SECTORAL
ASSET MANAGEMENT

NEWSLETTER

JULY 2013

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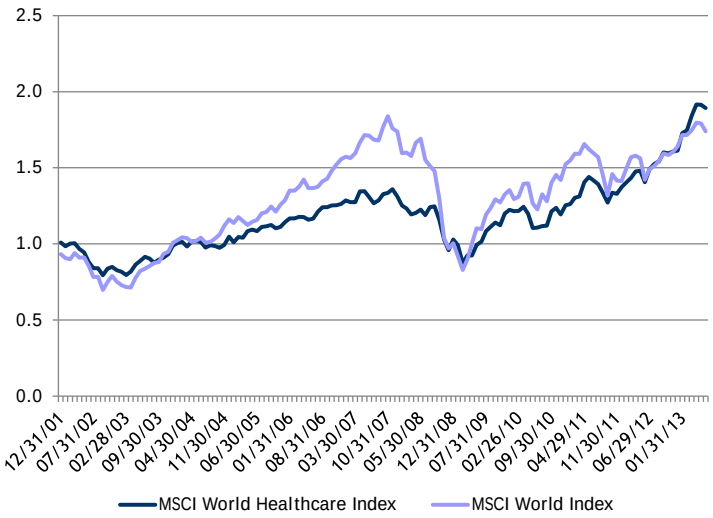
HEALTHCARE MARKET REVIEW AND OUTLOOK

Healthcare stocks followed through on their strong performance in the first eight weeks of the quarter, driven primarily by pharmaceuticals and biotechs. These two groups headed into the meeting of the American Society of Clinical Oncology (ASCO) with expectations running high for several cancer-related companies. Despite several positive updates (see below), both groups sold off after the meeting and beyond, as global markets reeled from the potential consequences of the Federal Reserve's announcement that it intends to stop adding liquidity to the system.

Nonetheless, healthcare stocks ended the quarter ahead of the broader market, with the MSCI World Healthcare Index advancing 2.8%, compared with a 0.4% decline for the MSCI World Index. Biotech stocks were once again among the strongest performers, with the MSCI World Biotech Index up 3.9%. At the other end of the spectrum, emerging market healthcare companies suffered the most from the macro-related concerns. The MSCI Emerging Market Healthcare Index dropped 15% after the meeting of the Federal Reserve, before rebounding to end the quarter down 0.6%. Emerging Markets is now the worst performing healthcare subgroup over the last twelve months.

At this juncture, much of healthcare stock's future performance depends on the balance between their fundamentals (including valuation) and their attractiveness as dividend-yielding securities. Recall that the latter had been the main reason for the renewed interest in pharmaceuticals stocks in 2011. As we pointed out in our last newsletter, increased generalist interest has fueled much of the recent rise in healthcare stocks (pharmaceuticals and biotechs in particular). Now that long-term yields appear to have bottomed out and seem set to increase, even if only modestly, it can be argued that money will flow out of big pharma. On the other hand, fundamentals for most healthcare companies have clearly improved in recent times and most pharmaceuticals stocks now

INDEX	CLOSE 6/30/2013	RETURN					ANNUALIZED VOLATILITY	
		1 MONTH	3 MONTH	6 MONTH	9 MONTH	12 MONTH	3 MONTH	6 MONTH
MSCI World Index	156.3	-2.9%	-0.4%	6.1%	9.1%	16.6%	12%	14%
MSCI World Healthcare Index	184.8	-1.2%	2.8%	17.3%	18.2%	26.8%	12%	14%
MSCI World Pharma	155.0	-1.0%	1.5%	15.9%	16.5%	24.8%	13%	14%
MSCI World Biotech	744.7	-4.7%	3.9%	28.9%	32.1%	54.9%	25%	28%
MSCI World Equip and Suppl	236.8	-1.3%	0.7%	12.1%	12.8%	20.2%	13%	14%
MSCI Emerging Market Healthcare	434.7	-1.7%	-0.6%	2.0%	7.1%	18.9%	16%	19%



MSCI World Healthcare Index vs MSCI World Index, December 31, 2001 to June 30, 2013.

trade more on pipeline news than on yield. The regulatory environment in the US seems more supportive of innovation, as new drug approvals recovered after a drought in 2008-2009, clinical news flow has been solid across multiple indications, and most important, new product launches have been successful (with some exceptions). Therefore, the strong performance (absolute and relative) delivered by healthcare stocks since May 2011 may not have come to an end. As the graph above illustrates, healthcare significantly underperformed the broad market from January 2002 until April 2011, with a brief period of outperformance in the wake of the Lehman bankruptcy. Starting in May 2011, healthcare has now made up all of its accumulated underperformance.

With valuation still at reasonable levels and fundamentals on a solid foot, we believe that the recent decline will be temporary. Although volatility may last as markets deal with liquidity concerns, we believe any major declines are a good opportunity to build up positions for the long term. Recent events, as detailed below, strengthen this case.

BIOTECHS: IPOs ARE BACK

While the quarter was rich in regulatory and clinical news, the main event was the flurry of IPOs. About 20 IPOs have priced since the beginning of the year, with several issues moving higher in the first days of trading. This change is another signal that the recent strong performance of biotech stocks may continue.

On the regulatory front, this quarter saw the US FDA approvals of Breo for COPD (Theravance), Xofigo for prostate cancer metastases (Algeta), Procysbi for nephropathic cystinosis (Raptor), and Vibativ for nosocomial pneumonia (Theravance). As expected, the FDA did not approve tivozanib for renal cell carcinoma (Aveo). Another encouraging sign for the future was the grant of breakthrough designation to asfotase alpha for hypophosphatasia (Alexion), ibrutinib for three non-Hodgkin lymphoma indications (Pharmacyclics), and daratumumab for multiple myeloma (Genmab).

Clinical data were also mostly positive: Phase II data for VX-661 and ivacaftor in CF (Vertex), strong 52-week Phase III data for apremilast (Celgene), ASCO updates showing positive data for an EGFR inhibitor (Clovis), positive Phase II data for NKTR-181 in a human abuse liability study (Nektar), as well as positive Phase II data for ISIS-APOCIII for triglyceride reduction (Isis). However, a couple of disappointing data points were also reported: modest Phase III data for fostamatinib in RA, with AstraZeneca deciding against filing for regulatory approval and returning rights to the compound to Rigel; concerns about the safety/tolerability of the CLL drug IPI-145 (Infinity); and disappointing updates on PARP inhibitors (Biomarin).

Strong commercial performances were reported for several newly launched drugs, such as Tecfidera (Biogen-Idec), Juxtapid (Aegerion), Iclusig (Ariad), and Xtandi (Medivation). On the M&A side, we note Thermo Fisher Scientific's acquisition of Life Technologies in a USD13.6bn deal, which will create a global leader in life-sciences tools. Also, on the very last day of the quarter, Onyx Pharmaceuticals announced the receipt (and rejection) of a non-solicited USD8.7bn bid from Amgen, effectively putting Onyx in play.

GENERICS: HIT BY EMERGING MARKETS AND JAPANESE WEAKNESS

Generic drug makers stocks were hit by the weakness on the bourses of emerging markets and the correction of the Japanese equity market. USD returns were further hurt by the weakness in several emerging currencies, such as the Indian rupee and the South African rand. Adding to these challenges were developments affecting fundamentals, such as the Indian drug-pricing policy. Officially announced in mid-May to take effect July 1, the policy led to a market slowdown from double- to high-single digits. Trade inventory levels also decreased. However, some companies (eg, Lupin, Sun, and Glenmark) maintain domestic sales-growth rates well above market levels. In addition, the FDA's tough stance on manufacturing standards has not flailed. Wockhardt was hit with an FDA import alert for a plant in India, and Sandoz received a warning letter on its Ebewe injectables facility in Austria.

The M&A scene showed a great deal of activity as well. Actavis acquired Warner Chilcott, strengthening its brand portfolio and lowering its tax rate. Valeant bought Bausch&Lomb. Sagent bought out its JV partner in China to take full control of the injectables manufacturing plant. Perrigo acquired a portfolio of generic ophthalmology products from Fera Pharmaceuticals. Aspen acquired a manufacturing site from Merck, including related products, and announced that it was in negotiations with GSK to acquire two branded thrombosis products: Arixtra and Fraxiparine, as well as their manufacturing site in France. Finally, and importantly for biosimilars, the EU approved the first antibody biosimilar product with a full label (Celltrion's infliximab).

MEDTECHS: STILL MUDDLING THROUGH

Not much has changed in the medtech business environment, as volumes and pricing trends have not improved, especially in developed markets. While some new products are showing signs of strong pick-up, such as Heartware's HVAD device or Insulet's Omnipod, regulatory and clinical news were mixed, at best. Edwards did obtain the go-ahead for Sapien XT in Japan. However, Baxter's venture into therapeutics received a setback with the failure of its antibody treatment for Alzheimer's disease, while Medtronic's Infuse failed to show advantage over bone autograft and potentially increased the risk for cancer and male sterility. On the M&A front, we note Bayer's acquisition of Conceptus for USD1.1bn and the finalization of Covidien into a medtech pure-play following the divestiture of its drug unit Mallinckrodt.

GROWTH P.A. 2012-2015E					
	SALES	EPS	PE13E	EV/SALES13E	COGS
Pharmaceuticals	2-4%	4-6%	14x	3.3x	15-20%
Generics	10-15%	10-15%	15x	3.0x	25-55%
Biotechs	15-20%	20-25%	21x	7.6x	10-20%
Medtechs	10-15%	15-20%	17x	2.7x	20-40%

Based on Sectoral estimates / median numbers

PHARMA: CANCER DRUGS STEAL THE SHOW

For many pharmaceutical companies, results reported at the ASCO meeting were the recent focus of attention. Impressive immunotherapy data were presented by Merck (lambrolizumab), Bristol-Myers (nivolumab and Yervoy), and Roche (strong PFS data for GA101 in chronic lymphocytic leukemia). The American Diabetes Association meeting also was rich in news. Solid data were disclosed for Eli Lilly's dulaglutide and empagliflozin, and Sanofi's new long-lasting insulin. We also note the approval of Glaxo's and Theravance's Breo in COPD, which will further reduce risk for Glaxo's respiratory franchise.

In our last newsletter, we highlighted the risk of frothiness among biotechs and big pharma. The recent post-ASCO sell-off was a good example of the high level of investor expectation for certain names. In addition, the perspective of increasing long-term bond yields has diminished the attractiveness of big pharma stocks from a pure yield-play perspective. Although the last 24 months has seen a rising tide lift most, if not all, boats, we think we are moving into a market environment in which fundamentals will increasingly matter, and stock picking will further gain in importance in determining investment success. We advocate exploiting the expected short-term

market volatility to take advantage of attractive entry points into stocks with solid fundamentals. Emerging-market healthcare stocks, with generic drug makers at the forefront, have gained in relative attractiveness after their recent underperformance, given their intact growth perspectives. Still, among generic-drug makers, Japanese companies are once again attractive following the recent market-related decline. Biotechs, while selectively expensive, should continue to reward investors on the strength of their recent progress on the clinical, regulatory and commercial fronts. The re-opening of the IPO window signals renewed interest in some earlier-stage companies, which provide more attractive risk/reward opportunities than do most of the industry's large caps. Among medtech players, the priority should still be given to companies with innovative technologies and/or exposure to emerging markets. Finally, the big-pharma core of the healthcare universe is, in reality, a split group, in which high dividend yields are no longer sufficient to convey upside to stock prices. Alongside valuation, particular attention should be paid to fundamentals: product portfolios with long-tailed assets, emerging markets exposure, and solid pipelines.

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INCREASING DEMAND FOR HEALTHCARE AND THE EVOLUTION OF HEALTHCARE MODELS

INTRODUCTION

Rising health expenditures have brought most of the developed world's healthcare systems to a crossroads. The mounting fiscal pressures of meeting increased demand will require most health systems to move away from their current publicly funded models to ones that aggressively pursue a significantly larger contribution from the private sector. The caveat is that the transition will occur in large part under a system of managed competition. Without private-sector cooperation, governments will be increasingly hard pressed to provide adequate care, and innovation for new drugs and products will slow as reimbursement becomes less reliable. Moreover, cost containment and better use of available resources will become major components of any future healthcare model. As a consequence, self-responsibility and prevention will become key considerations for payers.

Despite the enormous economic and societal challenges facing governments and businesses as they try to cope with rising health expenditures, a number of factors will continue to promote the growth of healthcare utilization. These include: 1) sizeable increases in wealth in the developing and emerging worlds; 2) an aging demographic across the globe; 3) the spread of unhealthy lifestyles, which is taking place more quickly in China and areas of South America than it did in many Western nations; and 4) the realization that governments in many developing and emerging countries, including China and India, must to do more to satisfy the healthcare needs of their citizens. Looking ahead, we believe the combination of these favorable demand catalysts, coupled with the reform of healthcare models, should provide sustained growth for the healthcare industry beyond the short-term, while continuing to offer important opportunities to investors.

This article has multiple objectives. First, we want to highlight the unsustainability of many of the developed world's healthcare models. Second, we will discuss the unique nature of healthcare from an economic perspective, explaining why a purely free-market based solution is not a viable option. Third, we will explore the need for significantly more private healthcare delivery and describe the set of conditions under which it can work. In this regard, the Netherland's experience with managed competition following reforms enacted in 2006 will be illustrative. Fourth, we want to emphasize how the growing middle class (and the accompanying increase in wealth) in the developing and emerging worlds impacts healthcare demand. Finally, we will underscore the importance of prevention and lifestyle changes in bending the cost curve for healthcare.

GLOBAL HEALTHCARE MODELS AND ECONOMICS

Most developed countries provide universal healthcare to their citizens largely though government-run and government-financed (70-80% is publicly-funded) systems. Canada, Japan, South Korea, and Taiwan are some of the countries that follow this model and adhere very strictly to the principal of equal access to care. These government-run systems use uniform price schedules that pay all healthcare providers the same fee for every patient; in so doing, they try to limit patient discrimination. Many European nations also have adopted this approach. However, these countries often incorporate a two-tier component, allowing private insurance, which is utilized by up to about 10% of the population in some countries. In the UK, for example, nearly 11% of individuals have private health insurance in addition to automatic coverage under the National Health System (NHS), for which they already pay taxes. In Germany, citizens have the option of opting out of the public system in favor of private insurance, and thereby avoid paying, on average, the 13-14% gross payroll taxes that finance the health system. Although these government-run systems provide the most equal access to care, their reliance on public funds often limits the supply of healthcare and can generate long waiting times. Then there is the US healthcare model, which is, for the most part, an endless maze-like

combination of private and public systems, which offers some of the best medical care in the world, while simultaneously leaving millions uninsured with little access to even basic coverage, save for hospital emergency room visits as hospitals cannot refuse anyone emergency room treatment. The passage of the Affordable Care Act (ACA), which seeks to cover these millions of uninsured, may rectify some of the disparities; however, it is difficult at this early stage to predict the success (or failure). The US system also ranks near the bottom, according to some measures that assess value for dollar spent. For instance, the US spends USD8,233 per capita on healthcare, or roughly 2.5 times the OECD average for developed countries. Despite this massive spending differential, the US ranks poorly on many key measures, including life expectancy and infant mortality. According to the OECD, since 1960, life expectancy in Japan, for example, increased 15 years and the OECD average increased by over 11 years. However, life expectancy in the US increased by only 9 years. On infant mortality, the US fared even worse, with 6.1 deaths per 1000 births in 2010, beating only Mexico and Turkey. There are also fewer doctors per person in the US. In 2010, the average was 2.4 doctors per 1000 residents in the US vs. the OECD mean of 3.1. Administrative costs are also higher in the US than in many other countries. Consider that USD900 per person per year are spent on administrative costs in the US, whereas France or Germany spends only USD300 and 281 respectively.

These few examples illustrate the lack of relative value per dollar spent in the US system, and while the ACA will increase healthcare access for many of the poor and uninsured, the legislation will do little to address the fundamental financial issues. Unlike in the more public systems, where access to care is sometimes limited by supply, access to healthcare in the US is often limited by its exorbitant cost.

SUSTAINABILITY OF HEALTHCARE MODELS

Advanced economies currently spend about 9.5% of GDP on healthcare, with 70-80% of that financed through public sources. With healthcare inflation almost consistently outpacing general inflation, this figure is projected to rise by 1-1.5% of GDP every decade. Clearly, this spending places increased pressure on already-strained government budgets and reinforces the need for healthcare reform. That said, with the global economy finally beginning to gain traction, the debate over healthcare expenditures may lose some momentum over the near term. However, this will likely be a temporary pause, as the structural imbalances in healthcare will continue to grow. Thus, the question is not, "Will healthcare models begin to break down?" but rather, "At what pace will they continue to break down?"

Both supply-side and demand-side catalysts are driving up health expenditures (Figure 2). In and of themselves, demand-side catalysts are not generally reasons for concern. A consumer's decision to spend his or her disposable income on healthcare is a perfectly rational economic choice. However,

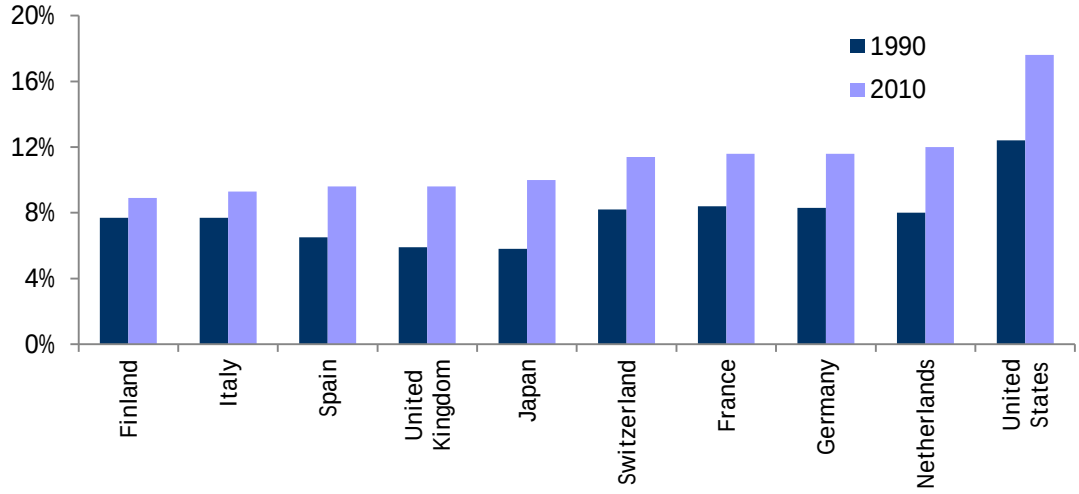

Figure 1. Health expenditures as a percentage of GDP. Source: OECD Health Data 2012.

SUPPLY-SIDE	DEMAND-SIDE
Innovation - Unlike other industries, innovation in healthcare causes costs to increase	Rising wealth and incomes globally
Labor force - Productivity in healthcare has lagged behind every other major industry	Governments in emerging and developing countries doing more for their citizens
Demographic shift - Elderly population (65 years +) is increasing faster than other population segments	More healthcare and better healthcare (ie, better facilities, more advanced treatments, etc.)
Lifestyle - Obesity is increasing, along with the chronic diseases that accompany it	

Figure 2. Supply- and demand-side catalysts behind increased healthcare demand. Source: Sectoral estimates.

healthcare pricing lacks any real transparency and is subject to asymmetric information. As such, the consumer seldom knows or understands the true cost of their healthcare. Furthermore, insurance companies or governments typically bear the largest share of health expenditures. In combination, these factors tend to push consumers to over-consume and doctors to over-prescribe. On the supply side, the two principal drivers of rising healthcare costs are innovation and weak labor-force productivity. Innovation in the healthcare sector almost always drives costs up, whereas in every other sector of the economy, innovation typically reduces them. The labor force in healthcare has far worse productivity growth than any other sector of the economy. Continuing to fund these expenditures without addressing some of the causes is an exercise in futility. In fact, devoting scarce resources to fund inefficient activities reduces overall economic growth, as these scarce resources cannot be deployed more productively elsewhere. Consequently, not only are we faced with rising healthcare costs but also with a less efficient and slower-growing economy, which has a diminished capacity to support these expenditures.

THE INEVITABLE QUESTIONS

In seeking solutions to slow the growth in health costs, two fundamental questions must be resolved: "What is the appropriate level of government vs. private involvement?" and "Should healthcare follow a purely free-market approach?" The answers must be qualified, as no perfect solution exists. Like most economic activity, healthcare is subject to constrained resources. It is precisely because of these constrained resources, along with the inefficiencies generally associated with government activities, that proponents of free-market healthcare fiercely advocate allowing the marketplace to "solve" the problem of healthcare spending. However, the situation is not that simple.

If we assume the public wants some relative degree of equal access to basic and high quality healthcare, then the supply (and associated price) of healthcare, unlike most goods, cannot be left to the free market to determine. In properly functioning markets, market mechanisms attempt to maximize the value of a given good based on its supply and demand. Since value is typically measured by the maximum price someone is willing to pay for that good, the market dictates that any particular good should be rationed, that is, go to the highest bidder. Put another way, a properly functioning market will allocate society's scarce resources to market participants who are willing to pay more for a good in a bid-and-outbid process. This is how markets ensure that goods are rationed, their value is maximized, and they are allocated to the highest bidder. The problem becomes immediately evident when the good in question is healthcare. Letting free markets completely determine the price and supply of healthcare will all but guarantee that a sizeable portion of citizens would have no access to any sort of healthcare, as people with less means would be priced out of the market.

Nevertheless, despite the aforementioned constraints, under the right set of circumstances, more private-sector cooperation can be a powerful tool, which can help governments achieve better and more sustainable healthcare for everyone. There are a number of countries in the world, such as the Netherlands and Switzerland, where cooperation between government and the private sector, under

what is termed "managed competition", is being used to slow the rise in health expenditures, raise patient satisfaction and outcomes, and address some of the inequalities in access. Over time, a well-designed managed competition system has the potential to enhance overall effectiveness and satisfaction by using the power and resourcefulness of the private sector, while regulation can ensure the preservation of universal healthcare.

HEALTHCARE REFORM AND MANAGED COMPETITION IN THE NETHERLANDS

Since the 2006 reforms, the Netherlands has not had any public health insurance. Prior to that time, the old system mixed public and private health coverage, insuring 67 and 33% of the population, respectively. The old system was a complex and rigid two-tier system, which exacerbated inequalities and failed to provide adequate levels of healthcare to the neediest. Very long waiting lists were common, as was a lack of focus on the patient. Patient choice was very limited, and insurance providers were assigned by postal code, creating a lack of competition among insurance providers. In 2006, a single mandatory scheme covering all legal Dutch residents was introduced. The new law requires all citizens to purchase private health insurance covering a basic range of services. Citizens can, at an additional cost, purchase supplemental health insurance as well. The primary objective of the reform was to introduce market mechanisms, which would promote competition and create incentives for more system-wide efficiencies. In so doing, these reforms are expected to slow the rise in health expenditures. To this end, the debate focused not only on reforming the health insurance system, but also improving the delivery of care. As a result, the government went from directly managing and controlling the system to serving as a regulator tasked with ensuring that quality and universal access to care are maintained.

Since the reforms, insurance companies in the Netherlands are no longer able to cherry-pick applicants. They are required to accept all applicants regardless of any pre-existing conditions and must charge the same premium for basic coverage to everyone. By mandating that all citizens purchase insurance, while requiring insurance companies to accept all applicants, the government has successfully spread the risk across all individuals. Without this mandate, healthier individuals would forgo purchasing insurance, causing premiums to be abnormally high and spread among only the riskiest applicants. In order not to penalize insurance companies that have a disproportionate number of high-risk clients, the government provides additional compensation to them through a risk-equalization scheme. Moreover, as insurers are required to charge everyone the same rate and customers have the right to switch insurers, insurers are now forced to compete on quality and service.

Managed competition also has become instrumental in making healthcare delivery more efficient. Although the delivery system is now a mix of private and public institutions, the country has lately been promoting additional privatization, especially for hospitals that are largely public not-for-profit facilities.

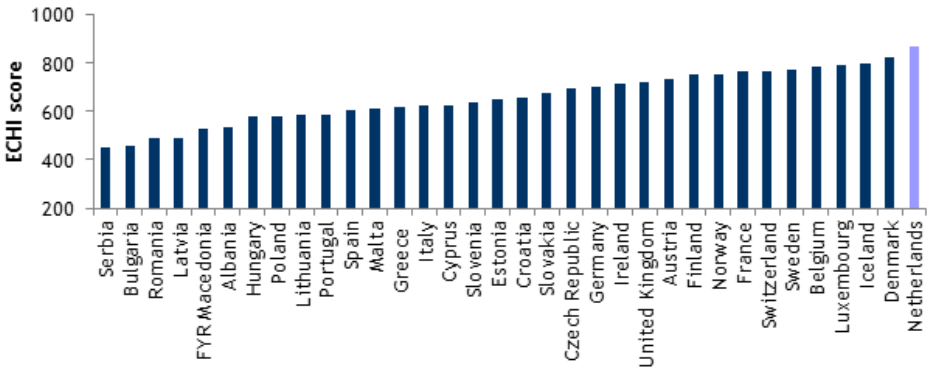

Figure 3. ECHI 2012 total scores. Source: Health Consumer Powerhouse - Euro Health Consumer Index 2012 report.

Although it is too soon to fully judge the results of the Dutch reforms, some key indicators are favorable. According to the Euro Health Consumer Index 2012 (Figure 3), consumer satisfaction consistently ranks among the highest in Europe. Complexity has clearly been reduced,

as the labyrinth that was the old private health insurance system is gone. Patients who had been assigned to insurance providers based on their postal code now have increased freedom of choice. In addition, patient accessibility and fairness have increased, while co-payments are among the lowest in OECD countries. To be sure, more must be done. Waiting times, although improved, remain problematic, and health expenditure as a percentage of GDP has risen. However, it is important to point out that some of this increase can be attributed to increased volumes, due, in part, to aging. Still, the annual flat-rate premium portion paid by the individual has increased from an average of EUR795 per person in 2006 to an average of about EUR1,100 in 2011. Lower-income individuals have disproportionately felt the effect of this growth. Despite these problems, the Dutch system is clearly worth following closely over the next several years, as it can offer some much-needed insight into the role the private sector can play in the evolution of global healthcare models.

CATALYSTS BEHIND RISING HEALTH EXPENDITURES

From an economic perspective, healthcare is a superior good. That is, healthcare is a good for which demand increases as income increases. Accordingly, as wealth and income levels rise, people spend more on their health. Developing and emerging markets, which have evidenced spectacular growth in the size and wealth of the middle class since 2001, will likely see a dramatic illustration of this principle in action in the coming years. According to the Global Employment Trends 2013 report published by the International Labor Office (ILO), rapid growth in middle-class employment in the developing world from 2001 to 2011 led to an increase of nearly 401 million in the number of workers classified as "emerging middle class," with an additional increase of 186 million classified as "middle class and above." ILO is projecting the number of workers in the emerging middle class and above could grow by an additional 390 million by 2017, with the share of middle-class workers rising to 51.9%. Looking at Figure 4, we see that by 2017, the "emerging middle class" and "middle class and above" will comprise 53% of the economic classes in the emerging and developing world.

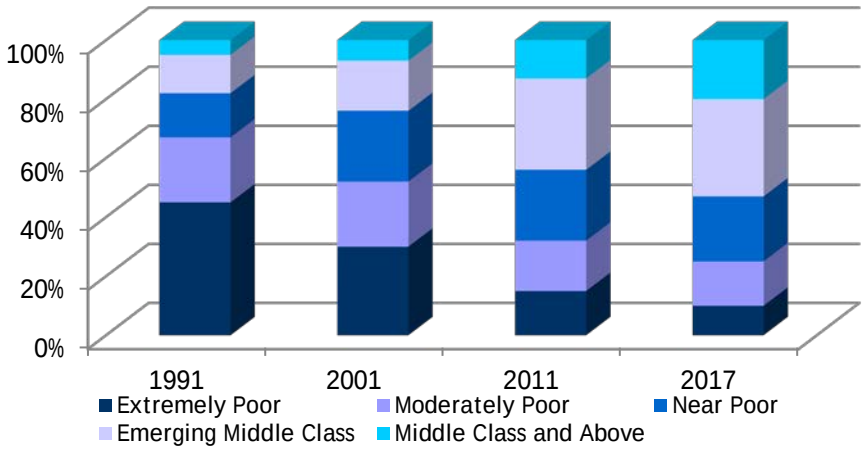

Figure 4. Split by economic class in emerging and developing world. Source: Global Employment Trends 2013 report published by the International Labor Office (ILO).

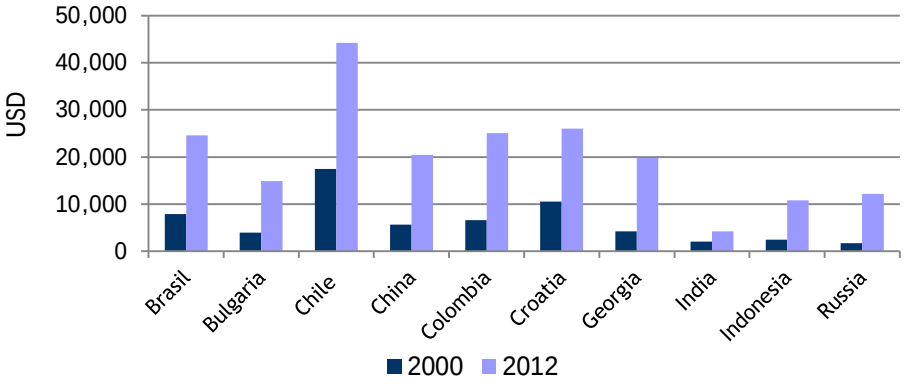

Figure 5. Wealth levels per adult in 2000 and 2012. Source: Credit Suisse Research Institute, Global Wealth Databook 2012.

This middle class expansion is accompanied by a wealth expansion. Selected data in Figure 5 highlight the very large increases in wealth between 2000 and 2012 reported for a number of emerging and developing economies. Increases in wealth and income are linked to increased utilization of healthcare good and services. No longer poor, the new middle class is much less likely to avoid seeking treatment for even minor ailments. This fact, which has been seen time and again in the developed world, is especially true in the emerging middle class, which heretofore had little or no access to healthcare. Moreover, high copayments and user fees will fail to act as deterrents, as these will be offset by increasing incomes.

SUPPORTIVE GOVERNMENT ACTION IN EMERGING MARKETS

The expansion of the middle class in developing and emerging markets, coupled with the associated reduction of poverty, has been impressive. Crossing such class thresholds induces structural change in an economy, altering the consumption and demand preferences of the population and producing stronger and more sustained economic growth and healthcare demand. However, this ongoing middle class expansion will place greater fiscal burdens on government finances, as demand for healthcare spirals upwards. In some developing and emerging markets, governments are acting proactively to ensure they can meet these growing needs in a sustainable fashion.

For instance, over the past few years, China has enrolled considerably more people in public health insurance plans. Indeed, today about 95% of the population is covered. Although this insurance is limited, focusing more on coverage for catastrophic diseases and inpatient services and offering little outpatient care, the country's macroeconomic growth has allowed it to meet the public's demand for more health services. China also is moving away from fee-for-service reimbursement models to models that do not reward providers for high utilization while imposing price controls on certain drugs and hospital fees. Given the fact that the Chinese healthcare market is still in its infancy, the government will likely continue to dominate this market for years to come.

Nevertheless, the sheer size and growth of the Chinese market will create enormous potential for private payers and providers to satisfy both niche sectors and the health needs of the general population that aren't addressed through basic coverage. According to the OECD, in 2011, healthcare expenditures in China were USD377bn, or just over 5% of GDP. Applying conservative assumptions and assuming China will spend at least 7.5% of its GDP in 2020 on healthcare, we predict health expenditures of 1 trillion USD. For private payers and providers, the best opportunities for expansion will be through supplemental coverage. By studying the experiences of other nations' health systems, China has become cognizant of the enormous benefits of private/public cooperation, as well as of the many shortcomings of purely government-funded and government-managed systems. Consequently, China will likely turn from the model adopted by most of the developed world.

For example, until the recent past, doctors were required to register to work in either a public or private healthcare facility. Most physicians selected the public sector, as it typically offered more employment stability. This bias raised critical staffing difficulties in private hospitals. However, China has begun to relax these regulations; as a result, many doctors are now able to work in both the private and public sectors simultaneously, allowing them to satisfy unmet medical needs.

In addition to the obvious benefits the private sector can offer to improve both capacity and patient satisfaction, the market can also be instrumental in applying pressure on public providers to deliver higher quality care and services. Finally, greater private sector involvement will provide further incentive to drug and device makers to introduce new products, as private payers will likely reimburse a wider array of treatment options. That being said, as private healthcare begins to play more of a role in China, the political leadership should take steps to prevent the problems currently affecting the US healthcare system from materializing in China. Such measures could include government supervision under managed competition and tight regulation of the insurance market.

AGING DEMOGRAPHICS

The world is also getting older. As a result of declining birth rates (Figure 6) and increased life expectancy, the global median age in 2050 is projected to rise to 36.2 years, up from 26.5 in 2000 (Figure 7). The largest increase between 1950 and 2000 occurred in developed regions, where the median age jumped from 28.6 to 37.4 years. However, the greatest increase between 2000 and 2050 is projected for less developed regions, where the median age is expected to rise from 24.3 to 35 years. This trend shows no sign of reversing, as birth rates in the developing world are approaching the rate in the US. Consequently, older age groups will make up larger portions of the overall population (Figure 8). In fact, the OECD average for the over-80-year-old group will more than double by 2050, increasing from about 4% in 2010 to more than 9% in 2050. Clearly, the implications of an aging demographic are increasing healthcare demand, as the level of utilization, and expenses, rises substantially as a person ages. According to the OECD, on average, people older than 65 years spend 2.5 times more than the average person in annual healthcare costs.

	TOTAL BIRTH RATES			
	1950-55	1970-75	1990-95	2005-10
East Asia	6.0	4.7	2	1.7
Eastern Europe	3.1	2.4	1.7	1.4
Latin America	5.9	5.1	3.1	2.3
Russian Sphere	2.9	2.1	1.6	1.4
South Asia	6.0	5.4	3.8	2.7
Sub-Saharan Africa	6.6	6.7	6.1	5.2
Average	**5.3**	**4.7**	**3.2**	**2.5**
United States	3.3	2.1	2	2.1

Figure 6. Birth rates in emerging and developing markets. Source: UN World Population Prospects, 2009.

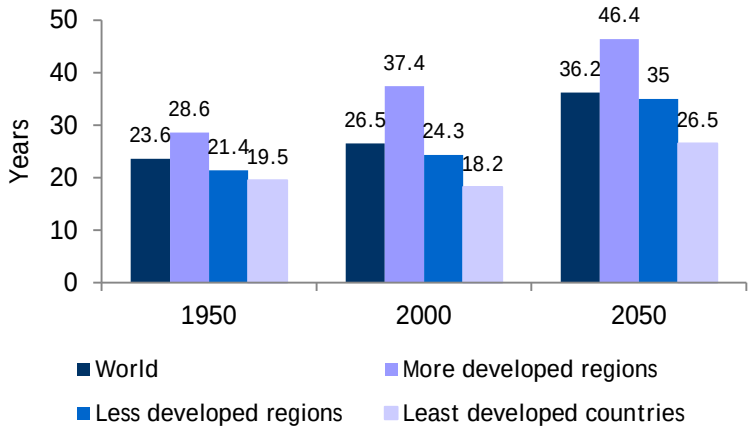

Figure 7. Median age of population. Source: UN World Population Prospects, 2009.

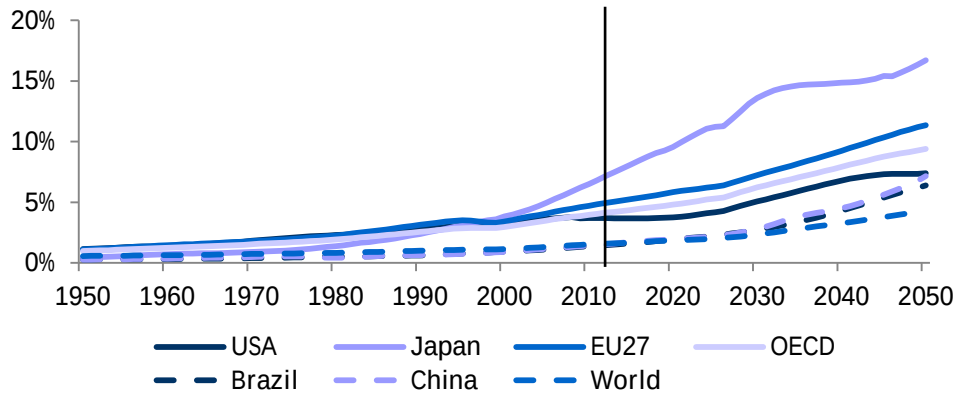

Figure 8. Percentage of the population over 80 years old. Source: OECD Labor Force and Demographics, 2010.

LIFESTYLE, PREVENTION AND COST SAVINGS

Aging and unhealthy lifestyles have shifted the focus of healthcare from the treatment of acute diseases to the management of chronic and expensive-to-treat conditions. As a result, the growth rate of health expenditures will continue to accelerate. To counter this trend, prevention and self-responsibility will become key components of future healthcare policies.

One effective way to capture the benefits of prevention is through the use of new technologies that facilitate at-home care and disease monitoring. Efficient ambulatory care can keep individuals at home longer, instead of in more costly hospitals. At-home care and monitoring is especially useful in the management of chronic diseases, such as diabetes, heart diseases, and hypertension, as well as for post-surgery recovery, in which the early detection of complications is crucial to keeping costs low and survival high. The cost savings from this type of activity can be substantial. Moreover, the use of such technology makes sense for healthcare systems across the world, especially in light of the speed in which Western lifestyles are spreading across emerging markets. For example, the rate of diabetes in China has surged from 2.5% in 1992 to 9.7% in 2010. In all likelihood a portion of this increase is attributable to improved diagnosis and testing; nevertheless, the jump highlights the risks of an increasingly unhealthy lifestyle. At the same time, the fast-food market in China has tripled between 2005 and 2012, growing from USD50bn to USD150bn, and sales are slated to reach USD300bn in 2017. The ensuing investment opportunities in the medical technology area could be very rewarding, as at-home preventive care becomes a necessity in both developed and emerging markets grappling with the increase of non-communicable diseases.

LIFESTYLE AND SELF-RESPONSIBILITY

In the future, we anticipate a much bigger onus for prevention will be placed on the individual. However, this goal, if laudable in theory, will be difficult to achieve in practice. The epidemic increase in the rate of obesity clearly demonstrates that efforts to slow this trend have failed spectacularly. Figure 9 shows how widespread the obesity epidemic is around the world, while Figure 10 details past and projected overweight rates for selected countries. The problem

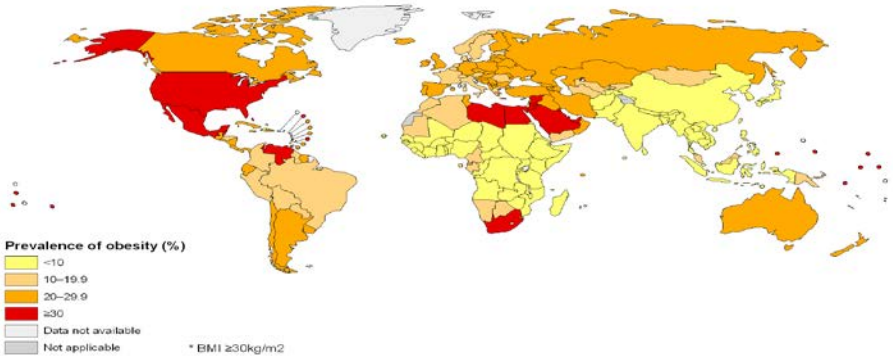

Figure 9. Prevalence of obesity, ages 20+, male and female, 2008. Source: World Health Organization, 2008.

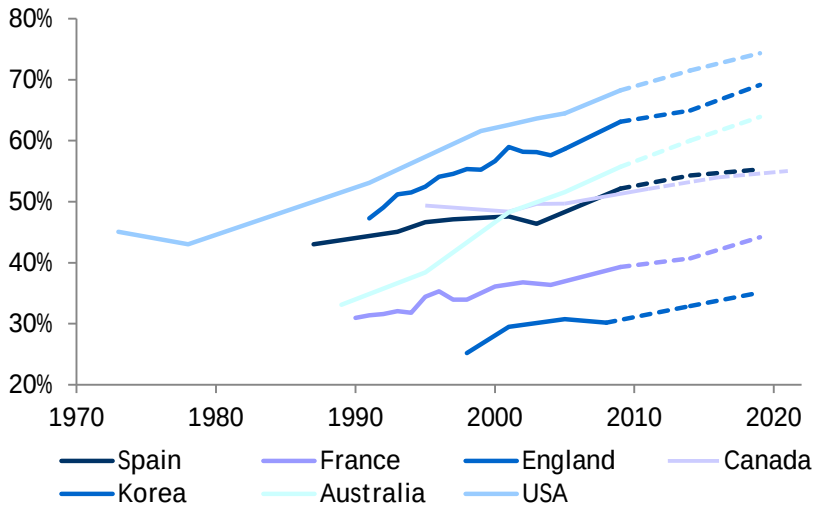

Figure 10. Past and projected overweight rates. Source: OECD, 2010.

is that incentives for a healthier lifestyle must offer almost-immediate benefits. The possibility of developing heart disease 20 or 30 years in the future typically fails to alter lifestyle behaviors beyond the very short term. Although most of us would probably not race to our favorite fast-food restaurant knowing we might well receive a speeding ticket, the long-term consequences of a fatty, 2000-calorie meal are easy to ignore! We are habituated to a cycle in which we fall ill, we consume healthcare, and then we feel better. The benefits are immediate, while the myriad negative consequences only emerge years in the future. This cycle keeps repeating, and healthcare costs keep accelerating, as additional treatment is required to achieve the desired benefit.

Alternatively, the benefits that accrue from practicing a healthy lifestyle generally materialize much later in life. In the near term, we are only confronted with the costs associated with health-club memberships, more nutritious food, and such activities as stress-reduction or smoking-cessation programs. Needless to say, the preference for delayed gratification is not a common character trait. In this context, increases in sin taxes for tobacco and alcohol have proven to be somewhat effective in improving health. Moreover, providing caloric information on restaurant menus along with daily caloric requirements can aid in dissuading customers from consuming high-fat foods. Although the potential for menu-labeling provisions is promising, especially if caloric information is provided in a relative context (eg, the time required to burn off calories consumed), it is too early to judge the long-term effectiveness of these measures. Lastly, as in most cases, monetary incentives can play a key role in prevention because they promise an almost-immediate reward. In this regard, an interesting tool is the Health Savings Account (HSA), such as the one offered by Pruhealth Insurance in the UK. This system effectively links prevention and wellness by using a carrot (ie, money) instead of a stick (ie, fear and threats) and putting individuals in control of much of their healthcare spending. Customers are provided with HSA account dollars each year. These dollars are the first dollars used to pay for day-to-day coverage. If HSA dollars are depleted, additional costs are covered by insurance reimbursements. By providing customers with cash they can keep if not used, Pruhealth is incentivizing them to practice more wellness in their lives, so as to avoid the increased doctor visits and other related costs associated with unhealthy living. Moreover, studies by Pruhealth show that customers do not forgo care to save HSA dollars. Even though incentivizing the individual to live better is no easy task, even marginal improvements derived from examples like Pruhealth's HSA could go a long way to reducing healthcare costs.

CONCLUDING REMARKS

Despite some of the uncertainties surrounding the evolution of global healthcare models over the next few decades, the enormous increase in healthcare demand means that investment opportunities in healthcare will continue to multiply. Expansion of the middle class, with its associated increase in wealth, in emerging and developing markets will provide solid support for healthcare demand. Investing in companies that offer innovative ways to satisfy these vast unmet health needs should create an opportunity to capture some of the ensuing value. Moreover, in part as a result of strong macroeconomic growth during the past decade, governments in emerging and developing markets should continue increasing healthcare access and services to their citizens in the years to come. As they do, generic drug manufacturers will be set to benefit as governments seek out the lowest-cost alternatives. Finally, falling birth rates and increased life expectancy are shifting global demographics by pushing up the median age, which will further sustain healthcare demand. A successful long-term healthcare strategy needs to include exposure to these markets, as well as to companies that are in a position to charge premium pricing for differentiated products and advanced treatments geared to satisfying the needs of an older population looking to live better, healthier, and longer. Furthermore, the effort to address public-finance stress on government budgets from rising healthcare demands will generate important increases in the role of the private sector. This restructuring

will likely occur within the scope of managed competition in order to limit issues of accessibility, which would surface if healthcare were left to follow a purely free-market approach.

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