

**„Value creation“ by allocation of resources in SMEs
under different conditions of economic development”**

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Contents

1. “Value creation” as a problem of entrepreneurship and SMEs
2. Relations between allocation of resources and creation of value
 - 2.1 Changes of theoretical hypotheses
 - 2.1.1 Entrepreneurship
 - 2.1.2 SMEs
 - 2.2 Changes of empirical findings
 - 2.2.1 From cycles of economic growth to economic stagnation
 - 2.2.2 From new enterprises to dependent companies
 - 2.2.3 The new hope: innovative SMEs?
3. Results of international comparative studies of value creation by allocation of resources
4. Conclusions

Summary

References

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- History of economic thought on SMEs
- Dynamic labour qualification
- values and value creation by SMEs

1. „Value creation“ as a problem of entrepreneurship and SMEs

The longterm development of economic activities and economic thought demonstrates that the former research on “values” and “value creation” brought about different, even antagonistic theoretical approaches.

Mainly three versions of “economic value” were distinguished: exchange value, user value and returns value (Hubig/Müller 1989). Taking into account also the dimensions of value – objective and subjective value – (Stavenhagen, G., 1969, p. 53 f, 227 ff), the impact of economic resources on the creation of value turns out as a severe problem of economic reasoning especially if entrepreneurship and SMEs are considered (Dobb, M., 1977, esp. p. 185 ff).

The following contribution is restricted on two specific aspects of the relations between allocation of resources and value creation: (1) the changes of theoretical hypotheses of value creation, and (2) empirical findings on value creation by allocation of resources in SMEs of Germany, Japan and South Africa.

2. Relations between allocation of resources and creation of value

2.1 Changes of theoretical hypotheses

Following the traditional canon of the history of economic thought, different determinant factors of “values” and “value creation” were distinguished (Hubig/Müller, 1989, Sp. 963 f). At the 18th century in all European countries the “exchange value” was emphasized as indicator of economic value. It was seen to be based on “real costs” of production (Stavenhagen, 1969, p. 57 ff). The real costs, yet, were explained differently because different factors, which “create” economic value, were identified. Mercantilistic authors of the 18th century pointed out the role of “projeteurs”, “undertakers”, “entrepreneurs” or “Unternehmer” in relation to allocation of resources, innovations and production (Stavenhagen, 1969, p. 18 ff). Authors of the early 19th century saw human labour and the division of labour as determinant factors of “value” (Dobb, M., 1977, p. 47). According to classical economics, “value” was created by human labour, considering the quantity, intensity and qualification of employees. Authors of the late 19th century, instead, emphasized the “subjective value” of commodities. The “Marginalistic Revolution” (L. Walras, W. St. Jevons, C. Mener) of the 1870’s pointed out the marginal utility of consumption to determine of economic value (Dobb, M., 1977, p. 185 ff; Brandt, K., 1993, p. 275). Via reference to individual preferences, the subjective value was demonstrated to be connected with the price of a specific commodity (V. Pareto). Moreover, the interdependence of prices in a system of exchange of commodities under the conditions of given resources and knowledge was pointed out (L. Walras, V. Pareto). But the entrepreneur seemed to be reduced to a mechanism of resource allocation, production and distribution of incomes and commodities. Also, the economic structure of production (organization and size of firms) turned out to be neglected. Moreover, authors of neoclassical economic theory even were opposed to the term “value”. They argued, that the “price” substitutes the term “value” and solves the problems following from the impossibility to measure the utility of commodities. This debate in economics, yet, was pushed aside by the worldwide depression around 1930 and by the “Keynesian Revolution” since 1936 (Stavenhagen, 1969, p. 585 ff). As a consequence, the problem of “value creation” remained unsolved, and the economic structure (organization and size of firms) was neglected in economic research.

Instead, not all of the economists restricted their view on macroeconomics or on the analysis of general economic equilibrium. Soon after the Second World War, not far from Geneva and Lausanne in Switzerland, precisely in St. Gallen and some neighboured locations, decisive efforts were made to develop a new approach of research on “value creation”, especially by SMEs and new or emerging firms (Schmidt, K.-H., 2004, p. 13 ff): Alfred Guttersohn founded the “Rencontres de St. Gall” (1948), the oldest international conference on SME’s worldwide. To focus on the problems neglected by

general economic theory, Guterson and the group of scholars and other participants started from the role of the entrepreneur in SMEs and initiated a continuous and widespread research on functions of SMEs and determinant factors of the economic development of SMEs. The new approach of economic research on SMEs had to consider the former research on the impact of capitalism on SMEs (K. Bücher, W. Sombart), but the conferences demonstrated that the approach had to be based mainly on the “value creation” by allocation of resources. Therefore, “entrepreneurship” was analysed at St. Gallen even earlier than this expression was introduced in research conferences worldwide (Backhaus, J., 2003).

2.1.1 Entrepreneurship

To start from the history of economic thought and empirical research on the development of SMEs in the market economy, it was necessary to search for relevant hypotheses and results of SME-research. Firstly, the relation between “objective” and “subjective” value in a free market system was investigated. It was found, that – as a consequence of restricted knowledge, transparency and flexibility – the individual person may estimate the subjective value of a product to be larger than the objective value measured on the ground of opportunities to realize the intended purpose (Hubig/Müller, 1989, 963 f). Secondly, a discrepancy between the objective and subjective value may follow from the market structure and the strategies of entrepreneurs to allocate “their” economic resources (Backhaus, J., 2003, p. 5 ff). Examples are demonstrated by monopolies and oligopolies. Their impact on the allocation of resources and on the prices of commodities follows from the degree of monopoly, the economic performance of SMEs and the access of new enterprises to the concerned markets. Therefore it is continuously necessary to investigate, if and how entrepreneurs in the SME-sector create values by allocation of resources.

In this perspective six approaches of allocation of resources may be distinguished:

- (1) Objective value approach / classical approach,
- (2) Surplus value approach, i.e. allocation according to exchange values of resources (rent economics approach),
- (3) Risk oriented approach, i.e. allocation according to the degree of risk and uncertainty of production,
- (4) Neoclassical approach, i.e. allocation of resources based on market prices, quantities and qualities of resources and on individual preferences of demand,
- (5) Subjective value approach, i.e. allocation of resources according to the subjective values of individuals demanding products and services,
- (6) Institutional approach, i.e. allocation according to the decisions by institutions, f.e. employers organizations and trade unions.

Following from these approaches the entrepreneurs must pursue different aims:

- Ad 1): to reduce costs of production,
- ad 2): to increase profits,
- ad 3): to compensate risks by agios of price differences and returns of production,
- ad 4): to maximize profits,
- ad 5): to satisfy individual preferences,
- ad 6): to adapt the allocation to the diversification and flexibility of individual demand.

The conclusions concerning entrepreneurship will be, that “values” can be created by allocation of resources according to different strategies and with different effects on the distribution of incomes and wealth, and on the satisfaction of individual preferences.

2.1.2 SMEs

Focussing on SMEs and emerging enterprises, the subjective value approach (5) and the institutional approach (6) were exposed to be the most appropriate approaches to explain the economic activities. This was demonstrated at the “Rencontres de St-Gall” and related publications.

Already since the 1940's the research on SMEs has made efforts to explain, how SMEs can create values by allocation of resources in the production process. SME-research has grown enormously during the 2. half of the 20th century. The open question, yet, concerns the identification of the relations between specific forms of factor allocation arranged by internal organization schemes of SMEs and the development of sales and “values” offered by the enterprises.

To check the opportunities of SMEs in this respect, empirical results of related studies shall be exposed. Special interest will be spent for the vocational training and (recurrent) professional education, the development and application of new technological knowledge and new product and services in the SME-sector, and for the development of working conditions and employment in enterprises of this sector of the economy.

According to the subjective value approach SMEs are orientated to the satisfaction of diversified individual preferences and the resulting demand even in decentralized small market niches. In order to be able to compete with larger firms in the markets, the small firms must allocate the resources efficiently. Under the conditions of high rates of technological change and flexible demand for commodities and services, the firms must be prepared to adapt the resources allocated in the departments of the company to the development of the demand in the market (niches). Preconditions of the competitiveness of the companies, yet, will be: (1) dynamic labour qualification, (2) risk-oriented capital, (3) market transparency and (4) strategic management, summarized as “SME-entrepreneurship”.

2.2 Changes of empirical findings

2.2.1 From cycles of economic growth to economic stagnation

From a macroeconomic point of view the annual change of real GDP may be used as an indicator of the annual change of value added in a country during one year. Empirical data of the annual average of real changes of GDP in OECD countries demonstrate: (1) the fluctuations of GDP differed temporarily in each country, (2) they also varied considerably among countries, and (3) in a long run view the five-years average of the growth rates of real GDP tended to decrease towards economic stagnation, though not in all OECD countries (Table 1). The tendency to be recognized, yet, may be described as: From cycles of economic growth to economic stagnation. The impact on the value added therefore is expected to be negative.

Table 1: Groth rates of GDP in selected OECD countries since 1970

Country	Growth rates of GDP in selected OECD countries since 1970					
	1970 – 1980	1980 – 1990	1990 – 2000	2000	2001	2001 per inhabitant ¹⁾
Austria	3,6	2,3	2,3	3,0	1,2	76
Germany	2,7	2,2	1,6	3,0	0,6	72
France	3,3	2,5	1,8	3,1	2,0	70
Luxemburg	2,7	4,4	5,8	7,4	4,0	136
Netherlands	2,9	2,2	2,9	3,5	1,4	78
United K.	1,9	2,7	2,3	2,9	2,3	69
Switzerland	1,2	2,0	0,9	3,0	1,7	85
Canada	4,3	2,8	2,9	4,5	1,3	79
USA	3,2	3,2	3,3	4,2	1,1	100
Japan	4,4	4,0	1,7	2,4	- 0,7	72

¹⁾ in purchasing power parities;

Source: Institut der deutschen Wirtschaft Köln (Hrsg.): Deutschland in Zahlen, Ausgabe 2002, Tab. 12.2.

Regarding statistical data on fluctuations and sectoral differences of labour productivity, it is again necessary to point out considerable differences of these changes. The fluctuations of labour productivity in Germany were exposed by higher rates in manufacturing industries than in the service sector; construction business and service activities were even designated by negative changes of labour productivity (Table 2). Probably SMEs contribute to positive changes of value added mainly in sectors, in which they represent a large percentage of firms, employees and sales, which is valid to a large extent for manufacturing industries.

Table 2: Labour productivity¹⁾ in sectors of the German economy

Sector	1991 – 1996	1997	1998	1999	2000	2001
Agriculture	10,6	1,8	2,1	6,5	0,5	3,0
Manufacturing industries ²⁾	3,4	4,2	0,3	0,2	6,0	0,6
Construction business	0,2	1,4	- 0,1	0,4	1,7	- 1,3
Commerce, restaurants and transportation	1,7	1,5	1,7	6,2	3,6	3,1
Financial services, housing and enterprise services	0,0	1,1	0,1	- 1,3	- 1,0	0,5
Public and private services	1,5	0,5	0,2	- 0,6	0,7	1,0
Total	2,3	2,4	1,3	1,7	3,0	1,6

¹⁾ Real gross value added in relation to labour volume;

²⁾ Manufacturing production without construction business;

Source: Institut der deutschen Wirtschaft Köln (Hrsg.): Deutschland in Zahlen, Ausgabe 2002, Köln 2002, Tab. 5.2.

2.2.2 From new enterprises to dependent companies

To demonstrate the structural changes, the proportion of industrial firms in relation to total sales can be demonstrated, for example in Germany 1980 (West), 1994 (D) and 2000 (D) (Table 3). The data let conclude, that an increase of the proportions of sales was found only for enterprises occupying 200 up to 999 employees, but not for small firms and not for very large enterprises. This result seems to contradict the hypothesis of concentration of industrial enterprises. Instead, more sophisticated investigations of the longterm structural changes of industrial production and sales demonstrate that the tendency of concentration can be shown, if the economic relations of the companies, at the input side and at the output side, are taken into account. The more the subcontracting business determines the structure of sales, the more the industrial SMEs as suppliers of parts, intermediate products or services are in danger of becoming dependent on large orderer companies being clients of the subcontracted SMEs.

Table 3: Percentages of classes of industrial enterprises according to sales
Germany 1980 (West), 1994 (D) and 2000 (D)

Year	Enterprises occupying ... employees						Total
	1-19	20-99	100-199	200-499	500-999	1.000 a.m.	
	Percentages of sales (%)						
1980 ¹⁾	1,1	14,3	10,1	18,2	14,5	41,8	100
1994 ¹⁾	1,0	14,3	11,1	17,6	15,0	41,0	100
1994 ²⁾	1,0	15,2	11,6	17,6	14,9	39,6	100
2000 ²⁾	0,8	13,8	11,0	19,1	16,9	38,4	100

¹⁾ West Germany (W)

²⁾ Total Germany (D)

Source: Institut der deutschen Wirtschaft Köln (Hrsg.): Zahlen zur wirtschaftlichen Entwicklung der Bundesrepublik Deutschland 1999, Köln 1999, Tab. 73; 2002, Köln 2002, Tab. 3.6

The degree of this economic dependence is increased mainly by demand fluctuations in the markets of intermediate and final products, by competition in exports and/or imports, furthermore by the economic impact of new technologies on SMEs of different capabilities to innovate or to adapt to innovations.

According to surveys on German enterprises which financed R & D-expenditures, the companies occupying less than 500 employees financed the same percentage of total R & D-expenditures of the considered enterprises in 1991 and 1992: around 12 % (Table 4). Instead, large enterprises financed nearly 88 % in both years. Secondly, the respective proportion in relation to sales, yet, was slightly larger in 1999 than in 1991, and it was higher in the large enterprises than in the small and medium firms. Thirdly, the absolute amount of R & D-expenditures per employee increased during the 1990's in small and medium firms and in large firms, but with a higher amount of expenditures per employee in the larger firms compared to the smaller enterprises.

Table 4: R & D-expenditures according to the size of enterprises in Germany 1991 and 1992

Enterprises with employees	Expenditures for R & D		
	% of total R & D-expenditures	% of total sales	per employee (1.000 Euro)
	1991		
less than 500	12,3	3,3	2,0
500 and more	87,7	3,9	4,9
	1999		
Less than 500	12,2	3,6	5,5
500 and more	87,8	4,3	9,7

Source: Institut der deutschen Wirtschaft Köln (Hrsg.):
Deutschland in Zahlen 2002, Köln 2002, Tab. 9.2

Also, the difference between the absolute amount of R & D-expenditures per employee of the smaller and larger enterprises was increased during the considered time period. This result was documented, too, by other surveys, like the reports of the Center of European Economic Research (ZEW), Mannheim: “In the class of SME (in Germany) the percentage of successfully innovating enterprises is steadily decreased” (ZEW news, Mai 2004, Schwerpunkt Innovationen, Mannheim 2004, III).

2.2.3 The new hope: innovative SME's?

In data of the “Mannheimer Innovation Panel” may be applied to answer the question being put forward in all European countries, in the United States as well as in Japan: Is it a reliable hypothesis to expect a way out of the recession and of the stagnating economy by means of innovations realized by SMEs?

The “Mannheimer Innovation Panel”-results offer a pessimistic answer: The proportion of successfully innovating enterprises was decreased mainly in the class of smaller enterprises, occupying less than 50 employees. In the class of enterprises with medium-sized numbers of employees the decrease of that percentage was not as high as in the class of small firms, but the negative tendency of innovations cannot be neglected. Instead, in the class of large enterprises the R & D-expenditures were expanded. Concerning the innovation budgets in 2003 and 2004, the SMEs of the manufacturing sector expected decreasing budget volumes (- 2,5 % p.a.), whereas the large enterprises of this sector planned increasing innovation budgets (+ 3,5 % p.a.) (Table 5). Similar growth rates were forecasted for enterprise-oriented services (Center for European Economic Research, ZEW, Mannheim, ZEW news, Mai 2004, Schwerpunkt Innovationen, Mannheim 2004, III).

Table 5: Expected innovation-expenditures by SMEs and large enterprises in manufacturing industries and the service sector in Germany 2002 – 2004

Industries / sector	SMEs	Large enterprises
	Average annual growth rates of innovation-expenditures (%)	
Manufacturing sector	- 2,5	+ 3,5
Enterprise-oriented services	- 3,0	+ 2,0
Distributive services	+ 8,0	- 0,5

Source: ZEW Mannheim (Hrsg.): ZEW news, Mai 2004, Schwerpunkt Innovationen III.

The main reasons for the differences of innovation expenditures between SMEs and large companies are found in their different conditions of enterprise finance. In the manufacturing sector about 50 % of all smaller firms (5-49 employees) realized a low percentage of profitability in relation to sales (less than 2 %), instead in the class of large enterprises (500 a.m. employees) 30 % of the enterprises. But in the sector of distributive services (retailers, personal services etc.) the small firms realizing a low profitability in relation to sales made up for a smaller percentage than in the manufacturing sector. These tendencies were found to be valid for the 1990's, but even more strictly for the years since 2000, probably also for 2003/04 (ZEW news, Mai 2004, III f).

To conclude, the above mentioned survey data leave little hope for new impulses to innovate in SMEs of the manufacturing sector, may be with more positive expectations concerning the service sector.

Even though, some attempts should be made to find out, if international comparisons of value creation by allocation of resources bring about positive results for SMEs.

3. Results of international comparative studies of value creation by allocation of resources

Former own surveys and recent studies on SMEs in Germany (Dornieden, M., 2001) allow for positive results, demonstrating that SMEs innovate in many ways and by activities different from those carried out in large enterprises. Innovating SMEs increase their value added by in house production, subcontracted production, other forms of cooperation, marketing of products and services as "independent" companies, but on the other hand also by various activities on the input-side, like vocational training and professional education.

In the German state Northrhine-Westphalia about 5000 subcontracting handicraft firms cooperated in 2001, mainly in mechanical engineering, automotive industry, electrotechnical industry, aerospace equipment, chemicals and environment protection equipment. About 50 % of the production capacity of the concerned subcontracting firms was utilized for orders by industrial client enterprises (Report on subcontracting business in NRW, ed. by LGH (Landesgewerbeförderungsstelle), Düsseldorf 2001, (Manuskript), 1). The orders were mainly focussed on the production and delivery of components, parts, modules or systems to be integrated into the products or systems of machinery produced by the industrial client enterprises, mostly being of large firm-size. Contrasting to industrial firms, the handicraft firms were acting on all steps of the "pyramid of subcontracting business". In order to stabilize the handicraft companies, they can utilize the services of the Chambers of Handicraft and affiliated counselling institutions.

Another study on the subcontracting business of German handicraft firms offers more insight into the aims and measures of the subcontractors to innovate. Concerning the problem of economic and technological dependence on their client companies, the following results should be considered (Dornieden, M., 2001 281 f and Tab. A 36): More than 25 % of the investigated subcontractors realized more than 50 % of their sales by successful contracts with their most important orderer company. This situation was found to the utmost in subcontracting handicraft firms which did not occupy more than 19 employees. Simultaneously, the concentration of sales made up for about 25 % of sales in around 33 % of the investigated handicraft firms. On the average about 40 % of the considered subcontracting handicraft companies carried out their subcontracted sales by selling products, parts, components etc. to no more than one client, again mostly to a large enterprise.

In Japan the subcontracting business is most widespread, and SMEs are to a large extent orientated technologically and economically to “their” orderer companies, the “mother companies”. This structure of activities sustains the innovativeness, but also the dependence.

In South Africa the subcontracting business is segmented: Large enterprises have developed “their” network of subcontracting enterprises, mainly medium-sized companies; the medium-sized companies, yet, have developed intensive subcontracting business relations within their segment; instead, small companies to the utmost purchase and sell via the local or regional markets. As an interesting organization of firms, the “bees baskets”, small or medium-sized workshops or marketing halls filled by small companies, may be mentioned. Especially on behalf of increasing the value added of small firms, these “bees baskets” should be regarded. They are a special South African way of organizing “creation of value” by allocation of resources in the small business sector.

To refer more in detail to Japan, the next paragraph comments on specific results of a new own study on Japanese SMEs. They should be taken also as conclusions.

4. Conclusions

Value creation by allocation of resources depends on opportunities to increase the productivity of inputs, mainly of labour. Therefore “dynamic labour qualification” is needed. To investigate the effectiveness of different programs and institutions affiliated in the process of labour qualification by vocational education and training and by professional education, comparative studies were carried out in various countries, by this author during late 2002 in Japan and Germany. Some results are to be presented (Schmidt, K.-H., 2003, 11, (2), esp. 24 ff).

Firstly, the determinant factors of dynamic labour qualification become apparent: on one side, environmental and technological changes, applied as innovations, and the substitutability of labour by capital must be considered; on the other, the structure and development of the supply of labour had to be regarded, esp. as to the interest for schooling and learning, the individual preferences to invest in human capital and the availability of personal skills and capabilities.

Secondly, the effects of technology transfer on the dynamic labour qualification was pointed out, which means, that the process of upskilling the employees in existing or emerging enterprises could be investigated. This was the purpose of case studies of Japanese and German manufacturing companies 2002.

Thirdly, the results of the studies and surveys referred to in the former paragraphs recommend not to rely strictly on the innovativeness and value creation by allocation of resources in all industries of the SME-sector. The capability of SMEs to create values depends on their internal and external conditions of economic activities. Therefore training, schooling and counselling is a constant task in the SME-sector.

Summary

“Value creation” is a problem of entrepreneurship and SMEs, though the debate about “values” dates back to the beginnings of economics. Neither mercantilistic nor later authors developed an approach of research which covered the role of entrepreneurs and SMEs appropriately. Six approaches of allocation of resources are distinguished, out of which two are evaluated to be most relevant for SMEs: the subjective value approach and the institutional approach.

Results of empirical studies on SMEs have pointed out that preconditions of the competitiveness of SMEs are: (1) dynamic labour qualification, (2) risk-oriented capital, (3) market transparency and (4) strategic management. In Germany large enterprises, yet, turn out to invest more intensively in human capital and real investment. Other studies instead let conclude, that SMEs in Germany, Japan and South Africa attempt to intensify activities and programs to develop dynamic labour qualification and investment. The capability of SMEs to create values depends on the internal and external conditions of the economic activities of SMEs and emerging companies. Therefore training, schooling and counselling is a constant task in the SME-sector.

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