

Longer Term Investments

Emerging market healthcare

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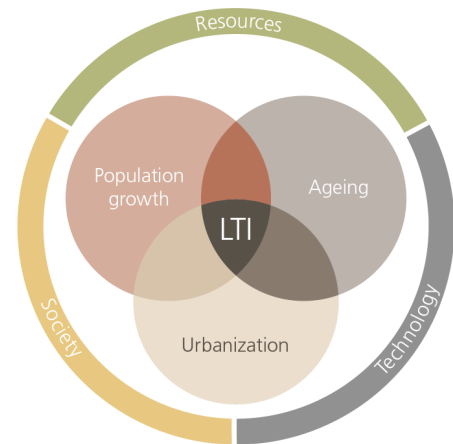
- Emerging markets (including China, India, Indonesia, Brazil) are home to half the world's population, but healthcare spending there is less than half that of developed markets (DMs). We believe public investment in healthcare in EMs will pick up in the next 10 years due to rapidly graying populations, and rising demand for modern healthcare services from urban middle classes.
- According to the UN, the number of people aged 65 or more will rise to 15% from 10% of the EM population by 2030. The rising healthcare demands of hundreds of millions of senior citizens, coupled with the more expensive costs of treating non-communicable disease in EMs, suggest that healthcare investment will need to rise. We forecast it to increase at double the rate of global healthcare over the next decade and to also outpace EM economic growth. Earnings will also likely continue growing ahead of global healthcare in the long term.
- We advise investors to gain exposure to the EM healthcare theme via the MSCI EM Healthcare Equities Index. It focuses on large-cap liquid EM healthcare heavyweight stocks and is 86% weighted toward Asia, 10% toward South Africa, and 4% Brazil. We expect growth to outpace the global healthcare average, supporting further re-rating.

Our view

The value of the healthcare sector in emerging markets (EMs) is likely to grow at 6.3% annually over the next decade, in our view. That is double the pace of developed markets. Emerging markets (including China, India, Indonesia, Brazil) are home to almost half the global population. But the combined value of the EM healthcare sector is just USD 1.3trn, less than half that of the US. The big gap in per capita healthcare spending between EMs and the rest of the world is largely due to decades of underinvestment by EM governments. This is poised to change, in our view, as rapidly aging EM societies will become a burden on healthcare services and potentially on economic growth unless governments address the issue. Treatments for non-communicable diseases (NCDs) are also increasing and raising healthcare expenditures. NCDs are now the major cause of death in EMs due to major changes in lifestyle and diet brought about by the rapid pace of urbanization in EMs over the last two decades.

Introduction to the Longer Term Investments (LTI) series

- **The Longer Term Investments (LTI)** series contains thematic investment ideas based on long term structural developments.
- Secular trends such as population growth, ageing, and increased urbanization create a variety of longer term investment opportunities.
- These investment opportunities are influenced by the interplay of technological advancement, resource scarcity, and the societal changes.
- Investors willing to invest over multiple business cycles can benefit from potential mispricings created by the typically shorter term focus of stock markets.



Key drivers

EMs have historically underspent on healthcare

Historically, EM healthcare spending has significantly lagged that of developed markets (DMs). EM healthcare spending is just 5.5% of GDP, compared to 14% in DMs and 17% in the US. Within EMs, Asia spends 5.1% of GDP on healthcare (China spends 5.3%), EMEA 5.5%, Latin America 8% (Brazil 9%), and South Africa 8.2% (see Fig. 1). On average, EM spending per capita is 5% that of a rich nation like the US, yet developing countries face many of the same demographical and medical challenges as developed ones. Capacity constraints in terms of the number of hospital beds and physicians are proof of the underspending in EM healthcare. EMs had 3.4 beds per 1,000 population versus 9.5 in DMs in the 2007–13 period (see Fig. 2). Similarly, there were two doctors per 1,000 population in EMs versus 2.8 in DMs. While we do not expect this large spending gap to narrow overnight, rising government spending is likely to fuel EM healthcare growth.

Aging demographics: Another key to spending growth

EM populations are aging rapidly. The percentage of people 65 years or older has risen two-fold to 10% since 1980, and will likely reach 15% by 2030 and 25% by 2060, according to UN forecasts. In Asia, the trend is especially pronounced. China's 65-and-above demographic will likely rise by 50% by 2020 as more than 200 million people reach the age of 60. This will increasingly strain domestic healthcare services, especially as life expectancy rises. In the EU, for example, public healthcare spending on the 65-year-old plus demographic is 15% of GDP per capita compared to just 5% for 20–65-year olds (see Figs. 3 and 4).

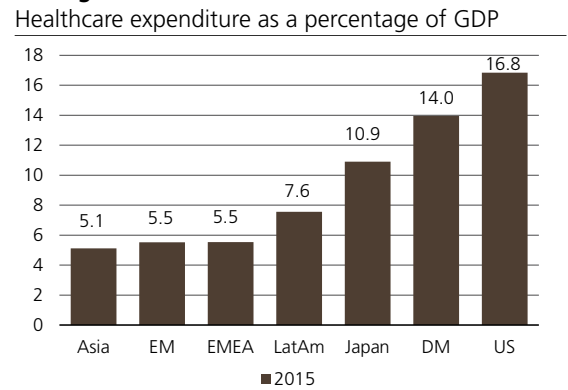
Non-communicable diseases also playing a major role

EM healthcare has rapidly evolved from treating infectious diseases like malaria, dengue and polio to treating NCDs like hypertension, cancer, diabetes and cardiovascular diseases. Swift urbanization is partly responsible, as are the shifts in lifestyle and diet that it has brought about. The trend has been especially evident in Asia over the last decade. Indeed, 80% of EM deaths are now attributed to NCDs, nearly on par with the 87% in DMs. Among NCDs, cancer and cardiovascular diseases cause most of the deaths in the world. EMs suffer a higher incidence of certain ailments than DMs. For example, China's 120 million type 2 diabetes sufferers constitute the largest group worldwide. Diabetes patients on average spend 2.3 times more on medical expenses than those without it. Because of the higher costs and longer treatment periods that NCDs require, we think they have been fueling EM healthcare spending growth. A comparison of costs is illustrative: in 2010 the US spent an average of USD 90,000 per stroke patient. This compares to a cost of USD 5,450 per malaria patient across the disease cycle.

Decline in out-of-pocket spending share a positive trend

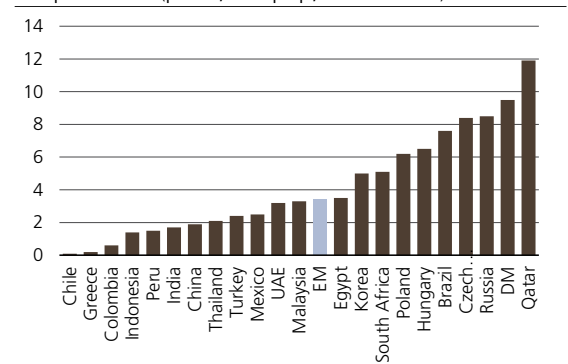
Public healthcare spending as a share of total healthcare spending in EMs rose from 45% in 2005 to 54% in 2013. Asia, where it rose from 38% to 52%, has been in the lead, with China climbing from 38% to 56%.

Fig. 1: EM healthcare spending is below global average



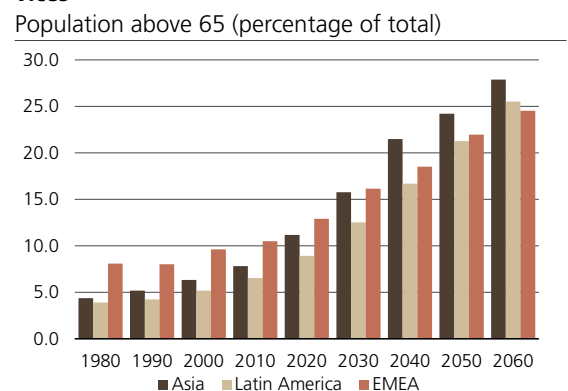
Source: World Health Organization, World Economic Outlook, UBS, as of April 2018. GDP weighted using 2017 GDP

Fig. 2: EM healthcare services are undersupplied



Source: World Bank, UBS. GDP weighted using 2014 GDP

Fig. 3: Aging will fuel demand for healthcare services



Source: World Health Organization, World Economic Outlook, UBS, as of 2016. GDP weighted using 2017 GDP

Asia's other most populous nations, India and Indonesia, have seen their public spending rise from 23% to 32% and from 28% to 39%, respectively. Meanwhile, public spending in LatAm rose from 46% to 52%, and in EMEA it has remained stable at an elevated 60%.

The relatively low share of public spending has meant that out-of-pocket expenses (private medical expenses not covered by state healthcare schemes) have been historically high in EMs – on average 35% of the total (in 2014) compared to 12% in DMs (see Fig. 6). Recent trends suggest that the state is increasingly picking up the tab in EMs. Since 2000, out-of-pocket expenses there have fallen from 47% to 35%.

In the last three years, the figure has remained around 35%, which we attribute to slower economic growth. As global economic growth recovers, we think the share of EM out-of-pocket expenses will resume falling as public spending on healthcare steps up.

Healthcare sector growth at premium to GDP growth

Because the growth of the EM healthcare industry has depended on relatively high out-of-pocket expenses alongside rising public spending, it has tended to outpace EM GDP growth per capita. EM healthcare spending per capita rose at a compound rate of 9% annually between 1995 and 2013, compared to the average EM GDP per capita growth of 7%.

We expect this trend to continue. We forecast healthcare growth of 6.3% annually over the next decade, with Asia leading the push as China and India record double-digit growth rates. EM healthcare expansion should continue to enjoy a premium over the broader economy.

Key markets

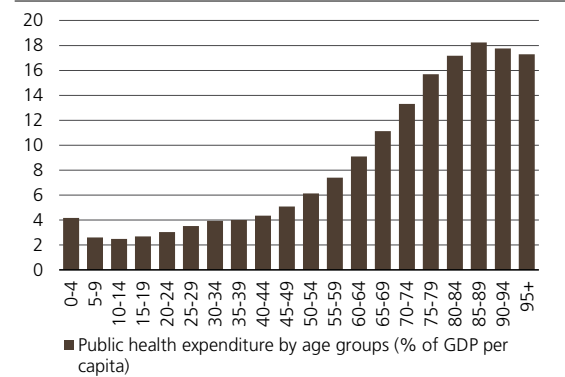
We see the biggest EM opportunities in healthcare in China and India. The two countries have the world's largest populations, are facing aging demographic time-bombs, and have grossly underspent on their healthcare systems in the past. India still has big gaps in terms of disease prevention and communicable disease control while China is focusing on upgrading the quality of its healthcare system as well as controlling the nationwide escalation of non-communicable diseases with home-grown drugs.

China: The engine of EM healthcare growth

Raising healthcare spending, creating modern healthcare systems and improving state medical coverage are the goals of reform programs being instituted by many EM governments. One of the largest-scale programs is underway in China, which has historically only spent around 5.0% of its GDP on healthcare. We think the program is especially ambitious, as the government is targeting a CNY 8.0trn (USD 1.29trn) industry by 2020 – a seven-fold increase over 2011. This implies a compounded annual growth rate of 26% over the next five years and would double the size of the entire EM healthcare sector as valued today. China's resolve to expand its healthcare sector aggressively is closely linked to the government's blueprint to shift from an investment to a consumer-driven economic model. However, the government believes that the full spending power of the consumer

Fig. 4: Healthcare spending per capita increases sharply after 65

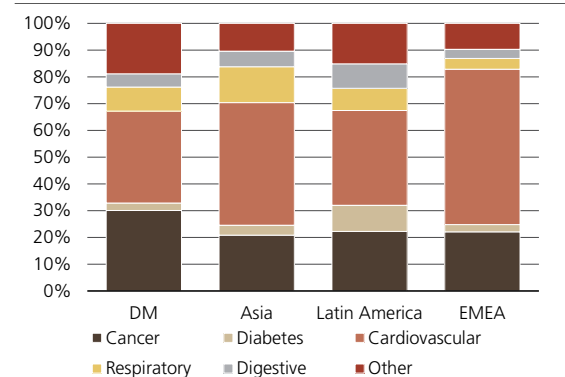
Public healthcare expenditures as a percentage of GDP per capita, average of 20 EU countries.



Source: OECD, UBS as of May 2013

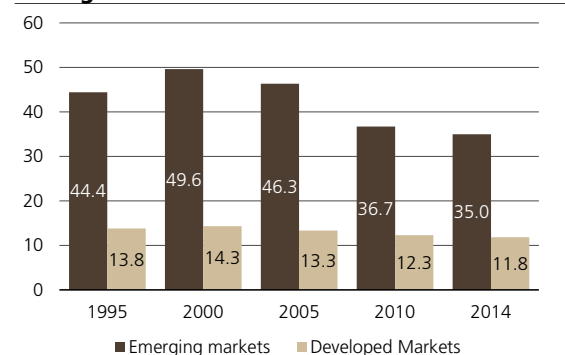
Fig. 5: Global fatalities in non-communicable diseases

Percentage of deaths by most common non-communicable diseases, 2015



Source: World Health Organization, World Economic Outlook, UBS, as of April 2018

Fig. 6: Out-of-pocket expenditures as a percentage of total healthcare



Source: World Health Organization, World Economic Outlook, UBS, as of 2014

cannot be unlocked with high levels of out-of-pocket expenditures, especially as a rapidly aging population drives up treatment costs.

China is targeting out-of-pocket expenses (as a share of total healthcare spending) of 25% by 2030 (vs. 28.8% in 2016 and 34.3% in 2012). It intends to reach this goal by improving medical insurance coverage, raising medical cost subsidies and, at the same time, deregulating drug prices. The decision to remove specific drug-price caps and expose prices more to market forces was made in response to supply shortages that have occurred because of overly cheap drugs in some areas. Notable recent pricing developments include the decision by the National Development and Reform Committee (NDRC) to deregulate the prices of 283 drugs and 250 traditional Chinese medical drugs in 2015. Other reforms include raising subsidies for the Rural New Cooperative System (China's main medical insurance for 832 million, mostly rural dwellers) from CNY 280 in 2013 to CNY 360.

The government has also been implementing a pilot program to expand and improve insurance coverage for critical illness since June 2015. Under the Rural New Cooperative System, the government will raise subsidies for so-called critical illnesses and expand the critical illness list. Currently, the list contains 20 illnesses, including congenital heart diseases, child leukemia, breast cancer, cervical cancer and end-stage renal disease.

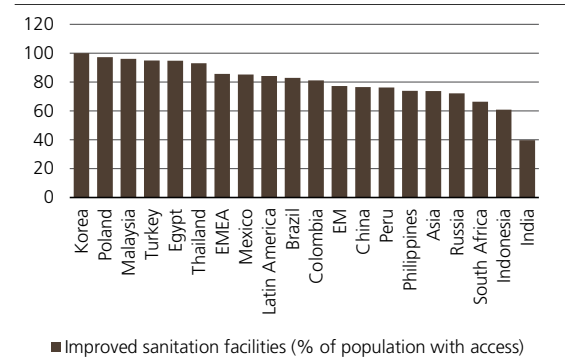
In China non-communicable disease control is a key challenge

China has made progress in terms of sanitation facilities, with 74% of the population having access to such facilities. However, large discrepancies exist between urban and rural areas, where access is available to 85% and 62% of the population, respectively. Many rural areas suffer inadequate healthcare and sanitation. China's impressively high urbanization rate over the last two decades has also been accompanied by another less-welcome trend: a sharp rise in non-communicable diseases which have become the main cause of mortality in the country. China has 120 million type 2 diabetes sufferers – the largest such group worldwide. Medical expenditure to treat diabetes patients is on average 2.3 times higher than those living without the disease. Treatment can be especially difficult in areas with poor basic infrastructure or under-trained physicians. The key challenges for domestic pharmaceutical companies include a lack of public funding, poor patent protection, patient affordability and infrastructure. Many of these issues are magnified in rural areas.

India still hostage to communicable diseases

India accounts for some 17% of the world's population, and its economy has been growing at around 8% a year over the past 10 years. Despite this rapid development, the country still tops the global ranks in terms of deaths from communicable diseases. Some 27% of deaths in India are attributable to maternal, perinatal, or nutritional deficiencies, compared to the Asian average of about 10%. Maternal deaths in India (174 per 100,000) are among the highest in emerging markets, where the average is 52. Almost 79% of malaria cases in Asia in 2014 were reported in India. And in terms of sanitation facilities, there is a large room for improvement, as only 38% of India's population has access to sanitation versus the Asian average of around

Fig. 7: India still lagging in access to sanitation
Percentage of population with access to sanitation facilities, 2015



Source: The World Bank, World Development Indicators, UBS, as of April 2018

Table 1: EM countries provide healthcare services at lower costs

In USD

Country	Heart bypass (CABG)	Angioplasty	Knee replacement	Rhinoplasty	Breast implants
US	1,13,000	47,000	48,000	4,500	6,000
India	10,000	11,000	8,500	2,000	2,200
Thailand	13,000	10,000	10,000	2,500	2,600
Singapore	20,000	13,000	13,000	4,375	8,000
Malaysia	9,000	11,000	8,000	2,083	3,308
Mexico	3,250	15,000	14,650	3,200	2,500
UK	13,921	8,000	10,162	3,500	4,350

Source: OECD. The price comparisons for surgery take into account hospital and doctor charges, but do not include flight costs and hotel bills for the expected length of stay.

70% (see Fig. 7). As expected, there is a wide discrepancy between rural areas, where only 28% have access to sanitation, and urban areas, where it is 62%.

Medical tourism

One area where EM healthcare demand overlaps with global healthcare is medical tourism. We anticipate rising growth in this segment as inhabitants facing high medical inflation in developed countries visit emerging countries to take advantage of the lower cost of healthcare treatment (see Table 1). This trend is supported by rapid DM population aging, costlier healthcare treatment, and a decade of wealth destruction for a generation of DM retirees. Medical tourism also occurs within EM regions, as patients from poorer or less developed EM countries travel to those offering better healthcare or more affordable treatment. Both these trends benefit healthcare services and hospitals in EMs.

EM-to-EM and EM-to-DM medical tourism

Asia's main medical tourism hubs are Singapore and Thailand currently, though India and South Korea are fast catching up. Thailand competes through its combination of quality, affordable services and natural attractions, which allows patients to seek treatment while vacationing. India's main advantage is cost, while South Korea has carved a niche for itself in cosmetic surgery, particularly among East Asians.

According to industry research, Asia's medical tourism market likely doubled by end-2017 versus 2011, with medical-tourist arrivals exceeding 10 million. A significant share of patients has been intra-regional, as those from countries with less-developed healthcare infrastructure travel to neighboring countries with better facilities.

Elsewhere, in South Africa, luxury accommodation and tourist activities, such as a post-op safari, are included in the price of a procedure. The most popular include dental procedures, cosmetic surgery, fertility procedures and rehabilitation. Surgeries performed in South Africa are on average one-third the cost of those in the UK. In Latin America, Mexico is a popular destination due to cost savings that range from 30% to 70% relative to the US for the same treatment. Brazil is a popular destination for plastic surgery. Many of its medical facilities are accredited by the Joint Commission International (JCI), with high quality healthcare services.

We expect EM medical tourism to continue growing robustly, thanks to rising income growth, better healthcare services and more affordable air travel due to the rise of low-cost carriers.

Emerging markets healthcare is a compelling impact investing theme

One of the critical global challenges facing us today is that essential healthcare services are simply not available to all, particularly in developing countries. Goal 3 of the UN Sustainable Development Goals (SDG) seeks to "ensure health and well-being for all, at every stage of life." Public financing in developing countries, while growing, does face limitations and significant private investment will be required to accomplish this goal and its specific targets by 2030.

The gap in affordability, access and quality of healthcare is most acute in emerging markets. Despite rapid growth in EM healthcare spending over the past two decades, the historical under-investment in healthcare infrastructure, human resources and insurance has led to a significant lack of quality care in these regions. Even where care is available, it is expensive: private healthcare spending consumes more than 50% of the annual income of low income populations.

Investors can intentionally drive positive long-term impact by investing in private businesses focused on providing essential healthcare solutions targeting those regions and communities with the greatest unmet demand for such services. One key tailwind supporting the potential commercial attractiveness of these opportunities is higher expected growth rates of healthcare expenditure in emerging markets compared to developed markets. Low current levels of relative spending and healthcare utilization in emerging markets, coupled with strong demand growth from rising incomes, are likely to further strain the imbalance between availability and demand for high quality, affordable healthcare in the years ahead. While the broad investment case is attractive, specific opportunities must still stand on their own merit.

We see numerous investment opportunities to improve the state of EM healthcare, ranging from physical delivery infrastructure (hospitals, specialty facilities, pharmacies) and services (diagnostics, emergency care) to new technologies that can increase efficiency and availability across the healthcare spectrum. In all of these cases, commercial success should be closely linked with progress on social metrics – if the business models are successful and deliver financial return, they should also have a direct impact on the affordability, access to and quality of healthcare in these markets. Success on both fronts will depend on execution by investment managers and company management.

Equally important is that the social impact in the emerging market healthcare space is measurable with specific indicators to assess both outputs and outcomes. Examples of output indicators are business-model dependent and could include patients served and procedure volumes, while examples of outcome indicators include infant mortality rates and affordability measures. Measurement can be done both at the level of individual companies and their immediate contributions, and at a broader level in terms of how they contribute to social objectives such as specific SDG targets and indicators (for e.g., physician density per capita).

The potential to achieve both attractive financial returns and measurable social impact makes emerging market healthcare a compelling theme for impact investors. Investors should be able to invest capital in this theme across a wide range of business models that enable affordable, high-quality healthcare in frontier and emerging markets while having an intentional, measurable, positive impact on the lives of patients and families.

How to play this theme? MSCI EM Healthcare Index

Investing in EM healthcare via publicly listed equities can be challenging. The sector is typically underrepresented on EM country benchmark indices, and many listed companies have low capitalization or are illiquid. In India, listed drug-makers typically export generics to global markets and are less a play on EM healthcare. Even EM medical equipment makers mainly export to DMs, where equipment costs are greater and they can sell higher-value products. However, given cost pressures in DM healthcare markets, low cost generic drugs and medical equipment manufactured in India and China have a ready market in DMs and increasingly EMs, and enjoy attractive growth prospects.

Most multinational European, US and Japanese pharmaceutical companies export to EM markets although their sales to these regions rarely combine to make up more than 10% of total sales and are therefore a diluted platform for EM exposure. Significantly, much of the activity in EM healthcare equities takes place in private markets and requires a longer-term investment commitment. This is especially the case in China.

We consider the MSCI EM Healthcare Index an efficient way of gaining equity investment exposure to EM equities. It consists of large-cap liquid EM healthcare heavyweight stocks and is 86% weighted toward Asia, 10% toward South Africa, and 4% Brazil. We especially like its composition because it is heavily weighted toward the higher growth regions within EM healthcare.

Earning growth supportive of further re-rating

EM healthcare company valuations are trading above the 10-year average but strong growth will likely support further re-rating. The MSCI EM HC Index's forward price-to-earnings (P/E) multiple premium relative to the MSCI World HC Index is above the five-year average of 33% (see Fig. 8). Return on equity (ROE) for MSCI EM HC has rebounded from a five-year low in December 2013, and we expect it to converge to the ROE of MSCI World Healthcare (see Fig. 9). Based on IBES consensus earnings forecasts, we expect 12-month forward EPS growth of 39% for EM healthcare versus 14% for DMs, a growth premium consistent with that of the last 10 years (see Fig. 10). Over the long term, we project a 10-year earnings CAGR of 15% for EM healthcare, with the growth premium over global healthcare intact.

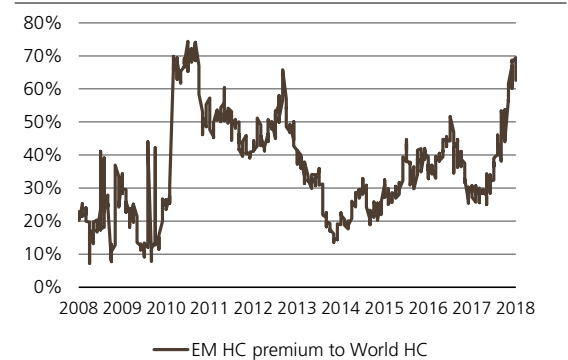
Risks

The main risk to our EM healthcare theme is that weak economies and struggling commodity markets will cause GDP growth to stagnate in EMs. A subsequent rise in EM public deficits and weak EM currencies could prevent governments from raising their share of spending on healthcare. However, this need not necessarily be the case; even if economic growth slows, healthcare spending could nonetheless rise at the expense of other public spending because of its strategic importance.

We consider the EM healthcare industry to be more defensive than other industries in a lackluster economic climate due to the inelas-

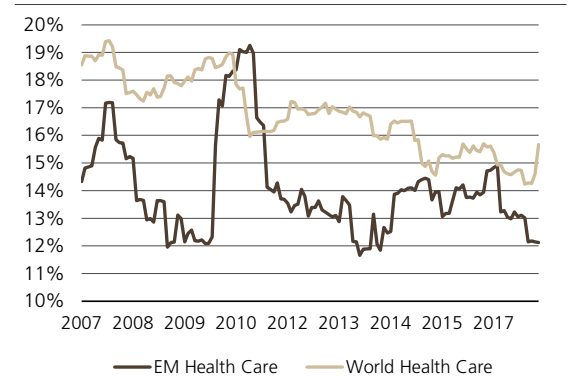
Fig. 8: EM healthcare trading at attractive levels after narrowing of historical premium

12-month-forward P/E, MSCI EM Healthcare and MSCI World Healthcare



Source: DataStream, Bloomberg, UBS, as of 23 April 2018.

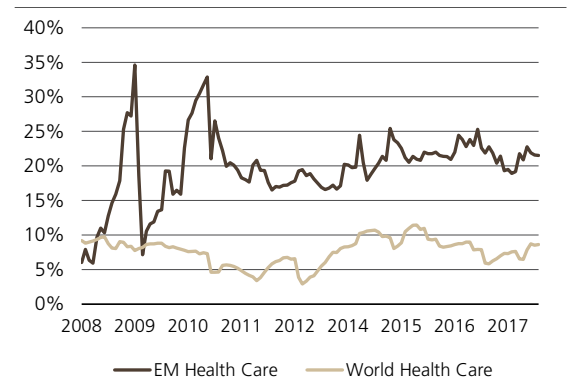
Fig. 9: MSCI EM Healthcare enjoying ROE recovery
Return on equity, MSCI EM Healthcare and MSCI World Healthcare indices



Source: DataStream, Bloomberg, UBS, as of 23 April 2018

Fig. 10: EM healthcare earnings growth at premium to DMs

12-month-forward earnings growth, MSCI EM Healthcare and MSCI World Healthcare indices



Source: DataStream, Bloomberg, UBS, as of 23 April 2018

ticity of healthcare demand. We also view it as a sector with no direct sensitivity to US Federal Reserve rate hikes. A potential risk for EM healthcare is the downward pressure on drug prices, a trend evident in Europe and the US. China has introduced a provincial drug tendering system that is pressuring drug prices, but we believe its impact will be less severe for branded drugs produced mainly by public-listed pharmaceutical companies.

Countries like India and China want to nurture homegrown drugs and patents to reduce their reliance on imported drugs and licensing. This is another reason why multinational drug companies may not be an ideal vehicle for gaining exposure to the EM healthcare growth story. As a result, and due to greater potential protectionism, we believe EM governments like China are unlikely to let domestic drug prices fall too much.

Another risk as EM countries attempt to nurture homegrown drug industries is the lack of adequate intellectual property laws. Major progress is required in this regard for domestic companies to have the confidence to continue investing in R&D and develop their own drug patents as opposed to making generic drugs.

Appendix

Emerging Market Investments

Investors should be aware that Emerging Market assets are subject to, amongst others, potential risks linked to currency volatility, abrupt changes in the cost of capital and the economic growth outlook, as well as regulatory and socio-political risk, interest rate risk and higher credit risk. Assets can sometimes be very illiquid and liquidity conditions can abruptly worsen. CIO Americas, WM generally recommends only those securities it believes have been registered under Federal U.S. registration rules (Section 12 of the Securities Exchange Act of 1934) and individual State registration rules (commonly known as "Blue Sky" laws). Prospective investors should be aware that to the extent permitted under US law, CIO Americas, WM may from time to time recommend bonds that are not registered under US or State securities laws. These bonds may be issued in jurisdictions where the level of required disclosures to be made by issuers is not as frequent or complete as that required by US laws.

For more background on emerging markets generally, see the CIO Americas, WM Education Notes, *Emerging Market Bonds: Understanding Emerging Market Bonds*, 12 August 2009 and *Emerging Markets Bonds: Understanding Sovereign Risk*, 17 December 2009.

Investors interested in holding bonds for a longer period are advised to select the bonds of those sovereigns with the highest credit ratings (in the investment grade band). Such an approach should decrease the risk that an investor could end up holding bonds on which the sovereign has defaulted. Sub-investment grade bonds are recommended only for clients with a higher risk tolerance and who seek to hold higher yielding bonds for shorter periods only.

Terms and Abbreviations

Term / Abbreviation	Description / Definition	Term / Abbreviation	Description / Definition
A	actual i.e. 2010A	CAGR	Compound annual growth rate
COM	Common shares	E	expected i.e. 2011E
EPS	Earnings per share	GDP	Gross domestic product
OP	Outperform: The stocks is expected to outperform the sector benchmark	Shares o/s	Shares outstanding
UP	Underperform: The stock is expected to underperform the sector benchmark	CIO	UBS WM Chief Investment Office

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