the size of EM equity markets and their share of the global pie.**

- Our projections indicate that **global equity market capitalization** may rise from \$43tr presently to \$83tr and \$145tr by 2020 and 2030. Over this time frame, **emerging market (EM)** equities could increase from \$14tr to \$37tr and \$80tr, and **developed market (DM)** equities may expand from \$30tr to \$46tr and \$66tr.
- **China's** market cap (on-shore as well as off-shore listed equities) is apt to rise from \$5tr now to \$16tr in 2020 and \$41tr in 2030. This would make China the largest individual equity market globally. For comparison, the US may increase from \$14tr now to \$22tr and \$34tr in two decades.
- The **BRICs** market cap may rise from \$8tr to \$25tr and \$59tr. The -N11 market cap growth could be from \$2tr to \$4tr and \$8 tr.
- The **20-year market cap CAGRs** for global, DM and EM equities are 6.2%, 4.0% and 9.3%. The BRICs and N-11 CAGRs are 10.6% and 7.3%.

3. Index changes

With our long-term market cap forecasts in hand, we turn to how these may be reflected in the composition of the MSCI AC World Index (ACWI) on a 10 and 20-year horizon. Clearly, the different rates of increase in country market caps will result in a natural shift in the relative weights of these countries, but there are two index-specific developments that are likely to augment the already substantial organic changes that are likely to occur.

■ **Changes to free float percentages.** The MSCI Global Investable Market indices make adjustments to the proportion of the market cap of a particular constituent stock according to three factors:

- a) Strategic holdings that reduce a company's free float;
- b) Foreign ownership limits at the country or stock level; and
- c) Other foreign investment restrictions, which can include complex investor validation processes or restrictions on funds transfers. Together, these factors make up the overall foreign inclusion factor for a given constituent.

We note that equity markets at earlier stages of development tend to have greater foreign investment restrictions and therefore lower free float ratios for their indices, whereas developed markets tend to have high free float ratios. For example, the free floats for India and Russia are currently 35% and 33%, whereas the US and UK ratios are 95% and 92%. Israel is a good example of how significantly market accessibility can change: its free float ratio has risen from 58% to 74% in the past 8 years.

In our forecasts for index composition in 10 and 20 years, we assume changes to free float ratios based on historical patterns, the likely pace of change that a given market may experience, and our expectations of how strategic shareholdings may change. This is clearly an imprecise exercise, but we feel that our assumptions are reasonable and tend towards the conservative side.

- **Inclusion of China A shares.** The most significant change that may occur- and the most substantial index assumption that we make- relates to the timing and extent to which onshore China equities are included in the MSCI ACWI. Currently, this nearly US\$3trillion market cap is not included because of severe limits on foreign investor access: qualified foreign institution investors (QFII) hold only about 0.5% of the A share market.

To be conservative, we assume that China's capital account restrictions will ease only after 2020, i.e. that the CNY will be convertible and that foreign access to A shares will improve only in the second decade of our analysis. Currently, the A share market's free float is about 30%. We assume this rises to 40% in 10 years and 50% in 20 years. We also assume that the 'Limited Investibility Factor' (LIF) remains at the current 0 level through 2020 and then rises to 50% by 2030. This results in an overall foreign inclusion factor of 25% in 2030.

While these are only educated guesses, we feel they are reasonable and that the inclusion of China A shares in global index benchmarks is a development that long-term investors must anticipate.

- **Results:** substantial increase in the EM share of the global index. Rising EM free float percentages and the inclusion of China A shares will augment the compositional shift in MSCI ACWI driven by more rapid EM growth. (For simplicity, we ignore the issue of markets such as Korea 'graduating' from EM to DM status.) Key highlights are:

- Our central case shows that the **EM markets rise from 13% currently to 19% and 31% in 10 and 20 years.**
- Within this, the **BRICs index share may increase from 6% now to 11% and 22%.**
- **China's index share may rise from 2% to 4% and 13%**, which would make it the dominant emerging market by a long stretch.
- The **N-11 markets may rise from 3% now to about 4% in two decades** (we don't have forecasts for all the individual N-11 markets, but can estimate them based on our work).
- The **US index share may fall from 44% now to 42% and 38%.**

- **Other benchmarks:** Our analysis is based upon the MSCI AC World index, which we believe is the most prominent benchmark for global managers and for which we have a rather straightforward set of rules regarding float factors and foreign ownership inclusion, allowing us to estimate potential future country weightings. For reference, the FTSE All World index currently holds a 15% weighting in EM, comparable to the 13% weighting within the MSCI AC World index. We would assume a similar weighting change over the next 20 years between the two indices.

Exhibit 16: A summary of factors affecting the free float calculations in MSCI Global Investable Market indices

Classification by shareholder types	
Non-strategic (free float)	Remarks
Individuals	excluding officers, members & affiliated, and with significant size suggesting holdings are strategic
Investment funds, mutual funds and unit trusts	
Security brokers	
Pension funds	excluding shares of employing company & affiliates
Insurance companies	
Social security funds	unless fund's management will exert influence on the company
Strategic (Non-free float)	Remarks
Governments	
Companies	including treasury shares
Banks	not including shares in trust
Principal officers and board members	including affiliated family members
Employees	including retirement plans, pension, compensation, etc.
Foreign ownership limits (FOLs)	
For countries/companies that impose foreign ownership restrictions of stocks	
FOL calculation includes the percentage represented by any depository receipts	
Countries to which this is more applicable include: India, Thailand, Philippines, and Taiwan	
Limited investability / other foreign investment restrictions	
To account for the existence of other foreign investment restrictions, and examples include:	
• A complex process of investor validation and qualification	
• Restriction of funds transfer	
• Individual investment quota limits	
The application of a Limited investability factor (LIF) is based on a case-by-case analysis	
- Currently applies to 3 stocks in the whole MSCI AC World universe only	

Source: MSCI, Goldman Sachs Global ECS Research.

4. 'Sanity check'

We decompose our market cap forecasts into their underlying components, which are real earnings growth, valuation change, currency change and implied new issuance. This serves both as a check that our overall market cap forecasts are plausible and also isolates the amount of likely market cap and index cap that investors may be underexposed to, even if they are at current benchmark weights.

Key points:

- **Earnings growth.** We assume long-term EPS growth to be in line with our GDP growth assumptions, with adjustments for markets with higher external linkages. The numbers are generally conservative compared to the longer-term real earnings growth that many markets have delivered. If ROEs and payout ratios are stable, then book values will grow at equivalent rates to earnings.
- **Valuations.** We use long-term mean price/book levels unless we assume de-rating in specific cases. We have maintained a conservative bias for EM and given the benefit of the doubt towards DM in order to set a higher 'burden of proof' for the growth of EM equities over the next two decades.

Our model assumes that DM equities will benefit from rising valuations in the order of 1.6% per year over the next two decades, whereas EM valuations will rise a more modest 0.4% per year. We note that there is some variation at the country level and that all five countries for which we assume moderate de-rating are EM.

The generous DM re-rating is a reflection of the well below-average price/book ratio at which DM equities are currently trading (1.7x vs. 2.3x 10-year average). Consequently, this mean-reversion of DM valuation may understate the relative importance of EM markets in 2030.

- **Currency.** As noted previously, we use our long-term FX assumptions which assume gradual convergence towards PPP levels. The rates are all relative to the US Dollar, which we assume will weaken to varying degrees relative to other currencies.
- **Implied new issuance.** This is the difference between the ‘organic’ growth of profits (enhanced or moderated by valuation and fx changes) and the aggregate market cap CAGRs that we forecast based on real GDP growth and market cap/GDP ratios. The numbers fit with historical new issuance/market cap ratios and are shown on a net basis, as both private equity transactions and stock repurchases may detract from issuance increases.

Exhibit 17: Sanity check: our market cap CAGRs appear reasonable when we decompose them into earnings growth, valuation and FX changes, and implied new issuance

Composition of market cap increases by EPS, P/B, FX and Issuance

	As % of global cap (20 years)	Market Cap CAGR	Market Cap Growth Decomposition			
			EPS (real)	Valuation	FX	Implied new issuance
Australia	2%	3.8%	2.1%	1.0%	0.0%	0.7%
Brazil	3%	7.2%	4.5%	0.3%	1.0%	1.3%
Canada	2%	2.4%	1.8%	0.5%	0.0%	0.1%
China	28%	11.5%	6.8%	0.0%	2.3%	2.0%
France	3%	5.7%	2.2%	2.6%	0.0%	0.9%
Germany	2%	4.1%	1.3%	2.5%	0.0%	0.3%
Hong Kong	1%	5.0%	3.5%	0.7%	0.6%	0.1%
India	5%	9.2%	6.4%	-0.4%	1.9%	1.1%
Indonesia	1%	6.7%	5.1%	-1.8%	1.4%	1.9%
Israel	0%	6.3%	4.6%	0.2%	0.7%	0.7%
Italy	1%	6.0%	1.1%	4.4%	0.0%	0.4%
Japan	3%	2.1%	0.5%	1.5%	0.0%	0.1%
Korea	2%	5.5%	3.0%	1.3%	0.7%	0.5%
Malaysia	1%	6.4%	5.3%	-0.5%	1.3%	0.3%
Mexico	1%	7.3%	4.3%	-0.1%	1.0%	2.0%
Philippines	0%	7.5%	6.0%	-1.6%	1.5%	1.6%
Russia	4%	10.2%	3.6%	2.4%	1.6%	2.2%
Singapore	1%	4.1%	3.0%	0.3%	0.3%	0.4%
South Africa	2%	6.5%	3.9%	0.1%	1.1%	1.2%
Spain	1%	3.2%	0.6%	2.3%	0.0%	0.3%
Switzerland	1%	2.8%	1.8%	0.8%	0.0%	0.1%
Taiwan	1%	5.0%	3.0%	0.5%	0.7%	0.7%
Thailand	0%	6.6%	4.4%	0.4%	1.2%	0.5%
Turkey	1%	8.4%	4.7%	0.7%	1.1%	1.7%
United Kingdom	3%	3.7%	2.2%	1.3%	0.0%	0.2%
USA	23%	4.6%	3.0%	1.3%	0.0%	0.2%
EM	53%	8.4%	5.1%	0.4%	1.2%	1.3%
DM	40%	4.2%	2.4%	1.5%	0.0%	0.3%
Total	93%	6.2%	3.6%	1.1%	0.5%	0.7%

Source: Goldman Sachs Global ECS Research.

Note: The above decomposition follows the relationship of $(1 + \text{Market Cap CAGR}) = (1 + \text{EPS CAGR}) (1 + \text{Valuation CAGR}) (1 + \text{FX CAGR}) (1 + \text{issuance CAGR})$. These figures on the table are not additive.

Ramifications of a changing EM equity landscape

The ramifications of the increasing size and relative importance of emerging equity markets include three broad areas, which we discuss below. First, DM institutional asset management pools will need to increase their holdings of EM equities; we conservatively estimate new buying of \$4tr over the next two decades. Second, the institutionalization of EM savings pools is likely to gather pace. This will change the ownership composition of EM equities and may lead to lower market volatility. Third, there are numerous implications for investors, financial intermediaries and DM corporates. These include attractive potential absolute and relative investment returns, significant revenue opportunities (we estimate \$420bn potential revenues just from primary issuance and secondary market commissions), management challenges as businesses localize, and changes to the shareholder mix of some DM companies.

1. DM Savings Pools: Current arena and future developments

The current “lay of the land” of developed market savings pools

According to IFSL (International Financial Services London) Research, the conventional DM fund management industry comprises almost US\$70 trillion in total assets, spread across a variety of investment vehicles including pension funds, insurance funds, and mutual funds (based on OECD countries’ data).

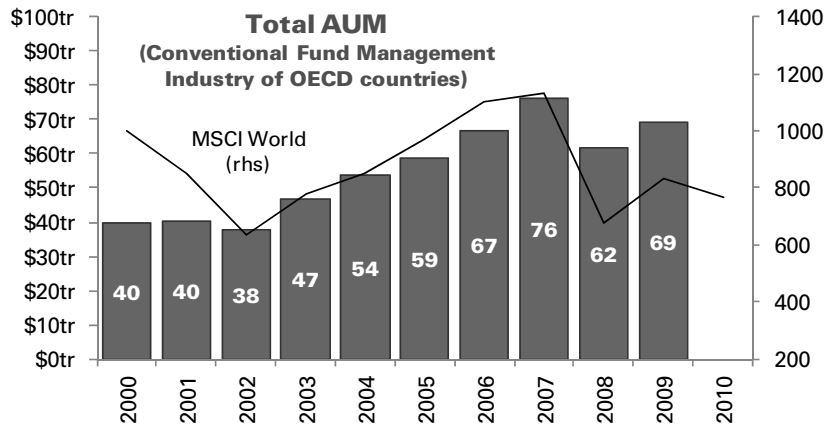
In recent years, non-conventional asset management agents such as sovereign wealth funds, hedge funds, private equity funds, and exchange-traded funds have sprouted across the globe, but their combined assets under management remains much smaller, totaling roughly \$10 trillion.

The global asset management industry has grown considerably over the past 8 years, despite muted equity performance. Between 2001 and 2009, global AUM of conventional funds grew 72%, in comparison to the MSCI World index, which fell 2%. Of course, this differential is partially a reflection of both diversification in fund portfolios as well as fund inflows and subscriptions.

Adjusting for inflation, global AUM have risen at a 5% CAGR over the past 8 years, and assuming they maintain this growth rate, total assets of conventional funds may reach \$120 trillion by 2020 and \$190 trillion (in today’s dollars) by 2030.

We believe this estimate may be on the conservative side given that the 8-year CAGR is based on a period starting at a local top (in 2001) and ending just one year after a local bottom (in 2008). Regardless of the specific growth rate, the more important point to note is that the prospect of further substantial growth in the global asset management industry will impel institutional investors to venture beyond their respective geographical borders and search for investment opportunities around the world. In order to assess the potential magnitude of the migration of developed market institutional assets into the emerging markets, we assess the current split of equity assets by institutional investor type and allocation.

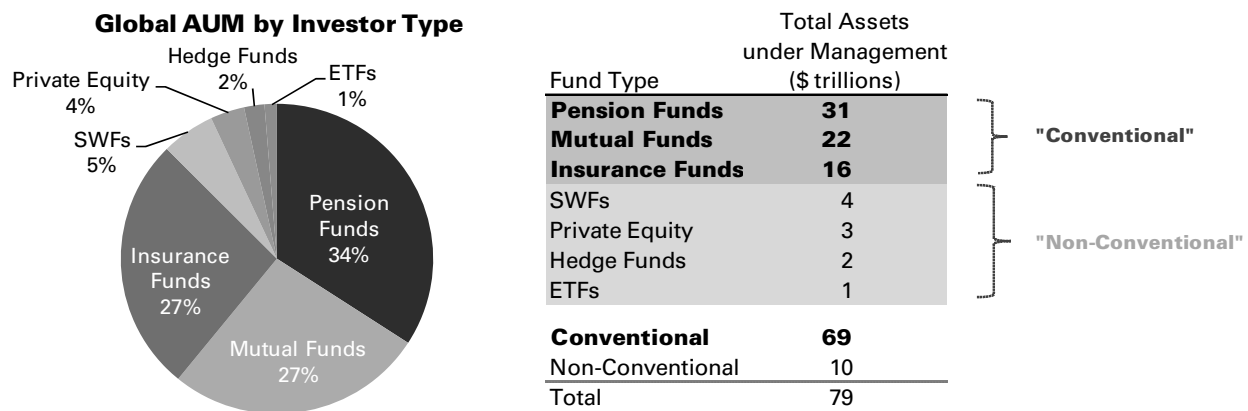
Exhibit 18: AUM of conventional asset managers has grown 72% in 8 years
 Total AUM of conventional asset managers in OECD member countries



Source: IFSL, OECD, Goldman Sachs Global ECS Research

Looking within the segments of the DM asset management industry, we find that conventional fund managers represent the vast majority of total assets, roughly \$70 trillion worth or 87%. Non-conventional funds account for the remaining \$10 trillion, or 13% (see Exhibit 19). For the purposes of our analysis we consider only the conventional asset pools, given availability of information and data limitations elsewhere.

Exhibit 19: Conventional asset managers make up 87% of total assets under management
 Global investment management industry AUM of OECD member countries, by investor type



Source: IFSL Research, OECD, Goldman Sachs Global ECS Research

Developed market institutional savings pools: potential shifts

In order to gauge the potential shifts in developed market savings pools over the next two decades, we focus on the three markets for which we have the most information and which account for the lion's share of the DM conventional assets under management: the US, Europe, and Japan. We estimate that institutional asset managers in these three markets currently possess \$57 trillion of assets under management (see Exhibit 20). This figure represents about 83% of the total conventional assets under management (\$70 trillion) we describe above.

Our data set indicates that two thirds of these assets are held by US-based institutions, which we believe may be high, and is probably due to more data being available in the US market. For the purposes of this analysis, we will refer to the asset pools of the US, European, and Japanese institutions as total "DM institutional assets".

Outlining the assumptions of our base case

The calculation of future potential flows from these institutions into EM equities depends upon several variables, including (1) the growth of current assets; (2) the amount of new subscriptions to fund programs; (3) the future asset allocation of investment funds; and (4) the emerging market exposure within the equity allocation.

First we note that our subset of data includes \$57 trillion worth of total institutional assets within the US, Europe, and Japan. In our analysis, we assume this asset base has a similar asset allocation and future growth rate as the entire OECD country investor base of \$70 trillion, and we therefore "gross up" the figures based on our analysis of the subset. For simplicity's sake, we will only refer to the adjusted numbers we believe reflect the true global totals.

1. **Organic asset growth.** We utilize our forecasts of real earnings growth, valuation change, and foreign exchange shifts that we outlined earlier in this report to estimate the growth of the current equity asset base (please refer back to Exhibit 17 for further details). Combining these three rates into one "organic growth" rate gives a sense for the increase in market capitalization excluding new issuance. Our model therefore implies "organic" growth rates of 6.7% and 3.9% for EM and DM equities, respectively.

From the perspective of DM institutional investment funds, their equity AUM would grow by these organic rates assuming no new purchases or sales. Given their current equity allocation split between EM and DM, the weighted "organic" growth equals 4% ($94\% * 3.9\% + 6\% * 6.7\%$).

Exhibit 20: Asset managers currently hold a 6% weighting in EM according to our data

Asset allocation for asset managers in our data set (subset of OECD country data)

Fund Type	Total AUM (\$ tril)	Equity AUM (\$ tril)	Equity AUM split by DM Domicile			Share of Equity Assets invested in EM
			US	Europe	Japan	
Pension Funds	24	7	70%	12%	18%	4%
Mutual Funds	18	9	71%	25%	4%	8%
Insurance Funds	15	2	17%	57%	25%	3%
Total	57	18	66%	22%	12%	6%

Source: IFSL, OECD, FactSet, Goldman Sachs Global ECS Research

2. **New subscriptions.** To account for new subscriptions to DM investment funds, we look at historical equity inflows as reported by AMG, which indicate that over the past 15 years roughly 3.5% of equity AUM enters institutional investment vehicles through equity fund inflows. Assuming inflation of 2% going forward, our “real” growth in DM institutional assets due to inflows equals 1.5% per annum. Combining this rate with our “organic” growth estimate, we believe DM institutional assets may grow at an annual pace of roughly 5.5% over the next two decades. For reference, this 5.5% rate is roughly consistent with the realized CAGR of total DM institutional assets in real terms over the past 8 years. We recognize that equity inflows need not necessarily equal total AUM inflows (in percentage terms), but find the growth rates to be comparable enough to assert that our assumptions are reasonable.
3. **Asset allocation.** The potential of a shift in asset allocation demands another set of assumptions. Given the recent swings in equity prices, many institutional investors cut their equity allocations, but 2009 did witness a fair amount of re-risking. We find that currently, in aggregate, DM institutions appear only moderately underweight equities relative to history.

Specifically, both European mutual and insurance funds appear underweight equities relative to their 8 year history, whereas US and Japanese funds appear closer to average allocations. Pension funds on a global basis also appear under-allocated to equities. Due to some limitations regarding historical time series as well as uncertainties about the specific developments of pension, mutual and insurance funds in the future, we keep equity allocation as a percent of total DM assets constant in our assumptions.

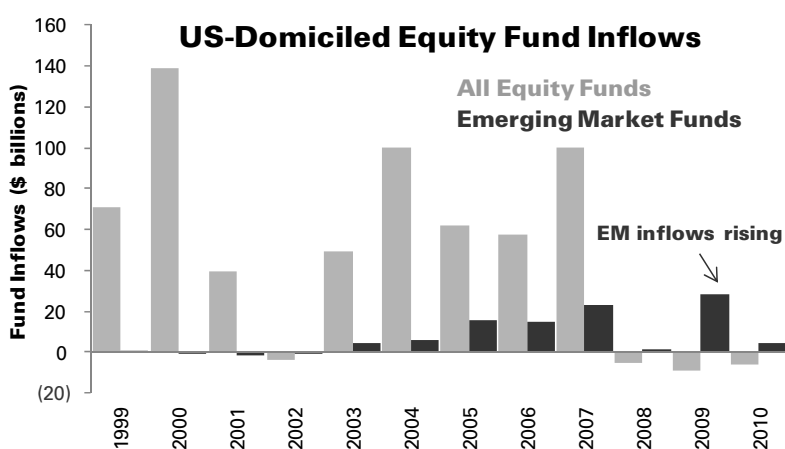
4. **Emerging market exposure.** The last assumption rests on managers’ future allocation towards EM equities, which we believe will be a function of changing benchmark weightings as well as investor preference and mandate requirements. Based on current information, **we estimate that DM investment funds hold an aggregate 6% equity weighting in EM**, with European funds generally having high single digit exposure, US funds with low single digit weightings, and Japanese funds in the middle.

The current 6% EM weighting in equity portfolios compares with a 13% EM weighting in the MSCI World index. Of course, this does not necessarily represent an “underweight” position in the traditional sense, given that the vast majority of DM funds are not benchmarked against MSCI World. However, we estimate this gap to narrow over time given likely shifts in DM investor preferences.

To gauge the shift in investor preferences, we look at historical inflows into US-domiciled mutual funds, which have shown a clear preference for EM funds in recent years (see Exhibit 21). From 2003 and 2007, the aggregate inflow into EM funds was \$64 billion, or 17% of the total \$370 billion inflow into all equity funds. This compares with less than 1% share of inflows for the preceding 5 years. Since 2008, EM funds enjoyed a total \$35 billion of inflows, whereas all equity funds in aggregate experienced \$20 billion of net outflows. In short, we believe that investor preferences will continue to shift towards EM funds, raising the total EM exposure of DM institutions.

Looking out 10 years to 2020, we believe DM funds will have a 10% weighting in EM equities and that the EM weighting in MSCI World will total 18%. To arrive at the 10% figure, we assume that current DM assets grow at their organic rates given by our top-down model (using real earnings, valuation and foreign exchange changes) and that roughly 20% of new funds channeled into DM institutions are allocated towards EM equities. This assumption is consistent with the current fund flow data in the US.

Exhibit 21: US equity mutual fund flows show a growing preference for emerging markets
Annual inflows into Emerging Market Funds vs. All Equity Funds



Equity Inflows (\$ bil)		
Date	All Equity Funds	EM Funds
Dec-03	\$49	\$5
Dec-04	100	6
Dec-05	62	16
Dec-06	58	15
Dec-07	100	23
Dec-08	(5)	2
Dec-09	(9)	29
Dec-10	(6)	4
2003-07	\$369	\$64
2007-10	\$(14)	\$30

Source: AMG, Goldman Sachs Global ECS Research

Looking out on the following 10 years to 2030, we believe DM funds will hold 18% of their equity portfolios in emerging market stocks and that EM will constitute 31% of the MSCI World index. This assumption is a bit complex given our view that the China A-shares market will open to foreigners at some point between 2020 and 2030.

In order to calculate the potential shifts, we look at the potential increase in DM asset exposure to EM relative to the MSCI World index. Currently the 6% exposure vs. 13% benchmark represents a 46% (6/13) “relative” weighting. Assuming the growth and fund flows outlined above, our 2020 estimates of 10% exposure vs. 19% benchmark represents a 53% (10/19) “relative” weighting. We believe the “relative” weighting may move to 58% by 2030 or 18% exposure vs. 31% benchmark.

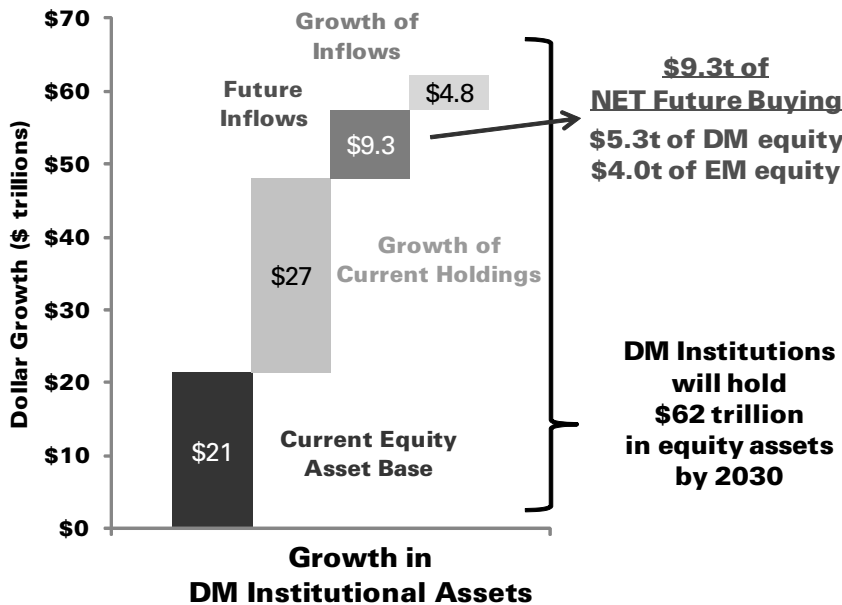
Our base case: DM institutions to purchase \$4 trillion of EM equity

We believe developed market institutions will actively purchase roughly \$4 trillion (in today’s dollars) of emerging market equities over the next 20 years. This base-case estimate incorporates the assumptions outlined above, i.e. that DM institutional assets will grow by 5% per year in real terms (including both growth of holdings and future inflows), will maintain equity allocation at current levels, and will increase EM equity allocation to 18% from 6% currently. We highlight the significance of this migration below.

Trajectory of fund flows. From a top-down perspective, our assumption of 5% growth analysis suggests that DM institutional equity assets will grow by \$41 trillion over the next 20 years, rising to \$65 trillion from \$21 trillion currently. As we highlight in assumptions (1) and (2) above, this growth is driven by a \$27 trillion appreciation of the current asset base and \$14 trillion of new holdings. The \$14 trillion of new holdings may be broken down into \$9 trillion of new purchases and \$5 trillion from the subsequent growth of those purchases.

Our \$4 trillion estimate of DM institutional buying of EM equities represents roughly 43% of the \$9 trillion in total new purchases. Looking at the timing of these flows indicated by our model, we estimate that roughly 25% of new

Exhibit 22: Composition of growth in assets of DM institutional investment industry



Source: Goldman Sachs Global ECS Research

purchases between 2010 and 2020 will be directed towards EM equities, and that the figure will growth to roughly 55% between 2020 and 2030. The model is certainly influenced by our view that the China A-shares market opens up to foreign investment sometime between 2020 and 2030, but we believe this insight warrants repeating: **in about ten years’ time roughly half of DM institutional investor equity purchases will be directed to the emerging markets.**

Sensitivity analysis

To examine the reasonableness of our projected \$4 trillion of fund flow into the emerging markets over the next two decades, we take a close look at the four major assumptions we highlight above.

- **AUM growth.** The first two assumptions of “organic” growth and accumulation of AUM through future inflows may be combined into one compounded growth rate in our sensitivity analysis. As we noted, our base-case assumption of 5% real growth is derived from our expected real earnings growth, valuation change, foreign exchange movements as well as explicit inflow forecasts based on history. We note that our model is sensitive to this growth rate, and that each 25 bp of real growth assumed equates to roughly \$400 billion in future purchases of EM equities (see Exhibit 23).
- **Asset allocation.** As we noted previously, our base-case assumes a constant equity allocation for the next 20 years which we view as conservative given most fund types appear to be under-allocated relative to equities by a few percentage points. Currently DM institutions appear to hold a 31% weighting in equities, and we believe the historical average is roughly 33%.

If we assume that DM funds revert to average equity allocations in the next two years, the incremental EM equity buying would be roughly \$400 billion (relative to our \$4 trillion base-case estimate described below), so we do not view this assumption as a critical input.

■ **Emerging market allocation** within the equity portfolio. Our base-case assumes DM institutions hold an 18% EM equity weighting by 2030. According to our sensitivity analysis below, each incremental percentage point of EM exposure corresponds with an additional \$400 billion of EM equity purchases over the next 20 years. The 18% exposure assumed in our base-case is equivalent to a 58% “relative” weighting (18% EM weighting vs. 31% EM weighting in MSCI World) compared with 46% currently (6% exposure vs. 13% EM weighting). If DM institutions increase their EM exposure more modestly, to a 50% “relative weighting” (15% vs. 31%) by 2030, our sensitivity analysis shows that total EM equity purchases would equal \$3 trillion instead of the \$4 trillion in our base case.

For reference, if DM managers simply held their current positions without any future purchases, the simple outperformance of their current EM holdings forecasted by our model would result in a 12% EM weighting in 20 years’ time. In our view this figure serves as a conservative “floor”. On the other end of the spectrum, we think a 30% EM weighting is unrealistically high, as it would assume that essentially all DM funds would be benchmarked to the MSCI World, or similar, index (our view is that this index will reflect a 31% weighting in EM). Given fund mandates, investor preferences and foreign exchange issues, we highly doubt that such an outcome could occur.

Gaining exposure to EM equities. Our model suggests that EM equities will become an \$80 trillion market by 2030 (in today’s dollars). This represents about \$65 trillion in dollar growth. Interestingly, roughly 60% (\$39 trillion) of this expansion comes from the “organic” growth of currently listed emerging market companies. The remainder comes from future issuance and the subsequent growth of that issuance (see Exhibit 24).

This disaggregation suggests that, **while portfolio managers may benefit from what we believe will be substantial growth of current EM holdings, the shift to higher EM weightings in their portfolios will involve continued buying.** We anticipate DM institutions to shift funds into EM on an ongoing basis for the next two decades. The higher issuance rate within EM (1.3% per year vs. 0.3% in DM) will necessitate money managers allocating larger and larger portions of their portfolios to the emerging markets to avoid falling underweight.

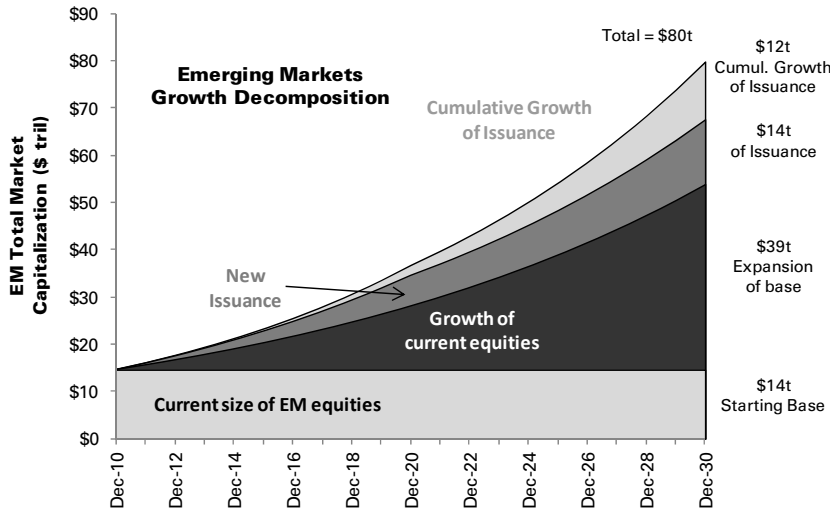
Exhibit 23: DM investors may purchase \$4 trillion of EM equities but model is sensitive to target EM weighting and the growth of the assets
Sensitivity of DM investor purchases of EM equities over the next two decades

		Aggregate Flow to EMERGING Markets (\$ tril)												
		Target EM Weighting (%)												
		6	8	10	12	14	16	18	20	22	24	26	28	30
Real Growth of DM Asset Base (%)	7.00	(0.0)	1.0	2.1	3.2	4.3	5.4	6.5	7.6	8.7	9.9	11.0	12.1	13.2
	6.75	(0.2)	0.8	1.9	2.9	3.9	5.0	6.0	7.1	8.2	9.2	10.3	11.3	12.4
	6.50	(0.3)	0.7	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6
	6.25	(0.4)	0.5	1.4	2.4	3.3	4.2	5.2	6.1	7.1	8.0	9.0	9.9	10.9
	6.00	(0.5)	0.3	1.2	2.1	3.0	3.9	4.8	5.7	6.6	7.5	8.4	9.3	10.2
	5.75	(0.6)	0.2	1.0	1.9	2.7	3.5	4.4	5.2	6.1	7.0	7.8	8.7	9.5
	5.50	(0.7)	0.0	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.5	7.3	8.1	8.9
	5.25	(0.8)	(0.1)	0.7	1.4	2.2	2.9	3.7	4.4	5.2	6.0	6.8	7.5	8.3
	5.00	(0.9)	(0.2)	0.5	1.2	1.9	2.6	3.4	4.1	4.8	5.5	6.3	7.0	7.7
	4.75	(1.0)	(0.3)	0.3	1.0	1.7	2.4	3.0	3.7	4.4	5.1	5.8	6.5	7.2
	4.50	(1.1)	(0.4)	0.2	0.8	1.5	2.1	2.7	3.4	4.0	4.7	5.3	6.0	6.7
	4.25	(1.1)	(0.6)	0.0	0.6	1.2	1.8	2.5	3.1	3.7	4.3	4.9	5.5	6.2
	4.00	(1.2)	(0.7)	(0.1)	0.5	1.0	1.6	2.2	2.8	3.4	3.9	4.5	5.1	5.7

Source: Goldman Sachs Global ECS Research

Exhibit 24: EM equity capitalization may rise to \$80tr from the current \$14tr in 20 years

Composition of emerging market capitalization growth over next 20 years



Source: Goldman Sachs Global ECS Research

Flows are not one-directional: EM capital will flow to DM

Our analysis above has attempted to quantify the potential fund flows across borders, yet our approach has only addressed one direction: DM institutional investor purchasing of EM equities. As EM savings pools grow and the institutional investor industry develops (as we discuss in the following section), EM investors will doubtless seek to invest in DM equities.

Data limitations and the lack of information on current EM investor holdings and mandates impede our ability to make an informed estimate in terms of the magnitude of the potential flow of EM assets into DM equities. However, we can affirm that such shifts are very likely to take place over the next two decades.

For example, although our growth and return forecasts are more optimistic for EM equities, simple diversification logic would argue that EM investors hold a significant portion of their equity portfolios in DM.

Furthermore, some markets, such as China, currently have capital restrictions which bar or limit domestic investor participation in foreign securities. As the capital markets develop within EM economies, we would expect such restrictions to abate, opening new channels for EM funds to flow into DM equities.

Finally, as Dominic Wilson points out in a recent *Global Economics Paper 202*, demographic shifts point to a cleaner split in the future between emerging markets as current account surplus economies and developed markets as current account deficit economies compared to the current, more complicated picture. EM surpluses vs. DM deficits will likely be manifested in fund flows from EM investors into DM assets. (See *Current Accounts and Demographics: The Road Ahead*, Aug 12.)

We doubt that EM investor flows into DM equities would significantly affect our forecasts in terms of the future development of EM equity markets or the flows of DM investors into EM equities. The development of EM equity markets is largely a function of the economic development, both in terms of size and per capita income growth, of the emerging market economies. Future DM investor flows into the emerging markets is largely a function of the need for DM investors to diversify their portfolios further and seek higher growth opportunities.

2. Institutionalization of EM savings pools

Our central argument in this report asserts that the rapid economic expansion in emerging market countries is likely to lead to substantial deepening of their financial markets, meriting these markets a much larger share of total global equity capitalization. This progression carries with it several important implications for the potential evolution of the emerging market savings pools, specifically the proliferation of institutional investment funds and organizations. In this section we set out the rationale for the oncoming rise of emerging market institutional investors.

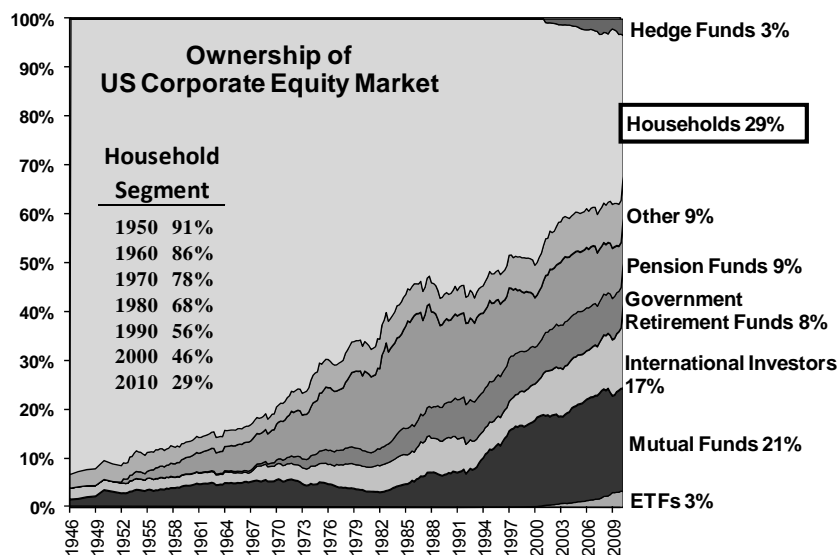
Starting with past examples

The US market offers an abundance of information regarding the institutionalization of its domestic savings pools which has taken place over the past half-century. In 1950, the “household” segment, commonly referred to as “retail investors”, directly held over 90% of the US corporate equity market. Over the past 60 years, this share has declined rather steadily and now stands at 29%.

As retail ownership in the US fell, institutional investors, namely mutual funds, pension funds and insurance funds (captured in “other”) grew their respective share of equity market ownership. Recently, the rise of hedge funds and ETFs have further gained share from the retail segment. In fact, while the ownership transition from retail to institutional has been taking place for over half a century, the largest decline in retail ownership occurred over the past ten years (46% to 29%, see Exhibit 25).

The US does not serve as the sole example of the development of institutional funds; Australia provides another glimpse into the potential rise of EM institutional assets. Over the past twenty years, there has been a clear correlation between the rise of Australian investment funds’ total assets under management and the rise in Australia’s equity market capitalization. The relationship is probably a reflexive one: the institutionalization of domestic savings helped channel funds into equities, and growth in the equity market contributed to a rising institutional asset base.

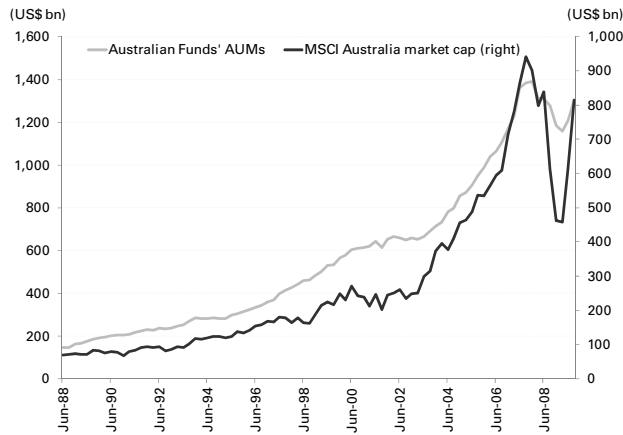
Exhibit 25: Institutional ownership of the US equity market has increased markedly
Ownership structure of US corporate equity market



Source: Federal Reserve, Lionshares via FactSet, Goldman Sachs Global ECS Research

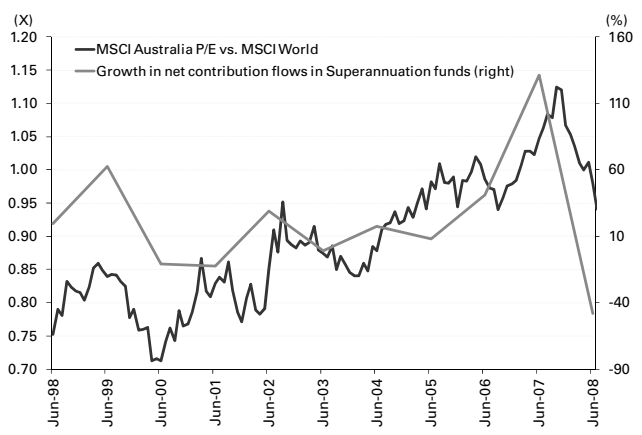
Exhibit 26: Australia’s institutional AUM and equity market capitalization are well correlated and likely have a reflexive relationship

Institutional AUM and market cap in Australia



Source: Bloomberg, MSCI, RBA, Goldman Sachs Global ECS Research.

Exhibit 27: Australia’s Superannuation flows have been correlated with the equity market’s relative valuation
 Superannuation fund inflows and Australia’s relative P/E



Source: FactSet, MSCI, RBA, Goldman Sachs Global ECS Research.

As an additional insight, we would also note that the growth in net contribution flows in Superannuation funds has been correlated with the expansion of Australia’s valuation relative to the global equity market: institutional buying appears to have been supportive to that market’s valuation.

Anecdotal evidence within the emerging markets corroborates the view that EM institutions will become larger players in the equity markets. Trends in China, Korea, and India suggest that the institutionalization of domestic savings pools is already underway in emerging markets, and at a significant pace.

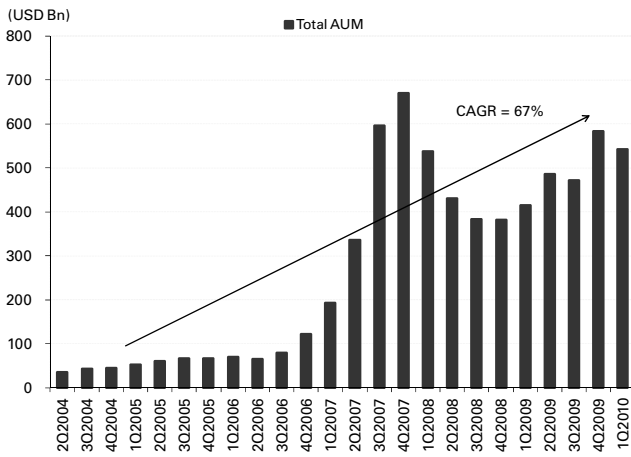
In **China**, the domestic mutual fund asset base grew to \$583 billion in total assets by the end of 2009, up from just \$45 billion at the end of 2004. This \$540 billion expansion represents a CAGR of 67% over the five years. During the same time period, the CSI 300 rose by a CAGR of 29%. Certainly the rise in equity prices boosted the total assets of Chinese mutual funds, but the far higher growth rate in AUM growth vs. rate of equity price appreciation suggests that mutual funds received a substantial amount of inflows as well, which in turn suggests that the domestic savings pools in China are indeed moving towards institutional management.

Similarly, **Korea’s** National Pension Service (NPS) has been growing at a fast pace as well. NPS assets expanded to \$238 billion in 2009, rising from an \$85 billion base in 2003, a 19% CAGR. The KOSPI rose at an annual rate of 13% during the same time period. Again, this differential in growth suggests that NPS inflows have boosted the growth in AUM in addition to the “organic” growth due to asset appreciation, especially given low equity allocations.

Third, insurance funds in **India** have steadily grown for the past decade, rising to \$180 billion in AUM from \$40 billion in 2001, or a 22% CAGR. The NIFTY has posted a 22% CAGR over the same time period, suggesting that insurance funds may have benefited mostly from asset appreciation rather than inflows. However, we note that insurance funds typically have low equity exposure (less than 10%) and that the total AUM of Indian insurance funds has been much less volatile than the equity index (see Exhibit 31). This, plus the successful distribution of products such as ULIPs (Unit linked insurance plans) shows that inflows have indeed contributed to the rise of AUM among Indian insurance funds.

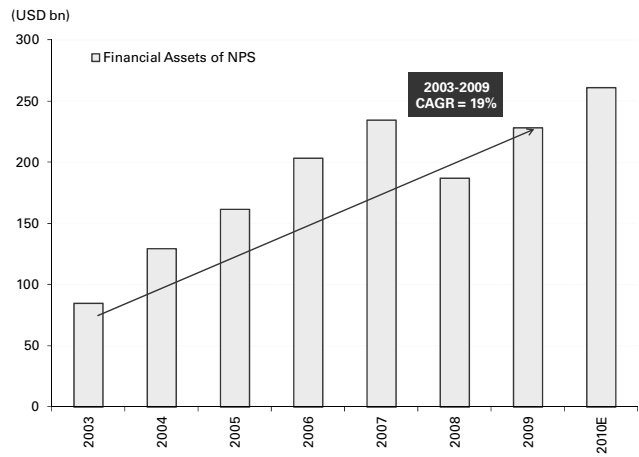
In summary, the anecdotal evidence to which we allude provides a quick snapshot of three different emerging markets and three different institutional fund types, which we believe is important for several reasons. First, we would note that these examples show that the institutionalization of domestic savings pools is already taking place in various emerging markets. Our view that institutional investors will gain share in the equity ownership of emerging markets is consistent with current changes in the market place. Furthermore, the evidence of such developments is apparent across a variety of institution types (mutual, pension, and insurance funds), increasing our conviction that the process is deep-rooted and will continue over the long term.

Exhibit 28: China's mutual fund industry has grown at a heady rate in recent years
Mutual fund time series in China



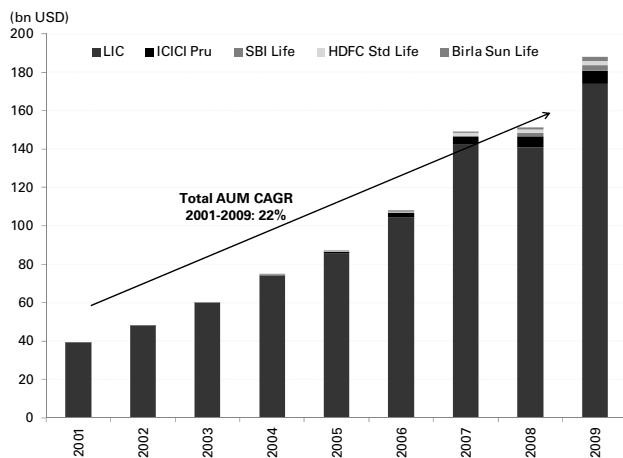
Source: Wind, Goldman Sachs Global ECS Research.

Exhibit 29: The development of Korea's pension assets will be a good example for many emerging countries
Korea NPS time series



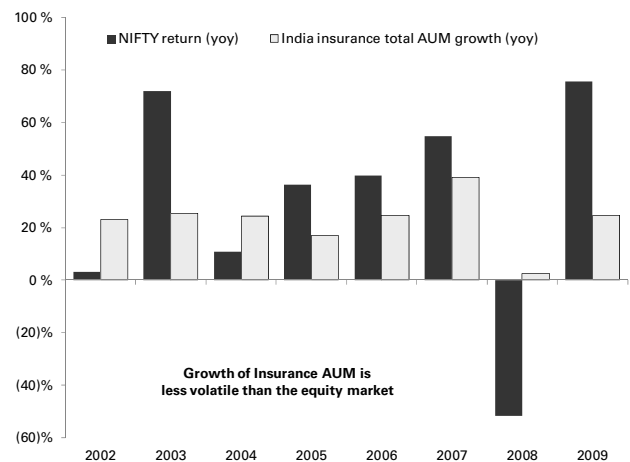
Source: National Pension Service, Goldman Sachs Global ECS Research.

Exhibit 30: Assets under management for India's insurance sector are growing rapidly
India's insurance AUM time series



Source: Bloomberg, Company data, Goldman Sachs Research estimates, Goldman Sachs Global ECS Research.

Exhibit 31: India's insurance AUM growth has been driven by asset mobilization, not just equity market appreciation
India's insurance AUM vs. NIFTY index return



Substantial future growth potential

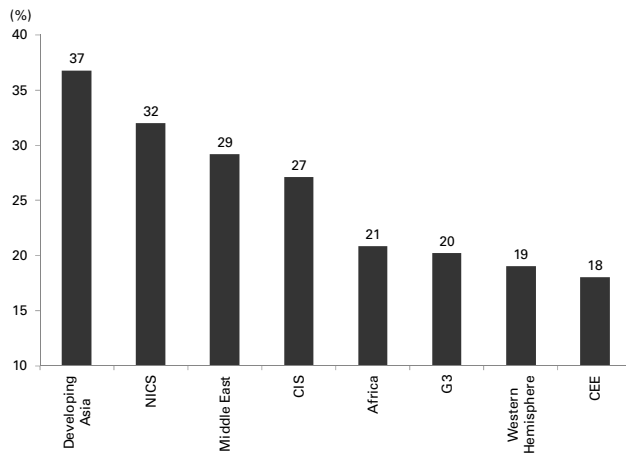
Institutional funds in most emerging markets are still in the early stage of their development compared to their DM counterparts. However, we believe EM institutions will likely grow at a rapid pace from their current “low base” and narrow the gap in size and structure with DM institutional investment funds. The key drivers are demographics (young populations), a large pool of household savings, low current allocations to equities, and regulatory/policy backdrops that encourage the development of the financial sector. The profit incentive is, of course, a powerful catalyst to transform the ‘potential energy’ of these favorable conditions into the ‘kinetic energy’ of a growing institutional asset management industry.

We illustrate these points in Exhibits 32-37.

- EM savings rates are high relative to DM. Over the past 20 years, developing Asia has averaged 37% of GDP compared to 20% for the G3.
- The pool of EM liquid household assets- as proxied by demand, savings and time deposits, is large relative to GDP.
- The allocation of financial assets to equities by EM households is generally low in absolute terms and relative to DM counterparts. For example, the ratio of equities to total financial assets in Korea, Taiwan and China is 10% or less, which is well below the 20-25% range for the US and EU.
- The sharp rise in the US household sector’s allocation of financial assets to equities occurred during the 1990s, which was a period of strong economic and household income growth. Even allowing for other structural factors that may have influenced this rising preference for equities, the US experience suggests many EM household sectors may have a greater appetite for equities if their economies continue to grow as we expect.
- The EM demographic profile, which is younger than DM, also argues for higher equity allocations in coming years. (For a detailed discussion of Indian demographics and implications for its asset markets, see *Global Economics Paper No: 201: India’s Rising Labour Force*, July 2010.)
- The “low starting base” of EM institutional assets can be shown by the ratio of institutional fund AUM to GDP. In the US, Japan, and Europe, the amount of total institutional assets are above 150% their respective regions’ GDP figures. For the three markets in Asia which we highlighted above, Korea has the highest ratio at 78% and China the lowest, with just 17%. From this perspective, there appears to be significant potential for the expansion of the institutional investor base in emerging markets.
- **China, in particular, may see rapid growth in its institutional asset base, as robust economic growth will be coupled with government initiatives to expand pension coverage.** The Chinese government aims to achieve full national coverage of the population with its social security system by 2020, and we expect more accounts in the social security system will be allowed to invest in equities in the future. (See *Global Economics Paper No: 191, China Savings Rate and Its Long-term Outlook*, October 2009.

Emerging market institutional investors could have an equity asset base of around \$30 trillion by 2030. As a rough approximation of the potential size of EM institutional equity holdings in two decades, we note that DM institutions tend to own between 40-50% of the equity assets in their respective markets. In more mature emerging markets like Taiwan and Korea this ratio is about 35%, whereas local institutional ownership in the BRICs is no more than 15%. If overall EM institutional ownership rises to the lower end of the current DM band by 2030 (i.e. 40%), then this would imply approximately \$30tr of equity assets given our projected \$80bn EM equity market cap.

Exhibit 32: EM countries have had high savings rates, in part driving the rapid increase in people's wealth
Savings as % of GDP, average over 1991-2009



Note: Savings is calculated as the top-down macro aggregate savings, including savings of households, corporate and government. See Global Economics Paper No: 197: Baby Boom and Ageing, Property Boom and Bust: Why Korea Will Not Follow Japan's 1990s Experiences, June 2010.

Exhibit 34: US had the most rapid increase in their equity/mutual fund allocation in the 1990's
Equity and mutual fund as % of household financial assets

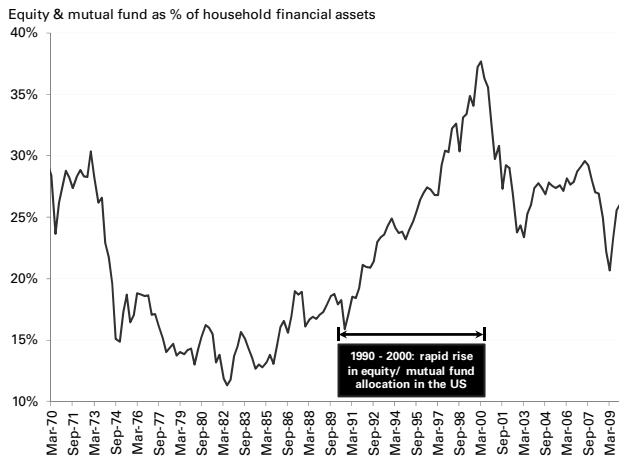
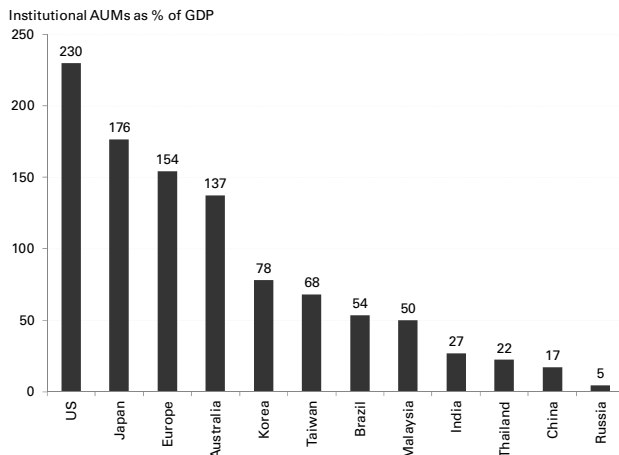


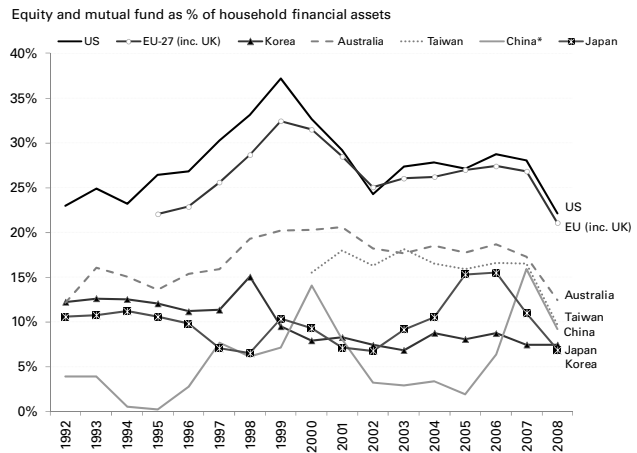
Exhibit 36: Institutional funds in emerging markets are still early in their development stage
Institutional fund AUM as % of GDP



Note: In this paper institutional asset is defined to include pension funds, insurance assets and mutual funds, to the extent data is available from public sources. For local institutional ownership, the following proxies are used for countries without official exchange data release: for Europe, India and Russia, we estimate using equity AUM of institutional funds as % of market cap; for China, we aggregate data from the top-10 holder classification for individual stocks, excluding legal person shares (mostly holdings of corporates); for Brazil, this is proxied from the owners breakdown of deposited securities; our Australia numbers source from a survey by Goldman Sachs & Partners; our Malaysia numbers are proxied by the turnover breakdown. China in these two exhibits refers to China domestic, for both market cap and size of institutional fund AUMs.

Source: CEIC, IMF, local stock exchanges and regulatory authorities, OECD, United Nations, Wind, Goldman Sachs Global ECS Research estimates.

Exhibit 33: EM households allocate a smaller portion of financial assets to equities compared to their DM peers
Equity and mutual fund as % of household financial assets



Note: Data on flow of funds account (stock basis) is not available for China. Figures above for China are showing the proportion of income (flow concept) going into equity and mutual funds.

Exhibit 35: A younger population in EM should support a shift towards more equities as wealth increases
Proportion of population under 40 years old

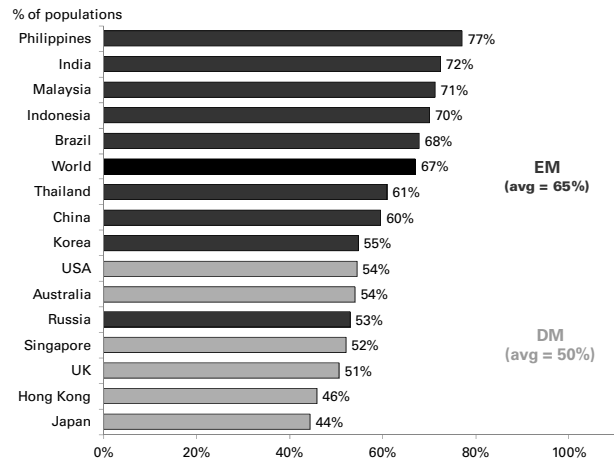
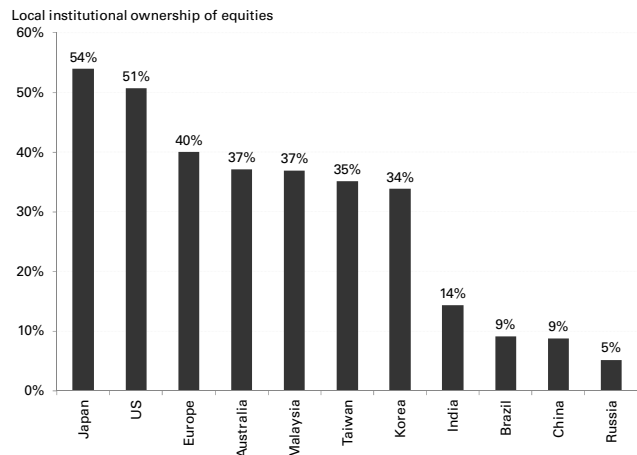


Exhibit 37: Institutional funds in emerging markets own a lower percentage of the overall market cap
Estimated local institutional ownership of equities



Impact from an expanding institutional base

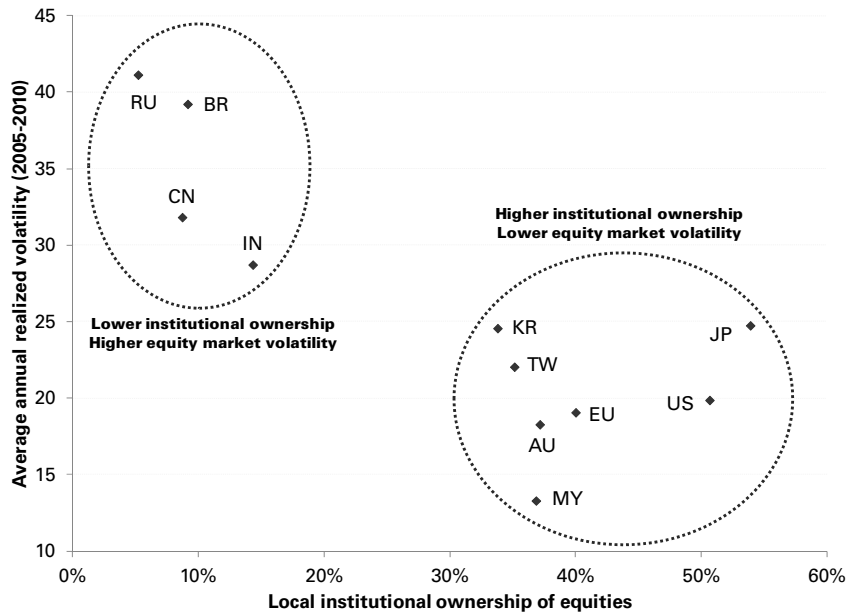
The development of the local institutional funds complex within the emerging markets will likely impact the behavior of their equity and other capital markets.

From a **valuation** perspective, a deepened institutional ownership base may be supportive of market valuations, arguably due to home country allocation bias, or restrictions from fund mandates. Particularly during downturns, investors that are required to keep a certain portion of their portfolio invested in equities may provide more secure “floor” valuations within the market. Currently, a larger portion of investors are foreigners, hedge funds, and retail investors, which anecdotally appear to be more flexible in cutting equity exposure more rapidly and sharply than a mutual, pension, or insurance fund might be able to do.

An increasing dominance of local institutional players may also lead to changing dynamics from a **volatility** perspective. Looking at the past five years of trading patterns from around the globe, we find that markets with a high institutional ownership base, which tend to be the developed markets, also tend to have lower realized volatility. Perhaps the increasing influence of local institutional investors in the emerging markets may lead to a reduction in their equity market volatility, although we also note that the link between lower volatility and economic development may be due to lower ‘fundamental volatility’ in more mature economies.

Exhibit 38: Higher institutional equity ownership is associated with lower equity market volatility

Realized volatility vs. local institutional ownership of equities



Source: Federal Reserve, ICI, local stock exchanges and regulatory authorities, OECD, Wind, Goldman Sachs Global ECS Research estimates.

3. Implications for investors, financial intermediaries, corporates

We have made the case that emerging markets are likely to grow substantially in absolute size over the coming two decades and become a much larger share of the global market cap and index pie. In turn, we expect this to encourage significant flows from DM savings pools into EM equities and to spur (and in part be driven by) the continuing institutionalization of EM savings pools.

Below, we outline some of the implications that these developments may have for investors, financial intermediaries and corporations.

Investors- return opportunities (with caveats); resource allocation

- **Potential attractive absolute and relative returns from EM.** Over the long run, listed corporate profits correlate well with underlying economic growth, and profits (along with dividends) are the main drivers of long-term returns. As we previously noted in Exhibit 17, the main contributor to the growth in market caps that we project over the next 20 years is likely to be earnings; valuation and FX changes may enhance or impede this, but the locomotive is real profit growth. Our long-term economic growth projections for emerging market economies thereby suggest that investors have an opportunity to earn attractive returns- in absolute terms and relative to DM markets- from investing there.
- **Two caveats- entry points matter; earnings growth not wholly tied to domestic GDP.** That said, we highlight two important caveats.
 - **Avoid overpaying for growth.** One of the key mistakes investors continually make is overpaying for future growth opportunities. This is true in developed markets (e.g. the late 1990s tech bubble) as well as in the many boom/bust episodes in emerging markets. In Exhibit 40, we show the rolling 5 and 10 year DM and EM price returns over the past nearly three decades. There has been a strong positive correlation between long-term returns and earnings growth, particularly in EM, and a negative correlation between returns and starting valuations, notably in DM. Clearly, entry points matter, even if the underlying fundamentals are strong. We note that EM valuations are presently moderate in both absolute terms and relative to historical ranges.
 - **Concentrate on sources of revenue.** Equity markets are not necessarily a simple reflection of their underlying economy. Increasingly, listed companies have sources of revenue outside their listing domicile: for example, over 30% of the S&P500 revenues are from outside the US and over 60% of Taiwan's listed corporate earnings come from the tech sector which mostly manufactures and sells its products outside of Taiwan. Investors must therefore be conscious of how they obtain exposure to the underlying growth opportunities in EM (*see Global Portfolio Strategy: The BRICs Nifty 50: The EM & DM winners*, Nov 4 2009).
- **Benchmark selection.** As we previously noted, there are substantial differences between the weight of emerging markets in the MSCI AC World index and their share of the global economy and contribution to its growth. The trend towards using alternative benchmarks, such as GDP-weighted indices, may gather pace.

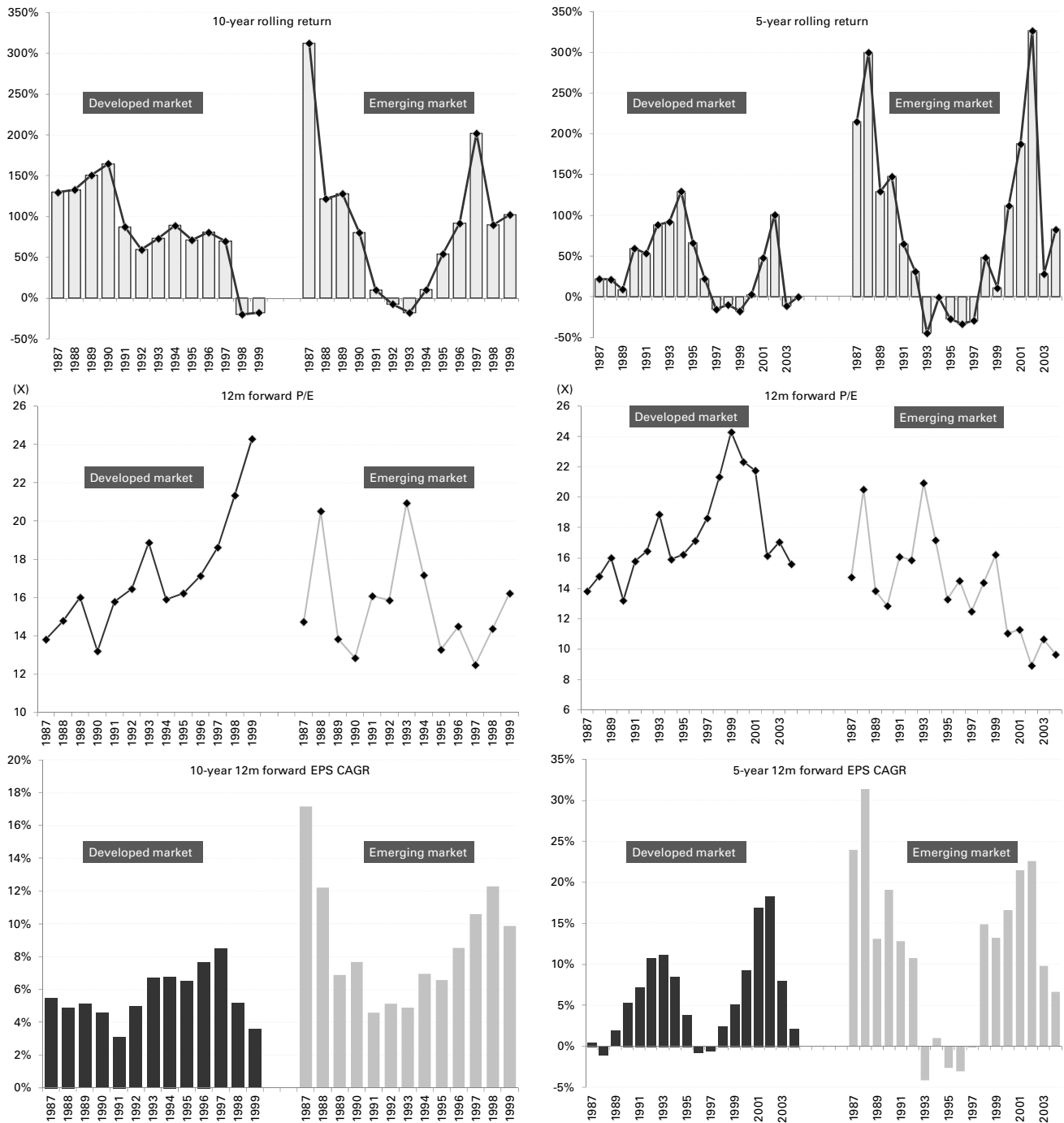
- **Strategic allocation of resources to EM.** From an operational perspective, the structural opportunities in EM imply a greater allocation of resources by investment firms towards these markets. This may include more on-the-ground presence in order to improve research and trading capabilities, which in turn implies a higher cost base and therefore a higher threshold of assets under management.

Exhibit 39: Long-term investment success is well correlated with earnings growth and negatively correlated with starting valuations: investors must avoid overpaying for future growth opportunities

Correlation (10-yr return vs)			Correlation (5-yr return vs)		
	Start val	EPS CAGR	Start val	EPS CAGR	
DM	-90%	3%	DM	-37%	57%
EM	-38%	87%	EM	-20%	90%
All	-56%	62%	All	-33%	85%

Source: I/B/E/S, FactSet, Goldman Sachs Global ECS Research

Exhibit 40: Starting at the “right” valuations matters for equity market returns, for both long or shorter-term horizon 10-year (left) and 5-year (right) rolling return compared to valuation and earnings growth



Source: FactSet, I/B/E/S, MSCI, Goldman Sachs Global ECS Research.

Financial intermediaries

The implications of the shifting EM/DM equity mix for financial intermediaries such as investment banks are numerous and significant. Among them:

- **Significant revenue opportunity:** The growth in emerging equity markets signals substantial potential incremental revenues for financial intermediaries. Business opportunities include:
 - DM investment flows (both new buying as well as customary portfolio trading)
 - Growth in domestic EM institutional business as domestic saving pools become more institutionalized
 - Addressing the domestic retail investor base
 - Primary issuance, placements
 - Derivative and structured product businesses as equity and related options and futures markets become larger and more liquid
 - Principalling and proprietary activities
 - Related businesses- including stock loan, custodial services, foreign exchange settlements, and advisory work- that will be driven by larger and deeper equity markets.

To give a crude sense of the magnitude of the potential ‘plain vanilla’ revenues, we have calculated potential fees on a) the \$14tr of primary issuance that we estimate may transpire over the next two decades; b) secondary market commissions (based on average market cap, 100% annual turnover ratio and 15bp commission rate); and c) commissions on the \$4tr new foreign buying that we anticipate. **Using conservative estimates, these add up to about \$420bn of revenues over the coming two decades or a simple average of \$21bn annually.** Given the diverse array of generally more profitable businesses that complement these core equity intermediary activities, the business opportunity is clearly meaningful and could be several multiples of these base figures.

- **Competition:** Competitive pressures will probably intensify as the revenue opportunities from growing EM equity markets become recognized. Stronger local players will no doubt emerge and change the competitive landscape. The ‘war for talent’ will also continue as financial intermediaries compete to attract capable and experienced people.
- **Localization:** The growth in EM equity markets will bring both the incentive and pressure to expand and localize EM businesses. Coverage footprints will expand, demand for local language capabilities will increase as the client mix shifts more towards domestic institutions, and management pressures (for global or regional intermediaries) will intensify given inevitable tensions between local norms/objectives and a given firm’s broader culture and goals.
- **Higher operating costs:** The revenue opportunity sketched out above will likely be accompanied by a higher cost base, since a greater local focus makes it harder to have scale efficiencies across geographic borders, i.e. a ‘hub and spoke’ model will become more difficult to deploy. This will also make it harder for financial firms to manage through the cycles that will inevitably take place within the context of the longer term structural trends.

Corporates

The growth of emerging equity markets may also have implications for DM corporations aside from the business opportunities that high-growth EM economies offer. Examples include:

- **Access to new capital pools and investor bases.** Selected emerging markets may become more attractive as secondary listing venues, which would offer a DM company access to additional capital and a different investor base. We note that Hong Kong is encouraging a diverse array of listings and the Shanghai stock exchange also has plans to attract foreign listings.
- **Changes to corporate communication/behavior as shareholder base changes.** The rapid growth of EM institutional investment assets that we discussed above will probably also result in a portion of these assets being invested globally. As the composition of a DM company's shareholder base begins to change, there may be a need to adapt corporate communication and there may also be pressure for more substantive change, depending on the level of EM investor holdings and how active they choose to be.
- **Changing competitive dynamics.** As the capitalization of EM companies increases (through organic growth and valuation expansion at various points in the cycle), industry competitive dynamics are likely to change. For example, outbound M&A is likely to rise, as demonstrated by Indian and Chinese companies in the steel and commodity sectors in recent years.

Risks and caveats to our forecasts

In this report, we have postulated what the world equity markets may look like in 10 and 20 years' time. However, we recognize that any long-term forecast is highly sensitive even to moderate modifications of underlying assumptions given the compounding effects of long-run growth rates.

Our forecasts represent point estimates of what we believe to be a likely future outcome in terms of GDP growth, equity market capitalization, index weighting, and other developments. In this section we categorize the types of risks and caveats to our views and identify the potential implications of adjustments to our current assumptions.

■ **Macro and fundamental:** The core of our model is based upon our long-term GDP growth estimates for each inputted country. Although the trend growth rates we employ in our model incorporate expectations of how growth rates change as countries mature, we have not factored in the risk of growth shocks, which could occur due to a variety of factors. Large shocks to the economy, such as a repeat of the Asian financial crisis of the last 1990s or the global financial crisis of 2008 could certainly alter the trajectory of world GDP growth and global equity market dynamics.

Security risks are another potential threat to economic growth. These risks are more prominent in EM compared to DM, for example in the Korean peninsula, south Asia and the Middle East. Destabilization in any of these regions could delay the growth of those respective equity markets and the development of the domestic institutional investor base.

From a sustainable development perspective, our growth forecasts could be affected by the finite nature of the planet's natural resources. As the world's resources are depleted, commodity prices may rise above levels embedded in our models, elevating the cost of production globally, and possibly hindering economic growth and corporate margins, which could limit the potential for equity market growth especially in EM.

■ **Market conditions and capital deepening:** Another critical input to our model is a rising market cap to GDP ratio, which represents the capital market deepening process that we expect to take place over the next two decades. Inherent in this forecast, we assume that macroeconomic growth translates into rising corporate profits and the development of the private sector. However, corporate profitability does not necessarily follow from economic expansion and is subject to a variety of risks, including political and regulatory ones.

Political risks are easy to describe, but difficult to quantify. Within the DM world, several governments are currently in the process of adopting stricter financial regulatory policies, which could impact future economic growth, capital market deepening, and fund flows. Within the emerging markets, our forecasts assume relatively stable growth and capital market deepening, but there exist nontrivial political risks of regime changes towards administrations that restrict the opening of markets.

We assume that market conditions remain attractive for the capital deepening process to take place. This includes general stability of the global equity markets, which depend upon a sustainable appetite for equity securities as a savings and investment vehicle as well as regular liquidity within the equity markets.

We would also note that the appetite for EM equity investment may be more vulnerable to corporate governance risks, but this risk may be mitigated by developments by EM exchanges to enforce stricter reporting standards. The rise of Brazil's *Novo Mercado* listings is an example of this type of development.

- **Fund flow dynamic:** Our analysis on potential fund flows across borders is primarily based upon current institutional investor holdings and the future sizes of DM and EM equity markets. Although we discuss the potential changes within EM savings pools, we did not assume a structural change in the behavior of DM investors. For example, demographic shifts in DM, most notably the retirement of the baby-boomer generation in the US, may lead to higher allocations towards fixed income securities compared with equities. This sort of shift could result in a lower fund flow from DM institutional investors into EM equity markets.

As history suggests, DM investor appetite towards EM stocks may experience substantial swings back and forth over the next 20 years. Our forecasts show a steady increase in DM institutional investor portfolio weightings in EM equities. We would note that our model is based upon trend growth rates and that our goal is to estimate reasonable end points for how the world may look in 2020 and 2030. The path, of course, may vary substantially.

Appendix I: Panel model details

Methodology

We pool data on valuation-normalized Market Cap to GDP ratios and per capita income across 26 countries from 1990 to 2010. Preliminary analyses suggested that it would be more beneficial to utilize data that is more recent since this would account for more structural change in the Cap to GDP ratio (there have been notable changes in the ratio over the last few years). Hence, we finally pooled data across these 26 countries from 2001 to 2010. Even though we halved the length of the time series, we still have an adequate number of observations for us to carry out the analysis.

It would be too simplistic to assume that per capita income has a linear relationship with the MC/GDP ratio. And indeed for most economies, it is anything but linear. The underlying belief here is that the ratio cannot increase forever, and at some stage, as the economy matures, the curve should flatten. This is particularly true of economies such as the United States, the UK and Hong Kong. Hence, we proceed to fit a relationship of the following form to the panel data (for expositional clarity we ignore the error term):

$$CaptoGDP = a(Income^b)$$

We then use a natural logarithm transformation to analyze our panel data without too many interpretational and procedural difficulties.

We fit a fixed effects model to the panel data after using the incremental F-test to reject the null hypothesis of no fixed effects in the model at 1% and 5% levels of significance (the Hausman test for fixed vs. random effects is significant to the 10% significance level). On fitting a two-way fixed effects model, there are no significant time differences in the panel data and hence we finally fit a one-way fixed effects model for cross-sectional differences.

Results: good fit

The results show that per capita income is a significant predictor of the Cap to GDP ratio at 1% and 5% levels of significance and the fit yields an *R-square* of 94%. (See Exhibit 41)

Adjustments and final estimates

With our model in place, we estimate future MC/GDP ratios for each of our 26 countries using our forecasts of economic growth and per capita GDP levels over the coming 20 years. Three points bear mention:

- Structural differences acknowledged.** The model specifies which countries have statistically valid fixed effects and calculates different intercepts for them, both above and below the central regression. These fixed effects line up well with the differences between countries that we discussed: e.g. countries such as Singapore, South Africa and Switzerland have significantly positive fixed effects, whereas Germany's fixed effect is notably negative. This suggests that the model acknowledges the structural differences between countries (openness, financial center, bank vs. market corporate financing) to a good degree.

Exhibit 41: Our panel model yields good overall results and accounts for structural differences between markets

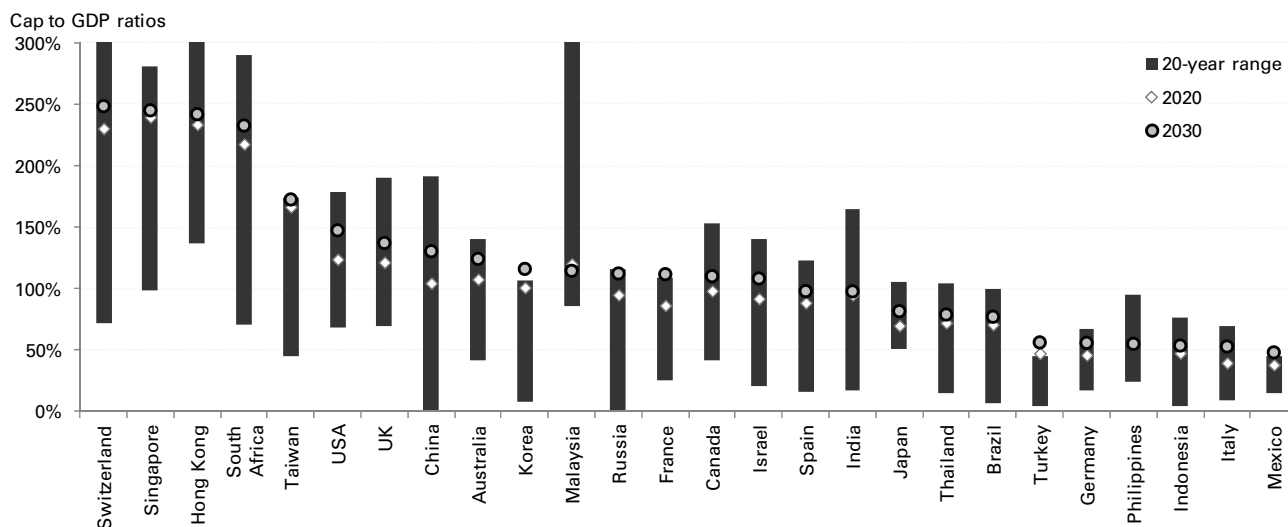
Summary of panel model output and statistics

Dependent var.	Independent var.		R-square	F-test for no fixed effect
ln(Cap to GDP_adj.)	Intercept	ln(Income)		
<i>Coefficients</i>	-5.10	0.48	94%	91.06
<i>t-value</i>	-11.0	11.1		(<.0001)*

Source: IMF, MSCI, World Federation of Exchanges, Goldman Sachs Global ECS Research estimates.

- Judgmental adjustments.** Although our approach provides a structurally sound base for framing MC/GDP forecasts, we nevertheless apply some judgmental adjustments to the model’s output. The principal ones are to attenuate the increases in the more distant forecasts (years 10-20) for markets with positive fixed effects. For example, if greater capital deepening has occurred at lower levels of per capita GDP (eg China), then the pace at which further deepening takes place may be somewhat less than the model projects (i.e. the slope of that country’s log regression should be lower). Overall, our adjustments result in more conservative forecasts for the EM group, which suggests that the structural changes to the composition of global market cap could be larger than the numbers we show.
- Final numbers formed using mid-cycle valuations.** The final step in projecting MC/GDP levels for each country is to translate our model output (which is based on globally-comparable valuations) back to each market’s own terms by using that market’s mid-cycle price/book valuations. Where applicable, we have accounted for clear de- or re-rating, and our adjustments generally err on the conservative side for the EM bloc. Exhibit 42 shows the MC/GDP forecasts relative to their 20-year range: most of our 2030 forecasts are still below the high end of historical ranges.
- We also highlight how rapidly the equity markets in EMs have developed. For example, the current market caps for China and the BRICs are already above the previous 2020 projections made in *Global Economics Paper No: 118, The BRICs and Global Markets: Crude, Cars and Capital*, Oct 2004 (Exhibit 43).

Exhibit 42: Our 2030 forecasts for most countries’ MC/GDP levels are well below the high end of their historical ranges
Our market cap / GDP forecasts for 2020 and 2030



Source: IMF, World Federation of Exchanges, Goldman Sachs Global ECS Research estimates.

Exhibit 43: Upside surprise from EM: current market caps for China and BRICs are already above our previous 2020 projections
Old and new forecasts vs. current figures for GDP, market cap and MC/GDP ratios

	2020 forecasts in GEP118			Current number			Our new forecasts for 2020		
	GDP	Mkt Cap	MC/GDP	GDP	Mkt Cap	MC/GDP	GDP	Mkt Cap	MC/GDP
US	17,347	18,156	105	14,614	13,850	95	18,065	22,398	124
China	7,357	4,265	58	5,633	4,716	84	15,694	16,417	105
BRICs	13,002	7,817	60	10,906	8,292	76	25,854	25,244	98

Current market cap in China and BRICs have already exceeded our old forecasts for 2020 (made in Global Economics Paper 118, 2004)

Source: IMF, World Federation of Exchanges, Goldman Sachs Global ECS Research estimates.

Appendix II: Our Growth Environment Scores (GES)

The Growth Environment Scores were first introduced in Global Economics Paper 134, “How Solid are the BRICs?” to assess the policy and institutional environment that contribute to growth performance. The score consists of 13 different factors (Exhibit 44) which capture five major ingredients: macro stability, macro conditions, technology, political conditions and human capital.

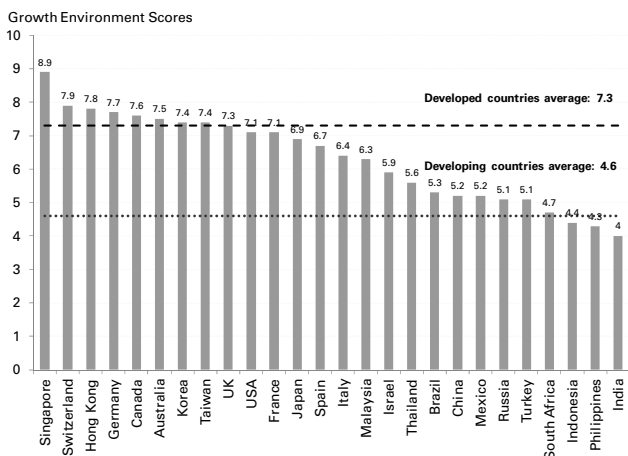
Exhibit 45 shows the GES of the 26 countries we model in this paper. The developing countries in general have lower scores than the developed world, but their conditions have improved in the past 5-6 years. In 2009, growth conditions continued to improve in the developing world despite a weakening in their developed counterparts (Exhibit 46).

Exhibit 44: The 5 categories and 13 components of the Growth Environment Scores

Basic categories	GES components
Macroeconomic stability	Inflation Government deficit External debt
Macroeconomic conditions	Investment rates Openness of the economy
Technological capabilities	Penetrations of PCs Mobile phones Internet
Human capital	Education Life expectancy
Political conditions	Political stability Rule of law Corruption

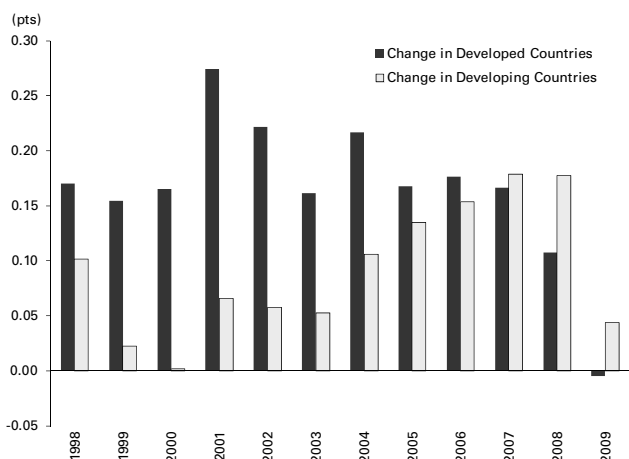
Source: Goldman Sachs Global ECS Research.

Exhibit 45: GES in developed countries are higher than in the developing world...
GES for the 26 countries in our panel model



Source: Goldman Sachs Global ECS Research estimates.

Exhibit 46: ... but the developing countries' growth conditions continue to improve
Change in GES for developed and developing countries



Source: Goldman Sachs Global ECS Research estimates.

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