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Norbert Berthold* and Michael Neumann**

The Motivation of Entrepreneurs: Are Employed Managers and Self-employed Owners Different?

Are managers entrepreneurs? What motivates them to run a firm? Are managers different from self-employed firm owners? In which points do they differ? And why is it that they are different? The following article examines these questions based on a survey of German engineering firms in which managers and self-employed owners answer why they are motivated to run a firm and what hinders their firms from growing more rapidly.

Many enterprises, particularly the large ones, are not run by self-employed entrepreneurs but by employed managers. These large concerns that are run by managers account for a steadily diminishing share of German growth. They are currently quite ill-reputed, noted mostly for dismissing workers and reducing the numbers employed, often in spite of showing record-breaking profits.

Public discussion often fails to see that the managers are simply behaving according to their preferences within a given framework of market conditions and governmental institutions. In this, they do not differ that much from self-employed owners. Only the framework parameters are different. Moreover, these parameters have changed over time. The economies of the developed countries are shifting away from the “managed economy” with mainly large-scale production using homogeneous input factors towards an “entrepreneurial economy” that is marked mainly by the use of knowledge and ideas. Hence, although the aims and intentions of the typical manager and self-employed owner may differ somewhat, the major cause of the different public evaluation of the self-employed entrepreneur who owns a small firm and the employed manager of a large business is the changing economic environment. This can be shown exemplarily for the German engineering sector. German engineering is well-known for success through innovation in small and medium-sized firms.¹

First, we explain in general why an economy needs entrepreneurs. Then possible differences between managers and entrepreneurs are discussed in a dy-

namic perspective. After addressing this topic, we turn to the empirical results of a survey of the motivation of business leaders in the German engineering sector.² We shall show the differences in the motives of managers and self-employed owners. We then explain which parameters in the German institutional framework account for the problems of enterprises run by managers.

What is an Entrepreneur?

A historical survey provides many sources for the definition of “entrepreneur” and the description of an entrepreneur’s tasks.³ There is no commonly accepted definition. However, most definitions regard the entrepreneur as a “natural person” and hence an individual. The most commonly known definition may be the one by Schumpeter. According to him entrepreneurship entails innovation. The entrepreneur is responsible “for the doing of new things or the doing of things that are already being done in a new way”.⁴ Entrepreneurs create new products, new methods of production, open new markets on the both the supply side and the demand side and, moreover, reorganise industries. Schumpeter calls this the process of “creative destruction”: new entrepreneurs crowd out old firms, displac-

¹ For details of the innovation behaviour in the engineering sector cf. Cologne Institute for Economic Research: Das Innovationsverhalten der technikaffinen Branchen, 2006, <http://imperia5.vdi-online.de/imperia/md/content/presse/22.pdf>. For a description of the engineering sector itself, cf. VDMA: Maschinenbau in Zahl und Bild, Stuttgart 2006.

² The empirical evidence presented is taken from a survey of the motivation of business leaders in the German engineering industry; cf. N. Berthold et al.: Motivatoren und Demotivatoren für Unternehmer im deutschen Maschinen- und Anlagenbau, 2007, http://www.vwl.uni-wuerzburg.de/fileadmin/12010400/diskussionsbeitraege/DP_098.pdf.

³ S. Parker: The Economics of Self-Employment and Entrepreneurship, Cambridge 2004.

⁴ A. Schumpeter: The Creative Response in Economic History, in: Journal of Economic History, Vol. 7, No. 2, 1947, pp. 149-159.

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ing old products and innovating production processes. The transformation of knowledge into saleable goods is the focus of Schumpeter's view. There are other well-known definitions of entrepreneurship. According to Cantillon,⁵ the bearing of uncertainty is the main characteristic of an entrepreneur. Cantillon's entrepreneur is an arbitrageur. Say⁶ suggests the combination of factors under risk, whereas Kirzner⁷ focuses upon the entrepreneur's alertness. The entrepreneur is able to notice what other people have not seen and gains profit by using this ability.

All these definitions are not really helpful for classifying the manager type into the concept of entrepreneurship. Everyone who is successful at selling products or services will earn their money only because the products and services are unique in some way – and even if this is just the selling place or time. Already the choice of this kind of heterogeneity defines his offer as a new one, and hence this can be defined as an innovation. Due to the fact that the innovating entrepreneur absorbs buying power by selling his products other firms will suffer. This is the basic idea of Schumpeter's creative destruction. Although Schumpeter's interpretation of entrepreneurship did not cover such small and gradual changes, they are basically the same as the larger shifts he describes. Maybe they are less successful, but for deciding what is a small change and what is a large one the evaluation of the consumers is needed. This evaluation is then an evaluation of the success of the entrepreneur's action. Hence, every self-employed person can be defined as an entrepreneur. Moreover, corporations run by employed managers basically do the same thing under the command of these managers. Following that argumentation, the manager is also an entrepreneur. There are a few main tasks that an entrepreneur usually carries out. Some differences between the typical manager and the typical self-employed owner may become clear if we look at these tasks.

Factor Combination. According to microeconomic theory, the main task of the entrepreneur is to combine the factors of production and to transform them into saleable goods and services. This transformation is represented by the production function. The usual in-

puts are labour and capital. This is exactly the task that Jean-Baptiste Say claimed to be the most important. The entrepreneur is responsible for supplying jobs and offering opportunities to invest capital. Of course, he can also insert his own manpower and capital.

The Bearing of Risk. Wage-earners bear little risk that the products of the enterprise will not be sold. The wages for labour are fixed in labour contracts or in collective agreements. The interest rate for borrowing capital from a bank is fixed when the loan takes place. The entrepreneur bears all the other risks. This makes sense since he is the one who has the largest, or even the only, influence on what is produced and how this is done. His decisions determine how saleable the products and services are. It is compatible with incentives that he bear the risk of failing. Of course, a risk-averse individual will try to pass on as much risk as possible. Labour can participate via profit-sharing and risk can be passed on by selling company shares. The manager typically passes on almost all the risks: for him the only remaining risk is that of dismissal.

Product Heterogeneity. The satisfaction of consumer needs can be viewed as the main aim of economic activity. Therefore this must be the focus of entrepreneurship. Yet, consumer needs differ. Thus, the entrepreneur must find out as exactly as possible what the individual consumer wants in order to adapt his product better to the consumers' wishes than his competitors. Those who best meet the consumers' wishes have the greatest success.⁸ This creates a broad range of products and services.

The Transformation of Knowledge. According to Schumpeter, innovation is one of the main tasks of entrepreneurship. Entrepreneurs create new products. They innovate the production process and combine factors in a new way. They develop new markets. Thereby, entrepreneurs are not necessarily inventors. They only use inventions and transform them into products. This transformation of knowledge into saleable products and services is at the core of Schumpeter's definition. In doing so, entrepreneurs create a broad and heterogeneous range of products, and thus the task of the transformation of knowledge is frequently accompanied by the task of increasing product heterogeneity. However, they may differ. Process innovation includes the transformation of knowledge and usually makes existing products cheaper. And

⁵ R. Cantillon: *Essai Sur la Nature du Commerce en Général*, 1755 edited and translated by H. Higgs, London 1931.

⁶ J. B. Say: *Cours Complet d'Economie Politique Pratique*, Paris 1828.

⁷ I. Kirzner: *Competition and Entrepreneurship*, Chicago 1973; I. Kirzner: *Discovery and the Capitalist Process*, Chicago 1985.

⁸ L. Mises: *Nationalökonomie. Theorie des Handelns und Wirtschaftens*, Geneva 1940.

vice versa, enhancing product heterogeneity does not inevitably require new knowledge.

Growth. The driving force for many business leaders is not only profit but also the reputation arising from their activity and the intrinsic motivation of self-fulfilment. Entrepreneurs' firms grow if they are successful. This growth is often an important objective for entrepreneurs, even if it does not change their earnings. At a time when success is founded on large-scale production, growth is fundamental for future success. High growth means that the entrepreneur combines more factors, produces more products and bears higher risks. Someone whose focus is no longer the growth of his enterprise is also no longer an entrepreneur with regard to this task: he is only an administrator, just like someone who does not wish to innovate any further.

None of the above five functions alone can be used to decide whether an individual is an entrepreneur. The arbitrageur may spend little or no time on factor combination. The manager bears no risk. The successor may lack alertness, and the leader of a corporation may focus on large-scale production instead of innovation. Lastly, the heirless elderly founder may have few incentives to increase the size of his firm. Nevertheless, if most of the above tasks are fulfilled an individual can be called an entrepreneur. This includes the employed manager. It is better to think of entrepreneurship not as black or white but as a continuum in a five-dimensional vector space that is spanned by the five tasks. Thus, the difference between a self-employed entrepreneur and an employed manager is gradual.

The importance of these tasks has been changing over time. Other market circumstances thus alter the meaning of entrepreneurship. In the 1970s and 1980s, the rising importance of transaction costs was a major force in favour of large-scale production in Germany. Managers, as the leaders of large enterprises, were a response to the forces of large-scale production based on capital and unskilled labour. The intensive use of these two factors gave enterprises a competitive advantage.⁹ The "managed economy" is based on certainty concerning outputs and inputs, which are both comparatively homogeneous.¹⁰

⁹ D. B. Audretsch, A. R. Thurik: What's New about the New Economy? Sources of Growth in the Managed and Entrepreneurial Economies, in: *Industrial and Corporate Change*, Vol. 10, No. 1, 2001, pp. 267-315.

¹⁰ D. B. Audretsch, A. R. Thurik: Capitalism and Democracy in the 21st century: From the Managed to the Entrepreneurial Economy, in: *Journal of Evolutionary Economics*, Vol. 10, Nos. 1-2, 2000, pp. 17-34.

While in the 1970s the trend in Germany was shifting towards large enterprises, this is changing again. Over the last thirty years, the exploitation of knowledge has become an increasingly crucial factor in the production process.¹¹ Instead of large-scale production, the "entrepreneurial economy"¹² is based firstly on the production factor knowledge, and secondly and more importantly, on entrepreneurial capital that forces spill-overs of knowledge and R&D.¹³ Due to the challenges of globalisation and a change in consumer demand, the industries of developed countries are shifting away from the managed economy towards the entrepreneurial economy.¹⁴ However, knowledge and R&D will not spill over just due to their mere existence.¹⁵ Entrepreneurial capital is an important factor that shapes output and productivity. Firms need individuals that carry out the tasks of creating product heterogeneity and of transforming knowledge. Additionally, the positioning of new and innovative products involves a higher risk than the use of large-scale advantages. Firms run by managers and specialised in large-scale production face a disadvantage regarding these tasks. Self-employed entrepreneurs have a better ability and more incentives to use knowledge and transform it into the products desired by consumers. Thus, in a world based on the transformation of knowledge rather than on the exploitation of scales, self-employment is crucial for more innovation and higher growth rates.

Empirical research shows that there is a systematic and strong connection between the per capita GDP of a country, its economic growth and its level and type of entrepreneurial activity.¹⁶ Countries with similar per capita GDP tend to exhibit similar levels of entrepreneurial activity, while significant differences exist among countries with differing levels of GDP per capita. Among the richer countries, self-employment

¹¹ European Commission: Observatory of European SMEs 2003, No. 7, Luxembourg 2004.

¹² So named in D. B. Audretsch, A. R. Thurik: Capitalism and Democracy ... , op. cit.

¹³ Compare *ibid.* for a brief description of 14 differences between the managed and the entrepreneurial economy.

¹⁴ *Ibid.*

¹⁵ D. B. Audretsch, M. Keilbach: Entrepreneurship Capital and Economic Performance, CEPR Discussion Paper No. 3678, London 2003; Z. Acs et al.: The Missing Link: The Knowledge Filter and Entrepreneurship in Endogenous Growth, CEPR Discussion Paper No. 4783, London 2004.

¹⁶ Z. Acs et al.: Global Entrepreneurship Monitor, 2004 Executive Report, 2005, http://www.gemconsortium.org/download/1168450632437/GEM_2004_Exec_Report.pdf; M. Minitti et al.: Global Entrepreneurship Monitor, 2005 Executive Report, London 2006.

Table 1

Dependent Variable: LOG SALES GROWTH			
Method: OLS regression			
Observations: 257			
Variable	Coefficient	t-Statistic	Probability
CONSTANT	1.64	11.40	0.0000
LOG SALES	0.04	1.20	0.2332
MANAGER (DUMMY)	-0.13	-0.98	0.3261
FOUNDER (DUMMY)	0.72	4.81	0.0000
FEMALE (DUMMY)	-0.33	-1.42	0.1566
R-squared	0.11	Mean (dependent variable)	1.87
Adjusted R-squared	0.10	Standard Deviation (dependent variable)	0.94
S.E. of regression	0.89	F-statistic	8.13
Sum squared residual	200.76	Probability (F-statistic)	0.00

is currently again gaining importance. Over the 1990s, its growth rate exceeded that of civilian employment in most OECD countries. The growth of self-employment has been concentrated mostly in business and community services. The strongest growth occurred for the higher-skilled.¹⁷

However, self-employment varies considerably among the developed countries.¹⁸ The span ranges from near 6% in Denmark to almost 20% in Greece.¹⁹ In Germany, there was continuous growth of self-employment in the 1990s.²⁰ One reason for this is the founding boom following German reunification. However, compared to the EU15 average of 14%, Germany's self-employment rate is rather low, amounting to just 10% in 2003.²¹

According to the OECD, self-employment has become a significant source of job growth in many OECD countries. Hence, more self-employment is likely to foster the moderate German growth rates.²² It can also reduce unemployment and, moreover, make people more satisfied with their jobs.²³ However, this should not be misinterpreted: people are able to judge what is in their own interest – being employed or being self-

employed.²⁴ Low self-employment itself is no reason for governmental action. The question is why self-employment in Germany is low. This can best be answered by looking at the differences in motivation of the self-employed owner and the employed manager. As an example, these differences are shown for firm leaders in the German engineering sector.

Different Motivation of Managers and Self-employed Owners

In German engineering, enterprises run by a manager have been growing less on average over the last ten years than those run by self-employed owners. Using an OLS regression and controlling for firm size (log sales) and gender (female), the dummy variable "manager" (-led) is a significant factor explaining sales growth rates. However, if controlling for founders (dummy variable: "founder"-run) this result changes (cf. Table 1). The self-employed founder is the one who achieves growth, not the self-employed owner *per se*. Note that the founder in this analysis is not necessarily a *new* founder – he may have founded his firm some twenty or thirty years ago.

The managers are not necessarily to blame for the sluggish growth of their companies compared to those of the founders (and, only thus, to those of the self-employed). The survey data suggest that they want their firm to grow. The question: "Would you like to expand your firm in Germany within the next five years?" was answered "yes" by 83% of the managers and employees, but only by about 74% of the self-employed owners.²⁵

¹⁷ OECD: The Partial Renaissance of Self-Employment, OECD Employment Outlook, June 2000, pp. 155-193.

¹⁸ M. Minitti et al., op. cit.

¹⁹ N. Noorderhaven et al.: Self-employment across 15 European Countries: The Role of Dissatisfaction, SCALES-paper No. 200223, Zoetermeer 2003.

²⁰ M. Minitti et al., op. cit.

²¹ K. Göggel et al.: Selbständigkeit in Europa 1991-2003: Empirische Evidenz mit Länderdaten, ZEW Discussion Paper No. 06-015, 2006.

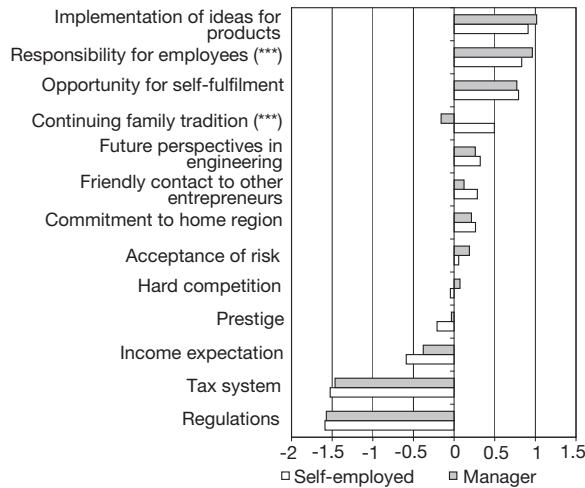
²² OECD, op. cit., p. 155.

²³ D. G. Blanchflower: Self-employment in OECD countries, in: Labour Economics, Vol. 7, 2000, pp. 471-505.

²⁴ D. G. Blanchflower: Self-employment: More may not be better, in: Swedish Economic Policy Review, Vol. 11, 2004, pp. 15-73.

²⁵ Note that some employees answering this question are employed in a firm run by a self-employed owner.

Figure 1
Motivation and Demotivation for Entrepreneurial Activity in German Engineering



Omitting the employees in owner-run firms and controlling for firm size (log sales), gender, age, founding year and founder, the difference between managers and self-employed owners diminishes into insignificance. The rumour that managers are less orientated towards firm growth cannot be confirmed for German engineering. If at all, there is a weak indication that it is the managers who wish to promote growth.

The self-employed owner of a German engineering firm decides in favour of an independent stand-alone activity and against being constrained by the instructions of anyone else. Moreover, his choice is of a risky investment of his capital into his own firm instead of risk diversification. The motivation for such a choice can stem from higher income expectations and a

higher capital yield, from a lower risk aversion than average, from having a different cognition of risk, but also from preferences for self-fulfilment and against the constraints of being employed and having a boss in the background. Therefore, self-fulfilment, income expectations and risk attitude are often mentioned as reasons for self-employment. Both groups, managers and self-employed owners in the German engineering sector, were asked about these and other possible reasons for entrepreneurial activities. Some possible obstacles to self-employment were also tested (cf. Figure 1).

For both self-employed owners and managers the implementation of ideas for products and the opportunity for self-fulfilment are the most important factors for entrepreneurship (independence was not tested). The result shows only slight differences between the two groups. Admittedly, managers are not founders and are thus on average running older firms. Additionally, the data suggest that manager-run firms are larger. Hence, the OLS regression analysis is controlled for firm size (log sales), gender, age, founding year and founder. By controlling these variables, the dummy "manager" is highly significant only for "continuing family tradition" and for "responsibility for employees and their families" (marked with *** in Figure 1).

It is no surprise that continuing one's family tradition is a stronger motive for self-employed owners who succeed to a family-run business. More interesting is the motive of responsibility for employees and their families. Both groups see this reason as the second most important one. However, the managers of German engineering firms feel more responsible for their employees than self-employed owners do. And the result remains the same even after controlling for firm

Table 2

Dependent Variable: RESPONSIBILITY FOR EMPLOYEES AND THEIR FAMILIES

Method: OLS regression

Observations: 332

Variable	Coefficient	t-Statistic	Probability
CONSTANT	0.600	5.18	0.0000
MANAGER (DUMMY)	0.152	2.97	0.0032
FEMALE (DUMMY)	0.254	2.94	0.0035
AGE	0.003	1.39	0.1658
LOG SALES	0.015	1.05	0.2933
FOUNDER (DUMMY)	-0.025	-0.44	0.6605
R-squared	0.06	Mean (dependent variable)	0.86
Adjusted R-squared	0.05	Standard Deviation (dependent variable)	0.39
S.E. of regression	0.38	F-statistic	4.39
Sum squared residual	47.62	Probability (F-statistic)	0.0007

Table 3

Dependent Variable: COMMITMENT TO HOME REGION			
Method: OLS regression			
Observations: 256			
Variable	Coefficient	t-Statistic	Probability
CONSTANT	0.164	2.01	0.0457
MANAGER (DUMMY)	-0.119	-1.63	0.1036
LOG SALES	0.073	3.82	0.0002
EQUITY SHARE	-0.003	-2.26	0.0248
R-squared	0.07	Mean (dependent variable)	0.26
Adjusted R-squared	0.06	Standard Deviation (dependent variable)	0.49
S.E. of regression	0.47	F-statistic	6.72
Sum squared residual	56.18	Probability (F-statistic)	0.0002

size (log sales), gender, age (of the firm leader) and the dummy variable founder(-run) (cf. Table 2).

Concerning the factor "commitment to home region", the dummy "manager" is significant, controlling for the usual variables. However, the underlying explaining variable here is the enterprise's share of equity (cf. Table 3). Controlling for the equity share makes the dummy variable "manager" insignificant. Entrepreneurs with a higher equity share also feel less responsible for their workers than entrepreneurs with a lower equity share.

The acceptance of risk, the prestige and the income perspectives are also different between managers and self-employed owners. However, these differences do not yield significant results in OLS regressions by controlling for the factors named above. Risk acceptance can be explained best by gender differences. In the group of managers, the share of males is larger than in the group of the self-employed, and male entrepreneurs are less risk-averse than female ones. This makes self-employed owners comparably risk-averse. In evaluating the market situation and the institutional obstacles (taxes and regulations), managers behave similarly to self-employed owners.

Institutional Obstacles to Entrepreneurship

The rate of self-employment and the number of enterprises in an economy depends on the framework of governmental institutions. For example, institutional drawbacks have been the reason why Germany's development in biotechnology had a relatively slow start compared to the USA. A rigid institutional framework limited entrepreneurship in this particular sector.²⁶ Another example was pointed out by Henrekson/Johan-

nsson²⁷ and Henrekson/Davis:²⁸ Sweden shows the lowest self-employment rate of all OECD countries although no larger market size differences compared to other countries could be observed. Hence, this difference can only be ascribed to an institutional framework that discriminates against small businesses, start-ups and family firms. In this way, the size distribution of firms is largely determined by institutional factors.

German engineering enterprises unanimously dislike the current institutional framework. Both managers and self-employed owners classify governmental "regulations" as discouraging factors for their entrepreneurial activity (cf. Figure 1). Differences between managers and self-employed owners emerge only by differentiating between single institutions. This is shown in Figure 2. All responding entrepreneurs are adjusted for average and variance. An average obstacle thus has the value 0. Institutions with a positive value are major obstacles, institutions with a negative one are minor ones. Highly significant differences between the evaluation of managers and that of self-employed owners are marked (***), having controlled for the usual factors (gender, age, firm size, founder, founding age) and using an OLS regression.

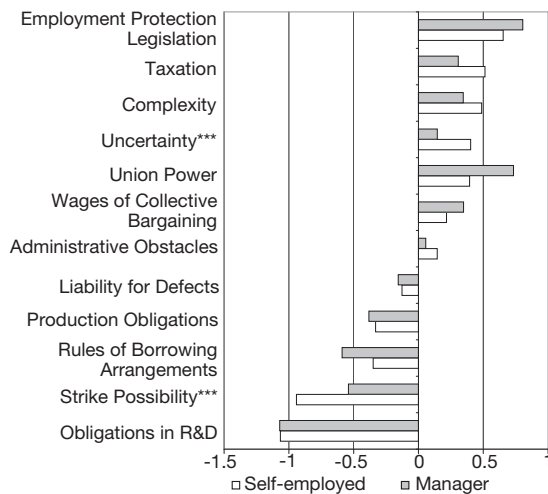
First of all, employment protection legislation (EPL) is the main impediment for German entrepreneurs in the engineering sector. But managers struggle most with EPL and the strong power of the unions, whereas self-employed owners classify taxation, the complexity of institutional rules and the uncertainty with respect to changing rules as their other main problems. Of in-

²⁶ G. Krauss, T. Stahlecker: New Biotechnology Firms in Germany: Heidelberg and the BioRegion Rhine-Neckar Triangle, in: Small Business Economics, Vol. 17, 2001, pp. 143-153.

²⁷ M. Henrekson, D. Johansson: Institutional Effects on the Evolution of the Size Distribution of Firms, in: Small Business Economics, Vol. 12, 1999, pp. 11-23.

²⁸ S. Davis, M. Henrekson: Explaining National Differences in the Size and Industry Distribution of Employment, in: Small Business Economics, Vol. 12, 1999, pp. 59-83.

Figure 2
Which Institutions Bother Most?



terest is also the different cognition of the possibility of strikes. Managers are significantly more aware of strikes than self-employed owners.

Employment Protection Legislation

Employment protection legislation (EPL) can be justified for welfare state reasons as well as for smoothing business cycles. EPL protects employees from dismissal without cause and stabilises employment over time. It can also enhance productivity by making sure that investment in firm-specific human capital will pay off over time because no job loss will cut off the return to this investment. The costs for the welfare state will be lowered as well, since the unnecessary utilisation of unemployment benefits can be avoided.

On the other hand, by raising the costs of labour, an increasing EPL can reduce the demand for labour, making firms more reluctant to hire new employees. It can thus produce unemployment – unless the employees accept real wage reductions. Interestingly, wage costs and labour costs are also obstacles to entrepreneurial activity, but they are not as ill-reputed as EPL. Bertola/Ichino²⁹ argue that a greater volatility in the markets requires an increasing flexibility by the enterprises. This flexibility is hampered if EPL is too rigid. Drawing conclusions about the consequences of employment protection on unemployment rates is difficult. Employment-smoothing effects and job losses

²⁹ G. Bertola, A. Ichino: Wage Inequality and Unemployment: United States vs. Europe, in: NBER Macroeconomics Annual, Cambridge MA et al. 1995, pp. 13-54.

caused by inflexibility may counteract each other, at least partly. Empirical research does not produce clear results either.³⁰

Whereas the consequences for unemployment remain nebulous, changes in EPL are crucial for entrepreneurial activity. The risk of job loss when employed declines with stronger protection, but on the other hand the opportunities for self-fulfilment and the liberty of the entrepreneur in his role as employer are limited by a stronger EPL. These are two important motives for encouraging managers as well as self-employed owners to engage in entrepreneurial activity. Hence, it is not surprising that both groups find fault with EPL. In the sample, managers regarded EPL more negatively than self-employed owners. However, this difference is not significant.

The strictness of German EPL varies across the firm size distribution. Besides existing thresholds, German enterprises can dismiss their workers for operational reasons only if there is no other job inside the enterprise the worker could do. It is more likely in small firms that there will be no other job for which a worker is suited. Moreover, works councils can be established if the firm has five or more workers. The larger the firm, the more likely is the founding of a works council. The works council must be informed and heard in any case of dismissal. Every (even a small) formal mistake in this hearing process makes the dismissal ineffective. Thus, the owners of small firms should actually suffer less from EPL. On the other hand, precisely the knowledge-based small firm of the entrepreneurial economy needs flexibility most urgently. This may be the reason why both manager-run firms and self-employed owners agree that EPL is the most problematical institution.

Union Power

Central wage bargaining has long been praised as a solution that can internalise the externalities that negotiated wages can impose on the inflation rate and on the systems of transfers to unemployed workers. Crucial for the successful functioning of central wage bargaining is that employers pay the same wage for the same job without respect to the geographical loca-

³⁰ G. Bertola et al.: Employment Protection and Adjustment: Evolving Institutions and Variable Enforcement in OECD Countries, ILO Employment and Training Papers No. 48, Genua 1999; G. Nicoletti et al.: European Integration, Liberalization and Labor-Market Performance, in: G. Bertola et al. (eds.): Welfare and Employment in a United Europe – A Study for the Fondazione Rodolfo De Benedetti, 2001, pp. 147-236.

Table 4

Dependent Variable: UNION POWER EVALUATION			
Method: OLS regression			
Observations: 313			
Variable	Coefficient	t-Statistic	Probability
CONSTANT	-0.01	-0.03	0.9743
LOG SALES	0.11	3.24	0.0013
MANAGER (DUMMY)	0.05	0.45	0.6505
FEMALE (DUMMY)	-0.21	-1.09	0.2779
FOUNDER (DUMMY)	-0.33	-2.43	0.0157
AGE	0.00	0.66	0.5094
COLLECTIVE WAGE BARGAINING (DUMMY)	0.19	1.71	0.0891
R-squared	0.14	Mean (dependent variable)	0.50
Adjusted R-squared	0.13	Standard Deviation (dependent variable)	0.89
S.E. of regression	0.83	F-statistic	8.52
Sum squared residual	212.16	Probability (F-statistic)	0.0000

tion or the economic situation of the enterprise. This again is based on the assumption that workers with a similar background and education have the same productivity.³¹ Yet this assumption no longer corresponds to reality. The era of large-scale production with a homogeneous labour input has passed in many sectors. High-skilled labour is the major input, and competition takes place not via cost reduction but by innovation as well as the transformation of ideas and knowledge into saleable products.

Central wage-floors negotiated in a collective wage-bargaining process allow the single firm little range for offering the right incentives to promote the needed flexibility. Coping with the challenges of globalisation and knowledge-based production is more difficult with low wage-flexibility. Many collective agreements in fact allow firms to diverge, yet a significant discrepancy undermines the position of the trade unions and thus endangers their existence.³²

In particular larger German firms cannot escape the impact of the unions. This applies to wage-setting, but it also applies to the trade unions' impact on employees' co-determination rights. In Germany, companies with between 501 and 1,999 employees are covered by the rules of the Works Constitution Act of 1952 (Betriebsverfassungsgesetz) and a newer act of 2004 (Drittelbeteiligungsgesetz). These give the employees' representatives one third of the seats on the supervisory board. Moreover, the 1976 Co-determination Act (Mitbestimmungsgesetz) covering companies employ-

ing 2,000 or more employees provides for equal numbers of representatives from the employee side and the company side on the supervisory board. Some of these seats are compulsorily reserved for members of those trade unions that represent the largest numbers of workers in the enterprise. This can also explain the negative attitude of the leaders of particularly larger firms towards unions.

As is to be expected, the size of an enterprise has a clear effect on the evaluation of union power. By incorporating "log sales" into the set of variables, the dummy variable "manager" loses its significance. It can be followed that not the manager himself has a negative attitude towards unions, but that the management of larger firms perceives unions in comparison to other institutional obstacles as a major disturbing factor. These larger firms are often controlled by employed managers. Hence, the different evaluation is likely due to the difference between the managed and the entrepreneurial economy. The large-scale firms of the managed economy suffer most from union power because they and their workers are bound by the collective agreements. Additionally, the analysis reveals that the founder of an enterprise cares significantly less about the power of the trade unions (cf. Table 4).

Uncertainty of New Regulations

In an environment that is affected by great uncertainty with respect to new regulations and the high complexity of bureaucratic rules, surviving is easier when producing homogeneous goods in large-scale mass production. Any new rule requires investing fixed costs primarily to learn the rule and secondly to im-

³¹ N. Berthold, R. Fehn: Unemployment in Germany: Reasons and Remedies, CESIFO Working Paper No. 871, Munich 2003, p. 32.

³² Ibid.

Table 5

Dependent Variable: UNCERTAINTY			
Method: OLS regression			
Observations: 322			
Variable	Coefficient	t-Statistic	Probability
CONSTANT	0.4649	1.88	0.0607
LOG SALES	-0.0194	-0.67	0.5055
MANAGER (DUMMY)	-0.2806	-2.64	0.0086
FOUNDER (DUMMY)	0.0367	0.30	0.7673
FEMALE (DUMMY)	-0.3518	-1.93	0.0544
AGE	0.0002	0.03	0.9726
R-squared	0.04	Mean (dependent variable)	0.31
Adjusted R-squared	0.02	Standard Deviation (dependent variable)	0.80
S.E. of regression	0.79	F-statistic	2.64
Sum squared residual	197.03	Probability (F-statistic)	0.0235

plement it into the production process. By allocating these costs to as many products as possible, advantages of scale can be generated. Hence, a large firm based on mass production (counted among the managed economy) suffers less than a small and innovative firm (counted among the entrepreneurial economy) that has to obey new rules more frequently because its product plan changes so often.

This is also supported by the data (cf. Table 5). Managers in German engineering feel less hindered by both the uncertainty of new regulations and the complexity of rules. Uncertainty remains significant even after controlling for gender, age, firm size (log sales), founder and founding year of the enterprise whereas complexity can be explained better by founding year and firm size.

The German institutional framework is not manager-hostile in general. Problematical is only that some labour market institutions are no longer up-to-date in an environment in which production is knowledge-based. Generally, managers evaluate the German institutional setting as better than the self-employed do. Nearly every third manager answered yes to the question: "Do you feel motivated to entrepreneurship by German society and German politics?" The share of yes-answers by the self-employed was only half as high.

Concluding Remarks

The world has changed. Thirty years ago, large-scale production may have been the concept for success, but today the exploitation of knowledge for the purpose of continuous innovation has become the crucial factor in the production process. Due to the challenges of globalisation and changing consumer

demand, the industries of developed countries are shifting away from the managed economy towards the entrepreneurial economy. German engineering is a perfect example of this "new" economy. And even within German engineering, which is dominated by small and medium-sized firms, the growth problems of larger firms are notable.

The managers of German engineering firms wish their firms to grow more strongly. Their motivation is not so different from the motivation of self-employed owners. The most important reasons for entrepreneurship turn out to be self-fulfilment and the implementation of ideas for products. Astoundingly, managers care even more for the well-being of their workers than self-employed owners do.

A major difference between both groups can be discovered in their attitude towards trade unions. The managed economy needs more workers for gaining the advantages of large-scale production. With the number of the workers, the impact of the unions increases. Young and successful German engineering firms, on the other hand, do not carry this burden: they are too small to be affected by union power. Of course, unions are not automatically to blame for the sluggish growth of larger German firms. However, next to EPL union power is the major obstacle to more growth according to the managers of German engineering firms. Both EPL and union power are said to reduce flexibility, primarily on the labour market. Such flexibility is a crucial requirement for a firm that has to survive in this epoch of the entrepreneurial economy. Larger firms are less flexible than smaller ones anyway simply because of their size, and thus unions and EPL should not make them carry an additional burden of inflexibility.