

# TEKNOLOJİK DEĞİŞİM ve EKONOMİK BÜYÜMEYİ AÇIKLAMADA ADAM SMİTH'in İŞ BÖLÜMÜ'nün ROLÜ

Araş. Gör. Dr. Oktay Öksüzler\*

## ÖZET

Günümüz ekonomisinde, Dünya genelinde ekonomik büyüme ve ülkeler arası gelir farklılıklarının nedeni teknolojik farklılıkla açıklanır. Fakat, teknolojik değişmeye neyin sebep olduğu tam olarak açıklanamamıştır. Bu, büyüme teorisindeki önemli bilmecelerden birisidir. Bu makale Adam Smith'in iş bölümünün bu bilmeceyi çözmemizde yardımcı olup olamayacağını araştırır. Bu makale gösterdi ki, Smith'in iş bölümüyle ilgili farklı açıklamalar yapılmıştır. İş bölümü veya sermaye birikimi ekonomik büyümeye sebep olmuş olabilir. Her iki durumda da Smith'in çalışması çok önemli ipuçları verir. Smith'in iş bölümü, icadı teknolojik değişimi ve ekonomik büyümeyi anlamamıza yardımcı olabilir.

**Anahtar Sözcükler :** Büyüme, İş Bölümü, Adam Smith

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\* Balıkesir Üniversitesi, Bandırma İ.İ.B.F. , İktisat Bölümü  
E-mail: oktayoksuzler@yahoo.com

## **The Role of Adam Smith's Division of Labor in Explaining Technological Change and Economic Growth**

In recent growth economics, world wide economic growth and cross country income differences are explained by technological change. However, economist are having serious difficulties in explaining what causes technological change. This is one of the puzzles in growth theory. This paper searches for an answer for this question from Adam Smith's division of labor. The paper showed that there are different interpretations of Smith's division of labor. It is division of labor or capital accumulation that leads to economics growth. In either way, Smith's work gives important clues in solving the big question of growth economies. Smith's division of labor may help to understand invention, technological change, and economic growth.

**Key Words:** Growth, Division of Labor, Adam Smith

## **I. Introduction**

The purpose of this paper is to investigate the division of labor in *The Wealth of Nations*. Smith's introduces a link between the division of labor and the process of technical change which is quite important. Technological change is accepted as the most important dynamic of economic growth and wealth by contemporary growth economists. Labor division leads to technological improvement and so to economic growth. In recent growth economics, world wide economic growth and cross-country income differences are explained by technological change. However, economists are having serious difficulties in explaining what causes technological change. For example, Solow's (1956) growth model assumes technology as given, while endogenous growth theories attempts to explain technological change with human capital. This is one of the puzzles in growth theory that has not been solved yet. At this point, Smith's division of labor may help us to understand technological change. In this paper, what Smith really meant by division of labor will be investigated. I want to focus on the question of whether or not Smith's division of labor has been useful in helping to understand economic growth.

In the mid 1960s, a controversy occurred over the meaning of Adam Smith's division of labor (West 1964; Rosenberg 1965). West (1996) reopened the debate and concluded that Smith's two views on the division of labor remain inconsistent. Stigler (1976) considered the division of labor as an "improper failure".

According to the general view among the historians of economic thought, Adam Smith contributed little importance to the role of technological change in determining the growth of the wealth of nations. Brewer (1991) comments that in Smith's account of economic growth, capital accumulation is primary, and technical change follows passively. Along a similar line of argument, Rashid (1986) argues that " Smith's treatment [of the division of labor] was not only rather narrowly focused, it also distracted attention from both the role of machinery and the activity of the entrepreneur. Smith casts much light on one aspect of the productive process, but at the expense of throwing a shade on those features or [sic] production, such as the contribution of inventions, machinery and management, which have proved of greater long run significance. In a similar vein, Rostow (1990) concludes that the general thrust of his [Smith's] doctrine suggested invention and innovation as incremental improvements in ways of doing things, evoked by profit possibilities that almost automatically accompanied the widening of the market and the division of labor. Elmslie (1994) argues that Rostow's (1990) assessment captures only part of Smith's system, a system to which technical progress is internal. Smith's analysis of technical change does follow the division of labor, but different forms of technical change mirror Smith's broad conception of the division of labor.

In recent years, technological progress is conceived as either exogenous -falling from the sky- or endogenous to investment

According to Smith, the nature of technological progress was quite different; it was an ever-evolving process endogenous to the division of labor. However, the division of labor was broadly conceived as a classification of society into professions such as philosophers, tailors, or shoemakers (that is societal division), as well as narrowly conceived by the division of employment within the production process of a single good (that is technical division). Smith's view on technical progress closely follow these different definitions of the division of labor.

In the next section, Smith's division of labor will be reviewed from *The Wealth of Nations*. The second section discusses the controversies over Smith's division of labor. The third section discusses Smith's views on the relationship between capital accumulation and division of labor. The final section concludes the paper with a summary of the main points found in the paper.

## **II. Smith's Division of Labor**

The First chapter of Book I of *Wealth of Nations* presents an explanation of the great increase in output which follows the division of labor. Smith analyzes three propositions and supports his ideas with an empirical study, the famous pin factory. Smith's first proposition is that the workers tends to increase his dexterity by a concentration of fewer processes. This improvement in dexterity alone presumably has a favorable effect on his intelligence. The second proposition is that

specialization of labor brings a saving of time in changing from one process to another. The third one is that the division of labor encourages invention and mechanization. In the third proposition, Smith states his most philosophical and conclusive case for favorable effects upon intelligence and alertness:

*"Men are much likely to discover easier and readier methods of attaining any object, when the whole attention of their minds is directed towards that single object, than when it is dissipated among a great variety of things. But in consequence of the division of labour, the whole of every man's attention comes naturally to be directed towards some one very simple object. It is naturally to be expected, therefore, that some one or other of those who are employed in each particular branch of labour should soon find out easier and readier methods of performing their own particular work, wherever the nature of it admits of such improvement. A great part of the machines made use of in those manufactures in which labour is most subdivided, were originally the inventions of common workmen, who, being each of them employed in some very simple operation, naturally turned their thoughts towards finding easier and readier methods of performing it"<sup>1</sup>*

The progress of division of labor, according to Smith, eventually makes invention a special trade of its own, carried on by philosophers or men of speculation. He drew attention to the

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<sup>1</sup> Smith, 1976, p. 20

contribution of the “makers of machines” and to work of *“those who are called ,philosophers or men of speculation whose trade, it is, not to do any thing, but to observe everything; and who, upon that account, are often capable of combining together the powers of the most distant and dissimilar objects. In the progress of society, philosophy or speculation becomes, like every other employment, the principal or sole trade and occupation of a particular class of citizens.”*<sup>2</sup>

In the second chapter, Smiths emphasizes that the division of labor with all the above advantages is not the effect of any conscious regulation by the state but arises from a propensity in human nature to exchange, which in turn is linked to self-interest. After he explained the genesis of the division of labor, later chapters show how the process is self-generating in favorable conditions. The extent of market limits the division of labor. However, the market itself expands with production and prosperity. In turn, that is governed by the division of labor, therefore it provides a motor of economic growth. Smith emphasizes the importance of market, because in the case of institutional obstacles, markets losses effectiveness in allowing the improvement of the division of labor and prosperity.

The ideas of Book I suggest that the division of labor enhances man's mental stature as it increases the quantity of goods produced. This view is to be contrasted with Adam Smith's other views on the

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<sup>2</sup> Smith, 1976, p. 21

division of labor which appear in Book V. He seems to condemn the division of labor for being the cause of moral degeneration. The discussion in Book V admits that the worker develops dexterity, but argues that he acquires it at the expense of intellectual, social and martial virtues,

### **III. Some Interpretations of Adam Smith's Division of Labor.**

Smith's ideas on division of labor in Book I and Book V of *The Wealth of Nations* present a unique and fascinating challenge to twentieth-century economists. Some writers see no contradiction or tension in the two positions. Some of them argue that only one of them is correct and proceed to associate Smith's real intention or true conviction with a particular alternative.

West (1964) discusses contradictions in Adam Smith's treatment of the division of labor, both from the economic and sociological point of view. He argues that the most striking inconsistency between the two views on the effect of division of labor is on invention. In Book I, he states that "*Men are much more likely to discover easier and readier methods of attaining any object when the whole attention of their minds is directed towards that single object than when it is dissipated among a greater variety of things,*"<sup>3</sup> This is supported by the story of the boy who connected a piece of

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<sup>3</sup> Smith, 1976, p. 20



string between the beam and the valve of the steam engine to save his labour. On the other hand in Book V we have: "*The man whose whole life is spent in performing a few simple operations of which the effects are perhaps always the same or very nearly same, has not occasion to exert his understanding or to exercise his invention in finding out expedients for removing difficulties which never occur.*"<sup>4</sup> West (1996) states that his inclination in 1964 was to detect at least a conflict, if not a contradiction.

The apparent contradiction between Book I and Book V has been discussed very often. In *Capital*, Marx states that Adam Smith "...opens his work with an apotheosis on the division of labor. Afterwards, in the last book which treats of the source of public revenue, he occasionally repeats the denunciation of the division of labor made by his teacher, A Ferguson." <sup>5</sup>

West (1964) presents Adam Smith's ideas on the division of labor, he concludes that his ideas on this issue are "contradictory" and, "strikingly inconsistent". Rosenberg (1965) re-examines Smith's treatment of division of labor and challenges West (1964). His focus was on the relationship between the division labor and determinants of invention. Rosenberg (1965) shows that Smith's treatment of this problem is, in certain respects, considerably more complex and interesting than it has previously been made out to be. Furthermore,

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<sup>4</sup> Smith, 1976, p.36

<sup>5</sup> Marx, 1961, p.123

Rosenberg (1965) tries to demonstrate that Smith's analysis is free of inconsistencies and contradictions which have been attributed to it.

I think that this issue is quite important, because Smith's long term prognosis for capitalism is central to its capacity for generating technical change and thus substantially raising per capita income. This capacity is made by Smith to depend overwhelmingly upon the division of labor and the consequences flowing from it. Schumpeter's statement supports the idea of importance of division of labor. He says that "*...nobody, either before or after A. Smith, ever thought of putting such a burden upon division of labor. With A Smith it is practically the only factor in economic progress.*"<sup>6</sup>

Rosenberg (1965) argues that Smith's ideas in Book V, regarding workers who have become "stupid and ignorant" as a result of division of labor, have been misinterpreted. He then goes on to argue that we need to enlarge the scope of discussion by recognizing that Smith looks upon inventive activity as a process which has several dimensions. Increasing division of labor encourages invention in several ways. First of all, the division of labor sharpens the attention of workers and focuses it more forcefully than before upon a narrow range of processes. By narrowing down the range the worker is enabled to lavish greater care as well as curiosity upon his work. His mind is subjected to fewer distractions. In the absence of the need to

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<sup>6</sup> Schumpeter, 1954, p. 187

make frequent readjustment *by* moving from one sort of activity to another, the work proceeds in a spirit of "vigorous *application*."

*"The division of labor no doubt first gave occasion to the invention of machines. If a man's business in life is the performance of two or three things, the bent of his mind will be to find out the cleverest way of doing it: but when the force of his mind is divided it can not be expected that he should be so successful."*<sup>7</sup>

West(1964) recognizes the effect of division of labour in performing these functions. Rosenberg's objection to his treatment is in his insistence that the progressive division of labour increases intelligence as well as alertness. Rosenberg says that he finds no evidence in Smith's writings, to support the interpretation that increasing division of labor improves either the worker's intelligence or understanding. Dexterity, certainly; alertness, yes: intelligence, no.

Carl Menger (1871) attacks Smith's view on division of labor. He argues that the division of labor can not be the most important cause of progress in human welfare. He writes *"In such a manner Adam Smith had made the progressive division of labor the central factor in the economic progress of mankind-in harmony with the overwhelming importance he attributes to labor as an element in human economy. I believe, however, that the distinguished author I have just quoted has cast light, in his chapter on the division of labor,*

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<sup>7</sup> Rosenberg (1965) cited from Early Draft of "Adam Smith as a Student and Professor", Glasgow 1937, p.336

on but a single cause of progress in human welfare while other, no less efficient, causes have escaped his attention"<sup>8</sup> again he writes "the division of labor cannot even be designated as the most important cause of the economic progress of mankind. Correctly, it should be regarded only as one factor among the great influences that lead mankind from barbarian and misery to civilization and wealth."<sup>9</sup>

Marshall (1890) wrote: "Some people, for instance, seem to be fitted from birth for an artistic career, and for no other; and occasionally a man of great practical genius is found to be almost devoid of artistic sensibility"<sup>10</sup> However, these are exceptions and Marshall states the rule: "The natural vigor that enables a man to attain great success in any one pursuit would generally have served him in good stead in almost any other."<sup>11</sup> And thus, despite his interest in heredity, eugenics and biological endowments, Marshall returned in the final analysis to the plasticity of man, at least within the framework of the race: "A race that has great nervous strengths seems generally able, under favorable conditions, to develop in the course of a few generations ability of almost any kind that it holds specially high esteem."<sup>12</sup> It is not instinct and individual essence that most fundamentally molds the division of labor but rather the particular range of opportunities on offer that causes men to try to

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<sup>8</sup> Carl, 1994, p.72

<sup>9</sup> Carl, 1994, p.73

<sup>10</sup> Marshall, 1890, p.170

<sup>11</sup> Marshall, 1890, p.170

obtain a special skill and facility in some particular task and in that sense the division of labour is thoroughly social origin.

Marshall was convinced that specialization raises average productivity. Witness the doctor who is better doctor because, he early experience having been broad, he then narrows his field : “ *gradually concentrates his study more and more ... and accumulates a vast store of special experiences and subtle instinct.* ”<sup>13</sup>

In talking of the dexterity born of iteration, Marshall wrote :  
“*Any manufacturing operation that can be reduced to uniformity, so that exactly the same things has to be done over and over again in the same way, is sure to be taken over sooner or later by machinery* ”<sup>14</sup>

The chief cause of the division of labor remains , as Adam Smith said it was, “*the largeness of market*”- and we should remember that “*the chief effect of the improvements of machinery is to cheapen and make more accurate the work which would anyhow have been subdivided*”<sup>15</sup>

But incorporation of invention, improved and increased the usage of fixed capital into the theory of the division of labour does extend the model somewhat beyond the Smithian approach. For one thing, the extensive use of machinery lends to expand volume and scale of production and therefore the increase the opportunities for division of labor of all kinds and especially in the mailer of business

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<sup>12</sup> Marshall, 1890, p. 170

<sup>13</sup> Marshall, 1890, p. 120

<sup>14</sup> Marshall, 1890, p.212

<sup>15</sup> Marshall, 1890, p.212

management.

Stigler (1976) considered the division of labor as a failure. He argues that there is no standard, operable theory to describe what Smith argued to be the mainspring of economic progress. Stigler states that division of labor is as persuasive a case for the power of specialization today as it appeared to Smith. However, he argues that there is no evidence of any serious advance in the theory of subject since his time, and specialization is not an integral part of the modern theory of production, which may well be an explanation for the fact that the modern theory of economics of scale is little more than a set of alternative possibilities.

#### **IV. Division of Labor, Invention and Capacity to Invent**

Smith's story of the young boy who give vent his youthful exuberance with his playfellows, invented a device which opened and closed the valves of a steam engine without his assistance, is an evidence that Smith regarded the invention as a consequences of a narrow focusing of interest and attention rather than of a mature or developed intelligence. A Further important aspect of Smith's view of inventive activity is motivation. His other story about the boy and the steam engine makes Smith's view of invention activity more clear.

Smith show a clear awareness of the evolutionary process in the development of human artifacts. After surveying some of the basic inventions in agriculture and in grinding mills, He states: "*These*

*different improvements were probably not all of them the inventions of one man, but the successive discoveries of time and experience, and of the ingenuity of many different artists." Also: "We have not, nor cannot have, any complete history of the invention of machines, because most of them are at first imperfect, and receive gradual improvements and increase of powers from those who use them. "*<sup>16</sup>

Smith argues that the simple inventions for the operation of the grinding mill, might have been developed by the miller himself. However the more complex inventions were probably beyond the limited vision and capacity of the miller. Smith suggests that such sophisticated innovations as the cogwheel and the trundle were probably the work of millwrights. For these inventions "...bear the most evident marks of the ingenuity of a very intelligent artist." Smith shows here an awareness of the vital role to be played by the capital goods industries as a source of technological change. He argues that such possibilities are limited by the size of the market for capital goods which, in turn, determines when capital goods production can be undertaken as a specialized trade. *"All the important machinery... have by no means been the inventions of those who had occasion to use the machines, when to make them became the business of a peculiar trade..."*<sup>17</sup> Invention at the highest level involves acts of insight, creative synthesis, and the capacity to draw upon diverse

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<sup>16</sup> Smith, 1976, p.35

<sup>17</sup> Smith, 1976, p.21

fields of knowledge. The most important inventions of all are the work of philosophers.

The capacity to invent cannot be measured in absolute terms. The complexity of existing technology and degree of creative imagination required in order for new breakthroughs to occur makes capacity to invent meaningful. Major inventions involve the ability to draw upon diverse areas of human knowledge and experience and to combine them in a unique fashion to serve some specific purpose. Smith gives the ideal intellectual equipment for such synthesis by *"..philosophers or men of speculation, whose trade it is not to do any thing, but the observe everything: and who, upon that account, are open capable of combining together the powers of the most distant and dissimilar objects"* <sup>18</sup> This means that while the increasing division of labor continually narrows the range of worker's activities, the talent of workmen become progressively less capable of exerting.

Rosenberg (1965) argues that the division of labor strengthens the force of a worker' attention upon a narrow range of activities and as a result most likely increases his capacity for instituting small improvements. However, it could disable him completely for the task of undertaking major inventions which involve drawing upon ranges of knowledge and experience to which he is less likely to be exposed. Therefore, when production involved a relatively simple technology, increase in division of labor makes worker more concentrated the

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<sup>18</sup> Smith, 1976, p. 21



focus of his attention, provides him to invent and to institute non-fundamental improvement within the existing technology. As technology becomes increasingly complex, however, the worker is likely to be increasingly inadequate because of exceedingly narrow repertory of materials from which he can draw.

Smith visualized the worker as becoming increasingly stupid and ignorant as a result of further division of labor. However, Rosenberg (1964) thinks that this does not prevent continuing technical progress and invention. Rosenberg (1964) argues that Smith looked upon the growing division of labor as a process which had not only an historical but necessarily also an important social dimension. Therefore, to concentrate solely on the impact of division of labor upon the working class leads to the adoption of a very partial and misleading view of economic and social consequence of division of labor. This can be seen most forcefully if we look at the changing structure of the social division of labor as a society moves from a primitive to a civilized condition.

West reopens this debate in 1996. West(1996) shows that his argument in 1964 was reasonable and valid. The main thrust of his article has been to engage Smith in aspects of his denunciation that extend beyond the issue of invention and inventiveness. This aspects include his assertion that their cultural understanding, injure their moral behavior, relax their "martial spirit," and make them despise education.

## V. Capital Accumulation and Technological Change

Brewen (1991) argues that for Smith, accumulation is the only independent source of the growth of income. The division of labor is simply a consequence of this accumulation and, in turn, invention as a consequence of the division of labor. Brewer (1991) concludes, "Growth then [for Smith] depends on capital accumulation alone". Brewer cites the following statements from Smith to support his view,

*As the accumulation of stock must, in the nature of things, be previous to the division of labor, so labour can be more and more subdivided in proportion only as stock is previously more and more accumulated. As the accumulation of stock is previously necessary for carrying on this great improvement in the productive powers of labour, so that accumulation naturally leads this improvement.*<sup>19</sup>

Brewer (1991) states that increases in productivity follow automatically from increases in the scale of production, which themselves follow automatically from the accumulation of capital. Ahmad (1994) does not agree with Brewer(1991). Ahmad argues that Smith makes it clear that this statement applies only after the production process has reached an advanced stage.

Ahmet (1996) takes Brewer's generalization that for Smith the division of labor is simply a consequence of accumulation as a doubtful proposition. He says that not only does Smith begin his book with a chapter on this theme, he continues with it in the next two

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<sup>19</sup> Smith, 1976, p. 260

chapters as well. In fact, with a possible exception of the invisible hand, no concept is more closely associated with Smith than the division of labor. The following three cites relate the division of labor specifically to economic growth. Lowe (1954) writes, "*it has always been recognized that for Smith division of labor is the true dynamic force [for growth]*"<sup>20</sup> Schumpeter states, "with Smith [the division of labor] is practically the only factor in economic progress". And finally, Hollander (1973) writes "he [Smith] presented division of labour as the crucial factor in economic progress."

Ahmad (1996), in the light of Smith text, states that the division of labor results directly from a natural human propensity: hence, it must be prior to accumulation, not its consequence. Ahmad conclusion is based on statements by Smith that relate to the beginning of the division of labor, at the very early stage of human society. In this sense, Brewer is quite justified in claiming that for the relevant period-Smith's late-eighteenth-century England or, for that matter, our own time-Smith view represented by the first sentence in the quotation. Accumulation is a prerequisite and, hence, necessary for the division of labor.

## **VI. Conclusion**

This paper is intended as review of literature on Smith's ideas on division of labor, and focusing on an explanation of the

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<sup>20</sup> Lowe, 1954, p.135

technological change and economic growth initiated by the help of division of labor. In the first section, Adam Smith's view on division of labor is reviewed. The Second section discusses the different comments on the subject matter. West (1964) argues that Smith's view on the division of labor is contradictory. He shows that there are two different views of Smith that are not consistent. Rosenberg (1965) criticized West (1964) by saying that he misinterpreted Smith's view. Rosenberg focused on the relationship between the division of labor and determinants of invention. Schumpeter (1954) supports the idea of importance of Smith's division of labor. Menger (1871) attacks Smith's division of labor. He argues that Division of labor is exaggerated. He argues that the division of labor can not be the most important cause of economic progress. West (1996) again favors the idea of contradiction in the Smith's division of labor. In the third section, I discussed the invention and division of labor relationship.

The final section is devoted to the idea of how capital accumulation, not the division of labor, leads economic growth. Brewer (1991) states that capital accumulation is the only independent source of economic growth for Smith. He thinks that capital accumulation leads division of labor. So, motor of economic growth is capital accumulation. Ahmad (1994) attacks Brewer (1991) by saying that his argument is doubtful. Ahmad argues that the division of labor is specifically related economic growth. Lowe (1954), Hollander (1973), and Schumpeter (1954) support the idea that the division of

labor leads economic growth.

In this paper, I find two different interpretations on Smith's division of labor. One group advocates that Smith's division of labor does matter and helps to understand invention, technological change, and economic growth. The other group's main idea is that Smith's division of labor is exaggerated, in fact Smith's view is inconsistent. They also argue that it is rather capital accumulation that leads to economic growth not the division of labor. Although there are different interpretations of Adam Smith division of labor, Smith's work gives important clues in solving the big question of economic growth. I believe that further research will make it Smith's work more helpful in understanding current questions of growth economics.

## References

- Ahmad Syed. 1996. Smith's Division of Labor and Kite's Invention: A Study of the Second Dichotomy, with an Evaluation of the First. *History of Political Economy*. 28:3 441-458
- Blaug. Mark. 1986. *Economic Theory in Retrospect* Fourth edition. Cambridge University press.
- Brewer, Anthony. 1991. Economic Growth and Technical Change: John Rae's Critique of Adam Smith. *History of Political Economy* 23:1 1-11
- Ekelund Robert 3. 1983. *A History of Economic Theory and Method* . Second edition
- Elmslie Bruce. 1994. The Endogenous Nature of Technological Progress and Transfer in Adam Smith's Thought. *History of Political Economy* 26:4 649-662
- Fulton Robert B. 1963. *Adam Smith Speaks to Our Times. A Study of His Ethical Ideas* Boston, U.S.A.
- Groenewegen, P.O. 1977. Adam Smith and the Division of Labour: A Bicentary Estimate, *Australian Economic Papers*. December, pp.161-74
- Love, A. 1954. The Classical Theory of Economic Growth. *The Social Research* 21.2:127-58
- Hollanders. 1973. *The Economics of Adam Smith*. Toronto: University of Toronto press.
- Marshall A.1890. *Principles of Economics*. Eight Edition

- Marx, Karl. 1961. *Capital*, Moskow
- Menger Carl. [1871] 1994. *Principles of Economics* Translated by James Dingwall and Bert F. Hoselitz
- Rashid, Salim, 1986. Adam Smith and the Division of Labour: A Historical View. *Scottish Journal of Political Economy* 33.3:292-97
- Rosenberg, Nathan. 1965. Adam Smith on the Division of Labour: Two Views or One? *Economica* 33 (May); 127-39
- \_\_\_\_\_ 1976. Another Advantage of the Division of Labor. *Journal of Political Economy*, v84, n4, Part 1, Aug. pp. 861-68
- Rostow, W. W. (1990). *Theorists of Economic Growth from David Hume to the Present With a Perspective on the Next Century*, New York: Oxford University Press, p 505
- Schumpeter, Joseph A *History of Economic Analysis*, New York, 1954
- Smith, Adam,[1766]. 1976. *An Inquiry into the Nature and Causes of the Wealth of Nations*. 2 vols. Edited by R.H. Campbell, A.S.Skinner, and W.B. Todd, London: Clarendon (VN)
- Stigler, J. George. 1951. The Division of Labor is Limited by The Extend of The Market. *Journal of Political Economy*. June 3: 185-193
- Stigler, J.George. 1976. The Successes and Failures of Professor Smith. *Journal of Political Economy* 84.6 (December): 1199-1213
- West, Edwin G. 1964. Adam Smith's Two Views on the

Division of Labour. *Economics* 31(February):22-32

West, Edwin G, 1996. Adam Smith on Cultural Effects of Specialization: Splenetics versus Economics. *History of Political Economy* 28:1 83-105

Solow R. (1956) A Contribution to the Theory of Economic Growth *Quarterly Journal of Economics*, 70, 65-94.