Manufacturing Automation in China and Investment Implications

GaveKal recently wrote: "Chinese leaders wake up every morning pondering how to return China to being the world’s number one economy and a super-geological power in its own right (few other world leaders harbour such thoughts).” And Beijing knows that it cannot achieve its ambitions as long as it remains the world’s sweatshop for low-tech labour intensive assembly work (the value retained in China from my “Made in China” iPad, for example, is just USD 7 vs. more than USD 100 for the US – see Chart 1). For its GDP, which is still low on a per capita basis (in 2011 (USD): 5,436 for China compared to 19,187 for Taiwan, 23,310 for Korea, and 34,000 for Japan) to continue to grow strongly, China needs to push its manufacturing up the value-added chain.

And the upgrading of manufacturing is already in full swing. When I visit companies throughout China I often see factories where one half of the plant is a traditional, dirty, metal-bashing shop producing low quality, low margin parts. The other half is a clean high-tech factory full of computerised machines from Japan, Germany, and Italy. And CEOs showing me around their factories get excited talking about opportunities to replace an old line with 30 workers with an automated line run by a single person and the quantum leaps in precision and quality related to this.
The policies behind this manufacturing revolution have huge ramifications. They mark China’s departure from its mercantilist growth model which redeployed millions of peasants with a negligible GDP per capita in labour intensive low end processing jobs generating a much higher GDP per capita (although low in absolute terms). The gains from this reallocation were spent on a modern infrastructure which was the backbone for China to become the world’s largest exporter.

China in the meantime has set out to adopt a more advanced development model driven by huge investments in education, R&D, and capital replacing labour. Quantum leaps in quality and efficiency will come along with this and will eventually create higher paid jobs, and in the process boost domestic demand.

So, what will all this do to the margins and returns of Chinese companies? Chinese managers often struggle to answer this question because their pattern of thought is “pay-back time” (no longer than 2 to 3 years) and not returns. Secondly, manufacturing upgrading has been part of their life for many years and is not something new (Chart 5 shows this for Hengan, China’s leading manufacturer of personal hygiene products; we visited one of its diapers factories in Q4 2011).

Even modern Chinese plants, however, often look quite different from state of the art facilities in the West. Highly automated state-of-the-art equipment is often confined to the core process while upstream and downstream process steps are not automated at all. A comparison of Hengan with Kimberley-Clark, both firms have in broad terms the same business model, reflects this but also shows the enormous efficiency reserves a firm like Hengan can still realize (see Chart 6: Net Fixed Assets and revenues per employee still differ by a factor of 51!). And Hengan has the financial means and the know-how to close most of this gap quite fast (if it is economical to do so).

As a side note, this also shows the very different development stage of Kimberley-Clark and Hengan: “Large globally” (2011 sales: USD 20.8bn; market cap: USD 28.2bn) vs. “Large in China” (2011 sales: USD 2.2bn; market cap: USD 11.6bn); mature and with key performance drivers largely at “steady state” levels vs. high growth with a clear upward trend in key performance drivers.
At Hengan Net Fixed Assets (NFI) and sales per employee are up 120% and 180% respectively since 2005 compared to a flat development at Kimberley. The physical assets behind Hengan’s move up the value-added chain are plants and equipment of increasing scale with rapidly rising automation levels.

As part of this upgrading process Hengan has increased its Net Fixed Assets by 3.5 times and its Capital Employed by around 5 times between 2005 and 2010. Leaving some volatility from pulp and oil-based chemicals aside (together 70% of COGS), Chart 8 shows that Hengan’s returns, margins and direct employee cost have been stable (while sales and net income grew by a factor of 4.4 and 5.4 times respectively!). Asset efficiency (measured as Net Fixed Asset turnover) gradually improved from 2.1 times in 2005 to 2.5 times in 2010 (Chart 9).

The conclusion for Hengan is that pushing manufacturing up the value-added chain and, in the process, enhancing scale, efficiency and quality has helped the company to achieve a highly stable Return on Capital Employed well above its cost of capital, absorbing increasing labour cost, fluctuations in raw material cost, and domestic competition in a still fragmented market. And, compared to Western peers, a lot of low hanging fruits suggest that there are buffers to protect its performance in coming years. For companies in the right sector and with the right positioning, the enhancement and automation of manufacturing is a huge opportunity and not a threat!
IMPORTANT DISCLOSURES

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