The Influence of Business Concentration on Technological Progress

---Comments on Article 27 of Antimonopoly Law of P.R.C.

Shanghai Jiao Tong University Koguan Law School

Prof. & PhD **WANG Xianlin**

wangxianlin@sjtu.edu.cn

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1. Introduction

- Article 27 of Antimonopoly Law of People's Republic of China (hereinafter referred to as "AML") sets out the elements used by the authority in examining business concentration.
- According to the provisions, "the influence of business concentration on technological progress" is one of examination elements.
- However, how could the influence of business concentration on technological progress be examined? Within AML we could not find a clear answer.

- There are some explanations about the provision in recent books. But a presumption behind these explanations is that business concentration lowers the incentive to make technological progress.
- Does business concentration have an influence (in fact a negative influence) on technological progress?
- Is there any causal relationship between business concentration and a negative influence on technological progress?
- Those need further analysis.

2. The Relationship Between Business Concentration and Influence on Technological Progress

- There is a presumption regarding the relationship between the business concentration and influence on technological progress, namely, business concentration (changes the scales of enterprise and structure of market) lowers the competition faced by the concentrating business operators, and then lowers their incentive to make technological progress.
- However, such presumption in fact has neither theoretical nor empirical grounds. .

- .The topic of the relationship between business concentration (the enterprise scales) and influence on technological progress has been debated over so many years.
- There are two sharply contradictory hypotheses, and none of which can be accepted by theoretical circles as the only correct answer.
- One is represented by Schumpeter, arguing that business concentration leads more technological progress.
- The other one is represented by Arrow, arguing that a monopolist has less incentive to invest in innovation than a new entrant or a firm in a competitive industry.

- Regarding the relationship between business concentration and technological progress, many economists and governmental organizations have conducted various empirical researches.
- However, even the results come from different empirical researches contradicted with each other.
- Samuelson cites the 1997's statistics from National Science Foundation of U.S. in his book *Economics*, illustrating that in recent year, the R&D investment rate of small firms are higher than that of big firms.

- China's State Technology Ministry published a Technology Statistics Report on October 20th, 2008, which shows that 65.3% of large scale enterprises conduct R&D activities, 16% of small scale enterprises conduct R&D activities. It also shows that large scale enterprises spend 0.97% of their revenue in R&D, while small scale enterprises spend 0.22% of their revenue in R&D..
- Above all, the presumption that business concentration has negative influence on technological progress is groundless. There is no general causal relationship between business concentration and technological progress. Many economists find that technological progress or innovation has much more relationship with the firms' financial pressure, or with the technologies' own characteristics, than with the firm's scales, or the structure of the market.

3. The Traditional Approach to Examine Business Concentration and New Approach Taken by U.S. Agencies

- The approach adopted by Article 27---although it is a common approach---belongs to traditional static efficiency approach which can not be used to examine the influence on technological progress .
- This approach focuses on existing products and on static efficiency. Static efficiency comes from the competition on price and output of existing products, on the condition that the products, resources, and technologies do not change. The supply curve and demand curve will not change, and the competition will drive the price to the equivalent point, and the maximum of productive efficiency and of allocation efficiency will be achieved.

- Static efficiency presumes that business concentration will reduce competition, and will cause the price to rise above the equilibrium point, thus harm the consumers' welfare.
- Therefore Section 7 of the Clayton Act makes it illegal for one company to acquire some or all of the stock or assets of another firm where the effects "may be substantially to lessen competition, or to tend to create a monopoly."
- As a result, the approach adopted by *Horizontal Merger Guideline* will define the relevant market at the very first beginning, which is in fact a group of existing products tested and identified by SSNIP method.

- On the contrary, dynamic efficiency comes from the increase of economic efficiency, when new products, new resources and new technologies replace the existing products, resources and technologies, on the condition that the products, resources and technologies will change.
- Dynamic efficiency comes from the move of the demand curve.
- Therefore, business concentration will not harm economic efficiency, except it will reduce the new products and new technologies.
- However, the common approach, as illustrated above, since it focuses on existing products, can not observe and identify the influence on future products and technological progress.

- As criticized by Gilbert and Sunshine, “the former (traditional) approach may fail to capture many of the consequences of altered innovation effort if, as under traditional merger analysis, attention is restricted to product markets where the merging firms were actual or potential competitors prior to the merger.”
- If Article 27 adopts the same common approach, it will suffer the same limitation, and can not be used to examine the influence of business concentration on technological progress.

- Although the presumption that business concentration reduces incentive to technological progress is questionable, and traditional examination approach can not examine the influence of business concentration on technological progress, since technological progress is crucial to economic progress, examination enforcement authorities should not give up examining influence of business concentration on technological progress.
- In recent years, U.S. enforcement agencies have taken many initiative steps.

- *GM/ZF case*, challenged by DOJ of U.S. in 1993, shows that DOJ did not follow the traditional approach, limiting their examining upon existing products market. It challenged that the merger will eliminate the competition for innovation between these two companies, and then the investment on R&D for new products and new technological progress might be reduced, thus virtually harm the consumers in US market.
- Ciba/Sandoz case, challenged by FTC in 1997, shows that the enforcement agencies in US have taken steps away further from the traditional examination approach.
- Genzyme/Novazyme case, challenged by FTC in 2001, shows that US enforcement agencies not only stepped away from traditional examination approach in some cases with negative impacts on innovation involved, but also may abandon the presumption that concentration might reduce incentive to innovation.

4. Suggestions Regarding China's Examination of the Influence of Business Concentration on Technological Progress

- While conducting examination of the influence of business concentration on technological progress, the examination authorities need to understand that the presumption that concentration reduces technological progress is groundless, and the common approach adopted by Article 27 can not be used to examine such influence.
- Therefore, the examination authorities need to develop new approach to examine such influence, based upon China's own enterprises features and the characteristics of technological progress.

- Based upon the above precedent cases and theoretical works of other economists, we propose the following suggestions regarding such examination:
- 1) The examination of the influence of business concentration on technological progress could be conducted only on the condition that the trend of the technology progress towards certain future products could be identified, and the innovators could be identified.

- 2) We can only presume that concentration will reduce incentive to innovate in cases where the merger leads to monopoly, and such presumption can be rebutted by facts.
- 3) While examining the influence of business concentration on technological progress, we need focus on the facts in the detailed case, on the characteristics of the technology and its progress.
- 4) The examination authorities need carefully observe the trend of technological progress in different industries and in different products, especially carefully observe the features of China’s own enterprises and technologies, and categorize different cases, and develop our own approach to conduct such examination.

Thank you for your attention!