

## The Important Theory of “Industry-University-Institute” Cooperation Basis: The Division of Labor Theory in the West

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### Abstract

It is the key problem in the study of the economic theory of division of labor theory, marxist economics and western economics made a system analysis of the division of labor, and formed their own theory system. In modern market economy, the division of labor is ubiquitous social economic phenomenon. As a result, a comparative study of division of labor theory of western economics, has important theoretical significance and practical significance.

**Key words:** Industry-university-institute cooperation; The theoretical basis; Western theory of division of labor

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### INTRODUCTION

Western theory of division of labor is an important part of economic research, as early as 380 BC, Plato, has discussed the significance of labor division to improve social welfare. William with the first end of the 17th century, and puts forward some basic ideas of labor division, he believes the Dutch use a dedicated merchant ships to carry different goods is a major cause of

improving business efficiency. Master these discussions are earlier than classical economics of Adam Smith in the wealth of nations, ideas are put forward. To realize the role of division of labor for productivity improvement. In the western economic and social development, division of labor theory also experienced the evolving process.

### 1. ADAM SMITH ABOUT DIVISION OF LABOR THEORY, THE BASIC IDEA

In Adam Smith’s classic with the nature of the national wealth and causes research, he then opened the history of modern economics: “The largest increase on labor productivity, as well as the use of labor is more skilled, skills and judgment, and seemed to be the result of the division of labor.” Adam Smith discussed the concept of division of labor is mainly refers to the production of the division of Labour. He explains the following three aspects: The division of labor is the efficiency, or the division of advantages: First, improves the degree of skilled workers work the division of labor. Second, division of labor saving production workers frequently changes jobs or transform the production activities of different operating and loss of time. Third, the division of labor has prompted a lot of machine to save labor, so that a person can do a lot of people live.

First, Adam Smith put the division of labor in the leading position. Schumpeter identified with Adam Smith’s the theory, he said: “No matter after Smith, Smith before no one so attaches great importance to the division of labor”. In Adam Smith’s book “the wealth of nations”, he would do a pin as a concrete instance, on the basis of the observation do pins on the division of labor in the process of improve labor productivity, enhance national wealth effect has carried on the estimate, he points out that the division of labor has a very important role. A pin can be finished by 18 procedures, if each master of one or more of the following process, proficiency will be greatly

improved, the production efficiency will improve. In a small factory, if everybody do 2-3 working procedure, the average per person per day to finish the pin number is 4800; But, if all the procedure done by a person, a day of the total output of more than 20, to even a don't come out. This shows the effect of division of labor is immeasurable. Is what Adam Smith put forward and the research of this phenomenon, many economists in order to improve the labor productivity, promote economic growth has made a great contribution.

Second, Adam Smith put forward the division of labor thought for later in the division of research has a very positive role. In particular, his thoughts include: First, the division of labor can improve labor productivity, promote economic growth, is the basic driving force and source of economic growth. He once said: "The largest increase on labor productivity, as well as the movement of labor is more skilled, skills and judgment, and seemed to be the result of the division of labor". Second, the emergence of surplus commodities exchange promotes the division of labor between people, so the division of labor is bound to be subject to the conditions of the market. Third, no matter in which indirect production department, capital driven ACTS as a tool. Division of labor has such a huge role, Adam Smith believed that the main reason is: One is the division of labor can greatly improve the proficiency of workers operating a job, so that directly affect his work; second, division of labor can save between laborer to work in different time, so as to improve the production efficiency; three is the division of labor can also lead to the invention of the machine, this can greatly simplify and save labor.

## 2. MARSHALL ABOUT DIVISION OF LABOR THEORY, THE BASIC IDEA

Marshall's contribution to the "division" is mainly manifested in the increasing return and industrial organization form. Theory of marginal utility of a major argument is diminishing marginal returns, but from the industrial layout, scale production, Marshall function three levels of enterprise management analysis of the "division" brought about by the increasing return. Marshall enterprise economic activities can be divided into external economy and internal economy, the former depends on the general development of the whole industry, the latter depends on the individual enterprise resources, their organizations and their efficiency. First of all, the special industry to focus on a particular place, through the secret into the open, auxiliary industry formation, and skilled technical workers form factors such as market, to the external economy of the enterprise, thus produce increasing returns; Secondly, the enterprise mass production through "economy", "economic machine" and "material economy" internal economy can produce increasing returns; Third,

private partnership enterprises, joint-stock company, cooperatives and other organizations for the development of the division of functions is beneficial to the formation of entrepreneurs, decentralized management risk so as to realize increasing returns.

First, Marshall has not only stayed in for a single process of labor division of work, but the vision will be expanded to the whole business of the division of labor, creatively puts forward the concept of "external economy".

Second, different from Smith thinks "division of restricted by the size of the market," Marshall has realized the enterprise organization form of division of labor, and the influence of the effect on economic growth, this for later Sachs J. and Yang, Becker and Murphy et al., further put forward the concept of "coordinating cost" laid the foundation.

Although Marshall has seen the forces of economic development, and adopted dynamic method of studying the process of economic growth, but due to structural change process time is too long, and the mathematical foundation of Marshall time is limited, there is no corner solution method, so the analysis of a variety of division of labor in the theoretical level of all the resources optimal allocation problem is not possible, Marshall still end up back in the static analysis framework, in a given industry scale and enterprise competence under the premise of economic growth of the research. At this point, the expansion of enterprise scale is only attributed to the natural growth of external economy, enterprise division of labor, innovation and technological change in the frame of the analysis are abstracted away. Further, Marshall would "external economy" and progressing to a static price theory, thus completely ignore the structure change, use machinery, such as the impact on economic growth.

## 3. ARLENE YOUNG DIVISION OF LABOR THEORY POINT OF VIEW

On the basis of Marshall, further to a great contribution to division of labor theory, increasing returns are Allen young British economists. Young in 1928 became the royal economic society President, gave a speech titled "increasing returns and economic progress, the speech is also a concentrated reflection of young" the concept of division of labor. Arlene young from three aspects to explain division problems: (a) the specialization and division of labor are to realize the mechanism of increasing returns is indispensable, they are always running through the whole process of economic growth. If we focus on a single enterprise, on the basis of the original with the division of labor pattern, may assume that the enterprise scale is the main influence factors of increasing reward. In fact, the expansion of enterprise scale is increasing reward in the material conditions of under certain conditions, it is not the fundamental reason

for the increasing reward. (b) division of the size of the market and rely on each other and influence each other. , he argues, the purchasing power of the division of labor determined by the market size is the decisive factor, which is the ability to absorb a large amount of output. So, market and division of labor between the positive feedback effect "are the driving force of economic growth, is the interaction between. (3) the division of labor is a network effect. We cannot isolate view of the enterprise scale, the scale of the specific industry other enterprise will affect the size of the individual enterprise, in the same way, the size of the specific industry also affected by other related industrial scale.

In paper "the increasing reward and economic progress," young said: "first of all, through the observation of individual industries and individual companies scale change effect, is unclear mechanism of increasing returns, because of industrial division of labor and specialization is in the process of increasing return to achieve a fundamental part of. Must put the business as a connected whole. Second, the increasing return depends on the development of division of labor, the modern form of the main economic division of labor based on indirect or indirect use of labor economy. Then, the division of labor depends on the size of the market, and the size of the market depends on the division of labor. The possibility of economic progress is in these conditions, the people in addition to progress from acquiring new knowledge, also have the possibility of this kind of economic progress, no matter what they pursue is economic interests and non-economic interests."

#### 4. BECKER, MURPHY ABOUT THE INTERPRETATION OF THE DIVISION OF LABOR

Becker, murphy analysis problem is standing in the division of labor deepening economic growth caused by the coordination costs and on the point of view of knowledge. They believe that Adam Smith's theorem can only be established after the laborer completely specialization. In general, the most important factor is the division of labor workers their knowledge level and their coordination costs. "Is not an one-way decision between knowledge and the specialized division of labor, but to promote each other, it is a positive feedback mechanism between the two led to the economy of endogenous growth". About the division of labor theory, both of them are: first, through the division of labor can be specialized economic effect, is engaged in professional production workers get paid more than the ordinary workers. Second, the market capacity is not the only factor influence division of labor, division of labor is more influenced by the social knowledge level and coordination cost. If

coordination cost is relatively low or even no coordination costs and the size of the market, under the condition of rather smaller effect division of labor are the most important factors in the size of the market. So in the present economic phenomenon, knowledge level and coordination costs become the main factors influencing the specialization and division of labor. Third, the deepening of the division of labor leads to the increasing reward, but the cost of coordinating economic increase with the deepening of the division of labor. If the degree of division of labor remains the same, will exist an optimal degree of division of labor. When growing stock of knowledge of society, to coordinate the cost will be reduced due to the accumulation of knowledge, so as to further guide the evolution of division of labor.

#### CONCLUSION

Western economics theory of the division of labor is the analysis of the industry within the division or the enterprise internal division of labor, Adam Smith and young mainly from the viewpoint of industrial division of labor, division of labor, will limit in the perspective of industrial division of labor division, economic attribute of key research division of Labour, and ignores the social attribute of division of labor. Sachs J. and Yang's theory of division of labor on the connotation of the division of labor "did not distinguish between the division of labor market and the enterprise internal division of labor, thus ignoring the internal mechanism of enterprise as the increasing return implementers." Division of the western economics theory, this paper expounds the division of labor can improve labor productivity, and determine the size of the market. Practice shows that all economically developed countries and regions of the professional division of labor must be very strong.

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