

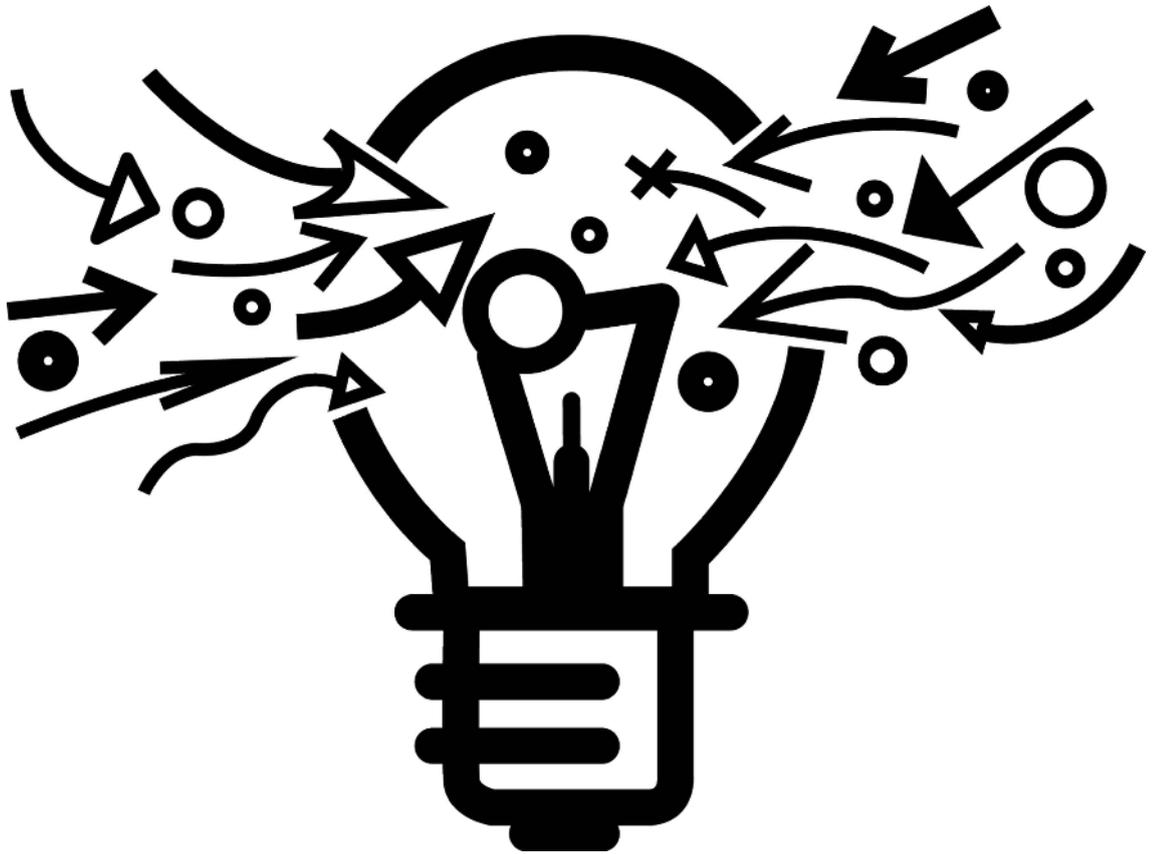


The consolidation of emerging economies brings changes in **Financial Capital**.

A high birth rate and young African population account in part for a growing world population, which brings changes in **Human Capital**.

The new networks of knowledge and use of state-owned data bring changes in **Intellectual Capital**.

## The keys to the new global balance





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# Introduction

In our discussions on what should be the topic for the Bankinter Innovation Foundation 20th Future Trends Forum, Future Trends Forum Experts were intrigued by the issue of sources of economic growth. Indeed the question of which innovations will drive economic growth in the coming decade is pertinent to us all and seemed suitably ambitious for the 10<sup>th</sup> anniversary of the foundation and the 20<sup>th</sup> FTF.

Since the 2008 financial crisis, economic growth in developed economies such as Europe, the United States and Japan has faltered. According to the Economist Intelligence Unit, the U.S. growth forecast for 2013 is just 1.6% while the Eurozone is forecast to shrink by 1.6%, and Japan will grow by no more than 2% in 2013 and 1.2%. Global economic growth has been buoyed largely by emerging economies such as China, India and Brazil. However, with emerging market growth set to slow, global growth for 2013 will not surpass 2.9% down from 3% in 2012, 3.8% in 2001 and 5.1% in 2010. This apparent stagnation is a source of concern for economists, business analysts and policymakers, who continue to ponder which technologies, sectors and paradigms will fuel growth over the next decades.

A series of interviews with experts and opinion leaders helped us to identify trends in financial, human and intellectual capital that characterize the changing economic landscape and could potentially serve as sources of growth in the coming decade. The group of experts assembled in Madrid on June 6 and 7 2013 was in turn tasked with assessing this changing global economic landscape and developing a set of strategies by which mature economies such as Spain could prosper.

Under the rubric of shifts in financial capital flows, Joel Kurtzman, noted the rise of BRIC economies, demonstrated by their increasing holdings of foreign exchange (in 2012 China held nearly US\$3,500 billion, a nearly 3,500-fold increase from 1998). In the context of shifts in human capital flows, Wolfgang Lutz referenced rising global population driven in part by high birthrates and a young population base in Africa. In a presentation on intellectual capital flows, James Boyle highlighted the lack of integration of across scientific networks, while stressing the enormous potential returns associated with freeing up public data.

The overall picture resulting from these discussions was of an evolving world, laden with both opportunities and challenges emerging from fundamental shifts in financial, human and intellectual capital. The United States and Europe have trailed emerging markets and developing economies in their recovery from the 2008 financial crisis. Developing economies will surpass advanced economies in their share of world GDP in 2013, although China has experienced a significant drop in terms of its attractiveness to foreign investors. The structure of the global financial landscape has continued to change as major central banks have expanded their balance sheets, select private equity firms based in London and New York account for 2% of the world's financial resources, and sovereign wealth funds run by highly sophisticated fund managers nearly US\$5 trillion in assets.

With global population set to peak at 9 billion around the end of the 21st century with large population increases forecasted in Africa and aging populations in Europe, China and the United States, the efficacy of education provision will be pivotal. As Wolfgang Lutz asserted, economic growth starts with the people who produce it. If a young work force at the base of the population is highly educated and highly productive, the financial burden posed by an aging population becomes less problematic as the total product produced by the workforce outweighs the costs presented by the dependent population. In addition, according to the Vienna Institute of Demography studies, greater education attainment is correlated with later retirement. In a similar vein, a study carried out by Science concludes that investing in better education rates would in itself help to bring world population growth to more sustainable levels (a difference of a world population of 9 billion compared to 10 billion). Thus, improving educational outputs remains a powerful remedy to impending demographic imbalances and their intrinsic impediments to growth.

Over the past 20 years, the Internet has provided a generous boost to global growth, creating and revolutionizing entire industries. Continued integration across scientific and technological networks could create enormous value by making knowledge and data more widely available. However, significant barriers in the form of overly-generalized intellectual property regimes remain. If the global economy is to benefit from free trade and the efficiencies that result from harmonized knowledge, data inputs have to be appropriately priced (so as not to create barriers to entry) and intellectual property regimes have to be tailored to the specific sector and locale.

Certain opportunities may result in emerging regions such as Africa, China, India and Latin America, although these opportunities will be conditional upon effective mitigation of the various risks that beset the relevant country or region. Africa may benefit from an increasing population as well as the advent of mobile banking and other technologies that transcend limited infrastructure development. China faces the daunting task of managing the privatization of a host of state owned companies as well as battling corruption and continued environmental degradation. Success on these fronts will go far to improve the country's prosperity and long term growth prospects. India and Latin America also face considerable challenges improving their human capital base and spurring continued infrastructure development.

Assessing the potential of each of these capital flow areas—financial, human and intellectual—to become robust sources of growth has been a worthy process for the Bankinter Innovation Foundation. We are pleased to present the reflections and conclusions of the 20<sup>th</sup> Future Trends Forum in this publication.

Fundación de la Innovación Bankinter  
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# 1 Introduction

## 1.1 The GDP and Welbeing



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# Introduction

**Susanne Schneider**

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What kind of global economy will result from the great economic crisis that has so severely hit the Western world, particularly Europe, and from which some people already see the light at the end of the tunnel? What changes can be expected in an increasingly populated planet—especially in developing economies, but also increasingly populated by educated and elderly people? What challenges are involved in the new revolution of knowledge, fueled by a phenomenal increase in collaboration among people and a widespread use of technologies, which make society brim with new ideas and applications, as well as patents and intellectual property rights? And how will Spain emerge from this painful crisis? What can this country do to make the most of its strengths in an increasingly competitive global environment?

For two days (June 6 and 7) over 20 renowned experts in their respective and very diverse fields met in Madrid for the 10th anniversary of the Bankinter Foundation of Innovation to answer these and other questions, and to shed some light on the main underlying trends that will 'reshape' the economic landscape for the next two decades. Particularly, the experts came from different countries and analyzed the future from three angles, which were very consistent with each other: the flow of financial capital, flow of human capital, and flow of intellectual capital. This 3-pronged analysis was eventually applied to Spain in order to outline some roadmaps and recommendations for its economy to bounce back and overcome future challenges—some sooner rather than later.

From the talk at the meeting it is gathered that after this Great Recession—in which the Spanish economy has been stripped to the bare minimum and left with only a rocket-high unemployment rate—nothing will be the same: the world's gravity center will definitely shift towards emerging countries, particularly in Asia-Pacific. This shift was seen coming, but it will now accelerate and have an impact on everything: the direction of financial capital flow, the make-up and transformation of human capital flow within countries, and the intangibles protected by intellectual property rights. This process of converging in developing countries started in the 1990s and has allowed them to increase their

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clout in global investments and savings—they currently hold 46% of the total savings. As a result, half the stock of the world's capital will be found in emerging economies by 2030, according to the World Bank. After crossing and ranking ideas (which are detailed in this report), the attendants came to the conclusion that some of the essential issues to bear in mind include: the spiritual capital, the US energy independence, the importance of state-owned data in the field of IP, the growing prominence of sovereign funds and the possibility of it resulting in the withdrawal from globalization. Of course, many other issues were discussed, as you may read in the chapters on financial, human, and intellectual capital.

Ng Kok Song, the former Chair of Global Investments at the Government of Singapore Investment Corporation, which is one of the main sovereign funds, explained the significance of spiritual capital that inspired enormous consensus and surprise among the audience. On the other hand, this is only logical, since the current financial crisis has been described by some as a moral crisis of the capitalist system, which must reconsider its values and principles in order to avoid more financial turmoil in the future. Less casino-like, speculative capitalism and more productive capitalism. "We must focus on what it means to be human; we're turning our backs on centuries of knowledge about human beings. It is important to transcend one's own ego and to remember that when one holds a position of power, it is first and foremost a responsibility to others. We should analyze how common spiritual values are taught," says Ng. "We need a new type of capitalism, a moral capitalism that brings about a more sustainable world. And I think spirituality must be seen from the point of view of human values," agrees Tan Chin Nam, Chair of the International Advisory Panel of the Media Development Authority and former Permanent Secretary of the Ministry of Employment in Singapore.

Leaving aside the ethical aspects of it and moving on to the field of finance, attendants pointed out the re-emergence of the United States as a genuine power in energy. Fracking is a new, unconventional technology to extract natural gas. It is causing a sharp drop in energy prices in the US economy, which could go from importer to exporter of energy in a few years. It's a revolution through and through. Its first effects are already seen in the relocation of the manufacturing plants of many American companies, which now sense that manufacturing at home is becoming cheaper. This 180° turn will carry great geopolitical implications: relations between the US and OPEC and other oil producers, such as Russia,

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will change, and may even cause currency wars in the long term. Undoubtedly, it will all have an impact on the direction of future capital flows.

At the same time, emerging countries are accumulating a growing mass of millions and millions of foreign currencies that they cannot always invest in their countries—they would not absorb that much and it would create inflationist tensions. So sovereign funds, the state-owned investment vehicles, are concentrating increasingly more wealth as they raise fears due to their ultimate political motivations, since not all of them show transparent management practices and at times make decisions based on geopolitical, or purely political, reasons. Although when all is said and done, their greatest advantage is that they plan for the long-term and avoid herd behavior.

Hence, one of the trends experts envisage more clearly is the shift in power from the private to the public sector, which has taken on most of the former's debt, and that in some countries has led to the nationalization of banks and greater regulation and economic intervention. In addition, there are other phenomena, such as public companies appearing in emerging countries as well as a certain type of state-capitalism in developing countries. This shift has been interpreted by some as a loss of confidence in economic rationality and a clear set-back in business management.

From a financial standpoint—where we are likely to see low interest rates and abundant liquidity in the fierce struggle for greater returns on investments—other factors that may change the scenario must be taken into account. One is climate change, which, if the worst-case scenario comes to being, will demand massive amounts of capital, especially from developing countries. The very real danger of globalization coming to a temporary halt or "de-globalization" was also highlighted. Any sort of paralysis would curb international flow of capital and trade, causing an economic contraction and a rise in unemployment.

The direction of human capital flow will be shaped to a great extent by the rise of emerging markets—namely China and India—and will demand large investments in financial capital to pay for infrastructures in education or health care. Furthermore, it was foreseen that today's world population of 7 billion people will increase up to 9 billion people by the end of the century, at which point the population will start decreasing after centuries of escalating growth. The truth is that over the next few decades the international society will follow different demographic

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cycles at different speeds: the population in areas such as Europe (particularly Eastern Europe) will decrease, while in others, such as Africa, will continue to grow. The population in other countries, such as China with 1.3 billion inhabitants, will plateau in a few years' time to then begin declining, following a demographic maturity pattern similar to Europe's. Education, particularly secondary education and education for women, will play a big role in this. Experts concluded that people are not shapeless masses or simple quantitative units; each of them has their own qualities. Human beings drive growth, the greater their education the greater the economic growth (and probably the more sustainable the growth too). Therefore it is essential to invest in education in order to grow more and more effectively. Even Europe or China have reason to expect that their citizens' greater productivity will compensate for their demographic decline. Even an ageing population, seen by everyone today as a burden on the economy and the public treasury, could have a positive impact.

That is why one of the great upcoming dilemmas is how to educate millions and millions of young people who aspire to higher education, especially in the poorest countries. The massive online courses taught for free by some universities are one potential solution. But their scope and educational impact is questionable. Most attendants also agreed on how skills in the highest demand by business people in the next few years will be digital skills, mental agility, communication skills, interpersonal relations, and the ability to work with a global perspective. Over the next few years we can also expect to see more international circulation of creative talent seeking the best environment to develop their skills and creativity. Cities and governments would have to compete to appeal to the best professionals, regardless of their nationality.

Finally, intellectual capital—described as everything that is intangible or not yet created—is being very much influenced by the global rise and democratization of education and new technologies, and the collaborationist spirit of today's society. Intangible products continue to multiply, along with intellectual property rights and patents. Some experts gathered by the Bankinter Foundation of Innovation maintain that greater public use of the massive data currently accumulated by the state would open up a wealth of businesses and spur economic activity around human capital. From data on the weather to the genome: there is a wealth of public statistics. At the same time, the Internet could serve Science by facilitating the exchange of information among scholars worldwide. This could spur phenomenal economic growth. However, at-

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tendants concluded that excessive intellectual property rights cannot be imposed on intangible assets because they can suffocate innovation and curb experimentation. In fact, the trend to standardize property rights worldwide could be a big mistake.

What can Spanish society learn from all these trends? Where should politicians place their focus in a scenario where emerging countries are moving up the ranks vis-à-vis Western countries, where capital flows are not scarce but are looking for good ideas to render their investment profitable, and where creative classes are willing to set up shop wherever they feel more comfortable to develop their entrepreneurial projects? Far from entering recurring discussions of the likes of "putting pressure on the job market" or "the financial reform," attendants contributed with very creative ideas that—I believe—are quite complementary. Among other measures, by order of significance, they recommended opening data from the Administrations to the public, launching a campaign to galvanize the Spain brand, setting up a program to appeal to investors, creating Peace Corps for young unemployed graduates to acquire international experience, and finally, eliminating all barriers we have built as a country against the arrival of the creative class, that productive class which, many believe, will be the key of the century.

## Another way of measuring progress

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Do all citizens really enjoy a better quality of life when the GDP continuously grows in absolute terms? Does an increase in value of all goods and services produced in a country equal a more robust and sustainable society over time? For years, the GDP—which had become a totem—has been suffering a whirlwind of criticism coming from both the right and left. It does not take into account the deterioration of the environment that generates growth, or the use of potentially limited natural resources, or social inequalities... or—like what the king of Bhutan has upheld for decades—people's happiness. "We have entered a stage where we are reconsidering what works and what doesn't work, not only in Europe or the United States, but basically everywhere. We are all now thinking about the main driving forces of prosperity and what creates an entrepreneurial culture and non-exclusive growth," says Jeffrey Gedin, President of Legatum Institute, which puts together one of the best known well-being indexes. Legatum's prosperity index goes beyond material measurements and takes into account eight dimensions of equal importance: the economy; entrepreneurship and opportunities; governance; education; health care; security; individual freedom; and social capital. The latest results, based on these criteria, show the thriving countries worldwide (regardless of their GDP growth) to be Norway, Denmark, Sweden, Australia, New Zealand, Canada, Finland, the Netherlands, Switzerland, and Ireland. As you can see, all these countries are relatively small but very close-knit, socially speaking.

The economist Simon Kuznets said in 1937 that we should find a standard measurement of wealth production for states, companies, and individuals. After World War II all countries started applying the GDP that he himself had created, but by then Kuznets had already suspected that this measuring tool did not separate quantitative from qualitative growth, or costs from benefits. Other initiatives have gradually made up for this lack of accuracy. For example, since the 1980s the United Nations Development program has published the Human Development Report, including several variables to measure human development: life expectancy, literacy rates, per capita income... In 2009, the former French president Nicolas Sarkozy asked the Nobel Prize Laureate Stiglitz to find other statistics that are more socially-

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oriented for measuring wealth, and to do away with “the religion of figures.” The passion to find different measuring tools goes even further. “The interest in these issues has exploded. There are some two dozen excellent indices similar to Legatum’s that do a very good job,” says Gedmin, while acknowledging that human beings love measuring things, even things that are not easily measurable. “All indices tend to express a point of view that is more intense than others; if the mantra is ‘fighting corruption,’ then it is corruption; if it is ‘corporate freedom,’ then a more limited state and entrepreneurship tend to be the main driving forces of prosperity,” says the president of Legatum. We could make bets, without fear of being wrong, on the short-term future of these statistical experiments: there will be more—and more diverse—social well-being indices, but at some point they will start to condense until some consensus is reached about what works and what doesn’t.



## 2. Flows of Financial Capital

2.1 Globalization

2.2 Climate Change



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# Financial Capital

Ever since the financial crisis erupted in 2008, the waters of capital markets, especially in Western countries, have been very choppy. Central banks from the Federal Reserve to the European Central Bank have cut their interest rates to historically low levels so as to perk up advanced economies that can barely leave this Great Recession behind, being as it is the worst recession of the last 50 years, and seeing how emerging markets—more dynamic and impervious to the crisis—continue to move up the ranks. Given the situation, experts gathered by the Bankinter Foundation of Innovation have a very clear idea of **future capital flows for the next decade and beyond: nothing will ever be the same**, from neither a quantitative nor a qualitative perspective. “After this recession, the worst mistake would be to think the world will remain as it is. We’ll see a different lineup, new forms of international capital, and new innovations,” says Joel Kurtzman, a researcher at the Milken Institute. What kind of changes will there be from such a sharp break with former patterns? Namely, **power will shift from private to public treasuries; and the hand of the state will become more visible**. Emerging economies will soon account for more than half of the world’s GDP, playing a key role in the shift. This re-balancing of powers will bring along a new and surprising role of the US economy in the international arena, thanks to the energy power it is quietly developing that will take it to self-sufficiency in the production of gas and oil. Of course, this scenario will not be free from conflicts and uncertainties that could derail these forecasts—for example, globalization, understood as an accelerated integration of economies, could stall or even retreat, thereby raising barriers or walls between countries.

Experts gathered by the Bankinter Foundation of Innovation have a very clear idea of future capital flows for the next decade and beyond: nothing will ever be the same.

Kurtzman made a general introduction to the section on capital flows. He clearly sees three driving forces behind the disruptive changes awaiting us around the corner: the rapid rise of the US economy as a major energy player; the unstoppable vigor of emerging markets—although it may lose steam at certain points, as is the case with China and Brazil in the past few months—and the new landscape of financial institutions, where sovereign funds will play a decisive role. “The major issue since 2008 is that the amount of energy produced from oil and natural gas in the United States is shooting up because of fracking, a new technology perfected between 2006 and 2007. I see this as one of the main trends that has changed in the last fifty—and maybe even one hundred—years,” said this columnist of The New York Times. It is a revolution in the field

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of energy that, without a doubt, will intensify over time. To give you an example: this year, Washington will import \$400 billion worth of oil. In seven years time, that is, by 2020, this investment will no longer be needed, because the US will no longer need to import. And those \$400 billion will be available for other entrepreneurial or investment ventures. According to most forecasts, the world's first power will start selling energy (which could become a reality by 2020). This is quite a radical change! "This will take us back to the 1920s, when the United States exported energy. This will affect capital flows and investments," says Kurtzman.

**Fracking is hydraulic fracturing, a process of extracting natural gas and oil from shale rock layers.** To fracture the rock and free gas or oil, a pressurized mix of chemicals must be injected. Some of these components end up coming up on to the surface too. It is calculated that the Earth's reserves will last between 100 and 300 years. The United States is the country most actively supporting this technique (which raises environmental concerns) since it has a high energy bill that has forced the country to depend on the supply of not so friendly countries, and because it is one of the few countries in the world where both oil and natural gas can be owned by individuals, not necessarily the state. That is why the entrepreneurial community and private investors are in full gear mode these days while, for the time being, the hand of the state is not very evident.

*Fracking is hydraulic fracturing, a process of extracting natural gas and oil from shale rock layers.*

The first consequence of this unparalleled US approach is that energy prices are on a never-ending downfall (prices in the United States are already below those in the rest of the world), and that extracting techniques and equipment are constantly being improved, which in turn increases relative productivity. The expectations are set so high that this phenomenon is not temporary, it is here to stay. Therefore, many US companies are packing up abroad and coming back home. Or they simply decide not to leave, whereas before, relocating was a serious consideration, they now decide to stick to being made in the USA. "Some American projects that were going to be undertaken abroad, worth some \$65 billion, stay home because energy prices have dropped," says Kurtzman. Of course, the rise of US energy raises many questions and challenges, some of them in the geopolitical arena. "I wonder if it will have an impact on political stability in the Middle East," says Federico Steinberg, main researcher of the Instituto Elcano. Indeed, this rebalancing of powers is not good news for OPEC (Saudi Arabia, Iran, Iraq, Venezuela, and Kuwait, among others) and other countries, such as Russia, that are

There is a palpable, growing interest in Europe to become less energy-dependent on Russia and more on the United States.

outside the Club of Vienna. Let us not forget that, depending on the statistics, Washington tends to be ranked first or second in oil consumption from OPEC. In 2008, the crude oil price came close to \$145 a barrel. The United States spent roughly \$3 billion on imports from Venezuela, Saudi Arabia, and Nigeria. As it was mentioned at the debate hosted by Bankinter, there is a palpable, growing interest in Europe to become less energy-dependent on Russia and more on the United States (a more loyal and predictable ally). The latter could become the second major provider. Today, Moscow provides 42% of the oil and 33% of the natural gas used in the EU. Even though not all European countries are highly dependent on Russia in this regard, the diplomatic crisis in 2009 between Russia and Ukraine paralyzed the gas supply for a while, revealing the burdensome cost of this economic relationship with a partner that is unstable as far as international relations are concerned.

Another potential battle resulting from Washington's new role is trade fights in rebalancing foreign balances between countries. "If the US foreign balance becomes balanced or even reaches a surplus, and European countries start to follow Germany's example and also have a surplus, and emerging markets continue to export, one might ask: Who is going to buy? Where will demand come from? This will be a big discussion for the G20, and a dialogue will be necessary to avoid currency wars," says Federico Steinberg, main researcher at the Instituto Elcano. There may be a battle brewing between the dollar, the euro, the renminbi, and other currencies from emerging markets.

The future of fracking, of course, just like with any new technology, is uncertain. "It is not environmentally proven and it could disappear at any moment. It may change the energy as well as the physical landscape," says ironically Larry Rudolph, an MIT researcher. Kurtzman acknowledges that foreseeing the long-term implications of injecting certain chemicals underground is impossible—there is talk of polluting aquifers and even earthquakes—but for the moment, the only proven fact is that CO2 levels have lowered to the threshold of 1993, a year before what is required by the Kyoto protocol.

Emerging markets are another underlying trend that will change the direction and size of capital flows. BRIC countries (Brazil, Russia, India, and China) and other buoyant developing markets (Mexico, Colombia, South Africa, Turkey, Iran...) continue to grow to such a point that in a few years the developing world will account for the same share of the world's GDP as advanced economies. These regions used to be poor, but they are amassing massive amounts of money. "Emerging markets hold close



Emerging markets are another underlying trend that will change the direction and size of capital flows.

to 5 or 6 trillion dollars in currency reserves, a large amount providing flexibility and muscle to invest and influence events be it in the United States, in manufacturing, or in their own domestic economies," says Kurtzman. But this mass of savings may most likely not be invested in their own countries for the very simple reason that they cannot absorb it. In fact, there is some inflationist pressure present in some countries already, such as Brazil, due to the constant stream of money coming from stagnant Western economies, which still hold the bulk of financial resources to invest. BRIC have absorbed a lot of capital and the risk of a hard landing is high. This will have an impact on the influx of capital to these countries," warns Nikhil Prasad Ojha, from Bain & Company India. Besides, the utilization of flows is even more complex, if even possible, in some regions. "There is a limited capacity to absorb them in the most unstable regions on Earth, such as the Middle East, most of Africa, and parts of South-East Africa and Central Africa. Paradoxically, that is where huge amounts of money are needed, given their demographic evolution," points out Chester Crocker, professor of Strategic Studies at the University of Georgetown.

So, given the difficulty to invest at home, **the future champions of the world's economy "would rather make global, smart investments.** They have been observing Japan's investments for years, and they have become very sophisticated in what they do," says Kurtzman. China has amassed close to \$3.5 trillion (almost three times the economic size of Spain) and it wants to invest intelligently. However geopolitics, the decision-making based on political criteria or the interest to influence a certain country, plays a key role in the direction of these capital flows. Because of this, receiving states (for example, the US is always in need of foreign capital to fund its external imbalances) must remain vigilant, since funds may dry up for reasons far removed from what is logical economy-wise. Japan, which also holds massive currency reserves, has just surpassed China as the biggest buyer of US treasury bonds. And perhaps the US now feels more at ease.

Given the current economic situation, which is in quite disarray particularly in continental Europe, the US and the UK are becoming more appealing for investors (as China becomes less appealing). In Germany and other European countries, assets are also being bought cheap in the hope that the Old Continent will finally get back on the road to recovery. But the return of capital to Western markets poses dilemmas. "The issue is that, in many countries, the population is young and institutions are corrupt, so capital does not reach them. At the same time, advanced eco-

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nomies show higher levels of transparency and accountability, and they have the money," says Reuven Brenner, professor at the McGill University in Canada. According to him, the issue at hand is that if money continues to go to countries with robust democracies but ageing societies, the profitability of investments will gradually decrease. This means that **if less transparent and accountable countries do not reduce their corruption levels, they will not receive money and it will be everybody's problem: their young population will migrate wherever money can be found.**

The US energy revival and the thrust of emerging markets aside, we find a scenario of wealth "concentrated" in a very small group of companies.

Even though everyone tends to see a bright future for emerging countries, the truth is that they may run into some troubles along the way. In fact, it remains unknown at what rate they will continue to grow (no one doubts that it will surpass the average rate of advanced countries) and whether there will be many or few bumps in the road. To begin with—as the US 'normalizes' its monetary policy, with interest rates that are currently close to 0%—capital that had fled to emerging countries in search of better profitability may now be returning. This two-way journey would slow down the flow of capital and may lead to increased interest rates, along with all the collateral effects. Besides, there is always doubt hovering over these countries in regards to their trustworthiness, legal certainty, and political stability, as well as social and salary inequalities and the differences between rural and urban areas.

The US energy revival and the thrust of emerging markets aside, we find a scenario of wealth "concentrated" in a very small group of companies, ranging from sovereign wealth funds to hedge funds, and private equity. Sovereign wealth funds are state-owned investment vehicles managing close to \$12 trillion, most of which is amassed by emerging economies through the export of raw materials such as oil or gas. Abu Dhabi alone holds over \$1 trillion in various funds. **"Sovereign funds are just a sign of how globalization has sped up in the last 25 years,"** says Ng Kok Song, former Chair of Global Investments at the Government of Singapore Investment Corporation and currently the advisor to this sovereign fund. China, Korea, Brazil... some 14 countries have amassed such a large amount of foreign currencies that a worldwide redistribution of wealth is taking place. But the fact that this concentration of money is in the hands of states that are not always democratic raises doubts, as Ng acknowledges, regarding the political motivations of these investments and their transparency, efficacy, and management. These fears are logical in some cases, although this group is not homogeneous in the least. "Each one is in a different development stage and has its own mo-

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tivations," says Ng. In fact, the Government Pension Fund of Norway is among the most transparent and predictable funds. It has even stepped out of some companies because they did not comply with the established ethical standards. Some of the least transparent (and unpredictable) funds are the China Investment Corporation and the Abu Dhabi Investment Authority. In 2008, several sovereign funds signed the Santiago de Chile Declaration, which imposes a code of ethics and tries to minimize government intervention in their management of funds. It has been a positive process, although there is still much to do.

Regardless of their motives and degree of transparency, everyone agrees they are sophisticated instruments: "They are very careful in what they do, and they hire the best brains from the world over," says Kurtzman. These investment vehicles tend to have limited room to maneuver, since they can trigger inflation in their countries, so they follow a global strategy. Despite their limited room to maneuver, one of their advantages is that they can set very long-term investment strategies to avoid one-time fluctuations and herd behavior in markets.

The Government of Singapore Investment Corporation, whose economy holds large reserves due to its openness to foreign flows of financial, human, and intellectual capital, is an example of transparency and long-term vision. It illustrates the direction these (in many cases opaque) funds may take. "We devise 20-year strategies, and over the last two decades they have yielded 4% return rates, above the average inflation (2%). It is because our objective is to make sure the purchasing power of reserves is maintained," says Ng. This is all in line with their two ultimate goals: to protect themselves from an unexpected crisis and to guarantee a continuous flow of money for state budgets. The government's general guidelines set the tone, but government may only use half of the profits above inflation, and they must be allocated, for the most part, to education and health care. This fund is chaired by the president of the country. Its risk profile is approved by the board and the decision of what and where to invest is made by professionals.

Since the demographic conditions of Singapore are quite good, the sovereign fund of this city-state currently favors risky positions, which means more stocks, mainly in developed countries.

**Another key player in the financial arena is private equity firms:** companies that invest in non-listed companies, such as Blackstone, KKR, or Carlyle Group, that manage funds worth some 4 to 5 trillion dollars total. It is a small group of companies, usually headquartered in New York

In 2008, several sovereign funds signed the Santiago de Chile Declaration, which imposes a code of ethics and tries to minimize government intervention in their management of funds.

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Another key player in the financial arena is private equity firms: companies that invest in non-listed companies.

or London. They have suffered severely during the crisis, especially in 2008, because of their excessive leverage. "Interestingly enough, since these companies are quite concentrated, they managed to exchange investments that didn't work by creating a secondary market for themselves. Thanks to this, they have softened their landing. There are signs that they are raising money again, and as capital markets become livelier, they will be in a good position to sell their assets," says Kurtzman. Finally, hedge funds are also part of the financial landscape. They manage 2 to 3 trillion dollars, that is, close to 1% of resources available for investment. These investment instruments are also highly concentrated in some two dozen companies. They are usually based in New York or London, and their operations are highly leveraged. Just like private equity, these funds are showing encouraging signs of coming back to speed: they now have more assets under management in their portfolios after years of major intervention by central banks in markets, and the return on their investments (alpha) is improving.

What conclusion may be drawn from this landscape? Why will the world economy awaiting us around the corner be very different from the previous one? Of course all experts gathered by Bankinter agreed on defining the shifting power from the private to the public sector as a major disruptive change. "If you look at the balance sheets of central banks, they have taken on the bulk of the private sector's debt. Basically, what is happening is what always happens in a recession: debt is transferred from a sector that cannot pay to another one that can," says Joel Kurtzman. Therefore, the debt of central banks is increasing. The only way to pay it off (if it is ever paid off) is by trusting that with time, this liability will represent a smaller share of the GDP. Countries, as it is usually said, never really foot their big bills. For instance, some countries still hold outstanding debt from World War II, such as the United States.

The financial crisis (which Joel Kurtzman describes as the depression of the rich man, because even though this crisis is similar to that of the 1930s, it started with a wealth that is 30 times more than the previous one, so it is considerably less painful than before) is changing balance sheets, redistributing wealth, and having a purifying effect. But the greater prominence of the state is not welcome. "Some 20 years ago the world seemed to be fairly convinced that the state had to step out of the way and leave the path open to private ventures. Then came the crisis in 2007 and 2008, when banks had to be bailed out by the states. Ever since then, the state feels it is the smart kid and everyone else is a dummy. The financial system certainly came close to collapsing, but that doesn't

The financial system certainly came close to collapsing, but that doesn't mean that the free market doesn't work, just that some people crossed a line and they should have been stopped much sooner.



mean that the free market doesn't work, just that some people crossed a line and they should have been stopped much sooner. Every time the government interferes, there is chaos," says Max Burger-Calderon, CEO of Golien and a keen expert in finance, as well as a background in the private equity fund Apax. **The return of the public sector in times of crisis seems to be a constant theme in history.** "From a historical perspective, all governments use times of crisis to reinforce their role in the economy. Besides, politicians always make use of these situations to invest in infrastructures," says Reuven Brenner, professor at McGill University. "The best example in Europe is the French president François Hollande, who lives in a fantastic residential complex, has no contact with human beings, and passes decrees like King Louis XIV." But Western states are not the only ones to play a more prominent role; emerging states are increasing their share of international power through their state-owned companies—some of which are authentic multinationals that are putting their Western competitors in a tight spot and are not always ruled by the same competitive rules: Petrobrás, Cemex, Haier, Tata Group, Grop Dogus, Jollabies...

"What is most striking, I believe, is the growing loss of confidence in private equity since 2008, whereas before it was allocated 10% of the total money. Economic reasoning in making investment decisions is losing steam as we see how the governments of emerging states are amassing reserves. These countries have a huge impact on markets, just like China is having on Africa or Asia. These investments are politically-driven, not business-driven," says Nimrod Kozlovski, founder and president of Altal Security. "I believe the financial crisis has had devastating effects on Anglo-Saxon capitalism. It may not be perceived in the US as much as in Europe. And in Asia too, where other forms of state-capitalism are emerging," says Federico Steinberg, main researcher at the Instituto Elcano. In fact, the prevailing American capitalism—symbolized by Wall Street as well as the Washington Consensus—has been criticized over and over for having unleashed the current financial catastrophe through subprime mortgages, and it seems to be opening the way to softer forms of **capitalism, such as Nordic capitalism, which is much more socially oriented, where the public sector plays a bigger role and social cohesion is greater.** Countries such as Finland or Norway tend to top many competitiveness indices and they are envied by many.

As you can see, the future of capital flows may be affected by many factors (including new forms of funding, such as crowd funding or peer-to-peer). Most of it will have to do with the cost of capital. There is a consensus within markets to keep the price of money low for many years,



# Max Burger-Calderon

CEO Golien Ltd

## The growing influence of *hedge funds*: a myth or reality?

The "growing influence of hedge funds" may be a myth created in the press and meetings like the FTF but is not happening in the "real" world.

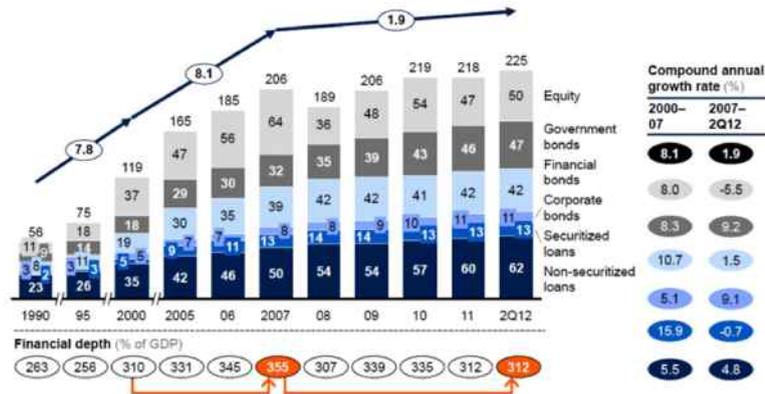
According to the McKinsey Global Institute global financial assets have grown to \$225 trillion by Q2 of 2012 from about \$56 trillion in 1990 (Exhibit 1). Out of these \$225 trillion \$50 trillion were invested in equities. According to Barclay Hedge, hedge funds managed globally over \$2.3 trillion at end of 2012 and had \$39 billion under management in 1990 (Exhibit 2). While global financial assets grew by 4X, hedge funds grew by 59X from 1990 to 2012.

Exhibit 1

Exhibit E1

Global financial assets have grown to \$225 trillion, but growth has slowed since 2007

Global stock of debt and equity outstanding <sup>1</sup> \$ trillion. end of period, constant 2011 exchange rates



SOURCE: McKinsey Global Institute Financial Assets Database, McKinsey Global Institute analysis

<sup>1</sup> Based on a sample of 183 countries

Exhibit 2

Hedge Fund Industry-Assets Under Management			
Assets Under Management	1st Qtr 13	4yh Qtr 12	3rd Qtr 12
<i>Hedge Funds</i>	\$1865.5B	\$1798.7B	\$1827.3B
Funds of Funds	\$485.5B	\$501.4B	\$515.1B
Sectors			
Convertible Arbitrage	\$38.6B	\$38.9B	\$39.9B
Distressed Securities	\$142.6B	\$124.4B	\$120.7B
Emerging Markets	\$232.5B	\$211.6B	\$211.8B
Equity Long Bias	\$163.8B	\$149.9B	\$151.0B
Equity Long/Short	\$176.9B	\$170.2B	\$176.0B
Equity Long-Only	\$59.5B	\$53.5B	\$87.2B
Equity Market Neutral	\$20.2B	\$23.2B	\$28.8B

Looking at the growth you might assume that the influence of hedge funds is growing, but when looking at absolute numbers (hedge funds represent only 1% of global financial assets) the argument becomes a bit soft.

The founders/executives of the hedge funds are entrepreneurial characters, strong-willed and practically all have most of their personal funds tied up in the funds they manage. This makes them politically-incorrect animals going after absolute returns and targets with clearly identifiable weaknesses which they tend to exploit, creating value on the way. These managers have no other objective than creating value which makes them very transparent, difficult to negotiate with and at the same time easy targets for the world of the politically-correct broadcasters. That may be the reason why the public loves to talk up their influence and paint a picture of dark operators as it creates an easy argument.

Ask yourself why are politicians of every color—including Japanese corporate—are so much in agreement when it comes to bedeviling hedge funds? .....

Globalization is the best way to get a glimpse of, and contextualize, future capital flows.

to let the world's economy swim in abundant liquidity, and to let assets in capital markets continue to grow faster than the world's GDP—at \$70 trillion at present. Precisely because of this, with money being cheap and making money above inflation will not be easy, we are likely to see a fierce battle among investors to put their money where profitability is highest. Will there be other periods of mergers and acquisitions? Possibly. Will money go to fund big projects? Definitely. Most new opportunities will come from long-term investments: infrastructures, health care... for an ageing population or for new middle classes on the rise. "I believe one of the greatest challenges before us, from a perspective of both growth and future prosperity, is to channel these capital flows to wherever they are most productive. There is a lot of liquidity in the system," says Marco Annunziata, chief economist and executive director of Global Market Insight at General Electric. According to this expert, it is true that emerging markets have a hard time absorbing investments, but it is also true that "coordination and information are lacking" among investment institutions (which must achieve higher returns), and countries need infrastructures in health care and education. If this shortage is eased and new forms of collaboration are found, all players involved may come out winners. According to Osman Anwar, economic consultant at SQW, "there will be a lot of co-investment to reduce the risk of investments for the private sector. The key will be to find the balance between public and private." A world of business opportunities in the form of airports, ports, highways, schools, bridges.... will come up in many regions in the developing world within the next few years.

At the very beginning, Chris Meyer, discussion moderator and trustee of the Bankinter Foundation of Innovation, remarked that: **"The financial economy cannot be isolated from other dimensions, such as demographics, the rule of law, or geopolitics."** Or globalization. It was precisely Ng who reminded everyone several times that globalization—defined as the gradual integration of goods, services, and capitals on the planet—is the best way to get a glimpse of, and contextualize, future capital flows. According to this investment expert, flows will improve or worsen depending on the state of globalization. "Since 2000, globalization has created close to 150 million jobs in emerging economies, but offshoring manufacturing plants has entailed the loss of roughly 40 million jobs in developed economies. The problems of unemployment and less personal income are aggravated by the current deleveraging process in the aftermath of the financial and economic crises. Unless politicians offset the negative impact suffered by the poorest layers of the population, the

“blessings of globalization may very well be questioned,” predicts this investor. International conflicts between great powers, or trade blocs, or a return to trade protectionism, may erect barriers and stop the progress of global trade, which has been growing at rates well above the world’s GDP for many years. That is why the political management of the economy is considered important. “I think the political dimension of problems must be provided. We are seeing how politicians in Europe have not risen to the occasion of this crisis. For the last twenty years, and unlike the public sector, the private sector has amassed a lot of talent. Politics are necessary,” says Fernando Napolitano, founder and chair of the Italian Business and Investment Initiative.

So-called global problems they have equal impact throughout the planet, the most important one is climate change.

Given this context of globalization, analyzing so-called global problems cannot be avoided. They have equal impact throughout the planet, and across borders. The most important one is climate change (see box). “I see climate change as the big disruptive force that will change capital flows. If the environmental impact foreseen for 2020 becomes a reality, there will be cities that we cannot afford to lose and it will demand large amounts of capital, be it to mitigate damages, build dams, or for environmental engineering. There will be many things in need of being saved that will require capital,” says James Boyle, professor at Duke University. Larry Rudolph sees it that way too: “Climate change will have a huge impact on capital flows, not so much because of the private sector but because of the public sector.”



## Kok-Song Ng

Chair of Global Investments, Government of Singapore Investment Corporation (GIC)

### Spiritual Capital: an untapped resource for a sustainable global economy

It was the first time that I attended the Future Trends Forum (FTF) in June 2013. The goal of the forum was to assess forthcoming shifts in global capital, to analyse their significance for growth and prosperity in mature economies, and to identify strategies for countries such as Spain to benefit from the changing landscape. Global capital was seen as consisting of financial capital, human capital and intellectual capital. My role was to offer a perspective on sovereign wealth funds as a new phenomenon of financial capital.

At a brain-storming session skilfully conducted by Chris Meyer, I was moved to propose that in the aftermath of the global financial crisis, a transformation of values was necessary for healthy and thus sustainable growth in the world economy. It struck me as vital for the future that we fundamentally rethink the moral framework that underpins our economy, politics and global inter-dependence. My perspective had developed from my own personal observation of how the financial industry had been motivated by greed and irresponsibility and strayed from facilitating economic growth to indulging in speculative activities which destabilised and damaged the economy.

I had also been impressed by the exhortations of spiritual leaders to restore the moral motivation for economic activity. For example, the Tibetan spiritual leader the Dalai Lama, was quoted as saying, "Selfishness

and a lack of spirituality in the world were key causes for the current crisis in the world's financial markets. People have become selfish and materialistic. The solution was in recognising our interdependence, valuing education and protecting the natural environment. People needed to be less interested in consumerism, less selfish and to understand that if we want to survive and be happy, everyone must survive together."<sup>1</sup> Similarly, the Vatican's Pontifical Council for Justice and Peace urged that "the economic and financial crisis which the world is going through calls on everyone—individuals and peoples—to examine in depth the principles and the cultural and moral values as the basis for social co-existence."<sup>2</sup>

My thesis is that the root of major problems in the world—ethnic conflict, violence and terrorism, greed and irresponsibility in business and finance, desecration of the environment and extreme income disparity—is fundamentally spiritual. We should therefore harness the spiritual tradition of humanity to contribute to a saner and wiser world.

It is in the realm of spirituality that the human person discovers the meaning and the goal of human existence. For a change in values to happen, we need to go to the depth of the human person where one experiences an interdependence on others, and where the motivation for action and external behaviour arises.

Laws and regulation are necessary to make explicit what is not acceptable behaviour. They are necessary but not sufficient for truly ethical behaviour. Complying with the letter of the law would not necessarily meet the higher standard of what is ethical. What is needed is "self-regulation" by which I mean the regulation of one's own self, in which one listens to an inner voice or conscience. Going to the spiritual part of our being will enlighten us to act in accordance with the "spirit" of the law.

At the personal level, from my own experience, a simple regular practice of meditation can be very helpful in the transformation of values. I practise a form of meditation in the Christian tradition. This might be of interest to Spanish readers of this article because two significant teachers of this Christian meditation tradition were Spanish mystics, St John of the Cross and St Teresa of Avila.

<sup>1</sup> Talk to students at the Central Institute of Higher Tibetan Studies, Sarnath, India, 16 January 2009.

<sup>2</sup> Towards Reforming the International Financial and Monetary Systems, Vatican City, 2011.

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## 2.1 What if globalization retreats?

Since the mid 1970s, the 200 states that make up the international community have been experiencing a frenzied process of economic integration in all regards, including finance and trade. In 1980, cross-border flows accounted for almost half a trillion dollars, but in 2007 this amount had climbed up to 12 trillion dollars. However, this terrible financial crisis erupted and flows have dried up. Levels today are much lower than they were months prior to the crisis breaking out, and global exchanges of goods and services have also been brought to a sudden halt. **Some experts talk about risks and even signs of 'deglobalization,'** some even say that globalization has been so intense over the last few decades that there is some sort of "globalization glut." Many US multinationals are going back home due to lower energy prices in the US and rising labor costs in China and other emerging regions. At the same time, Europe, shocked by the financial crisis, is slowing down its integration process. There is clearly less interbank lending between countries, and lending from European banks abroad has shrunk considerably. In addition to that, China seems to have decided to shift its focus internally and address the myriad problems ailing its economy, from its weak financial system to the mass of ineffective public companies, the inexistent social protection, or the huge gap between the inner, poorer regions and the more dynamic, coastal regions. Some specialists feel the world is fragmenting into zones of different regulations. Investing in companies or buying stocks and bonds is not equally easy for international capital in all countries.

Some specialists feel the world is fragmenting into zones of different regulations.

## 2.2 climate change will require a lot of money

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The entire planet is under the threat of climate change, although not all regions will suffer it equally.

One conclusion drawn at this event sponsored by Bankinter is that climate change will play a key role in the amount and direction of future capital flows. The entire planet is under the threat of climate change, although not all regions will suffer it equally. The average temperature has been rising constantly for two decades, supposedly because of human activity, which is changing climate patterns and may trigger great dangers, from rising sea levels to very sudden climate changes. This is partly attributed to burning fossil fuels that release CO<sub>2</sub> into the atmosphere, so one of the main goals for the next few years is to **reduce pollutant gases and transform the current energy model into a cleaner, more sustainable system**. Since developing countries will continue growing at a good pace (that is, increasing their pollution levels) and they are much more vulnerable to the impacts of climate change (hurricanes, floods, droughts...) some capital should be directed towards emerging economies. Public-private collaboration will be needed to transform their economies. There are very different calculations, but it is estimated that by 2020 a few hundred thousand dollars per year will be needed, earmarked specially for the poorest countries.





## 3. Flows of Human Capital

### 3.1 Talent Travels Around the World



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# Human capital

Man's demographic history on Earth is simply fascinating, even though most of us (except demographers) have never taken the time to really think about it. There are some 7 billion people on Earth today, but there were far less in the past and the figure grew at a much slower pace than in the last century. Twenty centuries ago there were 200 million people and we only reached 1 billion in 1800. Then, especially in the 20th century, the number of people on Earth has multiplied as a result of a positive mix of factors, including better hygiene, diet, food and drugs, and better health care in general. This applies to life expectancy as well. In the Roman Empire, a regular person could not expect to live beyond 25 years of age (except for a few patricians who surprisingly made it to 60 years of age!). For many years, including the entire Middle Ages and many more periods that followed, things didn't change much. In 1900, a Spaniard lived some 34 years; today life expectancy is close to 80 years of age (Spanish women live a little bit longer than men).

The latest data released by the UN say mankind will hit 11 billion by 2100.

After analyzing the future evolution of capital flows, Wolfgang Lutz, a well-known demographer and director of the Wittgenstein Center of Demography and Human Capital, focused the discussion around human capital flows. "We must not look only at the sheer number of people, but also the people who produce actual growth. **Economists tend to think everyone behaves the same, but demographers know people are not a shapeless mass.**" According to him, the population will most likely continue to increase over the next few decades to 9 billion by the end of the century, and then it will start decreasing. The reason behind this is that the world will tend to follow the European model (and also Chinese) of low birth rates. However, this interpretation is not undisputed; the latest data released by the UN say mankind will hit 11 billion by 2100. At the end of the day, everything will depend on the evolution of fertility. Projections aside (by the way, demographic projections tend to have a higher success rate than purely economic projections, which are based on many more variables), the world is certainly very different from one region to another. Africa is growing non-stop and will most likely double or triple its population size (which is not odd, since women in many countries bear more than five children on average, for instance in Nigeria, Niger, Uganda, or Ethiopia, and the population in these countries is quite young). On the contrary, in some developed regions, such as Eastern Europe,

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Germany, the largest country in the EU and its great economic engine, could see its population shrink from 80 to 70 million.

the demographic size is shrinking. Ukraine, Russia, Bulgaria... It is shrinking because fertility rates are low, part of the population is migrating, and mortality rates are still relatively high. "The question is whether the entire Western world will shrink. It will depend on global migration flows," says Lutz. **According to the latest UN report, the population in Europe could drop by 14% by 2050.** Germany, the largest country in the EU and its great economic engine, could see its population shrink from 80 to 70 million in this period of time, unless it manages to compensate for it with a strong influx of millions of migrants.

However, this Austrian demographer warns that people cannot be considered as mere quantitative units, they are people with their own qualities too: level of education, health care, contribution of innovative ideas, age, gender, involvement in the job market.... Common sense and empirical evidence show not everyone has the same impact on the economy. Thinking otherwise is the typical mistake of many economic models. The greater the human capital, the greater the economic growth. The greater the human capital, the greater the chance of eradicating poverty and raising the standard of living in society. This professor's favorite measurement to assess human capital combines the maximum education level with gender and age. "Statistically speaking, it could be said that individuals with the highest education level undoubtedly tend to enjoy higher income levels, and in aggregate, when the most educated cohorts reach the job market, countries see their economies grow," says Lutz, who has carefully studied similarities between the educational evolution of the population pyramid, and the evolution of the economic cycle and per capita income in several countries.

An essential conclusion in understanding human capital flows is that secondary education, not primary education, make the big difference. When education from 14 to 17 years of age becomes universal for men and women, the impact is immediate. Another essential conclusion is that the role of educated women is vital, since the higher the education the lower the fertility rate, so by means of (mainly secondary) education, a country can ensure that they will not reach unsustainable birth rates and that society will be more sustainable.

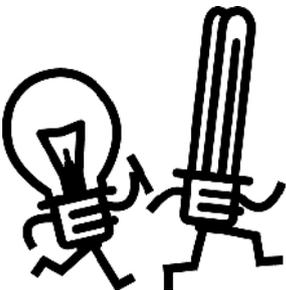
But the stock of a country's human capital, with all its skills and knowledge, changes very slowly. In general, it is modified as a result of the momentum. That is, **human capital flows mutate very little.** This statement becomes evident when one observes the evolution of the stock of human capital in Singapore over the last few decades (Lutz used Singa-

The education pyramid in China (the second economy worldwide with 1.3 billion inhabitants) has improved considerably since economic reforms started in the 1980s.

pore to illustrate his theories). As (secondary and higher) education expands over time through different age groups and women, the economy starts to take off. Singapore today is one of the liveliest economies in the world, with high-quality human capital.

**The dynamics of social change is always a bottom-up process in the population pyramid.** Flows start at the bottom, with the youngest group, who are very different from their elders who gradually die, thus producing a demographic metabolism. This metabolism is visible in many economies. For instance; the education pyramid in China (the second economy worldwide with 1.3 billion inhabitants) has improved considerably since economic reforms started in the 1980s: more than half the Chinese workforce today has graduated from secondary school. This factor is largely accountable for the miraculous development of this country. That is why it is reasonable to conclude that the population in China will peak in the next 10 to 15 years, and then start contracting due to women's progress in education and a low fertility rate.

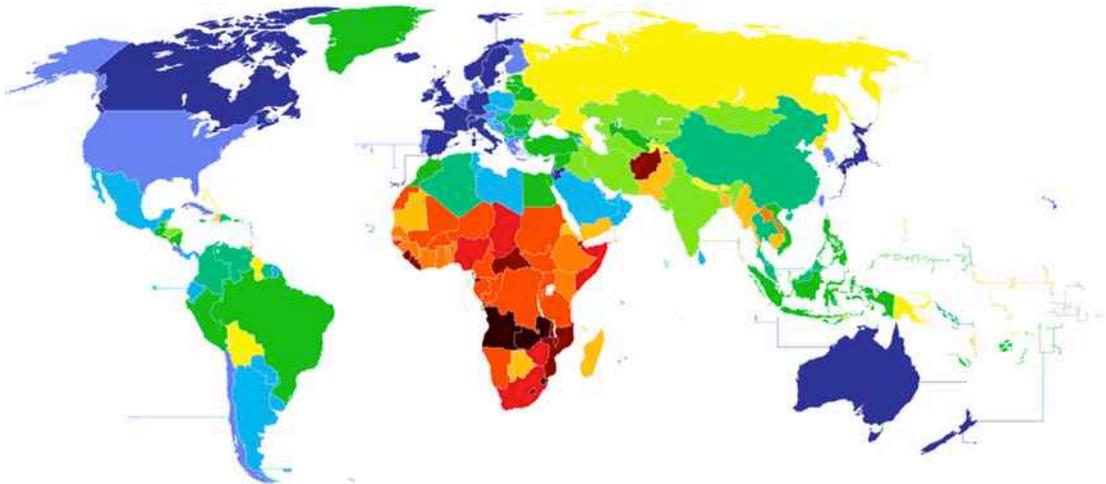
However, India (the second most populated country, with 1.2 billion people) is not experiencing the same social dynamism. Almost 50% of Indians have no formal education. The proportion is even more alarming among women. "The government has made some efforts, but India is 20 to 25 years behind China in regards to the spread of education," says Lutz, who adds that the future is uncertain and there are several possible demographic scenarios—some more positive than others. Which one becomes a reality will depend on what the government does., Nikhil Prasad Ojha, of Bain & Company, made a presentation precisely on this point. "The current workforce has been schooled for an average of 5.2 years. If we want a different model of economic growth, with more intensive workforce, we must increase years of schooling. Unfortunately, it took us ten years to increase the average by only one year," regrets Ojha, who is Indian. With each year that passes, there are 12 million more people in India who reach the job market. According to projections, the labor force will continue to grow until 2050. What will these young people do? Where will they find work? The type of economic growth that exists does not offer them job opportunities and they do not have the schooling or sufficient skills to become productive workers. Therefore, **India faces a dilemma: it needs to decide what type of economy it wants to be. It either continues as is or it becomes competitive.** For this to happen, it must train its people now. "The truth is, all scenarios are currently possible. If this continues as is and education does not improve, social tension is likely to explode, regardless of how many non-



qualified jobs we get out of the millions that China is going to outsource in the next few years. It will be a lost paradise of sorts. But there is also the possibility that we will move towards a higher value added economic model, for which we already have important competitive sectors, such as the car industry or information technologies," says Ojha, who confesses not to be optimistic.

One way or the other, many countries will face challenges that might become opportunities. Besides, the continuous ageing process must be added to the issue of demographic size. The UN forecasts that by the end of the century, the average life expectancy in developed countries will be 89 years of age, and 81 in less advanced countries. The average age for the Earth's population will be 37 years (compared to 28 today) by 2050. In Western countries, the most aged societies raise many challenges in the fields of finance and the welfare state. How will pensions be paid when the labor force is shrinking? How will healthcare costs and pharmacy expenses be paid? Lutz offers a positive, encouraging message: "The issue in Europe is whether the smaller number of young people can be compensated, or even be paid competitive wages for their greater skills and educational knowledge. It seems that it can be so." That is, the productivity of future European workers, who are very well educated, can be much greater. Besides, the more educated people are in Western countries, the later they tend to retire. According to Lutz, the ageing process does not have to be the big problem some foresee, not even in big emer-

One way or the other, many countries will face challenges that might become opportunities.



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Western countries, the most aged societies raise many challenges in the fields of finance and the welfare state.

ging markets. China has upheld its one-child-per-family policy for years. It will also face a similar dilemma as its population starts to shrink.

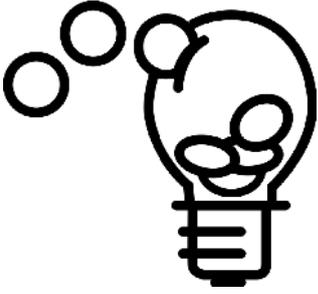
Globally, people with secondary education have doubled over the last few decades, and they will double again in the next few decades. This is good news, especially for the pessimists who think that the growth of the world's population is a ticking time bomb that will end up exploding—based on what demographers and economists who follow the doomsayer Thomas Malthus believe. If the world's population starts decreasing for the first time in many centuries because the mortality rate is above the birth rate, we might approach more sustainable demographic levels for the planet. In general, a more educated population may also end up being much more respectful with the use of energy and natural resources, as well as more flexible and inventive in facing new challenges. This could have a positive impact on phenomena such as climate change. So, in general terms, greater education has positive effects on the health and quality of life. "University graduates in Austria enjoy better life expectancy rates. There is evidence that mental activity has a positive impact on longevity," says Lutz. Some even extend this positive impact to happiness.

Education certainly is the solution to many evils. But how do we face this huge investment challenge in developing countries? "If demographers and their statistics are right, which they normally are, we will need room to accommodate 300 million more university graduates. This means that by the end of this century we would need to build 10,000 universities the size of my university, George Masson, which holds some 30,000 students. This means a George Masson university should be opened every day, whereas it took us 40 years to create it," says Ángel Cabrera, President of the George Masson University. Indeed, **the UNESCO estimates that 80 million new university posts will be needed by 2025**, out of which 25 million should be in India. Some governments are already at work to meet the challenge. For instance, China is already teaching courses to train some 4,000 new university presidents! Given the budgetary restrictions in many countries, the solution may come from new technologies, particularly online education. In fact, many traditional aspects of education are already online: content, projects, tests, homework, certificates, and interaction. Within online education, MOOCs (Massive Open Online Courses) are going through the roof and creating the expectation that they may be the perfect tool to educate millions of people in developing countries who seek better quality education but cannot afford paying for it or it is not offered by their

national educational system. Stanford, Harvard, or MIT are already successfully teaching these global courses: they are followed by hundreds of thousands of people and are 100% free. Are they the final solution? According to some studies, they don't seem to be. An analysis of MOOC attendants shows that most students come from the United States and Europe. There are much fewer students from Asia, and there are barely any from Africa. Potential students from poorer countries do not always have Internet access or the necessary IT infrastructure, they do not possess digital skills and most important, they are not always proficient in the language in which classes are taught. MOOCs are usually taught in English, and in all cases, in the language most widely spoken among the potential audience. Besides, even though the frontiers of physics and time are bent and these courses promote interaction, improve life-long learning, and promote personal responsibility, it is unlikely they could substitute good old-fashioned education—even when taught over the Internet.

Globally, people with secondary education have doubled over the last few decades, and they will double again in the next few decades.

Experts gathered by the Bankinter Foundation of Innovation also discussed the exact content of this education that triggers and promotes economic growth. In the current economic situation there are many paradoxes. For instance, there are 40 million unemployed people in industrialized countries that coexist with business segments where job positions remain vacant for lack of skilled candidates. This is true even in Spain, one of the Western economies where unemployment has hit the highest rates. Besides, when it is said that education tends to expand through all strata and countries around the world, we don't know exactly what type of education is being referred to. "Big portions of the population are not sufficiently skilled to be hired. This includes lots of young people who have attended university and graduated with diplomas without a practical application to find a job. So the basic skills should be reconsidered, without emphasizing creative skills too much," says Marco Annunziata, from General Electric. However, several attendants at the meeting mentioned a recent report from the consultancy firm Oxford Economics. This report points out that **in the next few years the skills in highest demand by business people will be digital skills, mental agility, communication skills, interpersonal relations, and the ability to work with a global perspective.** That is, it highlights skills that are harder to quantify, such as lateral and creative thinking, ability to innovate, and cross-cultural communication. "Unfortunately, the arts and social sciences are under constant criticism in many countries," regrets Jeffrey Gedmin of the Legatum Institute. "I believe computer skills are irrelevant. It's like when it was said back in the 1920s that driving a



car was essential, now we know it is completely irrelevant," says Juan José González, director of International Strategy at Indra. He also reminds us, rather provocatively, that there are those who say the personal incentive to continue investing in education is decreasing, because salaries are smaller and educational costs are increasing. Nevertheless, since the rest of the attendants are underscoring the importance of creativity in the current knowledge-based economy, the economist from General Electric insists on some bare essentials: "We are underestimating the importance of reaching a basic level of computer or mathematical skills," he maintained. It seems clear that there is an imbalance between what is taught at universities and what companies demand. The 'dual vocational training systems' in Germany and Austria, keenly analyzed by other EU countries and recently applied to Spain, prove that students who have had prior contact with the business world tend to find a job sooner. "I think it is a mistake to focus on university degrees exclusively. I do not think that someone with a degree in law or history must become a lawyer or historian. Degrees only prove the ability to study, but these are different skills. As it is, universities and students are not inventive enough to think what they should do, unless they follow a straight line," critiques Stephen Trachtenberg, President Emeritus of George Washington University. According to him, "universities must analyze the skills of students and see if they find new, convenient paths. For many years there were 600 new history graduates in the US every year, when only 60 to 70 positions in teaching history would open up per year. "Interestingly enough, we do not have enough teachers in secondary education. The truth is that both jobs are very similar, except in people's minds," regrets Trachtenberg.

In the next few years demand highlights skills that are harder to quantify, such as lateral and creative thinking, ability to innovate, and cross-cultural communication.

A more flexible approach among institutions and individuals could be the prevailing philosophy in this brave new world. "I think one must think of education not as higher education, but as professional education acquired through the job. In this regard, I prefer the US system of continuing education, which is highly focused on the job market. In some countries, you are considered an educated individual after attaining a certain education level; in the United States, you are always learning," says Nimrod Kozlovski, founder of Altal Security. Since changing jobs several times in one's career is going to be typical, there is a need to find ways for people to continue training as years go by. Online education may be very helpful for this. In the words of the demographer Wolfgang Lutz, experience shows that people who reach the highest education levels also tend to reach the highest education levels in continuing education. All in all, there is much left to be done as far as human capital, because the



There is much left to be done as far as human capital, because the national educational pyramids only reflect basic divisions of education.

national educational pyramids only reflect basic divisions of education—primary, secondary and higher—but they do not describe what the prevailing studies are among the educated population. If this were identified, it might be known what type of education has the highest impact on economic activity. For the time being, it's all wishful thinking, although common sense dictates that the better the quality of the educational content, the better the economic growth.

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# Talent travels around the world

It is to be expected that in the next few years people will leave their countries not because of poverty, conflicts, or disease, but because they find new attractive reasons.

Global population shifts have been the norm over the past few decades and they will continue to be so in the mid to long term. **There are now some 250 million first-generation migrants who live abroad** (a figure that is in contrast to the 70 million forty years ago), and some forecasts say these flows are bound to increase by 50%. Of course the financial crisis in Western economies has slowed down many flows (unemployment in both the United States and Europe discourages the poorest immigrants), but dynamism will pick up once the Great Recession is over. What is interesting about great migrations is that they are becoming more frequent within the Southern Hemisphere. Presumably, this will continue in the future as emerging countries mature and the world's economy revolves not only around growth in the United States, Europe, and Japan, but also BRIC and other developing countries. It is to be expected that in the next few years people will leave their countries not because of poverty, conflicts, or disease, but because they find new attractive reasons: better professional or personal development opportunities or higher salaries, just to name a few. In the world of business, the demand for professional talent is huge. It is growing faster than talent can be trained in domestic economies. In fact, as of today, the unemployment rate in developed countries is obscuring the fact that many business sectors have no unemployed and are actually struggling to find candidates with the right skills. This even occurs in Spain with 27% unemployment, where some of the most qualified young professionals are moving abroad. Hence, it would not be ridiculous for the United States or Europe to compete against Asian countries in seizing talent that used to come easily from other countries (China, India...) and that now prefer to remain at home or in emerging regions where opportunities are better. Because of the peculiar loss of interest in science and mathematics among the new American and European generations, the problem is growing. At the same time, new ways of producing globally will surely be created by tapping into the surplus of human capital from remote corners of the world through tele-work, tele-presence, or virtual teams. "A lot of Silicon Valley talent goes back to India, and the same applies to the talented Chinese who return to China. There is worldwide traffic of talent," agrees Tan Chin Nam, Chair of the International Advisory Panel of the Media Development Authority and former Permanent Secretary of the Minis-

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So creativity is the great economic asset contributed by this class. Their essential values are individuality, meritocracy, diversity, and openness.

try of Employment in Singapore. According to this expert, China is the factory of the world and it is redistributing some of its activities to the rest of Asia due to rocketing labor costs. Regional growth and movement of individuals are spurred by this trend.

In this new struggle, national governments have a lot to say—and also a lot to win or lose because the social, legal, and economic ecosystems will lure young trained professionals. If a state does not invest in training and retaining the best talent, it will be left out of this qualified migration phenomenon. Singapore sets the right example of how to do things. “We are a small country, a global city that attracts investments from around the world. Our philosophy is simple: if we do not have enough babies, we borrow from the rest of the world. Singapore is one of the most open countries in the world for the best talent, the most highly qualified professionals,” states Tan Chin Nam, Chair of the International Advisory Panel of the Media Development Authority and former Permanent Secretary of the Ministry of Employment in Singapore. “In Singapore, we used to focus on mathematics and logic, but then we shifted to the more creative and innovative aspects as well. You need to invest in the entire brain, both the right and left hemispheres.” But cities are the most appealing, so much more than the countries themselves. They have a larger share of the jobs and GDP, and, in times of the knowledge-based society and de-centralization, they must compete against each other if they want to make progress in the global economy. Ideas come from cities. If you double the size of a city, you more than double the ideas generated in it because of the connections among the people,” says Larry Rudolph.

According to the well-known theories of sociologist Richard Florida, **a new creative class is emerging** (engineers, designers, architects, economists, artists, writers, scientists, musicians...). **They are the true driving force of an economy that is increasingly focused on innovation, knowledge, and ideas.** “I believe the creative class and their flows are going to be a decisive factor,” says Cabrera. Florida calculates that ‘creative workers’ already account for 30% of the US economy. They are ready to travel domestically and internationally towards urban ecosystems where entrepreneurial spirit, tolerance, and cultural diversity prevail. So creativity is the great economic asset contributed by this class. Their essential values are individuality, meritocracy, diversity, and openness.



## Reuven Brenner

REPAP Chair in Economics, McGill University

### Adjusting to Shifting Flows of Capital, Human and Financial

To prosper, talents must be matched with capital, holding everyone – the talents, the suppliers of capital and the matchmakers – accountable.

What is then needed to make better matches between people and capital around the world?

The answer is simple – in principle: Either speed up the “domestic migration” of the youth in Western countries; or selected young people from around the world are allowed to migrate to the countries where financial capital is flowing (while and the Western world adjusts its institutions to accommodate this); or, the rest of the world speeds up institutional changes to better accommodate the flow of financial capital.

There is not much either Western Europe or the US can do about the latter, the last decade’s faddish, wrong-headed belief of exporting “democracy” notwithstanding. Speeding up institutional changes in China, the Middle East, African countries or any “emerging and re-emerging country,” are not under Western societies’ control.

But having a domestic migration of “young human capital” is feasible, would bring about better matches between flows of financial and human capital, and could offer the path of least resistance relative to alternatives of either massive migration or finding ways to induce the rest of the world to make the necessary institutional changes and increase their capacity to absorb greater capital flows.



## Domestic Migration of "Youth Capital"

Pessimistic tones dominate debate about government deficits, taxes, and an aging population. Surprisingly, an overhaul of the country's ways to increase its domestic flows of "human capital" could fix these problems. What if students could better complete their overall education, including vocational schools or undergraduate study, in fewer years? Consider a "Fermi" calculation about the monetary consequences of such a change, as it would apply to the United States:

There are at least 16 million youngsters enrolled in post-secondary education, with approximately 4 million graduating every year. Assume that from now on, each year, 4 million students join the labour force just a year earlier. Each generation would stay one year longer in the labour force – what can be defined as "domestic youth migration." How much annual income and how much wealth would this generate?

Assume that after graduation the average salary would be just \$20,000 and remain there. With 4 million students finishing one year earlier, this would add \$80 billion to the national income during that year. Or at an average annual income of \$40,000, it would add \$160 billion. Assume now that the additional \$80 billion in national income would be compounding at 7 percent over the next 40 years. This would then amount to an additional \$1.2 trillion of wealth – for just one generation of 4 million students joining the labour force a year earlier at a \$20,000 salary. At \$40,000, this would amount to \$2.4 trillion by the fortieth year – again, for just one generation of 4 million people joining the labour force a year earlier. The added wealth depends on how rosy one makes the assumptions about salaries or compounding rates. Add 10, 20, or 30 generations, each starting to work a year earlier, and the numbers run into the tens of trillions of dollars.

Indirectly, more "human capital" would be created. Finishing studies in fewer years means that the lucky, leisurely education/entertainment college years-traditions are over, as now Western youth must compete with hundreds of millions of young Chinese, Indian, and Latin American peers, previously isolated by Iron and other dictatorial curtains. Such new awareness brings about greater discipline, seriousness and fewer vices.

## Accelerated and Selective Learning

This brings us to execution: How does the educational sector encourage accelerated schooling – faster flow of better quality “human capital,” that is? The Swiss, German and Israeli school systems provide insights. After primary education (grade eight), students are sorted according to their abilities, and some go to high schools (with streams in science, math, and the humanities), while others go to trade or vocational schools that collaborate with related businesses. This dual system does not close the doors for late bloomers: If some youngsters change their minds and want to become engineers and go to universities, they can pass a few exams later and apply. Adolescents and college students whose talents and interests are not in general studies are not forced to prolong their schooling – that has been a recipe for decline in educational standards the last few decades, and has created inflation in paper degrees – with illusions of “human capital” only.

Moreover various studies have shown that increased spending on educational institutions in recent years has not led to measurable improvements in human capital. Using data from the 2010 Digest of Education Statistics, Eric Hanushek of Stanford University analyzed student enrolment and teacher and staffing levels at K-12 U.S. public schools between 1980 and 2008. He found that staff and teachers grew roughly twice as fast as students over this period. Yet while school staff increased 52 percent and student enrolment by 21 percent, students showed no additional learning in Hanushek’s achievement tests.

Universities show similar trends of increased administration personnel and costs without greater learning, as documented in Richard Arum and Josipa Roksa’s recent book *Academically Adrift: Limited Learning on College Campuses*. It would seem then that educational spending, and years spent in today’s “educational institutions” can be both cut drastically – while improving youngsters’ real “human capital” (even though the “statistical” could show decline).

Can education be drastically shortened and have far stricter selection in schools, with smaller faculties and administration and fewer universities – all while sharply raising a country’s flow of “human capital” as measured by know-how, discipline, ambition? The answer would seem straightforward.

Can the drastic restructuring of education achieve a better match between flows of human and financial capital? It would appear so. Will it be done?



This strategy appears to be easier to execute, and easier to bring under control than the two alternatives: bringing in masses of youth immigrants to Europe's aging societies from the rest of the world, or trying to reform the rest of the world. The timing seems right too: In politics, as in business and private life, bankruptcy or fear thereof, is the mother of invention. The aging Western societies have been walking this tightrope. This solution could better match today's the shifting flows of human and financial capital than the two alternatives. Executing this change, Europe in particular would get stabilized.



## Ángel Cabrera

President of George Mason University

### The Creative Class

In the 21<sup>st</sup> century, economic prosperity in every country, region and city is linked to their capacity to produce and innovate vis-à-vis other countries, regions and cities. This is so because international trade has created a global market of products and the Internet has created a global market of ideas and services, so we are all competing against each other. Since financial markets allow capital to flow towards places with greater productivity and better ideas, the global centers of innovation will take an increasingly larger share of available resources worldwide, to the detriment of the rest.

In this scenario, the most important competitive resource each of us has is our ability to appeal talented individuals and offer them an environment to grow their talent. A former professor in my university, Richard Florida, coined the concept “creative class” a little over a decade ago. It describes this type of person. The creative class includes engineers and scientists, programmers, designers and artists. Lawyers, educators, doctors and financiers that support the former group are included in this class too. As society moves away from agriculture and basic manufacturing as their primary means of production, the creative class becomes the driver of economic growth.

In the United States, the recent economic success of regions such as Silicon Valley, Boston/Cambridge or Northern Virginia cannot be explained without analyzing flows of talent. Most technological companies in Silicon Valley were started up by individuals who are not Silicon-Valley born and bred—many of them are not even American-born. According to studies by the Kauffman Foundation, the reason why many entrepre-



neers ended up there was to study at Stanford, Caltech or Berkeley, or because they knew that was the place where their talent had a greater chance to succeed. My own analysis demonstrates a very high correlation (roughly 50%) between the number of world-class research universities in one country and its competitive index, based on the tables of the World Economic Forum.

What can be done to appeal this creative class that is capable of setting the grounds of a dynamic, competitive economy? Talent seeks talent and lifestyle. The members of the creative class look for environments where they can collaborate with other talented people, where they can learn and find professional and entrepreneurial challenges and opportunities. They look for environments where it is easy to do things, where there are transportation and telecommunications infrastructures and an environment that nurtures startups. They look for vibrant, diverse, tolerant, inclusive urban environments where cultural activities abound and life can be lived to its fullest.





## 4. Flows of Intellectual Capital

4.1 A Collaborative Society

4.2 Piracy and the Entertainment Industry



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# Intellectual capital

**Let no one be mistaken, we are amidst a revolution in the knowledge-based economy:** there is increasingly more knowledge, and more products and services are made based on this 'raw material,' Wherever you look—the cyberspace included—new apps, designs, and ideas sprout all around you, be them in Western or emerging countries, among young people or the elderly.

It is no wonder that intellectual property rights are gaining ground to protect sellable and exchangeable assets.

The knowledge-based economy has several driving forces. First, higher spending in education and more students worldwide, particularly in emerging countries (as a result, there are almost two million students studying abroad, either in their region or a different continent). At the same time (and this is another driving force), new types of open innovation and projects based on collaboration and transferring knowledge are flooding in. In this context, research centers at universities and public and private R&D organizations are becoming increasingly important. Ever more specialized knowledge is being produced, more academic studies are being published, and new design-based innovative solutions and applications are being created.

In light of all this, it is no wonder that intellectual property rights are gaining ground (patents, registered trademarks...) to protect sellable and exchangeable assets. But intellectual capital is not easy to measure and analyze, so much data and statistics must be put on hold. "Measuring the impact of innovation is very hard. How can you measure the impact of the Internet, for example? The effects of innovations may be very different from country to country or industry where they are applied. There are no valid data," says Ravi Gupta, an economist with expertise in intellectual property.

James Boyle, professor at Duke University and co-founder of the Center for the Study of the Public Domain, shed some light on the main trends in the field of intellectual capital, which he defined as "all the value that is not physical: all that is intangible and all things yet to be invented." According to him, there are three big issues that may transform the status quo: data generated by the public sector, the push for the Internet to contribute to science (that is, the possibility of transforming science into technology), and the legal regime of global IP.

State data are quite a significant field, but poorly regarded in the world of innovation. It includes a wide range of concepts, such as time, geoloca-

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tion, traffic, or even the human genome. What is the economic significance of these statistics? Let's assess it fairly by way of an example: Europe has spent close to \$9.5 billion on obtaining data on the weather (if it will be sunny or cloudy this day or the other, if it is convenient to carry out this economic investment in this period or the other..., this information could be strategic in making decisions in the private sector) to then make an economic profit of \$68 billion. On the other hand, the United States spends \$19 billion in weather data, which yield a return of \$750 billion. As you can see, weather data are—surprisingly, even—behind massive amounts of money, although some seem to make better use of them than others. Why? "The United States is making more because it publishes all data at reproduction cost. If you want to obtain the weather history in the US, you can buy it for the very affordable price of a DVD box. Europeans, however, try to have state data self-funded; they want to break even. Empirically, numbers show the American model works better because there are many entrepreneurs creating value around it," says Boyle.

In spite of it all, the market for state-owned data is quite inefficient, which is precisely why a lot remains to be done: this could encourage many entrepreneurial projects. "Many state-owned data are generated locally. Opening them would trigger a wave of innovation," says Nimrod Kozlovski, president of Altal Security.

The United States spends \$19 billion in weather data, which yield a return of \$750 billion.

**The Internet is currently a very effective machine for buying books, shopping for groceries or the latest pair of shoes, but not for boosting science.** That is quite a paradox: the Internet was created precisely so that science would work better! "Most scientific content ends up being siloed, which keeps you from doing the same with it as you would with other content on the net," regrets Boyle. It would be ideal to read a scientific paper, and then be able to immediately obtain the set of data that the study is based on so as to replicate them (or not) and add them (or not), regardless of our expertise (or lack thereof) in the field. That is to say, it is not a matter of scientists needing more statistical series—we are all swimming in a world of ever-increasing data. "What scientists need are new ways of processing and managing data," argues the Duke Professor. There is huge potential benefit. To prove it, just apply common sense: there are 1.4 billion people connected to the Internet. Many of them are tremendously clever and surely have a better idea if you ask them and take them into account. It is simply logical. Besides, presenting scientific content to the public may have a huge redistributive impact on the world's economy, since the poorest countries can use it to speed up their economic growth.

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What scientists need are new ways of processing and managing data.

Third, **the legal regime for IP is increasingly more important in understanding where intellectual capital flows will go in the future.** There are increasingly more rights on intangible assets, and the number of products related to them is ever increasing. According to the World Intellectual Property Organization (WIPO), there are more than seven million patents internationally (although, as Reuven Brenner from McGill University points out, "the world of patents is chaos, so caution must be exerted when interpreting data"). And Japan, the United States, Germany, and China are the owners of most of these patents. But things are starting to change, just like with financial or human capital flows. As emerging countries catch up with the wealthier ones, some countries such as South Korea, which is a strong supporter of innovation, are progressively and clearly rising. Brazil, Russia, India, China, South Africa, and some Eastern European countries are taking strides in this direction.

The secret ingredient in a good, incentive-creating, legal-economic regime for IP is balance. "If you want to innovate you need input (be it a gene sequence or weather data) to 'build' your innovation, and also, you must be able to protect output through property rights. If the bar for IP rights is too low in certain fields, for example, drugs or film production, they will never be made. On the contrary, if the bar is set too high, you are paralyzing or discouraging the next innovator by increasing the cost of input," says Boyle. According to this specialist and pioneer in Creative Commons (a non-for-profit organization in sharing and using creativity and knowledge through free legal tools), public powers always want the high bar. "Most politicians will say that intellectual property standards must be higher. This equals to saying that you need to water the plants more. But the truth is that too much water is as damaging as too little. Too many IP rights are just as bad as too few." The key is to wisely set the optimal balance, which is now done globally.

If we take a look at the global map of IP, you will see stark differences from country to country. This is despite the World Trade Organization, in force since 1994, which has clearly stated that IP rights are part of free trade. The advantages of harmonizing systems among countries are evident and no one will object to them—provided they are reasonable. There is only one problem: systems are very specific and they change based on this or that technology and this or that development stage. Should we create the same type of rules for novels and software? In principle this is not a good idea, but we do it. Experience pro-

As emerging countries catch up with the wealthier ones, some countries such as South Korea, which is a strong supporter of innovation, are progressively and clearly rising.

ves that IP rights on a drug or smart phone, both obtained through patents, have completely different effects.

As with the example of weather data, each country imposes IP rights its own way. Europeans see weather statistics one way and Americans another. That is, if intellectual property is standardized worldwide, as is actually happening, the room to experiment shrinks. In the end, we may very well end up adopting a certain, mistaken pattern, which ends up being the most expensive. Besides, policies are designed with few data in many cases. "Copyright policies—and patent policies, to a certain extent—are based on anecdotal data, intuitions, and very simple economic models," says Boyle. That is why standardizing rules at a global level is dangerous. Besides, it is interesting that rights are being harmonized internationally, but not the exceptions. For example, Google copies the entire Internet everyday—several times a day even. Many things on the Internet are violating copyright, so it should be illegal for Google to copy law-breaking content. Another example: out of the 10,000 songs in an iPod, the average student has not paid for more than 20. Why isn't Apple held accountable for enabling this massive theft?

The conclusion drawn from all these dilemmas, according to Boyle, is that we need to set a reasonable balance and be humble with our intuitions on intellectual property, while acknowledging that it is hard to perceive advantages in open versus closed systems, and we need to encourage experimentation. In some cases, more intellectual property rights is good, in others it is wrong.

**One of the most interesting fields of experimentation in IP is digital entertainment goods.** Larry Rudolph, MIT researcher, shared the experience of his groundbreaking company, Redigi, which started in 2009 and is seeking to become a peer-to-peer market for exchanging digital videos, music, and books. "One of our principles is for virtual goods to be considered just like physical goods. The main reason why young people don't feel bad when stealing songs, software, or movies is because they don't feel it is real. What is something worth? What someone is willing to pay. But if you cannot sell it, the value is zero," concludes Rudolph. This researcher has concluded that using market laws is good even for monopolies, just like Amazon did when it stepped into the used book market. "All publishing houses told Amazon it was going to cannibalize its own clientele. But that didn't happen. Quite the contrary: second-hand articles currently help sell new books through the so-called 'loyalty card effect,' says the researcher and

businessman. If you save on a book, you'll spend it later on another, more expensive book. Time and time again, be it with cars or books, it is proven that selling used products improves the market.

The market idea of Redigi is that people can buy and sell used digital books and other digital products among themselves anonymously, without anyone knowing who bought or sold this or that (exactly the opposite of Amazon). This should generate trust among clients. Besides, to preserve this 'loyalty card effect,' money is stored in the system to guarantee that additional copies are made and a certain amount is paid to artists or authors every time a sale is made. "How much is this market segment worth? I believe close to 43% of spending in videos is digital. So there are billions of dollars in digital CDs, music, videos, books... all at stake," says Rudolph. It is undoubtedly a growing market with huge potential; especially if we take into account the rise of new middle classes in emerging countries and the fact that young people around the world want personalized or a-la-carte entertainment. Many products are purchased, and after a while, because of changing preferences, they are no longer useful, although they can be sold if there is a market for them.



We need to set a reasonable balance and be humble with our intuitions while acknowledging that it is hard to perceive advantages in open versus closed systems.

The experiment Redigi is carrying out has encountered some legal resistance, as is normally the case in these situations where one tries to solve the contradiction of not being able to sell or loan digital goods as opposed to physical books. The consequences of this initiative are nicely explained by Chris Meyer, who labels it as pioneering: "This system is by-passing the monopolist; it is creating a peer-to-peer market and enabling collaborative consumption. It is another way of achieving the redistribution of income with current technology while rewarding creators or artists." Add to this that companies like Redigi empower the individual and promote the creative spirit in each of us who profit from new technologies. "Some production methods in distributing creativity over the Internet combine work and pleasure. You can get paid for what you enjoy doing, and this is a new, burgeoning phenomenon. That is why people are experimenting more and more with their creative freedom. It increases satisfaction because we are homo faber [we enjoy making or manufacturing things] and also homo ludens [we enjoy playing]," says Boyle. Just like Chris Meyer said, the new emerging relationship between work and leisure may be changing Maslow's hierarchy of needs.

In short, intellectual property will be of paramount importance in the next few years, but there is still a lot to do. From bringing state data to



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years.

light, so that businesses can be created around them, to defining the international legal regime, or creating markets around digital goods. In the meantime, private opportunities are sprouting: open software, universities sharing genetic data through collective actions, Creative Commons facilitating peer-to-peer sharing...

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## The key is collaboration

What is that fuels an economy based on knowledge and ideas? **The fundamental driving force for the knowledge revolution is increased collaboration among people**, wherever they are, thanks to new ICTs. This interaction allows new forms of knowledge to be created and distributed. The constant expansion of the Internet and other information-sharing methods will surely continue to fuel the revolution. To give you an example: in academia, studies carried out by two or more people, who in no few cases are located in different countries, are continuously being published. According to the British Council, a third of the reports are already international (global projects are precisely those with the deepest impact, because, among other reasons, they tend to be quoted more often). It is also noted that the number of international patents in which inventors have several nationalities is increasing. International collaboration brings more incentives and ideas to projects, which end up reaching a higher degree of excellence. Many countries, particularly some of the likes of Switzerland, benefit from the international flow of students and researchers. In this era of collaboration, it is quite remarkable how connections between the corporate and academic (universities, business schools, think tanks...) and—to a lesser extent—political spheres, have multiplied. Likewise, there is greater interaction between companies and their consumers or clients. The greater role of universities and higher education in general is particularly outstanding, as is illustrated by the greater number of academic patents. A true cultural change is taking place. As a result, collaborative platforms and communities, and clusters and regions, where all players collaborate with each other and with other regions or clusters, are multiplying.

It is also noted that the number of international patents in which inventors have several nationalities is increasing.

## Piracy does not kill the entertainment industry

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There have never been as many creators, opportunities, and money as there currently are in this industry. Markets for videogames, films, and eBooks... are growing.

For years, it has been commonplace to declare that the future of the entertainment industry—including music and books—is doomed. Or that its future is not as bright as its recent past. The argument holds that new technologies (which have been very democratizing) favor file copying and sharing, which is in violation of copyright. Content creators will make less money and they will have less of an incentive to create, leading to the culture industry dwindling in the long term. There is a recent report by the Computer and Communications Industry Association called *The Sky Is Rising* that crushes this myth. Its conclusion? There have never been as many creators, opportunities, and money as there currently are in this industry. Markets for videogames, films, and eBooks... are growing. According to the latest edition of *Global Entertainment and Media Outlook* (GEMO—the best tool for sounding out the future in this industry, in this case, the 2013-2017 period), compiled by PWC Consultancy, worldwide spending in this industry will grow at a respectable 5.6% compound annual growth rate until it reaches \$2.2 trillion in 2017—well above \$1.6 trillion in 2012. Even in Spain, whose economy has been severely beaten by the crisis, the media and entertainment industries will continue to grow at 1.9%. Nevertheless, not all markets will display the same energetic growth. Many emerging countries (China, Brazil, India, Russia, Middle East, Northern Africa, Mexico, Indonesia, and Argentina) will grow at a cruising speed (twice the average growth rate), and, by 2017, their share of the pie will have reached 22%.





## 5. Country (or Regional) Analysis

China

Latin America

Africa

Oil States

India



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# Regions



The big trends in financial, human, and intellectual capital will have an impact on the big global economies. You will find below a review of opportunities and challenges offered by the disruptive changes we have just analyzed (challenges for Spain are the subject of an in-depth analysis in the next chapter).

## China

China is a great (probably the greatest) unknown for the future of the economy. Several decades of astonishing growth have positioned it as the second economy and top exporter in the world. It has carried out numerous reforms to open its economy to the world and facilitate incoming flows of foreign capital: price liberalization, diversification of the banking system, greater independency of state-owned companies, and creation of a stock market... However, despite evident progress, significant challenges remain ahead: to spur domestic demand sustainably, continue creating jobs, reducing corruption, overcoming the economic gap between inland and coastal areas, fighting pollution, maintaining political unity in the country, improving transparency... According to Max Burger-Calderón, who discussed the future of China with a small group of experts, the Asian giant is "well positioned, except on issues regarding governance and trust. **If the Chinese today were capable of recovering the values of Confucius** (destroyed by Mao's Cultural Revolution) **they would have everything that is needed to be successful. China would be an unbeatable rival.**" Regarding piracy, Nimrod Kozlovski says that even though in principle "China profits from a more flexible IP system that allows piracy and enables innovating on US innovations, there is now a domestic movement to protect the intellectual property of their own innovations." China doesn't just copy now; it also innovates and invents.

Delving into the detailed analysis, Burger-Calderón said about private entrepreneurship that "privatizing state-owned companies and creating a genuine separation of governmental and non-governmental institutions" is necessary. Regarding Chinese direct investment, China "has many resources to invest favorably in Asia and other regions, because it needs these regions to have an infrastructure so as to outsource many activities that are currently being carried out domestically. That is how

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this region will be able to provide the services it needs. Sustainable urban planning: renewable energy, fighting pollution, food safety, water," he says. In general, the Chinese society needs more values, greater ethical strength, and an important state reform.

The importance of this country with 1.3 billion inhabitants is such that if things don't go well for them, it won't go well for the rest of the world either. Ng Kok Song clarified that everything mentioned will make sense provided that politics in China remain stable and does not enter an era of conflicts. Basically, "for there not to be any political implosion in China and that it does not start a war," These are two different scenarios, one focusing on the fragile domestic stability and the other on international conflict, which cannot be ruled out, given its eventful history. "I am an optimist," says Burger-Calderón. "There are increasingly more Chinese students graduating around the world, for example in the United States. The Chinese are smart and hard-working," he adds.



## Latin America

Latin America is one of the most thriving regions of the last decade, where the 2008 crisis has barely been felt. This region is definitely integrated in the world's economy, although there is a group of countries swimming against the tide, upholding outdated, quite unorthodox economic strategies (Venezuela, Bolivia, Ecuador...) There are, however, many challenges to overcome: poor infrastructures, major socio-economic inequalities, a precarious tax system... **Brazil, the great regional power has consolidated as an economic power.** Thanks to years of growth, social inequalities have decreased considerably and it has amassed a substantial amount of reserves. However, there are signs of a bubble in its economy, foretelling a sudden halt to its growth (in fact, it has been slowing down for months now). After an overhaul of the labor market and education system in Mexico, the country continues to grow at a healthy pace, mainly due to exports and its strong ties with the US and Canadian economies. Colombia is another big player in the region. It is in a sweet spot: its GDP is growing non-stop, per capita income continues to increase, and foreign investments in 2012 broke a new record. Its success is partly due to an increasingly open economy, resulting from the many trade agreements it has signed.

Given this context, the experts at the Bankinter Foundation of Innovation concluded that the road ahead of them is looking very promising. "The future is bright. It seems governments are taking the right mea-

tures. Both Brazil and Mexico are taking the battle against corruption and bribery more seriously. As far as the physical, energy, and telecommunications infrastructures go; investment over the last 20 years has been low. But they are using their current surpluses for investing," says Juan José González, International Strategy Director at Indra. Regarding human capital, this executive argues that there are two areas in need of improvement: "The educated population is too small. There are not enough people with technical and commercial knowledge, although those who have it are keen experts. That is why it is expensive for companies to hire top executives. Historically, social mobility in Latin American countries has been scarce. The way up meant moving abroad and coming back. But this seems to be changing for the better." One of the weak points in this region is security and excessive dangerous zones. "Colombia is proving that you can win the war on drugs. And the group is convinced that the battle can be won in Mexico too," says González. Mexico is sunny; it borders with the US Southern border and is part of NAFTA. As soon as thousands of people stop being murdered, as has been the case over the last few years due to the war on drugs, tourism will thrive," says Reuven Brenner.

The weakest link in this region is finance. Generally, Latin America does not hold many currency reserves; so if a currency war unfolds, this region would have a lot to lose.

## Africa



There are some fifty countries in Africa, home to a wide variety of political, economic, and social conditions. Despite ongoing poverty and conflicts, this region has been very dynamic over the last few years. "There are some 15 countries with a better chance at thriving: Nigeria, Rwanda, Ghana, Zambia..., but everything is irregular. There are many differences among them. The largest economy in Africa is Nigeria, a somewhat scary country," says Chester Crocker. Sub-Saharan Africa is certainly on the radar of international analysts and investors. For instance, Rwanda's economy is growing at a rate close to 8% thanks to the government's effort to create an economic framework that favors international investment and free trade. Kenya has suffered ongoing corruption and political conflict. It has now become the hub for finance and communications in Central and Eastern Africa. In other countries such as South Africa, an impressive middle class is emerging. Not surprisingly, an S is now added to the acronym BRIC (Brazil, Russia, India and China) to include this emerging economy.

For years, the lack of infrastructures has been considered a big barrier to development in Africa.

Sergio Martínez, director of the Bankinter Foundation of Innovation was the spokesperson for the group of experts discussing this continent. He reported on the following positive aspects: **"Africa holds a great opportunity thanks to its demographics and its numerous natural resources** (oil, gas, and minerals). Likewise, we see a positive change in governance and governmental policy-making. It has the opportunity to take a leap forward thanks to new technologies, especially cell phones." On this point, James Boyle stressed how important technologies are for accelerating development. "For years, the lack of infrastructures has been considered a big barrier to development in Africa. Disruptive technologies, such as cell phones, are enabling this leap forward by providing access to financial markets, information, and payment systems."

Regarding Africa's disadvantages or weaknesses, Martínez pointed out the lack of education and skills to enable the population to meet the demands of the job market; the precarious healthcare system, and the limited access women have to education and work; religion and tribal tensions; and infrastructures (energy, renewable energies, transportation, drinkable water...). Their institutions can also be improved, despite recent progress in governance.

In the open discussion, there was some disagreement regarding the strengths, and even Africa's so-called final takeoff. "I believe there is excessive optimism regarding Africa. One of its problems is its limited capacity to absorb capital and technology. I believe progress will be slow because development is a multifaceted process to be carried out in all fields at a more or less similar pace," says Lluís Renart, professor at IESE Business School. "I see Africa's fast-growing population more as a problem than an advantage because it complicates all investments in infrastructures," says Wolfgang Lutz, who, for the first time, sees ghettos being built around cities where living standards are worse than in rural areas.

On a different note, the presence of China is ever stronger in this region in order to ensure its supply of raw materials, among other economic reasons. "Chinese eagerness for investments and opportunities in Africa is the best thing that has happened to this continent in decades. Unfortunately, Chinese governance is the worst thing that has happened to African governance in decades," says Chester Crocker.

## Oil States

Oil states are economies with an overwhelming dependency on revenue from oil exports. There is quite an array of political and social issues among

them. However, **they tend to share weak institutions and an omnipresent oil industry that tends to squeeze out other industries.** Nigeria, Venezuela, Saudi Arabia, Iran... The list is long. These economies could plummet if new oil extraction techniques—such as fracking—or new sources of renewable energy trigger a drop in prices in the future. Jeffrey Gedmin explained the conclusions drawn by a small group of experts on the many challenges these countries face. Before delving into three oil states (Nigeria, the United Arab Emirates, and Saudi Arabia), Gedmin made a mention of Norway, a European country that has used its oil reserves intelligently. “We have reached the conclusion that size does matter, because small can be more manageable; that a relatively ethnically, linguistically, and culturally homogeneous population is easier to rule; that governance matters and Norway benefits from a moral, transparent, and accountable government; that it has worked to diversify its economy and attain excellent education for its citizens. They made the potential curse of oil a blessing, a gift. Just by using it sensibly,” he states.

He sees Nigeria as quite a somber, terrible country. The extent of corruption is tremendous, and inequality is a real scourge for society. Oil represents the vast majority of the value of its foreign exchanges, and it accounts for nearly 80% of its budget revenue. “We think it is a highly volatile country because of oil, and because it is expected to become the third most populated country with 600 million inhabitants, a North and South division, a widespread corruption problem, and pervasive poverty and extremism. It appears to be pretty challenging to catch sight of the road to prosperity in the mid-term.”

Over the last few years, the United Arab Emirates has undertaken a huge effort to reduce its oil dependency by diversifying into several industries and investing in education and human capital. As a result, energy exports currently account for just 25% of its GDP. “We consider the United Arab Emirates a relatively stable country, albeit artificially so. It is a small country (where the local population accounts for barely 30% of the total) that relies on a very poor international labor force coming from Bangladesh, Philippines and Ethiopia. It offers no political rights, so no form of Arab Spring is foreseeable. It is not a very healthy society and it does not seem to be clearly sustainable in the long term,” says Gedmin. He believes that it would be essential to further diversify their economy, improve politics, and increase political participation throughout the various social strata, even though it is not a democracy, so as to ensure economic and political sustainability. Finally, in Saudi Arabia, the top oil producer in the world, where political freedom is absolutely lacking, oil accounts for 80% of its budgetary revenue and 90% of exports. Its unemployment rate is high, particularly among





## Chester Crocker

James R. Schlesinger Professor of Strategic Studies, Georgetown University

### Reflections on FTF XX Themes and Global Regions: The Case of Africa

Overview: One of the areas briefly considered during FTF XX was the relationship between thematic focus areas (financial, intellectual and human capital flows) and their implications for various regions of the global system. Bearing this in mind, the question of potential Spanish interest in the MENA/Sub-Saharan Africa regions can be viewed from a number of angles. In some quarters it is still fashionable to view Africa—broadly defined—as a strategic backwater characterized by poverty, conflict and disease. The reality is more complicated and the trends have become more interesting.

Before looking at some of the trends, it may be useful to ask why this should matter for Spain. After all, one might argue that if Spanish enterprises are to thrive once again and if Spain is to regain a reputation for innovation and dynamism, the focus should be on China and the U.S. and that Spain should try to walk in the footsteps of successful, innovative places like Singapore and Israel. But there is a counter-argument: Spain is not Israel or Singapore. Even in this age of globally-linked technologies, the destiny of most countries is decisively shaped by their history and culture, by their demography, and by the facts of their geography. Like France, Italy and Portugal, Spain is a Mediterranean power that has had an impact on Africa and has been shaped by the Arab-Muslim world. It cannot be irrelevant that Spain is closer to Africa than any other non-African country except Israel (Israeli entrepreneurs have long understood that there

are interesting opportunities in African countries in such sectors as tourism, hotels, civil engineering and construction, mining, and military equipment).

What does Africa look like today as a place in which to do business and seek opportunity: On the negative side, the region suffers from some significant hurdles: weak political institutions and rule of law; small, fragmented markets; poor infrastructure for land transport; marginalization of the rural sector; high levels of corruption; health challenges and weak education systems; inadequate human capital (in part due to brain drain), low levels of productivity/skills; and significant conflict potential in the more fragile states.

This is one side of the balance sheet. The upside is less well understood, although a number of studies by the IFIs, major financial firms and consultancies have begun to tell the story:

- Africa is the world's second fastest growing region, and six of the world's fastest growers are African. The IMF anticipates 6% GDP growth in sub-Saharan Africa in 2013.
- Many of Africa's internal conflicts have been brought under control.
- The quality of macro-economic policy making has been positively transformed in the great majority of African states.
- The region's vast agricultural potential, major hydropower resources, massive natural resource endowments in energy and non-fuel minerals; and underdeveloped infrastructure serve as magnets for foreign capital inflows from traditional sources in Europe and North America as well as from Brazil, Russia, India, Gulf Arab states, China, Japan, and Korea.

There is a new 'scramble for Africa', but this time Africans themselves are defining some of the terms of engagement.

In addition to these factors, there is an increasingly diverse range of drivers behind Africa's modern development. These include:

- Africa's demographic and urbanization trends are creating an emerging consumer class. Though heavily concentrated in ten countries (out of 54), Africa's booming growth of private consumption accoun-

ted for 45% of regional growth in the 2000's, while less than one-third of regional growth came from natural resource exploitation.

- Capital inflows increasingly come from remittances, conventional FDI and SWF investments rather than official (concessional) development assistance (Conservative estimates indicate that Africa's 31 million international migrants send about \$40 billion/year back home annually, accounting for significant share of GDP in a number of countries. Europe and the US are the top sources).
- Soaring rates of urbanization and rapid population growth point to huge challenges but also major opportunities. By 2035, Africa's labor force will be larger than China's, but education levels are lower than China's and India's. The informal sector accounts for 80% of the region's employment. Nearly one half of the world's out-of-school children are in sub-Saharan Africa. Despite large expenditures on secondary education, only two thirds of students progress from primary to secondary school. It is estimated that by 2015 60% of Africans will be under age 25, a statistic with powerful implications for manpower, consumption, and retiree dependency ratios—but also for governance challenges, opportunities for criminal enterprise, and emigration flows.
- Information technology has enabled many African economies to leapfrog into new economic opportunities as a result of mobile phone and internet-based banking, remittance transfers, agricultural marketing, e-shopping, and cultural and political participation. Mobile phone penetration has soared from 1% to nearly 60% in one decade.
- By mid-century, Africa will have three times Europe's population and 25% of the global labor force will be African. There are expected to be two billion Africans by that date.

## Implications

It is difficult to argue that Spanish decision-makers can ignore these scenarios. The impact of failed African states/economies will be directly felt in those European states most closely linked to Africa (geographically and historically). By the same token, African successes will have many partners and suitors, as Africa—for all its problems—has become a com-

petitive arena. The real issue is not a scarcity of resources (finance, human capital, basic and applied knowledge); rather, the challenge is how to overcome the mal-distribution and uneven access to these critical resources. Global prosperity can no longer be based solely on the economic engines of China, the US, India and Europe. It will require the participation of two billion very poor people—half of them African today—joining the modern global economy.

The possibilities for Spanish engagement are varied. Africa can absorb the help of idealistic young people with capacity building skills in such fields as, farming and animal husbandry; all levels of education, especially in entrepreneurship and engineering; women's empowerment; and the application of appropriate technologies. A Spanish Peace Corps initiative has been suggested by some FTF XX Participants.

Spanish decision-makers may need to review and refine their country's 'brand identity' for engaging with the emerging Africa region. Historically, Spain is a center of global exploration. Are there modern echoes of this historic calling? Spain's rich cultural history positions it to be an inter-cultural bridge and an innovative center of capacity-building in fields where Spain has an edge (engineering, alternative energy, infrastructure). In Spain today, unemployment is an overwhelming concern. The day will come, however, in Spain as in other European nations, when declining population is once again recognized as a slow-burning demographic and fiscal problem. Both the demand for and supply of migrant workers will likely grow, initially in fields such as personal services and healthcare. Spanish authorities may want to study the migration experience of their European partners to identify 'best' (and 'worst') practices in managing migrant labor resources. As in previous centuries, Spain will predictably be a primary 'gateway to Europe' for peoples from the southern shores of the Mediterranean.

The financial sector may also need to consider whether there are opportunities to "put Spain on the map" in fields relevant to Africa's needs. One such area is remittance processing (African Diaspora' transfers are the most expensive in the world—what can be done about this scandalous situation and how could a pilot scheme be rolled out?). Africans are savers as well as consumers. Major pension fund assets are being built up in a number of African countries, but these assets are typically poorly managed due to local requirements to invest in narrow local debt and equity markets. Western banks like Bankinter could be making the case to liberalize this captive capital and bring modern



asset management to the region. It may be interesting also to explore whether Spanish financial institutions have anything to learn from African innovators that have skipped generations in creating mobile platforms for money transfer, ATMs, email, and market intelligence.

young people. Despite some efforts over the last few years to diversify its businesses and invest in human capital, there is much left to do at all levels. "The governing leadership is corrupt, hedonistic, and hypocritical. It seems stable but it really isn't. If the system collapses, bloody conflict could erupt," says Jeffrey Gedmin. The group discussing oil states believe that oil in the Middle East is at risk. The only way to make a transition towards more stable models is by improving government accountability, investing in industrial diversification, encouraging political participation in order to close the gap between the elites and the general public, and investing in education. "This region has been subjugated, and there will be a long period of instability," says Gedmin.

## India

**It is undoubtedly one of the great economies of the future.** India is already the tenth economy in the world in nominal terms due to the many reforms that have enabled high economic growth—close to 7% over the last few years. Since 2011, the economy has slowed down slightly due to cuts in public investments and international investors being less confident in the government's reformist zeal. At 1.2 billion people, its population will be larger than China's in a few years. It has many challenges ahead of it, from building infrastructures and improving the population's educational level to reducing poverty and corruption, and providing better opportunities for women. "Many of the things said about Africa can also be applied to India, except in regards to the government," says Larry Rudolph, who is in charge of sharing the conclusions of the work team.

To analyze the future of this gigantic country, the problems were divided into two groups: those that can be solved by central governments, and those that can only be solved through decentralization. It was concluded that many problems in India can be solved through decentralization. "The weaknesses are social cohesion, security, education, and health care. The weakest of them all is social cohesion. The strengths are the economy, governance, and individual freedom," says Rudolph. As far as the evolution of social cohesion, all scenarios are open: it may or may not improve; it all depends on government policies and the economy. A lack of improvement in social cohesion and security will have a negative impact on health care, education, gender equality, the economy, governance, and individual freedom.

In any case, improving infrastructures requires that the government make critical decisions, which will have a major impact on education and





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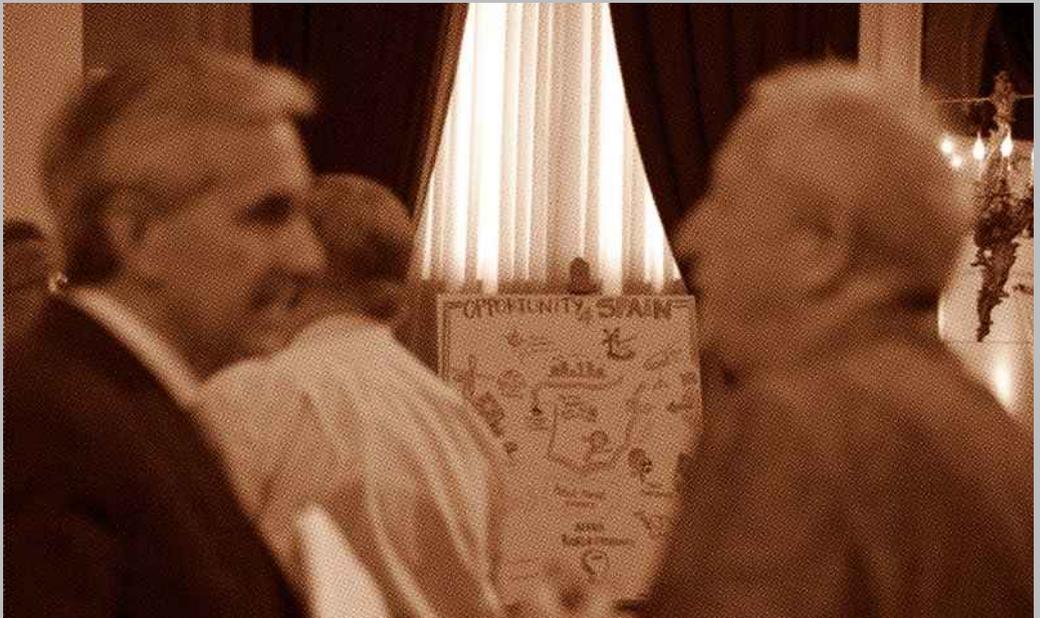
entrepreneurship. There are also fears that pollution and other environmental problems will become major headaches. Once again, this would require action by the central government. "The government's problems are different from those in China or Africa, but nevertheless, the rather chaotic political decision-making process in India will slow things down somewhat and make them more volatile than they should," says Nikhil Prasad Ojha, from Bain & Company.





## 6. Spain

### 6.1. Rationality in Public Investments



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## Spain



How can Spain rebound from this crisis once and for all? What should it do to guarantee a more sustainable model that avoids falling back into the nightmarish real-estate crisis? How can it change its international image to join the squad of the most competitive global economies once again? Scientists and experts gathered by the Bankinter Foundation of Innovation are optimistic—provided that the necessary steps are taken in several regards. Far from discussing conventional roadmaps for an economy where unemployment is close to 27% and severely hit by the current Great Recession, experts decided to push forward more creative ideas that will surely complement the current ones. So this gathering of minds did not talk about the labor market reform—and whether or not firing costs continue to be steep for business owners—or the need to adjust the financial system another notch, or agree on a Europe-wide banking union, or accelerate the deleveraging of households and companies. International institutions such as the IMF, the OECD, or economists, or the Spanish government and opposition parties already take care of this on a daily basis.

The thoughts brought up ranged from **Spain's competitive edge in the fight against climate change to the proven creative skills of Spaniards in fashion**. Precisely because this approach to the Spanish crisis is different from the norm, it is worth consideration. What should the executive branch and Spanish people do? Well, among other measures, by order of importance: opening the administrations' data to the public, launching a campaign to galvanize the Spain brand, setting up a program to appeal to investors, creating a Peace Corps for young unemployed Spanish graduates in order to acquire international experience, and finally, eliminating all barriers we have built as a country against the arrival of the creative class, that productive class which, many believe, will be the key to the 21st century. "I recommend publishing all sorts of state-owned data on the Internet, at all levels of the local and central administration, and under an open intellectual property model so that people can create products with these data," says James Boyle, professor at Duke University and cofounder of the Center for the Study of the Public Domain.

There is huge potential in the segment of statistics and public information, since it enables citizens and entrepreneurs to create new businesses and services by reusing state-owned data. This is at an embryonic

stage in Spain, though. There is a project named `datos.gob.es` (a portal where a catalog of state-owned data is to be hosted) in the framework of the Digital Agenda. Some projects are underway in some cities, particularly the “smart cities.” But that’s basically it. “Spain needs to make better use of its state-owned data,” says Richard Kivel, executive chair of the ViS Research Institute and well-known entrepreneur in the field of innovation. “This initiative would bring about two benefits. The first one being improved transparency of the state. You cannot demand certain things from the public sector if you don’t really know what it is doing. The second one being a competitive advantage for citizens,” says Boyle. Spain is one of the few European countries without a transparency law, even though Mariano Rajoy’s current government has drafted a bill that is currently being discussed in Parliament. Reusing data effectively would boost innovation, promote collaboration among all players, and facilitate a smoother transition towards the knowledge-based economy.

Improving how Spain is seen is the key to continue attracting foreign capital in order to grease the wheels of the Spanish economy.

Another idea fiercely pushed by the experts brought together by the Bankinter Foundation of Innovation is to revive the image of Spain around the world after a dire, years-long crisis that has made the Spanish economy (formerly an example of an economic marvel) a usual suspect among the ‘negative’ headlines of the global financial press due to its macroeconomic imbalances, risk of sovereign bankruptcy, corruption scandals, and out-of-control unemployment through all social layers and ages—particularly among the youth. **“Spain must believe in itself.** The government must rekindle hope and national pride that has been weakened by the financial crisis,” says Ng Kok Song. Nimrod Kozlovski, founder and president of Altal Security agrees: “It would not be a bad idea to launch a brand campaign to celebrate national excellences. Entrepreneurship has a lot to do with image.” According to all studies, the image of Spain is hurting in Western countries, particularly in Europe—and within Europe, it’s hurting in Germany and the UK. Improving how Spain is seen (by international investors, other countries, international organizations, and communication media, among other stakeholders in the international community) is the key to continue attracting foreign capital in order to grease the wheels of the Spanish economy. “Many things could be done. For example, a sports team with the Spanish sports elite (Real Madrid, Barcelona, Nadal, Ferrer...) could be put together for a world tour. They are the Spanish icons of success,” says Ng.

But a mere campaign with popular personalities to improve its image might not be enough. “I believe the initiative to revive the image of Spain is good, but it should be done with greater reach, such as an Innovative

Spain. It should be a group effort involving not only the government but also the public sector," says Tan Chin Nam, Chair of the International Advisory Panel of the Media Development Authority and former Permanent Secretary of the Ministry of Employment in Singapore and Trustee of the Bankinter Foundation. Ravi Gupta, an American economist specialized in intellectual property, pointed out that "Spain's history is packed with explorers. A program should be developed and called the Resurgence of Innovative Spain. Madrid and Barcelona would be the innovation hubs hosting entrepreneurial ecosystems." This experiment obviously would not work without the revitalizing state aid. "Some governmental funding would be necessary, through a fund of funds similar to the Small Business Investment Companies Program (SBIC). According to this economist, for this initiative to be successful, contacts between universities and companies must be facilitated (these contacts are basically non-existent in Spain today, contrary to the situation in other countries, like the US) so that scholars and researchers can also dabble in the field of entrepreneurship by starting up their own companies. And all stakeholders (investors, entrepreneurs, universities...) should be in close proximity to each other. Besides, the type of cluster should be carefully selected: renewable energies, cyber security...

For the last two years, far-reaching decisions have been made in the Spanish economy: the job market has been transformed, massive cuts have brought public finance back into control, and private companies' debt has lowered.

Of course, a campaign to boost the Spaniards' morale backed by new innovative projects would help show the world the big efforts the country is undertaking in order to transform its production model and to become a modern, dynamic, competitive economy. For the last two years, far-reaching decisions have been made in the Spanish economy: the job market has been transformed, massive cuts have brought public finance back into control, and private companies' debt has lowered. This is all bringing greater flexibility to the economic system, and the weight of the construction industry—formerly stratospheric as a share of GDP—is now closer to the European average. Besides, exports are a very dynamic sector.

Several attendants insisted on creating investor programs so that entrepreneurship may blossom in Spain. "It would be advisable to offer better tax benefits to business angels and institutional investors in order to facilitate the path for those who actually invest in entrepreneurs," says Kozlowski, who sets Israel as the example to follow. Indeed, this neighboring Mediterranean country has been dubbed by some as the start-up nation (one start-up per 1,800 inhabitants!) and it attracts vast amounts of foreign capital—thanks to many tax deductions, among other reasons. This dynamism and entrepreneurial culture have transformed the country from an orange-exporter to a high-tech-exporter in thirty years. The new Spanish Entrepreneurs Law, to be passed in the

Spain attracts vast amounts of foreign capital—thanks to many tax deductions, among other reasons.

coming months, follows this example. Under this law, business angels may deduct part of the capital invested in a new company from their personal income tax, and they are exempt from taxes on their capital earnings provided that they are reinvested in another business project. Its impact is yet to be seen, but so far, investors in Spain have preferred to put their money in relatively consolidated companies, rather than rising start-ups with a more uncertain future.

**The human capital in Spain is excellent and particularly outstanding in engineering, for instance.** But even engineers are having a hard time. Their unemployment rate (even though it is below the national average) is rapidly increasing given the economy's lethargy, and the meager investments in public infrastructures. Therefore, many Spanish engineering firms (just like many developers and the entire business sector in Spain, SMEs included) are setting their sights elsewhere in the world, searching for the growth they cannot find at home. Precisely because of the excellent technical professionals (civil, telecommunications, industrial engineers...) Joel Kurtzman, a researcher at the Milken Institute, proposes creating a "Peace Corps of engineers," a program that would feed off young unemployed graduates. "This program should set up internships with Spanish engineering companies, and then, after a few months, they would go work in India, Saudi Arabia, or other locations under the premise of coming back to Spain with world knowledge," he says. This specialist sees Spain's particular strengths to be energy and IT maintenance of electrical networks—terribly attractive fields for many countries. "Engineering is a competitive advantage to be geared towards exports, just like consulting or products, for which there is a huge appetite around the world," says Kurtzman. Emilio Méndez, scientist and director of the Center for Functional Nanomaterials, argues that "there are many engineering projects offered through the Internet. Basically, a company proposes a project and several countries compete to solve the problem. Spain has vast experience to offer through universities or small groups possibly funded by the state in an initial stage."

But looking farther, this idea could be applied to other fields where some professionals have proven their worth (architects, nurses...). "I believe the idea of a peace corps for the unemployed could be applied to other specialties where Spain has a comparative advantage. For instance, in renewable energies, financial asset management..." says Chester Crocker, professor of Strategic Studies at Georgetown University, who believes these peace corps could be funded by the government in some cases, and in other cases by companies in certain business sectors.



This specialist sees Spain's particular strengths to be energy and IT maintenance of electrical networks—terribly attractive fields for many countries.

There is no doubt that we live in an era of the knowledge-based society and the creative class. **If Spain wants to be top-of-the-class, it must learn to enhance its creativity and leave the doors wide open to the flow of global talent ready to put down roots wherever they feel best.** It seems that the economy grows faster than the average wherever these professionals abound. "Every time I mention the idea of the creative class among Spaniards, people are reluctant, arguing that there is a lot of unemployment already. Why bring in more people? But it is precisely the fresh ideas and projects of the creative class that could solve the problem of unemployment. We ourselves have built many barriers against importing creative talent, and we must tear them down. These barriers have to do with the admission system in Spanish universities, the possibilities for staying in the country, etc," says Ángel Cabrera, President of George Mason University. The creative class includes professionals not only in culture, the arts, and music, but also in science, engineering, high-tech, design, or economics. (Lots of) talent, (lots of) technology, and (lots of) tolerance are the magnets for these flows.

In this regard, Kozlovski proposes appointing Madrid and Barcelona as global cities for start-ups, just like New York or Berlin. "You need to create an environment where start-ups can multiply and Spain has the right culture, the right people, and the right energy. People love Spain and its food," says this consultant in security issues, who is convinced **that opportunities for Spain will come from "women: women entrepreneurs and innovators." He maintains that Spain could be a worldwide leader in fashion and design.** Retail is of course one of Spain's advantages, as clearly indicated by Zara: one of the most revolutionary fashion chains of the last few decades, thanks to its state-of-the-art, swift, and flexible logistics and unique relationship with clients (Kurtzman says that he wishes the top management of the business giant Amancio Ortega started as a small tailor shop left the multinational and started up other companies from scratch with their highly demonstrated skills).

According to him—for whom the revolutionary 3D printers coming up are new platforms for architects, designers, and other creators to access the global market—it is advisable to clear the way for the arrival of talent by eliminating obstacles ranging from visas to other legal or job-related restrictions. With sights on developing the best ecosystem, it is also advisable to lower the bar on intellectual property requirements, so that companies will cooperate with each other, including universities, in order to facilitate the transfer of knowledge and guarantee basic infrastructures on which start-ups can build.

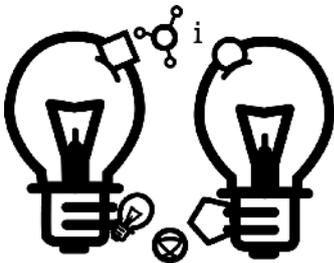
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With sights on developing the best ecosystem, it is also advisable to lower the bar on intellectual property requirements, so that companies will cooperate with each other.

If Spain is to become a more competitive and creative country, a barrier rarely mentioned by international bodies or conventional economists should be eliminated: the huge gap that separates those who have power, that is, the decision-makers, from the rest of society, where creative ideas must blossom. "Spain and Israel have a very similar profile, except on one point: the hardly-accessible powerful people," points out Cabrera. Social links tend to be closer in the most entrepreneurial countries, such as Israel and the Nordic countries. In Spain, the powerful are always far removed. It would be very odd to see an Ibex 35 company CEO chatting in the corporate cafeteria with a low-level worker. "Any initiative to break with this convention and create an environment for interaction would be warmly welcomed," says Cabrera. "Corporate sponsorships are needed to solve this problem. The state must stay out of it as much as possible. Besides, there must be leaders that consider this task as some sort of contribution to society—even if they work part-time on it," says Fernando.

Blossoming creativity and start-ups need more than a barrier-free scenario. It is also important to have international social capital, a network of relations between one country and the rest of the world—which is precisely what Spain lacks. "A reason why IT has taken off in India is due to the extensive connections issued from the painful diaspora of Indian citizens around the world, particularly in the United States," says Cabrera. The same applies to Israel, holder of huge international social capital after a centuries-long Diaspora, which connects it to basically all countries of the world. They have a program named Birth Right under which young Jews from around the world can travel for 10 days to Israel in order to get to know the country. More than 300,000 young people from over 60 countries have participated in it. "A program that creates incentives for Spanish talent to move abroad and create connections with the rest of the world must be set up," declares Cabrera.

During the event, the guest thinkers shared more ideas to help Spain once and for all climb out of the hole this Great Recession has sunk it into for the better part of six years. A highly discussed idea was what regions in the world should be the priorities. That is, in what basket to put the eggs so as to continue growing internationally. Ng Kok Song, for instance, believes Spaniards are not jumping on the Asian wagon—and it is the one traveling the fastest. "I think the country is far too focused on Europe in a time when this region is facing a severe adjustment process. Spaniards may say 'let's go to Latin America,' but they are missing out on opportunities in Asia, the fastest-growing region in the world where, currently, their presence is insignificant." The gravity center of



the world's economy is certainly shifting from the West towards Asia, particularly China, where the rise of the new middle classes and the improved purchasing power of all social strata is becoming increasingly evident. In the meantime, the Old Continent has been severely hit by the financial crisis, jeopardizing the single currency and forcing Brussels to bail out a few countries such as Ireland, Portugal, or Greece. And Spain itself has received generous help in re-structuring its banking system. "Europe has been immersed in an inward-looking process over the last few years, and not just because of the euro crisis," says Napolitano. However, the former head of investments of the sovereign fund Global Investments Singapore Investment Corporation does not question the significance of Europe for Spain: "It is correct in thinking about an economic future within the EU; the long-term economic benefits are clear," he says.

Social links tend to be closer in the most entrepreneurial countries, such as Israel and the Nordic countries.

Basically, it just makes sense for Spain to have a larger presence in Europe (the destination of 70% of our exports) and Latin America (the recipient of the bulk of Spanish foreign investments, where Spain is one of the top 10 worldwide investors). It is part of the evolution of an economy that was under Franco's dictatorship until the end of the 1970s, and chose to approach its European partners, its natural habitat, and Latin America, where it has strong cultural and historical ties. "For the last few decades, Spanish companies have been busy tapping into the European and Latin American markets. But this is the result of history. If we are not present in Asia it is because of the still incomplete path we have followed," points out Lluís Renart, Marketing professor and director of the Africa Initiative at the IESE Business School. By paraphrasing Ortega y Gasset, this economist said that **Spain is the problem, and Europe is the solution**, meaning: Spaniards need to become further integrated with our European partners, probably progressing towards greater economic and political union. "I believe our greatest strides in history have involved higher engagement with Europe," he says.

In any case, Ng says that now that the German elections have taken place, the Spanish government must call on Brussels to say: "We have carried out a great effort to reduce our debt, we have been austere, we have made progress, but now we need more time. It must be crystal clear in Europe that the EU is committed to Spain staying in Europe." This would boost the confidence of Spain's international partners and would lower the risk premium and the cost of IPOs for companies.

International strategies aside, some attendants pointed out the important role of politics and the risks involved for a society when the

The gravity center of the world's economy is certainly shifting from the West towards Asia, particularly China.

former is not correctly executed. Experts mentioned the need to fight rampant corruption, reinstate economic logic to the government's decision-making (which was lacking during the past economic boom, fueled mainly by the real estate bubble), and restore stability to the national territorial structure. **"Corruption must be fought,"** says Reuven Brenner, professor at McGill University in Canada. This social scourge has been growing in Spain for the last fifteen years, as proven by continuous scandals over embezzlement of public funds, money laundering, and misappropriation of public funds. Many excesses have taken place, from careless urban planning to trespassing the limits set by the law regarding the funding of political parties. **Spain has fallen many positions in the index put together by the organization International Transparency that assesses countries based on the extent of corruption.** Surveys by the Center for Social Research (CIS by its Spanish acronym) remind us every month that corruption and the low quality of Spanish politicians are the main concerns of Spaniards, second only to unemployment. What to do against this chronic social illness? "Something similar to what has been done in Singapore should be undertaken to achieve an honest, accountable government: civil servants are paid based on market rules and meritocracy." The Canadian economist adds that "regulation leaving the door open to bribes must be simplified, and an independent audit of different government levels must be carried out. Once these measures are implemented, the question remains of how to fund the transition." According to him, if leaders send a clear signal to the international community that changes are underway, and that there is a credible, long-term strategy towards greater transparency, responsibility, and meritocracy, financial capital will return and contribute to the transition.

Finally, there was a mention of the Spanish territorial model, which is subject to constant tensions and spinning forces. Over the last two years, Catalonia has initiated an independentist path. Its regional government is planning a referendum on whether or not to continue being part of Spain in 2014. The Basque Country, where half the people maintain an independentist stance, is closely following events in Catalonia. "At present, Spain has not yet solved its territorial model and national cohesion. This thorny issue is on the table," warns the IESE professor. Separatism is never appealing to international investors, who are fearful of uncertainty. "As proven by Québec in Canada, separatism tends to decrease capital flows and deter the arrival of people to separatist regions," says Brenner. Studies reveal that even entrepreneurs, although they may stay for one or two years in the French-speaking,

Experts mentioned the need to fight rampant corruption, reinstate economic logic to the government's decision-making and restore stability to the national territorial structure.

independentist Canada, end up moving elsewhere. Therefore, the antidote proposed by this professor is to encourage people to move among regions and to interact in general, so as to promote an atmosphere of tolerance.

Other strategies for reviving the Spanish economy were brought to the table during the discussion. Sergio Martínez, the director of the Bankinter Foundation of Innovation, proposed **creating international missions to put the spotlight on university talent**. These missions would go both ways: some would be led by university presidents going abroad to India, China, or wherever potential opportunities have been identified; others would be undertaken by Spanish companies seeking talent in Spanish universities. Fernando Napolitano, along with Juan José González, Head of International Strategy at Indra, suggested reviving the Fulbright program so that a group of young people under 35 (engineers, economists...) could study in Silicon Valley and learn about entrepreneurship. "We would apply the same model designed in Italy through Indra, the US embassy in Madrid, the Fulbright Institution in Spain," says Napolitano who hopes these young people—highly motivated after their stay in California—would contribute to the creation of entrepreneurial communities in Spain. Besides, it would be a way of activating innovation programs related to the core business of companies involved in sponsorship.

Other proposals worth taking into account were: improving the economics of our diplomatic services (Lluís Renart) (which is not up to par in business-related issues with the French or British diplomacy); shortening the time to open a company (Reuven Brenner); creating an Administration desk to solve entrepreneurial-related problems (James Boyle); putting together some sort of Wiki website for entrepreneurs to discuss the usual problems of starting up and managing their business (Ravi Gupta); **showcasing national engineering products in Spanish airports, following the example of other countries** (Joel Kurtzman); developing a collective intelligence market where many companies can cooperate in identifying bottlenecks or certain opportunities in a country, and to then compete for talent against each other (Joel Kurtzman); launching Spanish MOOCs, the latest frenzy in the US (Larry Rundolph); creating a platform of educational online classes targeted at the Spanish-speaking world (Joel Kurtzman); and finally, sounding out the field of online education for engineers (Chester Crocker).

## Greater rationality in public investments

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The latest boom in the Spanish economy filled the coffers of the Spanish treasure and built lots of barely profitable infrastructures (highways, airports, high-speed trains...)

Regarding decision-making by Spanish politicians, some experts asked for more common sense and cost-benefit analysis of public investments. The latest boom in the Spanish economy filled the coffers of the Spanish treasure and built lots of barely profitable infrastructures (highways, airports, high-speed trains...) that are currently big white elephants providing little economic or social advantages but are object of exorbitant maintenance costs over time. "Spanish politicians must show greater economic rationality in their decisions. This applies mainly to infrastructures, but also to other fields. There has been a lively discussion about the freight train of the Mediterranean, because the central government insisted on having it go through Madrid. Several high-speed train lines have been closed down because trains were traveling empty," says Lluís Renart. Each kilometer of the high-speed train bears a building cost ranging from €10 to 30 million, depending on the difficulty of the section. Osman Anwar, a consultant with the British company SQW, proposed creating an entity that puts together independent reports to control the effectiveness of government programs. This latest idea of **controlling the effectiveness of governmental economic decisions** was among the most popular and is included among the main recommendations from the gathering.





## 7. Spain's Relations with Other Countries



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# Spain's relations with Other Countries

Spain is part of a community of about 200 states. These two-hundred economies do not always provide the same opportunities for growth. For strategic reasons, some are more prudent partners than others. During the discussion, experts analyzed relations between Spain and five regions: Africa, China, India, Latin America, and the oil states of the Middle East. Countries such as Europe, Russia, or the United States were not discussed.

## Africa

Mauritania, Cape Verde or Senegal, or North African countries such as Morocco and Algeria, are the top destinations for Spanish companies.

The African continent is populated by more than 1 billion people. It has been very dynamic over the last few years, so much so that many people talk about an economic miracle and it finally leaving behind the poverty that has burdened the continent for decades. The GDP has doubled in 10 years. Mauritania, Cape Verde or Senegal, or North African countries such as Morocco and Algeria, are the top destinations for Spanish companies. How should Spain approach this continent located just a few kilometers away? "I believe Africa is a big threat for Spain. There is a saying that goes: if you lie down with dogs, get up with fleas. Spain must keep company with the strongest, most competitive economies in the world. It must focus on the United States or Asia, not on problem-ridden Africa." Richard Kivel heartily agreed with this thought. The continent is clearly burdened with many problems, from drinking water to political instability and ethnical and tribal problems in many states, which account for the lack of legal certainty in many cases.

But the neighboring continent can also provide many advantages, depending on your point of view. At least this is what Lluís Renart, leader of African matters at IESE, thinks. "Africa can also be an opportunity. Given that 10 new countries will join the EU in the imminent expansion towards Eastern Europe in 2014, we started researching the impact this would have on Spain, and we reached the conclusion that if Spanish companies do nothing, 1% of the GDP would be lost, mainly because funds would go east and there would be new low-cost competition. But we also reached the conclusion that if Spanish companies were up to

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the challenge, it could be an opportunity, as has been correctly proven." Therefore, this economist believes in the skill and creativity of Spanish companies, and feels there is interest: "Companies, especially engineering and consumer companies, are very interested in Africa."

James Boyle added that Madrid must pay attention to demographics and migratory flows since, according to forecasts, Africa's population will continue to grow. "Demographic changes on the horizon will complicate migratory flows, and this may have an impact on Spain," says the Duke University professor. Besides, **as labor costs rise in China, Africa becomes the last source of cheap labor.** "And since Spain has long held a competitive edge within the EU due to its cheap labor, it must take these changes into account," says Boyle.

## China

The Asian giant is already the second largest economy in the world, and in a few years it will rival the number one, the US.

There is little left to say about the macroeconomic and business significance of China that is not widely known. The Asian giant is already the second largest economy in the world, and in a few years it will rival the number one, the US. There is nothing, or barely anything, in the economy without a connection to China. Interestingly enough, the Spanish presence in the country is symbolic. It is clearly overshadowed by the sizeable investments of some European partners, such as France, Germany, Italy, and the UK, which have made a solid bet. "China is brimming with French and Italian citizens, but you will not find one single Spaniard," says Max Burger-Calderón. Companies such as Alsa, Zara, Mondragón, Antolín, and some Ibex 35 companies have been testing the waters for years. **But the truth is those Spanish business owners continue to be wary and see it as a less natural habitat for business.** Be it as it may, there is a rising trend. Exports to China, our main trade partner after the EU countries, have continued to grow in double digits during the crisis. Burger-Calderón believes that this problem will be solved in "ten to twenty years. We must also start bringing in Chinese students." Cabrera reminded us that there are few Chinese students in Spain, whereas the Chinese, Indians, and Koreans make up most of the foreign students in the US. Oddly enough, political relations between Beijing and Madrid are excellent. But this does not even translate into large Chinese investments in Spain (the invested stock barely reaches €1.5 billion compared to €8.2 billion in the UK) when even in this financial crisis the Chinese have abstained from buying sovereign debt or struggling companies. But Beijing sees Spain as a gateway to Latin America and Africa, two regions where it has invested intensely to ensure its future supply of raw

materials. It also highly values the renewable energy sector (China aspires to become the worldwide leader in renewable energies). The potential of Chinese tourists for Spain is huge.

## India

India is one of the economies in the world with the biggest potential. A market of (at least) 1 billion consumers among the top 10 economies worldwide, in nominal terms, has a lot to offer to Spain—and Spain to India. The Indian economy, whose economic momentum has been curbed lately but still grows at above 5%, has considerable needs in infrastructures, energy, telecommunications, machinery, the food industry, and the textile and toy industries. Spanish companies are leaders in renewable energies, infrastructures, transportation, water and waste management, health care, and banking services. **“India offers Spanish companies an opportunity in the field of renewable energies,”** says Osman Anwar from SQW. In fact, many companies (Isolux, Acciona, Gamesa, or Abengoa, for instance) are present there. Nevertheless, economic relations are rather weak and Spanish exports to the Asian giant are rather symbolic (between one and two billion euros). It is also possible that the “lab of the world,” given its huge potential in technology and services, may offer opportunities for strengthening cultural ties. “Education and attracting students could be another great opportunity for Spain. Indian students think of the UK or the US for higher education, so Spain should be in the picture,” says Anwar. The Spanish language is obviously the key that opens the door to the global Spanish market, from the US to Argentina. “Indian software companies are desperately looking for ways to expand beyond English speaking markets. Spanish is one of the most international languages and there are definitely opportunities to tap into the Latin American market,” says Nikhil Prasad Ojha, of Bain & Company. India does not excel in super computers, which could be an opportunity for reviving economic cooperation between both countries. “The supercomputing center of Barcelona is one of the best in the world. Excellent IT students graduate from it—it is a diamond in the rough. India shows having difficulties in this field and could be interested in collaborating,” says Larry Rudolph, researcher with the Massachusetts Institute of Technology. According to all rankings, the National Supercomputing Center of Barcelona has one of the most powerful supercomputers in the world, the Mare Nostrum.

The Indian economy, whose economic momentum still grows at above 5%, has considerable needs in infrastructures, energy, telecommunications, machinery, the food industry, and the textile and toy industries.

## Latin America

Economic relations between Spain and Latin America are rooted in history. But they really picked up speed over the last few decades, especially in the 1990s, when Spanish companies started their internationalization process in the wake of regional privatizations. **The Spanish investment stock in the region currently amounts to €115 billion, making Spain one of the main partners.** "Spain holds a natural advantage in the region," says Ng, who also thinks Madrid should set its sights on Asia, the fastest-growing region. "I believe the importance of Latin America must not be underestimated. Not everyone has to be a champion in China. Just like the old adage: you can teach an elephant how to climb a tree, but it is easier to show a squirrel. Spain has a natural advantage in this vast market. For the time being, its economic standards are low, but the success of this region will be the success of Spain," foresees Ángel Cabrera.

with Europe currently in a recession, and the Spanish economy struggling to recover from it, many companies are turning their gaze to Latin American.

In fact, with Europe currently in a recession, and the Spanish economy struggling to recover from it, many companies are turning their gaze to this continent—growing at an average of 4% and with an emerging middle class, and excellent economic forecasts. Furthermore, many Spaniards, highly qualified in no few cases, are migrating to very dynamic countries such as Brazil, Mexico, or Colombia. Spaniards are choosing the more dynamic economies (including Chile and Peru) instead of the unruly group that is less inclined to maintain legal certainty (Venezuela, Bolivia, Ecuador, and Argentina). "There are sometimes misgivings in economies around the world about some Latin American countries. Spain, a well respected country, could be the gateway, just like Hong Kong was for China," recommends Nimrod Kozlovski. The great unknown now, since business assets in Spain are currently much cheaper, is whether Latin American MNCs will finally start appearing in Spain (their gateway to Europe)—inversely replicating what Spain has accomplished over the last few decades.

Nevertheless, over the last few years it has been observed that Spain wields less clout in the region. First, because of the economic crisis lashing it received, it is no longer an example to follow and a magnet for Latin American migratory flows. Second, because Latin America has taken off, and economic and commercial exchanges within the region have increased. And third, because many countries (Colombia, Chile, Peru...) are becoming increasingly interested in the Asia-Pacific region, lured by the high dynamism in Asia in general, and China in particular.



## Joel Kurtzman

Senior Fellow, Milken Institute

### A Spanish Engineering Corps

If you search for Spanish engineers on the internet, you will quickly find José Manuel Hermo Barreiro. Barreiro is a Spanish naval engineer who has a small following on YouTube. On his own, Barreiro designed and built a fully functioning V-12 engine, similar to the type of power plant used in racing cars and in some airplane engines. The only difference between Barreiro's engines and the engines used in, say, a Ferrari, is that Barreiro's precision masterpiece fits in your hand. He built the world's smallest, and one of the most beautifully designed, advanced gasoline engines. I bring up Barreiro for a reason.

Spain has a long and distinguished history as an engineering power. The history of Spain's civil, naval and military engineering triumphs goes back to days of the Roman Empire. Its mechanical engineering history is nearly as extensive. Spain was at the forefront of many engineering advances that changed the world—Hispano-Suiza, an aircraft and automotive engineering firm based in Barcelona, built its first gasoline engines and vehicles in 1904, and through a series of mergers was absorbed into France's Snecma, a maker of jet engines, in 1968. Spain's civil and military aviation and electronics firms are among the world's most respected engineering companies. Spain has been a pioneer in alternative energies, such as wind, and also in the field of chemical engineering. Spain's transportation engineers—especially for high-speed trains—are world class.

Economists would say engineering is one of Spain's comparative advantages. And, because engineering is very education—and experien-

ce-dependent, it is a highly-defensible sector of the economy. And yet, as important as Spain's contributions have been (its defense-related companies employ about 18,000 people, and its civilian engineering companies employ at least that number), it remains largely unknown not only outside of the country, but inside Spain as well.

The time has come to shine a bright light on one of Spain's main economic advantages.

The world is moving rapidly into an era where Spain's engineering strengths are increasingly valued. It is doing this at a time when the Spanish economy is weak. This means Spain has a once-in-a-generation opportunity to refocus its economy by taking advantage of its strengths and the world's needs. But to do that requires making the world aware of Spain's strengths.

The Spanish speaking world is vast—and growing. An engineering-oriented "Spanish Peace Corps," which sends young, qualified, Spanish engineers to work on projects in the emerging Spanish-speaking world would create good will and draw attention to one of Spain's strengths. It would also sow seeds for future business relationships, while developing the real-world, problem-solving skills of Spain's young engineers. Not only that, it would create a strong alumni network among "graduates" of the program. The alumni group the program creates would be made up of some of Spain's smartest and most adventurous engineers—*an ideal profile for tomorrow's entrepreneurs.*

Until the onset of the economic crises, the perception of Spain was of a rapidly growing European economic power. Currently, the world's attention is focused on Spain's inability to fix its economy. Since perception drives commerce and investment, there is an urgent need to change the way people think of Spain. The best way to do that is by focusing on the awesome potential of the Spanish people, especially its young people.

By creating a program that showcases Spain's best, brightest and most adventuresome young people, it will draw attention to the country's considerable strengths, especially its engineering strengths. By focusing on the future, Spain can regain the world's enthusiasm, make its citizens proud, and create teams of future entrepreneurs.

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José Manuel Hermo Barreiro may be a gifted engineer and model maker. But the world must understand graphically and viscerally, that Spain's future is far bigger than that. The world must understand that Spain's future will take place on the global stage.

## Oil States

Spain is highly dependent on foreign energy, especially fossil fuels (oil and natural gas). Therefore, its economy is highly vulnerable to the usual oscillations of these raw Spanish materials. In spite of its supply base being highly diversified, it is concentrated in countries that are not completely trustworthy—in either supply or politics. Russia has recently become the main oil supplier, followed by Saudi Arabia, Iran, and Nigeria. In general, basically no supplier has an excessively significant share. Venezuela, under the leadership of Maduro and Chavez's philosophy, has lost relative influence, going from 2,000 tons of oil exported down to 418 tons in 2011. Globally, 37% of imports come from the Middle East, 27% from Africa, and 17% from Latin America. Europe and the remaining regions account for the rest. Regarding natural gas, 40% of consumption comes from Algeria. **"The closest energy relationship is with Algeria, and conflicts are not foreseeable,"** says Federico Steinberg, the main researcher at the Elcano institute. Trying to draw future scenarios, this economist believes that if fracking becomes the mainstream technology for extracting non-conventional oil and gas, as is successfully being done in the US, Spain could profit from this tremendously by significantly lowering its energy bill. "It could lead to cheaper costs. Since Spain is a net importer, lowering the current account deficit would be positive." Generally speaking, experts consider the energy mix as accurate, although the question remains as to whether it was planned or pure chance. In any case, the oil market is very liquid and global, so one may always change suppliers. Regarding natural gas, some people ask for less dependency on North Africa, which is typically a politically unstable region.

Its economy is highly vulnerable to the usual oscillations of these raw Spanish materials





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