

The Theory of the Firm

Erich Gutenberg and Misunderstandings of his Theory

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A. Introduction

In the anniversary volume celebrating 90 Years of the Association of German Teachers of Business you will find a note on how the three volumes of Gutenberg's Foundations of the Theory of the Firm were born².

His theory revolutionized the then existing teaching of business administration. I acknowledge with great admiration and pleasure the immense work that Japanese friends and colleagues put into translating the three volumes. On the occasion of celebrating 150 years of friendship between Japan and Germany I would like to mention their names.

The first volume "Die Produktion" was translated by Professor Kaouru Takada (University of Osaka), Professor Kazuo Mizoguchi (Kobe University), and Professor Katusi Yamashita (Kobe University).

The second volume "Der Absatz" was translated by the same colleagues.

The third volume "Die Finanzen" was translated by Professor Jiro Ono (Kobe University), Akio Mori (Kobe University), and Professor Kazuo Mizoguchi (Kobe University).

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² Burr, Wolfgang; Wagenhofer, Alfred, im Auftrag des Verbandes der Hochschullehrer für Betriebswirtschaft e.V. (Hrsg.): Der Verband der Hochschullehrer für Betriebswirtschaft. Geschichte des VHB und Geschichten zum VHB, Wiesbaden 2012. My contribution is entitled: Erich Gutenberg, die Entstehung der „Grundlagen der Betriebswirtschaftslehre und der VHB“ pp. 87 - 90,

In addition I cannot but mention also with great gratitude and appreciation Professor Kiyosi Ogawa (Waseda University) and Professor Kyoichi Futagami (Waseda University), who translated Gutenberg's "Unternehmensführung", and Professor Nobuo Sugihara (Kwansei Gakuin University), Professor Kazuo Yoshida (Kwansei Gakuin University), and Professor Professor Nobuyuki Ikeuchi, who translated Gutenberg's "Introduction to Business Administration". Professor Mitsuhiro Hirata contributed a most remarkable paper on "Die Wirkung der Theorie der Unternehmung von Gutenberg in der japanischen Betriebswirtschaftslehre" to the Memorial Volume on the Occasion of the 100th birthday of Erich Gutenberg³

Erich Gutenberg never wanted to set up a school of followers in his scientific tracks. But obviously some observers were of the opinion that in fact there existed a "Gutenberg School of Business Scientists". One of them was Professor Morihiko Kuriyama, who wrote a book on "Die neue Entwicklung der Betriebswirtschaftslehre in Deutschland" (Tokyo 1987). In this book he analyzed the works of Albach, Dinkelbach, Herbert Hax, Jacob, Kilger, Koch, Lücke, Rose, Sabel und Seelbach. These professors were the direct successors of Erich Gutenberg. In this book he also presented a list of the next generation of successors, all in all professors of business economics.

Not all of them have moved ahead in the tracks of Erich Gutenberg. In the social sciences it is not as customary as in the natural sciences to express progress of science as Charles Newton did: "I have seen further ahead because I sat on the shoulders of giants!" In business economics "new paradigms" pop up like the famous "Rat catcher of Hameln" in the fairy tale, and others claim to work on problems of management that can allegedly not be solved by Gutenberg's theory.

B. Misunderstandings of Gutenberg's Theory

In this paper I will try to comply with the wishes of our Japanese organizer Tomoki Waragai: I will talk about some misunderstandings of Gutenberg's theory of the firm. They are manifest

³ Hirata, Mitsuhiro: Die Wirkung der Theorie der Unternehmung von Gutenberg in der japanischen Betriebswirtschaftslehre, in: Albach, Horst; Eymann, Egbert; Luhmer, Alfred; Steven, Marion (Hrsg.): Die Theorie der Unternehmung in Forschung und Praxis, Berlin-Heidelberg-New York 1999, p. 195 – p. 207. Hirata cites the papers of Takahashi, Y. and Yoshida, K. on Gutenberg's Theory of the Firm. He criticizes strongly the book by K. Nagaoka. He rejects his thesis that Gutenberg's theory is nothing but a theory of capital. Nagaoka's interpretation of Gutenberg's work has purely ideological grounds. In later years Nagaoka developed a deeper understanding of Gutenberg's Theory of the Firm. I will not discuss Nagaoka's earlier work in this paper.

in parts of the literature and constitute a barrier to noting that his theory may well be interpreted as the basis for modern developments in business economics.

I will mention four misunderstandings:

1. The firm in society
2. Output in the production function
3. Labor in the production function
4. The utility function

1. The firm in society

Let us start with the first misunderstanding: the firm in society.

The greatest misunderstanding has been that Gutenberg's theory of the firm was interpreted as a theory that serves the interests of capitalists and capitalism. An attempt was made, therefore, to develop a theory of the labor-managed firm. That theory turned out to be a wishful mistake and is today practically forgotten. The adherents of that theory found out themselves that Gutenberg's theory was not capital-oriented, but was a general theory of the firm.

A deeper misunderstanding, however, resulted from the structure of Gutenberg's volume no. 1, called "Production". The last chapter of the book deals with the national framework that limits the freedom of decision-making by the entrepreneur. Usually and unfortunately readers skip this chapter. However, originally Gutenberg had planned to use this chapter as an introduction. It is the key to his whole theory.

Gutenberg gave up the assumption made by microeconomists that the firm makes decisions under competitive pressures on perfect markets. The only role of the state is to set up the market as an institution to protect firms against dominant firms on the market. Instead, Gutenberg assumed that the firm decides within the leeway left to it by state regulation. Gutenberg called the system of legal regulation imposed on the firm the "categorical claws" of the state legal system (die kategoriale Umklammerung der Unternehmen).

Thus, production is not a technical process but rather a production regime. If the firm does not comply with the regulatory system of the state, the firm loses its right of existence. The firm decides within the role assigned to it by the state and by society. Gutenberg's theory of the firm is a general theory of the social responsibility of the firm. Gutenberg defines social responsibility in a market economy by

- no squandering of the scarce resources for production (“Wirtschaftlichkeit”)
- efficient combination of the scarce means of production (“Kombinationsprozeß”)
- no wasting of money: maintaining sustainability (“finanzielles Gleichgewicht”)
- autonomy of entrepreneurial decisions within the leeway granted by the regulatory system (“Autonomieprinzip”)
- risk-taking by the owners of the firm only. Factors of production bound by contracts with the firm (“Alleinbestimmung”).

2. Output in the Production Function

It follows that the “product” is either a product well-known to customers on the market or an innovative good. The innovation is the result of a long process of invention, research, feasibility study, marketability analysis, approval process, and introduction to the market. The “product” is constantly under regulatory surveillance and ever-changing acceptance by the customers.

This “product” is the topic of the second volume of Gutenberg's “Foundations” called “marketing” (“Absatz”). Today one would probably label it volume 1 to make things clear.

3. Labor in the Production Function

The inputs of Gutenberg's production function are purchased on the respective markets: labor market, investment goods market, materials markets, and the market for services (the visible hands market). I will concentrate on the labor market. There have been very serious misunderstandings about Gutenberg's “factor” labor.

The criticism raised has been that labor is treated as a “factor” and not as a “person”. The interpretation of Gutenberg's “factor” is correct, the criticism is utterly false. The input into the combination process is the hours of an employee worked in the firm according to the

contract signed with the owner of the firm. The employee is not a slave in the understanding of the 19th century that was “owned” by the plantation owner or the cotton manufacturer. The worker in the concept of Gutenberg’s production function is an individual providing part of his life to the firm under what Oliver Williamson calls a “relationship contract”. Gutenberg respects the employee as an autonomous individual. The firm has in his opinion no right to control the worker in all phases of his or her 24 hours per day 365 days a year. The person provides a certain number of hours to the firm with his work content specified in the contract. He receives a specified salary, and promises in reverse to respect the directory rights of the owner of the firm.

This does not mean that the input of Mrs. Smith may not be more efficient than the input of Mr. Miller in the same work place. It does not mean that the employer may not try to improve the efficiency of the workers in the production function by information, education, and motivation. It does not mean that the efficiency of the combination process as a whole may not be influenced by technical progress or by considerations of social justice. The employer has to obey labor laws which affect the whole person. Gutenberg respects the dignity of the individual when he talks about labor as a factor of production. The relational contract in its deeper sense is based on the sustainability concept. Exploitation of the individual in whatever way is a violation of the employee’s integrity.

4. The Utility Function

Gutenberg calls the utility function of the firm the “erwerbsswirtschaftliches Prinzip” – the principle of working for an income. This seems to leave a wide range of interpretation. Those who identified it with profit maximization misinterpreted it.

If we want to understand the full meaning of the “erwerbsswirtschaftliches Prinzip”, we have to go back in time to when Gutenberg was a practicing CPA. He audited the firm’s financial reports on the basis of a “going concern” assumption. This means that the firm maximizes at least the probability of survival in the long run. This may mean minimization of risk in the long run, this may mean maximizing profits in the long run, and this may mean maximization of the net present value of the firm in the long run. Of course, the concept of the “long run” is open for interpretation. But it is quite clear that a CPA audits an *annual* report, but under the

“going-concern-assumption” and Schmalenbach’s concept that the annual profit is just a part of the total profits of the firm over its lifetime (infinity in the dynamic theory of the firm).

Let me go a little further in my interpretation of Gutenberg’s utility function. More recently, motivation theory in the form of contract theory assumes that there is a basic difference between the workers (or shareholders) and the managers of a firm. Gutenberg assumed harmony between the different interest groups. Let us start with the interests of the individual, say the employees. According to all philosophers in ethics the individual wants to lead a “successful life”, a “life of achievement” (“gelungenes Leben”). Aristotle’s in his *Nikomachian ethics* specified that life is successful if the individual maximizes his or her utility. The utility function consists of two elements: individual profit and contribution to the well-being of the “polis”. The second element should not be mistaken as altruism. It is the contribution that the individual in his own interpretation makes to the well-being of other persons in society.

The concept of a second element in the utility function of the individual is not alien to Adam Smith as well. A large majority of authors concludes from his book on “*The Wealth of Nations*” that Adam Smith proposed maximization of profits by the entrepreneur. They should not have a bad conscience because the competitive market with its invisible hand would guarantee maximum benefit for society. However, this interpretation of Adam Smith is utterly wrong. In his book “*A Theory of Moral Sentiments*” of 1759 he is quite specific: He talks about the “fellow-feeling” for others (pages 3, 5) and makes it quite clear that this is not altruism: “As we have no immediate experience of what other men feel, we can form no idea of the manner in which they are affected, but by conceiving what we ourselves should feel in the like situation” (p. 2).

Gutenberg’s utility function of the firm is in line with the utility functions of Aristotle and Adam Smith. If competition is perfect, the firm has to maximize profits for the common good. But Gutenberg knew too well that markets are imperfect. Therefore,

the firm's social responsibility is maximizing an Aristotle-Smith utility function with contribution to the wealth of the customer as the second element.

C. A Short Reformulation of Gutenberg's Theory of the Firm

Gutenberg's pioneering work has been, as I have tried to show, misunderstood by many business economists, even among his younger colleagues. Since Gutenberg had stressed so much the limitational production function B in opposition to the microeconomic production function A of the classical economic theory, it seemed scientifically interesting to build on and expand the theory of production functions. Edmund Heinen touched off this trend⁴. In 1987 Günter Fandel reported that the number of production functions had increased to six⁵.

This development of Gutenberg's General Theory intelligent and innovative as it has been seems to have overlooked the general character of Gutenberg's theory. Therefore, a search for new paradigms began. Rather than incorporating the new developments in business economics like transaction cost theory, institutional theory, contract theory in Gutenberg's theory, business economics developed in different directions. Most importantly, business ethics in the form of the objective function of the firm: Aristotle-Smith utility function was introduced under the name of CSR and corporate ethics, while the other form of the objective function started from game theory (non-cooperative games) with the axiom of opportunistic behavior of the firms.

Figure 1 shows how the production function can be integrated into a general theory of the firm. It incorporates all the new developments in recent years. We start with the theory of imperfect product markets. The firm markets the products customers want (x). The marketing function of the firm incorporates transaction costs and may have to cope with asymmetric information. The firm does not exploit this situation by not informing the customer about the quality of the product. The firm strives to maximize the Aristotle-Smith objective function. The firm produces the products in a production process ("combination process") that guarantees lower costs of the product than splitting the production process up in many steps combined by markets. A very important factor in the production process is the input of labor.

⁴ Heinen, Edmund: Betriebswirtschaftliche Kostenlehre, Band 1, Begriff und Theorie der Kosten, Wiesbaden, Zweite Auflage 1965

⁵ Fandel, Günter: Produktion I. Produktions- und Kostentheorie, Berlin-Heidelberg-New York-London-Paris-Tokyo 1987

The input of labor in the process is provided by persons that work under a labor contract that is expected to hold for many years (the going concern assumption). Assessment centers make sure that the labor contract is observed by the employees. Loyalty and trust of the employee and the entrepreneur are considered economically profitable. The other factors of production are purchased on an imperfect factor market. Again, social responsibility of the firm is observed. The limits that the firm has to observe in this whole process are drawn by the state and its legal order (the “categorical fetters”).

Figure 1 about here

D. Conclusion

This paper has tried to correct some misunderstandings of Gutenberg’s theory of the firm. Four fields of misunderstanding have been discussed: The firm’s role in society, the output in the production function, labor in the production function, and the firm’s utility function. The thesis of the paper is that Gutenberg’s theory is a general theory. The discussions of the social responsibility of the firm, the discussions on business ethics, and the discussions on sustainability all have their bases in his theory. Contract theory is part of Gutenberg’s production function, and labor contracts are evidence of Gutenberg’s conviction that the firm has no right to intrude on the integrity of the individual.

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