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From Red China to Green China

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2009 sees the 30th anniversary of the decision of the Communist Party of China to adopt a more liberal, market based approach to economic development. Recent economic progress has, by any standards, been very impressive in recent decades. China has maintained a growth rate in GDP of about 10% per annum for over a generation. This has lifted more than 300 million Chinese citizens out of poverty and has moved China to being the fourth largest economy in the world in 2007, behind the US, Japan, and Germany. It is speculated that, by 2025, China will have overtaken the US to become the largest economy in the world. This is what is seen as China's industrial destiny.

This feat has come about by China becoming the manufacturing hub of the world – particularly for consumers in North America and Europe. Originally, much of the Chinese manufacturing hub was kick started by overseas investment (known as Foreign Direct Investment or FDI). In recent years, the growth of Chinese production facilities has drawn upon the domestic savings pool rather than rely upon the flow of FDI. Indeed, China is now a net exporter of capital and has invested heavily in US Government Bonds.

The accumulation of assets denominated in US Dollars has been aided by a circular flow of income that has proven to be unsustainable. American consumers have a high propensity to buy Chinese manufactures. The Chinese government, by controlling the exchange rate, developed a trade surplus with the US (a Chinese surplus is an American deficit), which it then used to purchase assets denominated in US Dollars on the capital account. Recently, the Chinese government has started to move away from US Government Bonds as its preferential investment, and has created a \$300 billion fund that has started to invest in a variety of assets, ranging from the Blackstone Hedge Fund to Barclays Bank.

North American and European consumers have such a high propensity to consume Chinese manufactured products because of their price offering. China has become a vast, low cost production centre for the whole world. The key to this low cost production are the low labour costs associated with China. Chinese value added per capita may be very low (\$490 per annum compared with \$4,851 in Malaysia), but the even lower cost of labour is such that the loss of productivity can be tolerated. The Bank of England estimates that one result of the 'China Effect' has been to reduce UK inflation by a whole percentage point this century. In an economy where inflation ranges between 1% and 3%, this is quite a significant contribution.

CHINA'S INDUSTRIAL DESTINY

As the world moves into recession, whilst the propensity to consume Chinese manufactured products in Europe and North America may remain high, a lessening of income in these markets to buy those products has seen a fall in Chinese exports and a consequential reduction in the Chinese trade surplus (US trade deficit). Whilst some of this decrease in demand has led to a cooling of the Chinese economy in recent months, there is evidence to suggest that Chinese businesses are responding to the fall in exports by the development of the home market. This is an important part of China's industrial destiny. The future growth market for Chinese businesses is the home market rather than the export market. As the recessionary pressure abates in 2010 to 2011, there is every likelihood that China's export market will recover and add to the growth pressure caused by the development of the home market. By the start of the next decade, we can reasonably expect China to continue its progress towards its industrial destiny.

And yet, we might call into question whether this performance can be sustained into the future. The impact of Chinese development has already been felt in the resource markets of the world. The tightening of steel prices, oil prices, and the prices of a number of other basic commodities, as diverse as cement and wood panelled fencing, have been interpreted as evidence of the impact of the purchasing power of the Chinese economy. As living standards in China rise, so do the consumption expectations of Chinese citizens. For example, in 2006, the growth in consumption of Champagne in the Shanghai area alone was greater than the total growth in Champagne consumption for the rest of the world.

In 2007, China was the leading consumer of nickel, aluminium, tin, zinc, lead, copper, rubber, wool, cotton, and coal. All of these are key raw materials that are central to the future of the development of the Chinese economy. We can easily see why commodities have increased by 239% in price this century. However, when looking to the future, we have to account for potential scarcities. In order to secure strategic supplies, Chinese foreign policy is developing links in Central Africa (an important source of copper, nickel, aluminium, platinum and coal) and South America (an important source of copper, lead, zinc, tin, nickel, and aluminium). These commercial agreements lock in the suppliers at a given price for a given quantity of the commodities in question.

Whilst this may be a solution for the near future, it does not mean that China has found a long term solution. If we are entering a world of resource scarcity, there is an incentive for the supplier of the commodity to renege on the agreement. Even if this does not happen, at some point the agreement will be scheduled for renewal, and, at that point, the higher market price will enter into the equation.

NOT-SO-WEAK SIGNALS – THE OIL MARKETS

A more interesting view of the future might be gained from examining what is currently happening in the oil markets. The price of oil has risen substantially in the opening years of this century. This is partly due to the growth of the newly industrialising nations – including China – and partly due to the rapid economic growth of the industrialised nations. A factor adding to the tightening of the oil markets is the prospect – possibly within a generation – of the peaking of global oil production (known as 'Peak Oil'). From that point, not only will the demand for oil be a factor in pushing up the price of oil, scarcity of supply will be as well. Although the price of oil has fallen over 2008, any resumption of the Chinese juggernaut in the next decade will pull the world economy back into a situation of energy scarcity. The markets expect this to happen. In December, spot oil was trading for about \$40 a barrel, but oil for future delivery in 2014 was trading at \$80 a barrel. This situation (known as contango – an inverted yield curve) suggests that the issue of Peak Oil, whilst held in abeyance by the economic downturn, still has some way to run.

There have been three generic responses to the prospect of Peak Oil. The first response has been the development of oil substitutes such as ethanol based bio-fuels in transportation. However, the law of unintended consequences has come into play here. US policy is currently to subsidise maize (corn in

the US) production, predominantly in the Mid-west grain belt. Food prices have rose by 55% in 2007, as have farm incomes (2008 is also a US election year), leaving us with a situation where it costs about \$5 to manufacture a gallon of corn based bio-diesel, of which the US consumer pays about \$3 at the pump and the federal government pays \$2 directly as farm subsidies. In the meantime, the cost of corn derived tortilla flour in Mexico (a staple part of the Mexican diet) has doubled. This is unlikely to be sustainable into the future.

The second response to Peak Oil has been the development of energy substitutes from sustainable sources such as wind power. Energy substitutes fall into two categories – those that rely on ‘green’ technologies, such as the sun, wind, and sea; and those that rely on ‘dirty’ technologies, such as coal and nuclear power. The problem with the green technologies is one of scale – they are simply unlikely to generate sufficient energy to alleviate the projected energy shortfalls. The problem with the dirty technologies is that of the cost of clean up after the energy has been generated. These responses are unlikely to be sustainable into the future.

The final response has been one of conservation. There are two forms of conservation – abstinence and efficiency gains. In the case of abstinence, energy is conserved by foregoing activities previously undertaken (e.g. turning off the lights when we leave a room, whereas before we would have left them on). In the case of efficiency gains, this is a case of using a given amount of resource more effectively (e.g. the attempt to increase the number of miles per gallon in car transportation). This is an area where technology may have quite an important impact in the years to 2025.

We have dwelt upon the tightening energy markets because they are an important issue to the future which is taking shape today. They are also central to whether or not China achieves its industrial destiny. At present, China relies on coal as the primary fuel for its economy. It is putting into commission, on average, one coal fired power station a week. This is starting to have unfortunate consequences in terms of environmental pollution and air quality, which may pull back the Chinese economy by 2025.

THE CONUNDRUM

China currently faces a conundrum. Its recent economic performance has relied upon an abundant source of cheap resources – labour, energy, and raw materials. There are signs that the days of cheap labour are coming to an end as labour shortages were widely experienced in 2008 in Chinese factories. The approach to Peak Oil is likely to end the days of cheap energy, and the tightening of the markets for raw materials is increasing their cost at the factory gate. This all points in one direction – China has to adopt resource conservation as a means of achieving its industrial destiny.

The current resource efficiency rate (the amount of raw material needed to generate a unit of output) is unsustainable if China is to become the largest economy in the world. In order to reach that point, China will have to increase that resource efficiency so that raw materials go much further in producing industrial goods. That process has started already. China is currently the world’s largest importer of landfill – all of the plastics, metals, cardboard, paper that the industrialised economies discard. However, this is not enough. There is also a demand for new technologies to improve resource efficiency. This demand is likely to increase as the future unfolds.

If China is to achieve its industrial destiny of becoming the world’s largest economy, it will need to become the first major green economy as well. There is everything to suggest that, whilst this might be a huge task, it is not beyond the capacity of the Chinese people. It is entirely within their capability to make Red China become Green China.

Stephen Aguilar-Millan is the Director of Research at the European Futures Observatory (www.eufo.org), an independent not-for-profit organisation based in the UK, and is a Director of The Greenways Partnership, a firm of consulting futurists also based in the UK. He consults widely for a range of clients based across the globe. In addition, he is a member of the Royal Economics Society, a

fellow of the RSA, and a member of a number of other professional bodies in the UK. He is a Board Member of the Association of Professional Futurists and serves on the Global Advisory Council of the World Future Society. Stephen is currently engaged on a variety of projects ranging from 'The Age of Scarcity 2010-50' (to be published in the summer of 2010) to 'An Asian Love Affair – China, India, and the US 2010-2030' (to be published early in 2011).

POINTS FOR THE CLASSROOM (send comments to forum@futuretakes.org):

- *Aguilar-Millan refers to the trade imbalance between the US and China. A more recent development is the job imbalance – 10% unemployment in the US vs. labour shortages in China. Identify at least two scenarios that can result from a geographic imbalance or mismatch among labour, capital, and resources.*
- *Identify at least two scenarios that can result from the confluence of rising costs of energy, raw materials, and labour.*
- *Aguilar-Millan states that China's recent economic performance has relied upon an abundant source of cheap resources – labour, energy, and raw materials. Similar statements have been made in regard to the US. On what other hidden assumptions have economic performances and projections been based?*
- *Which nations will best synergize the military, economic, diplomatic, and other instruments of national power within the next decade?*
- *In what ways will resource scarcities and climatic issues impact the relative geostrategic influence of nations and regions – and systems of governance themselves? (See the following articles from back issues: "Climate Change: an Intergenerational Hot Potato," synopsis of dinner program by Dr. Peter Schultz, National Academies, Summer-Fall 2005 issue, p. 7; review and discussion of Collapse by Jared Diamond, Summer-Fall 2005 issue, p. 10; and "The Great Energy Transition," synopsis of dinner program by Robert L. Olsen, Winter 2004-2005 issue, p. 15.)*
- *In which nations or regions are demographic trends favorable for economic growth and/or sustainment? (See "South Africa's Youth Bulge: Risk or Opportunity?" by Itha Taljaard, Spring-Summer 2008 issue, p. 24; and review and discussion of Fewer by Ben J. Wattenberg, Spring 2005 issue, p. 10.)*
- *In addition to China, what other regions can become dominant geostrategic actors and economic powerhouses in the coming years? (See review and discussion synopsis of Why Europe Will Run the 21st Century by Mark Leonard, Spring-Summer 2008 issue, p. 35.)*