

FOCUS ON **CHINA** SERIES



# The Industrial Competitiveness of Chinese Industry

Jin Bei



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*Focus on China Series*

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**金碚 著**

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# *Chapter One*

## **Economic Basis of Competitiveness Research**

Since the late 1990s, competitiveness has been a very hot topic, talked about by economists, management experts, entrepreneurs, government officials and ordinary people alike. It seems that anyone can air opinions, propose theories and make judgments about competitiveness. But, if the competitiveness phenomenon is to be discussed in a strict scientific sense, the question is this — using the most advanced scientific research methods and analytical tools, what research findings can we derive from our interpretation and analyses of competitiveness? In other words, with the methods and analytical tools of scientific research currently available, can we make out a logical and objective explanation of the competitiveness phenomenon? This question has a direct bearing on whether discussions on competitiveness have solid scientific foundations and measure up to scientific norms.

### **I. Can Economics Explain Competitiveness?**

There is no doubt that competitiveness is, first and foremost, an economic issue because focus on competitiveness started

from and is mainly concentrated in the field of economics. Moreover, although the study of competitiveness inevitably involves many non-economic factors, the explanation ultimately centers on economic activities and achievements. Therefore, when discussing and studying competitiveness there is a natural inclination to apply economic concepts, methods and tools or even to adopt competitiveness directly as an important economics research topic.

In economics, market competition has been a major subject of study right from the start, and so it seems only natural that competitiveness should be a major economics research subject. But how does economics describe market competition? Firstly, it assumes that economic actors — both individuals and enterprises — have the characteristics of “economic man,” whose economic behavior is all about seeking benefit and avoiding loss, and whose behavior is totally rational. Rational behavior means that an economic actor is very clear and calculating, setting maximum profits as the goal and principle for decision-making, free of any influence from non-rational factors, such as culture, emotion, customs, morality and beliefs. One could say that rational behavior is behavior that purely pursues maximum economic benefit and in which differences of nationality, culture, psychology, customs, morality, belief are immaterial. So the pursuit by individuals of “maximizing utility” and “maximizing income” and the pursuit by enterprises of “maximizing benefit” and “maximizing profit” become the most basic premises of economics.

Economics, of course, admits the complexity of reality; it does not insist that maximizing profits is the only objective function of an enterprise’s practical behavior, nor that income is an individual’s one and only goal. Therefore, sophisticated economic analysis will take into account economic actors’ more complex objective functions. However, the basic logical and analytical approach of economics always assumes the behavior of the eco-



conomic actor to be inherently rationalistic. Based on this premise, all kinds of economic behavior and decision-making can be described and studied through logical deduction; based on this premise, using very abstract methods, the causality between economic behavior, economic policy, and economic phenomena can be analyzed. As a social science discipline, economics needs and prioritizes empirical and historical analysis. But, in contrast with other social science disciplines, economics can and must highly abstractify the subjects and relationships researched and build its disciplinary system completely by logical deduction. Logical deduction in economics makes it possible to start with a supposition and arrive at an unquestionable conclusion. The supposition can certainly be changed, which will lead to a different conclusion. But, the highest degree of perfection and clarity in the methodological sense can be achieved by reaching a conclusion from a particular supposition in a strictly logical way. Economic research and method of expression can be highly formalized and the most formalized language is mathematic expression and numerical formulation.

In this way, classic economic research methodology must start from a basic premise; that all individuals are intrinsically the same and that the decision-making principles and behavioral characteristics of all enterprises have no essential differences — i.e. that all individuals and enterprises follow the rationalism of “economic man” in their decision-making and behavior. Microeconomics uses a highly deductive method to describe the decision-making and behavior of all individuals and enterprises; for instance, decisions by enterprises’ on prices, output, number of workers and wage levels, allocation of resources, and adoption of technology (whether to replace labor with capital or vice versa). Economics, of course, does not deny the differences between individuals, enterprises in real life. But it has to abstractify those differences in research and presumes that all individuals and en-

terprises follow the same behavioral logic.<sup>1</sup>

So, can economics explain competitiveness? The most basic logical implication of the competitiveness concept is that all enterprises are not the same, because some are strong (possessing competitiveness) and others are weak (lacking competitiveness). Furthermore, as the factors leading to the differences between enterprises are substantial, those differences must be inevitable and primary. In simple terms, enterprises are intrinsically different from each other or at least have differences that can not be ignored. Clearly, this is vastly different from the analytical methods of classic economics. Therefore, to explain competitiveness exclusively by classic economic methods or set the research findings into a theoretical economics system is a rather arduous scientific task.

We cannot simply assert that any enterprises that follow economic principles in decision-making and behavior will be competitive and those that do not will be less so. This is because the logic of economics research methods is that all enterprises will, in every case, make decisions rationally in accordance with economic principles, unless actual conditions prevent them from doing so. In reality, there are, of course, some enterprises, which are ignorant of economics, breach its principles, make mistaken decisions, and take the wrong actions before finally failing. But these are not the focus of economic research, which studies those "smart" economics-savvy enterprises, rather than the "dumb" ones that know nothing about them. In other words, economic research on competitiveness mainly aims to explain why "smart" enter-

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<sup>1</sup> Economists admit the differences between enterprises in reality. For example, Alfred Marshall pointed out in his book *The Principles of Economics* that every trade is composed of various enterprises with differences in production scale, life span, professional knowledge, organizational structure, production costs and market share. But the theoretical analysis framework of classic economics still assumes all enterprises as being the same in behavioral pattern and decision-making aims. Therefore, the basic analytical framework of theoretical economics does not usually take account of the heterogeneity of enterprises in reality.

prises differ from each other in competitiveness rather than why “clever” enterprises are more competitive than the “dumb” ones.

However, if all the enterprises studied are sufficiently “smart,” i.e. they can be presumed to be rational economic men following economic principles in their decision-making and behavior, then can economics still explain and study the differences between enterprises, which decide and influence their competitiveness? The answer is a definite “yes” and that is exactly what economists dedicated to the study of competitiveness are striving for. Although economics cannot 100 percent explain competitiveness (in fact, there are still many economic phenomena that cannot be entirely explained by economics), it should still make the greatest possible contribution to the research and explain at least 70 or 80 percent, leaving other factors for other disciplines to explain. After all, competition is an economic phenomenon and despite interdisciplinary study the main discipline in competitiveness research is still economics. Thus, economic research on competitiveness can be seen as an important development direction of applied economics.

## **II. How Does Economics Explain Competitiveness?**

In a market economy, the most direct illustration of competitiveness is given enterprises providing products or services (hereafter products) to consumers (or the market) more efficiently than others and having the capability to gain self-development or comprehensive quality. “More efficient” means that an enterprise is consistently able to produce and sell at lower prices or more satisfactory quality than those of others. “Self-development” refers to an enterprise’s ability to realize a long-term virtuous economic circle, sustaining good performance and thereby achieving long existence, continuous expansion and strength. Therefore,

there are two basic indices in competitiveness evaluation, market share and earnings yield. The former reflects the extent of market acceptance for an enterprise, the latter reflects the basic conditions for an enterprise's self-development. A long-term view shows that the two are consistent or indeed identical. Only with market acceptance (i.e. possessing long-term high market share) can an enterprise realize long-term earnings yield, and vice versa.

How does economic theory explain why some enterprises are able to maintain a higher market share for longer than others? Classic economic analysis usually assumes that the products provided by competing enterprises are exactly the same, so the highest market share will go to those with the lowest price. So why do enterprises have different production costs, leading to the difference in prices? Economics introduced the criterion of enterprise variance: it originally assumed enterprises to be atomic entities, essentially no different from individuals. Later, the assumption of differences caused by the division of labor and specialization was introduced to explain differences in production costs. Adam Smith was the first to expound in depth and prove the role of the division of labor in enhancing productivity; from the division of labor and specialization, one can infer the assumption that differences in scale exist between enterprises, and economy of scale results in the phenomenon that the unit production cost of some enterprises (usually assumed large-scale) is lower than that of others (small-scale).

Of course, one can also relax the precondition of identical products. Products of competing enterprises can be supposed to be of the same kind and therefore substitutable (substitutability being a prerequisite for competition and for the issue of competitiveness). However, there are also differences between the products or services of different enterprises, which give rise to consumer preference (willingness to buy or pay a higher price) for the products of certain enterprises. If one studies competi-

tiveness working from such presuppositions, when applying theoretical economic analysis, the nature of “intangible products” must be carefully delineated. The products and services in question are, on the one hand, identical and substitutable, which permits discussion on competition and competitiveness between different enterprises. On the other hand, the products and services studied are variant (in terms of quality, function, variety, etc.) and variance implies non-substitutability. The greater the variance the less substitutability and the less competition. Total variance means zero substitutability and zero competition. Therefore, in economic theory, controlling the influence on competitiveness exerted by variance between products is actually to make appropriate assumptions between variance and non-variance, substitutability and non-substitutability, and about the respective degrees of variance, non-variance, substitutability and non-substitutability.

Fig. 1-1 reflects competitive relationships determined by the substitutability and variance of products. The vertical axis represents the non-variance or substitutability of products, high values indicating that the competition between enterprises is mainly cost-driven and lower costs mean stronger competitiveness. The horizontal axis represents variance or non-substitutability, which is the primary decisive factor of competitiveness. However, when the value is so high that the products studied belong to a completely different category, competition disappears, making any competitiveness comparison meaningless. When the variance is still moderate and between products of the same category, i.e. within the range of points U and V in Fig.1-1, a variance competition relationship exists, centering on the quality, variety, brand and other aspects of the products; then various differentiating factors between products become important forces in determining competitiveness. On the most abstract analysis level of micro-economics, it is supposed that only products at two extreme points, T and C, exist. Point T stands for the products that are

completely identical and substitutable and C for products that are of entirely different types and non-substitutable. When this supposition is relaxed to consider various situations between T and C (or more practically between U and V), the analysis of competitive relations and competitiveness of enterprises enters into a richer and more complex research field.

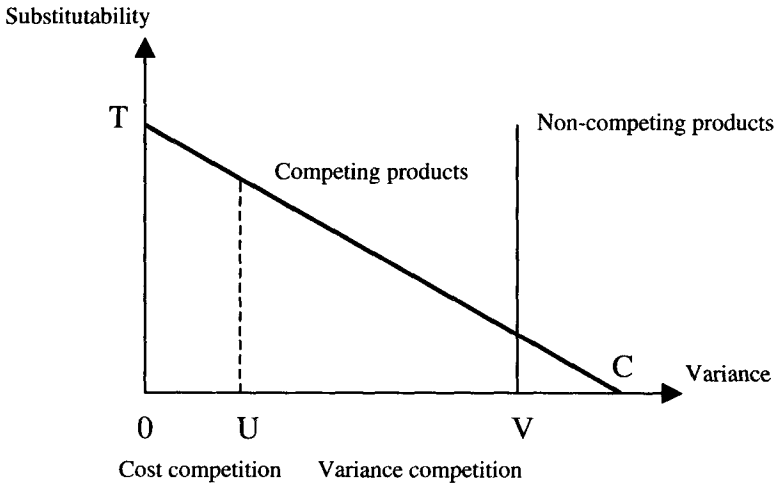


Fig. 1-1 Competition relations determined by substitutability and variance

Enterprises have different divisions of work and scales of production and there are also certain differences between the same-type products made by them; as a result different enterprises also vary in their market structures. Therefore, economics can explain industrial or enterprise competitiveness by examining the different composition of their markets. In terms of academic discipline, this is an extension of general microeconomic analysis to industrial organization economic research. The latter describes and explains competitive relations and their influence on market

performance from the standpoint of relations between enterprises within various industries. But in different market structures (strong competitiveness or monopolies) enterprises occupy different positions: some possess strong market dominance (monopoly) whilst others are marginal; some are of long standing whilst others are newcomers; some are initiators of pricing policies (e.g. price limiting, predatory pricing), whilst others are passive in terms of price competition. All in all, different market conditions will produce different competition consequences.

The differences between market conditions in which enterprises operate can be extended to their different consumer composition. Higher expectations from demanding consumers can force enterprises to generate better and better products. Conversely, "tolerant" consumers will put up with defective products and let the enterprise get away with lowering quality. Theoretically, this is actually a departure from the assumption that all consumers are identical (classic economic analysis assumes that all consumers are highly rational and calculating) to one that allows differences in consumers' behavior.

In fact, the above analytical logic is dominated by the analytical methods and tools of general microeconomics and industrial organization economics, i.e. on the assumption that all products are produced and sold in the same marketplace, and on the assumption that the marketplace has no divisions whatsoever, or that there are only structural differences caused by industrial competition rather than exogenous differences of the marketplaces. The relaxation of this presumption in fact shows that the market is actually divided into different regions and countries; in other words, that production and sales are conducted in a diversified marketplace. Firstly, the division and differences between countries requires the introduction of a new assumption: that there are tariffs and currency differences between countries, requiring one to take into consideration the impact of such factors as tariff

protection and currency rates, upon the market competitiveness of products from different countries. Second, the differences in location and key factors between regions: differences in transportation costs, natural conditions and factor endowment should be assumed and taken into account. Thus competitiveness analysis enters the field of international and regional (locational) economics. In this field, factors reflecting regional differences, such as comparative and absolute cost advantages, become important explanatory variables and criteria in the study of competitiveness.

General microeconomics, industrial organization economics, international economics, and regional (locational) economics all share the basic premise that individuals and enterprises are rationalistic, that there are no substantive differences between individual and enterprise decision-making and behavior, or that they at least follow the same economic decision-making principles. So all enterprises are assumed to be "black boxes" with entirely the same principle of input and output. That is, every "black box" makes decisions according to the rationalist behavior of economic man. But this approach makes it hard to explain why some enterprises are strongly competitive and successful whilst others have weak competitiveness and fail under precisely identical conditions. Moreover, even if one presumes that their competitiveness and performance are decided by certain advantageous or disadvantageous conditions, why are they in those positions and can others in disadvantageous positions change their situation? So insistence upon the rigid assumption that all enterprises have identical behavior and are "black boxes" with the strictly rationalist behavioral objectives of economic man will make it hard for competitiveness analysis to go any deeper.

Therefore, for competitiveness research to go deep inside the enterprises — to open the "black boxes" — is to regard enterprises as "white boxes," allowing deep examination and analysis of their internal structures. In other words, for competitiveness re-



search to go deeper requires a change from the assumption that enterprises are atoms without internal structures to regarding them as substantial entities with different internal structures and behavioral characteristics. Thus, competitiveness research enters the field of enterprise or managerial economics. So, people can research and analyze the factors influencing the performance and competitiveness of enterprises, including organization, strategy, and entrepreneur behavior. In this way, enterprises are no longer assumed to be the smallest economic unit, non-variant and strictly adhering to the rationalistic principle of economic man in decision-making and behavior, but as organisms with complex internal structures and with distinctly different decision-making and behavior.

Only under such theoretical assumptions can one discuss “non-imitable” and “non-tradable” factors, such as core competence, enterprise concept and entrepreneurial spirit, that result in the differences between enterprises. Under such assumptions, every individual or enterprise is different from the others. Thus the variance of enterprises is thoroughly affirmed and the root causes for competitiveness discovered. However, at the same time, it is also discovered that this way of explaining enterprise competitiveness has strayed far from the analytical modes and methods of classical economics, and is only a step away from the disciplines and research methods of sociology, psychology and ethics.

One step further means to completely abandon the assumption that all individuals and enterprises are economic men, whose behavior is totally rationalistic, and to assume instead that individuals and enterprises are social men, that their behavior goes beyond the strict principle of rationalism. Therefore, a person’s belief, morality, knowledge and ideas, an enterprise’s culture, values and traditions are all considered important, even determining factors in competitiveness; and enter the sights of interdisciplinary study on competitiveness (see Table 1-1).