УДК 331.104

ЭКОНОМИКА ТРУДА ГЕРМАНИИ: РЕТРОСПЕКТИВНЫЙ АНАЛИЗ И СОВРЕМЕННЫЕ ПРОБЛЕМЫ

К. Герлах и В. Мейер

Ганноверский университет, Германия

В данной статье представлен краткий обзор состояния экономики труда в Германии. Отправной точкой анализа автора является тезис о существенных различиях в развитии экономики труда в Германии и в англо-американских странах. Далее рассматриваются первые очертания новой дисциплины, зародившейся в Германии после Второй мировой войны, а также наиболее рельефные пробелы в исследованиях 1970-х годов.

Наиболее объемная часть статьи посвящена анализу современного состояния экономики труда. В работе представлен библиографический обзор научных трудов наиболее значимых авторов с оценкой использованных ими методик и полученных данных. Также обозначены существенные направления научных изысканий в данной области. Автором подчеркивается неизбежность привнесения субъективных моментов в оценку подобного рода проблем и явлений. После краткого обзора наиболее существенных монографий в статье формулируются заключительные положения и выводы.

Labor Economics in Germany: Retrospect and Contemporary State

Knut Gerlach and Wolfgang Meyer*

1. Introduction

In this article a brief overview of labor economics in Germany is presented. The starting point is the divergent development of labor economics in Germany and the Anglo-American countries. Subsequently, the first steps of the new discipline emerging after the second world war in Germany are discussed and the most blatant research gaps in the 1970s are identified. The most extensive section of the paper is devoted to the actual state of labor economics. The key actors of labor research are presented, data and methods briefly discussed and the outstanding contemporary research areas are outlined. Needless to say, a subjective assessment is unavoidable in the delineation of the principal research areas. After a short characterization of the most widely used textbooks the concluding remarks are presented.

2. Retrospect

Labor economics as a specific discipline of economics developed late in Germany compared to the United States and Great Britain. Several aspects can help to explain this divergence. With industrialization and capitalist development in the nineteenth century the conditions of manual workers were characterised by low wages, long working hours and insecurity of employment. As a reaction unions were established, strikes multiplied and the spectre of a socialist revolution was looming. In the Anglo-American countries and in Germany this situation was discussed under the term Social Problem or, more specifically, in Germany using the concept Social Question (Soziale Frage). Interestingly, in the Anglo-American countries the term Social Problem was rapidly displaced by the more narrowly defined concept Labor Problem or Labor Question (Kaufman 2004, 34), while the usage of the term Social Question was retained in Germany well into the twentieth century. In the Anglo-American countries this facilitated the separation of the problems of labor and capital from wider and more encompassing social issues and from the debate of the entire social and political system (McNulty 1980). This opened the path in the United

* We would like to thank Olaf Huebler for his helpful comments.

States and in Britain to discuss the Labor Problem as an autonomous subject and to separate labor issues from social policy.

In Germany, however, the scientific and political debate of the problems of labor and capital continued to be attached to the Social Question with the consequence that an autonomous field devoted to economic labor problems was much harder to establish, since it appeared too restrictive and too supportive of the economic and political status quo. This view was strengthened by two developments. On the one hand, Bismarck's attempt to solve or mitigate the Social Question by social insurance laws (health insurance (1883), accident insurance (1884), old-age pensions (1889)) and by severely restricting activities of the Social Democratic Party and the unions. On the other hand, the leading German academic economists of the historical school were very much afraid that the Social Question might endanger the unified German states (1871) and wanted to contribute to solving the Social Question. On top of their agenda were the reduction of injustice and the promotion of distributive justice by means of a social legislation which fosters progress and the economic well-being of the lower classes. In 1873 the German economists of the historical school founded the Society for Social Policy (Verein für Socialpolitik), which in addition to economic research was very active in proposing encompassing solutions to the Social Question. It is thus not surprising that the German economists were generally in favor of trade unions and were strong advocates of government and corporate welfare programs to support labor and this view was shared by the Christian Churches. The active role of the state and the concordant activities of the economists in addressing the Social Question led to the early establishment of the academic discipline social policy (Sozialpolitik). In this frame labor problems were analyzed and a separate, more narrow and autonomous field of economic labor analysis could not develop. In the period between the two world wars (till 1933) and still after 1945 textbooks of social policy addressed economic labor problems (Heimann 1929, Liefmann-Keil 1961, Preller 1962). In the late 1960s only one university chair existed with the main responsibility to analyze labor problems from an economic point of view (Reyher 1976). This distinction between the Anglo-American labor perspective and the German social perspective in investigating labor problems began to erode in the last three to four decades, a period in which the labor perspective has been firmly established in Germany, too.

3. First steps and research gaps

In 1969 the Promotion of Employment Act (Arbe itsfoerderungsgesetz) was enacted in a period of full employment. The new and basic law of the Federal Labor Agency replaced the law on Public Employment Service and Unemployment Insurance (AVAVG) which was restricted to improve the labor market transparency for employers and job-seekers and to administer unemployment insurance. In addition to these two tasks the newly created Federal Labor Agency was assigned responsibilities in the areas of active labor market policy (further training, retraining, job creation schemes) and labor market research which was concentrated in the Institute of Labor Market and Occupational Research (IAB), a separate department of the Federal Labor Agency. This Institute started with a staff of about 100 employees (presently more than 200), most of them academic researchers, was and is by far the biggest research entity in the field of labor, including labor economics, in Germany. In a situation of full employment the Institute defined its research priority as investigating long-term structural deficiencies of the labor market with the aim to develop preventive measures for the supply side of the labor market (Mertens 1968). If the long-term forecast would indicate an inadequate supply of electrical engineers or plumbers, for instance, the proposed measures concerning the educational system or the vocational training and retraining should help to augment the supply of employees in these occupations. This research approach was strongly influenced by the manpower forecasting studies of the OECD and Bombach (OECD 1966, Bombach 1964). Ingredients are: prognosis of GNP, prognosis of the future sectoral structure, prognosis of sectoral productivities, prognosis of occupational structures within sectors, and finally prognosis of educational requirements within occupational structures. Intimately related to this research agenda was the analysis of the substitutability of occupations. Interestingly, labor demand was interpreted as being beyond the realm of the Federal Labor Agency and thus of minor importance for the Institute. Economic policy was in charge of labor demand (Mertens 1968).

In hindsight, labor market research under conditions of full employment had to improve the scientific basis for training and retraining and to stimulate changes of the educational system in order to avoid labor market deficiencies emanating from the supply side of labor. This tenet could only be attained by long-term forecasts of basic economic variables which

finally enabled a prognosis of the detailed occupational structure and its concomitant educational structure. The data requirements of this research agenda are immense and the lack of suitable data was seen as a severe handicap for labor market research (Mertens 1968). In addition, the level of wages and specifically the structure of wages between occupations and qualifications which might impede or accelerate the matching of supply and demand in the labor market were barely considered.

In addition to the research agenda of the IAB and partly in collaboration with scientists of the IAB theoretical and empirical studies of labor market segmentation played a dominant role. The theory of labor market segmentation (Lutz/Sengenberger 1974, Lutz 1979, Sengenberger 1978, 1979) comprises three basic elements: institutional rules, human capital on the supply side of the labor market, and fixed costs of labor on the demand side. Three types of labor markets are distinguished in the German variant: the labor market for basic skills, the occupational labor market encompassing workers with a non-firm-specific apprenticeship training, and internal labor markets characterized by firm-specific training. These important insights into the structure and functioning of labor markets were later refined and most of them were incorporated into the mainstream of labor economics.

Shortly after the foundation of the Institute for Labor Market and Occupational Research Reyher (1976) identified the gaps of labor market research in Germany by interviewing general experts. A broad consensus concerning the existence of a general deficit of theory emerged, i.e. labor economics in the Anglo-American tradition was not yet accepted for theoretical and empirical investigations. Specifically the theoreti-cal and empirical determinants of labor demand were identified as the basic gap of labor market research. With respect to the research agenda of the Federal Labor Agency attention was drawn to lacunae concerning the structure and development of job-related and firm-specific qualifications and flexibilities. This was identified as the basic research gap regarding qualifications and flexibilities and the question was raised whether the demand for qualifications and their concomitant flexibilities were primarily determined by technology or induced by personnel policies of firms.

In subsequent years these gaps were addressed by labor economists and research of labor problems became more similar to the Anglo-American tradition. In the following we elaborate the main contemporary fields of investigation of labor economics in Germany.

4. Contemporary labor economics in Germany

In this section we address several facets of contemporary labor economics in Germany. We start with a short description of the key institutions investigating labor problems, followed by a short report on data sets and methods available for empirical research[1]. Furthermore major research areas are portrayed and some textbooks introduced.

4.1 Key institutions of labor research

When unemployment rose first in the 70s and the early 80s the prevailing opinion in the academic debate was that the problem could be handled by applying the macro economists' toolbox. Unfortunately, this view was unrealistic. With the length of the period of high unemployment researchers became more and more convinced that a reform of the labor market institutions is a precondition for regaining full employment. Parallel to this paradigm shift labor economics expanded in research institutes and universities. The highest research capacity is still available at the already mentioned Institute for Labor Market and Occupational Research (IAB) in Nuernberg with research in seven main fields, all concentrated on the labor market. The thematic areas comprise labor and social policy, European integration, demography and labor market, business cycle, working time and labor market, regional labor markets, along with establishments and employment. Additionally, the evaluation of some recent changes in labor market legislation (Hartz-Gesetze) is an important task.

Another well known specialized labor research institution is the 1998 founded Institute for the Study of Labor (IZA) in Bonn. In contrast to the IAB which is a state agency with many full-time researchers and focus on the German labor market, the IZA is a private foundation which provides a worldwide communication platform. There are only a few in-house-researchers and many research fellows spread all over the world do research in the following program areas: Evaluation of labor market programs, behavioral and personnel economics, migration; labor markets and institutions, labor markets in emerging and transition

[1] Links of the homepages of the various research institutions and providers of labor market data are listed in the appendix.

economies, the future of labor; employment and development. These areas, headed by international experts, are umbrellas for individual projects mainly performed in the home institutions of the fellows. The major communication instrument is the discussion paper series, but IZA organizes research seminars, workshops, and conferences as well.

Beside these two specialized labor research agencies additional independent non-profit institutes are engaged in general economic research and policy advice in Germany. Since unemployment is the predominant economic issue they analyze labor market problems, too. Some of them have specific departments, other ad-hoc research groups with the labor market on top of the agenda. Among those very involved in this field is the Centre for European Economic Research (ZEW) in Mannheim with its department for Labor Markets, Human Resources and Social Policy. Its work is characterized by a microeconomic and empirical perspective, i.e. examination of individual behavior, empirical approach, and the application of modern econometric techniques. To some degree these research dimensions characterize the investigations of the German Institute for Economic Research (DIW) in Berlin, too. In addition to their labor market research, since 1984 the DIW is the organizational center of the well known German household panel "GSOEP" (see section 4.2). In the political debate, additionally, the ifo-Institute Muenchen is often active especially since the institute was reorganized in the 90s and a close cooperation with the Center of Economic Studies of the University of Muenchen was established. However, the ifo-Institute is still better known for its business cycle forecasts than for labor market research. The Social Science Research Center Berlin (WZB) with its department for Labor Market Policy and Employment has a focus on the problem-solving capacities of social and governmental institutions, often within a cross-national comparative context with the aim to learn from approaches in other countries. The final institution to be mentioned is the Halle Institute for Economic Research (IWH) with its concentration on the analysis of economic problems of East Germany.

Obviously, the German trade unions and the business and employers' associations are interested in investigations of labor market problems, too. The research of the unions is concentrated in the WSI, Duesseldorf, (Wirtschafts- und sozialwissenschaftliches Institut der Hans-Boeckler-Stiftung), whereas the IW Koeln (Institut der deutschen Wirtschaft) is working on behalf of business interests. As expected, their explanations of the actual labor market problems differ widely, accentuating lack of demand on the unions side, and excessive labor costs mainly caused by union wage policy and over-regulation of the labor market by the employers' associations.

While the capacities concerning labor market research increased substantially at the research institutes the development of labor economics was much more gradual at the universities. The main public organization funding academic research in Germany, the German Research Foundation (DFG), tries to promote labor research, for instance by funding the research group "Heterogeneous Labor: Positive and Normative Aspects of the Skill Structure of Labor" at the university of Konstanz or the priority program "Flexibility in Heterogeneous Labour Markets" at the universities of Dortmund, Frankfurt and Hannover. However, in the leading association of German speaking academic economists, the Society for Social Policy, with 23 different research committees a committee for labor economics is still lacking. Of the roughly 70 state universities and nearly 10 private universities with chairs in the field of business administration and economics in Germany only very few have established specialized chairs for labor economics and some other combine labor research with regional policy, economics of services, and economic theory, respectively. However, research in labor economics is spread more widely than these figures show. Some economists interested in labor problems have chairs for empirical economic research. In addition, outstanding studies in labor economics are performed by professors of economics, economic theory, income distribution or empirical macroeconomics and regional economics. Complementing research activities, approximately every third university offered courses in labor economics in the academic year 2005/06.

4.2. Data and methods

The basic institutions collecting labor market data are the Federal Employment Agency (Bundesagentur fuer Arbeit) focusing on unemployment, and the Federal Statistical Office (Statistisches Bundesamt) focusing on employment. However, for a long time they provided only aggregated data of a limited scope. Gaps and possible improvements are comprehensively described by an expertise (Kommission 2001). To date, the unsatisfactory statistical basis of the labor market has improved noticeably. The first important step was

in the year 1973 the extension of the employment statistics based on information emanating from the social insurance system and thus covering more than 70 percent of the total labor force. Information is available for a limited number of personal characteristics like age, sex, marital status, nationality, pay, education, occupational status, full- or part-time work as well as for the branch of economic activity and the regional location of the employer. A two percent sample of the employment statistics is used to create a longitudinal data base.

The limited number of variables available in the employment statistics precludes many areas of research which are relevant for the analysis of the supply of labor. The German Socio-Economic Panel (GSOEP) helps to mitigate this shortcoming (Burkhauser et al. 1997). GSOEP is an annual longitudinal study of private households in Germany. Since 1984 the same households, families and persons have been surveyed. In 1990 GSOEP started to include respondents from states of the former German Democratic Republic. GSOEP is designed to provide data for testing a wide range of economic, social and psychological theories. The thematic areas include personality traits, occupational and family biographies, employment, participation in the labor market, mobility, earnings, health, personal and work satisfaction, household composition, and living standards. In addition, the surveys cover in specific waves topics like education, training, and social security. To stimulate international comparisons cross-national equivalent files were created which contain panel data from Canada, Germany, Great Britain and the United States (Cross-National Equivalent Files of the GSOEP). GSOEP has been and still is the work horse for labor economists analyzing a wide range of topics, specifically the supply side of the labor market.

At the beginning of the 1990s it was generally acknowledged that in comparison to the abundance of theoretical and empirical research on the supply side of the labor market empirical work on the demand for labor was lacking (Hamermesh 1993). To redress this imbalance the Institute of Labor Market and Occupational Research (IAB) and the Institute of Quantitative Economic Research at the University of Hannover conceived establishment panels (Bellmann 1997, Koelling 2000, Gerlach et al. 2003), respectively in 1993 for Germany and in 1994 for the Federal State of Lower Saxony. Due to budgetary constraints the latter establishment panel was merged with the IAB Establishment Panel in 2000. The IAB Establishment Panel started in 1993 (first wave) with 4356 responding establishments in West Germany, after the fourth wave (1996) it was extended to eastern part of the country. To date, approximately 16000 establishments of all sizes and from all economic sectors are interviewed annually. The thematic areas include determinants of employment (production, revenue, working time, investment, capacity utilization, vacancies, and employment policy of establishments), state and development of technology, innovation, organization and their impact on jobs, determinants of productivity, utilization of government assistance, involvement in training and further training, existence of collective wage agreements and works councils. The availability of the longitudinal data of the IAB Establishment Panel has strongly stimulated the empirical and theoretical analysis of labor demand.

The next and up to now the final step in the improvement of the statistical basis for labor market investigations is the merging of panel data from establishments and employees. This allows the analysis of interactions between unobserved or unobservable characteristics of firms and individuals. For example, the quality of job matches and the resulting efficiency and competitive gains can be analyzed. Consequently, the IAB has established a linked employer-employee data set by combining the IAB Establishment Data with the longitudinal data of the employment statistics. Summarizing, the availability of data for microeconomic investigations of the labor market has improved considerably in the last decades. These data sets are accessible by the research community in recently created research data centres (Forschungsdatenzentren) of the IAB (Kohlmann 2005) and of the Statistical Offices of the Federal Republic and the Federal States.

In empirical labor market investigations regression analysis including probit and logit estimation has been used extensively for cross-section data. The methodological advantage of panel data for microeconometric investigations stems from the fact that they mitigate problems of unobserved heterogeneity. Individuals differ with respect to motivation and ability, firms according to their specific strategies applied to personnel policy and wage setting. The empirically inclined labor economist is usually insufficiently informed about or ignorant of these characteristics. With the availability of panel data fixed- or random-effects models can be estimated. These models differ

in their assumptions about the correlation of the unobserved characteristic with the exogenous variables. A common ground for both models is, however, that they eliminate the time-invariant unobserved characteristics by a transformation or by differencing the unobserved characteristic. Methodologically this is a very significant step.

4.3. Main research areas

In this subsection we address several research areas that are significant from our perspective. Significance refers to scientific importance and to some degree importance from the point of view of labor market and economic policy. We are aware of the fact that this selection is based on a subjective selection. Nonetheless, we hope that our selection is fairly representative of the actual scientific endeavours and that it conveys the basic ideas, research approaches and results of contemporary labor economics in Germany.

Theoretical developments

The 1970s and especially the 1980s were a period of the development of the economics of information (Spence 1973, Stiglitz 1987). Efficiency wage theory (Akerlof/Yellen 1986) can be considered as a distinct version of this new approach to economic theory which is highly relevant for firms' decisions about wages and employment. The basic idea of the various variants of efficiency wage theory is that it can be profitable for firms to pay more than market-clearing wages. This occurs if two conditions hold: monitoring of employees must be expensive and effort or job performance is a positive function of the wage rate (Gerlach/Huebler 1985). In the shirking-model (Shapiro/Stiglitz 1984) the efficiency wage enhances the job performance since a detected shirking worker faces a dismissal and incurs a wage reduction if unemployment exists. Since profit-maximizing wages depend only on the nexus between effort and the wage rate firms will not lower the efficiency wage in a recession with prevailing unemployment.

Efficiency wage theory is confronted with a number of critical objections which stress that other institutional arrangements might prevent a low job performance. Newly hired workers might be required to pay a bond to the firm which is forfeited in case of detected shirking. However, bonds are very rarely requested in normal conditions of business, the idea, however, is at the core of the theory of seniority wages (Lazear 1981). It is a well established fact that occupational wages increase with tenure. This can be due to the accumulation of specific human capital or can be the result of being paid less than productivity during the first years of employment in a firm (paying a bond) and obtaining a remuneration exceeding productivity with longer tenure. Tournament theory (Lazear/Rosen 1981) models wage increases and promotions as incentives for a high job performance. If two employees compete for a promotion and the more productive employee (measured on an ordinal scale) is finally promoted both competitors are exposed to a strong incentive to work hard. Since promotions are not a one-shot game this incentive device might exert productivity enhancing effects for a long period if the hierarchical wage structure and the intervals between promotions have been appropriately devised. In addition, it has been demonstrated in experimental economic research that fairness plays a role in the wage policy of firms. Firms offering high wages, expect and attain an above-average job performance. Although the design of the experiment incorporated the possibility of unemployment most firms offered wages that exceeded the market clearing wage and did not converge to the equilibrium level in successive stages of the experiment.

The insider-outsider theory (Lindbeck/Snower 1988) postulates that insiders exert market power that is based on transaction costs when firms attempt to substitute incumbents by new applicants. In this process firms incur additional expenses which comprise costs of hiring, dismissal and training so that they are prepared to pay a wage premium to incumbents. The wages of insiders can therefore exceed the reservation wages of outsiders and cause unemployment.

More recently Manning (2003) stressed the important role of monopsonistic labor demand which is based on two fundamental assumptions: labor markets are characterized by important frictions and employers dispose of latitude to set wages. The second assumption is significant for integrating the new research area "personnel economics" into the more encompassing field of labor economics. Frictions are conducive to rents, i.e. if an employer and a worker are separated the benefits of both parties would usually be reduced. Since wages in this model are lower than the value of the marginal product of labor a small wage cut will not induce the worker to quit. The assumption that employers set wages is equivalent to wielding some market power. Monopsony in this sense does not mean that only one single firm has a demand for labor, it means however that the supply of labor to firms is

no longer infinitely elastic. A model of the entire labor market should thus be based on monopsonistic competition or oligopsony.

This brief review of theoretical developments demonstrates that they were generated outside of Germany, mostly by the Anglo-American scientific community which is and has been for several decades the dominant and most innovative subdivision of the science of economics. However, these basic theoretical innovations were subject to further developments and had to be adapted to the specific labor market institutions in Germany. For example, works councils which do not exist in the Anglo-American economic environment, and their interplay with unions were modelled with the aims of integrating them in the insider-outsider theory and of deriving testable hypotheses (Huebler/Jirjahn 2003). Efficiency wage theory relies to a certain extent on the dismissal of shirkers. Dismissal protection is, however, much more stringent in Germany than in the Anglo-American economies. Applications of this theory in Germany have to integrate this institutional detail and modify the theory prior to empirical investigations.

Labor demand

In the late 70s and the beginning of the 80s unemployment increased rapidly in Germany as well as in most other European countries and the focus of the scientific and political debate shifted from labor supply to the demand side of the labor market. Many empirical studies estimated nominal and real wage elasticities of labor demand with regard to persons, hours and qualifications (e. g. König/Pohlmeier 1988). Though there are many concepts and methodologies for estimating such values, a range of – 0.4 to – 0.6 for the real wage elasticity seems to be a realistic clue for practical purposes. Wage and output elasticities for low skilled manpower are considerably higher than for high skilled people. Since wage policy of the unions was often in favor of the former the employment problems of the low skilled increased. But this was not the only reason for the adverse movement of low skilled labor demand since it was observed in many industrialized countries. The ongoing globalization of the economy, skill-biased technological change or restructuring of the work places were the other candidates explaining changes in labor demand in favor of high skilled people. Especially the last two issues received much attention in Germany and, therefore, are often analyzed empirically. According to Bauer/Bender (2004), for instance, organizational change is skill-biased. On the one hand, it reduces net employment growth rates of low-skilled workers via higher rates of job destruction and separation. On the other hand, it increases churning rates for highly qualified workers. Most employment adjustments were external. Technological change and the reorganization process were frequently accompanied by new information and communication techniques especially computers and internet, whose effects are studied as well (Huebler 2002). A substantial number of high performance workplaces were created which are often characterized by employee participation and incentive systems boosting labor productivity.

Starting from static models of labor demand another strand of theory provided new approaches integrating simultaneity of factor demand, uncertainty, expectations, and adjustment costs. The incorporation of adjustment costs leads to a dynamic labor demand function, a concept which was mainly applied in investigations of short term or cyclical developments. In case of Germany, Koelling (1998) amongst others analyzed short term labor adjustment processes and tried to separate cyclical from permanent overtime. Another application can be found in studies of fixed-term contract employment (Hagen 2003). It was shown that this specific contract form accelerates adjustments. Another possibility to treat adjustment costs in empirical research offers the Generalized Error Correction Model (GECM). Falk/Koebel (2001) used this technique to estimate dynamic labor demand models for different skill groups.

To combat unemployment unions favored working time reductions, especially of the length of the work week and the magnitude of overtime. As a consequence they expected a change in the structure of labor demand: The same amount of hours demanded should be distributed among a greater number of persons. Most economists criticized this strategy and their empirical investigations corroborated their view (Steiner/Peters 2000), especially when hourly wages did not remain constant. Another group of measures, introduced to increase the flexibility of labor contracts, is assessed more positively, in principle. These measures include facilitation of fixed-term contracts, temporary workers and marginal employment (mini-jobs). Enhanced flexibility increased the number of employees in these specific contract forms, particularly the number of mini-jobs boosted. However, there is only weak evidence that flexible contracts are more than dead ends in secondary labor markets and serve as stepping

stones towards permanent employment for the unemployed (Hagen 2003). Alternatively, flexibility could be improved by decreasing adjustment costs, for instance in form of reduced dismissal protection.

Unions and works councils

Prior to the availability of the data sources described above the information about union membership was limited. Publications by unions do not distinguish between employed members on the one hand and retired and unemployed members on the other hand. For labor economists reliable information on employed union members is significant since the bargaining strength of unions arguably depends on membership density. Recent studies (Addison et al. 2006, Fitzenberger et al. 2006) show that union density in West Germany was fairly stable during the 1980s (about 32 percent) and began to shrink in the 1990s reaching a level of about 22 percent in 2004. The development of union density was even more dramatic in the eastern part of the country. After a surge of union density in 1992 (about 40 percent) due to the integration of approximately 50 percent of the former members of the communist trade union movement into the newly established western unions, union density declined to about 18 percent in 2004. Probit estimations demon-strate that men, blue-collar workers, full-time workers, older workers, employees in the public sector, supporters of the Social Democratic Party, and employees whose fathers were blue blue-collar workers are more inclined to be union members, while employees with a polytechnic or university degree are less likely to do so. Interestingly, changes in the composition of the work force explain only one third of the reduction in union density (Fitzenberger et al. 2006).

Under the German system of industry-wide collective bargaining unions and employers' associations conclude wage agreements that set minimum wages for member firms of employers' associations. These wages are binding only for union members. Firms, however, do not distinguish between union and non-union members since they want to avoid incentives for employees to unionize. A prerequisite of sectoral bargaining is thus the decision of a firm to join an employers' association. Compared to union density the coverage by industry-wide collective wage agreements is still rather high. In 1996 69 (56) percent of all employees were covered by these agreements in West (East) Germany. The figures declined to 62 (43) percent in 2003 in the two parts of the country (Schnabel 2005). In addition, about 50 percent of the firms not covered by collective wage agreements use them as a benchmark for their own wage policy. The probability of being covered by an industry-wide collective contract rises with the size and age of the establishment. Branch plants are more likely, while family-name and newly founded firms are less likely to be covered by these agreements. Large firms, firms with works councils and firms paying wages exceeding the wages stipulated in the collective contract are less likely to leave employers' associations (Kohaut/Schnabel 2003).

Research, thus, has shown that the German system of industrial relations with its basic characteristic to set wages in collective agreements is gradually eroding. Technological change and an enhanced global competition apparently induce an increasing number of firms to withdraw from the rather rigid conditions of collective contracts and to search for novel ways to adapt wages and working conditions more flexibly to changing market conditions. However, the design of collective contracts is responding to these develop-ments by incorporating "opening clauses" which allow firms with collective agreements under specific conditions to pay below the contract wages or to work hours which exceed the working time stipulated in the collective contracts.

The second pillar of the German system of industrial relations is the institution of works councils. Workers in firms with at least five employees have the right to elect a works council, i.e. works councils are not automatic. Works councils have information, consultation and participation rights which increase with the size of the establishment. Works councils, however, are legally not entitled to negotiate the terms of issues like wages and working time which are usually settled in collective agreements between unions and employers' associations. In 2000 in 16 percent of all establishments a works council existed whereas 53 percent of all employees worked in these firms. Works councils are rarely established in smaller firms, while their presence is very common in large firms with more than 500 employees.

In recent years the impact of unions and works councils on the performance of firms has been investigated extensively (Jirjahn 2005, Franz 2005). The wide range of topics includes wages, productivity, employment, labor mobility, labor demand, pay setting systems, training and further training, working time models, innovation and investment, reorganization of work and team work.

Huebler/Jirjahn (2003) analyze interactions between works councils and industry-wide collective bargaining. They first show in a theoretical model that works councils in firms covered by collective bargaining are more involved in productivity enhancing activities and less in rent seeking activities than in firms that do not participate in collective bargaining. Empirically the authors show that works councils raise productivity in covered firms, but do not exert a positive productivity effect in uncovered firms. Furthermore, works councils tend to raise wages, but more so in uncovered firms than in firms with collective agreements. Coverage by collective contracts apparently diminishes the distributional conflict at the establishment level, which might be an attractive feature of the German system of industrial relations and helps to explain why so many entrepreneurs defend this system, albeit requesting a more important role for wage setting at the enterprise level.

Without taking into consideration unions Addison/Teixeira (2006) analyze employment growth in German firms in the period 1993 to 2001. Given the high unemployment rate in Germany this is admittedly an extremely significant topic. They show that firms with a works council exhibit a negative employment effect of around -2.5 percent a year which is comparable to the magnitude that researchers in the US and Great Britain found for unionized workplaces. Subsequent investigations will have to address the issue whether this result is modified if interactions between unions and works councils are included in the theoretical and empirical model. Stephan/Gerlach (2005) investigate dimensions of wage setting that might differ between firms applying collective contracts and uncovered firms. Due to a lack of data works councils cannot be incorporated. They use linked employer-employee data for the years 1990, 1995 and 2001 and restrict the analysis to non-supervisory workers in larger manufacturing firms. The results show that the expected wage of the average worker is higher in firms applying collective contracts, while the returns to human capital are reduced. Moreover, these effects intensified during the period under investigation. This finding is important since the majority of the unemployed are unskilled. The caveat has to be reiterated that the result would have to be replicated by studies incorporating the interplay between unions and works councils.

These brief comments show that unions, works councils and generally the German system of industrial relations are scrutinized from different angles. Due to high unemployment and the sluggish employment growth the system and with it unions and codetermination are under attack. A response has been the introduction of opening clauses in collective contracts. On the basis of these clauses the management of a company jeopardized by bankruptcy and having a promising strategy to restore economic viability can negotiate with the works council an in-plant alliance. The terms of this alliance vary widely between firms, but usually allow the firms to pay wages below the contractual level and/or to work longer hours. The companies generally have to guarantee a specific level of employment for several years. Frequently, the bargaining partners (unions and employer's associations) retain the right to veto an in-plant alliance. These negotiations at the plant level intend to increase the flexibility of the German system of industrial relations. In a recent empirical study Huebler (2005) shows that on-the-job training and a prolongation of working time correlate positively with the objective of stabilising employment, whereas pay cuts and a reduction of working hours lead to decline of employment.

Closely related to the topic of this section is the issue why wages do not fall in a recession. In addition to unions insisting on rigid wages firms might be reluctant to lower wages due efficiency wage and human capital considerations, implicit contracts or an expected enhanced fluctuation of employees. The aim of recent studies is to ascertain the reasons for rigid wages, i.e. to distinguish between these possible candidates. In an investigation based on interviews of 801 firms Franz/Pfeiffer (2003) obtain the result that for less-skilled workers the terms of the collective contract induce wage-rigidity whereas for highly qualified workers firms avoid wage reductions since they expect negative signals for external applicants, a loss of firm-specific human capital and generally an increased fluctuation. Pfeiffer (2003) finds that wage rigidities exist in firms covered by collective contracts as well as in companies not covered. They are, however, quantitatively much more important in the first sector of the economy.

Some changes have recently been incorporated in the German system of industrial relations. The debate on wage-setting and its employment consequences continues. However, definitive and robust results are still lacking. Therefore, it is too early to predict the future development of industrial relations in Germany,

but of now we are more knowledgeable than 20 years ago about the system and its economic effects.

Evaluation of labor market policy

Since the end of the 60s, labor market policy consisted mainly of job placement services and benefit payments replacing work income. Later, active policy measures were added concentrating on the supply side. In the first period, when labor was scarce, the measures pursued the aim of raising the quantity and improving the quality of the labor force. Subsequently, the focus changed to a reduction of unemployment, especially when unemployment rose dramatically after the unification of Germany. Costs for labor market policy rose to roughly 60 billions Euros in the 90s, about two thirds for benefit payments and one third for active measures (Franz 2006, 434). These expenses intended to ease the impact of unemployment, but an increasing number of economists argued that they were – and still are – a cause of the employment problems as well. A theoretical foundation for this argument was presented among others by Calmfors (1994). An evaluation of labor market policy rapidly became a top priority. The ideal evaluation process should proceed in three steps. Firstly, the indicators for program success must be defined. Secondly, the impact of the program on participating persons must be analyzed and cost efficiency must be checked. Thirdly, cross effects on non-participants or general equilibrium effects have to be investigated.

The first step does not cause severe problems. Most studies define the probability of reemployment as indicator of success and obtain appropriate information from the Employment Agency or from surveys like GSOEP. The main problem is to check at the second step whether reemployment of a specific person is caused by the program or the result of other factors. One should know what would have happened with that person without program participation, which is a contra-factual situation. To overcome this problem an appropriate control group has to be defined and established with the objective of comparing the treatment and the control group. Basically, a random assignment of persons to the two groups is feasible. In Germany, however, such social experiments are avoided due to moral objections. Alternatively, one can control for possible selection bias by modern econometric techniques like Heckman correction, matching methods or difference-in difference estimators. The third step transcends the micro level and analyses the impact on non-participants like other employees, firms, or even the state. Substitution and crowding out effects as well as windfall gains and deadweight losses may occur. To analyze these indirect effects one can use international or interregional comparative studies or macroeconometric models.

The data requirements for an ideal evaluation process are very comprehensive. In Germany appropriate data sets have not been available for a long period of time. To date, however, based one new sources of information, studies relating to the main policy instruments show interesting results and will be presented briefly.

Regarding benefit payments of the unemployment insurance system the studies show that a high replacement rate and a long benefit duration increase the duration of unemployment spells and thereby the unemployment rates. This is demonstrated in international cross section regressions, for instance by Nickell (1997), who analyzed institutional determinants of average unemployment rates of 20 OECD countries including Germany for the two periods 1983 – 88 and 1989 – 94. And roughly the same conclusions result from microeconometric investigations estimating hazard-rate models (e.g. Hujer/Schneider 1998). Interestingly, government and parliament have already reacted to that finding and shortened the benefit duration for older workers and the replacement rate for long-term unemployed in 2005.

Employment protection is rather strict in Germany especially protection against dismissals. This may stabilize employment and induce investment in firm-specific human capital. However, critics argue that the regulations have no observable effect on the magnitude of dismissals but raise the costs, and, therefore, decrease the recruitment of personnel. This is confirmed by Flaig/Rottmann (2004). According to their analysis the employment threshold, i.e. the minimum rate of growth of GNP necessary to have rising employment, would have been halved in Germany if the protection would be reduced along the lines of UK. Unfortunately, not all studies are so unequivocal. Bauer et al. (2004) analyzed recruitments and dismissals of firms with less than 30 employees in the 90s and found stable behavior even when thresholds for application of dismissal protection changed. However, many economists are convinced that a transition to more flexible rules would stimulate employment.

Concerning active labor market policy the cited international cross section analysis of Nickell resulted

in a positive appraisal, since higher expenses for active measures are correlated with lower unemployment rates. However, microeconometric investigations are less clear-cut (Caliendo/Steiner 2005). Usually, they concentrate on a specific active measure, like job-creation schemes (ABM, SAM), further training and retraining, and wage subsidies. Job creation schemes create a locking-in effect in the short run and decrease the employment probability, at first. Since human capital of participants is hardly improved positive treatment effects are weak and the probabilities of most participants to find a job are reduced. However, there are some target groups for whom job creation measures appear to be beneficial (Hujer/Thomsen 2006). In the case of training measures most studies show significant locking-in effects, too. In the longer run, the employment perspective improves (e.g. Lechner/Miquel/Wunsch 2004), especially if participants live in West Germany and attend specific courses with longer duration. Evaluation of wage subsidies must focus on the individual and the firm. Since program participation is in this case synonymous with employment the employment effect is positive. However, three questions arise. Firstly, is employment caused by the subsidy or would the person be employed anyway? Secondly, what happens with the employees when payment of subsidies peters out. Thirdly, does subsidized employment substitute non-subsidized workers? There are only few evaluation studies of wage subsidies, since individual and firm data must be combined to answer the questions. The results show the existence of substitution effects and windfall gains (Hujer/Caliendo/Radic 2001). Over all, the evaluation studies do not demonstrate that the money spent for active labor market policy generally improves the labor market situation.

Unification and unemployment in East Germany

In October 1990, the two parts of Germany (FRG and GDR), separated after World War II, were unified. Unification meant that East Germany became a part of the Federal Republic of Germany and the western legal system, the social security system and all regulations of goods and factor markets were applied in the new federal states within a short period of time. Additionally, the "Mark" of the GDR was changed into the "Deutsche Mark" with a conversion rate – in most fields – of 1:1. The unification was an unexpected political event and many people supposed that it would become an economic miracle, too, producing flourishing landscapes in the East within a few years (prediction of chancellor Kohl). However, experience has shown that economic restructuring of the East German Economy is more difficult than initially thought .

Concerning the labor market two developments have been characteristic for the restructuring process (Franz 2006, 396 et sqq.). The economically active population and the number of employees decreased rapidly in the first three years with a parallel upswing of unemployment. Within the same time span nominal gross wages, negotiated by unions and employers' associations quickly established in the eastern part of the country, roughly doubled. Labor productivity increased, too, but more slowly, and, therefore, labor costs escalated. In 1992 the wage level in East Germany was roughly the same as in US, but the productivity was comparable to Mexico (Siebert 1993). In the next years theses tendencies continued, but at clearly reduced rates. The process of convergence stopped at the end of the 90s and since then the east-west differences are more or less stable. To date, the unemployment rate is about 18 percent, but the rate of under-utilization of the labor force is still higher, since open unemployment is reduced by measures of early retirement and active labor market policy. East Germans earn near 70 percent of the hourly wages paid to their western colleagues and the eastern productivity level is about 60 percent of the western level (SOESTRA 2005).

The specific East German labor market problems result from different causes. The main cause was the state of the socialistic economy. The organization of production was inefficient, the technical equipment and the products outdated. Therefore, most firms were not competitive after unification. Above all, this was aggravated by the currency reform. The conversion rate of 1:1 from Mark to Deutsche Mark was equivalent to a revaluation rate around 350 percent. With a rate of 2:1, for instance, the wage level would have been lower and the price-competitiveness higher at the beginning. While economists preferred the lower conversion rate, politicians argued that the East German people would only accept a rate of 1:1, and, therefore, it was introduced. The union wage policy in the first years after unification was a further cause of high unemployment. In this period the organizations negotiating the wages had to be established and the representatives of unions as well as of employers' associations were mostly West Germans. Neither side was really interested in low wages. The employers' representatives feared competition from East German firms and the unionists were worried about mass

migration from East to West. In the meantime most political and economic actors have learned from their early mistakes allowing more flexibility, for instance by incorporating "opening clauses" in collective agreements. However, it will take many additional years and a prudent policy to improve the labor market situation in East Germany.

Personnel economics

The analysis of internal labor markets of firms and their impact on wages and employment has a long tradition in labor economics. Since the book by Doeringer/Piore (1971) the most important element of internal labor markets is that wage-setting, employment and job-allocation decisions inside the firm are buffered from the external market. The wage and employment policy of the firm gains in significance as it can mitigate the competitive pressure to adjust wages and employment. The wide spectrum of wage and employment strategies of firms is recently analyzed with success by the new discipline "Personnel Economics" (Lazear 1998, 1999). Lazear (1998, iii) postulates that in the field of human resource management "an institutional, and somewhat chatty literature is being replaced by more analytic work, which is based on empirical investigation and rigorous theory". Basic ingredients of the new approach are asymmetric information for management and employees, heterogeneous workers, relation-specific investments which can enhance productivity and the assumption that both sides of the labor contract calculate rationally, act in their own best interests and tend to use the information to foster their own benefits.

The new approach to personnel economics spread rapidly in Germany. In 1998 the first of annual conferences of the Koeln-Bonner Colloquium of Personnel Economics was convened with the intention to dissipate and promote this new approach. The contributions included papers on incentive compatible remuneration, the dynamics of employment and wages in firms with highly qualified employees, and internal promotion versus external recruitment of managers (Backes-Gellner/Kraekel/Geil 1998). The most recent Colloquium of Personnel Economics took place in Zuerich in 2006 and addressed among others the subsequent issues: principal-agent theory, analysis of the effects of incentive systems, and signals in employment contracts. Since 2002 the agenda and papers of the conferences are documented on the web side of the Koeln-Bonner Colloquia of Personnel Economics. In addition, the German Association of Business Administration (GEABA), founded in 2000, pursues the aim to promote the development and application to business studies of instruments and methods elaborated in the microeconomic theory of information economics, game theory, empirical economic research, and experimental studies. Research results are presented on annual conferences since 2000 and in a discussion paper series.

4.4. Textbooks

Four important textbooks of labor economics are available for students and instructors (Goerke/Holler 1997, Sesselmeier/Blauermel 1997, Wagner/Jahn 2004, Franz 2006). Goerke/Holler concentrate on selected models of the labor market, and analyze extensively capitalist vs. labor-managed firms, trade unions and efficiency wage models. The spectrum of the textbook by Sesselmeier/Blauermel is much wider. In addition to the standard neoclassical model of the labor market the authors present human capital, search and union theories as well as contract, efficiency wage and insider-outsider theories. Noteworthy is their analysis of internal labor markets of firms, including transactions costs, and a chapter devoted to segmentation theories, which thrived in the 1970s and 1980s and regrettably is no longer incorporated in textbooks. The textbook by Wagner/Jahn exposes labor market theories on a demanding analytical and theoretical level. It begins with a thorough analysis of neoclassical labor market theory, discusses issues of matching, efficiency wages and incomplete labor contract. A novel and significant feature is an extended and comprehensive analysis of labor market institutions. The reader is exposed to a profound investigation of the labor market effect of unemployment insurance, welfare and dismissal protection. The textbook "Arbeitsmarktoekonomik" by Franz was first published in 1991, the sixth edition is available since 2006. It is the textbook most widely used by undergraduate and graduate students. This success is in part due to the revisions and up-dates in relatively short intervals that include the theoretical and empirical sections of the book. The basic chapters comprise labor supply and demand, coordination of supply and demand via matching and mobility, labor market institutions, namely unions, works councils, codetermination, employers' associations and manpower administration. An extensive chapter is devoted to issues of wage-setting, wage rigidities and wage structure. The textbook concludes with a long section on unemployment in West and East Germany and measures to combat unemployment. The

distinguishing feature of this text is that it exposes theoretical issues in a demanding, but accessible way and demonstrates how theoretical results are tested empirically. This combination of theory, econometric methods, empirical results and policy-oriented discussion provides a profound and stimulating introduction to the most pertinent issues of labor economics.

Due to the wide and nuanced variety of textbooks labor economics can be conveyed to students on an outstanding level in Germany. Finally, it has to be emphasized that the specificity of German labor market institutions has been incorporated in the analysis of the basic issues of the theoretical models which are common to the international scientific community and additionally many empirical investigations referenced in some, not in all textbooks take the institutional specificity into consideration. This development helps to enhance the value of labor economics for economic and labor market policy.

5. Concluding remarks

This article has depicted the long and winding path that lead to the establishment of labor economics as a specific discipline of economics in Germany. To date, labor economics is well entrenched in research institutions and at the university level of this country. This entrenchment was at first facilitated and fostered by the model of Anglo-American research. In a second phase evidence was mounting that this model which assumes very, even perfectly competitive labor markets is hardly appropriate for the German and most European settings. Organizations like unions and employers' associations impede the flexibility of wages, employment protection is stringent so that labor markets with low unemployment are the exception rather than the rule. These and other specificities of European and German labor markets have to be taken into account at the theoretical and empirical level. We have attempted to show how these specificities are incorporated in recent investigations. Labor economics has always been and continues to be a theoretical and empirical branch of economics. The rapid development of a large variety of data sources has certainly contributed to the rise of labor economics in Germany.

LITERATURE

Addison, J., Schnabel, C. and Wagner, J. (2006), The (Parlous) State of German Unions, IZA Discussion Paper No. 2000.

Addison, J., and Teixeira, P. (2006), The Effect of Works Councils on Employment Change, Industrial Relations 45, 1-25.

Akerlof, G.A. and Yellen, J. (eds.) (1986), Efficiency Wage Models of the Labor Market, Cambridge University Press, Cambridge.

Backes-Gellner, U., Kraekel, M. and Geil, L. (1998), Quantitative und qualitative Personalanpassungsstrategien – personaloekonomische Analysen ihrer institutionellen Bedingtheit und ihrer Konsequenzen, Rainer Hampp, Muenchen und Mehring.

Bauer, T. and Bender, S. (2004), Technological Change, Organizational Change, and Job Turnover, Labour Economics 11, 265-291.

Bauer, T., Bender, S. and Bonin, H. (2004), Dismissal Protection and Worker Flows in Small Establishments, IZA Discussion Paper No. 1105.

Bellmann, L. (1997), The IAB Establishment Panel with an Exemplary Analysis of Employment Expectations, IAB Labour Market Research Topics, No. 20., 1-14.

Bombach, G. (1964), Long-Term Requirements for Qualified Manpower in Relation to Economic Growth, OECD-Directorate for Scientific Affairs, Economic Aspects of Higher Education, Paris.

Burkhauser, R., Kreyenfeld, M. and Wagner, G. (1997), The German-Socio-Economic Panel: A Representative Sample of Reunited Germany and its Parts, Vierteljahrshefte zur Wirtschaftsforschung 66, 7-16.

Caliendo, M. and Steiner, V. (2005), Aktive Arbeitsmarktpolitik in Deutschland: Bestandsaufnahme und Bewertung der mikrooekonomischen Evaluationsergebnisse, Zeitschrift fuer Arbeitsmarktforschung 38, 396-418.

Calmfors, L. (1994), Active Labour Market Policy and Unemployment – A Framework for the Analysis of Crucial Design Features, OECD Labour Market and Social Policy Occasional Paper No. 15.

Doeringer, P. and Piore, M. (1971), Internal Labor Markets and Manpower Analysis, Heath, Lexington.

Falk, M. and Koebel, B. (2001), A Dynamic Heterogeneous Labour Demand Model for German Manufacturing, Applied Economics 33, 339-348.

Fitzenberger, B., Kohn, K. and Wang, Q. (2006), The Erosion of Union Membership in Germany: Determinants, Densities, Decompositions, IZA Discussion Paper No. 2193.

Flaig, G. and Rottmann, H. (2004) Erhoeht der Kuendigungsschutz die Beschaeftigungsschwelle? ifo-Schnelldienst Nr. 17, 13-17.

Franz, W. (2005), Die deutsche Mitbestimmung auf dem Prüfstand. Bilanz und Vorschlaege fuer eine Neuausrichtung, Zeitschrift fuer Arbeitsmarktforschung 38, 268-283.

Franz, W. (2006), Arbeitsmarktoekonomik, 6th ed., Springer, Berlin et al.

Franz, W. and Pfeiffer, F. (2003), Zur oekonomischen Rationalitaet von Lohnrigiditaeten aus der Sicht von Unternehmen, Jahrbuecher fuer Nationaloekonomie und Statistik 223, 23-57.

Gerlach, K. and Huebler, O. (1985), Lohnstruktur, Arbeitsmarktprozesse und Leistungsintensitaet in Effizienzlohnmodellen, Buttler, F., Kuehl, J. and Rahmann, B. (Eds.), Staat und Beschaeftigung, Beiträge zur Arbeitsmarkt- und Berufsforschung 19, Nuernberg, 249-290.

Gerlach, K., Huebler, O. and Meyer, W. (2003), The Hannover Firm Panel (HFP), Schmollers Jahrbuch. Zeitschrift fuer Wirtschafts- und Sozialwissenschaften 123, 463-470.

Goerke, L. and Holler, M.J. (1997), Arbeitsmarktmodelle, Springer, Berlin et al

Hagen, T. (2003), Does fixed-term contract employment raise firms' adjustment speed? Evidence from an establishment panel for West Germany, Jahrbuecher fuer Nationaloekonomie und Statistik 223, 403-421.

Hagen, T. (2003), Do fixed-Term Contracts Increase the Long-Term Employment Opportunities of the Unemployed? ZEW Discussion Paper No. 03-49.

Hamermesh, D. (1993), Labor Demand, Princeton University Press, Princeton, N.J.

Heimann, E. (1929), Soziale Theorie des Kapitalismus, Mohr/Siebeck, Tuebingen.

Huebler, O. (2002), Unpaid Overtime, the Use of Personal Computers and Wage Differentials, Jahrbuch für Wirtschaftswissenschaften 53, 88-106.

Huebler, O. (2005), Sind betriebliche Buendnisse fuer Arbeit erfolgreich?, Jahrbuecher fuer Nationaloekonomie und Statistik 225, 630-652.

Huebler, O. and Jirjahn, U. (2003), Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages, Scottish Journal of Political Economy 50, 471-491.

Hujer, R. and Schneider, H. (1998), Initial- und Verlaufseffekte der 'Replacement-Ratio' auf die individuelle Arbeitslosigkeitsdauer. In: H.P. Galler (ed.), Empirische Forschung und wirtschaftspolitische Beratung, Campus Verlag, Frankfurt, 184-199.

Hujer, R., Rendtel, U. and Wagner, G. (eds.) (1997), Wirtschafts- und sozialwissenschaftliche Panelstudien: Datenstrukturen und Analyseverfahren (Sonderhefte zum Allgemeinen Statistischen Archiv; Heft 30), Göttingen.

Hujer, R., Caliendo, M. and Radic, D. (2001), Estimating the Effects of Wage Subsidies on the Labour Demand in West Germany Using the IAB Establishment Panel, ifo-Studien 47, 163-199.

Hujer, R. and Thomsen, S. (2006), Wirksamkeit von A rbeitsbeschaffungsmaßnahmen in Deutschland: Empirische Befunde mikrooekonometrischer Analysen, ZEW Discussion Paper No, 06-054.

Jirjahn, U. (2005), Oekonomische Wirkungen des novellierten Betriebsverfassungsgesetzes – Was koennen wir vor dem Hintergrund zunehmender Globalisierung und veraenderter arbeitsorganisatorischer Bedingungen erwarten?, Zeitschrift fuer Arbeitsmarktforschung 38, 241-267.

Kaufman, B.E. (2004), The global evolution of industrial relations: Events, ideas and the IIRA, Geneva, International Labour Office.

Koelling, A. (1998), Anpassungen auf dem Arbeitsmarkt. Eine Analyse der dynamischen Arbeitsnachfrage in der Bundesrepublik Deutschland. Beitraege zur Arbeitsmarkt- und Berufsforschung Nr. 217, Nuernberg.

Koelling, A. (2000), The IAB-Establishment Panel, Schmollers Jahrbuch. Zeitschrift fuer Wirtschafts- und Sozialwissenschaften 120, 291-300.

Kohaut, S. and Schnabel, C. (2003), Zur Erosion des Flaechentarifvertrags: Ausmass, Einflussfaktoren und Gegenmaßnahmen, Industrielle Beziehungen 10, 193-219.

König, H. and Pohlmeier, W. (1988), Employment, Labour Utilization and Procyclical Labour Productivity, Kyklos 41, 551-572.

Kohlmann, A. (2005), The Research Data Centre of the Federal Employment Service in the Institute for Employment Research, Schmollers Jahrbuch. Zeitschrift fuer Wirtschafts- und Sozialwissenschaften 125, 437-447.

Kommission zur Verbesserung der informationellen Infrastruktur zwischen Wissenschaft und Statistik (eds.) (2001), Wege zu einer besseren informationellen Infrastruktur, Nomos-Verlag, Baden-Baden.

Lazear, E. (1981), Agency, Earnings Profiles, Productivity, and Hours Restrictions, American Economic Review 71, 606-620.

Lazear, E. (1998), Personnel Economics for Managers, John Wiley, New York.

Lazear, E. (1999), Personnel Economics: Past Lessons and Future Directions, Journal of Labor Economics 17, 199-236.

Lazear, E. and Rosen, S. (1981), Rank-Order Tournaments as Optimum Labor Contracts, Journal of Political Economy 89, 841-864.

Lechner, M., Miquel, R. and C. Wunsch (2004), Long-Run Effects of Public Sector Sponsored Training in West Germany, IZA Discussion Paper1443.

Liefmann-Keil, E. (1961), Oekonomische Theorie der Sozialpolitik, Springer, Berlin.

Lindbeck, A. and Snower, D. (1988), Cooperation, Harassment, and Involuntary Unemployment: An Insider-Outsider Approach, American Economic Review 78, 167-188.

Lutz, B. (1979), Qualifikation und Arbeitsmarktsegme ntation. In: Brinkmann, C. et al. (eds.), Arbeitsmarktsegmentation – Theorie und Empirie im Lichte der empirischen Befunde. Beitraege zur Arbeitsmarkt- und Berufsforschung 33, Nuernberg, 45-73.

Lutz, B. and Sengenberger, W. (1974), Arbeitsmarktstrukturen und oeffentliche Arbeitsmarktpolitik, Verlag Otto Schwartz, Goettingen.

Manning, A. (2003), Monopsony in Motion. Imperfect Competition in Labor Markets, Princeton University Press, Princeton and Oxford.

McNulty, P.J. (1980), The Origin and Development of Labor Economics, MIT Press, Cambridge, Mass./London.

Mertens, D. (1968), Rahmenvorstellungen fuer die Aufgaben des Instituts fuer Arbeitsmarkt- und Berufsforschung, Mitteilungen 1 (Institut fuer Arbeitsmarkt- und Berufsforschung), 5-17.

Nickell, S. (1997), Unemployment and Labor Market Rigidities: Europe versus North America, Journal of Economic Perspectives 11, 55-74.

OECD-Study Group in the Economics of Education (Ed., 1966), Financing Education for Economic Growth, Paris.

Pfeiffer, F. (2003), Lohnrigiditaeten im gemischten Lohnbildungssystem, ZEW Wirtschaftsanalysen 65, Nomos-Verlag, Baden-Baden.

Preller, L. (1962), Sozialpolitik, Mohr/Siebeck und Polygraphischer Verlag, Tuebingen, Berlin.

Reyher, L. (1976), Luecken der Arbeitsmarktforschung, Kommission fuer wirtschaftlichen und sozialen Wandel 136, Verlag Otto Schwartz, Goettingen.

Schnabel, C. (2005), Gewerkschaften und Arbeitgeberverbaende: Organisationsgrade, Tarifbindung und Einfluesse auf Loehne und Beschaeftigung, Zeitschrift fuer Arbeitsmarktforschung 38, 181-196.

Sengenberger, W. (1974, ed.), Der gespaltene Arbeitsmarkt, Campus, Frankfurt/New York.

Sengenberger, W. (1979), Zur Dynamik der Arbeitsmarktsegmentation – mit Thesen zur Struktur und Entwicklung des Arbeitsmarktes in der Bundesrepublik Deutschland. In: Brinkmann, C. et al. (eds.), Arbeitsmarktsegmentation – Theorie und Empirie im Lichte der empirischen Befunde. Beitraege zur Arbeitsmarkt- und Berufsforschung 33, Nuernberg, 1-44.

Sesselmeier, W. and Blauermel, G. (1997), Arbeitsmarkttheorien – Ein Ueberblick, 2nd ed., Physica, Heidelberg.

Shapiro, C. and Stiglitz, J.E. (1984), Equilibrium Unemployment as a Worker Discipline Device, American Economic Review 74, 433-444.

Siebert, H. (1993), Das Wagnis der Einheit. Eine wirtschaftspolitische Therapie, Bertelsmann, Stuttgart.

SOESTRA (eds.)(2005), IAB-Betriebspanel Ost, Ergebnisse der neunten Welle 2004, Berlin.

Spence, M. (1973), Job Market Signalling, Quarterly Journal of Economics 87, 355-374.

Steiner, V. and R.-H. Peters (2000), Employment Effects of Work Sharing - An Econometric Analysis for West Germany, ZEW Discussion Paper No. 00-20.

Stephan, G. and Gerlach, K. (2005), Wage Settlements and Wage Setting: Results from a Multi-Level Model, Applied Economics 37, 2297-2306.

Stiglitz, J.E. (1987), The Causes and Consequences of the Dependence of Quality on Prices, Journal of Economic Literature 25, 1-48.

Wagner, T. and Jahn, E. (2004), Neue Arbeitsmarkttheorien, 2nd ed., Lucius & Lucius, Stuttgart.

Appendix: **Homepages**

Centre for European Economic Research (ZEW): www.zew.de

Employment Agency, Labor Market Statistic: http://www.pub.arbeitsamt.de/hst/services/statistik/000000/html/start/index.shtml

Federal Statistical Office: www.destatis.de

Federal Statistical Office, European Data Service: http://www.eds-destatis.de/

Forschungsdatenzentrum der BA im IAB: http://fdz.iab.de

Forschungsdatenzentren der Statistischen Ämter des Bundes und der Länder: www.forschungsdatenzentrum.de

Forschungsportal der Deutschen Rentenversicherung: http://forschung.deutsche-rentenversicherung.de/ForschPortalWeb/

German Association of Business Administration (GEABA): www.geaba.de

German Institute for Economic Research (DIW): www.diw.de

German Socio-Economic Panel: www.diw.de/english/sop/index.html

German Social Science Infrastructure Services: www.gesis.org

Koeln-Bonner Colloquium of Personnel Economics: www.isu.ch/emap/research/workshop.html

IAB Betriebspanel: http://betriebspanel.iab.de

ifo-Institute: www.ifo.de

Institut der deutschen Wirtschaft Koeln (IW): http://www.iwkoeln.de/

Institute for Labor Market and Occupational Research (IAB): www.iab.de

Institute for the Study of Labor: www.iza.org

Social Science Research Center Berlin (WZB): www.wz-berlin.de

Society for Social Policy: www.socialpolitik.org

Wirtschafts- und Sozialwissenschaftliches Institut (WSI) der Hans-Böckler-Stiftung: http://www.boeckler.de/cps/rde/xchg/SID-3D0AB75D-0231961B/hbs/hs.xsl/8.html