Global Strategy Views

Itaú BBA

November 25, 2010

# China as Focal Point in Ongoing Global Rebalancing: Risks and Opportunities

Year I
Issue #2

## China at the Center of a Fast-Changing World

To any seasoned observer of global affairs, the breadth and depth of the ongoing global economic, political and (to a lesser extent) military power realignments between developed and developing country blocs, especially over the past 5-10 years, is nothing short of unprecedented, unless we look beyond the past 100 years. China and the US lie at the heart of the global rebalancing, with China as the rising state and the US as the declining power. Admittedly, a proximate precedent can be found in the rebalancing that unfolded during 1870-1890, in which the US played a role similar to that exerted by China today.

From a global long-term or strategic perspective, China's changing role in the world economy, financial markets, and geopolitical theatre is highly consequential with regard to multiple considerations, including:

1. the direction of global trade flows, with (a) the accompanying factor and output price realignments resulting from changing global trade patterns, and (b) implications for specific industrial sectors that compete with China in third markets (special interest in countries such as Brazil, Korea, the US, Germany and Japan);
2. the stability of the global economy and financial markets – in this respect, some mechanisms likely to be at play include the degree of international policy coordination under a more assertive China as well as the inherent instabilities associated with the metamorphosis of the global economy away from a unipolar (dominated by the US) to a multipolar world (with the presence of several large power blocs, including some out of the developing world);
3. the direction of risk premia owing to political ramifications stemming from China's growing economic and political assertiveness globally – on this score, it is quite plausible to envision scenarios in which certain countries may align themselves more closely with China (such as Korea) while others would do the same with the US (such as Japan) or with other rising powers, notably India (on the part of the US) as a means to contain China's expansionary agenda, real or imagined, in South Asia and Africa.
4. the potential for other emerging market countries to successfully replicate the Chinese economic model, in place since the inception of the main economic reforms in 1979;
5. the political sustainability of the economic model, particularly as regards the continued ability of the Chinese Communist Party (CCP) to retain power over the foreseeable future;
6. the prospects for the transition of the Chinese economic model away from an export- to a domestic consumption-based one, including the sequencing of policies likely to shape such a transition.

On the other hand, from a global short-term perspective, China is of significant interest to global investors owing to:

1. the Chinese economy's growing presence in the global economy, expected to overtake Japan as the world's second largest by the fourth quarter of this year;
2. the Chinese economy's outsized contribution to world GDP growth these past several years, exceeding 35% over much of that period;
3. the Chinese economy's advance positioning in the world business cycle, owing to the country's strong manufacturing sector presence globally;

By Carlos Asilis, Ph.D., with assistance from Darshan Bhatt, CFA



**Read this report in:**
- 4 min: Front Page
- 1 hour: Full

4. growing investor concerns tied to (a) China's overheating property sector, and (b) world economic growth implications from the monetary policy tightening campaign initiated by the People's Bank of China earlier this year, in turn as a result of rising (largely agriculture commodity-related) price pressures;

5. the potential for trade frictions between the US and China, as a result of longstanding US claims over the renminbi's excessive undervaluation versus the US dollar.

This report purports to outline some of the principal dynamics associated with the strategic questions posed above, primarily from the perspective of global investors. Though our report places special emphasis on economic and financial dynamics, attention is also given to geopolitical considerations owing to their inexorable importance, given the Chinese state's highly visible hand throughout the economic and financial spectra.

## China's Commanding Global Economic Power: A Quick Statistical Detour

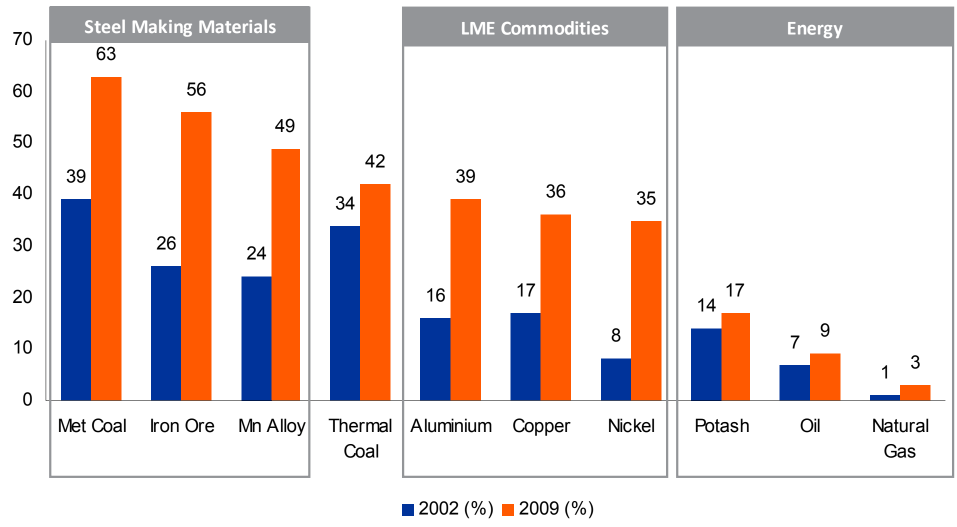
The task of ascertaining the quantum of the ongoing global rebalancing from an economic perspective, in which China exerts a preeminent role on multiple dimensions, is a relatively easy one to undertake, as reflected through the statistics captured in Table 1 & Chart 1. These statistics cover in colorful detail the sharp rise in China's world share of consumption and production for key consumption and industrial areas.

### Table 1: China's World Share of Population, Market Capitalization and GDP

| | 1990 | 2000 | 2009/2010* |
|---|---|---|---|
| **Population in Millions** | 1133.7 | 1265.8 | 1349.9 |
| **% of World Population** | 21.60% | 20.80% | 19.70% |
| **Stock Market Cap ($ bn)** | 2 | 580 | 5,007 |
| **% of World Market Cap** | 0.00% | 1.80% | 10.40% |
| **World Share of GDP in Purchasing Power Terms** | 1.70% | 3.80% | 8.90% |

Source: World Bank's World Development Indicators

### Chart 1: China's Share of Global Demand by Commodity




Source: BHP Billiton Ltd.

## Table 2: Ranking of China in the World Across Selected Key Indicators

| Item | 1978 | 1990 | 2000 | 2005 | 2009 |
|---|---|---|---|---|---|
| **Gross Domestic Product** | **10** | **11** | **6** | **4** | **3** |
| **Total Value of Imports and Exports** | **29** | **15** | **8** | **3** | **2** |
| **Volume of Production of Major Industrial Products** | | | | | |
| Crude Steel | 5 | 4 | 1 | 1 | 1 |
| Coal | 3 | 1 | 1 | 1 | 1 |
| Crude Petroleum | 8 | 5 | 5 | 5 | 4 |
| Electricity | 7 | 4 | 2 | 2 | 2 |
| Cement | 4 | 1 | 1 | 1 | 1 |
| Fertilizer | 3 | 3 | 1 | 1 | NA |
| Woven Cotton Fabrics | 1 | 1 | 2 | 1 | 1 |
| **Volume of Production of Major Agricultural Products** | | | | | |
| Cereals | 2 | 1 | 1 | 1 | NA |
| Meat | 3 | 1 | 1 | 1 | NA |
| Seed Cotton | 2 | 1 | 1 | 1 | NA |
| Soybeans | 3 | 3 | 4 | 4 | NA |
| Groundnuts in Shell | 2 | 2 | 1 | 2 | NA |
| Rapeseeds | 2 | 1 | 1 | 1 | NA |
| Sugar Cane | 7 | 4 | 3 | 3 | NA |
| Tea | 2 | 2 | 2 | 1 | NA |

Source China Statistical Yearbook 2010 & United Nations Database, United Nations Food & Agriculture Organization Database

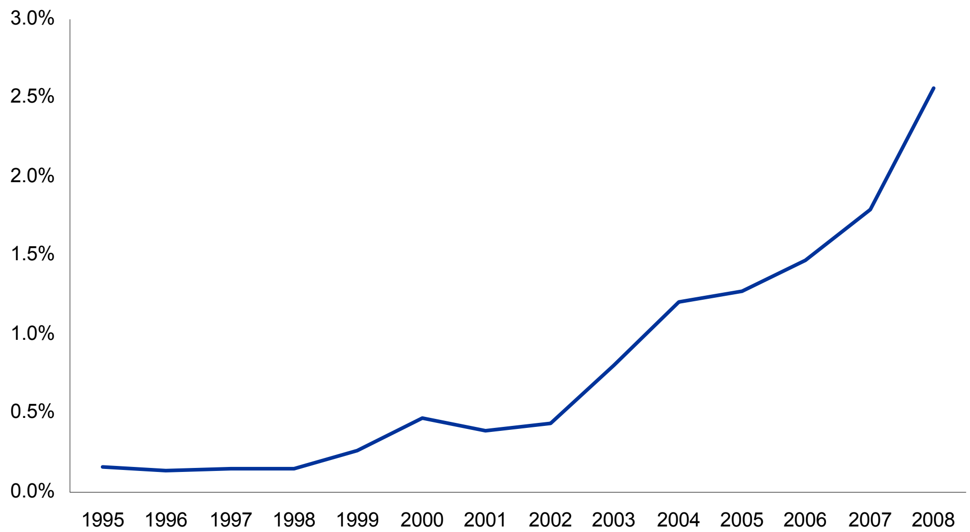
The so-called Chinese economic growth miracle stands out not only for the high average GDP growth rates recorded over a 30-year period but also for the stellar macroeconomic and financial stability accompanying such robust growth performance. In gauging the quantum of economic wealth generated in China over the past 30 years, the following statistical facts are worthy of note:

1. today's China per capita GDP is approximately 20% of the US, as compared with 4% 30 years ago;

2. in the span of 25 years, China's GDP has grown 10 times – no other large economy comes remotely close to such a record since the beginning of the industrial revolution;

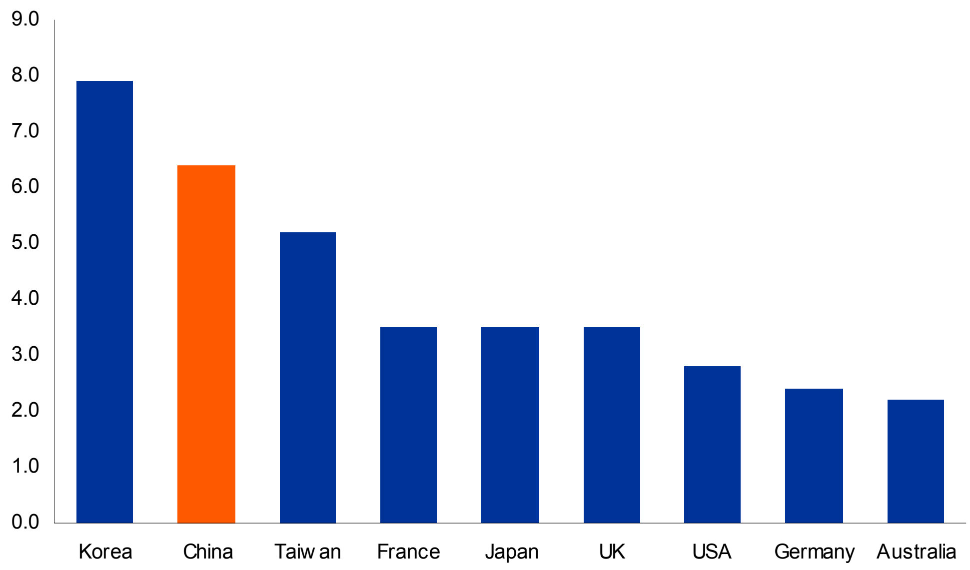
3. the Chinese economic growth record is a "reality," attested not only by Chinese government statistics but also by independently tallied indicators, such as competitiveness surveys, patents (Chart2), global trade volume shares and productivity (Chart 3, figures shown for labor productivity; China's total factor productivity growth for the period averages a solid 3 pct).

## Chart 2: China Patent Applications as % of World Applications




Source: World Intellectual Property Organization (WIPO) Statistics Database

## Chart 3: China's Labor Productivity Growth Versus Global Peers (1978-94)




Source: NBS, World Bank estimates and Bureau of Labor Statistics

4. China, projected to overtake Japan as the world's second largest economy by the end of the year, is expected to outpace the US as the world's largest economy before 2030;

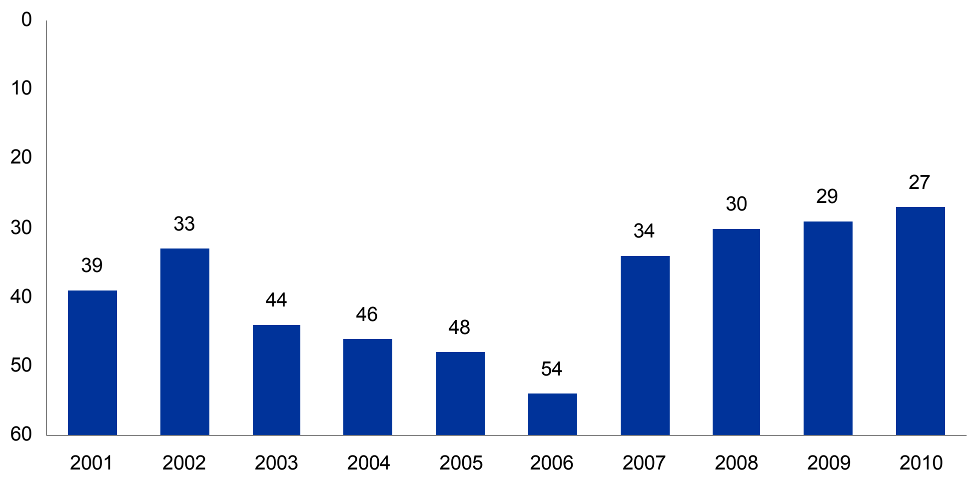
5. China recently overtook the US as the world's largest automobile market;

6. In 2009, China accounted for around 40% of the world's total consumption of nickel, zinc, aluminum, copper, steel and coal;

7. China has just overtaken India as the country with the largest number of foreign students in US colleges and universities, a position India had held for numerous years;

8. The quantum of China's economic growth has been accompanied with a growing quality, as attested by China's consistent escalation in the world competitiveness rankings to 27th highest at present.

## Chart 4: China's Improving Global Competitiveness Ranking (inverted scale)




Source: World Economic Forum

## Quick Historical Backdrop to China's Economic "Miracle" Period Indicates the "Miracle" Was Preceded by Centuries of Failed Attempts at Economic Take-off

The unbiased study of China's 30-year-long economic "miracle" period necessitates, in the first instance, proper historical perspective. Specifically, even a relatively "short" look back at Chinese economic history, say over the past 200 years, shows a succession of failed attempts at economic take-off, often precipitated or caused by the adoption of misguided economic models, foreign occupations or the adoption of antagonistic policy stances vis-à-vis foreign powers.

Social upheaval and foreign interventions marked much of the period leading to the collapse of the Qing dynasty in 1911. After the establishment of the Chinese republic, the country experienced political/social/economic dislocations on the back of civil war, Japanese invasion, regional warlords' activities and the collapse of Chiang's regime in the late 1940s. Subsequently, during Mao Zedong's 27-year reign (1949-1976), China embraced the misguided economic model fostered by the Soviet Union. Mao Zedong's realization of the Soviet model's failings led to China's decision to assert itself independently, primarily at the political level, through the Cultural Revolution. The Cultural Revolution, in furthering a confrontational stance between China and the United States (in addition to the Soviet Union), extended China's long period of economic estrangement from the West.

It was (1) Deng Xiaoping's ascendancy to power, upon Mao's death, together with (2) Deng's realization that Maoism had failed to "deliver the goods" for the population (an incontrovertible economic fact), and (3) the decision by US President Richard Nixon and Secretary of State Henry Kissinger to embrace China (largely for geopolitical reasons as a means to contain Soviet military and economic expansionism in East Asia) that led to the inception of China's market-oriented reforms in 1978. Table 3 summarizes some of the most meaningful policy events shaping China's reform period.

### Table 3: China: Timeline of Key Economic and Foreign Policy Reforms

| | |
|---|---|
| 1970-1976 | ■ Reestablished diplomatic relations with Japan set the stage for Japanese backed industrial projects.<br>■ In 1972, US President Richard Nixon visits Beijing and signs the Shanghai Communique, for China to import US Technology. |
| 1976 | ■ The death of Chairman Mao in September ends the Cultural Revolution. |
| 1978 | ■ Ten-Year Development Plan is designed to reinvigorate the economy, partly through foreign trade, which results in a surge of capital goods imports. |
| 1980 | ■ Preferential policies are conferred on special economic zones (SEZs) to attract foreign investment and technology, to promote exports and to create laboratories for broader market-oriented reforms. |
| 1984 | ■ 14 coastal cities are completely opened to foreign investment.<br>■ Sino-British Joint Declaration, Hong Kong is to become a Special Administrative Region of China in 1997. |
| 1986 | ■ Deng Xiaoping boosts "Open-door" policy to encourage FDIs. |
| 1988 | ■ Excessive economic growth with rampant corruption and out-of-control inflation of 18.5%. |
| 1989 | ■ In December, Stock markets are opened in Shanghai and Shenzhen. |
| 1990 | ■ Overcooling leads to risk of economic crisis, so fiscal and monetary stimuli are applied to reverse the economic slowdown. |
| 1992 | ■ (January) Deng calls for acceleration of growth, reform and opening up.<br>■ (October) Deng calls for the establishment of a "socialist market economy". |
| 1994 | ■ Exchange rates are unified, Labor Law is issued, SOE reforms are announced for 18 cities.<br>■ Foreign investment offsets monetary policies and inflation remains high. |
| 1995 | ■ High Inflation – 17%<br>■ Foreign pressure builds to nail-down Chinese commercial obligations. |
| 1998-99 | ■ Slow-down of the Chinese economy - partly due to Asian Financial Crisis. |
| 2001, Nov | ■ After years of negotiations, China becomes a member of the World Trade Organization. |
| 2006 | ■ CNOOC, one of China's largest oil and gas producers buys a stake in Nigerian offshore oil and gas field |
| 2008 | ■ The government announces a $586 billion economic stimulus package. |
| 2009 | ■ Feb: 20 million migrant workers may have lost their jobs in China due to global economic crisis.<br>■ Nov: China is now the largest automobile market in the world.<br>■ Dec: New gas pipeline is opened between Turkmenistan and China. |

Source: Institute of International Economics Working Paper 96-5, Gautam Jaggi, Mary Rundle, Daniel Rosen and yuichi Tokahashi & www.china-profile.com

We contend that the above account of China's economic and political history is highly consequential for any objective assessment of the Chinese economic "miracle" and also for future economic prospects at multiple levels, including the following:

1. the historical account reminds us that the Chinese economic "miracle" of the past 30 years was not pre-ordained but rather was born on the cusp of a key inflection period, both geopolitically (during the heated days of the Cold War between the US and the Soviet Union), politically (following the end of Mao's 27 year reign) and economically (on the ashes of the failed economic consequences of Maoism and the Cultural Revolution);

2. at the time of China's initial embrace of market-oriented reforms under Mr. Deng's leadership, the United States and other major developed economies were in the early stages of one of the very few, and arguably the strongest, economic supercycles of the past 200 years – for demographic, policy, and geopolitical reasons well beyond the scope of this report, and;

3. at the time of China's embrace of Mr. Deng's market-oriented reforms, the cost competitiveness of the Chinese labor market combined with the pent-up demand for goods and services were massive, courtesy of the Chinese economy's multi-decade long below-trend economic growth in the period leading to 1978;

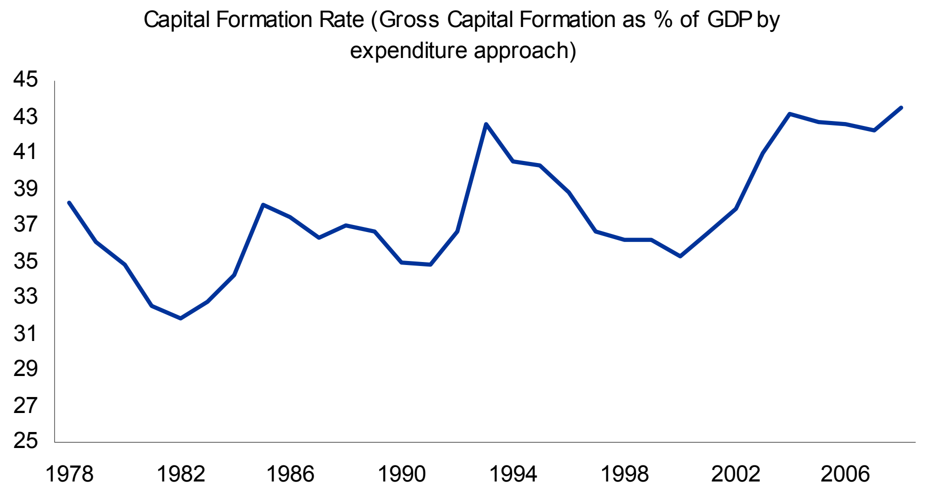
4. by the mid-1970s, the traction gained by the export-oriented models successfully adopted by Japan (1950s-1960s) and the Asian Tigers (Hong Kong, Taiwan and South Korea, 1960s-1970s) was readily apparent to the new leadership in China, under Mr. Deng. At the same time, the failed economic results of China's Cultural Revolution, India's decades-long socialist experiment and Latin America's CEPAL-inspired import-substitution model were also equally apparent to anyone who was paying sufficient attention to global development trends.

From our perspective, the Asian tigers' entry, during the mid-1970s, into the parabolic high-valued-added economic growth stage, in turn first entered into by Japan in the 1960s, provided much philosophical guidance (from an economic perspective) to the new Chinese leadership of the time.

## Chinese Economic Model Unique in Multiple Respects, Especially its Heavy Reliance on Domestically-Funded Massive Investment Programs – Efforts at Replication May Be Both Futile and Hazardous

A close examination of the record since the beginning of the reform era under Mr. Deng, through the succeeding governments led by Messrs. Jiang Zemin and Mr. Hu Jintao, yields China's massive domestically-funded investment program as the distinguishing characteristic of China's economic model – Chart 5.

Chart 5: China Capital Formation Rate since 1978

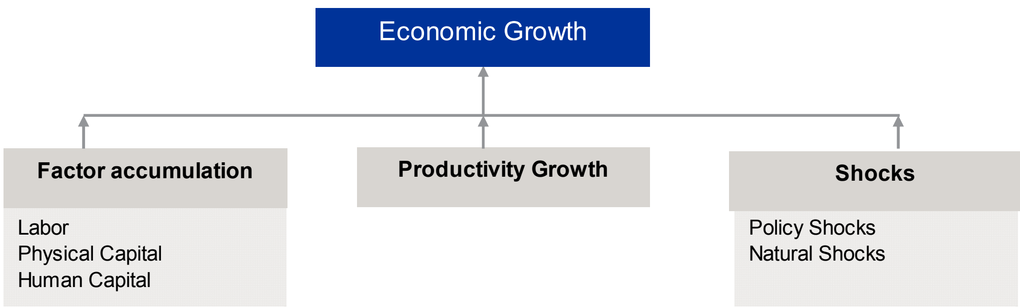



Source: China Statistical Yearbook, 2010

China's inordinately high investment ratio, directed by central government policy through the design of recurrent multi-year strategic plans and its implementation through the government's strong hold of the banking system, is exceedingly important to acknowledge so as to understand not only China's strong economic record since 1979 but also to identify areas of potential vulnerability for the future. Specifically:

1. As Chart 6 illustrates, investment (through the accumulation of physical capital) represents one of the most important drivers of long-term economic growth for any economy. In modern times, the insufficiency of tapping into pools of domestic or foreign savings (especially in the cases of Africa, Eastern Europe and Latin America) has been the most significant hurdle facing developing countries in embarking on sustainable growth and development paths. Understanding China's ability to tap into its domestic savings pool, control its process of growth AND direct such savings into investment spending lies at the core of understanding the Chinese economic record – we discuss these dynamics further below.

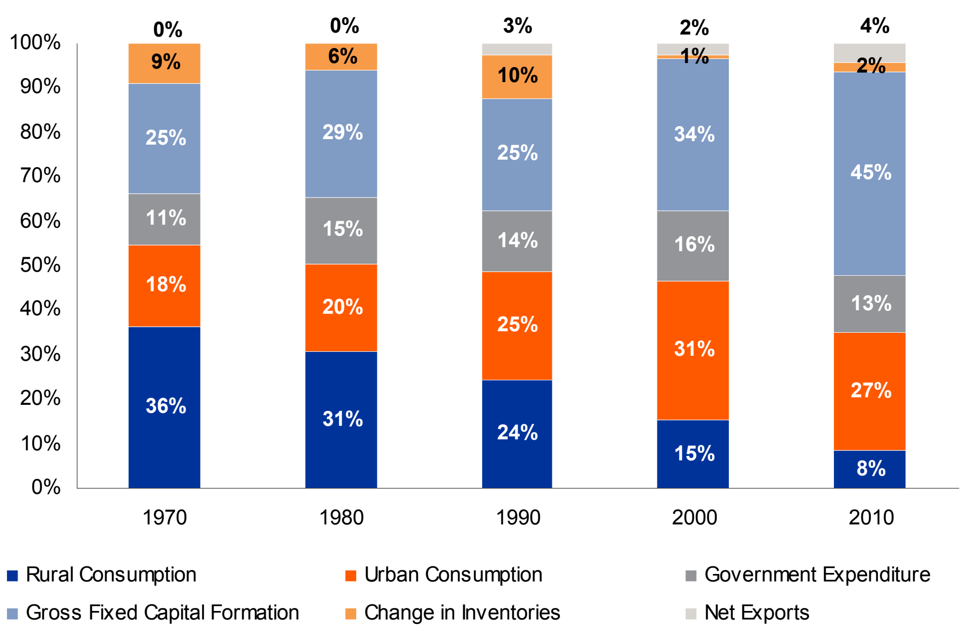
### Chart 6: Anatomy of Economic Growth




Source: Author

2. China's exorbitant investment ratio is a clear sign of the economy's highly imbalanced domestic demand conditions, from a compositional perspective. History indicates that protracted periods of elevated investment rates, especially when such investment outlays are state directed as is the case in China, carry the potential of causing broad-based resource misallocations. In turn, such resource misallocations, discussed further below, may impair the country's ability to sustain long-term (that is, productivity growth-fueled as opposed to factor accumulation-based) economic growth prospects – Chart 6. Consequently, it is in China's interest to adopt policies aimed at bringing about healthier demand balance to the country's economy. Chart 7 illustrates investment expenditures' outsized contribution to China's overall GDP growth these past several decades.

### Chart 7: China GDP Composition (in percentage points)

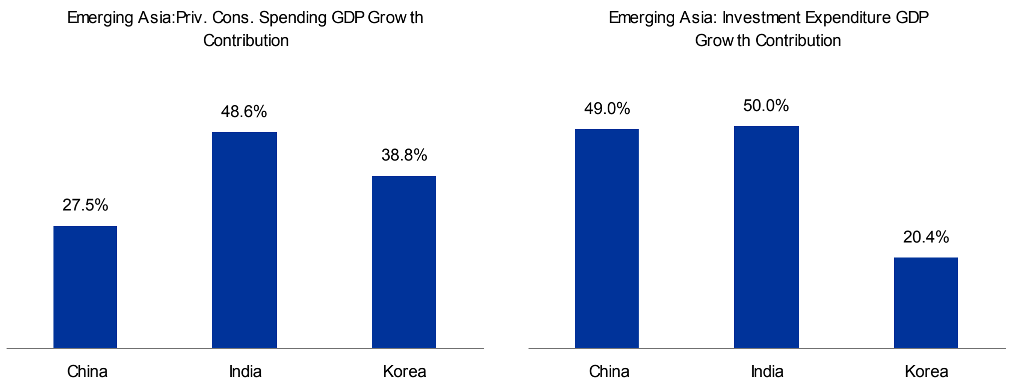



Source: Bloomberg

3. The role of Chinese Communist Party leadership in adopting policies explicitly aimed at sustaining high domestic savings LEVELS and RATES over much of the past 30 years as well as PRESERVING control of how such savings pool has been and continues to be channeled into domestic investment is NO SMALL FEAT. It requires a level of policy CONTROL and CONSISTENCY virtually impossible to replicate in any other large developing country - for most countries, owing to democratic rule: India, Brazil, Korea, Taiwan; in others, owing to lack of policy consistency: Russia; in others owing to insufficiency of domestic savings pool: Latin America, South Africa, Eastern Europe.

Chart 8 illustrates China's outlier relationship versus other fast-growing Asian economies these past 9 years (2000-2009), in terms of investment expenditure GDP growth contribution. Please note China's vastly larger investment expenditure and smaller private consumption expenditure shares of GDP growth. The combined contribution of private consumption and investment expenditure in overall GDP growth testifies to the insufficient role exerted by Chinese domestic demand conditions in overall economic growth.

## Chart 8: Investment and Private Consumption Expenditure GDP Growth Contribution for Select Emerging Asia Countries




Source: IMF, Asian Development Bank and calculations in E. Prasad "Rebalancing Growth in Asia". Finance & Development (December 2009), pp. 19-22.

In looking ahead, the Chinese Communist Party offers sufficient visibility as to the importance the leadership continues to place on the country's infrastructure build-up program, financed at negative real interest rates by the country's massive sheltered domestic savings pool. Specifically, the year 2020 is an important milestone for China, as by that year many of China's infrastructure projects are planned to be completed (this is reflected, for example, in China's Eleventh Five Year Plan, which was accepted in November 2006, covering the 2006-2010 period).

Specific emphasis is given to the growth of strategic industries for which access to great amounts of raw materials will be needed – this is bullish commodity prices globally, favoring countries such as Brazil, South Africa, Peru, Chile and Indonesia. China's aggressive program to buy direct equity ownership and control, or simply long-term access via leases, in raw material companies falls within the purview of the long-term strategic plans laid out by CCP.

The sequencing of China's investment program, at the sector level, begins with emphasis in low value-added/low technology areas, including clothing and shoes (first stage), having moved to heavy industries (the initial processing of raw materials – including aluminum and steel, despite build-up of excess capacity worldwide). China's focus in such areas reflects the Chinese leadership's goal of self-sufficiency in those vital products to accomplish China's long-term growth agenda. Government support for those industries, through subsidies or indirect protection from foreign competition, is typical, and a growing source of friction with countries that compete with China in third markets such as Brazil, Korea, Germany, Japan and the US. A third stage of China's investment program, which has already begun, includes high technology, including automobiles, aircraft, trains, and electronics.

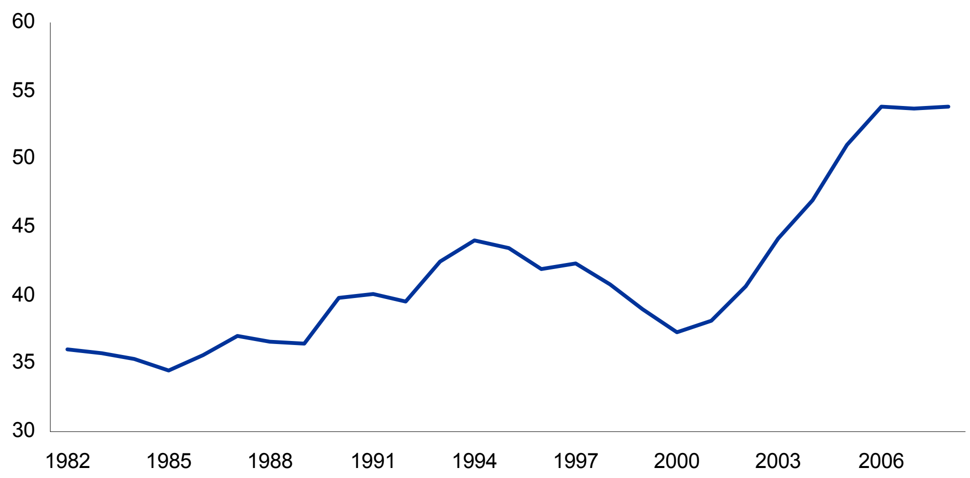
From our perspective, China is guaranteed to become an even more formidable competitor in high valued-added areas, owing to (1) exceedingly compelling cost-competitiveness of its manufacturing base; (2) access to negative real cost of debt capital (through local savings pool), and (3) implicit subsidization of Chinese corporates' competition in third markets through the sheltering they experience in China's vast and fast growing local market.

## Factors Other Than Investment Spending Fueling China's Fast Economic Growth Period: (1) Financial Repression; (2) One-Child Policy; (3) SOE Sector Reform; (4) Urbanization; (5) Export-Oriented Policies; and (6) Exceedingly Benign World Economic Backdrop. Such Boost Factors Are Likely to Fade in Coming Years

From our perspective, a complete account of the Chinese economic model, in place since the 1970s, is most effectively undertaken through the discipline afforded by the body of empirical knowledge as regards the main drivers of economic growth. Specifically, as illustrated in Chart 6, the empirical and theoretical economics literature have long-established economic growth to be driven by three principal drivers: (1) factor accumulation (quantity); (2) productivity growth (endogenous qualitative), and (3) policy and natural shocks (exogenous qualitative).

China's 30-year economic miracle period, in which annual real GDP growth has averaged a whopping 10 pct, has been fueled primarily by exceedingly high investment expenditure ratios (as a percentage of GDP). In contrast to most other developing countries in modern times, China's ability to fund such massive investment expenditure programs has been made possible on account of the Chinese government's broad powers over much of the economy and population.

Chart 9: China's Fast-Growing Savings Rate, Fueled by State-Controlled Firms' Retained Earnings

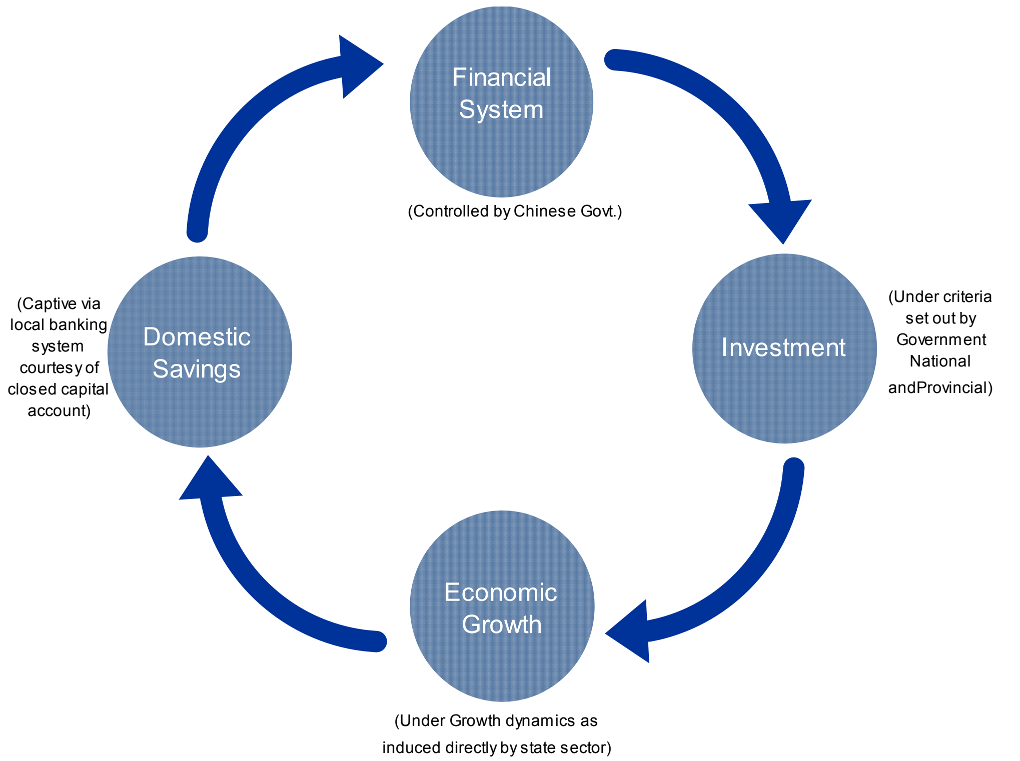



Source: World Bank

The Chinese government's ability to implement its decades-long massive investment expenditure program has been made possible by the Chinese government's combined control of the following: (1) a sustained rise in the pool of domestic savings (through the de facto policy of pushing companies to retain most of their earnings), (2) retaining the use of such funds for domestic investment purposes, (3) designed by the government itself, and (4) implemented through the government's control of the financial intermediation system. In turn, the latter has been made possible by the long-existing capital account restrictions that have prevented Chinese households from diversifying their portfolios internationally. Chart 9 illustrates the sustained rise in China's domestic savings since the beginning of the reform period in the late 1970s.

It is worth noting that in contrast to most high-savings countries in Asia, China's savings are generated primarily by the state-controlled enterprise sector (at the tune of 30 % of GDP, or about two-thirds of total savings, versus India where the overriding majority of savings is generated by the household sector, two-thirds. Of course, the distinct ability of Chinese enterprises to grow their earnings base, fueling the economy's savings pool, has come at the expense of the financial repression borne totally by the household sector, through negative real interest rates, state-controlled companies' monopoly power and company subsidies funded directly or indirectly by the taxpayer. Going forward, it is plausible to envision a growing share of such savings to come from foreigners (especially through Chinese corporates' growing international market presence, especially in emerging market countries under weak governance). Chart 10 illustrates the workings of such controlled economic and economic policy dynamics that define the Chinese economic model's distinguishing characteristics, from our perspective.

Chart 10: Anatomy of China's Domestically Funded, State Sponsored Investment Led-Growth




Source: Author

## Role of Financial Repression

In its current form, the Chinese model owes much of its longevity to the breadth and depth of the financial repression coloring economic activity at multiple levels. Our claim that financial repression lies at the core of the Chinese model's longevity and functionality can be ascertained at multiple levels, including the following:

a) negative real interest rates

b) visible public hand in the credit-intermediation process

c) non-convertibility of the renminbi

d) persistence of capital account and current account restrictions

The multiple levels at which financial repression governs economic activity throughout China carries multiple implications for resource allocation, both within China and, perhaps of growing interest and incrementally, outside China's borders. The massive distortions to resource allocation that are endemic to the Chinese model are the result of the direct effects of Chinese government policy on the (output and factor) market price vector that defines resource allocation within China and with the rest of the world economy. Such distortions and resource misallocation problems:

1 call into question the long-term sustainability of the Chinese economic model and, more importantly,

2 could pave the way for the onset of crises in the future, with potential contagion to the rest of the world.

We outline immediately below some important areas in which the Chinese model leads to significant resource allocation problems. Some of those areas include:

1 The Chinese model's overt anti-job bias. This can be viewed most clearly through the strong bias in Chinese policies in favor of physical capital (both on account of government diktat, through the channeling of credit into investment outlays, as well as a result of negative real interest rates at which firms are able to fund capex). The net effect of such policies is to push the economy's capital labor ratio well above equilibrium levels.

2 The distortion fostered by government policy on household investment choices between financial and real assets, with a specific bias in favor of real estate over financial (stocks or bonds, including corporates) assets as a venue for household wealth accumulation. That such dynamics have been at play is easily evidenced by (1) persistently negative real interest rate levels, (2) government disincentives vis-à-vis dividend distributions by companies, (3) the non-existence of a liquid local corporate bond market, (4) the inability of households investing overseas, and (5) domestic real estate as the investable asset class in which households' use of significant leverage has been possible. Considering these dynamics, it should come as no surprise that local real estate bubbles across three of China's principal urban real estate markets are flourishing.

## The One-child Policy: A Demographic Dividend on Economic Growth About to Turn into a Tax

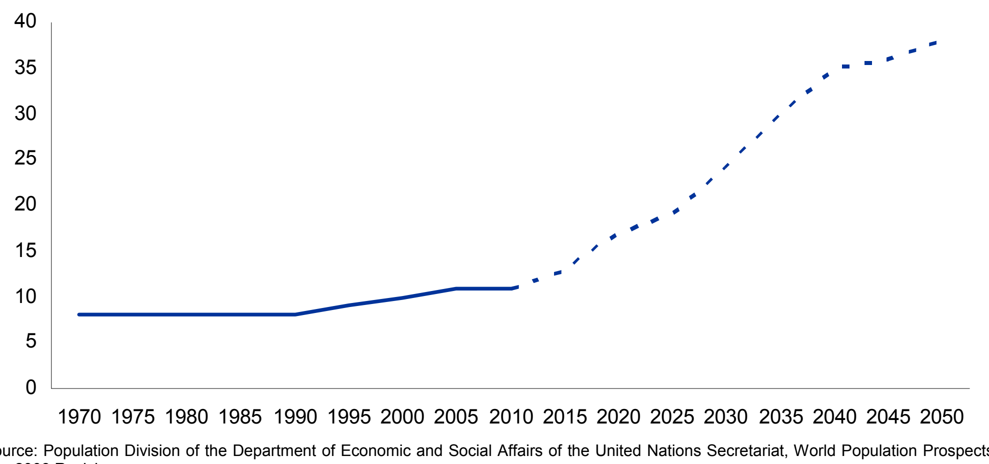
The adoption of the one-child policy during the 1970s guaranteed, through the determinism conferred by the gods of demography, a decades-long demographic dividend on economic growth. Unfortunately, the same determinism that guaranteed said dividend stream on economic growth also guarantees the beginning of a long tax stream on growth, courtesy of the aging of the Chinese population and shrinkage of its workforce, relative to the overall population (see e.g. Chart 11). This looming reality reinforces the need for the Chinese state to solidify its social safety net.

From a strategic perspective, especially taking into consideration China's historical backdrop ahead of the adoption of market-oriented reforms and discussed earlier in the report, it is easy to understand the allure offered by the adoption of such policy during the 1970s. Specifically, the one-child policy offered the Chinese leadership a highly effective, and short-term, inexpensive policy tool in allowing China to "leapfrog" other nations in its growth trajectory over a period of decades, as this policy generated several mutually-reinforcing benign economic growth dynamics, including:

- Direct effect - higher transitional savings pool owing to a lower dependency ratio.
- Indirect effect – higher transitional savings pool as women's participation in the labor market becomes a vastly more appetizing option for women and households (as the opportunity cost of joining the labor force declines under a one-child policy system).
- Indirect effect – higher popular support for government policy, as it is a well established fact that political support correlates most closely with standard of living. The adoption of the one-child policy fueled a stronger per capita income growth outlook, which offset the hardships experienced by displaced workers from the state-owned enterprise sector. Viewed in that light, the one-child policy acted as an indirect "funding vehicle" for the transitional economic and political support costs of embracing a new model.

It is quite clear that China's adoption of the one-child policy is highly difficult to replicate by other countries, owing to both political and social considerations. Beyond such considerations, however, it is certain that this "policy bet" by China is one that contains significant downside risks, particularly looking at the future, and that the "jury" is still very much out as to the policy's ultimate success from a growth and social welfare perspective. Moreover, it is quite clear that the timing associated with the guaranteed swing from demographic dividend to tax on growth in the coming years implies an urgency for Chinese policymakers to transform the model in multiple respects, including the creation of a functional social safety net and the fostering of domestic demand (including service-based) growth.

Chart 11: China's One-child Policy: Demographic Dividend Soon to Turn Into a Tax




Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2008 Revision

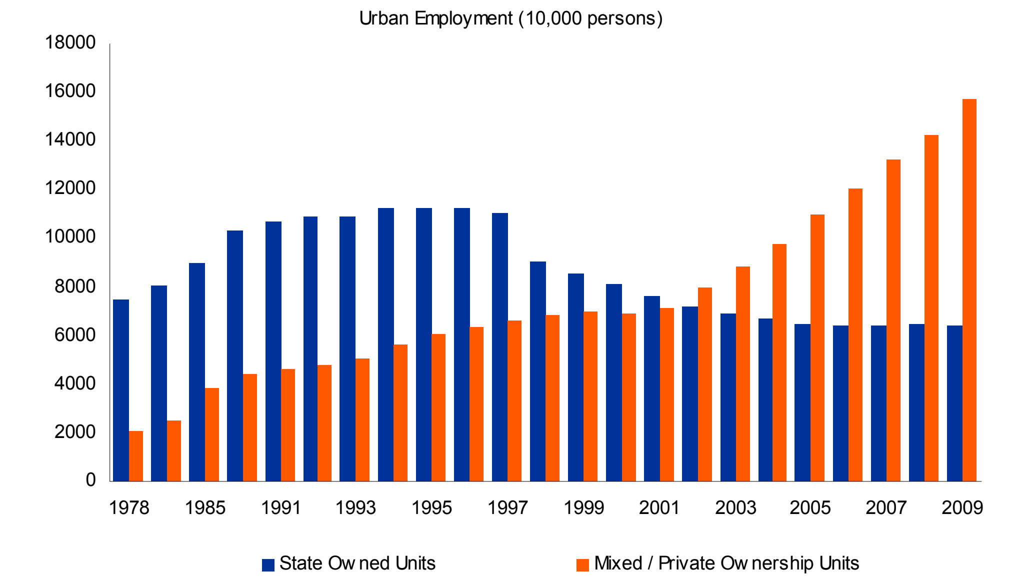
## Reform of State-Owned-Enterprise Sector (SOE) as a Means to Unlock Productivity Gains

The breadth and depth of the Chinese government's reform of its state-owned-enterprise (SOE) system lies at the core of the unlocking of sizable productivity gains over the past thirty years. Specifically, up until the early stages of China's reform program, the SOE sector's primary role was as a social policy tool through the provision of life-long employment to the working class. Such a role was typical of Socialist economies of the time, such as the former Soviet republics and also India.

While the Chinese State still wields vast ownership and control stakes in mixed-ownership companies that have come to replace the SOEs, governance criteria for the transformed companies have moved away from an exclusive focus in meeting sales or production targets to other criteria, of a strategic nature and also a profit orientation. In both of those instances, profitability and cost efficiency have taken on much larger importance than during the pre-reform period.

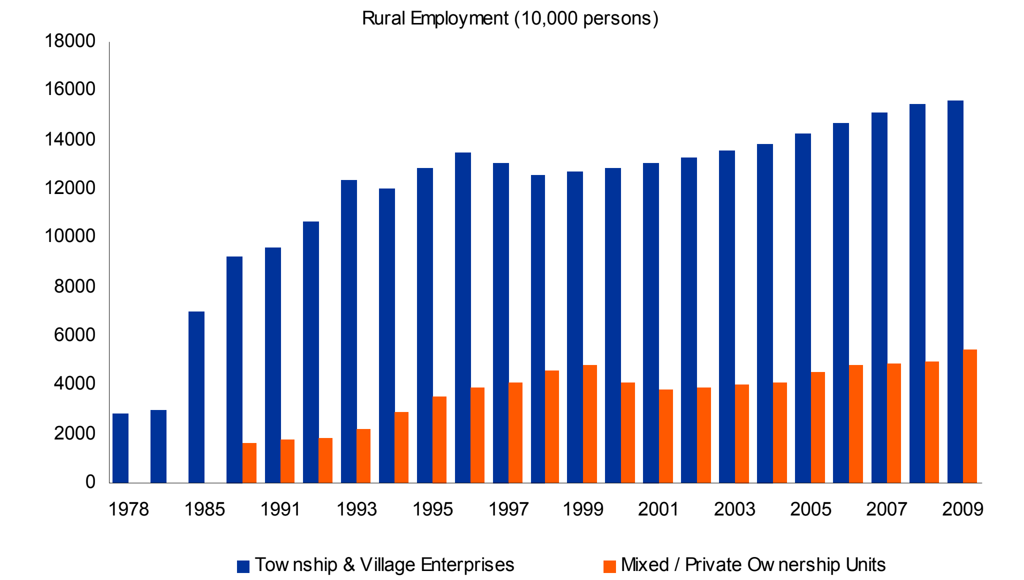
Charts 12 and 13 illustrate the changing composition of China's employment sector between SOEs and mixed-ownership companies. It is clear from the prior Chart 3 that China's secular trend of sizeable productivity growth gains has been accompanied by the transition away from SOEs, especially in the urban areas.

Chart 12: China Urban Employment in State-Owned Versus Mixed- / Private-Ownership Units




Source: China Statistical Yearbook, 2010

Chart 13: China Rural Employment in State-Owned Versus Mixed- / Private- Ownership Units




Source: China Statistical Yearbook, 2010

## Aggressive Export-Oriented Industrial Policy as an Anchor for Investment Expenditure Programs

This report already established the driving force played by public sponsored investment spending, especially infrastructure-related, in China's strong economic record these past few decades. At a sector level, the data shows quite clearly the bifurcated orientation of China's vast decades-long investment expenditure program: domestic infrastructure and plant/equipment. While investment in both sectors has been conducive to the generation of significant productivity gains, especially in the early stages of the growth period dominated by manufacturing, the size of the domestic market did not warrant the quantum of expenditure in plant/equipment.

From the early days of the reform period, the Chinese leadership's focus on the foreign market as a destination for the massive goods production yet to be generated was more than apparent. Specifically, the Chinese leadership learned well the lessons of Japan's and the Asian tigers' (Hong Kong/Taiwan/Korea) economic take-off experiences during the 1950-60s and 1960-70s, respectively. From our perspective, among those other fast-growth experiences, the Japanese episode comes closest to the Chinese in terms of the benign international economic backdrop prevailing at the time of the reforms' inception. Specifically, in the case of Japan's growth episode, the US and European economies were undergoing a massive catching-up growth phase in the aftermath of World War II. This backdrop was characterized both by a benign demographic shock (the Baby-Boom generation) that followed the war period and, arguably of far greater importance, the catching-up dynamics associated with the US and Europe's need to replenish the massive cumulative capital destocking that had built up since the early 1930s (in the US case) and capital destroyed during WWII (in the case of Europe and Japan).

Through global dynamics, similar to those benefiting Japan in the 1950s and 1960s, China's reform period took hold at a particularly favorable juncture in modern economic history. Specifically, China's reform period began in the early stages of one of history's fiercest economic growth supercycles in the developed world. The economic supercycle period, which started at the turn of the 1980s, was fueled by the magic exerted by financial deepening (leveraging) and liberalization on the household and corporate sectors, and subsequently reenergized by the magic of the peace dividend that followed the dissolution of the Soviet Union. The latter paved the way for one of the sharpest declines in risk premia ever experienced as well as the entry into an unprecedented period of trade and financial globalization, starting in the early 1990s.

From our perspective, the especially benign international backdrop that benefited Japan in the 1950s, but especially China in the 1980-90s and early 2000s, is exceedingly unlikely to repeat itself in the coming years. To the extent to which we are correct in such prognosis, it follows that China will be forced to modify its economic model's orientation away from exports and increasingly to the domestic market. Happily, we contend that such metamorphosis is already in play, evident in the massive communication and transportation infrastructure campaign that began several years ago, connecting urban coastal areas to the rural population. This strategy amounts to "bringing the market to the rural areas," in contrast to the focus during the early years of the reform period in which the rural population was brought to the urban centers (the "market"). These actions evidence, once again, the foresight and strategic mindset of China's leadership. However, as history reminds us, transitions are never without risks, both in design and execution. Such considerations are likely to lead the Chinese leadership to stay the course with the gradual, pragmatic approach that has defined their policy approach throughout the years. In turn, this gradual approach may lead to heightened tensions with the US, Europe and selected emerging market countries, as well as overexpose China to unexpected risks and systemic instabilities that are internal and external to China.

## Winds of Change for China's Economic Model

The discussion above establishes our thesis that China's post-1978 economic growth record:

1. is real in that it has generated much physical wealth, primarily through the accumulation of vast stocks of physical capital, largely under the direction of state authorities, though the social welfare implications from the uneven growth dynamics are likely to have been rather pernicious, especially for the household sector;

2. requires an urgent transformation away from an investment-led to a consumption-led growth policy approach. Such transformation entails the adoption of significant policy reorientation, including financial sector and balance of payments liberalization, including both capital account liberalization and higher degrees of market determination of interest rate and exchange rate. Such transformation is needed because a continuation of the current state of affairs will lead to much higher vulnerability for

the Chinese economy vis-à-vis internal (overheating) or external (terms of trade or financial) shocks, given that the Chinese economy is now one of the world's largest and its degree of integration with the rest of the world is many times larger than it was at the time of the reforms' inception.

In requiring the adoption of inward-oriented policies, China must expect medium- and long-term economic growth rates to converge to lower levels than those of the past several decades, for several distinct yet interconnected reasons:

I. secular decline to lower average productivity levels stemming from the switch away from manufacturing to services – it is a well-documented fact that service sectors undergo much lower productivity growth than manufacturing;

II. the swing of the demographic backdrop from being a boost to a drag to economic growth, on account of (a) the predetermined turn in demographic dynamics associated with the adoption of the one-child policy decades ago and (b) the deceleration in the rate of China's urbanization, discussed further below;

III. the expected decline in investment ratio to international average levels for more advanced economies, as (a) financial sector liberalization leads households to diversify savings internationally, (b) the creation of a social safety net lowers households' incentives to sustain elevated savings levels, (c) the normalization of government policy as regards corporates leads to declines in companies' retained earnings, and (d) the fading of the labor cohorts most affected by the dislocations tied to SOEs restructuring leads to further reduction in precautionary savings. In all of these instances, we outline the future outlook for China's investment ratio through changing savings dynamics. Such a connection between savings and investment within a given country is often referred to as "home bias," and it is a well-proven empirical regularity.

IV. the fading of "catch–up" growth dynamics associated with the parabolic rise in urbanization and marketization, in place these past several decades, leaving an increasingly smaller cross-section of the rural population left to be absorbed into the market.

We expect the Chinese government's realization of the need to steer the economy towards a more market-oriented system to grow over time. We hold this view owing to the multiple structural vulnerabilities afflicting the current system, which will only grow over time.

The Chinese economy's growing vulnerability to internal as well as external shocks, given the limited degrees of freedom for policy maneuverability stemming from the Chinese model's highly contrived nature. Such vulnerability is increasing over time as a result of the economy's growing integration with the rest of the world and also growing sector diversity. Potential shocks may include the onset of an international financial crisis, terms-of-trade shocks (trade protectionism in the West), weak foreign markets, and geopolitical events or an overheated local economy.

The desirability of embracing such liberalization measures stems from the potency of the policy tools that would become available upon the adoption of such reforms, especially via an independent monetary policy, traditionally the fastest and first response policy tool employed to confront sudden shocks. Under the current state of affairs, monetary policy is an indirect tool employed largely in sustaining the country's managed exchange-rate system. Fiscal policy is potentially an alternative policy tool, though less effective in the short-term and also subject to long-term budget realities and more prone to create distortions in the economy, as attested through the growth of local real estate bubbles throughout China's urban centers in the aftermath of the fiscal policies embraced at the beginning of 2009.

As regards the point made immediately above, we would note that while the proliferation of local real estate bubbles is an undisputed reality in China, its incidence does not yet aggregate into a macro-level risk factor and is unlikely to do so anytime soon, in our view. On that score, we differ from the view espoused by some US-based observers who have been calling for the onset of systemic crisis for several years now. From our perspective, the thesis of these observers suffers from three principal errors, both of commission and omission:

I. ignoring the unusual nature of China's credit cycle, particularly its discontinuities or bunching-like dynamics, when compared with those of developed countries. Such dynamics are the direct consequence of the "on-off" credit policy switch activated or deactivated by central and provincial governments, oftentimes without much notice;

II. underestimating the ability of fast economic growth to absorb what at times may appear to Western observers to be insurmountable excess capacity;

III. the limiting of China's real estate bubble phase to the country's three principal urban centers – for most of the country, the cumulative rise in real estate prices these past four years has been a fraction of average annual disposable personal income growth.

On financial sector reform, the adoption of broad financial sector liberalization would help reverse the distortionary and adverse welfare effects resulting from China's long period of financial repression. The welfare and distributional effects of China's long-running economic policies, while not accounted for explicitly in the national accounts, are likely to have been highly significant, and therefore relevant for public policy, for, after all, consumption, not investment, should be the ultimate goal of public policy.

The challenges associated with properly sequencing the dismantling of capital account restrictions, interest-rate and exchange-rate liberalization, and hardening of corporates' budget constraints, are likely to lead to multiple policy challenges, including the likelihood of mounting quasi-fiscal costs associated with future exchange-rate interventions. The magnitude and complexity of engineering such transformation explains the continuous deferral of such decisions on the part of the Chinese leadership. In the interim, the economy's distortions become more widespread and deep.

Continued avoidance of adopting corrective measures in China's model is likely to lead to heightened vulnerability to internal and external shocks, the potential for deflationary dynamics to take hold on the back of excess capacity in certain areas, policy challenges associated with the emergence of asset bubbles, and social and political upheaval associated with continued inaction in the creation of a functional social safety net.

Regardless of the specific turns yet to be taken by China's leadership in the years to come, it is certain that the ride for the economies, markets and population of China, Asia and the world is guaranteed to be historic.

## Concluding Remarks:

This report's account of China's decades-long economic take-off period, the key role exerted by the State sector in the mechanics of growth, and the changing nature of the global economy and political system, lead to multiple action-oriented conclusions, from the perspective of global investors. Some of those conclusions include the following:

### Selected Economic Implications

1. China's economic assertiveness in the world economy, political sphere and financial system are virtually guaranteed to remain on the ascendancy over the next several decades, unless internally-driven political or social shocks cause sufficient trauma so as to lead to the dissolution of the Chinese Communist Party.

2. China's growing economic ascendancy is likely to continue reverberating positively on natural resource-endowed economies, including Brazil, Australia, Indonesia, South Africa, the Middle East, and Peru, among others.

3. The process of China's economic ascendancy is in the interest of the global community owing to the favorable feed-back economic effects unleashed on the rest of the world at a time when the developed world has lost several of its traditional growth drivers (Spain, UK and the US) for at least several additional years.

4. The Chinese leadership's focus on higher value-added manufacturing areas is likely to result in growing trade and financial frictions with countries that compete with China in third markets, including Germany, Italy, Brazil, Korea and Japan, in the first instance, and the US, France and India, to a lesser extent.

5. The ascendancy of China's middle class will carry over positively on service-based industries globally, both in terms of (a) China's growing appetite in acquiring recognized branded assets, especially in the developed world as well as (b) the beneficial effects of China's growing demand for tourist, health, education, financial, insurance and other services from neighboring Asia as well as elsewhere (especially developed countries such as the UK, US, France, Italy, Spain, Australia, Denmark, Singapore, Netherlands, and Switzerland).

6. The Chinese model is virtually impossible to replicate by any competing emerging market country in the absence of a basic redefinition of said countries' political and social systems. Moreover, a close examination of the Chinese model's inner workings shows the Chinese "miracle" to be a lot less appetizing for other countries to emulate on account of the vast social welfare costs borne by Chinese households through a long period of financial repression without the accompanying creation of a social safety net. Moreover, the long-term sustainability of the Chinese model remains in question owing to the large role played by state-directed investment expenditure, funded by a large pool of domestic savings, in turn fueled by companies' retained earnings and sheltered by the permanence of capital account restrictions. If, and when, the Chinese society and economy attain a higher degree of openness and decentralized power, we are to expect those growth drivers to lose much force. At that juncture, heavier reliance on innovation and market-sensitive economic policy tools (especially in the monetary policy area) will be needed so as to sustain the economy on a long-term growth path.

7. The opacity coloring the timing and sequencing of China's needed changes in its economic model are likely to result in episodic spikes of realized financial and economic volatility during much of the next 5 to 10 years. Such volatility spikes may extend not only to the currency but also commodity, equities and fixed income markets. Consequently, such considerations justify the maintenance of healthy doses of cash by global asset allocators so as to take advantage of the opportunities that will present themselves during such adjustment phases.

8. The fiscal costs associated with the creation of a well-functioning social safety net are likely to prove material for the Chinese state in the coming years, especially in light of the fast aging of China's population. Likewise, the Chinese state's growing focus on the environmental consequences of economic growth is likely to entail additional fiscal costs. This focus is inexorable owing to the well-known social and political upheavals experienced in the last few years in the aftermath of several environmental disasters (e.g. ecological consequences of poorly regulated industries, polluted drinking water, "cancer villages" in the countryside resulting from mining effluents and unregulated industrial activities).

### Selected Geopolitical Implications

9. Historical precedents associated with factors conditioning the onset of military conflict between an ascending and a declining power, combined with a tally of the US and China's major strategic interests, offer a strong basis for imputing minimal probability of military conflict between China and the US in the coming decades. Of course, war by miscalculation can never be ruled out. Moreover, the changing relative power between China and the US will lead, in all certainty, to a changing geopolitical landscape throughout the Asia Pacific region, especially East Asia.

10. Over the coming decades, China's ascendancy and the US's economic decline are likely to lead to a reconfiguration of existing Asia-Pacific alliances as well as the creation of new ones.

11. The US-Korea military alliance is likely to lose force in the coming decades especially as the Korean peninsula undergoes reunification and as the Korean economy becomes increasingly more integrated with China's (a process that has already begun).

12. A further strengthening of the Japan-US military alliance is likely because from a geopolitical perspective the dynamics would be perceived by the Americans and the Chinese to be mutually beneficial – largely as both powers would view the ascendancy of an independent Japanese nuclear military power as destabilizing (owing to historical animosities between China and Japan).

13. From the US perspective, the strengthening of existing alliances, especially with Japan, is bound to remain a critically important focus area. On an incremental basis, however, the US is likely to engage India more forcefully in the formation of a strong alliance with the world's largest democracy, soon to be the world's most populous nation and arguably the only rising power likely to rival China in the decades to come. A strong US-India alliance would serve US and India's interests well by helping contain any East Asia and global expansionary agendas pursued by the CCP leadership, or any succeeding regime, especially of a totalitarian orientation.

14. In due course, the US-Taiwan alliance will fade once Taiwan's absorption into China materializes, an event universally expected by international policy observers.

15. China's growing international political assertiveness is being projected not only throughout Asia but also Africa and Latin America. Such political assertiveness is explained largely by the Chinese

leadership's deep-rooted commitment to secure access to raw material sources needed by China in accomplishing its massive infrastructure build-up plans through 2020 and beyond. In turn, increasingly the political strategy of engaging large natural-resource endowed countries in both nearby and far away places, fueled by China's pursuit of massive economic growth, is matched by China's recent redefinition of its naval power projection strategy into what is referred to as "far-sea defense" in military strategy lingo, ultimately leading to China's build-up of a true blue-water navy capable of projecting power well beyond its immediate area and that of Taiwan's. These dynamics represent one more example of the Chinese leadership's holistic approach to strategy design and implementation across the economic, political, and military divides.

16. China's growing assertiveness in projecting its political power to far away countries in Latin America and Africa, especially to countries whose regimes may be at odds philosophically with Western powers, may help perpetuate the longevity or even instigate the formation of political regimes not conducive to private sector investment and ownership. In that regard, China, as a "global factor" may bring about complex divergence or non-linear growth and risk premia dynamics across a significant cross-section of the developing world. Global investors will serve their interests well by paying heed to these dynamics. From a market perspective, cross-country differentiation is likely to gain more importance in the eyes of global investors, especially those new to the emerging markets.

### Selected Risks

17. The principal downside risks associated with China's ascendancy on a global scale stem from the potential for political and social upheaval, prompted by either internal issues (e.g. collapse of the Chinese Communist Party) or external events (military conflict with the US over Taiwan, India, Japan or Russia over disputed sea lanes or territories).

18. The developed world's painful economic metamorphosis, in the aftermath of one of the deepest financial crisis since the Great Depression, raises the urgency of China's transition from an export-led to a domestic-demand-led growth model. However, the opacity of developed countries' economic and financial outlooks over the coming years, combined with the Chinese Communist Party's well-proven pragmatic and incremental approach, is likely to lead to a slower-than-desirable pace of economic reform. The latter increases the vulnerability of the Chinese economy to both domestic and external shocks to a larger degree than necessary – however, this is a case of politics trumping economics.

*Carlos Asilis is currently the CIO at Glovista Investments. In the past, he has served as Global Strategist on the proprietary trading desks at Banco Santander (Madrid) and on the emerging markets fixed income proprietary trading desk of CSFB (New York), and he was Global Macro Trading Strategist at VegaPlus (New York). Carlos has also served as Chief US and Chief Emerging Markets Equity Strategist at JPMorgan Chase (New York) and Chief Emerging Markets FX Strategist at Merrill Lynch (New York). Prior to his tenure in the financial industry, Carlos served in the early 1990s at the International Monetary Fund (Washington DC) as the principal research economist with economic surveillance responsibilities for the Russian Federation and China, among other responsibilities. Prior to his tenure at the Fund, Carlos taught pure and applied economics at Georgetown, the University of Chicago and the Stockholm School of Economics. He holds Ph.D. and M.A. degrees in Economics from the University of Chicago and a BSE (honors) degree in Finance and Economics from the Wharton School. He sits on several external global investment committees, including that of ICICI Bank (Mumbai, India).*

## Itaú Global Strategy Views – Recent Issues:

- Issue #1, Carlos Asilis, September 15, 2010
  "Deflation Risks in the Developed World: Broad Global Macro and Market Implications"

# DISCLAIMER

### Itaú BBA is a brand name of Itaú Corretora de Valores S.A.

## Ratings: Definitions, Dispersion and Banking Relationships

| Ratings (1) | Definition (2) | Coverage (3) | Banking Relationship (4) |
|---|---|---|---|
| Outperform | The analyst expects the stock to perform better than the market average. | 48% | 35% |
| Market Perform | The analyst expects the stock to perform in line with the market average. | 43% | 31% |
| Underperform | The analyst expects the stock to perform below the market average. | 9% | 7% |

1. The ratings used herein (Outperform, Market Perform and Underperform), for purposes of the ratings distribution disclosure requirements of FINRA and the NYSE, correspond most closely, respectively, to Buy, Hold and Sell.

2. Ratings reflect the analyst's assessment of the stock price performance in the medium term compared with the market average. Recommendations will be valid until the analyst changes the rating, which may happen as a result of news or simply due to a change in the stock price (there is not a defined time horizon). Companies are grouped, according to their similarities, into sectors. The sectors are: (i) Banking & Financial Services, (ii) Consumer Goods & Retail + Food & Beverage, (iii) Healthcare + Education, (iv) Steel & Mining + Pulp & Paper, (v) Oil, Gas & Petrochemicals + Agribusiness, (vi) Real Estate, (vii) Telecommunications, Media and Technology, (viii) Transportation, Industrials and Logistics, (ix) Utilities, and (x) Equity Strategy.

3. Percentage of companies under coverage by Itaú Corretora de Valores S.A. within this rating category.

4. Percentage of companies within this rating category for which Itaú Unibanco S.A. or any of its affiliated companies provided investment banking services within the past 12 (twelve) months, or may provide investment banking services during the next 3 (three) months.

## Relevant Information

1. This report has been prepared by Mr. Carlos Asilis as a consultant to Itaú Corretora de Valores S.A ("Itaú BBA"), a subsidiary of Itaú Unibanco S.A., and distributed by Itaú BBA or one of its affiliates (altogether, "Itaú Unibanco Group"). Itaú BBA is the brand name used by Itaú Corretora de Valores S.A., by its affiliated or by other companies of the Itaú Unibanco Group. . This report is being distributed (i) in the United States by Itaú BBA USA Securities Inc., a FINRA/SIPC member firm; (ii) in the United Kingdom and Europe by Itau BBA UK Securities Limited, regulated by the Financial Services Authority (FSA). Details about the extent of its authorization and regulation by the FSA are available on request; and (iii) in Hong Kong by Itaú Asia Securities Limited, licensed in Hong Kong by the Securities and Futures Commission for Type 1 (dealing in securities) regulated activity (altogether, "Itaú Group"). This report is provided for informational purposes only and does not constitute or should not be construed as an offer to buy or sell or solicitation of an offer to buy or sell any financial instrument or to participate in any particular trading strategy in any jurisdiction. The information herein is believed to be reliable as of the date in which this report was issued and has been obtained from public sources believed to be reliable. Itaú Group does not make any representation or warranty, express or implied, as to the completeness, reliability or accuracy of such information, nor is this report intended to be a complete statement or summary of the securities, markets or developments referred to herein. Opinions, estimates, and projections expressed herein constitute the current judgment of the analyst responsible for the substance of this report as of the date in which it report was issued and are therefore subject to change without notice. Prices and availability of financial instruments are indicative only and subject to change without notice. Itaú Group has no obligation to update, modify or amend this report and inform the reader accordingly, except when terminating coverage of the issuer of the securities discussed in this report.
2. This report has been prepared by Mr. Carlos Asilis, who hereby certifies that the views expressed herein accurately and exclusively reflect his personal views and opinions about any and all of the subject matter discussed and that this report was prepared by Mr. Asilis independently and autonomously, including from Itaú BBA. The views expressed herein do not necessarily reflect the views of Itaú BBA, its subsidiaries and affiliates. Because personal views of analysts may differ from one another, Itaú BBA, its subsidiaries and affiliates may have issued or may issue reports that are inconsistent with, and/or reach different conclusions from, the information presented herein. Mr. Asilis is not registered and/or qualified as research analyst with the NYSE or FINRA, and is not associated with Itaú BBA USA Securities Inc. and, therefore, may not be subject to Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.
3. The financial instruments discussed in this report may not be suitable for all investors. This report does not take into account the investment objectives, financial situation or particular needs of any particular investor. Investors should obtain independent financial advice based on their own particular circumstances before making an investment decision based on the information contained herein. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the price or value of, or the income derived from, the financial instrument, and the reader of this report assumes any currency risk. Income from financial instruments may vary and its price or value, either directly or indirectly, may rise or fall. Past performance is not necessarily indicative of future results, and no representation or warranty, express or implied, is made herein regarding future performances. Itaú Group does not accept any liability whatsoever for any direct or consequential loss arising from any use of this report or its content.
4. This report may not be reproduced or redistributed to any other person, in whole or in part, for any purpose, without the prior written consent of Itaú Corretora de Valores S.A. ("Itaú BBA"). Additional information relative to the financial instruments discussed in this report is available upon request.

**Additional Note to U.S. Investors:** Itau BBA USA Securities Inc. accepts responsibility for the content of this report. Any US investor receiving this report and wishing to effect any transaction in any security discussed herein should do so with Itau BBA USA Securities Inc. at 767 Fifth Avenue, 50th Floor, New York, NY 10153 Please refer to the Contact Page for additional contact information.

**Additional Note to U.K. and European Investors:** Itau Corretora de Valores S.A. (Itau BBA), a subsidiary of Itaú Unibanco S.A., is distributing this report to investors who are Eligible Counterparties and Professional Clients, pursuant to FSA rules and regulations. If you do not, or cease to, fall within the definition of Eligible Counterparty or Professional Client, you should not rely upon the information contained herein and should notify Itau BBA UK Securities Limited immediately. The information contained herein does not apply to, and should not be relied upon by retail customers.

**Additional Note to Asia Investors:** This report is distributed in Hong Kong by Itaú Asia Securities Limited, which is licensed in Hong Kong by the Securities and Futures Commission for Type 1 (dealing in securities) regulated activity. Itaú Asia

Securities Limited accepts all regulatory responsibility for the content of this report. In Hong Kong, any investors wishing to purchase or otherwise deal in the securities covered in this report should contact Itaú Asia Securities Limited at 29th Floor, Two IFC, 8 Finance Street – Central, Hong Kong.

**Additional Note for the Middle East:** This report is distributed by Itaú Middle East Securities Limited. Related financial products or services are only available to wholesale clients with liquid assets of over $1 million and who have sufficient financial experience and understanding to participate in financial markets in a wholesale jurisdiction. Itaú Middle East Securities Limited is regulated by the Dubai Financial Services Authority (DFSA). In the Middle East, any investors wishing to purchase or otherwise deal in the securities covered in this report should contact Itaú Middle East Securities Limited, at Al Fattan Currency House, Suite 305, Level 3, DIFC, PO Box 65703, Dubai, United Arab Emirates.

**Additional Note for Japan:** This report is distributed in Japan by Itaú Asia Securities Limited – Tokyo Branch, Registration Number (FIEO) 2154, Director, Kanto Local Finance Bureau, Association: Japan Securities Dealers Association.

**Questions, suggestions and complaints, talk to you Investment Advisor:** If necessary, contact our Client Service Center: 4004-3131* (capital and metropolitan areas) or 0800 722 3131 (other locations) during business hours, from 9:00 a.m. to 8:00 p.m., Brasilia time. If you wish to re-evaluate the presented solution, after utilizing these channels, talk to Itaú's Corporate Complaints Office: 0800 570 0011 (on business days from 9 A.M. to 6 P.M. Brasilia time) or Caixa Postal 67.600, São Paulo-SP, CEP 03162-971.

* Cost of a local call.

# Equities

Christian Egan - CEO

## Research

| | | |
|---|---|---|
| Carlos Constantini, CNPI - Head | +55-11-3073-3001 | carlos.constantini@itaubba.com |

**Equity Strategy**

| | | |
|---|---|---|
| Carlos Constantini, CNPI - Head | +55-11-3073-3001 | carlos.constantini@itaubba.com |
| Susana Salaru, CNPI | +55-11-3073-3009 | susana.salaru@itaubba.com |
| Pedro Maia, CNPI | +55-11-3073-3065 | pedro.maia@itaubba.com |
| Cida Souza, CNPI | +55-11-3073-3038 | cida.souza@itaubba.com |
| Rodrigo Correa. CNPI | +55-11-3073-3023 | rodrigo.correa@itaubba.com |

**Banking & Financial Services**

| | | |
|---|---|---|
| Regina Longo Sanchez, CNPI - Sector Head | +55-11-3073-3042 | regina.sanchez@itaubba.com |
| Thiago Bovolenta Batista, CFA | +55-11-3073-3043 | thiago.batista@itaubba.com |
| Alexandre Spada, CNPI | +55-11-3073-3004 | alexandre.spada@itaubba.com |

**Consumer Goods & Retail + Food & Beverage**

| | | |
|---|---|---|
| Juliana Rozenbaum, CFA - Sector Head | +55-11-3073-3035 | juliana.rozenbaum@itaubba.com |
| Francine Martins, CNPI | +55-11-3073-3039 | francine.martins@itaubba.com |
| Renato Salomone, CNPI | +55-11-3073-3062 | renato.salomone@itaubba.com |
| Rafael Vignoli | +55-11-3073-3018 | rafael.vignoli@itaubba.com |

**Healthcare + Education**

| | | |
|---|---|---|
| Juliana Rozenbaum, CFA - Sector Head | +55-11-3073-3035 | juliana.rozenbaum@itaubba.com |
| Marcio Osako, CFA | +55-11-3073-3040 | marcio.osako@itaubba.com |
| Enrico Grimaldi | +55-11-3073-3012 | enrico.grimaldi@itaubba.com |

**Oil, Gas & Petrochemicals + Agribusiness**

| | | |
|---|---|---|
| Paula Kovarsky, CNPI - Sector Head | +55-11-3073-3027 | paula.kovarsky@itaubba.com |
| Diego Mendes, CNPI | +55-11-3073-3029 | diego.mendes@itaubba.com |
| Giovana Araújo, CNPI | +55-11-3073-3036 | giovana.araujo@itaubba.com |
| André Pinheiro | +55-11-3073-3028 | andre.pinheiro@itaubba.com |

**Real Estate**

| | | |
|---|---|---|
| David Lawant, CNPI - Sector Head | +55-11-3073-3037 | david.lawant@itaubba.com |
| Ricardo Lima, CNPI | +55-11-3073-3007 | ricardo.lima@itaubba.com |
| Vivian Salomon | +52-55-5262-0672 | vivian.salomon@itaubba.com |
| Enrico Trotta | +55-11-3073-3064 | enrico.trotta@itaubba.com |

**Steel & Mining + Pulp & Paper**

| | | |
|---|---|---|
| Marcos Assumpção, CFA - Sector Head | +55-11-3073-3021 | marcos.assumpcao@itaubba.com |
| Alexandre Miguel, CFA | +55-11-3073-3020 | alexandre.miguel@itaubba.com |
| Alexandre Mello | +55-11-3073-3031 | alexandre.mello@itaubba.com |

**Telecommunications, Media & Technology**

| | | |
|---|---|---|
| Carlos Constantini, CNPI - Head | +55-11-3073-3001 | carlos.constantini@itaubba.com |
| Martín Lara | +52-55-5262-0673 | martin.lara@itaubba.com |
| Susana Salaru, CNPI | +55-11-3073-3009 | susana.salaru@itaubba.com |
| Rodrigo Correa, CNPI | +55-11-3073-3023 | rodrigo.correa@itaubba.com |
| Tito Ferraz | +55-11-3073-3066 | tito.ferraz@itaubba.com |

**Industrials + Transportation & Logistic**

| | | |
|---|---|---|
| Renata Faber, CNPI - Sector Head | +52-55-5262-0674 | renata.faber@itaubba.com |
| Filipe Abelha | +55-11-3073-3034 | filipe.abelha@itaubba.com |

**Utilities**

| | | |
|---|---|---|
| Marcos Severine, CNPI - Sector Head | +55-11-3073-3011 | marcos.severine@itaubba.com |
| Mariana Coelho, CNPI | +55-11-3073-3024 | mariana.coelho@itaubba.com |
| Marcel Shiomi, CNPI | +55-11-3073-3014 | marcel.shiomi@itaubba.com |

**Economics**

| | | |
|---|---|---|
| Guilherme da Nobrega, CNPI - Head | +55-11-3708-2715 | gcnobrega@itaubba.com.br |
| Mauricio Oreng | +55-11-3708-2807 | moreng@itaubba.com.br |
| Luiz Gustavo Cherman | +55-11-3708-2713 | lgcherman@itaubba.com.br |

**Technical Analysis**

| | | |
|---|---|---|
| Marcio Lacerda, CNPI - Head | +55-11-3073-3005 | marcio.lacerda@itaubba.com |
| Marcello Rossi, CNPI | +55-11-3073-3006 | marcello.rossi@itaubba.com |

## Equity Sales & Trading

### Latin America

**Sales - Latin America**

| | | |
|---|---|---|
| Carlos Maggioli - Head | +55-11-3073-3300 | carlos.maggioli@itaubba.com |
| Cecilia Viriato | +55-11-3073-3330 | cecilia.viriato@itaubba.com |
| Márcia Sadzevicius | +55-11-3073-3330 | marcia.sadzevicius@itaubba.com |
| Pedro H. Rocha Sauma | +55 11 3073-3330 | pedro.sauma@itaubba.com |
| Rodrigo Pace | +55-11-3073-3330 | rodrigo.pace@itaubba.com |

**Sales Trading - Latin America**

| | | |
|---|---|---|
| Eduardo Barone - Head | +55-11-3073-3310 | eduardo.barone@itaubba.com |
| Aureo Bernardo | +55-11-3073-3330 | aureo.bernardo@itaubba.com |
| Carlos Carvalho Lima | +55-11-3073-3310 | carlos.carvalho-lima@itaubba.com |
| Carlos Faria | +55-11-3073-3310 | carlos.faria@itaubba.com |
| Cristiano Soares | +55-11-3073-3330 | cristiano.soares@itaubba.com |
| Fernando Lasalvia | +55-11-3073-3310 | fernando.lasalvia@itaubba.com |
| Lucas Gonçalves | +55-11-3073-3310 | lucas.goncalves@itaubba.com |
| Sérgio Rocha | +55-11-3073-3330 | sergio.rocha@itaubba.com |
| Thiem Hauenschild | +55-11-3073-3310 | thiem.von@itaubba.com |

### Europe, Middle East & Asia

**Sales - Europe**

| | | |
|---|---|---|
| Mark Fenton - Head | +44-20-7663-7845 | mark.fenton@itaubba.com |
| André Luiz Dreicon | +44-20-7663-7845 | andre.dreicon@itaubba.com |
| Fabio Faraggi | +44-20-7663-7839 | fabio.faraggi@itaubba.com |

**Sales - Japan**

| | | |
|---|---|---|
| Masayoshi Yazawa | +813-3539-3850 | masayoshi.yazawa@itaubba.com |
| Gerson Konishi | +813-3539-3852 | gerson.konishi@itaubba.com |

**Sales - Hong Kong**

| | | |
|---|---|---|
| Jack Xu - Head | +852-3657-2388 | jack.xu@itaubba.com |
| Caio Galvão | +852-3657-2398 | caio.galvao@itaubba.com |

### North America

**Sales - North America**

| | | |
|---|---|---|
| Adam Cherry - Head | +1-212-710-6766 | adam.cherry@itaubba.com |
| Flavia Stingelin, CFA | +1-212-710-6768 | flavia.stingelin@itaubba.com |
| Marcello Spinelli | +1-212-710-6767 | marcello.spinelli@itaubba.com |
| Carina Cassab Carreira | +1-212-710-6790 | carina.carreira@itaubba.com |

**Sales Trading - North America**

| | | |
|---|---|---|
| Kevin Hard - Head | +1-212-710-6780 | kevin.hard@itaubba.com |
| Eric Krall | +1-212-710-6780 | eric.krall@itaubba.com |
| Gustavo Rosa | +1-212-710-6780 | gustavo.rosa@itaubba.com |
| James Tallarico | +1-212-710-6780 | james.tallarico@itaubba.com |
| Brad Marra | +1-212-710-6780 | brad.marra@itaubba.com |

## Futures, Derivatives & Stock Lending

| | | |
|---|---|---|
| Carlos Maggioli - Head | +55-11-3073-3300 | carlos.maggioli@itaubba.com |

**Futures Desk**

| | | |
|---|---|---|
| Eduardo Barcellos - Head | +55-11-3073-3320 | eduardo.barcellos@itaubba.com |
| Fabio Herdeiro | +55-11-3073-3320 | fabio.herdeiro@itaubba.com |
| Alan Eira | +55-11-3073-3350 | alan.eira@itaubba.com |
| Alexandre Rizzo | +55-11-3073-3350 | alexandre.rizzo@itaubba.com |
| Celso Azem | +55-11-3073-3350 | celso.azem@itaubba.com |
| José Dezene | +55-11-3073-3350 | jose.dezene@itaubba.com |
| Vinicius Cobo | +55-11-3073-3350 | vinicius.cobo@itaubba.com |
| Thierry Decoene | +55-11-3073-3300 | thierry.decoene@itaubba.com |

**Derivatives**

| | | |
|---|---|---|
| Fabiano V. Romano - Head | +55-11-3073-3310 | fabiano.romano@itaubba.com |
| Rafael Americo | +55-11-3073-3310 | rafael.americo@itaubba.com |
| Raphael Lie | +55-11-3073-3310 | raphael.lie@itaubba.com |
| Marcio Caires | +55-11-3073-3310 | marcio.caires@itaubba.com |
| Alexandre Chichorro Lacerda, CFA | +55-11-3073-3310 | alexandre.lacerda@itaubba.com |

**FX Spot**

| | | |
|---|---|---|
| Manoel Gimenez | +55-11-3073-3340 | manoel.gimenez-neto@itaubba.com |
| Haroldo Vasconcellos | +55-11-3073-3340 | haroldo.vasconcellos@itaubba.com |

**Stock Lending**

| | | |
|---|---|---|
| Marina Leite | +55-11-3073-3211 | marina.leite@itaubba.com |
| João Victor Caccese | +55-11-3073-3211 | joao.caccese@itaubba.com |

## Private Banking Desk

| | | |
|---|---|---|
| Felipe Beltrami - Head | +55 11 3073-3273 | felipe.beltrami@itaubba.com |

**Private Banking - Sales**

| | | |
|---|---|---|
| Lucas Tambellini | +55 11 3073-3110 | lucas.tambellini@itaubba.com |
| Marcelo Ferri | +55 11 3073-3110 | marcelo.ferri@itaubba.com |
| Sergio Fonseca Rosa | +55 11 3073-3110 | sergio.fonseca-rosa@itaubba.com |

**Private Banking - Trading Desk**

| | | |
|---|---|---|
| Caio Felipe Zanardo Val | +55 11 3073-3292 | caio.val@itaubba.com |
| Edgard Claussen Vilela | +55 11 3073-3291 | edgard.vilela@itaubba.com |
| Guilherme Rudge Simões | +55-11-3073-3150 | guilherme.simoes@itaubba.com |
| João Gabriel | +55-11-3073-3145 | joao.silvestre@itaubba.com |
| João Roberto A. de Souza | +55 11 3073-3298 | joao-afonso.souza@itaubba.com |
| Joseana Requejo Amaral | +55 11 3073-3293 | joseana.amaral@itaubba.com |
| Julio Pimentel Algodoal Neto | +55 11 3073-3210 | julio.algodoal@itaubba.com |
| Luis Fernando Kanashiro | +55 11 3073-3210 | luis.fernando.kanashiro@itaubba.com |
| Marco Antônio Gomes | +55 11 3073-3148 | marco.gomes@itaubba.com |
| Natália Mônaco | +55 11 3073-3297 | natalia.monaco@itaubba.com |
| Nicolas E. Balafas | +55 11 3073-3299 | nicolas.balafas@itaubba.com |
| Patrick Campos de Mello | +55 11 3073-3292 | patrick.mello@itaubba.com |
| Patrick Kalim | +55-11-3073-3145 | patrick.kalim@itaubba.com |
| Pedro Feres | +55-11-3073-3149 | pedro.feres@itaubba.com |
| Ricardo Guntovitch | +55-11-3073-3149 | ricardo.guntovitch@itaubba.com |
| Ricardo Julio Costa | +55 11 3073-3297 | ricardo.costa@itaubba.com |
| Robinson Minetto | +55 11 3073-3290 | robinson.minetto@itaubba.com |
| Sandra Steffen Brianti | +55 11 3073-3297 | sandra.brianti@itaubba.com |
| Thiago de Freitas Ribeiro | +55-11-3073-3290 | thiago.freitas-ribeiro@itaubba.com |

## Fixed Income

Alexandre Aoude, Global Head of Fixed Income

**Fixed Income Research**

| | | |
|---|---|---|
| Ciro Matuo, CNPI - Sector Head | +55-11-3073-3049 | ciro.matuo@itaubba.com |
| Boanerges Pereira, CNPI | +55-11-3073-3050 | boanerges.pereira@itaubba.com |
| Sérgio Vailati, CNPI | +55-11-3073-3067 | sergio.vailati@itaubba.com |

**Sales - Latin America**

| | | |
|---|---|---|
| Luis Fernando Guido | +55-11-3708-8800 | lcguido@itaubba.com.br |
| Andre Farkas | +55-11-3708-8800 | afarkas@itaubba.com.br |
| Rogério Cunha | +55-11-3708-8800 | rmcunha@itaubba.com.br |
| Luiz Felipe Ferraz | +55-11-3708-8800 | lfferraz@itaubba.com.br |
| Felipe Almeida | +55-11-3708-8800 | fralmeida@itaubba.com.br |
| Vinicius Pinho | +55-11-3708-8610 | vapinho@itaubba.com.br |

**Sales - North America**

| | | |
|---|---|---|
| Douglas Chen | +1 212 710-6782 | douglas.chen@itaubba.com |
| Mario Bonilla | +1 212 710-6745 | mario.bonilla@itaubba.com |
| Richard Cascais | +1 212 710-6766 | richard.cascais@itaubba.com |

**Sales - Europe**

| | | |
|---|---|---|
| Rodolfo Dejon | +44 207 663-7843 | rodolfo.dejon@itaubba.com |
| Rodrigo Malizia | +44 207 663-7843 | rodrigo.malizia@itaubba.com |

**Sales - Asia**

| | | |
|---|---|---|
| Gerson Konishi | +813-3539-3852 | gerson.konishi@itaubba.com |

## Alternative Investment Products

**São Paulo**

| | | |
|---|---|---|
| Marcelo Fatio - Head | +55-11-3073-3505 | marcelo.fatio@itaubba.com |
| Lizandro Arnoni | +55-11-3073-3584 | lizandro.arnoni@itaubba.com |

**New York**

| | | |
|---|---|---|
| Roger Freitas | +1-212-710-6778 | roger.freitas@itaubba.com |

**London**

| | | |
|---|---|---|
| Mark Fenton - Head | +44-20-7663-7845 | mark.fenton@itaubba.com |
| Raquel Franco | +44-207-663-7838 | raquel.f.franco@itaubba.com |
| Pedro Rafael | +44-207-663-7841 | pedro.rafael@itaubba.com |

**Dubai**

| | | |
|---|---|---|
| Rainer Schwarz - Head | + 971 4 440 8350 | rainer.schwarz@itaubba.com |
| Fernando Diez Notarnicola | + 971 4 440 8355 | fernando.notarnicola@itaubba.com |

**Hong Kong**

| | | |
|---|---|---|
| Jack Xu - Head | +852-3657-2388 | jack.xu@itaubba.com |
| Caio Galvão | +852-3657-2398 | caio.galvao@itaubba.com |
| Charles Lin | +852-3657-2379 | charles.lin@itaubba.com |
| Eduardo Bernardes | +852-3657-2368 | eduardo.bernardes@itaubba.com |

**Tokyo**

| | | |
|---|---|---|
| Kenichi Noguchi - Head | +81-3-3539-3847 | kenichi.noguchi@itaubba.com |
| Hiroyuki Shimizu | +81-3-3539-3848 | hiroyuki.shimizu@itaubba.com |

## Itaú Securities' Global Offices

**SÃO PAULO**
**Itaú Corretora de Valores S.A**
Av. Brigadeiro Faria Lima, 3400 - 10º Andar
São Paulo, SP, Brazil, 04538-132

**NEW YORK**
**Itaú USA Securities Inc.**
767 Fifth Avenue, 50th Floor
New York, NY 10153

**LONDON**
**Itaú UK Securities Ltd.**
6th Floor - 17 Dominion Street
London EC2M 2EF

**HONG KONG**
**Itaú Asia Securities**
**Regulated by the Securities and Futures Commission in Hong Kong**
29/F, Two International Finance Centre
8 Finance Street - Central, Hong Kong

**TOKYO**
**Itau Asia Securities Limited Tokyo Branch**
NBF Hibiya Bldg. 12F
1-1-7 Uchisaiwai-cho, Chiyoda-ku
Tokyo, 100-0011, Japan

**DUBAI**
**Itaú Middle-East Securities**
Al Fattan Currency House (DIFC)
3rd floor – room 305 (P.O. Box: 65703)
Dubai, United Arab Emirates