Comparative disadvantage

What China can't do

The author, Daniel H. Rosen, is principal of the consulting firm China Strategic Advisory and visiting fellow at the Institute for International Economics.

The popular notion of China in much of the West today is of an 800-pound economic gorilla headed inexorably for dominance of the global economic jungle. This view is based in part on a population-driven exaggeration of China's economic importance. China has nearly a quarter of the earth's people, but its economy is somewhat bigger than California's, accounting for 5 percent of global economic activity. This compares to shares of 30 percent, 28 percent and 10 percent respectively for Europe, the United States and Japan. True, if China maintains its growth trajectory, its economy (thanks to population) will surpass that of the United States before mid-century. Yet even at that rate, the average Chinese in 2050 will be substantially poorer than the average American was in 2005.

The "Chinese century" school of thought is also too alarmist in a much more fundamental way: it celebrates China's comparative advantages yet completely ignores its comparative disadvantages. All nations have comparative advantages; all have corresponding disadvantages. Even if you are strong at everything, there is something you are least strong at and should leave to others. It takes little effort to uncover the disadvantages that constrain China's competitive strength. Identifying these weaknesses provides a Rosetta stone that foreign companies can use to decipher commercial opportunities in China.

The list of comparative disadvantages is the same whether you think China will maintain its growth trajectory or not. As a confirmed China bull since 1992, I assume that China will continue to grow rapidly, but its weaknesses will persist and present strategic opportunities to foreign firms. In this review I consider a dozen major comparative disadvantages under three major headings; the list is not exhaustive. Individually, these weaknesses sound familiar. Taken together, they present a hardy challenge to the emerging "dominant China" mythology.

Table 1
Capital per worker US$ '000/member of labour force

United Kingdom	122.9
Japan	105.4
Germany	87.0
France	83.9
United States	76.3
Taiwan	55.2
South Korea	32.5
Mexico	5.5
Brazil	4.9
China	**4.3**
India	1.0

Source: Economist Intelligence Unit, author calculations

I. Production factors: excess labour, wasted capital and the innovation gap

First, consider comparative disadvantages relating to direct and indirect factors of production: labour, capital, technology and environment. China's abundance of low-cost labour is widely considered an advantage, but just as many economies suffer the "curse of oil" (excessive reliance on a single commodity, to the detriment of other sectors), China suffers the "curse of labour" (Table 1).

China's comparative advantage in labour is so deep that manufacturers often find their lowest operating cost by taking machinery and technology out of the manufacturing process and replacing it with workers. This is exactly the opposite of what has occurred in OECD economies over the past 40 years, as higher wage rates encouraged the introduction of technology and cost-saving innovation. Toyota's Camry factory in Guangzhou – among the most modern auto facilities in China – is about 50 percent automated. A comparable plant in Japan would be 95 percent automated.

China's labour supply is not infinite: wages are rising briskly for both skilled workers and factory labour. But relative to the United States, labour is still cheap (US$1.40 an

hour for urban factory workers on average). In sectors where low-skill labour is a key determinant of the cost of goods, production will continue to migrate to China. But in industries where labour is not the biggest determinant of cost, the tendency to substitute labour for technology stacks the deck against Chinese producers.

Wasted capital, patent flaws

China famous capital profligacy also sets it dramatically apart from the world-class economies. Capital markets play the key disciplinary role in shifting assets to where they are most productive. Financiers often contribute not just cash but also skills and opportunities to the businesses they invest in, and raise their returns by doing so. Government subsidies can help at an early stage of development but are no substitute in the long run.

China's government only vaguely understands the magnitude of the disadvantage imposed by primitive capital markets. An official involved with the nation's stock markets recently noted that some Chinese leaders believe China has done just fine without efficient capital markets, and should be happy to "outsource" the task of raising money to foreign stock markets. This is flawed thinking. China cannot make the next step to economic maturity without better financial infrastructure. With little consensus on financial reform other than "muddling through", China's leaders have little choice but to permit foreign firms to help service Chinese growth. Foreign firms with hard-wired capital efficiency cultures (developed over decades at great cost and pain) will outperform Chinese counterparts in capital intensive sectors. Subsidy capital can partly offset the need for capital efficiency, but only for a minority of firms.

Table 2
US invention patents by recipient country/state, 2004

Japan	35,350
Germany	10,779
Taiwan	5,938
South Korea	4,428
United Kingdom	3,450
France	3,380
Australia	953
Singapore	449
Kentucky	407
China	**404**
Vermont	400
India	363

Source: US Patent and Trademark Office

In another key factor, technology, China is playing a good game of catch-up but from an immense disadvantage. The patent base on which Chinese firms stand is minuscule compared to that of the advanced economies. In 2004 China (population 1.3bn) received 404 US invention patents; Australia (population 20m) received 953 invention patents and Taiwan (population 23m) pulled in nearly 6,000. China's patent prowess is equivalent to that of Vermont, a tiny, mostly agricultural American state (Table 2). In addition, Chinese firms exploit the technologies they do have quite inefficiently: they tend to diversify production, rather than hone in on high-margin niches and technologies. George Gilboy of MIT estimates that for each US$10 China spends acquiring a technology, only US$1 is spent learning how to get the most out of it. Take-off era Japan spent US$10 on learning for each dollar of technology acquisition.

Equality over innovation

As a result, Chinese firms under-perform in technology intensive sectors. The government has tried to address this deficit through policies promoting "independent innovation" (*zizhu chuangxin*). Yet innovation depends on an elusive mix of cultural and institutional factors; putting this mix together is a gargantuan task. Legal or practical guarantees of reward for innovators are absent; and the educational system is steeped in the culture of hierarchy and memorisation. Moreover, the innovation policy butts heads with another policy priority: levelling income inequalities. It is likely that, for political reasons, egalitarian policies will take precedence – meaning the government will reduce the gains individual investors can enjoy from technology "home runs".

China's paucity of resource-efficient innovation is a crucial deficit when it comes to another factor – environment. The environment is generally seen as an externality rather than a factor in production; but the absence of a decent environment makes

production difficult or impossible, so one may consider it a "hidden" factor whose value becomes obvious in its absence. The environmental toll on Chinese production is beginning to be measurable: recent satellite photography demonstrates that industrial smog reduces crop yields over three-quarters of China's farmland.

Many Americans and Europeans see China's weak environmental regulation as a competitive advantage for its firms, which escape high compliance costs. This is only true until China's environmental degradation and excessive resource use become so severe that they jeopardise growth. At that point the environmental know-how of western firms becomes a comparative advantage (Table 3). This day may be sooner than most imagine. Countries tend to get serious about addressing environmental devastation when incomes rise to middle levels – around US$6,000 per capita. Much of urban coastal China is already near this level, and for a critical mass of the country this level should be reached within 15 years.

II. Law and governance: deficits everywhere

The governing advantage

With all the talk of downsizing government, lowering taxes and emancipating the private sector heard throughout the OECD, one might think that the most sophisticated economy is the one with the least government. Not at all. A sophisticated economy critically depends on an array of services and tasks that can *only* be performed by government, but which we take for granted in the West. These include financial market regulation, consumer protection, environmental protection, social safety nets and building codes.

China in 1978 had very little of this sort of government but far too much government interference in markets and people's daily lives. Chinese growth over the past quarter century stemmed largely from getting government out of the way of markets and individual consumption decisions. The growth of the next quarter century will demand a more active, pro-competitive regulatory role for government – a far more daunting task then simply getting out of the way. While this institution-building takes place (over the next three decades), Chinese firms will be persistently less efficient than firms governed by sophisticated pro-competitive regulatory regimes. For instance, US firms have learned to address workplace safety issues at a minimum of cost. This *latent* comparative advantage for western firms will come into play as Chinese incomes rise and demand for worker safety increases.

Table 3
US exports of environmental technology to China, 2005
US$ m

Monitoring and analysis	978
Waste water management	516
Air pollution control	95
Solid/hazardous waste disposal	70
Heat/energy management	41
Renewable energy	23
Other recycling	21
Potable water treatment	11
All environmental technology	1,755
% of total US exports to China	**4.2**
All environmental tech exports, average % growth 1996-2005	19.8
All exports, average % growth 1996-2005	14.9

Source: US International Trade Commission

Love those lawyers

The economic advantage of a strong legal system boils down to three words: lower transaction costs. British prime minister David Lloyd George nicely captured the power of contracts when he wrote: "I have seen some of them: wretched, crinkled, scrawled over, blotched, frowsy, and yet these wretched little scraps of paper moved great ships, laden with thousands of tons of precious cargo, from one end of the world to the other."

Travelling expenses

China's low labour costs and high productivity growth have obscured the high transaction costs of doing business in the country. As labour costs rise and productivity gains regress to the mean, China's transaction costs will be revealed. China is striding toward legal reform, but will not attain lower end-OECD legal quality for decades. Pockets of adequacy exist; but these do not permit nationwide protection, a prerequisite for full economies of scale. More broadly, the "advantage" Chinese firms enjoy by operating in a low compliance cost environment changes into a crushing burden when they move to high compliance cost regimes. When an American firm enters a new market, whether in Europe or in China, its new legal compliance costs are a modest addition to its existing (high) legal bill. When a Chinese firm without a legal department leaves China to operate in the US it faces a wholly new cost of doing business, and requires significant time to develop the habit of feeding the lawyers.

A specific component of a mature legal system that merits individual attention is competition policy. The general purpose of such policy is to govern market competition so that welfare (however defined) is maximised. An effective competition policy is essential to ensuring that firms succeed on the basis of quality rather than rent-seeking. China does not have a competition law yet, let alone a comprehensive policy regime.

Political change ahead

Even after the first competition law is enacted (within the next year or two), it will take another decade or two to develop a full system for regulating competition. In the meantime, abuse of market power by major players in China (many of them state-owned), lack of separation between firms and regulators, inter-provincial trade impediments, and lack of a consumer welfare imperative will plague the economy. The budding private sector bears the brunt of this shortcoming. Barriers to entry due to monopoly power and regional rivalry prevent tens of thousands of entrepreneurial firms from growing to a size that enables them to fully exploit the economies of scale that ought to be an intrinsic comparative advantage.

Another governance issue is the risk of instability in the course of political reform. The current one-party system has been adequate for China's march from universal poverty to sustained high-speed growth. It will be inadequate for a large, diverse middle-income nation with sophisticated citizens and per capita GDP approaching US$10,000.

Exactly how political reform will play out is unknown; but the certainty that *some* kind of reform *must* occur combined with uncertainty over the exact shape of reform, means that political risk will be a large implicit cost for Chinese firms not borne by their competitors from more stable economies. Though this factor is more applicable to the long term (I believe the highest risk years may be 2015-25), it is a spark not far from the powder kegs and cannot be discounted even today.

III. Commercial issues

A final set of disadvantages relates more narrowly to the way Chinese companies are organised and operate. One disadvantage hits China hardest where it now seems strongest, in manufacturing. This is margin compression: manufacturers' margins from the final cost of goods sold is shrinking – not just in China but everywhere. One reason is the emerging surfeit of low-skill labour in China, India, Vietnam, Latin America and perhaps soon in Africa. Labour is abundant but raw materials and creative talent are scarce. Thus the relative profits of labour-intensive economies such as China shrink, while those of commodity- or creativity-intensive economies rise. Over time, China can address these issues by acquiring ownership of raw material sources, moving up the innovation chain, or moving downstream closer to consumers abroad. But these steps will be expensive and take decades.

A second operating-level constraint on Chinese firms is the significant disincentive to make full use of information technology (IT). In recent years as much as one half of productivity growth in many OECD countries has come from the use of IT tools such as enterprise resource planning (ERP) systems. Chinese firms in general adopt technology enthusiastically but resist ERP systems because they make financial data more transparent to management, to joint venture partners – and, alas, to the tax authorities. Many Chinese firms are allergic to such transparency, and are content to forego the productivity benefits of IT in order to keep running three sets of books. Some firms installed ERP systems to boost their stock price before an IPO were scandalised by what they discovered, and gave up using the systems they installed. Firms that avoid IT solutions because of the unpleasant truths they reveal are like the people in *The Matrix* who "take the blue pill" in order not to know reality, and this avoidance is a recipe for under-performance.

Let's keep the internalities opaque

Not at home abroad

Another set of disadvantages applies to the Chinese firms (many of them state-owned) which are following the government's exhortation to "go out" and internationalise operations. The biggest single problem, as noted above, is that it is difficult and costly to move from a low-regulation environment to a high-regulation one. This disadvantage will last as long as China is weakly regulated relative to the rich economies – i.e. a very, very long time. Cultural factors may also play a role. For whatever reason, firms run by ethnic Chinese (in Hong Kong, Taiwan, Singapore and southeast Asia) have not been very successful in running direct operations in Western markets, even if they are quite successful at selling products into those markets. They typically rely heavily on various sorts of middlemen. It is an open question whether mainland Chinese firms will do any better.

One last disadvantage in the modern global economy is a deeply-rooted reluctance to value intangibles properly. Nearly 80 percent of the US economy is services: the value of this "intangible" part of the US economy (US$10trn) is four times the size of the *entire* Chinese economy (Table 4, on next page). Chinese industry carries with it an enduring bias against intangible services and value. This may be because paying for a service does not get you something you can show to your boss, and traditionally was seen as a cover for a bribe or other unproductive activity.

US and European firms almost universally accept that intangible services can add to their bottom lines; China's firms as yet do not. Chinese buyers of capital equipment

Table 4
Composition of GDP in selected countries, 2005

	GDP	Agriculture		Industry		Service	
	US$ trn	US$ trn	%	US$ trn	%	US$ trn	%
France	2,125	47.3	2.2	444	20.9	1,633	76.9
UK	2,229	22.9	1.0	584	26.2	1,620	72.7
China	2,267	282.1	12.5	1,070	47.3	911	40.3
Germany	2,797	24.7	0.9	829	29.6	1,944	69.5
Japan	4,560	77.5	1.7	1,177	25.8	3,306	72.5
US	12,487	119.1	1.0	2,543	20.4	9,825	78.7

Source: EIU, derived from derived from national statistics, IMF, International Financial Statistics

tend to reject service contracts, figuring that they can do their own service.* This bias carries over into marketing, advertising, branding and quality control, all services that are essential to a consumer orientation and moving into higher margin activities in overseas markets. Managing and incorporating these services into the operations of a firm is not simple – in fact it is often the core task for multinational firms, as manufacturing itself becomes a low margin commodity process. Chinese firms in general will require a decade or more to turn around their thinking on this front.

IV. Conclusion

Know your strengths

Reciting this litany of flaws is not to make light of China's immense economic progress over the past two decades, nor to minimise the competitive challenge posed by Chinese firms. It is simply a tool for identifying opportunities for developed-country companies. My analysis suggests mounting opportunity in financial and other service sectors, and in technologies that promote environmental or resource efficiency. It suggests the value – in all sectors – of information-driven decision making and focus on customer needs (Table 5).

The first step to effective competition is a correct diagnosis of competitors. Too many politicians and pundits in the West peddle misguided diagnoses such as:

Table 5
A comparative disadvantage balance sheet

China comparative disadvantage	Advantages for Western firms
Factors of production	
Capital market inefficiency	Outperform in capital intensive sectors
The curse of labour	Greater flexibility of technology-intensive firms
Innovation gap	High returns to innovation
Environmental inefficiency	Opportunity for environment/resource-efficient products
Legal/political systems	
Governance technology	Faster standard & policy cycles
Competition policy	Superior responsiveness to consumer demand
Legal system weakness	Legal-intensive industries (e.g finance)
Political reform risk	Higher certainty in strategic planning
Commercial issues	
Margin compression in manufacturing	Higher returns to creativity
Slow to internationalise	Superior global brand management
Tax aversion/IT	Higher returns to IT
Undervalue intangibles	Better economies of scope

*There are practical limits to this reluctance. Some years ago I was told that Otis Elevator had an easier time selling service contracts in China than its sister company Carrier Air Conditioner. I asked why, and was told "people don't get stuck in air conditioners".

- An undervalued currency is the root of Chinese competitiveness;
- Chinese labour will be virtually free forever, so manufacturing elsewhere will be destroyed;
- A well-oiled industrial policy machine guides China's economic development, as with Japan and South Korea in the past;
- China is anti-import and essentially protectionist.

As this analysis suggests, all of these ideas are wrong, and in many cases what appears a Chinese advantage – lax environmental regulation or abundant cheap labour – turns out to be a *disadvantage* in crucial respects. Chinese businesses struggle every day with the disadvantages catalogued here. For leaders of many Western firms, the greatest impediment to taking advantage of China's growth may be the one in their heads.