Rethinking China's Automotive Industry Prospects

Viewed through McKinsey's Global Forces framework, the Chinese passenger car industry could reach global critical mass much faster than expected.

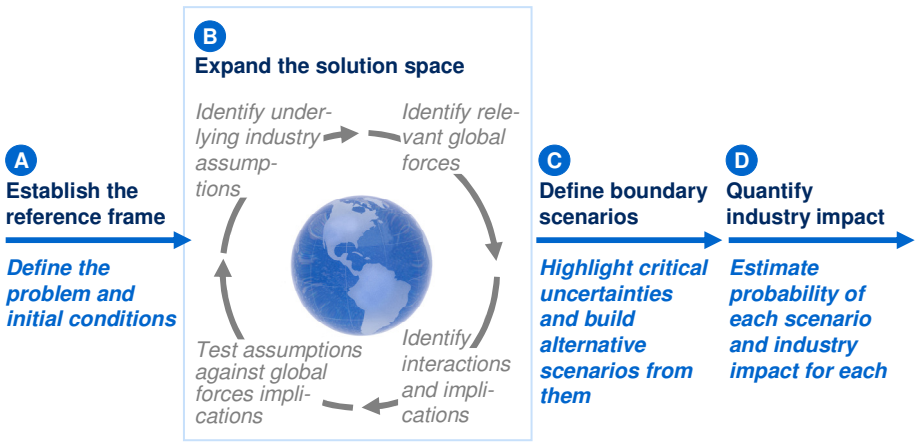
by Filipe Barbosa, Dago Diedrich, Dieter Düsedau, Damian Hattingh, Michael Kloss, and Stefano Proverbio

Conventional wisdom suggests that Chinese car makers will follow Hyundai's slow but steady trajectory over the last two decades and ultimately capture a marginal share of developed world markets in the next decade. However, using McKinsey's Global Forces methodology (Exhibit 1), one can argue that compelling alternative scenarios exist in which Chinese automakers may rise much more quickly than expected – potentially creating significant global industry disruptions in the process.

Exhibit 1:

A systematic approach is required to uncover the true insights revealed by Global Forces

Global Forces methodology



SOURCE: McKinsey

The Global Forces framework (see sidebar) consists of four steps. Teams define the problem and initial conditions, and then expand the solution space by examining the industry assumptions in light of relevant global forces in order to

identify and test the implications for industry players. They then examine critical uncertainties to define potential future scenarios and ultimately, quantify the probable industry impact under each scenario.

Defining the problem and initial conditions

Industry forecasts (e.g., Global Insight) suggest that Chinese OEMs' share of passenger cars in developed markets within the next 5 to 10 years will be relatively low – between 0.5 and 3 percent in North America, and 0.2 and 1 percent in Western Europe. Chinese OEMs, on the other hand, voice much greater ambitions, with Chery saying it wants to become "a famous international brand … even in the luxury segment". Likewise, Geely, which reportedly intends to sell two million cars in the US market by 2015, recently announced that it was purchasing Volvo from Ford for USD 1.8 billion.

Against this backdrop, one could argue that Chinese OEMs face initial conditions similar to those Hyundai had to contend with in the late 1980s – a relative cost advantage and a small (but growing) share in emerging markets, balanced against poor consumer perceptions of quality and safety. China's labor cost advantage means a 35 percent lower total vehicle cost compared to those of developed-market OEMs for an equivalent model. However, official safety evaluations, such as the China New Car Assessment Program, give domestic OEMs a quality index score of about 30, compared to ratings of roughly 45 for developed-market OEMs.

The question automotive industry strategists need to answer, therefore, is whether Chinese OEMs will follow the same trajectory Hyundai did in the 1990s – taking one to two decades after initial market entry to establish a meaningful presence in the market by competing on price initially and slowly improving brand image as poor quality perceptions are addressed and improved over time. Will global forces combine in unexpected ways to change this paradigm?

Expanding the solution space

The prevailing industry view assumes that Chinese OEMs will indeed follow this trajectory and deeper analysis reveals that this view is based largely upon three underlying assumptions:

- Chinese OEMs will enter developed markets using current internal combustion engine (ICE) technologies
- Over the next decade, Chinese cars will only meet minimum quality, safety, and regulatory standards in developed markets

- In the next 10 years, Chinese OEMs will only be able to develop sales networks comparable in size to Hyundai's in the 1990s (and this physical sales network will be an important factor in determining the Chinese sales trajectory)

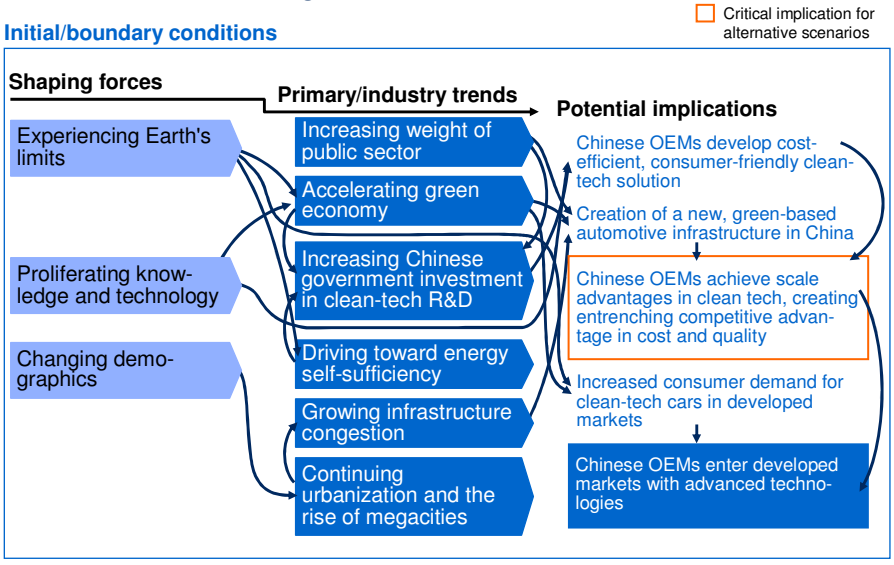
Executives can use the Global Forces approach and attendant interactions to test the accuracy of the following:

1. Could Chinese OEMs instead enter developed markets with alternative powertrain technologies?
2. How quickly could Chinese cars move up the quality/safety curve?
3. Could Chinese OEMs acquire much larger sales networks than Hyundai's or even bypass the need for a traditional sales network entirely?

1) Using alternative powertrain technologies to enter developed markets. One plausible scenario based upon an analysis of the interactions between Global Forces and industry boundary conditions suggests that Chinese OEMs could leapfrog the current technological trajectory of western OEMs, developing a significant competitive advantage in clean technologies (Exhibit 2).

Exhibit 2:

Expand the solution space – could Chinese OEMs enter with alternative technologies?



SOURCE: McKinsey

The elements of this competitive jump emerge from the Global Forces process. For example, the trend toward experiencing Earth's limits – particularly the rising cost and volatility of the oil supply – has accelerated China's attempts to reduce

its dependence on foreign oil in favor of local sources. This, combined with the increasing weight of the public sector (e.g., the large amounts of government funding available through China's economic stimulus package) and the desire to turn the accelerating green economy to its advantage, is already driving the Chinese government to invest more rapidly in R&D for alternate power technologies. This development, along with the continued proliferation of knowledge and technology, could eventually result in Chinese OEMs developing a cost-efficient, consumer-friendly clean-tech solution.

Alone, this development would provide a necessary (but insufficient) platform for domestic automakers to successfully enter developed markets with alternate technologies – especially since China is certainly not the only country experiencing the combination of forces described above.

In parallel, however, the massive rollout of new infrastructure in China (due to the related trends of continuing urbanization and the rise of megacities as well as growing infrastructure congestion) may create an opportunity to develop an entirely new, "green"-based automotive infrastructure in China. And, unlike in mature markets, such a move would be unencumbered by the massive replacement costs caused by the presence of existing legacy infrastructures. This new infrastructure would consist of the necessary refueling and service networks required for alternative technologies, and other investments would create additional incentives for clean-tech cars (e.g., dedicated lanes, preferential parking). This infrastructure is likely to play a decisive role in building a clear, large-scale consumer preference for alternate technology vehicles, allowing Chinese OEMs to develop the required scale to begin mass production – and in the process, creating a cost and knowledge advantage compared to that of OEMs elsewhere.

Finally, in developed markets themselves, experiencing Earth's limits and the accelerating green economy are likely to drive consumers to switch to cost-efficient, clean-tech vehicles more quickly than expected (e.g., due to continuing oil price increases combined with dramatically rising carbon taxes). This will, in turn, create a large market that Chinese OEMs could be well-positioned to supply – leapfrogging the traditional ICE technologies and nascent clean technologies of their developed-world competitors in the process.

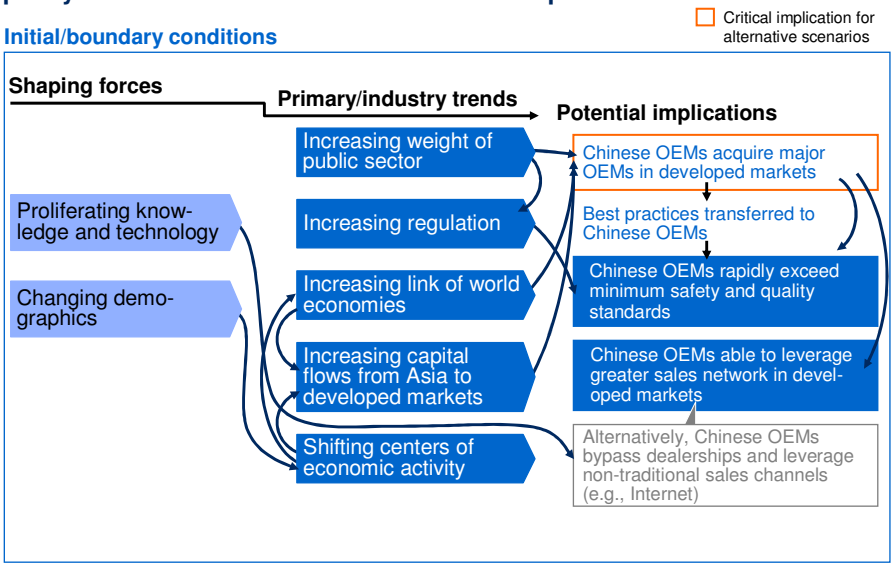
2) Quickly moving up the quality/safety curve. Contrary to conventional wisdom, plausible scenarios exist in which Chinese cars could rapidly exceed the minimum quality and regulatory standards in developed countries (Exhibit 3). A combination of trends could drive this development (e.g., *increasing link of world economies*, *increasing weight of the public sector*, and *rebounding regulation*).

The *increasing weight of the public sector* – particularly the Chinese government's growing appetite for taking ownership stakes in foreign companies – combined with the *increasing link between world economies* (e.g., capital flows moving from Asia to developed markets; and management practices more easily transferable from one country to another) could drive China to acquire a major (e.g., US "Big 3") OEM in a developed market. This would facilitate the transfer of best practices to local Chinese OEMs – which in turn would allow them to move

rapidly up the quality/safety learning curve. At the same time, domestic automakers would gain the brand image and (currently lacking) capability to understand and respond to consumer needs effectively. These customer-focused assets would further increase their chances of more rapid success in developed markets than Hyundai was able to achieve in building a brand presence from scratch.

Exhibit 3:

Expand the solution space – could Chinese OEMs solve quality and distribution issues sooner than expected?



SOURCE: McKinsey

In addition, the Chinese government – in line with globally *rebounding regulation* – may raise local safety and quality standards in response to consumer activism, while simultaneously subsidizing local players to achieve these stringent requirements. In doing so, the government would foster a more rapid "push" up the learning curve.

3) Acquiring larger sales networks or bypassing them entirely. Similarly, the purchase of a major OEM in a developed market (in keeping with the global *increasing weight of the public sector*) would allow Chinese OEMs to create a much larger sales network than Hyundai had in the 1990s. Alternatively, the *proliferation of knowledge and technology* – with its implications for the development of innovative distribution channels and operating models – might allow Chinese OEMs to reduce their reliance upon traditional sales channels in favor of Internet and Web-based sales channels.

Defining scenarios and quantifying industry impact

The previously-outlined discussion highlights several plausible scenarios, which in turn depend upon many uncertainties in the market. These uncertainties can, however, be distilled into two that are "critical" – i.e., both highly uncertain and with a large potential to impact the outcome:

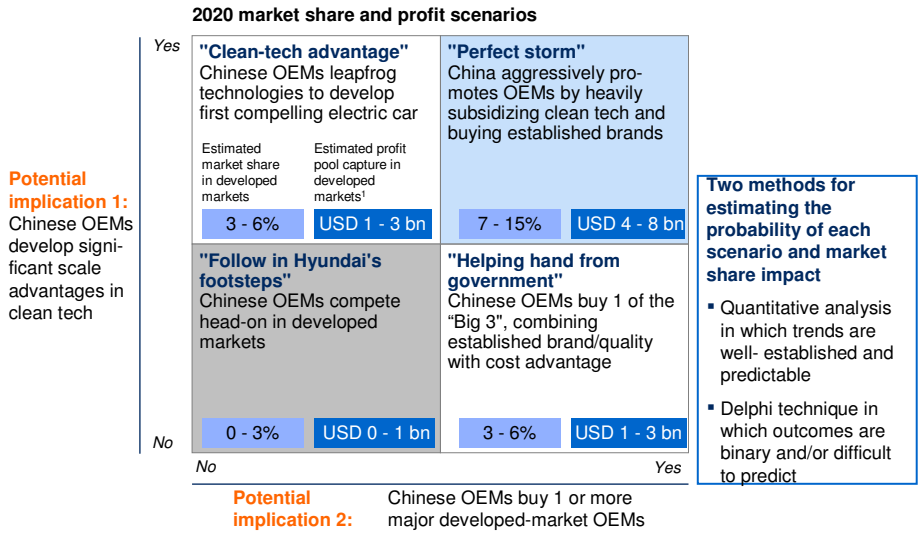
1. Will Chinese OEMs develop the significant scale advantages they need over other automakers when it comes to clean technologies?
2. Will Chinese OEMs acquire one or more *major* developed-market OEMs (e.g., a "Big 3" automotive manufacturer in the US)?

Given these two uncertainties regarding the Chinese automotive industry's future, it's possible to plot four possible future scenarios (Exhibit 4):

- *Perfect storm:* China aggressively promotes its OEMs by creating the conditions for the domestic clean-tech market to flourish *and* by buying established brands in developed markets to facilitate rapid market entry.
- *Clean-tech advantage:* The Chinese market for clean-tech vehicles flourishes, allowing Chinese OEMs to develop compelling competitive advantages with which to compete head-on with the offerings of other OEMs (without the benefit of a developed-market brand).
- *Helping hand from government:* Chinese OEMs buy one of the developed markets' large OEMs, combining established brands and quality perceptions with a cost advantage in traditional ICE technologies.
- *Follow in Hyundai's footsteps:* Chinese OEMs use their existing brands (or create new ones) to compete head-on with incumbents in developed markets by leveraging their factor-costs advantages to produce low-cost, traditional ICE technologies.

Exhibit 4:

Two critical implications emerge that will drive future scenarios



1 Assuming Chinese OEMs achieve profitability similar to current compact segment average

SOURCE: Delphi panel of McKinsey automotive experts analysis

Using a Delphi-style panel[1] of McKinsey automotive industry experts who were briefed on the above scenarios and the Global Forces interactions underpinning them, the scenarios have been roughly quantified as follows (USD amounts are in real 2009 dollars):

- *Perfect storm:* **10 to 15 percent likelihood of occurrence.** Chinese OEMs capture a 7 to 15 percent market share and an estimated profit pool of USD 4 to 8 billion in developed markets.
- *Clean-tech advantage:* **30 percent likelihood of occurrence.** Chinese OEMs capture a 3 to 6 percent market share and an estimated profit pool of USD 1 to 3 billion in developed markets.
- *Helping hand from government:* **15 to 20 percent likelihood of occurrence.** Chinese OEMs capture a 3 to 6 percent market share and an estimated profit pool of USD 1 to 3 billion in developed markets.
- *Follow in Hyundai's footsteps:* **40 percent likelihood of occurrence.** Chinese OEMs capture a 0 to 3 percent market share and an estimated profit pool of USD 0 to 1 billion in developed markets – in line with conventional industry assumptions.

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[1] The Delphi method involves a panel of experts who undergo multiple rounds of questioning with the goal of developing forecasts and quantifying probable outcomes in complex situations.

The results are revealing because they indicate that while the conventional wisdom outcome (i.e., *follow in Hyundai's footsteps)* is seen as the single most likely scenario at 40 percent, there is in fact a 60 percent estimated likelihood that Chinese OEMs will be significantly more aggressive in their entry to developed markets – with a significant resulting market share and profit pool impact. In other words, based upon these estimates, it's more likely than not that the conventional industry wisdom is in fact *incorrect*.

Tellingly, more than one survey respondent felt that the acquisition of a developed-market OEM was in fact not a necessary condition for China to achieve the market share levels indicated in the "perfect storm" scenario – which, if true, would further strengthen the case for overturning conventional industry wisdom.

* * *

Conventional wisdom assumes that China's automotive industry will follow a known and relatively slow path to international success; one that fits in with strategic assumptions made regarding much of the rest of the world's automotive industry. The Global Forces methodology highlights the greater chance of a more radical outcome, which if true, could significantly disrupt the industry, dramatically changing the competitive playing field and forcing OEMs worldwide to scrap their current strategies.

Sidebar:

GLOBAL FORCES METHODOLOGY

As automakers and their suppliers face an increasingly unsettled competitive field, leaders need to understand the underlying forces that will shape the world over the coming decade. By uncovering these forces' implications, leaders can identify the bold actions required to capture the opportunities present.

To help companies in this process, McKinsey & Company developed the comprehensive Global Forces methodology, which tracks these trends from basic underlying forces, such as changing demographics, to more recent trends, such as the accelerating green economy. It assesses their potential impact at both the global and industry-specific levels. The recently updated Global Forces framework includes three shaping forces, 11 primary trends, and more than 200 industry-specific trends that will fundamentally shape the corporate landscape over the next 10 to 20 years.

The three shaping forces – *experiencing Earth's limits, proliferating knowledge and technology,* and *changing demographics* – represent major "earth-shaking" realities that influence virtually everything that goes on in an industry. The 11 primary trends include developments such as the increasing "weight" (i.e., involvement and influence) of the public sector, continuing urbanization and the rise of megacities, or changing social values. Underneath these forces and trends are key uncertainties and decisions that include the potential for an economic reversal in a market, what the "new normal" will look like as the turmoil created by the recent financial crisis eases up, or the continuing war for resources.

Although the Global Forces methodology provides high-level insights, they need to be analyzed at a more granular level to be meaningful as input to the corporate strategic planning process. McKinsey's recent work has focused on "drilling down" into each trend to uncover the specific geography- and sector-level insights useful to strategic planners.

The findings also suggest that while individual forces are interesting in themselves, the truly insightful implications are found at the intersection of multiple forces – i.e., where two or more "obvious" forces interact in complex and non-obvious ways.

About the authors: Filipe Barbosa *is a Principal,* ***Damian Hattingh*** *is an Engagement Manager, and* ***Michael Kloss*** *is a Director, all in McKinsey's Johannesburg office.* ***Dieter Düsedau*** *is a Director in McKinsey's Munich office.* ***Stefano Proverbio*** *is a Director in McKinsey's Milan office.* ***Dago Diedrich*** *is an Engament Manager in McKinsey's Düsseldorf office.*