UBS

Longer Term Investments

Emerging market healthcare

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- Emerging markets (EMs) (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). The process of stepping up public investment in healthcare in EMs will acquire greater urgency in the next 10 years due to rapidly graying populations and rising demand for modern healthcare services from urban middle classes. We believe earnings will continue growing ahead of global healthcare for the long term.
- According to the UN, the 65-year plus demographic 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 outpace EM economic growth.
- 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 80% weighted toward Asia, 15% toward South Africa and Hungary, and 5% toward Brazil. We believe MSCI EM Healthcare is trading at attractive valuations. We expect growth to outpace the global healthcare average, while valuations remain below the 10-year relative average.

Our view

The value of the healthcare sector in emerging markets (EMs) is forecast to grow at 6.3% annually over the next decade. That is double the pace of developed markets. Emerging markets, including China, India, Indonesia, and Brazil, are home to almost half the global population. But the combined value of their healthcare sectors 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, because EM societies are aging rapidly. They 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 a leading 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.

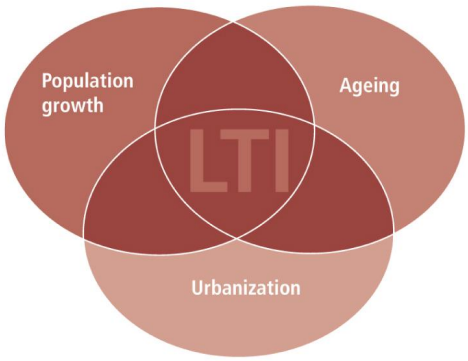
Source: ViewStock

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.

› 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 public healthcare spending is just 6.0% of GDP, compared to 14% in DMs and 17% in the US. Within EMs, Asia spends 5.4% of GDP on healthcare (with China at 5.5%), EMEA 6.4%, Latin America 7.5% (with Brazil at 8.3%), and South Africa 8.8% (see Fig. 1). On average, EM spending per capita is 5% that of a rich nations like the US, yet developing markets face many of the same demographical and medical challenges as developed ones. Underspending in EM healthcare is evident in capacity constraints at the level of hospital beds and number of physicians. EMs had 3.4 beds per 1,000 population vs. 9.5 in DMs in the 2007–13 period (see Fig. 2). Similarly, there were two doctors per 1,000 population in EMs vs. 2.8 in DMs. While we do not expect this large spending gap to narrow overnight, rising government spending is slated to become more important to fueling 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, according to UN forecasts. In Asia, the trend is especially pronounced. China's 65-and-above demographic will 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. For example, in the EU, 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).

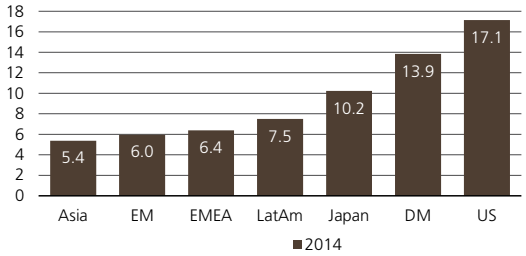
Non-communicable disease also playing a major role

EM healthcare has rapidly evolved from treating infectious diseases like malaria, dengue, and polio to treating NCDs like hypertension, diabetes, and cardiovascular disease. Swift urbanization is partly responsible, as are the shifts in lifestyle and diet that modernity 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 (Fig. 5). EMs suffer a higher incidence of certain ailments than DMs. For example, China's 120 million diabetes type 2 sufferers constitute the largest group worldwide. The medical expenditure of diabetes patients is on average 2.3 times higher 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

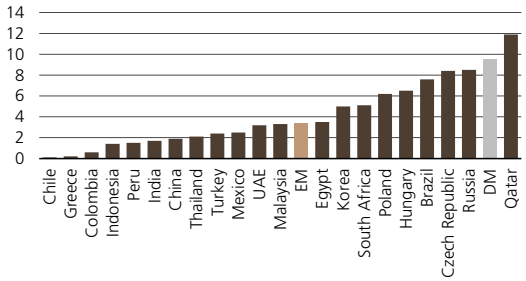
Public healthcare spending as a share of total healthcare spending in EMs has risen from 45% (2005) to 53.5% (2014). Asia, where it rose from 38% to 52%, has been in the lead, with China climbing from 38% to 56%. Asia's other most populous nations, India and Indo-

Fig. 1: EM healthcare spending falls below global average
Healthcare expenditure as a percentage of GDP



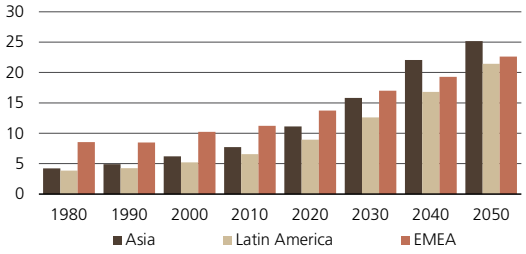
Note: GDP weighted using 2014 GDP. Source: World Health Organization, World Economic Outlook, UBS as of March 2017

Fig. 2: EM healthcare services are undersupplied
Hospital beds (per 1,000 pop, 2007-2013)



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

Fig. 3: Aging will fuel growing demand for healthcare services
Population above 65 (percentage of total)



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

nesia, have seen their public spending rise from 26 to 30% and 29% to 38% respectively. Elsewhere in the same time period, public spending in LatAm is up from 46% of the total to 51%, while EMEA has remained stable at an elevated 62%. 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 (2015) 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 48% to 35%.

In the last three years, the figure has remained consistent at around 35%, which we attribute to slower economic growth since the 2008 global financial crisis. As global economic growth recovers, we think the share of EM out-of-pocket expenses to GDP 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 average EM GDP per capita growth of 7%.

We expect this trend to continue. We forecast healthcare growth of 8% annually in the 2014–2020 period, with Asia leading the push as China and India record double-digit growth rates. Given UBS's average GDP growth projections of around 4% for EMs in 2014–2020, EM healthcare expansion should continue to enjoy its premium over the broader economy.

Key markets

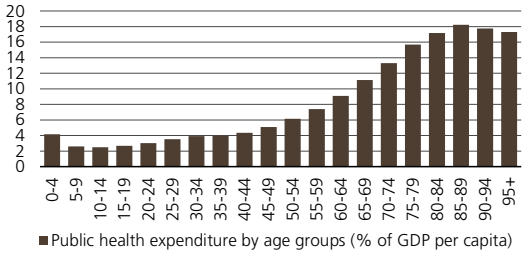
We view the biggest EM opportunities in healthcare in China and India. Both countries have the world's largest populations, are facing aging demographic time bombs, and have grossly underspent on their healthcare systems in the past. India still has big gaps in terms of disease prevention and communicable disease control while China is focusing on upgrading the quality of its healthcare system as well as controlling the nationwide escalation of non-communicable disease 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. 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 compound annual growth rate of 26% over the next five years and would alone double the size of the entire EM healthcare sector as valued today. China's resolve to expand its healthcare sector aggres-

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

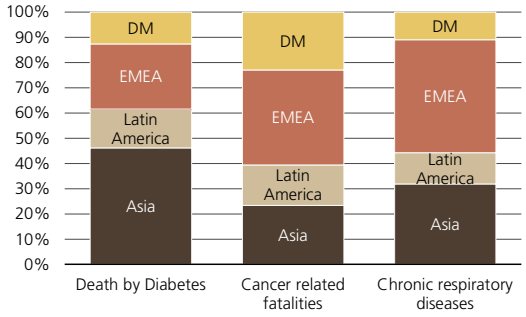
Public healthcare expenditures as a percentage of GDP per capita, average of 20 EU countries.



Source: OECD, UBS as of May 2013

Fig. 5: 80% of EM deaths are caused by NCDs

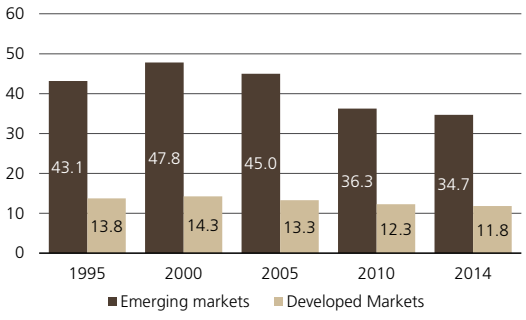
Percentage of deaths by non-communicable diseases



Note: GDP weighted using 2014 GDP

Source: World Health Organization, World Economic Outlook, UBS as of 2012

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



Note: GDP weighted using 2014 GDP

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

sively 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 cannot be unlocked with such 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 less than 30% by 2017 (vs. 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 chemical 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 of 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 critical list contains 20 illnesses, including congenital heart disease, child leukemia, breast and cervical cancer, and end-stage renal disease.

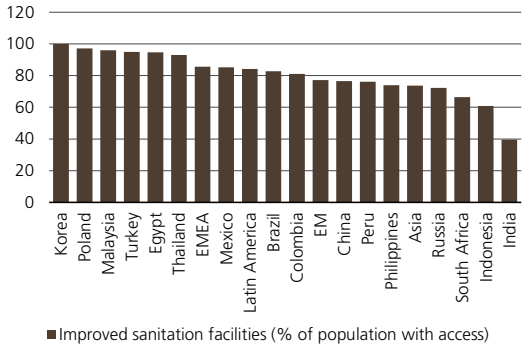
In China, non-communicable disease control is a key challenge

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 currently has 120 million diabetes type 2 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

China and India account for almost 35% of the world's population, with economies growing at around 10% and 8% a year, respectively, over the last 10 years. Despite this rapid development, India still tops the global ranks in terms of deaths from communicable disease. Some

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



Source: The World Bank, World Development Indicators, UBS as of 2015

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

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

27% of deaths in India are attributable to maternal, perinatal, or nutritional deficiencies, compared to the Asian average of close to 10%. Maternal deaths in India (174 per 100,000) are among the highest in emerging markets, where the average is 52. Finally, almost 79% of malaria cases in Asia in 2014 were reported in India. In terms of sanitation facilities, there is a large room for improvement in the country, since only 40% of the population has access to sanitation versus the Asian average of around 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

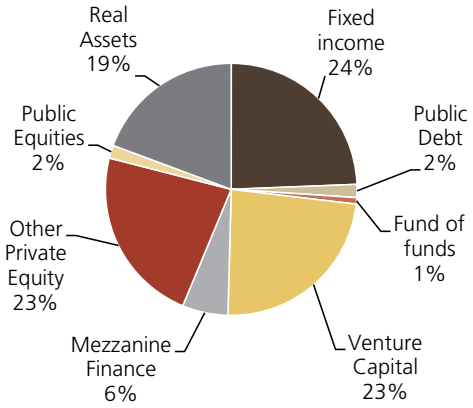
One area where EM healthcare and global healthcare demand overlap is medical tourism. We anticipate rising growth in this segment as citizens confronting high medical inflation in developed countries visit emerging countries to take advantage of the lower cost of healthcare treatment. (see Table 1). 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 DM-to-EM medical tourism

Currently, Asia's main medical tourism hubs are Singapore and Thailand, 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 Asians. According to industry research, Asia's medical tourism market is likely to have doubled by the end of last year since 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 JCI-accredited, with high quality health care 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.

Fig. 8: Breakdown of fund universe by asset class



Note: Based on total number of impact funds in the health sector in the ImpactBase Database

Source: GIIN ImpactBase, as of February 2017

Impact investing and the UN Sustainable Development Goals

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 the year 2030.

There are many reasons to be optimistic about the role that increasing the access to, affordability of, and quality of essential healthcare services can play in achieving the SDGs:

- Every year, some 100 million people fall below the poverty line as a result of out-of-pocket expenditures on health. Investments in pharmaceutical companies and retailers that are improving access to generic drugs for base-of-pyramid (BOP) communities could help reduce household expenditure on healthcare, thus alleviating a key driver of poverty.
- In addition to selling low-cost, generic drugs, pharmacies in EMs often provide additional services, such as walk-in appointments, checkups or diabetes testing. Investments in independently run pharmacies could thus prove life-critical, as low-income patients often avoid medical checkups due to high costs.
- Many BOP communities are difficult to reach, as they often live in areas that lack critical infrastructure. Investments in so-called "last-mile retailers" can help enable access to healthcare for poor and rural communities. In addition to providing low-cost generic drugs, last-mile retailers train low-income locals to educate clients when it comes to common health conditions.

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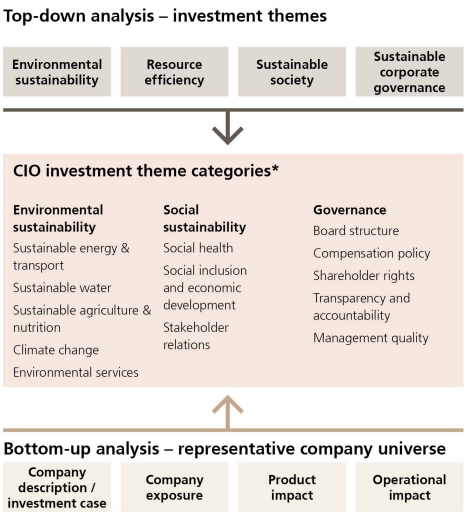
- Investments in companies that are developing information and communication technology (ICT) solutions for the health sector have tremendous potential to enhance communications between healthcare workers and the communities they serve. This can in turn improve adherence to treatment regiments and facilitate access to emergency care, particularly in low-income communities.
- Due to the limited spending power of low-income communities, pharmaceutical companies often lack incentives for developing solutions to combat so-called diseases of the poor. Through public-private partnerships and other innovative financing solutions, impact investors could help to address this gap in R&D spending for neglected diseases.

Achieving better access to quality healthcare in emerging and developing markets is undoubtedly critical to the UN SDG of ensuring "health and well-being for all." Nevertheless, it is important to note that healthcare investments alone will not be able to achieve these outcomes. Ensuring health and well-being for all will also depend, in no small part, on policies that address the underlying institutional, social, and environmental dimensions of health, including healthy diets, access to clean drinking water, and breathable air. This in turn requires improved policies and investments in many areas outside the health system, such as education, infrastructure, insurance, and environmental management. Investors in this sector should also beware of potential exploitative practices, particularly in emerging and developing markets. Underserved populations often lack access to legal recourse, making them particularly vulnerable to irresponsible drug testing, product pushing, and other exploitative practices. Exercising sound due diligence can help mitigate these risks.

Low current levels of relative spending and healthcare utilization in EMs, coupled with strong demand growth for healthcare as a result of rising incomes, make this an attractive theme for impact investors. Numerous impact investing solutions exist for investors looking to invest in this theme, primarily in private equity, fixed income, and

Fig. 9: Overview of LTI topic clusters



For simplicity, all topic clusters include several subcategories not included in the graph. For example: sustainable water includes water utilities, treatment, desalination, infrastructure and technology, water efficiency, and ballast-water treatment. Within each subcategory are further specifications; e.g. water treatment includes filtration, purification, and waste treatment. In total, we have more than 100 categories (potential sustainable investment themes) in our thematic database

Source: UBS

venture capital funds (a rough breakdown by asset class of the impact investment fund universe in this theme is illustrated in Fig. 8). In addition, investors may access this theme through generalist private equity and venture funds or via direct investments. As always, when investing using non-impact-specific vehicles, impact investors must assess on their own whether individual investments meet impact criteria including intent, measurability, verification, and additionality.

Andrew Lee, Head Impact Investing and Private Markets
James Gifford, Senior Impact Investing Strategist
Nicole Neghaiwi, Impact Investing Analyst

Link to sustainable investing

To identify whether a Longer Term Investment (LTI) theme qualifies as a Sustainable Investment theme, we follow a two-step process. The first works top-down. LTIs are assessed according to whether they match one or more of the sustainability topics within the environmental, social or governance categories (see Fig. 9). In general, these themes must contribute to environmental sustainability (e.g. a low-carbon economy), resource-efficiency (e.g. energy, water), sustainable society (e.g. health, education, poverty reduction, equality, and social inclusion, etc.) or sustainable corporate governance.

The second, bottom-up step, involves considering a thematically aligned representative universe of companies. A large majority of included companies (80% or more) must align with one or more of the ESG categories. For each individual company, a minimum business involvement threshold is applied, e.g. 25% of revenues must be derived from the thematic activity under consideration.

In our view, EM healthcare fits in our sustainable investing framework. In the report, we discussed key underlying trends such as aging and the increase in non-communicable diseases that translate into a higher demand for healthcare services. Better access to healthcare services contributes to a sustainable society and is a UN Sustainable Development Goal (SDG #3). The companies in our reference list are mostly pharmaceuticals, biotechnology, and healthcare providers. The key issue when analyzing the environmental, social, and governance (ESG) performance of healthcare companies is healthcare access, and product quality and safety. Other important issues include privacy and data security, corruption safeguards, ability to retain skilled employees, innovative risk management controls for healthcare companies and programs to minimize environmental impact from hazard waste for drug manufacturers.

The extent to which healthcare companies can improve access to quality healthcare in EMs is often constrained by institutional factors (informal institutions, trade policies, rule of law among others) and underinvestment in local infrastructure and education. Healthcare companies can partly address these issues through public-private partnerships and education campaigns.

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 drugmakers 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 EMs, 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 HC Index an efficient way of gaining equity investment exposure to EM equities. It consists of large cap liquid EM healthcare heavyweight stocks and is 80% weighted toward Asia, 15% toward South Africa and Hungary, and 5% toward Brazil. We especially like its composition because it is heavily weighted toward the higher growth regions within EM healthcare.

Attractive valuations relative to global healthcare

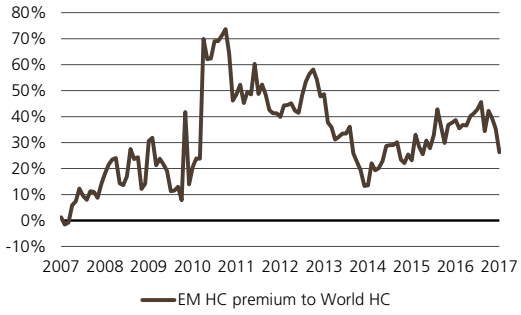
We think EM healthcare company valuations are attractive. The MSCI EM HC Index's forward price-to-earnings (P/E) multiple premium relative to the MSCI World HC Index is below the five-year average of 35% (see Fig. 10).

We view the narrowing of this premium as unwarranted, since the underlying fundamentals for EM healthcare companies are robust, while their capital returns are steadily improving . Return on equity (ROE) for MSCI EM HC has rebounded from a five-year low in December 2013, and is converging with the ROE of MSCI World HC, which has been declining (see Fig. 11). Part of the decline stems from the pricing pressure on drugs in European and US markets. Based on IBES consensus earnings forecasts, we expect 12m forward EPS growth of 21% for EM healthcare vs. 6% for DMs, a growth premium consistent with that of the last 10 years (see Fig. 12). Over the long term, we project a 10-yr earnings CAGR of 15% for EM healthcare with the growth premium over global healthcare intact.

Risks

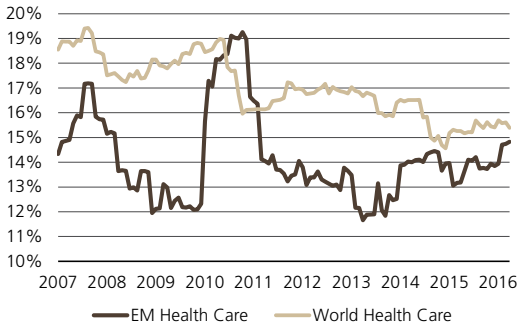
The main risk to our EM healthcare theme is that continued weak economies and struggling commodity markets will cause GDP growth

Fig. 10: EM healthcare trading at attractive levels after narrowing of historical premium
12-month-forward P/E, MSCI EM Healthcare and MSCI World Healthcare



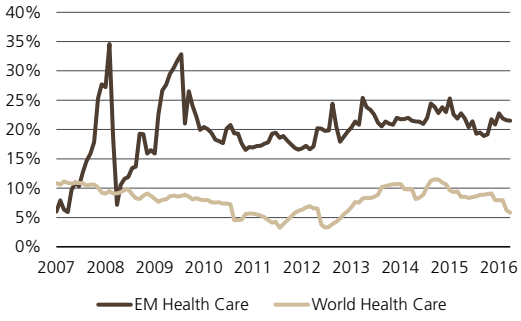
Source: DataStream, Bloomberg, UBS as of 13 March 2017

Fig. 11: MSCI EM HC enjoying ROE recovery
Return on equity, MSCI EM HC and MSCI World HC indices



Source: DataStream, Bloomberg, UBS as of 13 March 2017

Fig. 12: EM HC earnings growth at premium to DMs
12-month-forward earnings growth, MSCI EM HC and MSCI World HC indices



Source: DataStream, Bloomberg, UBS as of 13 March 2017

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. 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 as more defensive than other industries in a lackluster economic climate due to the inelasticity 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 more recently the US. China has recently 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 publicly 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 that 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 are inadequate intellectual property laws, especially acute in China. 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

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
yr	Year		