CREDIT SUISSE
Issue 01
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Expert know-how for Credit Suisse investment clients
Global Investor
Phases of globalization
Basics Infrastructure, real estate, energy
Enrichment Personal digital media
Switching Outsourcing, mobile telecom, valuation, Indonesia

→ At the beginning of 2006, Credit Suisse integrated the various divisions of its banking business.

The combined know-how of our economists and investment specialists ensures that our clients benefit from comprehensive analyses and market assessments. In this issue of Global Investor, we outline key thematic investment categories currently available to investors.

Demographic developments, globalization and rapid advances in modern technology all point toward substantial potential for economic growth in 2006.

"Basics," which lay the fundament for prosperity in growth markets such as India and China, represent a major, future-oriented investment category, encompassing infrastructure, logistics, transport, oil services companies, commodities, real estate and so on. In addition, excellent investment opportunities are often available in regions where people's requirements and desires have reached a higher level, and they look to "Enrichments" to boost their quality of life. Examples include on-demand TV and other personal digital media, luxury goods, and cosmetic healthcare. Finally, the "Switching" category also offers first-rate investment possibilities. Over a period of forty years, outsourcing to low-wage countries has focused primarily on manufacturing and business processes. In recent times, however, there has been a pronounced increase in the outsourcing of intellectual services. This process enables such countries to narrow the gap on the developed world, given that the transfer of knowledge necessitates an innovative, internationally competitive corporate sector. Investments in these young and promising companies offer attractive returns in the medium term, underscoring a fundamental trend: profitable investments are no longer only to be found in one's own back yard, but in diverse and often unexpected places around the globe. ←

Walter Berchtold, Chief Executive Officer Private Banking

Mobile man

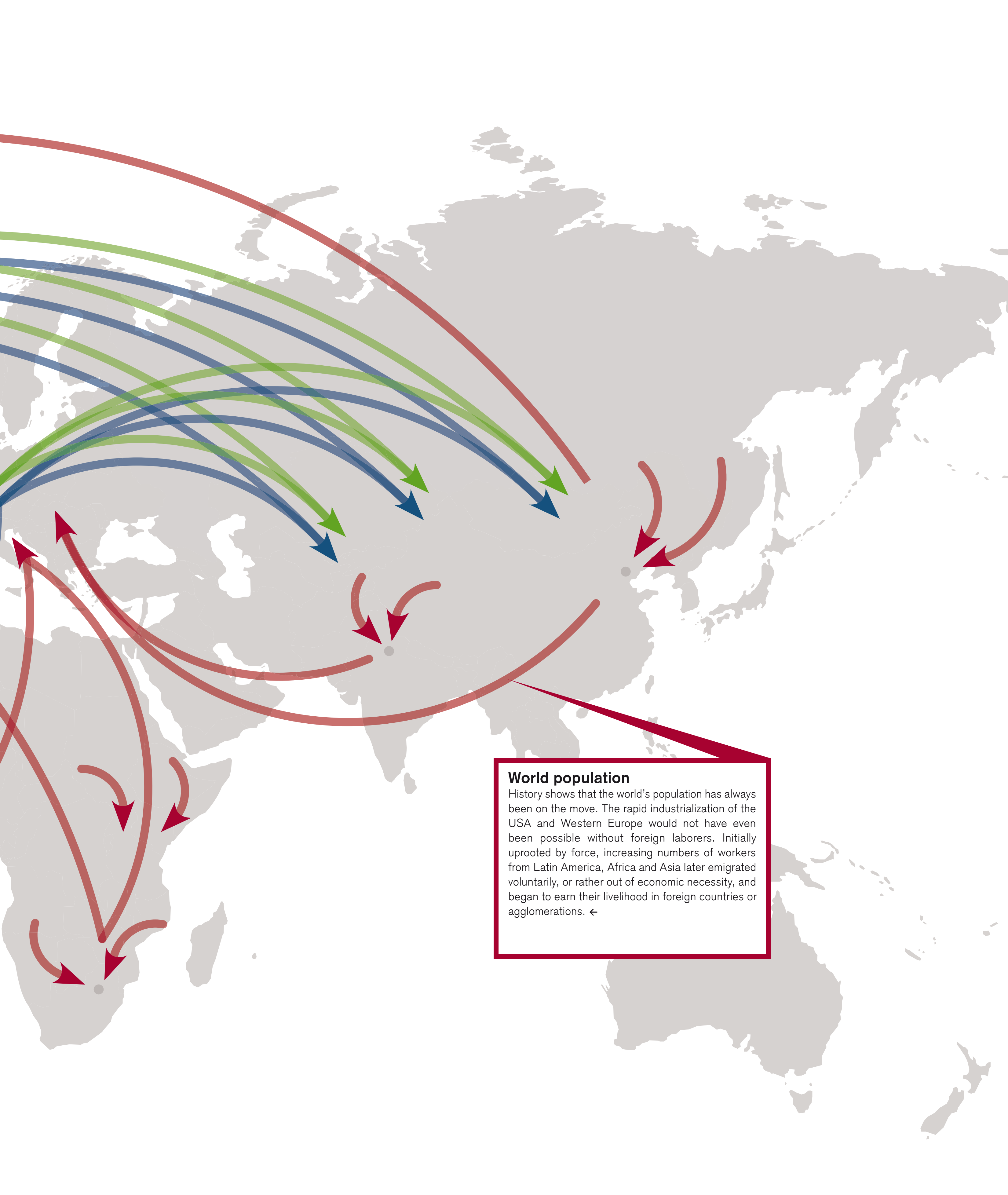
Mobility has shaped the world from the beginning. As the world population grew, the search for food and living space became imperative. Centuries-old migratory movements are testimony to this. Subsequent technological progress provided a means of livelihood and cleared the way for the flow of capital.

Employment

Technological progress created a wide variety of new occupations in the industrialized world, while destroying traditional means of livelihood. Comparatively high labor costs, mainly in Western Europe but also in the USA, resulted in manufacturing operations for products with little value added being transferred to so-called low-wage countries in South America and Asia and, more recently, Eastern Europe. The same is now taking place with standardized services and research and development activities. ←

Capital flows

There are no borders when it comes to capital, unless they are politically imposed. Capital costs, risk and returns are what determine the flow of capital. Capital flows had a significant influence on industrial developments in the USA and Western Europe, and today large flows of capital are pouring into Asia and Latin America. Without private investment inflows, the latter regions would never have grown as fast as they have. ←



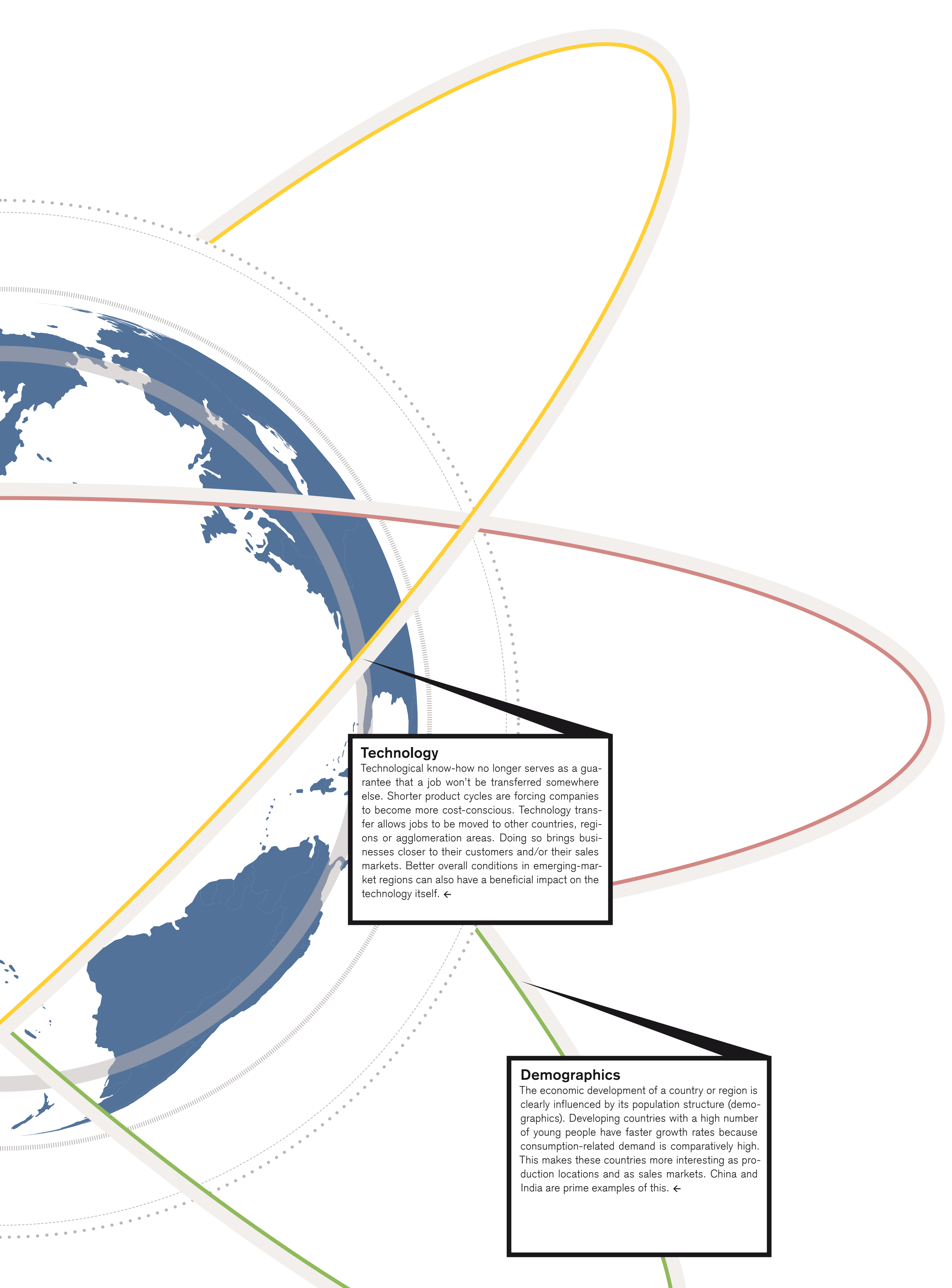
World population

History shows that the world's population has always been on the move. The rapid industrialization of the USA and Western Europe would not have even been possible without foreign laborers. Initially uprooted by force, increasing numbers of workers from Latin America, Africa and Asia later emigrated voluntarily, or rather out of economic necessity, and began to earn their livelihood in foreign countries or agglomerations. ←

Mobile jobs

Today's world is additionally exposed to special factors, as mentioned on the previous page. The world population is not the only driving force today – demographic change in certain countries or regions is also making a difference. Globalization is having a growing impact on where the jobs are. New technologies are attracting capital.

Globalization
Employment positions used to be more or less immobile but, as various barriers fall to the wayside, they are now being moved to wherever production costs (labor, taxes, subsidies, etc.) are most favorable and to wherever there are new market opportunities. Globalization has generally been accompanied by the relocation of jobs from mature economies to emerging-market economies. ←


Technology
Technological know-how no longer serves as a guarantee that a job won't be transferred somewhere else. Shorter product cycles are forcing companies to become more cost-conscious. Technology transfer allows jobs to be moved to other countries, regions or agglomeration areas. Doing so brings businesses closer to their customers and/or their sales markets. Better overall conditions in emerging-market regions can also have a beneficial impact on the technology itself. ←
Demographics
The economic development of a country or region is clearly influenced by its population structure (demographics). Developing countries with a high number of young people have faster growth rates because consumption-related demand is comparatively high. This makes these countries more interesting as production locations and as sales markets. China and India are prime examples of this. ←

Our main investment themes

Structural forces (demographics, globalization, technology) imply high global growth potential and underpin our key investment themes: “Basics,” “Enrichment” and “Switching.” We take a closer look at these key thematic investment areas in this issue of Global Investor and will follow up with more insights and analysis in future research publications.

Basics Page 16 onward

This area concerns issues and aspects related to fast-growing populations and migratory movements from rural to urban areas. Attention is given to sectors and companies that stand to benefit from these developments.

In this issue of Global Investor our specific focus is on:
- **Infrastructure >** shortage of harbors, airports, refineries, power grids, generation, oil exploration/production, coal and gas, LNG;
- **Emerging market real estate >** in India, Turkey, Mexico;
- **Energy and basic resources supercycle >** where invest ors may see entry opportunities in oil, commodities (soft and hard);

Other “Basics” themes we will touch upon during the course of the year are:
- **Demographics/aging >** which products/services could benefit?
- **Water >** water treatment: desalination, filtration and measurement, speciality chemicals; new infrastructure in emerging nations, replacement in developed countries;
- **Security >** biometry, access control, computer software;
- **Emerging market healthcare >** rising needs in basic medical treatment;
- **Microfinance >** providing banking/insurance to people who currently have no access.

Enrichment Page 30 onward

As people enter the mainstream global economy and incomes rise, their aspirations increase and they look beyond the basics. Improving the quality of life becomes a major issue. And people in developed economies are always open to the possibilities of new products.

In this issue of Global Investor our specific focus is on:
- **Personal digital media >** the rise of personalized, on-demand TV, downloadable music and books, the impact this has on advertising, the rapid development of new mobile media like the video iPod, and even the link to services like on-line dating.

Other “Enrichment” themes we will explore during the course of the year are:
- **New consumers >** emerging middle class in Asia focussed on luxury goods and jewelry; growing wealth worldwide fuels demand for private banking, etc.
- **Healthcare, wellness and beauty >** increasing propensity to spend on lifestyle services and therapies; unmet needs e.g. insomnia; functional food/education – but also some pharma firms hit by healthcare reform in the USA, Japan (and maybe Europe);
- **Big events >** The World Championships in Germany (2006), the Winter Olympics in Torino (2006), and the Summer Olympics in Beijing (2008).

Switching Page 36 onward

The business revolution of the last three decades has seen changes like the switch from manufacturing into low-cost emerging nations and the rise of lean production. Now knowledge work is being outsourced, new global brands are emerging, and new countries are developing. These developments are causing many companies to redesign their business models.

In this issue of Global Investor our specific focus is on:
- **Knowledge-based outsourcing >** with Indian companies such as Infosys as obvious potential gainers;
- **Emerging market frontiers >** where will economic development spread next – might some African countries finally benefit? And will investors re-rate markets like Korea to developed status?

Other themes we will explore during the course of the year are:
- **New global leaders >** Asian and other companies build/buy global brands, enter the top 100;
- **New models for financial services >** e.g. research unbundled; hedge funds assume banking services like trade finance;
- **More market liberalization >** Labor market reform in Japan and Germany, fewer "non-tarif" barriers in Swizerland;
- **More securitization >** cat bonds, motor insurance, disability risk;
- **New software business models >** open source; web-based applications, etc.

Conclusion

As emerging-market countries become better and better integrated into the economic mainstream, the latest examples being China and India, an increasing amount of capital is flowing into the democratic market economy and thus challenging the industrialized world in a way not seen since post-World War II. Adjusting to the new order of international specialization threatens to produce a high level of structural unemployment while putting established standards of living under considerable pressure. Numerous new sources of income will become available to Western companies, be it in the form of higher sales and/or increased production in the new regions. The political risks for investments in the new regions will remain relatively high. This results in an explosive mix. We will examine the opportunities and risks involved in future issues of the Global Investor and other research products.

Other topics

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The integration of developing countries into the global economy presents a wide range of investment opportunities, though not without some challenges. Credit Suisse has identified three key thematic investment areas: “Basics,” “Enrichment” and “Switching.”

Globalization as a long-term investment opportunity

Discussion with Giles Keating, Head of Global Research and Burkhard Varnholt, Head of Financial Products & Investment Advisory
Moderated by Michèle Bodmer, Credit Suisse Publications editor

→ **What are the expectations for the global economy beyond 2006?**

Giles Keating: We are looking at a world economy dominated by ongoing structural change. An environment in which the emerging markets continue to grow rapidly, not just as sources of low-cost production, but also as areas of consumption where the middle class is growing. And these markets are increasingly becoming areas of expertise.

With this in mind, what are the key areas on which investors should focus?

Giles Keating: On a two- to five-year horizon, we have identified three key investment themes, all of which are related to the structural forces of globalization, demographics and technology. Of the 6.5 billion people in the world, three-quarters are still outside the mainstream economy, but many are moving into the cities, and into the mainstream. In order to provide for them, there is an investment required in what is called "Basics," or the provision of infrastructure, water, housing, factories, offices, sewage systems and transport. As people begin to move up the income scale, and as those who already have good incomes look for new things to consume to boost quality of life, we have what is called "Enrichment." And then there is "Switching," which is the changing of business models away from the old ways of operating, most recently into outsourcing of knowledge-based processes.

Burkhard Varnholt: The crucial question for investors is obviously: "How do I make money from this?" How can investors profit from the migration of people from rural into urban communities? The crucial point is to focus on the sectors that will be the key beneficiaries – and there are many. As Giles mentioned in connection with the "Basics" theme, this migration that results from globalization will result in a great deal of infrastructure construction. Companies that produce technologies that cannot easily be produced in a Taiwanese sweatshop, and that face little competition, are the ones who will make the most money. Specifically, we are looking at some Japanese and German medium-sized companies. Typically, the banking sector also thrives on periods like this, as it provides the financing, the mortgages, and the consumer loans to families who want to build modest homes. The telecoms sector is also related to infrastructure. Investors can also gain good exposure in companies or funds that focus on energy and raw materials. The corporate names here range from global giants such as General Electric down to little-known small-caps. The exciting thing is that even Swiss-based investors can benefit from the trends of this global phenomenon.

Giles Keating: I'd like to add real estate as another crucial part of this development process, and therefore an obvious area to focus on for investments. A massive expansion of cities through migration automatically translates into building homes and places to work. We have already witnessed this trend of moving to cities in China and India for example, but we have also seen the migration of people from the emerging countries into the developed countries, particularly the US and other English-speaking countries. This translates into a series of real estate hotspots moving progressively around the world. We are also seeing this in a number of key emerging markets, Bangalore for example, and in Dubai, where both temporary and permanent immigrants from the Middle East, Pakistan, Europe and elsewhere are creating in grand scale a high-end financial, medical, educational and trading center. In this continuing globalization process, these real estate hotspots will tend to shift as prices move up.

It sounds like investors will have to find the right tools to profit from this.

Burkhard Varnholt: That's true. The trick is in finding the right vehicles. Real estate is precisely one of those markets where you can't just buy a piece of property in Malaysia, for example, and hold onto it for investment purposes. Particularly in Asia, there are some very well developed real estate investments trusts (REITS), both local and regional, with more clout. There are also some interesting proxies for real estate in the whole of Central Europe and even in parts of Eastern Europe. Those are exciting instruments in particular for investors based outside of these so-called emerging markets, who would otherwise find it difficult to access this investment opportunity. I believe investors should make a distinct allocation in their portfolios to natural resources, such as oil, energy, water, or clean air because natural resources work in a benign and in a malign scenario. In a benign scenario, natural resources become

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dearer because of demand growth. In a risk scenario, they can become dearer because of unintended side effects of globalization. It is not too late for investors to make an allocation to this asset class as a long-term portfolio builder and diversification tool.

How exactly should an investor go about investing in natural resources?

Burkhard Varnholt: The good news is that there is a vast array of very liquid financial products offering investors access to sectors and sub-sectors in various currencies, with capital protection and without, in both a conservative and also a more aggressive fashion. This is great progress that investors should take advantage of.

Mr. Keating, you mention "Enrichment" as the second phase of globalization. Can you provide more details on this?

Giles Keating: As people enter the mainstream global economy and their income rises, their aspirations increase and they look to enjoy the fruits beyond the basics. This leads to demand for a range of goods, including those at the higher end. Often those with newly acquired higher incomes want to signal that through some luxury brands. This also includes established European, Japanese and US luxury brands, but we are also seeing the emergence of Asian luxury brands. The prospects within the medium-term for those kinds of companies will become much bigger within Asia. As consumers in the developed nations get richer, they also become hungry for new technologies, and we see a mushrooming of web-based services as broadband penetration spreads in the US and particularly in Europe. Our current focus is on "Digital Personal Media" – the rise of personalized, on-demand TV, downloadable music and books, the impact this has on advertising, the rapid development of new mobile devices like the video iPod, even the link to services like online dating. The on-demand revolution creates lots of opportunities in terms of specialist companies that provide the software and distributors.

Burkhard Varnholt: The potential consumption by all of these people who have rapid income growth is staggering. Their income might be modest compared with ours, but if you multiply them by the sheer numbers of people who migrate from rural areas into cities, it creates enormous consumption opportunities for Western companies with strong and attractive brand names. This includes everything from textiles, such as Nike and Adidas to luxury goods, like Swiss watches and German sports cars.

I think these are extremely exciting trends, and what they all have in common is they are all very short-lived, fast-paced industries, where companies' fortunes can change over an amazingly short time. A company, for example, that doesn't get this year's fashion right might be out of business next year because these companies often run on very short cash flows. In this scenario, there will be clear winners and losers. This illustrates the excitement in the industry, and it makes it clear that this is not an industry for buy-and-hold investors. You have to actively monitor and manage a portfolio to constantly manage the risk-adjusted returns. I personally recommend investors be prudent and invest in this segment only through actively managed instruments.

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Burkhard Varnholt

Burkhard Varnholt is Head of Financial Products & Investment Advisory and a member of the Global Executive Council of Credit Suisse. Prior to joining Credit Suisse, he held various investment banking positions with Morgan Stanley.

Mr. Varnholt holds a PhD from the University of St. Gallen (HSG) where he also lectured on Finance and Investments. He has also lectured at the Massachusetts Institute of Technology (MIT), Massachusetts and Stern School of Business, New York University, New York. He has published extensively and authored four books.

The crucial question for investors is obviously: "How do I make money from this?" Burkhard Varnholt

As people enter the mainstream global economy and their income rises, they look to enjoy the fruits beyond the basics. Giles Keating

Let's move on to the third theme, "Switching." What exactly does that mean?

Giles Keating: We mean a switching of the ways that companies operate. In the past, companies shifted physical manufacturing processes out of the high-cost countries into low-cost locations in Asia, Latin American and parts of Eastern Europe. This physical shifting, which has been going on for the past 40 years, was followed by the more recent business process outsourcing. An example of this is when consumers in the US make a call to their electricity company to say the bill was too high and they are put through to a call center in India. Banks have for example, shifted their high-cost back office operations to India and other locations.

Now, we are in the third stage of shifting, which is knowledge process outsourcing. For example, some pharmaceuticals companies have begun to outsource some of the research and development into new drugs to India. IT applications, not just low-end processing, but also the development of new software, are also being moved. In the banking business, some research and analytics being outsourced. This means that certain countries, like India, will move up the scale. Highly educated people, once working in call centers, are moving up into more difficult and complicated research.The jobs they were doing under business process outsourcing are shifting to other countries.

Which countries are the ones to watch in this theme?

Giles Keating: India is still first and foremost, but many other areas are involved with Asia, including the Philippines and China. Some of this knowledge process shifting is also moving into parts of Eastern Europe, and even into pockets of South Africa.

What does this mean for investors?

Burkhard Varnholt: As Giles mentioned, some countries in particular stand to profit from this type of switching. With this in mind, making specific country bets is the right way to go. The troubling thing about this is that it is a very long-term theme, which is typically the most profitable. However, some of the companies that stand to profit are not yet publicly quoted. In fact, the key beneficiaries of this process are just two to five years old and are looking to IPO their stocks in the next three to five years. For institutional investors, and for very wealthy investors who can afford to make allocations to private, non-listed equities, this is an area where very attractive returns have always been generated. Investing into privately held stocks would be my preferred recommendation of translating this into investments.

Giles Keating: This also can relate back to the real estate theme, which is a good way to play the growth in India for example, or to funds that offer some exposure the key beneficiary countries.

Burkhard Varnholt: I agree. India is a good example of where valuations have gone very high, partly because of a very small stock market that will expand over the next few years. Talking about valuations in emerging markets, one intriguing idea comes to mind and that is some emerging markets are likely to lose their emerging market status over the next few years. The term emerging implies that it will eventually join the economic mainstream and become part of the developed, industrialized world. This is a trend on its own with much potential. One example is South Korea, which is a leading technology provider and highly developed economy that is still suffering from emerging market valuations. It's a play on switching because South Korean companies heavily tilted toward the tax sector benefit from it and valuations do not. In comparison to some very developed markets, they are very cheap. ←

Basics

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Enrichment

Switching

Globalization is resulting in increased transportation to low-cost countries like China, India and Brazil. Volumes are growing steadily, but the infrastructure is sagging. We believe that congested roads, ports, rail- and airways represent an attractive investment opportunity because of the mounting need for structural changes.

Christian Gattiker-Ericsson, Head of Global Equity Strategy
Thomas Rauch, Equity Strategist

Transportation and infrastructure: Bottlenecks around the globe

→ Global transportation volumes are steadily growing, while investments in infrastructure have not increased correspondingly and are still lagging the effective needs. A perfect example illustrating this lack of sufficient infrastructure is the congestion level at major ports, limiting effective growth of container shipping to a modest 2%–3% in the near future. Daily traffic jams in major cities are another obvious sign, pointing clearly to the need for further improvements in capacity and infrastructure. We expect the worldwide transportation industry to deliver sustainable growth going forward, with volume growth roughly in line or – depending on the segment – clearly above GDP growth. Besides economic growth, however, several structural factors affect global trade patterns, so volume can remain at high levels even during an economic slowdown. The main reason for this is the ongoing globalization process, with manufacturing moving away from high-cost production areas to regions with a much lower cost base. All in all, higher volume requirements (for goods and passengers) and new trade patterns depend on investments in infrastructure.

We tried to identify three key areas of transportation – air, sea and land – facing structural changes, based on further passenger growth (e.g. airports), global port congestion (drivers are liberalization, globalization and the shift toward container shipping), and new financing structures (e.g. toll roads, public/private partnerships) due to increasing budget deficits. Returns on capital employed (ROCE) are expected to pick up in the near future and make investments in the aforementioned areas much more attractive going forward. Sustainable passenger growth, combined with expected industry concentration and consolidation also forced by new technologies (e.g. Airbus A380), will have an impact on the airline industry. Overall increasing cross-border trade and the ongoing rising importance of China, India and Brazil will affect worldwide growth rates positively and increase demand in these areas even further.

Air: Passenger growth and airport concentration
Based on new wealth in the emerging markets and further globalization trends, worldwide passenger numbers (travel and business) will undergo an acceleration of overall growth. This situation is a key driver behind increasing intercontinental flights. Recent developments in Eastern Europe show, on a smaller scale, what we can expect on a global scale going forward. New types of aircraft, such as the Airbus A380, will accelerate the concentration process for the entire industry, causing huge shifts in infrastructure needs and repositioning of major airports and airlines (no more national airlines) in Continental Europe. Furthermore, the new low-cost carriers have created a new client segment in addition to the charter industry, with ongoing high growth rates. For 2004, market growth

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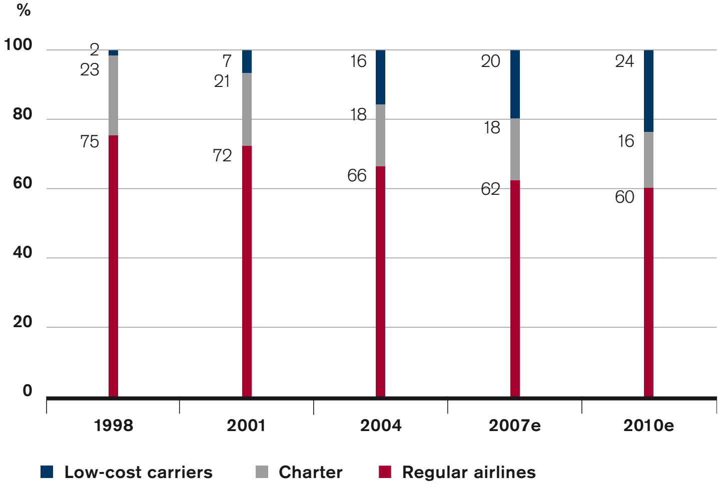
was 20 % in this segment, with European growth estimates at 12 % per annum until 2010 (source: A. D. Little Consulting). There is currently also a segmentation process discernable at the high-end side, indicating further changes in the airline business and operations at airports (e.g. baggage handling, first-class services). All in all, these structural changes (concentration) and increasing segmentation (charter, low-cost carriers, first-class airlines) will affect the future of the entire industry.

Low-cost carriers in Europe have shown impressive growth rates. Based on passenger development, their growth rates amounted to 67 % in the period 1998 to 2001 and 40 % between 2001 and 2004, clearly above total market growth of around 15 % in the same period. The market share of charter and regular airlines decreased in the same period, from 23 % to 18 % and from 75 % to 66 %, respectively. Overall, the airline market is expected to show sustained high growth rates in the coming years: 22.8 % for 2004–2007E and 14.8 % for 2007–2010E (source: McKinsey 2005). Low-cost carriers are expected to grow below market average in Europe going forward.

Figure 1 Source: McKinsey, 2005

Total passengers (millions) and market share of low-cost airlines

Worldwide passenger numbers are accelerating and the number of intercontinental flights is increasing. Low-cost carriers have created a new client segment. Growth in the overall airline market is expected to continue.



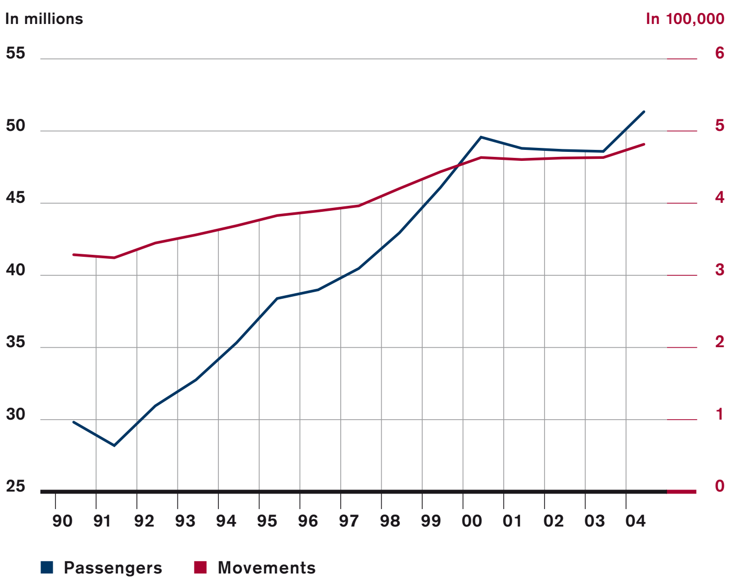
Fraport AG as an example

Frankfurt's airport, Fraport, is regarded as a clear winner in Continental Europe if expected industry changes take place. Dubai International Airport and BAA's Heathrow Airport are in a comparable situation and should thus also benefit from expected changes in the future. Fraport will mainly benefit from ongoing airport concentration and high growth rates for intercontinental flights. Competitors, such as Brussels' Airport Zaventem, Unique Zürich, Flughafen München, and Amsterdam's Schiphol Airport, will have much greater difficulty positioning themselves favorably in the key growth segment of intercontinental flights. In part, the success of an airport also depends on the market positioning of the local carrier, whereby Lufthansa is one of the most successful airlines in Europe. Compared with the Charles de Gaulle Airport in Paris, Fraport will also benefit from an attractive shopping mall for transfer passengers, which will additionally boost revenues in the future. Access to new client segments served by low-cost carriers and the new Airbus A380 (Fraport is currently the only airport to operate this plane in Continental Europe) should deliver sustainable growth rates going forward. Passenger development since 1980 shows a long-term growth rate of 4.5 % per annum. Fraport expects 3 % growth in the number of passengers in 2005 compared with 5.7 % in 2004. Fraport's current free float of just 29.3 % (or roughly EUR 840 million) is definitely too small for some investors. The public sector holds an absolute majority via the state and city alone, in addition to the federal government's stake. Given the continuing strained budgetary situation in Germany, we expect further share placements in the future, which would be a highly positive step, increasing demand for investments in Fraport AG sharply. Lufthansa's recently acquired 5 % stake in Fraport points to further possible developments in the industry (vertical integration) and underpins the airlines' awareness of their dependency on infrastructure.

Figure 2 Source: Fraport AG

Air traffic at Frankfurt Airport (1990–2004)

Fraport will benefit from ongoing airport concentration and the rising number of intercontinental flights. In addition, it will benefit from an attractive shopping mall for transfer passengers.



Sea: Growth in sea freight and infrastructure development

The boom in container shipping and sea freight goes on, but overall growth rates will clearly decelerate in 2006. The demand emanating from China and further liberalization have driven the extraordinary acceleration of international trade. China's volume demand

accounts for approximately 19 % of total global shipping on freighters and 22 % of global container shipping (source: Drewry shipping consultants). Based on AP Moeller-Maersk estimates, China is expected to have generated more than 26 % of total global container port throughput in 2005, which is expected to increase to 32 % by 2010.

Positive volume development depends on more than just economic growth due to the overall change in international trade patterns. While we expect a downswing in the overall container shipping cycle because of a container capacity overhang, we think that the most limiting factor is global port congestion, which clearly requires further infrastructure improvements. According to Drewry shipping consultants, the congestion hotspots in 2004 were Southern California in the USA, Benelux and the UK in Northern Europe, Gioia Tauro, Piraeus and Marsaxlokk in the Mediterranean area, India, West Africa, Durban in South Africa and in Brazil – especially the southern ports of Sao Francisco do Sul and Santos. Statistics for selected West Coast North American and Northern European ports show an average capacity utilization of around 85 % (e.g. Le Havre 89.6 %, Antwerp 92.9 %, Rotterdam 92.5 %, Bremerhaven 95.5 %, Hamburg 93.2 %, Southampton 99.3 %), with some individual ports showing a capacity utilization rate at clearly above 100 %. In most cases, congestion at major ports occurred because the amount of Chinese exports has been severely underestimated. Rotterdam, Los Angeles and Long Beach have been affected the most. Volume growth toward Asia is the main driving factor for the expected volume expansion. Hence, for the three major head-haul trades, aggregate volume increased 13.5 % in 2004 and is estimated to rise by more than 12 % in 2005 and 10 % in 2006.

In Brazil, the cause for congestion was the systematic underinvestment in ports, combined with an explosion in exports. Overall, several ports or terminal operators – in most cases ocean carriers – appear not to have satisfactorily geared themselves toward handling the increased number of containers. This is clear evidence that increasing the number of containers is a much easier decision than planning infrastructure needs. Besides pressure from the general scarcity of berth and yard space, infrastructure planning depends on environmental aspects and government regulations. While congestion in Europe was largely attributable to infrastructure problems, the shortage of labor was an additional issue in the USA. Overall, extended stays at berth and slower turnaround times were the final result. Hence, we think that port operators, equipment providers and engineering companies that provide infrastructure improvements represent an interesting investment opportunity, because container shipping by sea has mainly been negatively affected by problems such as ports with limited gate capacity, insufficient rail capacity, crowded highways, etc.

World trade grew 9 % from 2003 to 2004. Oil-price rises during 2005 dampened growth rates to an estimated 6.5%. The forecast for underlying world trade in 2006 is 7%, while the shortage of port capacity should increase based on the fact that port capacity will increase only 4.7 % per annum. We conclude that port capacity is indeed short (source: LCB Container Terminal 1 Ltd.). Based on the estimates of Drewry Shipping Consultants Ltd., global container port handling will grow by 12.1 % in 2005 and 8.5 % in 2006. In the period from 2007 to 2009, growth rates are expected to decline to around 6 %–7 % due to a slower rate of container penetration and a reduction in additional outsourcing to China. Further shifts toward the container trade will lead to an estimated volume of 399 million teu (twenty feet equivalent units) in 2005 and 433 million teu in 2006. By 2014, the estimated volume will have roughly doubled versus the effectively realized 2004 figure, to reach a level of around 700 million teu. The fastest growth in trade and container handling will take place in the Far East and Southeast Asia, with corresponding capacity constraints. The situation will be similar in India, with utilization levels already experiencing very high capacity at several ports.

The obvious answer would be to build new container terminals to increase capacity, especially in North America and Europe. Developing additional terminals or increasing existing port capacity is a complicated process (involving financing, planning, limited space, environmental aspects, regulation) and will therefore remain the most limiting factor in sea freight shipping. In addition, ports need to invest in new technology and information systems to increase short-term productivity of existing terminals. In addition to the aforementioned point, there are multiple causes of port congestion:

- Lack of sufficient port gates: Port authorities and terminal operators refuse to provide an appropriate number of gates for entry into and exit from the ports.
- Lack of sufficient space in the ports: Port authorities and terminal operators also fail to provide adequate space for chassis storage yards and chassis maintenance and repair within the port.
- Inadequately staffed port gates: Port authorities, terminal operators, and/or steamship lines sometimes fail to adequately staff port gates.

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Table 1 Source: World Shipping Council, partners in America's trade

Growth rates and estimates for intercontinental transport volumes

Global port congestion and the lack of port capacity clearly require further infrastructure improvements. In most cases, the congestion at major ports was because the amount of Chinese exports has been severely underestimated.

	Asia to North America	Asia to Northern Europe	Northern Europe to North America
2004	14.3 % growth	16.5 % growth	3.1 % growth
2005 forecast	11–12 % growth	15–16.5 % growth	1.5–3 % growth
2006 forecast	10 % growth	13.5 % growth	2.5 % growth

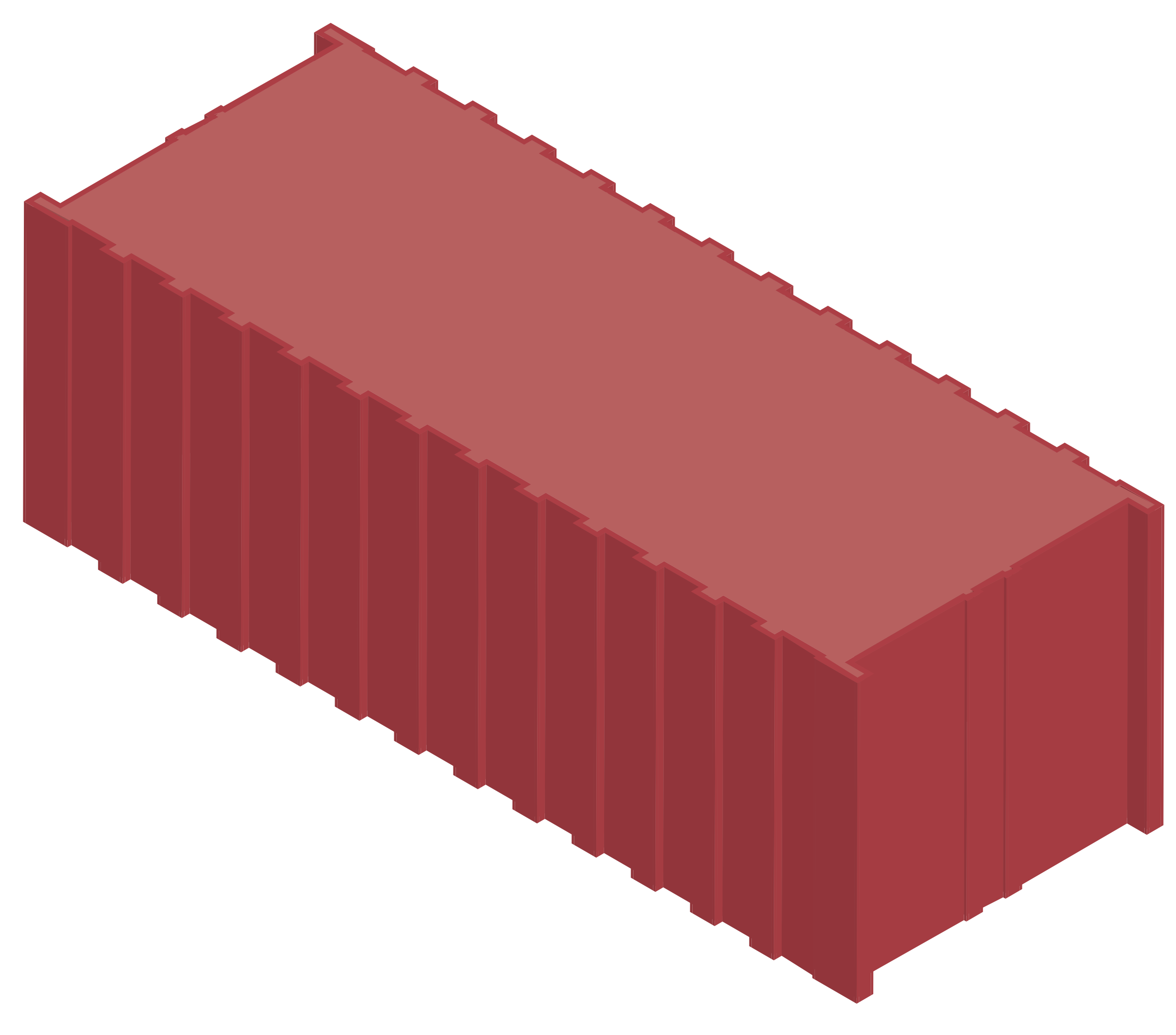


Table 2

Sources: Shipping Statistics Yearbook 2004; Containerisation International Yearbook.

World port ranking – 2003

Total cargo volume, metric tons (000s)

Rank	Port	Country	Measure	Tons
1	Singapore	Singapore	FT	347,694
2	Rotterdam	Netherlands	MT	326,958
3	Shanghai	China	MT	316,210
4	Hong Kong	China	MT	207,612
5	South Louisiana	United States	MT	180,493
6	Houston	United States	MT	173,320
7	Chiba	Japan	FT	169,000
8	Nagoya	Japan	FT	168,378
9	Guangzhou	China	MT	167,720
10	Kwangyang	South Korea	RT	165,089

Container traffic (TEUs, 000s)

Rank	Port	Country	TEUs
1	Hong Kong	China	20,499
2	Singapore	Singapore	18,411
3	Shanghai	China	11,280
4	Shenzhen	China	10,615
5	Busan	South Korea	10,408
6	Kaohsiung	Taiwan	8,843
7	Los Angeles	United States	7,149
8	Rotterdam	Netherlands	7,107
9	Hamburg	Germany	6,138
10	Antwerp	Belgium	5,445

Table 3

Source: Drewry Shipping Consultants Ltd.

Forecast container handling growth (%) by region

The fastest growth in trade and container handling will take place in the Far East and Southeast Asia, with a similar situation in India. Ports will need to raise capacity via new terminals or increasing the efficiency of existing ones by way of new technology and information systems.

Region	2001	2002	2003	2004	2005E	2006E	2007E	2008E	2009E
North America	1.3	9.6	9.5	7.7	5.5	4.7	3.7	2.6	2.9
Western Europe	2.1	8.6	9.3	10.8	8.1	6.4	4.8	4.3	4.6
North Europe	1	7.5	8.5	10.6	7.6	6.5	4.6	3.9	4.2
South Europe	3.8	10.2	10.5	11	8.7	6.3	5.2	4.9	5.3
Far East	5.7	16.5	18	17.4	19	11.5	8.8	7.8	8.2
South East Asia	7.5	11.4	10.5	14.7	9.1	9.2	9.2	9.1	7.3
Middle East	11.1	10.7	18.2	20.2	7.7	6.3	6.3	6.2	6.2
Latin America	5.6	2.2	10.9	15.3	15.5	7.3	7.3	7.3	7.3
Carib/C. Am	4.5	0.9	9.8	8.5	7.7	5	4.9	4.9	4.9
South America	6.9	3.9	12.2	23.2	23.6	9.4	9.3	9.3	9.2
Oceania	5.8	13.4	7.6	8.5	4.2	4	3.6	3.4	3.8
South Asia	6.4	13	8.7	6.8	11.6	9.2	9.2	9.2	9.2
Africa	6.5	11	14.3	16.7	6.5	5.4	5.3	5.3	5.2
Eastern Europe	33.2	20	20.3	21.5	9.3	8.8	8.7	8.7	8.3
World	**5**	**11.5**	**13**	**14.1**	**12.1**	**8.5**	**7.2**	**6.6**	**6.6**

- Insufficient gate hours: Port authorities and terminal operators often refuse to keep gates open beyond the traditional 8 a.m. to 5 p.m. timeframe.
- Vessel bunching: Although ports operate seven days a week, the fixed schedules maintained by shipping lines result in slow days followed by very busy days at ports and thus causing vessel bunching.
- Container stacking: Vessels arrive at ports within a two- or three-day period, with a resulting crush of vessel unloading, truck movements and rail departures. Due to the volume, terminal operators stack containers three or four rows high in order to conserve space.
- Insufficient longshore labor: During peak season (June through November) and as a result of vessel bunching, stevedore companies are often unable to obtain a full complement of labor to handle the glut of vessels arriving and seeking to unload at the same time.

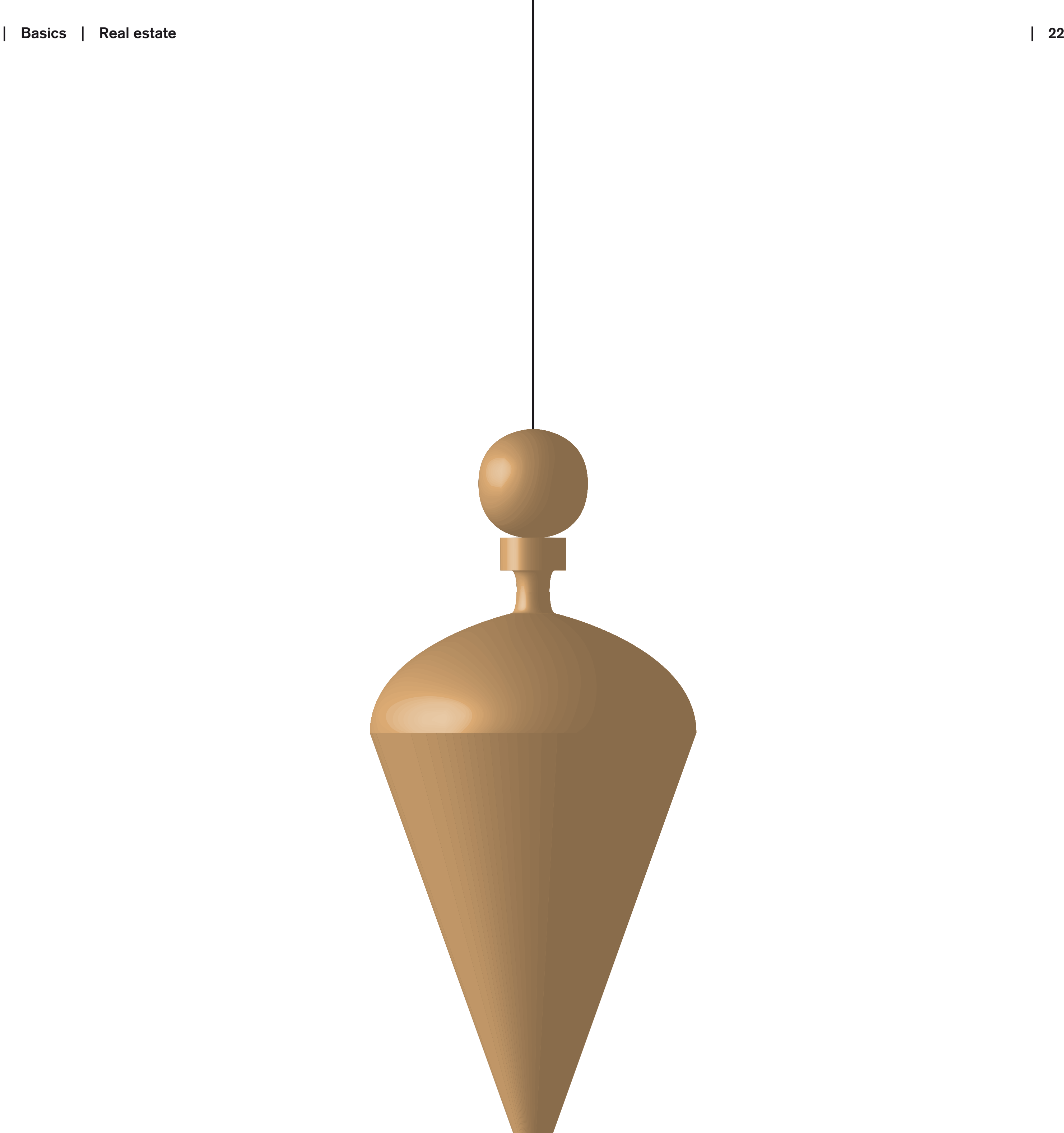
Land: (toll road projects in the USA and Europe) – from household financing to user-funded financing

Increasing pressure to limit budget deficits, coupled with aging highways, are encouraging states in the USA and European countries to privatize their toll roads in order to find a new source of revenue and/or reduce costs. Based on the conviction of many governments that private companies are often more efficient and better run than bureaucratic public bodies, the expansion of private/public partnerships should increase massively going forward. One could argue that governments have no real choice and infrastructure sales or concession allocations come from the necessity to reduce governmental debt or to find ways of increasing transportation revenues. While we expect the German government to start privatizing its highways step by step, the process is already underway in Italy, Spain and France. In the USA, this new trend was set in motion by the city of Chicago, which received USD 1.8 billion for leasing about eight miles of toll roads to private companies for 99 years. Following this example, privatization projects are flourishing in the USA, especially in states with heavy vehicle traffic, such as New Jersey and Virginia. Engineering companies, such as Fluor Corp. and Jacobs Engineering Group, as well as earth-moving equipment makers like Caterpillar, should benefit from this trend.

US states are considering using tolls to finance the expansion or rebuilding of highways and urban expressways. A study suggests that 22 toll projects, totaling nearly 2000 miles, with a price tag of USD 13.7 billion are in the pipeline. Following the Chicago example, state officials are also considering the privatization of toll roads as a source of financing for other projects. For instance, the city of Chicago has chosen the Cintra-Macquarie bid for its Skyway toll road. The Chicago Skyway, a 7.8-mile stretch of toll road running from Chicago to Indiana, registers 50,000 daily tolls and USD 43 million in annual revenues.

While it is common for companies to lease, operate, and maintain toll roads in Europe, Australia, and Canada, this was the first in the USA, and it raised the possibilities of leasing roads to private entities, such as the 157-mile toll road in Indiana and the 118-mile New Jersey Turnpike. In exchange for collecting toll revenues, private companies would modernize, improve and maintain the infrastructure during the lease.

As to be expected, the states with heavy traffic, especially from trucks, appear to be leading the move, with privatization projects in Virginia, New Jersey and Indiana. The state of New York could be the next on the list, in our view. ←



Changes in the structure of the global economy over the last few years should have an impact on real estate markets. Economic expansion, greater presence of foreign companies and the growth of domestic companies should increase the need for office retail and industrial space in Asia, Eastern Europe and Latin America.

Real estate investments in emerging markets offer considerable potential. Strong urbanization trends in Asia, the economic and political convergence of Eastern European countries with the EU and the current favorable interest rate outlook in Latin America should bolster real estate investments in emerging markets over the next few years.

Zoltan Szelyes, Global Real Estate Analyst
Arjuna Mahendran, Head of Asian Research
Cédric Spahr, Equity Strategist

Time to consider taking positions in emerging market real estate

→ Real estate investments have delivered attractive returns over the past few years. While real estate markets in some countries are already at a very advanced stage in the real estate cycle, other regions and sectors still have considerable potential (for a detailed analysis of real estate markets, see our Research Monthly: Global Real Estate publication).

In many respects, we believe that real estate sectors in emerging markets still have untapped potential. The global attractiveness of many emerging markets will further help them to expand and strengthen their weightings in the world market. Economic expansion, greater presence of foreign companies and the growth of domestic companies should increase the need for office, retail and industrial space in emerging markets. Real estate investors should find it worthwhile taking a closer look at emerging markets. Since these real estate markets are not very developed, property yields are still at a high level. Property yields show how much an investor is prepared to pay for a future income stream. A lower property yield means that the investor receives a higher price for a future stream of revenues. With the development of real estate sectors in emerging markets, however, investor interest should increase substantially, thus increasing the value of real estate assets. This expected development is not just confined to specific emerging markets, but should also spread across a number of continents. We expect to see investment opportunities in real estate crop up in Asia, Eastern Europe and Latin America in the coming years.

Asia: Strong trend toward urbanization

The Asian economies have recovered well from the Asian crisis over the last few years, with China and India as the growth drivers. Producers in China have all benefited from the country's high level of international competitiveness, and have built up a significant position in the global market. India has developed into a top outsourcing location for services and has been able to attract large foreign investment flows. The positive growth momentum of these two economies has also spilled over into other Asian countries **as shown in Figure 1**, with real estate markets clearly influenced by this trend. The positive Asian economic dynamic has led to a marked increase in the demand for office, retail and industrial space. While some places like Shanghai, for example, have seen enormous growth in the number of skyscrapers, many smaller and medium-sized cities are only just beginning to grow. Many Asian cities were unable to meet the growing demand for office properties in 2005, which led to high increases in rental prices.

Consequently, office property yields remain at a high level **see Table 1**. To better judge the appeal of real estate investments, it is helpful to calculate the spread between property yields and bond yields. This figure shows a different picture for each market. As also shown in **Table 1**, the spreads on office property yields in China, India, Taiwan and Seoul all favor real estate investments, meaning that properties in these countries are fairly reasonably valued.

In fact, the retail real estate segment in Asia harbors even greater potential than the office property segment. Investors are currently receiving significantly higher property yields for retail properties than for office space. Until now, the low market maturity of this asset class and the still-low level of per capita consumption have been factors reflecting in a higher risk premium for retail properties in these countries. However, we now see significant upside potential for this investment category in the coming years,

↗

as economic progress and rising incomes lead to a marked increase in per capita consumption. Another factor is that urbanization is likely to proceed at a rapid pace in China, India, Malaysia, Thailand and Indonesia. In Figure 2, the projections up to 2030 show how the number of cities in Asia is increasing. As the rising urban population increases consumption, retail sales are likely to take off. This potential consumption should result in a dramatic increase in the number of international retailers in these emerging markets, which should boost growth rates in the retail real estate segment substantially. This expected trend is likely to cause an increase in investment volumes, which could result in pressure on property yields. However, the rise in Asian consumption should have a positive impact on the developed regions. We expect retail properties in, for example, Singapore and Hong Kong to experience an upswing in the next few years.

Real estate sectors in emerging markets have untapped potential. Urbanization is likely to proceed at a rapid pace in China, India, Malaysia, Thailand and Indonesia. Economic expansion should increase the need for office, retail and industrial space.

Asia as a possible investment vehicle

Although gaining access to the real estate markets in China and India is still fairly difficult today, there are a number of investment tools that provide exposure to the Asian real estate markets, including real estate stocks in Hong Kong, real estate companies and Real Estate Investment Trusts in Singapore and Japan (REITS are the up-and-coming investment vehicle in Asia).

Eastern Europe: Economic convergence with the EU

In the emerging economies of Central and Eastern Europe, for example, the economic convergence to the euro zone is in full swing. Per capita GDP growth rates there have noticeably surpassed those in the euro zone for years. While economic growth in Poland, Hungary and the Czech Republic was fairly subdued at the start of 2005, there has been a noticeable improvement since the second quarter. Real GDP rates were 4.5% in Hungary and 3.7% in Poland in the third quarter, and 5.1% in the Czech Republic in the second quarter of this year. Economic growth in Eastern Europe has been driven by investments and exports. In this respect, most of the investments were in infrastructure, which in turn should have a long-term positive effect on foreign trade. In 2006, domestic consumption should be stronger and also play a key role. The rise in investments and exports in the three countries relates to their membership in the EU. At the moment, this positive economic momentum is also reflected in their real estate markets. One can also observe a strong convergence in property yields for Budapest, Prague and Warsaw see Figure 3. In light of the better supply/demand momentum, we continue to favor the Warsaw market next year too. While Bucharest, Sofia, Moscow, Kiev and Istanbul currently have higher property yields, the latter have declined considerably, and we expect this trend to continue next year. We think investments in the real estate sector in Istanbul will be a top investment story in 2006, as Turkey should benefit from its success in cementing ties with the EU. Following the currency crisis in 2001, the Turkish economy experienced strong growth. We expect more moderate growth rates around 5% in 2005 and 2006. Inflation in Turkey hit a record low level in 2005 and should continue declining in 2006. This has enabled the Turkish central bank to lower its key rate drastically to the current level of 13.75%, which should in turn have a positive effect on the national budget. In view of the central bank's ambitious inflation target of 5%, we expect to see further slight rate cuts in the coming year. The priva-

Figure 1

Source: CSIB, Credit Suisse

China and India as growth drivers in Asia

The Asian crisis is over. Producers in China and India have become highly competitive and have built up market share in the global market. Both countries, especially China, are attracting foreign investors. The positive economic momentum has spilled into other Asian countries.

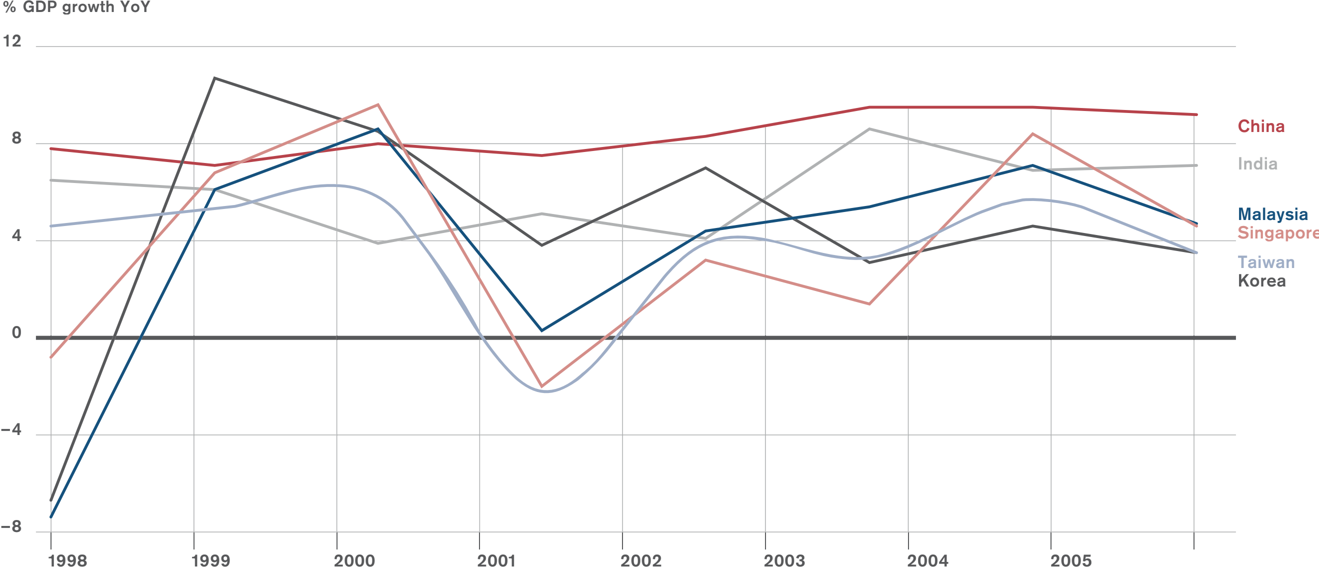


Table 1

Source: JLL, Credit Suisse

Property yields in Eastern Europe falling sharply

In Central and Eastern Europe, the economic convergence to the euro zone is in full swing. Rising GDP rates are reflecting in the real estate markets there. Investments and exports in Eastern Europe have driven economic growth to the point that property yields are now on the decline, and should continue to fall in 2006.

Data for 3Q 2005	Growth in office rents % YoY	Office property yields in %	Spread between office property yields and yields on 10-year government bonds in basis points	Growth in retail rents % YoY	Retail property yields in %
Hong Kong	73.7	3.7	-77.8	16.9	4.5
Shanghai	31.4	7.8	332.2	13.9	12.3
Taipei	3.9	5.5	363	5.8	5.5
Seoul	-1.8	7.4	190	0.7	n.a
Singapore	16.2	3.3	27	1	5.7
Kuala Lumpur	3.2	6	182	9.6	n.a
Bangkok	31.7	7	50	3.2	12.5
Mumbai	23.1	10	289.9	16.3	12
Bangalore	17	11	389.9	19	11
Jakarta	7.2	8.1	-666.6	0.9	11

Figure 2 Source: UNITED NATIONS, Credit Suisse

Rising urban population

Some Asian cities have seen enormous growth, while many smaller and medium-sized cities are just beginning to grow. Economic progress and rising incomes are leading to a marked increase in consumption. The effects of rising urban populations have raised the potential demand for office and retail properties dramatically.

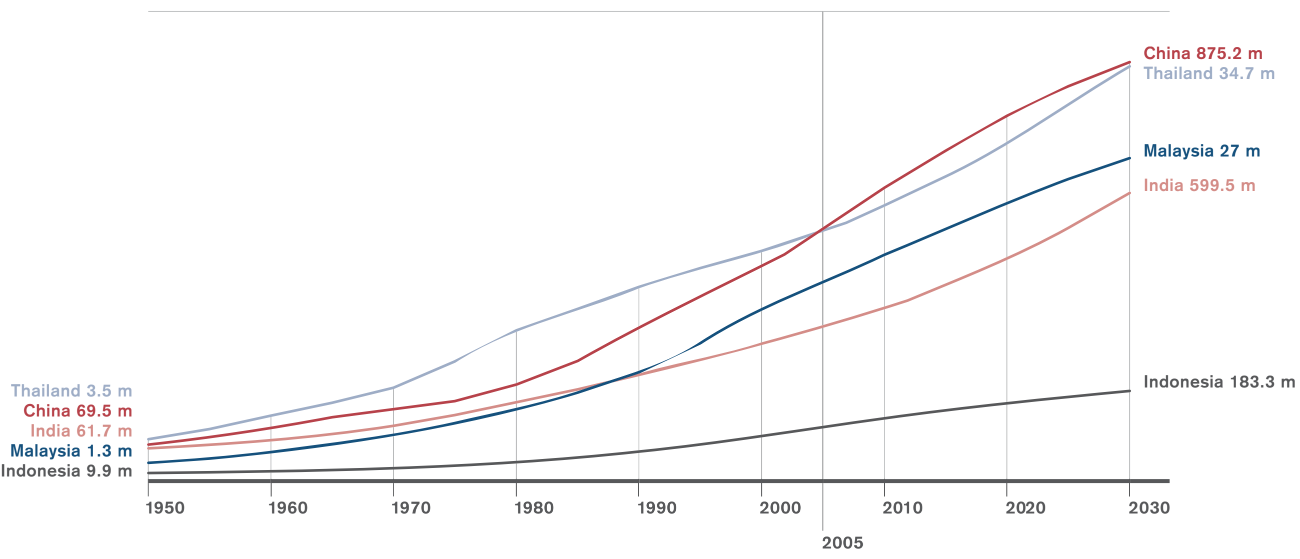


Figure 3 Source: Cushman and Wakefield, Credit Suisse

Property yields in Eastern Europe falling sharply

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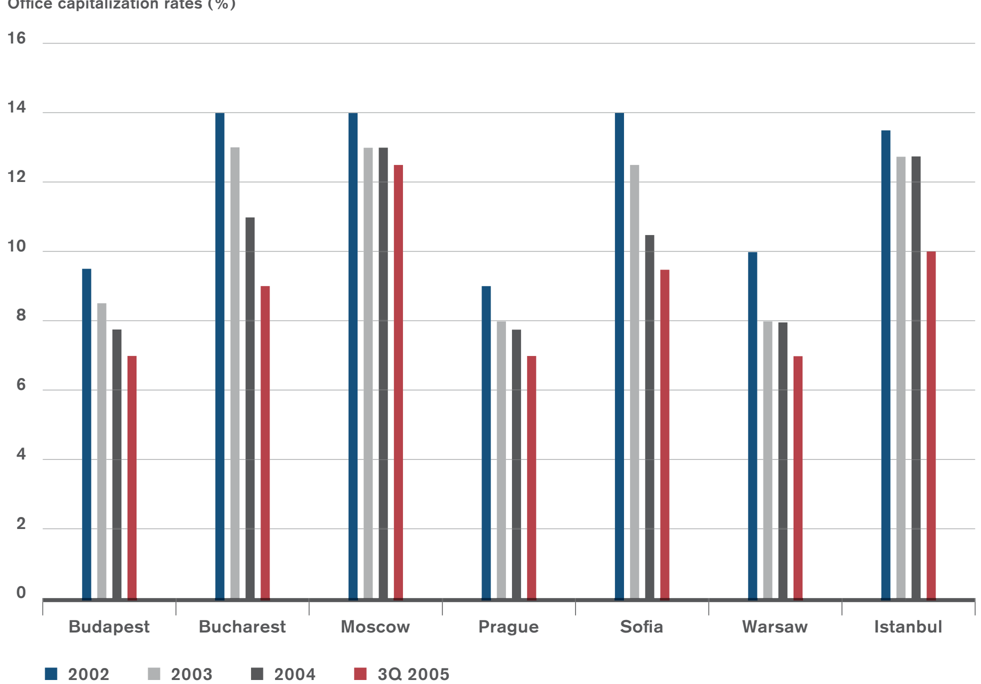


tization process is picking up speed and should help Turkey to finance its balance of payments deficit more easily in the next few years. This positive trend should not only manifest itself in higher demand for office and retail space, but also lead to a stronger presence from international real estate investors.

Eastern Europe as a possible investment vehicle
There are various ways of investing in Eastern Europe. Meinl European Land and IMMOEAST offer diversified exposure to the real estate markets of Eastern Europe.

Latin America: Favorable point in the interest rate cycle
We foresee new opportunities next year in the residential and office real estate markets in South and Central America. Mexico, Brazil and Argentina have shown favorable progress in recent years in overcoming both economic and political crises. Not only have these countries' economies picked up in past years, but also their monetary policies aimed at curbing inflation have become more credible.

In Argentina, the residential real estate market appears to have undergone a sharp downward correction in the wake of the country's currency crisis, and property values currently look exceptionally attractive by international comparison. When Argentina's economic situation improves, residential real estate should have significant potential for rising prices.

Brazil and Mexico have now arrived at a favorable point in the interest rate cycle. As **Figure 4** shows, both of these countries started to lower their interest rates at the end of 2005. We believe now is a good time to enter the office real estate market in these countries, as falling interest rates should put downward pressure on office property yields. Office property yields are now at 11.5% in Mexico City and close to 14% in Rio de Janeiro and Sao Paolo. However, the higher yields for Brazilian real estate should be viewed in context with the country's higher interest rates.

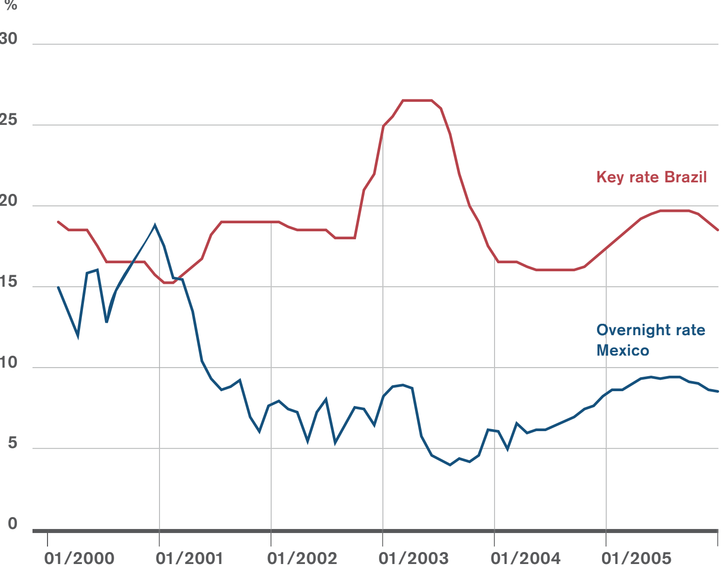
In our view, the office real estate market in Mexico City has the most potential, at least in the near term. Office rental prices in Mexico City are currently in a bottoming-out phase. Thus we expect to see office rental prices increase again in the next few years. In the long term, Mexico's younger population is not only likely to benefit the country's economy on the supply side, but should also support residential investments in the coming years. Mexico is one of the few countries in the world that still benefits from its population pyramid. In addition, repatriated income from the USA and rising demand from US citizens should increase interest for residential objects in Mexico.

Latin America as a possible investment vehicle
Although investors are currently only able to gain exposure to the Mexican real estate market via direct acquisitions and privately structured investments, other Latin American countries offer the possibility of investing indirectly in real estate via companies such as Cyrela Brazil Realty and La Fonte Participacoes SA-PR in Brazil, Irsa SA and Euromayer SA in Argentina, Parque Arauco SA in Chile, and Gazit Inc. in Panama.

Figure 4 Source: L.E.K. Consulting

Interest rates falling again in Brazil and Mexico

Brazil and Mexico have now arrived at a favorable point in the interest-rate cycle. Current downward pressure from interest rates on office property yields makes it a good time to enter the office market in Mexico in particular.



Conclusion
Changes in the structure of the global economy over the last few years should have an impact on real estate markets. The rise in economic growth of emerging markets in different continents should provide impetus to real estate markets in the coming years. The extensive trend toward urbanization in Asia, as well as increasing budgetary and monetary discipline in Latin America and processes such as the economic convergence of Eastern European countries will be key investment topics for the next few years. Investors looking ahead for opportunities in real estate would be well advised to position themselves in these markets now in order to benefit from the potential offered by these long-term trends. ←

The fundamentals for the overall energy sector remain attractive. Strong demand and high prices should benefit exploration, production and service companies in the fossil-fuel segment. In addition, new and alternative energy stocks should continue to gain momentum, so that in general the outlook for energy in 2006 is still good.

Energy sector

still up-beat!

Lars Kalbreier, Head of Global Trading Research
André Frick, Equity Analyst, Oil and Basic Resources

→ With underlying demand strong and supply tight, the fundamental data for the overall energy sector remain attractive, even though renewed phases of temporary weakness may occur. The oil price will probably occasionally exceed last year's high, and we also expect refining margins to be robust. This, in turn, will enable energy companies to generate high cash flows and pay attractive dividend yields. Owing to the infrastructure bottleneck and the consequent pricing power of companies, we especially recommend taking positions in the oil service segment. Thanks to their leading position in the sector, their global presence and their pioneering role in the rapidly growing emerging markets, Schlumberger and Halliburton are extremely well poised to benefit from any upside potential. Moreover, from spring onward, oil refining stocks such as Valero and Tesoro should become attractive investments due to a bottleneck in refined oil products. Owing to the high correlation between the share prices of companies active in exploration and production and oil prices, we expect these companies to perform well; for example, Apache, Anadarko or CNOOC. Integrated oil companies do not generate earnings from only one division; they are broadly diversified. ConocoPhillips, Total and BG Group are among our favorites. Petrobras and Lukoil are very interesting companies for risk-oriented investors. Based on the attractive fun-

damentals, we advise investors to make selected investments in, or to increase exposure to, the oil sector during any phases of weakness. The strong momentum in oil is likely to be coupled with continued momentum in alternative energies on the back of sustained high oil prices, the development of emission trading rights launched in Europe in accordance with the Kyoto Protocol and the implementation of large-scale projects, often with government support. The three main alternative traditional fossil fuel producers are likely to benefit from this situation. Natural gas prices should follow oil prices, as usual, due to their substitution properties. This is likely to boost the revenues of natural gas exploration and production companies like British Gas. Coal is also likely to benefit from high oil prices and sustained demand from China (coal represents 2/3 of Chinese energy demand). We are taking exposure to US coal through companies like Peabody. Nuclear energy has entered a long recovery trend in our eyes on the back of its low CO2 emission quality and its price competitiveness. Areva is the largest quoted nuclear company in the world and should be considered as a long-term investment. Besides fossil fuel producers, producers of hybrid vehicles will probably continue to benefit from high oil prices. Toyota is our favorite in this field: it will likely keep its solid momentum on the back of the Japanese market recovery, the introduction of new hybrid vehicles, and the persisting production problems at US car manufacturers. Finally, new energies are also likely to remain on an upward path in the long term, as growing public awareness of oil scarcity will lead to an increase in corresponding demand. Solar remains a long-term investment, helped by its convenience (i.e. it can be used for small-scale projects like single homes or large industrial complexes) yet some volatility in stocks like Tokuyama and Evergreen Solar might be experienced in the short term after their strong performance in 2005. Wind remains a strong investment case on the back of the expected deployment of several offshore wind farms in the coming years, more powerful than inland farms; we would remain exposed to Gamesa. Finally, biomass is expected to gain thanks to the aggressive new ethanol plan in Brazil and bio-ethanol plans in several European countries. Archer Daniels Midland remains the world leader in biomass and is increasing its investments in this field. To summarize, we remain positive on energy stocks going into 2006 and would recommend that investors complement their investments in energy stocks with a small allocation to selected alternative energy companies. For a detailed review of the alternative energy theme, please refer to the Global Investor Focus on "Energy," which we published in November 2005. ←

Figure 1 Source: Datastream

Performance of the oil price since 1987

Since oil prices are likely to remain high for many years, overall momentum in the energy sector should benefit from strong underlying demand and tight supply.

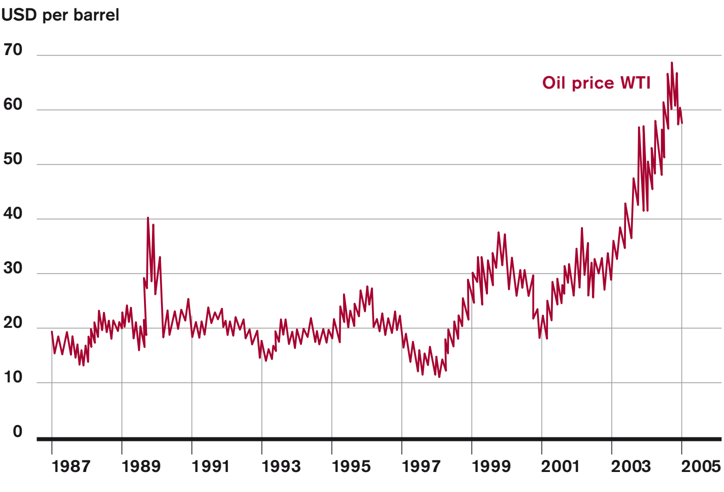
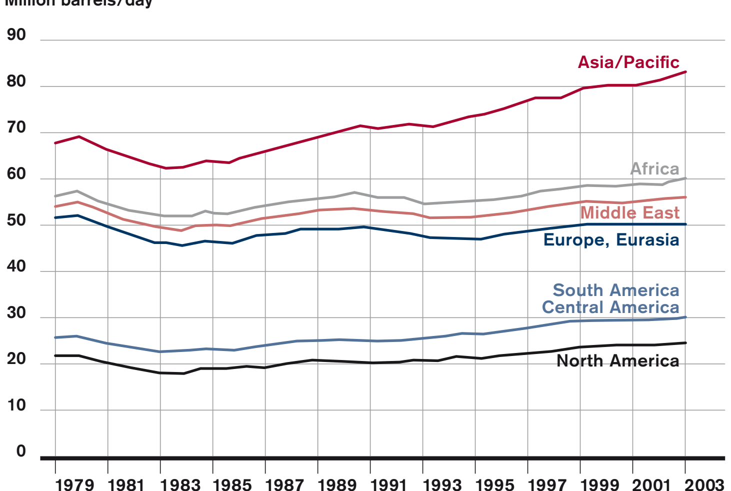
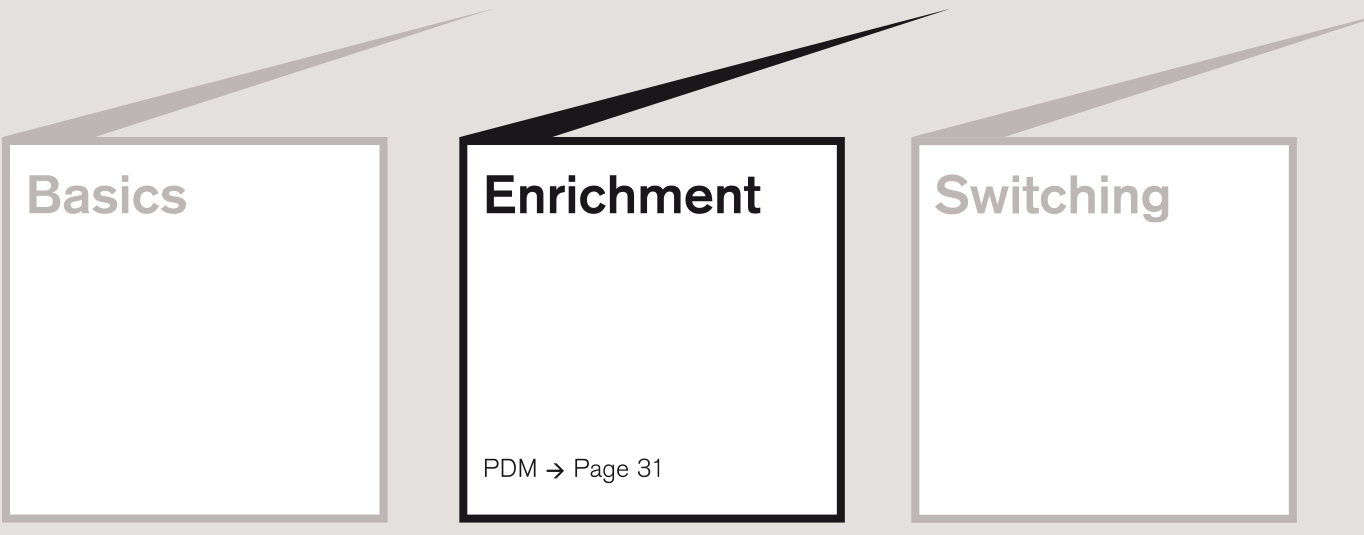


Figure 2 Source: BP statistics

High demand from Asia and North America

Worldwide demand for energy is rising, especially in Asia, where countries are growing and developing their infrastructures to further develop industry and trade.

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Enrichment
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Switching

The technology sector is picking up steam; telecom and media companies are positioning themselves for the battle over value creation. The potential for new, individually tailored information and media services is redefining established markets and leading to a variety of new business models. Meanwhile, investors are trying to sort out the winners from the losers and which newcomers to back.

Ulrich Kaiser, Equity Analyst, Technology
Uwe Neumann, Equity Analyst, Technology

Personal digital media: Any content in any device, at any time in any place

→ The growing demand for enhanced picture quality (large flat screens) and mobility (portable consoles and mobile phones), and the expanding utilization of digital transmission technology – as well as the increasing convergence of services that previously were offered separately via telecom, cable and information technology (i.e. the Internet) or through the media and entertainment sector – all form the basis for personal digital media (PDM).

These trends have an impact on nearly all value-creation chains in the technology sector. In particular, the battle waged by telecom and media companies over high cash flows is intensifying through new types of services that are individually tailor-made. This is advantageous for consumers since they can determine the timing (mobile or stationary reception rates) as well as the content of the desired medium, in addition to the interactivity. For technology companies, these trends represent a challenge. From the investor perspective, the focus is increasingly on banking on the winner or loser **(see Figure 2)**.

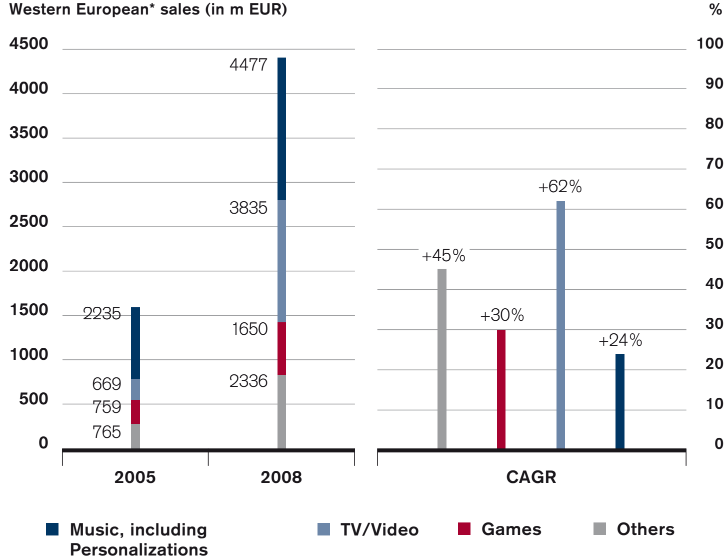
Flexible network opens door to opportunities

The more closely meshed, intelligent and flexible the data highways (networks) become, the greater the opportunities that are likely to emerge for new, individually tailored information and media services. In the USA, on-demand consumption of media has already reached the threshold of one video download per household per day. According to a study by Jupiter Research, digital media consumption in Europe will nearly triple, from the current EUR 4.4 billion to more than EUR 12 billion, by the year 2008 **(see Figure 1)**. This trend opens the door for new business models. For example, just as we will be able to have global access to our own home TV, video library or game collection in the future, it could also be increasingly interesting to have our own individual profile accessible on the network via video messaging or greeting card. This could provide the opportunity to find like-minded persons who share the same interests, for example, in the areas of culture, sports or music, during our leisure time or as we travel. In 2005, an online

Figure 1 Source: Jupiter Research, IDC (2005)

Digital content distribution is growing fast

According to a study by Jupiter Research, digital media consumption in Europe will nearly triple from the current EUR 4.4 billion to more than EUR 12 billion by the year 2008.



* Germany, Austria, Switzerland, UK, Ireland, Sweden, Denmark, Norway, Finland, Netherlands, Belgium, Luxembourg, France, Italy, Spain, Portugal, Greece

Figure 2 Source: Jupiter Research, IDC (2005)

PDM evolution path

The digital revolution will compel companies to invest considerably in hardware and equipment in the near term. But the battle for customers will put pressure on prices, forcing business models to adapt.

Phase 1: 2006–2007

- Investment into network quality and ubiquitous connectivity
- New business models arise
- Replacement cycle of electronic devices persists at a high level
- Battle for customers between media and telcos

Winners
- Telco equipment
- Semis
- IT hardware (benefits from business demand)

Neutral
- Software/CE

Losers
- Telco services/cable companies
- Media

Phase 2: 2007–2010

- Telco service companies benefit from new business models
- Saturation of the replacement cycle in consumer electronics
- Consolidation in the semiconductor sector
- Process innovation leads to economies of scale (software)

Winners
- Telco services/network owners
- IT software

Neutral
- Semis

Losers
- Telco equipment
- Media
- Consumer electronics

dating-service company – Meetic (France) – went public, which we believe should be closely watched. Another company (already listed since 2000) – Sparks Networks – succeeded in nearly doubling its monthly subscribers to 285,000 last year, and Meetic followed suit, boosting its sales twofold in 2005 compared with the previous year. In view of the increasing globalization of such local services as online dating agencies, this market harbors tremendous growth potential.

Competitive pressure in telecom business driving PDM

On the one hand, the digitalization of media transmission has led to enormous price pressure on volume-dependent tariffs (e.g. from Internet telephony), and on the other hand, it requires substantial investment for telecom companies to remain competitive, particularly in light of the stepped-up competition from TV cable network operators. Hence, telecom service providers have been confronted by declining revenues in fixed-line network and dwindling growth in mobile network operations. In order to boost the access service, companies will be compelled to carry out considerable investment in the near term. In this regard, the service providers also have a view toward reaping rewards in the long term from the trend toward personalized distribution of media and other content and are thus poised to acquire exclusive media content – such as the rights to football matches or video libraries. So the advancing PDM trend has prompted telecom service providers to expand horizontally along the value-creation chain, which will likely weigh more on margin and earnings growth in the short-to-medium term.

Media companies battling for customers and revenues

In our opinion, personalized digital media essentially gives media companies merely a new form with which to distribute their content. Whether or not they acquire new customers seems rather questionable to us. Small- and medium-sized companies will lose their independence in the course of this trend and be taken over by telecom or cable network operators. Other developments are conceivable as well: for instance, in Germany, where Deutsche Telekom bid for the rights to national football matches competing with pay-TV channels. The trend will presumably lead to distributors attempting to acquire content (e.g. the rights to football games, video or music libraries) to strengthen their competitive position, thereby attaining a certain exclusivity. Such moves would also diffuse the unpleasant debate over who the customer really belongs to: the distributor, which can provide services to customers via its distribution network, or the media company, which can distribute its content via a licensed distribution network. In light of this debate, we should see an emerging battle for customers.

PDM is a rewarding growth driver for consumer electronics

The success of PDM as well as the pace of dissemination will also have a noticeable impact on the hardware industry. This, in turn, constitutes a favorable factor for those exposed to this industry since PDM will only achieve success if sufficient hardware equipment (mobile as well as stationary) becomes available relatively quickly. But with the exception of exclusive equipment, this can only be realized through prices. In addition, producers of brand-name equipment will have difficulty keeping their profit margins stable due to the highly heterogeneous manufacturer's market in Asia. Consequently, we expect merely a volume effect initially from this industry and not a sustained impact on earnings. Big players

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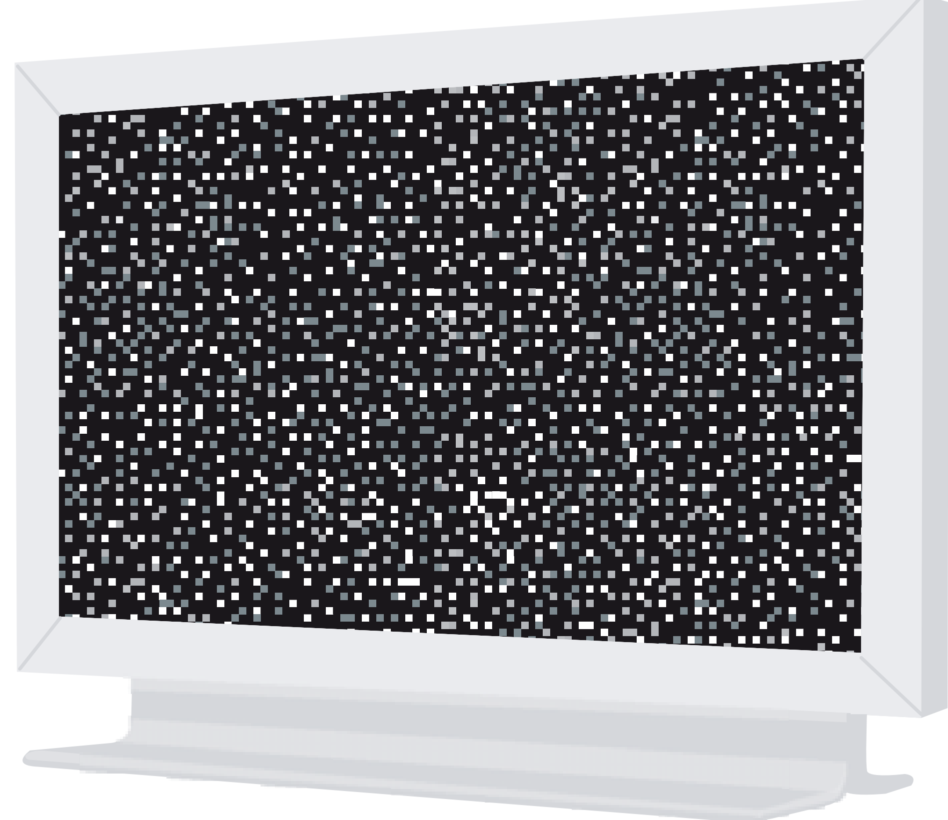


Who has not experienced such a situation: An important match featuring your own national football team will be broadcast live on television that evening. But you cannot watch it because you are traveling abroad. The hotel's television only offers local channels. Wouldn't it be nice to beam yourself home and comfortably watch the game live on your local channel from your own sofa? The age of personal digital media (PDM) has dawned, allowing individuals access to tailor-made digital media and communications.

like Samsung El. and Philips seem to be best positioned. The consumer electronics sector will reap benefits from the displacement of analog equipment by digital equipment, whereby televisions as well as portable devices will be among the first to be affected by this trend. This will especially prove true for flat-screen TVs as well as for the latest generation of digital set-top boxes, which are also called PVRs, or personal video recorders. A PVR is a video recorder equipped with a hard disk instead of the original standard band (VCR) and DVD drives. The PVR recognizes the attributes of the user's favorite programs and offers a selected program stored on the hard disk that matches his/her personal interests – often in combination with "time shift," which allows time-delayed viewing of broadcast programs.

PDM sparks boom in NAND flash technology

This multi-versatile technology used in the consumer electronics industry is only made possible thanks to state-of-the-art, more multi-faceted and complex microchips. Manufacturers of portable equipment are benefiting from the investment boom in NAND flash memory technology. This latest development has paved the way for storage of ever-greater amounts of data on portable devices, allowing, for example, users access to television via a laptop computer or mobile telephone (DVB-T). NAND flash is already incorporated into the iPod nano and, in just a few years, will replace larger disk drives, for instance, in laptops (see Figure 3). Like in the consumer electronic space Samsung again is a leading player here. Hence, the real benefactors of the value-creation chain in the consumer electronics industry – namely, the semiconductor companies – will likely discover that personal digital media will not be realized without new silicon content. This feeds through to stationary as well as portable digital devices (especially mobile devices). Moreover, telecom equipment manufacturers require new chips for new routers and servers. Thanks to this development, the semiconductor sector will be able to reduce its dependency on PCs and peripheral equipment as well as slow down sector-specific price decreases through greater production utilization, thereby joining the ranks of the few winners in the hardware industry. Companies like Texas instruments and Micronas (audio-/video chips) belong to them.

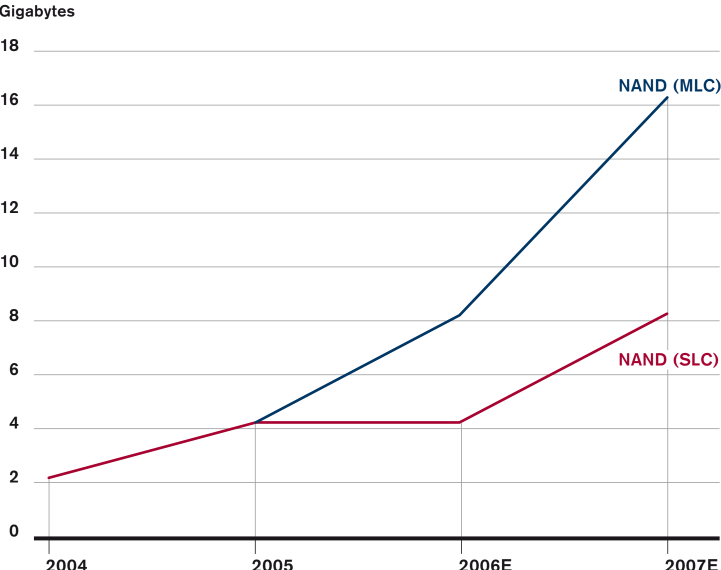
Telecom equipment manufacturers on convergence course

While telecom service providers and cable network operators are burdened for the time being by the substantial investments necessary to remain competitive, telecom equipment manufacturers are enjoying the long-awaited spurt in growth. European telecom companies plan to boost investment in the coming year by an average of 20%. Moreover, fixed-network manufacturers, such as Alcatel and Cisco, are set to benefit the most. There will be demand for comprehensive solutions, in particular, which should simplify and optimize the use of PDM for consumers. End-equipment manufacturers such as Nokia will likely hit the market for the first time in 2006 with mobile phones that offer constant access to the network, which offers the greatest download capacity. Whether domestic WLAN, 3G, or WiFi/WiMax access, users should be able to move freely at will without much effort. This not only presents a technological challenge, but also spurs stronger process optimization. Niche players such as Tandberg TV (compromising software system) or Esmertec (Java software platform for mobile handsets) should reap rewards from this trend.

Figure 3 — Source: Samsung Electronics

Rapid rise in NAND flash storage capacity

In just a few years, NAND flash will replace larger disk drives. This will decrease the semiconductor industry's dependency on PCs and peripheral equipment.



Software and services: Extending the seamless mobility vision
PDM involves targeted communication flows that accompany individuals no matter where they are, what they are doing, or what time is. This "seamless mobility" is transformational for many sectors, including software. Microsoft's efforts in the digital home are well known, with xBox 360, Vista, and IPTV/TelcoTV infrastructure software. Less well known is how Vista will serve as the glue in Microsoft's digital home strategy, enabling seamless links between television, PC and mobile devices. Combined with semiconductor advances, we believe home computers late in 2006 could make their largest year-over-year capabilities leap in roughly 10 years. Another example: Adobe owns the Web's leading fixed-content delivery platform in Acrobat, a leading video platform for the Internet and 3.5G mobiles in Flash, and a leading personal digital media productivity suite in Creative Suite. We note that rich media (video) advertising is one of the fastest expanding and most profitable segments of Internet Advertising (see our report from 22 June 2005, Investing for the Digital Revolution – Advertising Opportunity).

The commoditization of voice/data/video
Yahoo, Google and others are rapidly commoditizing voice/data/video services by introducing virtually free telephone capabilities, rapidly increasing the computing power available over the Internet, and building free video search. But why would any company commoditize these very large and lucrative markets – traditionally the home of telecommunications conglomerates? We believe Internet companies are playing within the enhanced market value generated by lower information and transaction costs, while also seeking to redefine established markets in ways that direct income streams their way. Strong demographic and technological trends are driving more people to shape their opinions by online social interaction – something we call social networking. Whether by word of mouth or word of mouse, opinion-shaping interactions are the single most valuable form of advertising; they help shape trends and fads. Search engines can help people find what they want; social networking technologies help people determine what they want. Yahoo is tying its shopping mall of Internet services together in ways that promote social interaction across the Web, while Internet-generation social networking on sites such as MySpace and Facebook are figuratively exploding in popularity – and attracting large-company attention. This enhanced economic value is a major reason why companies such as Yahoo, Google, and eBay are rolling out technologies that make communication virtually costless. Enhanced economic transaction volumes result from lower information and transaction costs. In the pre-PDM world, communication and the inability of targeted information to follow individuals anytime anyplace, have been significant costs in that equation. ←

Table 1

Source: Credit Suisse/IBES consensus

Tech stocks benefiting from the PDM trend

The trend in personal digital media is having an impact on nearly all value-creation chains in the technology sector, including hardware equipment, consumer electronics, telecom and Internet providers, software and services.

1) Hardware

Name	Bloomberg	Currency	Price as of 17/01/06	EPS 06E	P/E 06E	EPS 07E	P/E 07E
Samsung	005930 KS	KRW	697,000	56,000	12.45	65,000	10.72
Royal Philips Electr.	PHIA NA	EUR	25.9	1.6	16.19	2	12.95
Micronas	MASN SW	CHF	45.6	1.6	28.50	3	15.2
Alcatel	CGE FP	EUR	10.99	0.85	12.93	0.95	11.57
Texas Instruments	TXN US	USD	32.42	1.7	19.07	1.78	18.21

2) Software

Name	Bloomberg	Currency	Price as of 17/01/06	EPS 06E	P/E 06E	EPS 07E	P/E 07E
Tandberg TV	TAT NO	NOK	90.5	5.2	17.40	5.8	15.60
Esmertec	ESMN SW	CHF	25.8	1.46	17.67	2.41	10.71
Yahoo	YHOO US	USD	40.27	0.76	52.99	0.95	42.39
Adobe	ADBE US	USD	39.13	1.28	30.57	1.5	26.09

3) Special investments

Name	Bloomberg	Currency	Price as of 17/01/06	EPS 06E	P/E 06E	EPS 07E	P/E 07E
Meetic	MEET FP	EUR	31.4	0.64	49.06	0.86	36.51
Spark Networks	MHJG GR	EUR	5.7	0.64	142.50	0.08	71.25

Basics

Enrichment

Switching

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Companies began years ago by outsourcing manufacturing processes and later outsourcing business processes such as call centers and back offices to cheaper locations. Now companies in sectors like pharmaceuticals, automotives and financials are growing more ambitious and outsourcing knowledge processes and services to countries all over the globe, creating substantial business and investment opportunities.

Robin Seydoux, Head of European Equity Sector Research
Maria Custer, Equity Analyst, Healthcare
Christine Schmid, Equity Analyst, Banks
Markus Mächler, Equity Analyst, Automotive and Capital Goods
Laurence Blazianu, Equity Analyst, Healthcare

New wave of outsourcing as companies grow more ambitious

→ Forty years ago, companies in the USA, Europe and Japan started to outsource physical production to cheaper locations, beginning with simpler processes in the textile industry and then progressively graduating to more complex manufacturing in electronics, automobiles and so on. Some 15 years ago, the smarter firms were starting to outsource business processes, initially telephone call centers and later more demanding functions such as bank back offices. Now, a new wave is emerging as companies become more ambitious, outsourcing knowledge processes such as pharmaceutical R & D, automotive design and financial analysis (see Figure 1).

In parallel with this move up the value chain, there has been a geographic cascade. Early physical outsourcing was focussed in the original Asian Tigers (Singapore, Hong Kong, Taiwan and Korea) and then as these locations moved up the value ladder, it moved, and moved again to Malaysia, to China's seaboard cities, to Mexico, to Eastern Europe and so on. In its latest phase, this spatial flow is seeing Indian cities such as Bangalore finding far more productive use for their finite pools of graduates, moving them from call centers into, for example, high-end IT applications, while the lower-end tasks migrate to other Indian states, to China, the Philippines, Eastern Europe and so on.

A report by Evalueserve predicts that low-end outsourcing services will grow 26 % p.a. between 2003 and 2010. In contrast, the knowledge process outsourcing (KPO) market is likely to grow a staggering 45 % p.a. during the same period. This progression through sectors and geographies offers great potential for investors, whether in consulting firms like Infosys and Tata, or in the US, European and Japanese firms that move early to adopt knowledge-based outsourcing such as Continental, or in local suppliers and real estate in the newly prosperous locations.

The healthcare sector is just beginning to grasp the potential of the knowledge-based outsourcing field. Certain healthcare players started to outsource services. For example, the National Health Service (NHS) in the UK ships blood and urine samples to India for clinical tests, getting the results by e-mail. Medical x-ray is another common field to utilize Indian-based experience for reading purposes. Despite these early efforts, while some industries have been benefiting from global outsourcing for quite some time, the healthcare industry has not yet fully realized its total potential. Contract research organizations (CROs) and India's intellectual resources are increasingly playing important roles in pharma's R & D.

An unprecedented wave of patent expirations over the next three years underscores how urgently drug-makers need to boost productivity. Big pharma's recently announced restructuring plans illustrate the need to improve efficiency. Reducing SG & A and R & D expenditures can help cushion the blow to margins as a company's major branded drugs go off patent. While slimming the sales force can curb SG & A, outsourcing a greater percentage of its R & D budget can ramp up the innovation process.

Fueling this wave of outsourcing, in our view, is declining R & D productivity in big pharma (see Figure 1). Both the costs and the time to bring a drug to the market have increased significantly during the past thirty years. The development cost for a new drug has grown from approximately USD 400 million in 1990 to about USD 1 billion today. The average time from the pre-clinic to the commercialization stage increased from 11.6 years in the 1970s to 14.2 years in the 1980s. For the past two decades, despite rapid advancements in genomics, the time to market has remained at the high end. Launching a product fast is a critical factor for success, as it takes several years to achieve the maximum sales potential. ↗

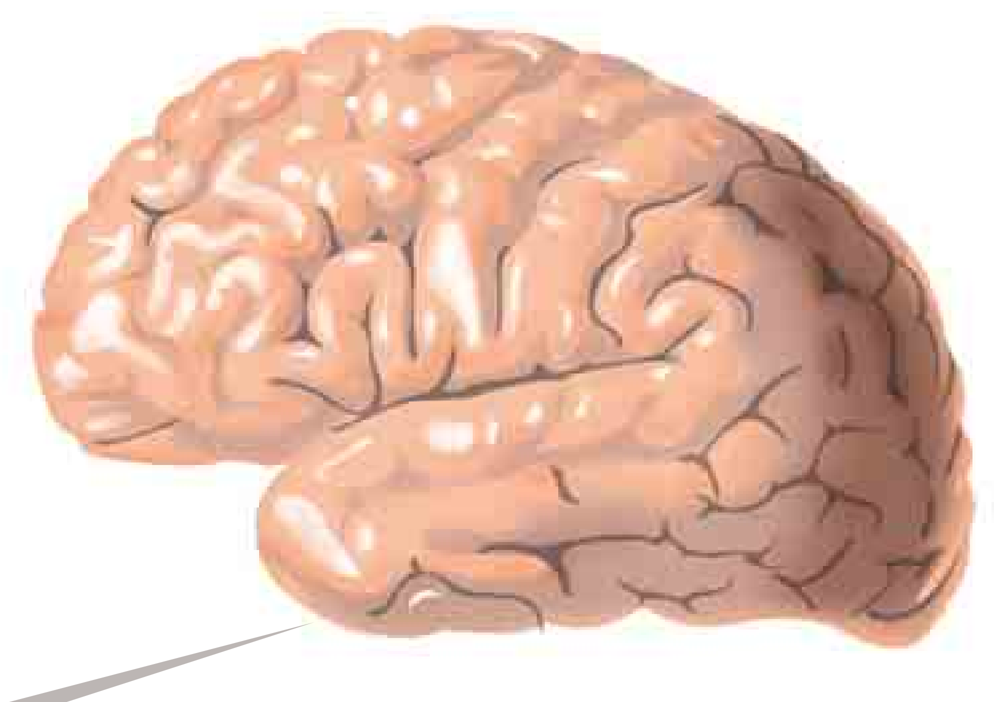


Figure 1: Physical production, business processes and knowledge processes

Labor intensive		Skill intensive		Knowledge content	
				R&D (India)	→
		Call centers (Ireland)		→	
	Electronics (Taiwan)		→		
Apparel (Philippines)		→			
Textiles (Korea) →					
1960s	1970s	1980s	1990s	2000	2010

Source: Credit Suisse

Figure 2 Source: L.E.K. Consulting

R & D activity has been declining

Outsourcing saves money, boosts productivity, helps companies to focus on core competencies and reduce the time to market. All these are key factors for success in developing and launching new products.

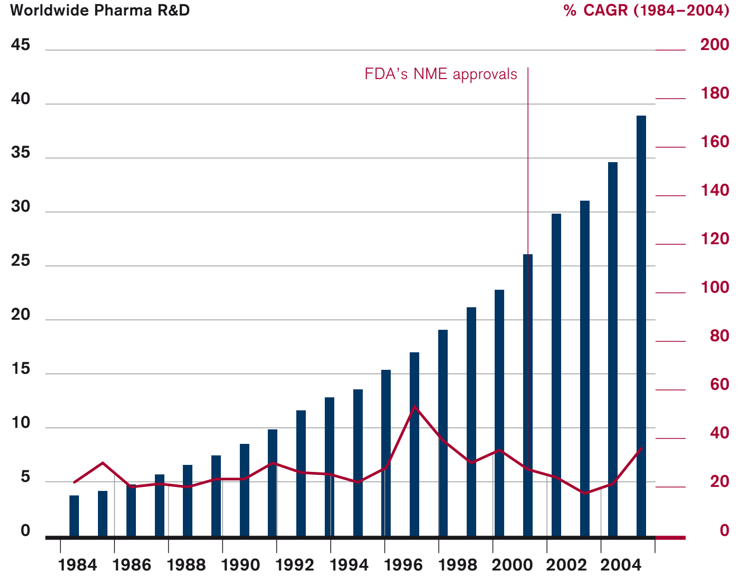
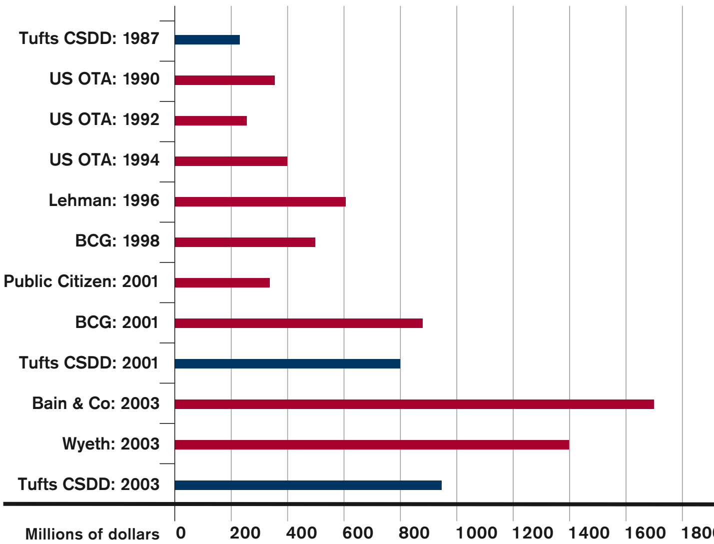


Figure 3 Source: L.E.K. Consulting

Cost of delivering a drug

The development cost for a new drug has grown from around USD 400 million in 1990 to about USD 1 billion today.



Furthermore, gaining time to market can optimize a product's potential before entry of new competitors or generic drugs.

Another driver for outsourcing is budget constraints. Small pharmaceuticals and biotech companies in particular tend to have limited financial resources to spend on building facilities. Biotech companies often rely on outsourcing preclinical and early-stage clinical development.

Outsourcing to CROs

Whenever a drug-maker's facility is not running at full capacity, the facility's fixed costs (land, buildings, equipment, a full-time highly skilled staff) drain funds that can be used more productively elsewhere. By conducting preclinical and clinical studies on behalf of biopharmaceuticals, CROs convert these fixed costs into flexible variable costs for their clients. Currently, about 20% of big pharma's preclinical and clinical development is outsourced. This kind of outsourcing is different from traditional outsourcing in which large companies outsourced commoditized parts of their businesses. Pfizer, for example, is collaborating with Gene Logic (a USD 120 million market cap company offering research services) in order to reposition a significant number of drugs. We estimate the current global CRO market is worth roughly USD 11 billion (or 14% of the global life science R&D market) and advancing about 14% per year.

Outsourcing to India

India is playing a growing role in this new equation due to its low cost structure, pharmaceutical know-how acquired through its generic business, and new regulations strengthening patent protection. The country combines a sizeable population of medical professionals (the fourth-largest number of doctors in the world) and good candidates for clinical trials ("naïve" patients who are not on any treatments mostly due to lack of medical access), combined with proficient IT and/or English language skills. India has the capacity to execute certain steps in R&D cost effectively, particularly in data management and analysis. Most global clinical research organizations such as Quintiles and Covance have set up bases in the country.

Multinational pharmaceutical companies are expanding R&D facilities in India. AstraZeneca is enlarging its discovery center in Bangalore, currently staffed with more than 100 scientists, by investing USD 10 million in a process facility to play a crucial role in the discovery phase of research. Other companies are pursuing partnerships with Indian drugmakers. For example, GlaxoSmithKline and Delhi-based Ranbaxy have a drug discovery and clinical partnership covering a wide range of therapeutic areas. Glaxo SmithKline recently announced its collaboration with Indian oncologists to evaluate new cancer treatments in a range of cancer types that are more prevalent in India than in Europe and North America. The first acquisition in the Indian healthcare services industry was that of Lotus Labs (a CRO) by Actavis (an Icelandic generic company with a market cap of USD 2.6 billion) in March 2005.

Other models for the healthcare industry

There are many other examples of services being outsourced, hospital services, for instance, due to the complexity involved and the burdens of related administration work. For example, hospitals in the USA have been relying on outsourcing their emergency departments to Pediatrix Medical Group (a US public company). According to JP Morgan, 67% of all US emergency departments were already relying on outsourcing in 2004.

↗

Figure 4 Source: L.E.K. Consulting

Time needed to deliver a drug

The average time from the pre-clinic to the commercialization stage has increased from 11.6 years in the 1970s to 14.2 years in the 1980s, and is still high today.

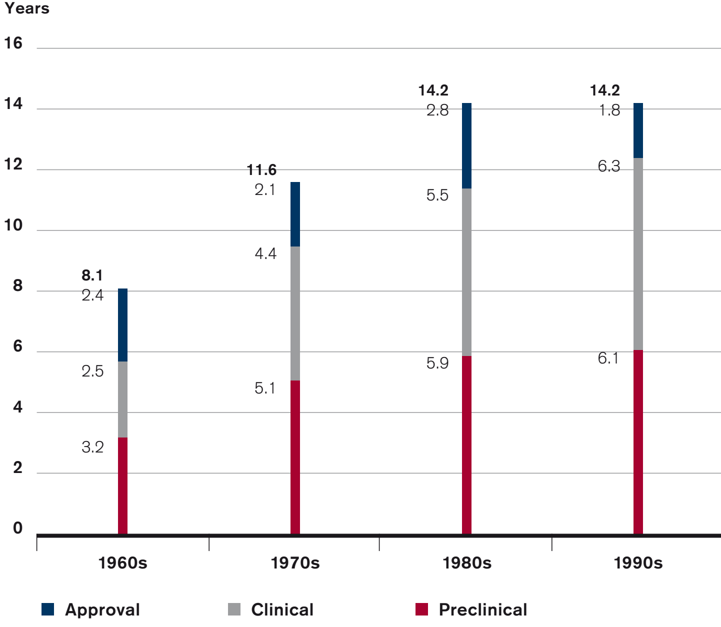
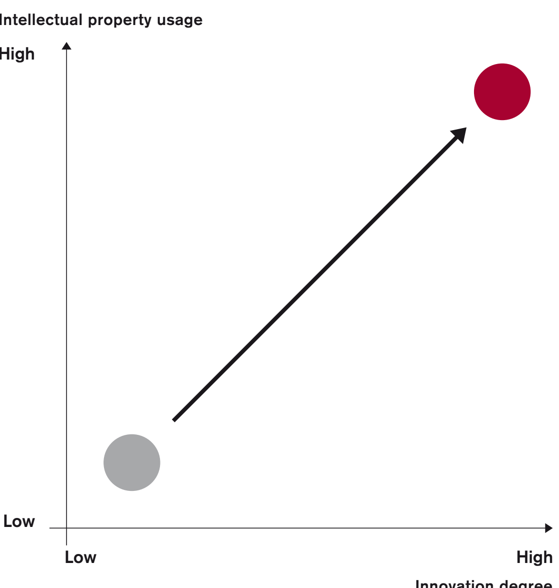


Figure 5 Source: Credit Suisse

From BPO to KPO in banking

The trend today is for banks to outsource knowledge work as well as business processes, including a number of highly sophisticated jobs that were previously done in Europe or the USA.



● **KPO: No predefined mode of reaching a solution** (e.g. FX trading, derivative accounting, sales activity, data analytics, legal services, research)

● **BPO: Planned method of solving a problem issue** (e.g. data processing, call centers, IT applications …)

Financial services: Knowledge Process Outsourcing, the next step in mature banking to fight cost levels

Investing more in the functions that drive market success and less in non-distinctive areas that can be executed better and cheaper by externals is vital, especially when competition in banking is sharp in the USA and Europe and customers are becoming more selective and price-sensitive. Financial companies started to outsource to protect operational margins and minimize capital investments. Deloitte estimates that the global financial industry could reduce its annual cost base by up to USD 16 billion – trebling current savings of around USD 5 billion. The average scale for offshoring is currently 3.5% of global headcount – far less than the 6.7% average reported by top performers. Most banks started to use captive outsourcing for their back offices and processing operations. Non-captive outsourcing mainly involves technology issues. Today the trend is towards knowledge process outsourcing, which includes high-qualification jobs formerly performed in the home markets.

JPMorgan – leading in knowledge process outsourcing in investment banking

JPMorgan currently employs 4500 employees in Mumbai. The JPM Global Service Center is a typical business process-outsourcing unit. Within two years' time, JPMorgan wants to double its staff in India to 9000 with an average of 30% university degrees headquartered new in Bangalore. The new businesses include sales functions, foreign exchange trading, credit derivatives and structured product accountants. This is a clear shift towards growth in highly sophisticated jobs, formerly focused in the USA or good old Europe. Two years ago, JPMorgan was one of the first banks to hire 35 equity researchers in India to support its Wall Street operations.

In comparison to the USA, salary costs are 70% to 80% lower in India – but increasing fast. Education levels in Bangalore are exceptionally high and, according to some studies, staff loyalty is better than in the USA, but the turnover rate is also clearly rising. US investment banks currently employ 6000 staff in India according to AT Kearny. The number is expected to increase fourfold by 2010 – in 5 years' time! Others will follow, as investment banking is a global business and pricing is key. With this development, the controlling efforts and compliance efforts will increase and might limit the overall effectiveness of the process. So overall, business costs and related risks must be taken into account when evaluating such decisions.

ABN Amro is one of the most aggressive banks in business process outsourcing, reducing costs with its Group Shared Services (GSS) initiative. ABN Amro is targeting cost reductions of EUR 600 million in 2007 and EUR 750 million in 2008. It has contracts with five IT vendors (IBM Infosys, Tata Consultancy Services, Accenture, Patni) for the next five years for a total value of EUR 1.8 billion. The corresponding IT staff reduction will be 1500 FTE or 30% of IT staff over the next 18 months. The multi-vendor approach increases the cost efficiency of the bank and significantly improves agility.

Citigroup is pursuing a different strategy and has recently bought control of one of its major outsourcing partners, e-Serve International, for USD 126 million. This move might be driven by further regulatory fears. E-Serve has 4500 employees and provides typical business project outsourcing functions.

Figure 6 Source: Deloitte

Pure captive outsourcing is losing ground

Companies are tending not to use wholly owned subsidiaries, known as "captives," as much to outsource knowledge and business processes. Instead, they are turning it over increasingly to local providers in emerging markets.

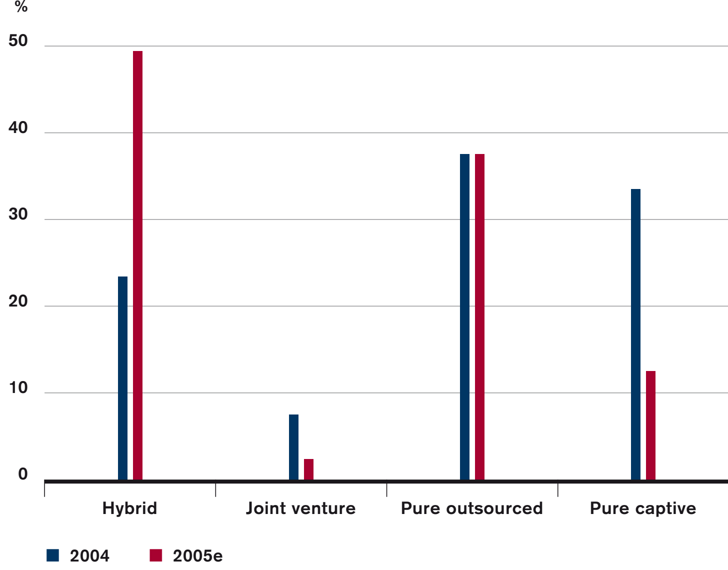
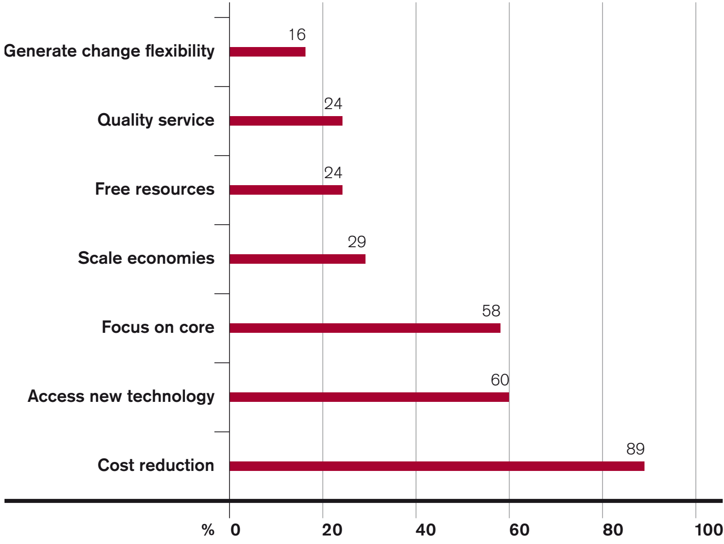


Figure 7 Source: European Central Bank 2004

EU banks' motives for outsourcing

Competition in banking is intense, and customers are becoming more selective and price-sensitive. Banks need to be more flexible, provide more information services and sophisticated products – all at a low cost.



The possible winners and losers

The winners will be the countries attracting the high-quality outsourcing jobs, such as India or Czech Republic, due to the ensuing economic growth and increase in wealth, as well as the companies achieving above-average profit growth on strict cost management. Profiting on the banking side are companies with effective cost-efficiency programs.

Automotive: KPO is a worry, but still needed to survive

The biggest fear of new entrants in emerging markets like China is the loss of knowledge. Early market entrants like Volkswagen in China were very restrictive in bringing their know-how into any joint ventures. In 1984, Volkswagen introduced the Santana model, which is still produced as a low-cost car in China, but failed to keep up with newer products containing the latest technologies introduced by competitors such as Toyota or Hyundai. This turned out to have a boomerang effect as Volkswagen's market share in the fastest-growing car market on earth fell back from more than 50% to less than 20%.

For the first time, Volkswagen recently announced that it is fully developing a new car in China for the local market with export potential. The planned successor, which will be a combination of Jetta and Santana, is unlikely to start selling before 2009. This puts it at a clear disadvantage to its competitors, although this should be partly offset by the introduction of the Skoda Octavia. One example of very progressive knowledge outsourcing is Continental. The tire manufacturer is collaborating with universities in the Czech Republic and the Philippines to provide a development platform for locally specialized engineers. The university courses are designed to meet the specific needs of Continental Tires and will provide the company with future innovation at a reasonable cost.

There is an undefined number of small companies in emerging markets doing research and development that have serious potential to sell their results to large global companies able to upscale. A taste of innovation was displayed in October 2004, at the Challenge Bibendum in Shanghai. More than 43 Chinese-developed vehicles with alternative fuel technologies shared the platform with international competitors. Innovations like the Habo, fueled not by gas but hydrogen peroxide and developed by Habo Chemical Technology Co, have some very interesting components. The car was developed within a very short time period and is based on a commercial Volkswagen sedan. Habo is an independent company, with several registered patents for sale that might even interest companies in developed countries.

Becoming specialists to defend technology leadership

Despite the growing range of models, both carmakers and suppliers have to focus on core competencies while outsourcing non-core activities to third parties in order to increase efficiency and ensure that they have sufficient funds available to develop new products. Carmakers have also turned over segments like security technology to their suppliers, since the regulations and specifications are the same for all manufacturers. Becoming specialists is the only way for western car manufacturers to maintain technology leadership. ←

In our August 2005 issue of Global Investor, we had already alluded to the fact that investors are increasingly directing their focus toward the telecommunications sector in the emerging-market countries, particularly the growth opportunities in Africa. Especially amid a generally favorable stock-market environment, interest in telecom companies is also likely to prevail in 2006, with the emerging nations as the focal point of business. There are several reasons that speak in favor of this premise.

Uwe Neumann, Equity Analyst, Technology

Mobile telecom in the emerging countries – the success story continues in 2006

→ It is common knowledge that market penetration in the emerging countries is still generally very low (see Figure 1) and, as such, growth in the customer base is disproportionately high compared with the regions of Europe, Japan and the USA. In view of the low income levels, however, doubt could arise as to whether market penetration can continue at the same pace as in the past. In this regard, the trend in sales prices for mobile phones plays a decisive role. In the emerging countries, for example, telecom companies do not usually pay subsidies to customers for mobile phones when entering into service contracts. Normally, 95% of the customer base has service contracts with prepaid cards. But this is an aspect that offers promise. In our opinion, the potential for decreasing mobile handset prices has been underestimated. While in Europe, the average price of a mobile phone is EUR 150, the competition, process optimization and economies of scale among handset manufacturers could push the price of standard mobile phones in the low-end business down from USD 40 to USD 30 this year. Moreover, the secondhand market should not be underestimated, where downward pressure on prices will likely continue. This trend should pave the way for access to mobile telecommunications for even broader segments of the population in the emerging countries.

Mobile handsets as a means of transacting payments

A second, less-recognized aspect that could accelerate market penetration and provide additional revenues for telecom companies operating in the emerging countries is the growing function of utilizing a mobile phone as a “digital wallet,” as well as the fact that SIM cards can be loaded with ever-smaller amounts of money. Since the banking and payment systems in many emerging nations are just rudimentary, new telecom product offers – for example, ePIN and micro-prepayment services (e.g. a service called “Tigo cash”) offered by mobile phone maker Millicom – are sparking the

interest of more and more customers. Users can effect day-to-day payment transactions in small amounts simply with the corresponding value of the call time loaded on a mobile handset: the buyer transmits the amount to the seller via SMS and/or vice versa.

Mobile people move North and "mobile money" moves South

In the USA, transmitting money via mobile phone could become especially popular with foreign workers there, preferring this service to send funds to their relatives abroad in Central and South America, instead of through the more expensive bank payment system. In 2004, the average cost of remitting USD 200 to Central or South America was USD 7.90 **(see Figure 2)**. The transaction via mobile networks for small amounts like this is by far cheaper. Meanwhile, according to statements from network operators in these regions, "substantial" amounts of money have already been transmitted via mobile phone networks. However, compared with the total amount of remittances of USD 45 billion from the USA to Central and South America (source: Inter-American Development Bank), these amounts still seem to be very low. In addition, since for the time being third-party services are managing the transactions and the "Airtime credit" is used for day-to-day shopping rather than for telephone calls, this does not generate greater revenues for telecom service operators. However, it underscores the growing significance of mobile handsets as a medium and the importance of telecom contracts. Mobile service providers could come to a point where they act like a bank, benefiting from the "virtual money" in their networks.

Investors are increasingly seeking alternatives

The lack of alternative investments in the developed countries could constitute a third reason for the continuation of the success story with respect to investments in mobile telecom stocks in the emerging-market nations. In the wake of the strong consolidation of the mobile telephone markets in the USA and Europe, as well as the wave of mergers and acquisitions, pure mobile telecom shares that are still trading on stock exchanges are now quite scarce in these regions. This is exemplified by the acquisition of O2 plc by Telefonica, in addition to the buybacks carried out by the parent companies Telecom Italia and France Telecom of their respective mobile telecom subsidiaries Telecom Italia Mobile and Orange. Hence, investors are increasingly seeking alternatives outside the US and European regions.

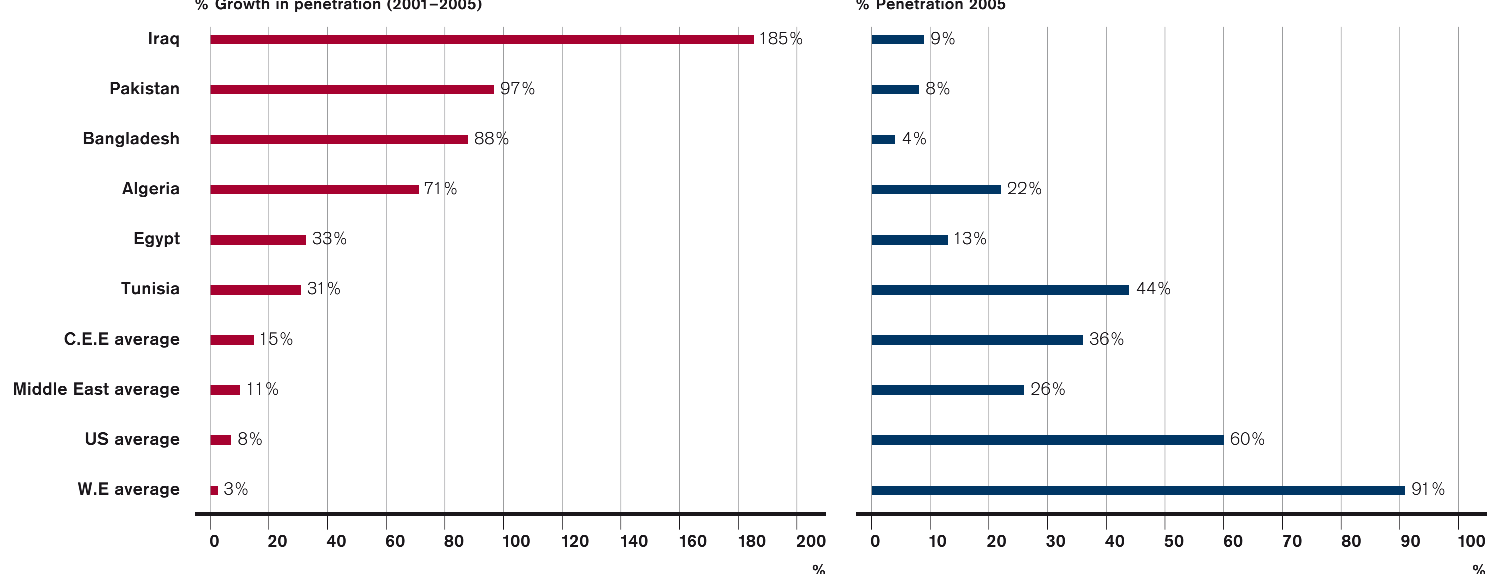
Takeover speculation spills over to emerging countries too

In particular, the search for growth by established European telecom companies also indicates that they will attempt to expand operations in the emerging countries. In October 2005, Vodafone boosted its stake in Vodacom (South Africa), which led to a revaluation of African mobile telecom assets. As a result, the share prices of companies such as South Africa-based MTN or Telekom South Africa, which hold strong market positions throughout the entire African continent, have advanced by up to 20%. We expect further activities along these same lines in 2006, particularly in the Middle East, South America or Africa. The stock prices of newly

Figure 1 — Source: Orascom

Market penetration in selected emerging markets

Since market penetration in the emerging countries is still generally weak, established telecom companies are likely to look toward these countries in an attempt to increase their customer bases. Growth and earnings prospects for local operators are still strong.



listed telecom companies such as Investcom (IPO in October 2005) or Millicom (already established as a listed company for some time) will likely be driven not only by speculation surrounding growth, but by acquisitions as well.

Valuations high but growth prospects strong

The growth story of these telecom operators in the emerging markets is not a new one. In 2005, average share prices were up 20% to 100% at the peak level. Therefore, compared with European or US peers, valuations are not cheap. The average enterprise value of indexed companies is 3 times sales compared with 2 times sales for European peers. However, due to relative benign competition and to the fact that 93% of the mobile customer base are pre-paid customers (no subsidies for handsets), EBITDA margins are on average 10% higher than in Europe. Taking the higher profitability into account, which should remain at a high level, average P/E ratios of 18.5 for 2006E and 14.7 for 2007E are justifiable **(see Table 1)**. Especially when valuations are adjusted for growth expectations (CAGR 05 – 08E), we see further upside potential for these stocks. In terms of PEG ratios, Investcom seems to be the cheapest stock, followed by Vodafone Egypt, Mobinil, Orascom and America Moviles. With a PEG ratio of 1.41, Millicom seems to be the most expensive among our selected stocks. However, due to its very attractive mobile asset portfolio in Latin America, Africa, the Middle East and Asia (Pakistan) the company should attract the most suitors. ←

Figure 2 Source: Inter-American Development Bank

Cost of sending remittances to Latin America

Transmitting money via mobile phone could become especially popular with foreign workers in the USA when they send funds to their relatives in Latin America, instead of through the more expensive bank payment system.

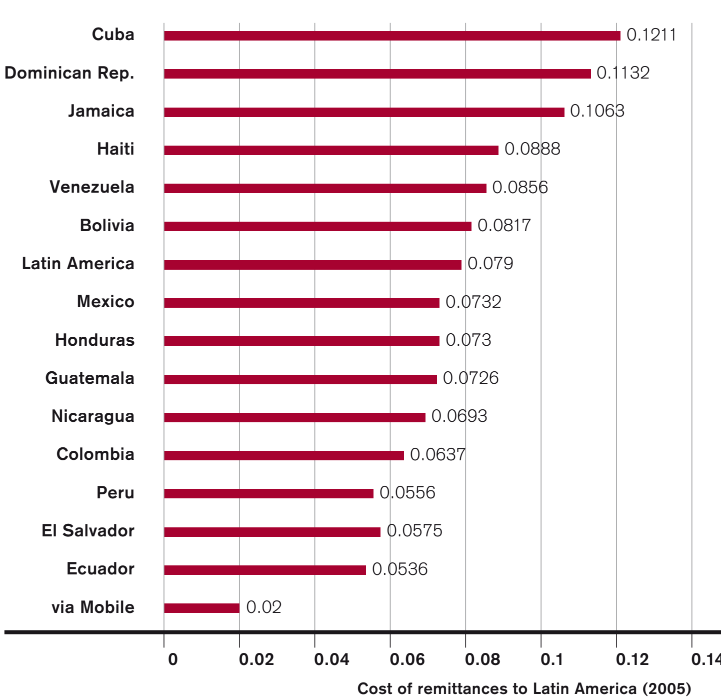


Table 1 Source: Inter-American Development Bank

Selected telecom stocks in emerging markets

The growth story of telecom operators in emerging markets is not new. Valuations are not cheap, but profitability is higher than in Europe. In view of the growth expectations, we see further upside potential for these stocks.

	Bloomberg	Currency	Price on 16/01/06	EPS 06E	P/E 06E	EPS 07E	P/E 07E	EBITDA CAGR 05–08E	PEG ratio
America Moviles	AMXL MM	MXN	17.72	0.62	28.58	0.82	21.61	26.4	0.82
Millicom	MICC US	USD	29.54	1.02	28.96	1.695	17.43	12.4	1.41
Orascom	ORAT EY	EGP	712	42.59	16.72	49.21	14.47	18.8	0.77
MTN Group	MTN SJ	ZAR	5760	435	13.24	518	11.12	14.5	0.77
Investcom	INVT LI	USD	15.6	0.84	18.57	1.06	14.72	26	0.57
Maroc Telecom	IAM MC	MAD	109.7	7.68	14.28	8.16	13.44	14	0.96
Mobinil*	EMOB EY	EGP	214	17.53	12.21	20.53	10.42	15.4	0.68
Vodafone Egypt	VODE EY	EGP	214	7.32	14.48	9.81	10.81	17.6	0.61
Telkom South Africa	TKG SJ	ZAR	141.5	15.67	9.03	16.24	8.71	10.5	0.83

* 36.3 % owned by Orange and 31.3% owned by Orascom

Some countries labeled as emerging markets present characteristics more similar to developed markets, but are still valued at steep discounts. For example, South Korea trades at a discount of 25% to the euro zone. Its market has risen strongly in 2005, which we see as the starting phase of a medium-term re-rating, helped by higher economic growth and solid fundamentals.

Lars Kalbreier, Head of Equity Trading Resarch
Cédric Spahr, Equity Strategist

Fine line between some emerging and developed markets

→ Investors tend to think in established boxes. One of these boxes applies to emerging markets. However, things change over time, and the boxes should change as well. If one takes a fresh look at the countries in the emerging market box, one needs to ask why some countries like South Korea and Taiwan are still placed in it, when they could arguably be placed in the developed market box. This is even more so, since South Korea joined the OECD in 1996. Let's take a closer look at South Korea, which is still part of the MSCI emerging market index. While many investors still consider South Korea to be an emerging market, the structure of the economy shows a different picture. There are more computers per inhabitant in South Korea than in Italy, the per capita mobile phone usage is higher than in Germany, and the percentage of the population employed in the service sector is in line with the European average. Moreover, the average literacy level is as high as in Europe, while more people are living in cities and benefit from higher education. From the macroeconomic point of view, South Korea fares very well compared to major developed countries. Its GDP per capita is higher than that of Greece or Portugal, which are both included in the MSCI developed market index (see Figure 1).

Moreover, South Korea's economy is showing strong momentum, and has surpassed the performance of the euro zone economies, growing at more than double the pace of the euro zone in 2005 and expected to grow twice as fast in 2006, thus starting to close the wealth gap to major euro zone countries such as Germany and France, as highlighted in Figure 1. South Korea's finances are also in better shape than those of more established economies. Foreign debt to GDP is currently at 19.3% versus 66% for Germany and 108% for Italy. Moreover, unlike countries such as France, South Korea's current account shows a healthy surplus. Finally, South Korea has much more favorable demographics compared to major European economies. Indeed, the demographic time bomb that is about to hit the euro zone is less of an issue in South Korea, where the population is younger and still growing (see Figure 3).

Possible re-rating of South Korea and others

All this points to a possible re-rating of South Korea and other candidates from emerging markets into the developed market indices in the medium term. A re-rating is likely to provide a strong boost to Korea's stock market, as the amount of global funds allocated to developed markets is substantially larger than the amount allocated to emerging markets. Historically, countries leaving the emerging market indices and switching into developed market indices have strongly outperformed in the process. For instance,

↗

Figure 1 Source: Datastream

Annual GDP per capita

South Korea›s economy is showing strong momentum, and has surpassed the performance of the euro-zone economies, growing at more than double the pace of the euro zone in 2005.

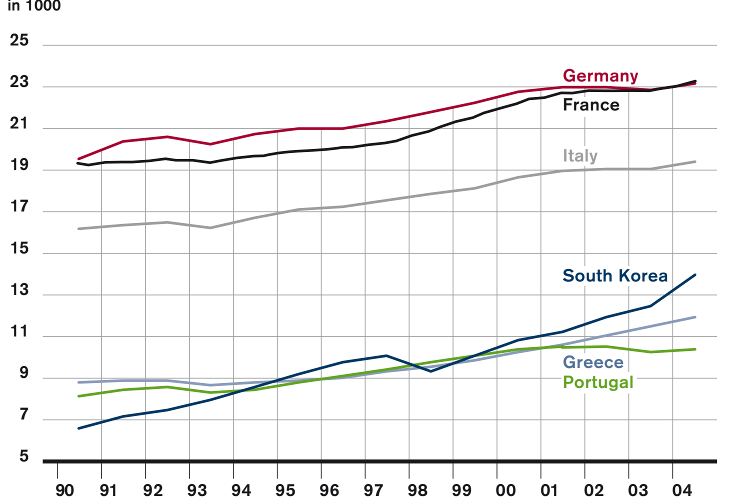
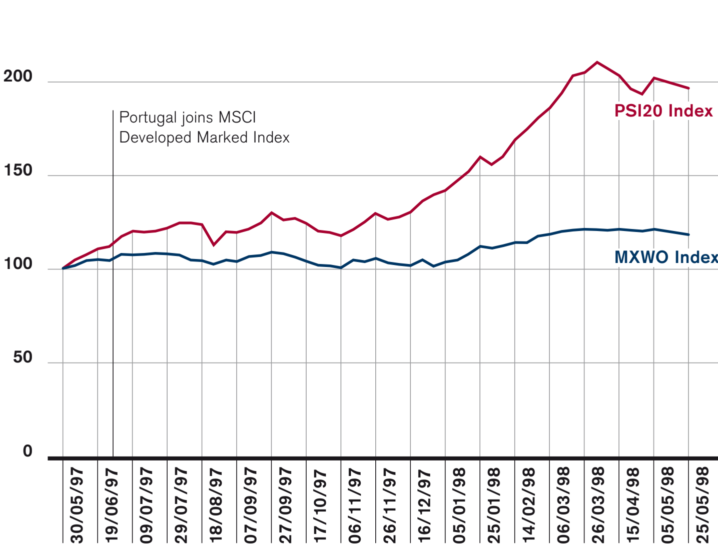


Figure 2 Source: Datastream

Performance of Portugal after joining the MSCI Developed Market Index

Portugal became one of the best-performing markets worldwide in the year it left the MSCI Emerging Market Index to join the MSCI Developed Market Index.



Portugal became one of the best-performing markets worldwide in the year it left the MSCI Emerging Market Index to join the MSCI Developed Market Index **(see Figure 2)**.

South Korea's strong economic fundamentals have already led to a re-rating of its debt. S&P has recently upgraded South Korean debt to A from A– in July, and Fitch put the country on positive watch in September. However, when one takes a look at the equity market valuations of these countries, one wonders why they are still trading at a discount to developed markets. For instance, in South Korea, the market trades at a discount of 25% on a forward P/E level versus the euro zone **(see Figure 4)**, despite its similar economic structure and stronger economic performance.

As investors start re-rating emerging markets like South Korea, the higher risk premium incorporated in valuations is likely to disappear. We believe this has begun and will continue to unfold over the next 2–3 years.

Another important point is that the establishment of a local base of institutional and retail investors constitutes an important characteristic of most converging stock markets.

- Greater financial and economic stability and the increasing affluence of the middle class allows the creation of a structural demand for investment products such as mutual funds.
- This phenomenon is still at a very early stage in many countries – Koreans still keep more than half their wealth in bank deposits.
- Countries introducing or extending pension systems for a large share of the population are creating the base for an institutional asset management industry, which tends to dampen the volatility of the local market.
- Professional asset management usually leads to a larger equity allocation in investment portfolios.

Corporate pensions for all company employees

Anecdotal evidence from countries, which have successfully established a pension system such as Chile, Poland and the Czech Republic suggest that strong institutional demand for equities supports higher market valuations. Those three markets have traded on balance at a premium to global emerging markets since 2002. In Korea, the National Pension Fund will raise its allocation to equities and foreign securities from 10% to 22%. Based on current assumptions, the Korean National Pension fund should own 7% of domestic equities by 2009, from 2% now. In terms of corporate pensions, Korea has now extended corporate pensions to all company employees.

Figure 6, which illustrates the relationship between investment assets as a share of GDP and stock market valuation strongly suggests that both factors are positively related. Korea looks especially inexpensive on this metric, probably due to the fact that the allocation of total assets to equities remains quite modest. Hence, the development of Korea's pension system combined with the attractive valuation of Korea's market, are likely to provide a further boost to Korea's stock market. On the back of all the above factors, we would advise investors to gain exposure to selected emerging markets that are likely to benefit from a re-rating in the medium term. South Korea is a good example. Other emerging market countries like Taiwan are also likely to benefit from a re-rating from emerging market status to developed market status. ←

Figure 3 Source: The Economist

Demographics

Increasing population and urbanization is leading to greater consumption and economic growth, helping South Korea to close the wealth gap to countries such as Germany and France.

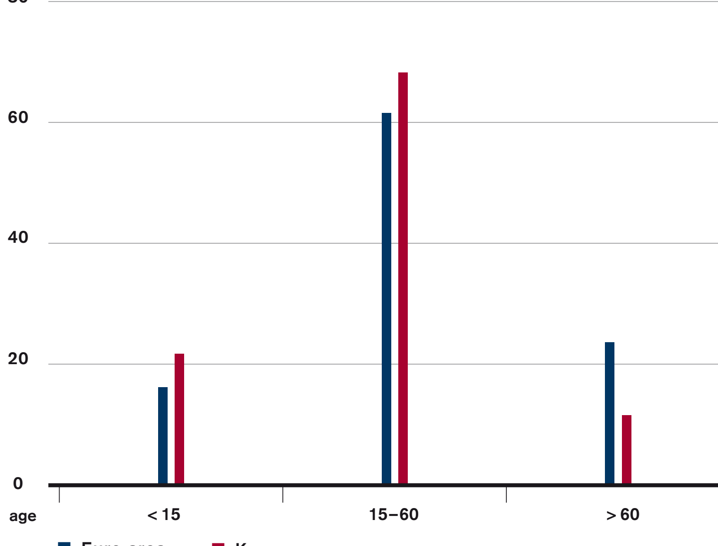


Figure 5 Source: Datastream

South Korea versus Portugal and Greece in terms of relative P/E

Comparing the price-earnings ratios of different countries, one can't help wondering why South Korea is trading at a discount to some developed markets.

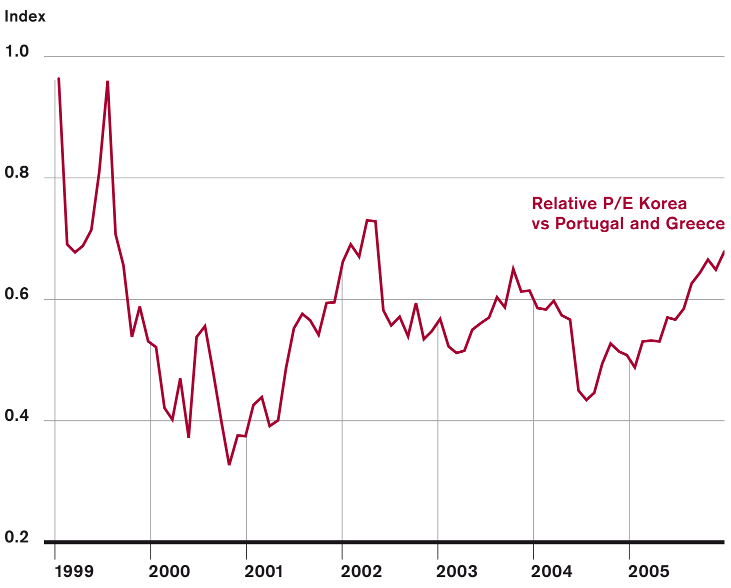


Figure 4 Source: Bloomberg

Performance growth and 12-month forward P/E

In South Korea, the market trades at a discount of 25% on a forward P/E level versus the euro zone, despite its similar economic structure and stronger economic performance.

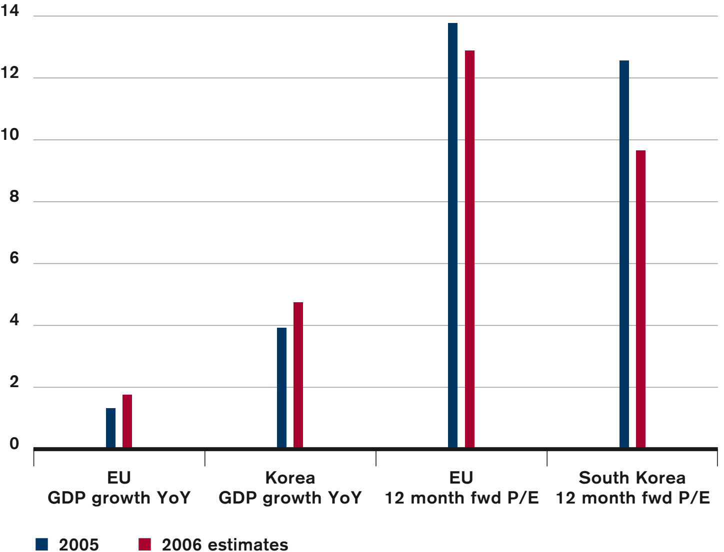
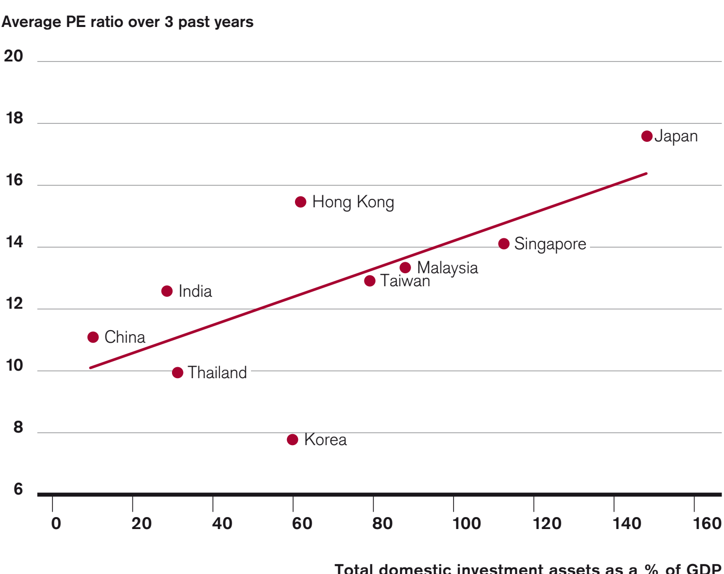


Figure 6 Source: Datastream, IBES, HSBC

Market P/E in relation to domestic investment

The relationship between investment assets as a share of GDP and stock market valuation strongly suggests that both factors are positively related. The allocation of total assets to equities in South Korea is fairly modest.



President Yudhoyono's policies have helped to stabilize the political situation in Indonesia, and are aimed at improving the investment climate and infrastructure. As a result, foreign direct investment flows are on the rise, and the economy is becoming consumption-driven.

Roger Signer, Trading Research Analyst

Indonesia: Are we looking at a turnaround?

→ Over the last five years, Indonesia has gone through an IMF structural adjustment program (1998–2003), entailing a big decline in its public debt to GDP ratio and base money growth. This has brought down inflation, stabilized growth and reduced the volatility of the exchange rate. Financial sector reforms have enabled the banking system to start functioning again. By 2004, the economy started recovering on a sustained basis through consumption-led growth, as the banking system started lending aggressively to consumers, in contrast to the corporate sector lending that dominated in the pre-Asian-crisis era. Investment spending started to recover firmly in 2005, primarily for replacement capital spending and expansion of existing facilities. Export growth remains anemic due to stiff competition from China and other emerging markets and is unlikely to be a main source of job creation in the next five years. In the pre-Asian-crisis era, exports drove investment spending and job growth.

Looking forward, the outlook for 2006 appears somewhat bleak, with the follow-on effects of the removal of fuel subsidies catalyzing inflation hitting both consumer and investment spending, as nominal interest rates remain high. Defensive sectors such as telecoms, utilities and food may do well in 2006. The main source of growth from 2007 onward is likely to be commodities, financial services, consumer durables and public infrastructure spending. The outlook for the competitiveness of manufactured exports, oil and gas sector reforms, and power sector reforms is still unclear.

Recent political developments are steps in the right direction

In December 2005, 13 months after becoming Indonesia's first directly elected president, Mr. Yudhoyono put three new economic ministers of his choice into office to give new impetus to Indonesia's economy. This move was hailed by foreign investors and is a further victory in the president's battle against Indonesia's old problems: corruption, high unemployment, and separatist violence. Most of these problems have their roots in the General Suharto era and the General's immediate successors did not really manage to step out of this shadow after Suharto's fall in 1998. President Yudhoyono, however, seems determined to fuel the economy by fighting corruption with legal and ethical rules, and by disentangling politics, public service and military. His policy reforms are winning high marks from economists and his approval rating is well above 50%, although some of the measures Yudhoyono has put in place are far from popular. His government, furthermore, is intensifying the campaign against extremism in the most populous Muslim country. So, the questions that come up are: is this the turnaround of a country with 220 million citizens, representing a great investment opportunity? Is it time to get back into Indonesia?

FDI flows have picked up

Foreign direct investment (FDI) flows have picked up to USD 2.6 billion year-to-date, which is the highest amount ever in the post-Asian crisis era and compares to USD 1 billion in 2004 and USD –597 million in 2003. Prospects in the medium term are unclear. The main FDI flows may go to the power, oil and gas, pharmaceutical and consumer staples sectors. Much will depend on the president's policy reforms designed to improve the investment climate and infrastructure, which have been slow so far. The key test will be 1H 2006; if momentum doesn't pick up, then the prospects for FDI may not be that encouraging.

Catalysts for growth in 2006: Sector beneficiaries

Key catalysts for growth in 2006 evolve around (1) increased infrastructure spending; (2) seeing headline CPI inflation brought rapidly under control; (3) interest rates peaking soon; (4) the exchange rate stabilizing; (5) the newly appointed economics team being able to begin to rapidly improve the investment climate; (6) subsidies for education and health; (7) continuation of the cash transfer scheme to the poor; (8) increased bank lending to SMEs; and (9) investment in rural infrastructure.

After the economy fully absorbs the negative impact from higher fuel prices, the following sectors should benefit (from earliest cycle to the latest cycle):

- Power and energy-related sectors: Reduced fuel subsidies mean higher energy prices. The demand and prices for alternative energy such as coal and natural gas should go up. It is more than likely that part of the investment cycle will go to the power sector as Indonesia is short of power at the moment.
- Construction and building materials: Public spending should drive construction works and demand for building materials (i.e. cement). Better infrastructure may also boost property prices to some extent.
- Banks: Construction should drive loan growth. Lower inflation numbers may mean higher net interest margins.
- Consumer / quasi-consumer (wireless companies): Eventually grassroots spending power should improve in the wake of public spending.

Specifically, as a hedge against interest rates and oil prices, we would focus on companies that benefit from high interest rates and oil prices. However, anticipating a rebound in consumption and investment activities in the second half of 2006, we would focus on sectors like telecoms, automobiles and food.

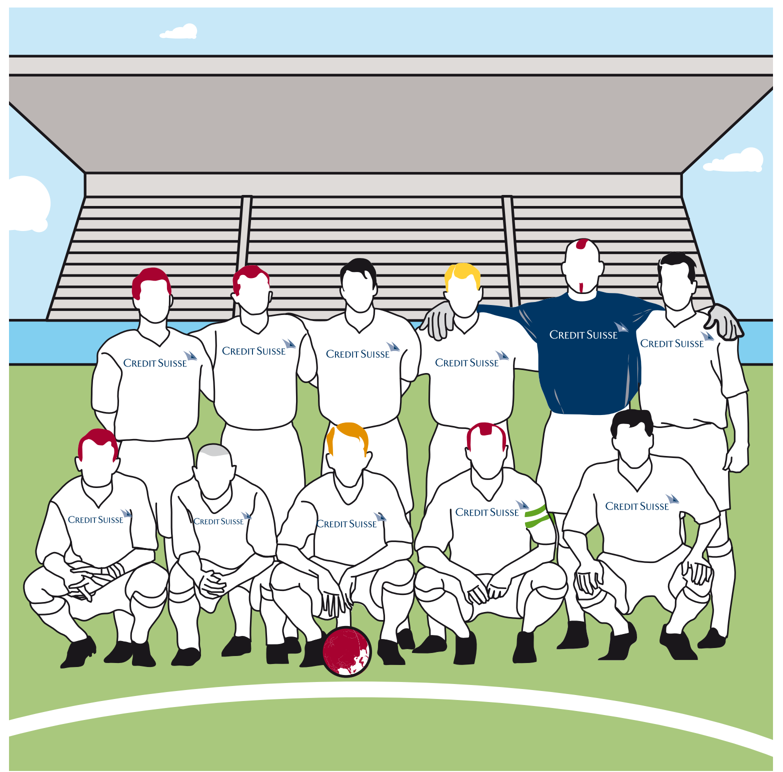
The foundations for growth have been laid. Can Indonesia sustain political reform and increase economic momentum?

Time to get back in? We would wait a bit longer

So the question remains – is this a good time for a re-entry into the Indonesian market? The answer is "perhaps." Those with a strong risk appetite may find the current asset prices appealing. However, there could still be some macroeconomic volatility to come, so those with less robust constitutions may prefer to wait a bit longer. One way to play the Indonesian asset recovery at this point in time could be via Indonesian local currency bonds.

Overall, Indonesia has a lot of bad news priced in. Moderating inflation towards the end of the year and a peak in the rate cycle perhaps in the first quarter could well drive the market. Indonesia's P/E of 9.1 x is the lowest in Asia ex. Japan and is now close to its two-year rolling average for the first time in 18 months, having traded up to two standard deviations above average during this period. It is true that this P/E attractiveness is still subject to macro earnings risks, so it is worth doing a bit more valuation work. Indonesia's P/B relative to Asia ex. Japan has compressed sharply during 2005, taking it back to the five-year average.

Furthermore, from a political perspective, it might be wise to observe whether the president's policy stays firmly geared towards pushing the economy and tackling security issues. If the president's measures do not actually succeed in addressing Indonesia's major problems, an investment in this huge country might not be profitable. However, the foundations for growth have been laid and investors should be ready to jump in if the turnaround proves sustainable. So, keep an eye on Indonesia! ←



A look at the new Credit Suisse logo reminds us of the sails of a ship heading for new horizons and signifies direction and purpose. The Global Economic and Strategy Group is a global team of senior economists, strategists and investment professionals.

Ross Hewitt, Research Editorial

One brand, one global team, one global know-how

→ Credit Suisse is now one bank, bringing together a single pool of talent and resources to meet the needs of clients across the three areas of Investment Banking, Private Banking and Asset Management. By sharing the expertise, talent and synergies that each business unit has to offer, the bank can better provide customers with one voice that they can depend on and one financial institution that they can turn to and recommend to others. Client needs are evolving and so is Credit Suisse.

As part of the One Bank integration strategy, the Credit Suisse Global Economic and Strategy Group (GESG) now meets once a month to help keep a finger on the pulse of markets and businesses around the world. Here, some of the most accomplished minds in the world of economics and finance discuss investment trends and macroeconomic themes during a conference call chaired by Giles Keating in Zurich. The GESG comprises senior economists, strategists and investment professionals from the company's three divisions and provides essential input toward formulating the investment policy and proposals developed in the Investment Committee Report and key publications such as Research Weekly, Research Monthly and the Global Investor. Our clients across all divisions in all regions will benefit as the GESG plays an important role in allowing relationship managers, salespeople, bankers and senior management to provide clear and consistent investment advice and financial guidance. ←

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Chief Economist of Credit Suisse Group

Alois Bischofberger joined the Macroeconomics department of Credit Suisse in 1973. He became Head of Industrial Countries and Capital Markets in 1978 and has headed the Economic Research department since 1986. Mr. Bischofberger holds a Masters degree in Economics from the University of Zurich, Switzerland. ←

Mark Burgess, London

Head of Equities, Asset Management

Mark Burgess is responsible for the management of all equities in Europe, Asia Pacific, all multi-country equity products and balanced portfolios. Prior to joining CSAM in 2004, he held a number of senior positions, including Head of Equities at Insight Investment, Chief Investment Officer of American Express Asset Management International, London and Chief Investment Officer for Colonial First State Investments. Mr. Burgess holds a Bachelor of Commerce (Hons.) from Melbourne University. ←

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Leveraged Finance Strategist, Investment Banking

Prior to joining CSFB in November 2000, Sam Derosa-Farag was Head of Fixed Income Research at Donaldson, Lufkin & Jenrette. Before that, he was Head of High Yield Portfolio and Strategic Research at Chase Securities Inc. Previously, he spent nine years with CSFB, where he developed and managed the High Yield Quantitative & Portfolio Strategies Group. Mr. Derosa-Farag is a member of Institutional Investor's All-American Fixed Income Research Team, ranked for strategy and economics in 1993 through 2000. He received an M.Sc. in Computer Science from Boston University and a B.Sc. in Physics from Cairo University. ←

Jonathan Garner, London

Head of Emerging Equity Markets Strategy, Coordinator of China Research, Investment Banking

Prior to joining CSFB in November 2000, Jonathan Garner was Head of International Equity Strategy at Donaldson, Lufkin & Jenrette, and before that Head of Global Emerging Market Strategy & Economics at Robert Fleming Securities. He was a faculty member in the Economic Department of the London School of Economics in the early 1990s and has worked as a consultant to the International Monetary Fund and the African Development Bank. He is the author of the "Rise of the Chinese Consumer: Theory and Evidence" published by John Wiley & Sons Limited in October 2005. Mr. Garner received his M.Sc. in Economics from the London School of Economics and his M.A. Hons. in Politics, Philosophy & Economics, First Class, from Oxford University. ←

Andrew Garthwaite, London

Head of Equity Strategy, Investment Banking

Andrew Garthwaite joined Credit Suisse in September 2000. Between 1987 and 2000, he worked for Warburgs (SG, SBC, WDR and then UBS), where he was Head of Asset Allocation since 1991. Currently, he is ranked number 1 for both asset allocation and sector selection by Institutional Investor and, for most of the past 14 years, has been a ranked analyst. ←

Bunt Ghosh, London

Head of Fixed Income and Economics Research, Investment Banking

Surojit (Bunt) Ghosh became Head of Global Fixed Income Research & Economics at CSFB in 2002. Prior to rejoining the Firm in 1998, Bunt was a Visiting Professor at Queen Mary and Westfield College, University of London. He is currently a member of the Financial Services Authority's (the UK's financial regulator) Central Policy. From 1986 to 1994, Mr. Ghosh was a Managing Director at Credit Suisse with responsibility for all fixed income and foreign exchange research. Prior to joining CSFB in 1986, he was a Research Fellow and Tutor in Economics at Oxford University. Mr. Ghosh has conducted extensive research on developing countries for the IMF, EBRD and the United Nations, including a period of years when he did research for the Economic Commission of Latin America in Buenos Aires. He holds a B.A. in Economics from Antioch College in Ohio and an M.A. in Economics and Econometrics from the University of Toronto. He also participated in the D.Phil. program at Oxford University. ←

Giles Keating, Zurich (Chairman)

Head of Research at the Private Banking division

Giles Keating became Head of Global Research at Credit Suisse Private Banking in Zurich in 2004. An economist by profession, Giles Keating joined CSFB in 1986 to hold various posts including Chief Economist, Global Head of Fixed Income Research and Economics, member of Global Fixed Income Management Committee and Co-Head of the Pensions Advisory and Structuring Group. Giles graduated from Oxford University with a bachelor's in philosophy, politics and economics, and holds an M.S. in Mathematical Economics and Econometrics from the London School of Economics. ←

Joe Prendergast, London

Head of Foreign Exchange Research, Investment Banking

Joe Prendergast is responsible for the production of currency research and derivation of the Firm's global foreign exchange forecasts. Prior to joining CSFB in 1997, Mr. Prendergast was Senior Currency Economist and First Vice President at Merrill Lynch. He has published widely on foreign exchange and international economics in both industry and academic forums. Mr. Prendergast received a B.A. in Pure Economics from University College Dublin and an M.Sc. from the London School of Economics in 1989. ←

Arun Ratra, Zurich

Chief Investment Officer Private Portfolios, Asset Management

Arun Ratra joined Credit Suisse in May 2005. Prior to that, he was Chief Operations Officer and Executive Director Asset Management at Pension Factory N.V. Before that, he held the position of Chief Investment Officer and member of the management team of Blue Sky Group. From 1994 until 1998, he was Regional Manager (North and South America) bonds & equities at MN Services. Arun Ratra completed his Masters degree in business economics, specializing in finance and accounting at Free University, Amsterdam. ←

Neal Soss, New York

Chief Economist, Investment Banking

Neal Soss joined CSFB in 1984. Prior to that, he was with the Federal Reserve Bank of New York. During a two-year leave from the Fed, he was assistant to chairman Paul A. Volcker of the Federal Reserve Board. Mr. Soss has also held various positions in New York State government, including three years in the New York State Banking Department as both deputy and first deputy superintendent of banks. He was also Chief Economist in the office of Secretary to the Governor during the Carey administration. Mr. Soss received his B.A., summa cum laude, in Economics and Spanish from Williams College and both his M.A. and Ph.D. in Economics from Princeton University. ←

Jonathan Wilmot, London

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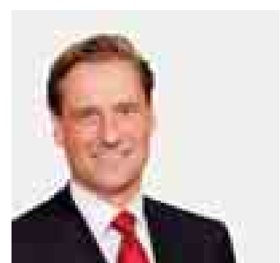
Jonathan Wilmot's work focuses on major secular and cyclical themes in the world economy and their implications for global capital flows and asset prices. Mr. Wilmot travels extensively in the USA, Europe and the Far East, and works closely with the Global Economics and Strategy teams, Proprietary Trading and Sales Coverage Groups. Mr. Wilmot holds an M.A. in Philosophy, Politics and Economics from Oxford University. After graduating in 1976, he worked as international economist at Bank of America and Merrill Lynch before joining Credit Suisse in 1985. ←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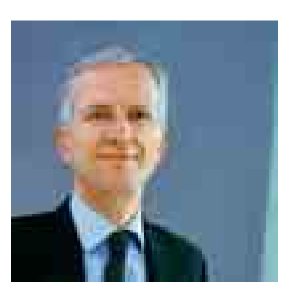
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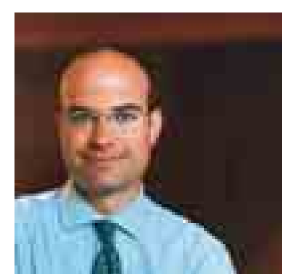
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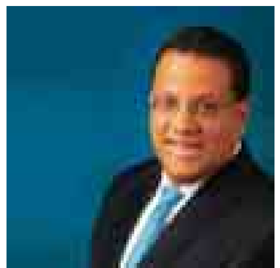
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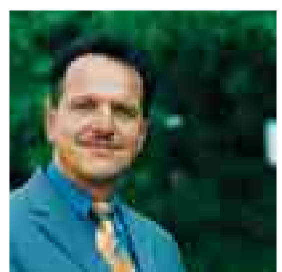
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Uwe Neumann
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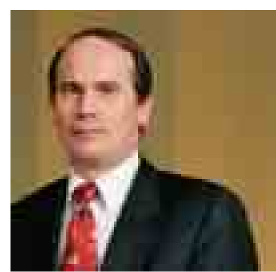
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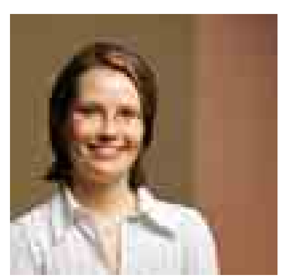
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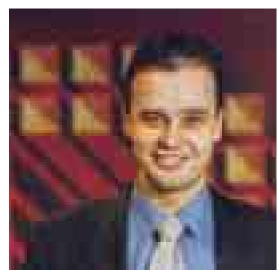
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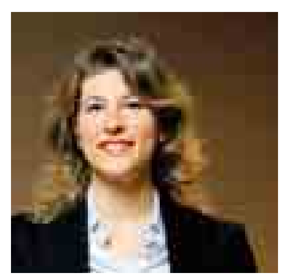
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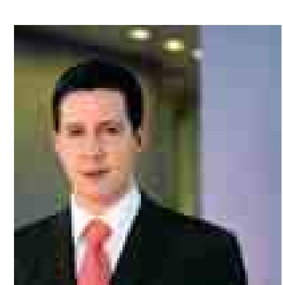
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HOLD	-10%/+10% variation in absolute share price
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Rating allocation as of 11.1.2006	Overall	With investment interests only
BUY	45.88%	46.30%
HOLD	49.18%	48.69%
SELL	4.32%	4.30%
RESTRICTED	0.62%	0.72%

Rating change History

Company	Rating	Date
ADOBE SYSTEMS (adbe)	BUY	since 19.04.2005
ALCATEL (CGE FP)	BUY	since 04.01.2005
	HOLD	since 09.01.2004
	SELL	since 12.09.2003
ASTRA INTERNATIONAL TBK PT (ASII IJ)	HOLD	since 01.12.2005
	BUY	since 29.09.2005
BANK CENTRAL ASIA PT (BBCA IJ)	BUY	since 29.09.2005
BG GROUP (BG/LN)	BUY	since 28.09.2005
	BUY	since 10.05.2005
	BUY	since 18.02.2004
	HOLD	since 28.07.2003
CNOOC (883 HK)	BUY	since 19.09.2005
	HOLD	since 30.03.2005
	HOLD	since 03.05.2004
CONOCOPHILLIPS (COP US)	BUY	since 28.09.2005
	BUY	since 28.09.2005
	BUY	since 27.04.2005
	BUY	since 30.07.2004
HALLIBURTON (HAL US)	BUY	since 28.09.2005
	BUY	since 22.04.2005
	BUY	since 24.01.2005
LUKOIL SP ADR (LKOD LI)	BUY	since 26.05.2005
	BUY	since 07.05.2004
	BUY	since 06.02.2004
MEETIC (MEET FP)	BUY	since 03.01.2006
MICRONAS SEMICOND N (MASN SW)	BUY	since 08.07.2005
	N/R	since 14.06.2005
	HOLD	since 19.04.2005
MOTOROLA (MOT US)	BUY	since 26.09.2003
	HOLD	since 14.01.2003
ROY.PHILIPS ELECTR (PHIA NA)	N/R	since 22.12.2005
	BUY	since 22.12.2005
SAMSUNG ELECTRONICS CO LTD (005930 KS)	HOLD	since 15.09.2005
	BUY	since 17.02.2005
SATYAM ADR (SAY US)	BUY	since 21.12.2005
	HOLD	since 10.11.2005
	BUY	since 04.08.2005
SCHLUMBERGER (SLB US)	BUY	since 24.01.2005
	BUY	since 26.09.2003
TANDBERG TELEVISION (TAT NO)	BUY	since 14.07.2005
TEXAS INSTRUMENTS (TXN US)	HOLD	since 07.12.2005
	BUY	since 08.01.2004
	HOLD	since 10.09.2003
	BUY	since 07.07.2003
	HOLD	since 11.06.2003
	BUY	since 04.06.2003
	HOLD	since 22.05.2003
	BUY	since 14.04.2003
TOTAL (FP FP)	BUY	since 28.09.2005
	BUY	since 25.04.2005
	HOLD	since 06.02.2004
	REST	since 19.11.2003

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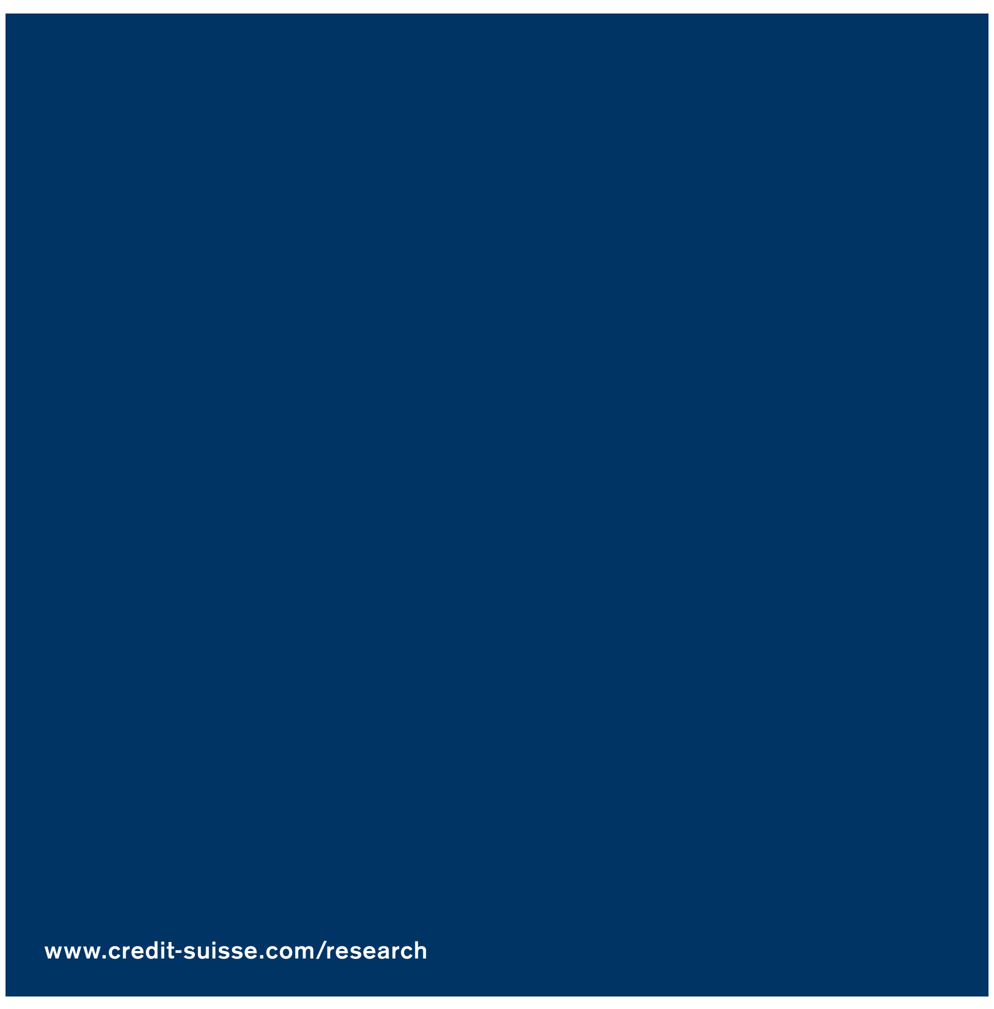

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