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The Recruitment Paradox: Network Recruitment, Structural Position, and East German Market Transition

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Abstract

Economic institutions structure links between labor-market informality and social stratification. The present study explores how periods of institutional change and post-socialist market transition alter network-based job finding, in particular informal recruitment. We highlight how market transitions affect both the prevalence and distribution of network-based recruitment channels: open-market environments reduce informal recruitment's prevalence but increase its association with high wages. We test these propositions using the case of the former East Germany's market transition and a comparison with West Germany's more stable institutional environment. Following transition, workers in lower tiers increasingly turned toward formal intermediaries, active employee search, and socially "disembedded" matches. Meanwhile, employers actively recruited workers into higher-wage positions. Implications for market transition theory and post-socialist stratification are discussed.

Personal connections matter for individuals seeking jobs (Granovetter 1995[1974]; Royster 2003), as well as for employers seeking to fill vacant positions (Fernandez, Castilla, and Moore 2000; Marsden 2001). Social-network processes are fundamental to understanding the extent to which valued economic resources (i.e., jobs) are allocated either through sponsorship or through formal competition. Labor-market informality represents a crucial mechanism in the reproduction of inequality by generating differential access to opportunities (Lin 1999). Social networks, and their role in labor markets, remain central to sociological analyses of economic activity. However, labor-market action is itself embedded in broader economic institutions that variously

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include markets, central planning, or post-socialist transitional contexts. This study investigates how market transitions affect the role of personal connections in the labor market. It explores how the former East Germany's reunification with West Germany altered the prevalence and distribution of labor-market informality. The East German case is an excellent context to explore labor-market change because it offers a natural comparison with West Germany.

The extent to which market transitions affect informal job finding remains unclear. Market-transition theory, a dominant approach to studying post-socialist contexts, implies that the adoption of market institutions reduces the dominance of patronage in economic exchange (Nee 1989; Nee and Matthews 1996). As markets come to coordinate exchange, particularistic criteria become less salient and transactions increasingly resemble the "disembedded" action of idealized markets. Yet, recent studies on post-socialist labor markets have found the opposite trend: relative to formal job matches (obtained through advertising and employment agencies, for example), patronage tends to persist or increase in the labor market during the transition from socialism to market capitalism (Yakubovich and Kozina 2000). Theory also suggests that these kinds of transformations introduce greater meritocracy and reward productivity-enhancing skills (human capital) to a greater extent than other stratification mechanisms (Brainerd 1998). Support for this proposition is equally suspect: while increasing wage returns to education have been observed in the wake of some market transitions (Nee 1996), others have found increasing wage returns to people who use personal contacts and patronage resources when finding jobs (Bian and Logan 1996; Angelusz and Tardos 2001; Bian, Shu, and Logan 2001; Gerber and Mayorova 2010).

Our primary contribution is to develop a deeper understanding of the interplay between institutional dynamics and network-based job matches. While previous research analyzes cross-national comparisons of social-capital use (McDonald, Benton, and Warner 2012; Son 2013), few studies examine how these patterns change over time and even fewer assess variability across periods of institutional change. Our focal research questions concern (1) how market transitions affect the prevalence of informal job finding; as well as (2) how transitions affect informal job finding in different positions across the wage distribution. We draw on the literatures on market transitions and the role of networks in job searching.

We propose a framework that enhances understanding of how economic transitions alter network-based hiring by extending the conventional formal versus informal dichotomy to distinguish how job matches are activated in post-socialist labor markets: by employee search or by employer recruitment. Specifically, we highlight a form of network-based hiring most affected by transition: *informal recruitment*. Drawing on previous research, we clarify how informal recruitment links the supply and demand sides of the labor market under conditions of institutional change. On the supply side, these matches occur without an explicit job search on the part of the worker (McDonald 2010). On the demand side, they are facilitated through informal networks on the part of employers and their existing employees (Granovetter 1995[1974]; Fernandez and

Castilla 2001). Informal recruitment is a network-based job-matching channel linking well-connected workers to employers who selectively recruit through informal channels. We contrast informal recruitment with two other types of job matches: (1) *informal job search* strategies, where workers actively lean on their contacts for job finding assistance; and (2) *formal searches*, where job seekers and employers rely on formal intermediaries and information sources or direct application. While informal recruitment relies on employer activation, these latter types of job matches depend on employee search.

Just as job matches are embedded in interpersonal connections, they are also embedded within broader economic institutions that provide the opportunities and constraints governing economic action (Chua 2011; McDonald, Benton, and Warner 2012; Son 2013). Post-socialist market transitions affect informal recruitment in two ways: (1) its prevalence over time; and (2) its distribution across wage groups. First, market transitions introduce an unstable institutional environment, increased competition, uncertainty regarding worker fit, and a changing occupational structure (Gerber and Mayrova 2010). In the short term, uncertainty encourages widespread informality, while formal intermediaries remain underdeveloped. In successful transitions, as in Germany, institutions eventually stabilize and formal channels become well established, allowing informal recruitment to recede. Second, dismantling central planning opens opportunities for employers to reserve top positions for personal contacts, but it also exposes them to competitive pressures in acquiring the best workers. In this context, employers have the opportunity and incentive to turn toward recruitment strategies to fill the most competitive positions. As a result, a “recruitment paradox” emerges during market transition: even as informal recruitment declines overall, it remains relatively important for filling highly valued occupations.

Drawing on survey data from the German Socio-Economic Panel (GSOEP), we assess how the transition from socialist to capitalist institutions in East Germany (formerly the German Democratic Republic, GDR) during the 1990s altered the mix of informal job matching across the wage distribution. Prior to reunification, East Germany featured a constitutional right to work and workers could not easily be dismissed once they were hired. Large enterprises dominated the economy and were also the primary venue for distributing a variety of welfare and social entitlements, including housing, medical services, and retirement support (Lange and Pugh 1998). Reunification resulted in the adoption of the German Economic, Monetary, and Social Union (GEMSU), which transferred the West German corporatist social-welfare institutions—including the national system of social insurance, unions, and employer associations—to the former GDR (Goedicke 2006). Authorities also extended West Germany’s financial institutions to East Germany through a one-to-one currency exchange and the managed privatization of state-owned enterprises.

GEMSU was distinct from other market transitions in Eastern Europe in that (1) the restructuring was externally financed by West German fiscal transfers; (2) it installed existing economic institutions (rather than developing new institutions); and (3) the reforms were rapidly instituted through a “shock therapy” approach (Kaser 1998).

These features helped avoid the “institutional vacuum” that developed in other transitions and also helped to establish a strong bureaucratic state that eased market implementation (Hamm, King, and Stuckler 2012). The East German case allows us to observe changes in labor-market behaviors across periods of rapid transformation and into the stabilization of the institutional environment. Furthermore, we compare those changes to West Germany, which maintained a stable institutional structure throughout the transitional period. Next, we outline our theoretical perspective by exploring how economic institutions affect job matches, demand-side informality, and how job-match patterns are positioned in the wage distribution.

Economic Institutions and Network-Based Job Matches

Market-transition theory dominates the sociological literature on post-socialist stratification but remains contested (Keister and Borelli 2012). It suggests that transitions from socialist to capitalist economies alter the stratification regime to favor people with market-based resources as opposed to resources in the state redistributive apparatus (Nee 1989, 1996; Nee and Cao 1999). Using the case of the Chinese market transition, Nee (1989) demonstrated how the emergence of markets set the context for economic actors to earn better income from market-valued resources such as education and entrepreneurship, while political patronage lost its income advantages. Increased income returns to human capital occurred in other transition contexts as well, including Hungary (Rona-Tas 1994), Poland (Domanski and Heyns 1995), and Russia (Brainerd 1998).

Market-transition theory implies that network-based job matches will decline as labor markets develop to coordinate search and match. As competitive markets replace the patronage logic of the command economy, labor-market matches should come to resemble the “disembedded” transactions of idealized markets. Transitions are presumed to reduce actors’ reliance on the traditional patronage systems that reward social resources, such as strong familial connections and political connections to the old communist bureaucracy, and replace these with market relationships. In this frame, markets generate more opportunities for open competition, and formal hiring through advertisements, private employment agencies, and other formal labor-market intermediaries. Thus, markets are thought to reduce the use of particularistic criteria.

Despite these predictions, findings from longitudinal studies of economic transformation suggest that informal connections continue to play a significant role in the labor market even as socialist economic institutions recede (Gerber and Mayorova 2010; Rona-Tas 1994; Yakubovich 2006). For instance, several studies of the Chinese transition find persistent or increased use of social-capital resources for job finding in both the state sector (Li and Walder 2001; Bian, Shu, Logan 2001) and more broadly (Bian and Huang 2009; Zhao 2013).

Scholars working in the market-transition framework do not all agree on what accounts for these divergent outcomes. Roughly, scholars draw on either new institutionalism or corporatism to explore the changing context in transition economies (Keister and Borelli 2012). From the new institutionalist perspective, scholars note that market institutions are

often not fully formed or may emerge only unevenly. Formal and informal institutions are laws and rules, along with enforcement mechanisms, that structure exchange relationships, reduce transaction costs, and introduce certainty to economic action (Ingram and Clay 2000; North 1990). When these institutions are not fully formed, informal processes flourish. Thus, while market-based transactions may feature prominently in well-established and stable institutional environments, transition contexts typically feature extreme uncertainty and high transaction costs that encourage informality.¹

Corporatists working within the market-transition framework have pointed to a variety of alternative features that can mediate the effects of markets. Transition pathways vary both within and across countries and are contingent on continuities and discontinuities in political power, state intervention, organizational forms, and historical path dependencies. These determine the kinds of market environments that emerge and can alter their implications for stratification and mobility. For instance, Walder (1996) argues that variable political institutions “define markets” and manage their impacts. Extending this insight suggests that changing labor markets are contingent not just on market institutions themselves but on other institutions that interact with markets, particularly the state. Corporatists emphasize the factors that complicate transition contexts and might make the formation of Western-style markets less probable under different conditions.

Despite their distinctive emphases, each of these approaches helps advance our understanding of how informal labor-market relations are transformed during market transitions. The institutionalist approach suggests that labor-market actors turn toward social networks during times of institutional uncertainty. The corporatist approach reveals how the uneven development of legitimate institutional forms is linked to political power and implementation. These points are particularly relevant for the East German case, where external administration (from West Germany) and state capacity offered a unique benefit. By contrast, Chinese reforms (and others) were internally administered and allowed for political cadres to retain sizable power through their social-capital resources (Li and Walder 2001). Consequently, continuity in political power may account for divergent outcomes across different transition contexts.

To these insights, we add another: economic transitions fundamentally transform job-allocation processes in ways that can be understood only by distinguishing between supply-side and demand-side informality. In particular, the institutional uncertainty and increased competitiveness that accompany these transitions have an especially strong impact on how employers use their network connections to recruit workers.

From Supply-Side to Demand-Side Informality

The distinction between supply- and demand-side informality pivots on identifying who activates job matches: workers or employers. Most of the research on informal job finding approaches the issue from the supply side, workers who actively lean on their network contacts for information and referrals (see, e.g., Lin 2001; Mouw 2003; for counterexamples, see Fernandez and Fernandez-Mateo 2006; Marsden 1994; Yakubovich 2006). In part, this emphasis on supply-side job finding has been due to the relative

difficulty in obtaining representative data on employer hiring practices. To overcome this problem, some have used individual-level survey data on the activity/passivity of job searches in order to infer employer recruitment. For example, research on the “non-search” phenomenon in the United States shows that between 25 and 35 percent of currently employed workers found their jobs without engaging in a job search (Campbell and Rosenfeld 1985; Granovetter 1995 [1974]; McDonald and Elder 2006). Research also indicates that non-searching is more prevalent in Germany than in the United States, and these differences are largely consistent with predictions based on the unique labor-market institutions across these contexts (McDonald, Benton, and Warner 2012). Non-searching has long been viewed as a type of network-based job finding because “jobs that ‘fall into your lap’ are unlikely to do so without some personal intermediary” (Granovetter 1995[1974], 145). Moreover, survey data show that the individuals who are most likely to receive unsolicited job leads have the most expansive networks and highest-status job contacts (Lin and Ao 2008). Consequently, non-searching is a useful (if imperfect) indicator of demand-side informal recruitment practices, whereby hiring managers and employees use their social connections to recruit workers to fill job openings.

There has been some debate about the extent to which non-searchers were really “not looking” for work as opposed to engaging in some form of passive job search, but research reveals that about 83 percent of non-searchers truly had not engaged in any job-search activities and are almost always connected to new jobs through the receipt of unsolicited job leads from friends, relatives, and acquaintances (Granovetter 1995[1974]; Hanson and Pratt 1991; McDonald 2010). Additionally, there are instances where recruitment of workers can be institutionalized in seemingly formal ways, as with the use of executive search consultants (“headhunters”) or with institutional linkages between schools and employers (Rosenbaum and Kariya 1989). However, in-depth investigations of executive search consultants reveal practices that are highly dependent on recommendations and personal networks (Finlay and Coverdill 2007). Similarly, school placements are a seemingly institutionalized job-match channel, but these also often involve network-based channels on the part of teachers and instructors (Royster 2003). Consequently, these practices, along with other institutionalized recruitment procedures, maintain a veneer of formality that masks a more informal foundation.

Differentiating between supply- and demand-side activation is crucial for a thorough understanding of how institutional changes alter the contours of post-socialist labor markets. To date, relatively little is known about how informal recruitment and active networking might be differentially affected by market transitions. Market-transition theory implies that, as neoliberal labor-market institutions emerge and become legitimated, both supply- and demand-side informal matches should decline in prevalence, whereas formal job matches should increase. The shift to capitalist economic institutions generates a market for wage labor, increases competition among workers for jobs (and among firms for workers), and fosters greater opportunities for matching these workers through formal mechanisms (e.g., advertising and employment agencies).

However, we argue that the decline in informality should be more dramatic for employer recruitment than for worker search. In many socialist countries—including East Germany (Volker and Flap 1999, 2001), China (Bian 1997), and Russia (Ledeneva 1998)—job finding via patronage ties and informal networks was widespread because it allowed workers and employers to circumvent highly regulated labor-allocation regimes. Among these, informal recruitment was an important hiring channel in the patronage networks known to thrive under state socialism. In Russia, friends and relatives were an especially important channel for finding information about job openings, in many cases without an active search (Clarke 1999, 226). The rise of capitalist labor-market institutions should reduce this patronage logic, transforming many workers from passive beneficiaries of employer patronage into commodified wage laborers actively seeking employment. By contrast, the decline in informal search should be less severe. Access to formal job-finding intermediaries is necessarily uneven, and the gaps in access are likely to be filled by active informal job searches. Searching for jobs via personal connections has few costs and few barriers to access, which is why this form of job finding is frequently associated with workers who are on the fringes of the labor market—young people, immigrants, and the low skilled (Holzer 1996; Kogan 2011; McDonald and Elder 2006).

Comparative capitalism research indirectly supports these propositions (Esping-Andersen 1990; Hall and Soskice 2001). Informal job searching is fairly prevalent in both liberal market economies that involve weaker social-welfare policies and greater market-mediated coordination, and in social democratic countries that feature stronger social-welfare states and more non-market centric coordination (Franzen and Hangartner 2006; Pellizzari 2010).² Alternatively, comparative analyses of informal recruitment are scarce, but a recent study found that non-searching in the US labor market is significantly less prevalent than in Germany (McDonald, Benton, and Warner 2012), which is consistent with the notion that capitalist institutions tend to reduce informal recruitment practices by transforming workers into commodified active searchers.

We anticipate that demand-side informality will be quite high immediately following the transition from socialism to capitalism. The immediate reliance on employer networks stems from the increased competitive pressures, the uncertain institutional context, and the familiarity of the old patronage job-finding regime (cf. Bunce and Csanadi 1993; Gerber and Mayorova 2010; Yakubovich and Kozina 2000). Over time, as institutional uncertainty recedes and market mediation develops, workers should increasingly find work through formal labor-market processes. Thus, we expect that informal recruitment will decline rapidly over time, whereas changes in informal job searching should be more modest.

Informal Recruitment and the Wage Distribution

In addition to altering the mix of formal/informal job matches, market transitions also affect the stratification order. Transitions typically introduce labor-supply shortages and skill mismatches, as the labor pool is ill equipped for the changing industrial structure.

Consequently, transitions lead to heightened competition among employers for recruiting highly skilled labor in short supply. In response to these shortages, employer-activated matches (informal recruitment) should be increasingly clustered at the upper end of the wage distribution.

Several studies offer implicit support for this proposition and the proposed mechanisms. Pellizzari (2010) analyzed how returns to job matching changed in Italy following the privatization of recruitment agencies. After privatization, employers faced a heightened need to compete for and actively recruit highly skilled labor. In this context, employers placed a stronger premium on network signals and network-based job finding generated greater returns for workers. Similarly, Nee and Oppen (2012) find evidence of this trend in the Chinese market-reform context. They describe how network-based recruitment was important for employers facing changing competitive constraints and shortages in highly skilled labor. Employers responded by “developing a diversified system of formal and personalized recruitment channels” (Nee and Oppen 2012, 168). The employers they studied filled lower-paid and unskilled technical or laborer positions through formal channels, like listing with employment agencies, posting advertisements, or relying on direct applications. However, employers filled highly skilled/high-wage positions, especially in management, through network-based recruitment (Nee and Oppen 2012, 170). In general, these findings suggest that market transitions encourage employers to rely on workers’ formal search behavior (i.e., answering advertisements) to fill lower positions while employers activate job matches for highly skilled workers by drawing on their informal connections (i.e., asking acquaintances and employees to refer candidates).

Additionally, transitions to capitalism may generate greater opportunities for workers to leverage their social connections into economic opportunities (Angelusz and Tardos 2001). Social-network connections are often used in open labor-market environments to circumvent heightened competition and to serve as signals of the underlying quality of job candidates (Erickson 2001; Granovetter 1995[1974]). Previous evidence within the United States suggests that relatively privileged workers are more likely to find jobs through passive recruitment channels (Campbell and Rosenfeld 1985). In particular, “elite non-search” (informal recruitment among highly experienced male workers) is especially common and the most economically beneficial in the United States; these non-searchers receive significant wage returns over similarly positioned workers who find their jobs through active formal searches (McDonald and Elder 2006). By contrast, informal job search tends to cluster more among marginalized workers (Loury 2006) and is not typically associated with higher wages (Bridges and Villemez 1986; Mouw 2003; Reingold 1999).

We hypothesize that, whereas informal recruitment is likely to decline in prevalence, these practices become increasingly clustered among high-wage workers following transitions from socialism to capitalism. This possibility has received implicit support from previous comparative labor-market research. Informal recruitment (non-search) is significantly more prevalent in Germany than in the United States because the generous

German welfare state reduces labor-market commodification and thus the propensity to actively search (McDonald, Benton, and Warner 2012). In the United States, non-searching is rarer but is associated with higher wages and employment in managerial occupations. Notably, this parallels our argument that while informal recruitment may become less prominent as economic institutions liberalize, it increasingly clusters among high-wage positions. Rising levels of inequality tend to accompany transitions from state socialism to market capitalism (Bandelj and Mahutga 2010; Heyns 2005)—we posit that the shift toward informal recruitment of well-connected workers is one mechanism driving this growth in inequality. Admittedly, there is a subtle irony to this scenario: in addition to the intended goal of promoting merit- and skill-based wage incentives, open labor markets might also result in increased rewards for interpersonal sponsorship. Figure 1 summarizes our empirical expectations concerning how the prevalence and structural location of informal recruitment changed over the course of the former East Germany's market transition.

We explore how economic transitions influence the prevalence of and wages associated with network-based job finding, using the example of German reunification and the transformation of East Germany from a command to a market-based economy.

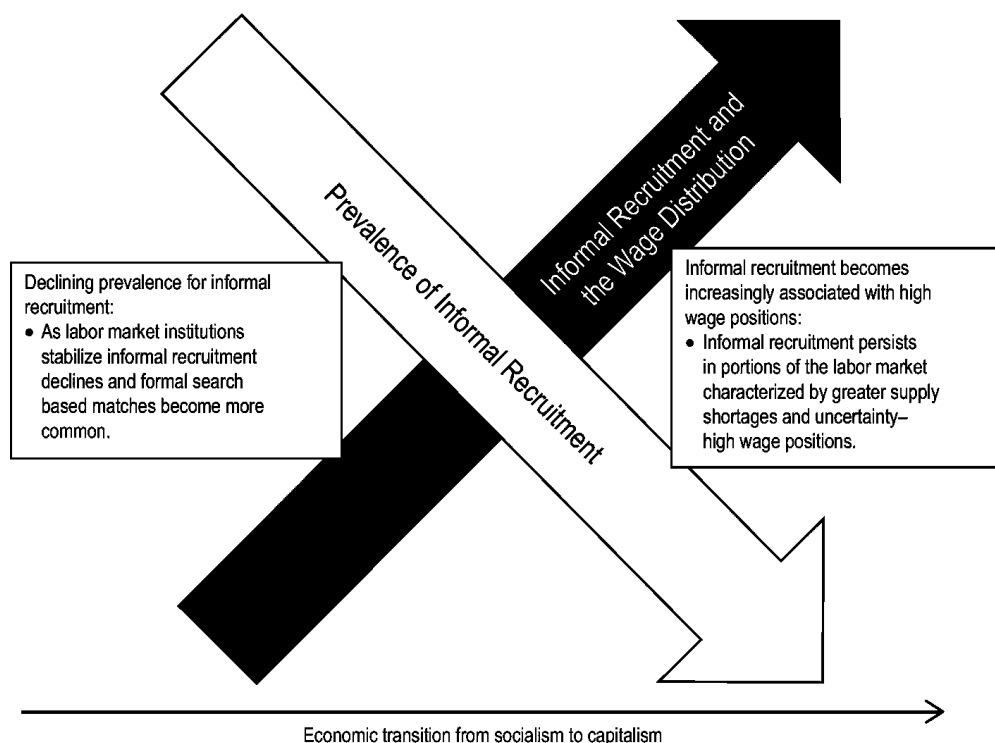


Figure 1. The recruitment paradox: Empirical expectations for changing prevalence and distribution to informal recruitment.

Data and Methods

We focus on two changes in the German economy with reunification: the changing prevalence of job-match patterns and how these matches are distributed across occupations. Therefore, our analysis proceeds in two steps. First, we examine how job-match patterns changed under the market transition following reunification. Second, we analyze East and West Germany separately to investigate job-matching patterns across the income distribution.

To examine these changes, we use data from the German Socio-Economic Panel (GSOEP), a nationally representative survey that began in 1984 following 5,921 households and 12,245 individuals each year, with replacement samples at various time points since. Individuals in East Germany were first interviewed in 1990. Consequently, we examine the labor-market patterns in the years 1991–2001 to examine the labor-market patterns in the decade following the 1990 institutional transition. The GSOEP asks respondents how they found their current job, but in our analysis we are interested only in how job-match patterns change from year to year—not job matches that occurred in earlier years or even before the market transition. Thus, we focused on job changes that occurred during the previous year in order to get estimates on contemporaneous wages and job characteristics and to assess how these patterns changed over the transition context. We also estimated alternative models that include a selection hazard (inverse Mills ratio) to account for potential selection bias on the dependent variable that excludes respondents who did not experience a recent job change. These models did not yield substantively different results. We arrange the survey data in a person-period format, where respondents contributed an observation for each job match during the study period. We exclude respondents who report being self-employed or working for a family business, as these types of job matches represent distinct processes from those under consideration.

Under these constraints, we begin with a sample of 8,210 respondents and 11,968 job matches. We subsequently listwise delete observations containing missing data on any of the variables used in the analysis (removing 2,023 jobs), leaving an analytic sample of 6,830 individuals and 9,945 jobs, of which 2,228 individuals and 3,283 jobs were from East Germany. Table 1 presents descriptive statistics for all variables in the analysis for both the full sample and the regional samples separately for East and West Germany.

Measures

To analyze the changing prevalence of job-match patterns, we define a categorical dependent variable that indicates how respondents found their current job. For respondents who declared a job change in the past year, we considered the question “How did you get your current job? Did you have to actively look for it or did it just happen?” We code respondents who said that it “just happened” as non-searchers, an indicator of *informal recruitment*; that is, matches that are employer activated. Respondents were then asked how they found out about their job. Respondents who indicated that they actively searched and information came through acquaintances and relatives are coded

Table I. Descriptive Statistics

	Full sample		East Germany		West Germany	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Dependent variables						
Formal search (<i>ref.</i>)	0.41	—	0.38	—	0.42	—
Informal search	0.18	—	0.21	—	0.17	—
Informal recruitment	0.41	—	0.40	—	0.41	—
Independent variables						
Log adjusted wages	6.95	0.77	6.81	0.67	7.02	0.80
Year (1–11)	6.39	3.36	5.96	3.32	6.60	3.36
Female	0.49	—	0.46	—	0.51	—
Age	32.62	10.46	35.14	11.28	31.39	9.80
Vocational training	0.62	—	0.67	—	0.59	—
Education						
Low secondary	0.36	—	0.51	—	0.28	—
Upper secondary	0.11	—	0.06	—	0.13	—
Tertiary	0.16	—	0.22	—	0.13	—
Married	0.49	—	0.57	—	0.45	—
Children	0.46	—	0.49	—	0.44	—
German nationality	0.86	—	0.99	—	0.79	—
Years of work experience	8.53	9.23	11.98	10.53	6.83	7.99
Union	0.14	—	0.20	—	0.11	—
Part-time	0.22	—	0.15	—	0.26	—
Permanent contract	0.66	—	0.61	—	0.68	—
Public sector	0.20	—	0.25	—	0.18	—
Firm size	2.09	1.03	1.96	0.96	2.16	1.07
Occupation						
Managerial (<i>ref.</i>)	0.03	—	0.03	—	0.02	—
Professional/technical	0.25	—	0.24	—	0.25	—
Admin support	0.13	—	0.11	—	0.14	—
Service	0.08	—	0.06	—	0.09	—
Construction	0.20	—	0.24	—	0.18	—
Operator/laborer	0.21	—	0.22	—	0.21	—
Sales	0.10	—	0.10	—	0.10	—
Industry						
Services (<i>ref.</i>)	0.34	—	0.36	—	0.32	—
Agriculture	0.02	—	0.03	—	0.01	—
Energy	0.01	—	0.01	—	0.00	—
Mining	0.00	—	0.00	—	0.00	—
Manufacturing	0.19	—	0.15	—	0.21	—

Table 1. continued

	Full sample		East Germany		West Germany	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Industry (cont.)						
Construction	0.16	—	0.20	—	0.14	—
Trade	0.20	—	0.18	—	0.21	—
Transport	0.05	—	0.04	—	0.06	—
Bank, Insurance	0.03	—	0.02	—	0.03	—
GDP change	4.30	10.55	11.33	10.91	0.84	8.44
Unemployment rate	11.30	4.56	16.56	2.98	8.71	2.53
Foreign sample (West)	.14	—	.00	—	.21	—
Innovation sample	.11	—	.07	—	.13	—
Observations (jobs)	9,945		3,238		6,662	
Individuals	6,830		2,228		4,671	

as *informal searchers*, while respondents who indicated using other methods to find their job are coded as *formal searchers* (these include responding to an advertisement, using the employment office, direct application, returning to a former employer, and other methods). As we are interested in the prevalence and distribution of informal matches (both employee and employer activated), formal search served as the reference category against which we compare both forms of informal matching.

Although the “just happened” category is an imperfect indicator of employer-activated job matches, it does capture passive job matches from the perspective of the employee. We conceptualize these passive job matches as representing employer activation because they necessarily preclude supply-side search and almost always involve network-mediated matching (Hanson and Pratt 1991; McDonald 2010).³ Despite the limitations, the measurement offers an excellent generalizable survey item to capture the passivity of a job search. We note that while the measurement strategy has been validated in the US context, further research is needed to validate the measure in the German context.

Independent variables include a variety of individual and job/firm characteristics that may be associated with different types of job matches. *Year* is a continuous variable indicating the wave of the survey (1 = 1991 to 11 = 2001). *Region (East)* is a dummy variable indicating (the former) East Germany. To analyze how job-match types vary across the wage distribution, we use a continuous variable indicating the log monthly real *earnings* from employment. Earnings are reported as gross employment income and are inflation adjusted to the constant 1997 Euro using the consumer price index embedded within the GSOEP data.⁴ We introduce a dummy variable capturing respondents’ gender (*female*). Educational attainment is captured in a series of dummy variables

indicating respondents' highest education and their educational track: *less than secondary* education served as the reference category, while dummy variables indicate *lower secondary*, *upper secondary*, and *tertiary* education. We also include a separate dummy variable for *vocational certification*. We include dummy variables to control for whether or not the respondent was *married*, had any *children* under age 16 living in the household, and reported being of *German nationality*. Finally, respondents were asked the number of years of full-time work experience they hold, which we use as a continuous indicator for *years of work experience*.

We include several occupational and firm characteristics. *Union* membership is a dummy variable indicating union affiliation. Union membership was measured sporadically in the GSOEP, so we used responses to the question in 1993 for the years 1991–1997, 1998 for the years 1998–1999, and 2000 for 2000–2001. *Part-time*, *public sector*, and having a *permanent contract* with the employer were each captured with dummy variables. *Firm size* was included as a continuous variable with 1 = < 20 employees; 2 = 20–199; 3 = 200–1,999 employees; and 4 ≥ 2,000 employees in the respondent's place of work. We also construct broad occupational categories using occupation codes from the 1988 International Standard Classification of Occupations. Categories included employment in *profession/technical*, *administrative support*, *service*, *construction*, *operator/laborer*, and *sales* occupations, with *managerial* occupations serving as the reference category. The former GDR experienced substantial industrial restructuring following unification; therefore, we control for industrial categories for the respondents' occupation using the one-digit CNEF (Cross-National Equivalent File) industry codes. These industrial categories are specified as dummy variables for *agriculture*, *energy*, *mining*, *manufacturing*, *construction*, *trade*, *transport*, and *banking* (*services* are the reference category).

Finally, we supplement the GSOEP survey responses with information on the German federal states (Bundesländer) using geo-coded matching variables. These data came from the German Federal Statistical Office's GENESIS-Online database. We include measures for *change in GDP per capita* and the *unemployment rate* in the survey respondents' federal state. These indicators control for uneven economic development across East Germany and the period under study. We also control for relevant sampling-frame indicators.⁵

Analytic Strategy

To examine changing patterns of job matches, we estimate a series of multinomial logistic random-intercept models predicting job-match types across time. A large portion of our sample had only one job match during the study period; because of concerns for sample selection bias due to dropping cases, we use random-effects models rather than a fixed-effects approach. This allows us to estimate an error term accounting for random individual effects across multiple observations while also permitting us to retain single-observation individuals (Petersen 2004). Equation 1 presents the baseline model used in our analysis. For simplicity, assume only one covariate, x_{ij} , for job

match i of respondent j . Consider a nominal dependent variable y_{ij} with S unordered categories and base category r . The model estimates separate intercepts and parameters for each binary comparison with the baseline category:

$$\ln \frac{\Pr(y_{ij} = s | x_{ij})}{\Pr(y_{ij} = r | x_{ij})} = \beta_1^{[s]} + \beta_2^{[s]} x_{ij} + \zeta_j + \varepsilon_{ij} \quad (1)$$

In our case, S has three categories (s) for each type of job match: informal recruitment, informal search, and formal search. Formal search serves as the baseline category (r). The coefficients (β) are the log odds ratios for the odds of each outcome versus the baseline. The model also includes both a level-1 (ε_{ij}) and a level-2 (ζ_j) error term from the random intercept, where level-1 cases are job matches across time points and level-2 cases are individuals.

As we are concerned with the overall patterns of job matching and whether these patterns in East and West Germany converge over the time period, we construct a baseline model (table 2, model 1) and a model with an interaction term (table 2, model 2) that assesses whether the effect for time is contingent on region. We use the reciprocal function for year with the form $1/\text{year}$. Reciprocal transformations have a unique feature that is substantively relevant for our model: as x becomes infinitely large, y approaches an asymptote parallel to the x -axis. A reciprocal transformation is appropriate when theory suggests that values will approach an asymptote parallel to one or both axes (Berry and Feldman 1985, 63). This is substantively useful because we predict that the prevalence of the job-matching patterns in East and West Germany will converge over the study period, given the institutional transference from West to East. In particular, informal recruitment will decrease but at a decreasing rate. Note, however, that year and $1/\text{year}$ are inversely correlated; a positive parameter estimate for $1/\text{year}$ indicates a negative relationship with year. Therefore, the reciprocal transformation for year is substantively applicable *a priori* to account for the nonlinear relationship.⁶

To study the changing patterns of informal recruitment across the wage distribution, we use a product term interacting inflation-adjusted logged wages and the reciprocal transformation for year. We estimate models using both region interactions and separate samples but present separate samples for ease of interpretations. These models describe the prevalence of informal recruitment and informal search strategies (versus formal search) across the wage distribution.⁷

Results

Changing Patterns of Job Matching

How did the transition to market capitalism and the installation of West German institutions change job-matching patterns in the former East Germany? Table 2 presents odds ratios from multinomial logistic regression models predicting the type of job match for both East and West Germany.

Table 2. Job Matching in Germany 1991–2001: Odds Ratios from Random Effects Multinomial Logistic Regression on Job Search Method ($n = 9,945$)

	Model 1		Model 2	
	Inf. search vs. formal search	Inf. recruit vs. formal search	Inf. search vs. formal search	Inf. recruit vs. formal search
East	1.276	0.994	1.039	0.841
l/year	1.065	1.941***	0.940	1.778***
l/year * East	2.004*	1.733*		
Log adjusted wages	0.880*	0.975	0.897	0.990
Female	0.918	0.970	0.925	0.975
Age	0.990	0.998	0.990	0.998
Vocational training	0.987	1.178*	0.975	1.167*
Education (ref. < secondary)				
Lower secondary	0.839*	0.885	0.833*	0.880
Upper secondary	0.834	0.734***	0.831	0.731**
Tertiary	0.869	0.759*	0.836	0.736**
Married	1.243**	1.234**	1.230*	1.224**
Any children	1.074	1.075	1.068	1.070
German nationality	0.787	1.335*	0.785	1.331*
Years of work experience	1.005	1.001	1.004	1.001
Union	1.300**	1.187*	1.300**	1.186*
Part-time	1.019	2.084***	1.041	2.119***
Permanent contract	1.228**	1.552***	1.223**	1.547***
Public sector	0.854	0.952	0.850	0.948
Firm size	1.022	0.880***	1.022	0.879***
Occupation (ref. managerial)				
Professional/technical	0.608*	0.499***	0.614*	0.503***
Admin. support	0.606*	0.445***	0.609*	0.447***
Service	0.787	0.582**	0.794	0.586**
Construction	0.796	0.625**	0.803	0.630**
Operator/laborer	0.898	0.606**	0.907	0.611**
Sales	0.641*	0.593**	0.642*	0.594**
Industry (ref. services)				
Agriculture	1.150	1.186	1.152	1.188
Energy	0.564	0.984	0.565	0.985
Mining	2.711	2.063	2.700	2.057
Manufacturing	1.134	0.918	1.137	0.919

(Continued)

Table 2. continued

	Model 1		Model 2	
	Inf. search	Inf. recruit	Inf. search	Inf. recruit
	vs. formal search	vs. formal search	vs. formal search	vs. formal search
Construction	1.330*	0.986	1.340*	0.992
Trade	1.145	0.906	1.147	0.907
Transport	1.387*	0.994	1.373*	0.986
Banking	0.855	1.121	0.856	1.121
GDP change	1.006	1.008**	1.002	1.006
Unemployment	1.005	0.995	1.014	1.002
BIC	20,631.8		20,642.8	
LL	-9,970.7		-9,967.0	

Models control for sampling characteristics listed in Table 1.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Model 1 estimates the baseline model for the odds of informal searches and non-searches (the indicator of informal recruitment) relative to formal searches across region, the reciprocal year transformation, and covariates. Many of the covariates illustrate interesting patterns. Informal recruitment is more common among vocationally certified respondents, union members, permanent contract workers, married respondents, and workers of German nationality. Additionally, informal recruitment is more common among part-time workers and workers in smaller firms. Finally, informal recruitment is especially common among managerial workers (the reference category). This latter effect corresponds to findings in other market and post-socialist contexts (Elliott 2000; Nee and Oppen 2012).

To assess convergence in job-finding patterns across East and West Germany during the study period, model 2 includes a product-term interaction between region and the reciprocal function for year. The interaction indicates a significantly different effect of time between the regions for the odds of both informal search and non-search versus formal search. This indicates that the odds of a given job match being informal (either supply- or demand-side activated) changed over time but did so differently in East and West Germany.

Figure 2 presents average predicted probabilities from model 2 for each type of job match in the former East and West Germany across the time period and aids in interpreting these interactions. East German workers increased their likelihood of finding jobs through formal means, while the prevalence of informal recruitment declined across the study period. Meanwhile, the likelihood of informal searches remained relatively stable across the time period, increasing only slightly and declining again toward the end of the period. In comparing these patterns, job matches in East Germany came to resemble those of West Germany fairly soon after capitalist market reforms and West

German labor-market institutions were installed. The prevalence of non-searches in East Germany decreased slightly past West German levels, while the prevalence of formal searches increased to match West German patterns. The findings support expected patterns of convergent job-matching channels following institutional transition. As market institutions stabilized and uncertainty was reduced, job matches became more formal.

West Germany also saw a decline in informal recruitment matches and a small increase in the formal searches. While the former East Germany faced a sizable shift, West Germany's was more muted. The uncertainty associated with reunification altered the

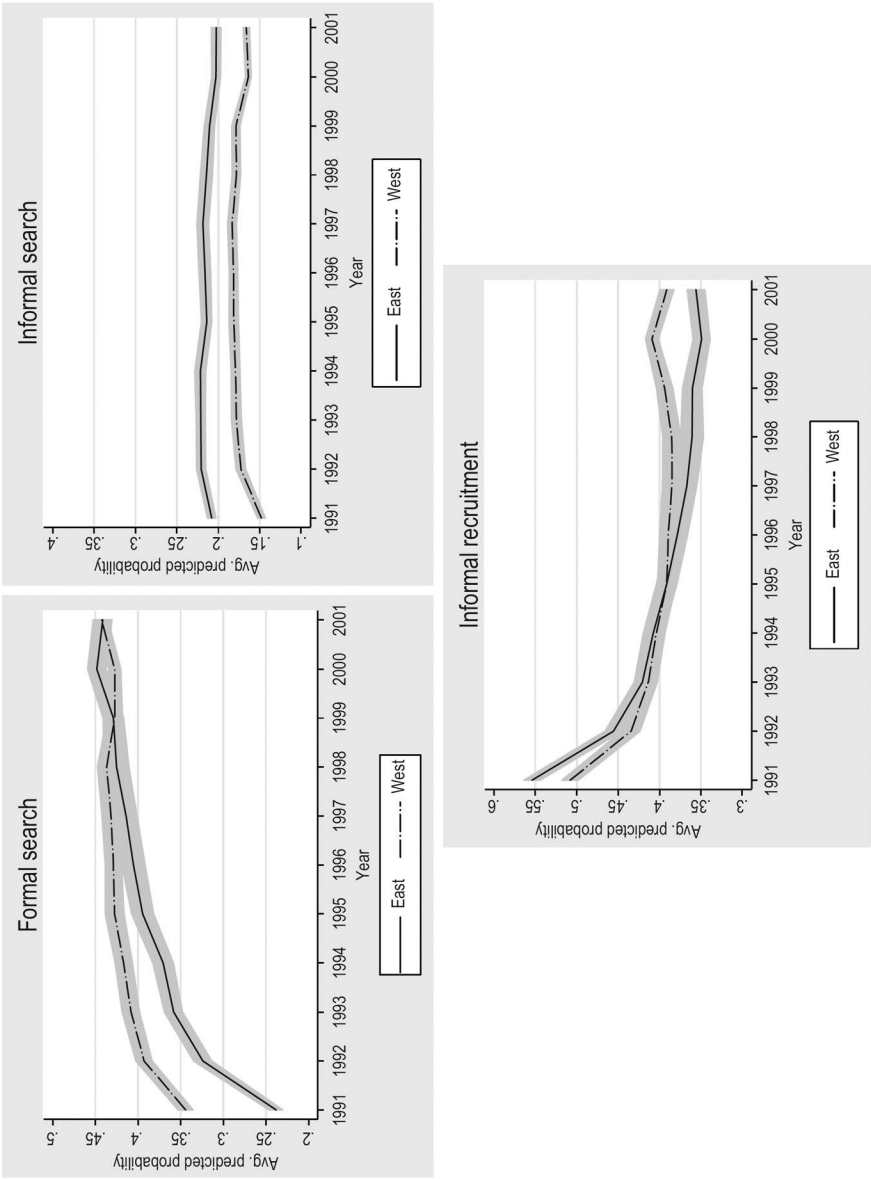


Figure 2. Job matching in East and West Germany 1991–2001: Average predicted probabilities and confidence intervals from random-effects multinomial logistic regression

West German labor market in theoretically consistent ways. The West German economy also experienced substantial shocks following reunification, including an influx of workers from the former GDR, inflationary pressures, and large public-sector deficits (Lange and Pugh 1998). During the early part of the decade following reunification, both regions saw high levels of non-search and relatively low levels of formal search, but these patterns were more extreme in the former GDR. As the decade progressed, institutional transition stabilized economic activity. As a result of the declining uncertainty, informal recruitment matches gave way to more formal searching. A supplementary analysis (not shown) of West Germany before and after reunification supports this interpretation: informal recruitment patterns were lower before reunification than in the years immediately following reunification, suggesting rapid growth then the decline of informal recruitment in the former West Germany.⁸

Locating Job-Match Activation within the Wage Distribution

Next, we investigate how these types of labor-market action were situated in the wage distribution in East Germany across the transition period. Demand-side match activations through informal recruitment should have remained prevalent among high-wage occupations, as employers increasingly sought to mitigate competition and uncertainty concerning high-wage/highly skilled positions. Meanwhile, informal search should not have changed its association with wages. Table 3 presents odds ratios from random-intercept models predicting job-match types against covariates and a $1/\text{year} \times \text{wages}$ interaction. The table includes models for East and West Germany separately, along with a significance test using the full sample and an interaction with a dummy variable for East Germany. The product term interacting logged wages and the reciprocal year transformation estimates the likelihood of a given job match across time for different positions in the wage distribution. In East Germany, the interaction term indicates higher probability among high-wage positions of informal recruitment relative to formal searching over the transition period. However, the comparable interaction term for informal search did not reach statistical significance, indicating that informal searches did not change their clustering in the wage distribution.

Figure 3 presents average predicted probabilities for each job match across the time period in East Germany. To interpret the $\text{wage} \times \text{reciprocal-year}$ interaction effect in table 3, model 2, we split jobs into high- and low-wage positions—high-wage positions are greater than or equal to the mean wage and low-wage positions less than the mean. We experimented with other cut points, but the results are identical. Figure 3 illustrates how changes in the probability of each job-match type were different across the wage distribution. In the former East Germany, between 1991 and 2001 the probability of formal searches increased for all wage groups, supporting the analysis presented above. However, formal searching increased more among low-wage positions. This suggests that low-wage positions came to resemble formal market actors more rapidly than others. Figure 3 indicates that informal search remained relatively stable throughout the period and indistinct across wage groups. Finally, the probability of informal recruitment

Table 3. Job Matching in the Former East and West Germany 1991–2001 and Log Wages: Odds Ratios from Random Effects Multinomial Logistic Regression on Job-Search Method

	East Germany (n = 3,283)		West Germany (n = 6,662)		Inter. ^a	
	Inf. search vs. formal	Inf. recruit vs. formal	Inf. search vs. formal	Inf. recruit vs. formal	Inf. search vs. formal	Inf. recruit vs. formal
I/year	1.188	1.855**	0.162	0.179	**	
I/year * log adjusted wages	0.674	0.491*	1.317	1.396	**	
Log adjusted wages	0.967	1.357*	0.905	0.913	**	
Female	1.027	0.935	0.877	0.999		
Age	0.981	1.000	0.993	0.996		
Vocational training	0.937	1.283	1.025	1.150		
Education (ref. < secondary)						
Lower secondary	0.990	0.934	0.762**	0.844*		
Upper secondary	0.950	0.736	0.794	0.721**		
Tertiary	0.820	0.922	0.790	0.663**		
Married	1.434*	1.195	1.095	1.200*		
Any children	0.879	0.930	1.162	1.127		
German nationality	0.243*	1.013	0.865	1.380***		
Years of work experience	1.017	1.001	0.998	1.001		
Union	1.280	1.077	1.218	1.256*		
Part-time	0.801	1.589**	1.206	2.410***	*	
Permanent contract	1.755***	1.623***	0.948	1.438***	***	
Public sector	0.599**	0.703**	1.105	1.122	**	**
Firm size	1.055	0.892*	1.002	0.872***		
Occupation (ref. managerial)						
Professional/technical	0.553	0.664	0.678	0.419***		
Admin. support	0.512	0.548	0.699	0.388***		
Service	0.675	0.759	0.901	0.487**		
Construction	0.628	0.826	0.926	0.517**		

(Continued)

Table 3. continued

	East Germany (n = 3,283)		West Germany (n = 6,662)		Inter. ^a	
	Inf. search vs. formal	Inf. recruit vs. formal	Inf. search vs. formal	Inf. recruit vs. formal	Inf. search vs. formal	Inf. recruit vs. formal
Operator/laborer	0.519*	0.767	1.327	0.535**	*	
Sales	0.607	0.728	0.679	0.513**		
Industry (ref. services)						
Agriculture	1.240	1.412	1.314	0.909		
Energy	0.990	2.281	0.354	0.468	*	
Mining	1.318	1.221	6.175*	3.354		
Manufacturing	1.195	0.962	1.096	0.891		
Construction	1.164	0.881	1.426*	1.025		
Trade	1.040	0.964	1.202	0.882		
Transportation	1.921*	1.263	1.186	0.893		
Banking	0.936	1.545	0.849	1.010		
GDP change	1.021*	1.025***	0.998	1.002	*	**
Unemployment	1.020	1.009	1.016	0.996		
BIC	7,259.1	13,728.3				
LL	-3,342.1	-6,551.6				

Models control for sampling characteristics listed in table 1.

a. The significance for the interaction is obtained with a region dummy interacted with each independent variable and indicates whether effects are significantly different across East and West Germany

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

(employer-activated matches) declined precipitously among low-wage positions but declined only slowly among high-wage positions. These findings indicate that employers continued to rely on recruitment channels to fill high-wage positions but turned to formal channels and employee-driven searches to fill lower-wage positions. General uncertainties and labor shortages encouraged employers to fill high-status positions through recruitment-based channels. It may be that in the long run, after the initial reunification shocks, the association between wages and job-match type will disappear. However, comparative research suggests that further market liberalization could entrench this clustering (McDonald, Benton, and Warner 2012)—liberal market institutions could open up opportunities for employers to reserve top positions for well-connected employees and create a context where network recruitment becomes a salient mechanism in generating wage inequality. Future research should consider these alternatives.

Discussion and Conclusion

Our study examined the “recruitment paradox” of German reunification. The results presented here provide important insights into the ways that institutional change can transform network-based hiring behaviors and their associations with economic inequality. German reunification introduced market institutions to the former East Germany and rapidly disassembled central planning. In accordance with new institutional

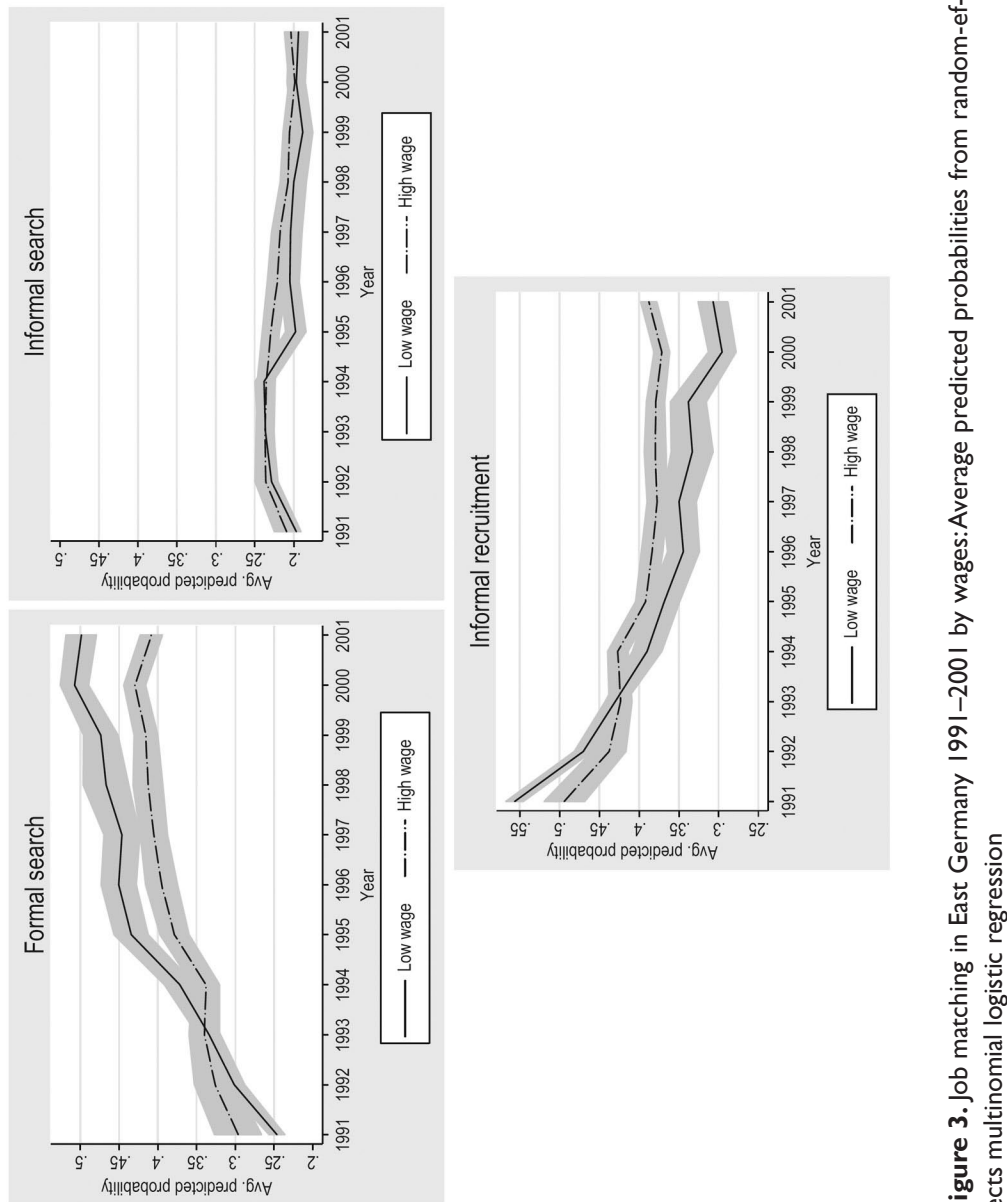


Figure 3. Job matching in East Germany 1991–2001 by wages: Average predicted probabilities from random-effects multinomial logistic regression

theory, this had the consequence of generating heightened economic uncertainty in the short term, which subsided under the aid of state support. In the absence of stable and well-developed formal markets and intermediaries, jobs were filled through employer-activated matches (informal recruitment). Employers actively sought to fill vacancies through network resources as a check on uncertainties emerging from institutional change. In the long term, as these uncertainties subsided, labor-market participants increasingly turned to formal market mechanisms. By the end of the decade, the former East Germany's levels of formal searching—matches based on active employee search through formal methods—had converged with West Germany's. This provides support for the notion that stable market institutions prompt greater reliance on formal market-mediated transactions.

In addition to producing increased formal market competition, this trend was situated primarily among low-wage workers. However, high-wage workers continued to be actively sought by recruiting employers at relatively high levels. Thus, while the labor market for low-wage workers came to resemble an idealized “disembedded” market, governed by formal transactions, job matches for high-wage workers continued to be informal and foster employer searches. Meanwhile, the prevalence and clustering of informal searches did not appreciably change over the study period. Labor shortages, skill mismatches, and general uncertainty likely provoked employers into seeking to fill high-wage positions through active recruitment, while employees' active networking did not change. This finding mirrors Nee and Oppen's (2012) evidence from the Chinese transition context, where employers tend to recruit highly skilled workers through their network contacts. This shows that market transition altered the prevalence and structural positioning of network informality in the labor market and, in particular, informal recruitment.

However, West Germany also saw labor-market changes due to reunification shocks. As in the former East Germany, institutional uncertainty during the early stages of reunification encouraged employers to rely on network-based recruitment immediately following reunification as a means of uncertainty reduction. In general, this suggests that reunification introduced institutional shocks in East Germany, and to a lesser extent in West Germany. Actors in both regions turned to network-based recruitment in the context of institutional uncertainty. Gerber and Mayorova (2010) observe an analogous trend in Russia's economic transition. The collapse of Soviet institutions and the resulting institutional vacuum encouraged labor-market actors to rely on personal networks rather than formal matches. However, their study notes a uniform turn toward network use. Alternatively, our analysis demonstrates a (re)turn toward formality as German institutions stabilized by the end of the 1990s. Once market institutions became well established, networking and formality patterns across the two regions converged as informal recruitment was replaced by more formal market activity. The corporatist approach to market-transition theory helps explain why the East German transition was unique and labor-market patterns differed from other post-socialist contexts. West Germany's “ready-made” institutions (in addition to massive fiscal outlays, political

legitimacy, and state capacity) facilitated a more rapid market transition and prevented the kind of institutional vacuum that occurred in other post-socialist contexts. In addition, East Germany's market transition featured a clean break from the old socialist bureaucratic elite. These differences support corporatist approaches to market-transition theory because state capacity and external administration were unique features in the German context that may have fostered the eventual decline in informal recruitment. In other transition contexts, such as reform-era China, network resources (particularly to political cadres) retained a considerable role (Bian and Huang 2009).

One of the limitations of our study is that we are unable to assess the character of individuals' social networks empirically. However, the extant literature offers some clues as to how interpersonal networks change during times of market transition. In the GDR's command economy, informal networks were important for circumventing shortages induced by the institutional regime, but the consequences of discussing politics with untrustworthy others could be damaging. Volker and Flap (2001) show how people responded by forming networks with two separate components. Many people discussed politics only within strong-tie networks comprised of trustworthy alters, but these ties were distinct from the weaker and uniplex ties that East Germans used to secure goods and services. This distinction started to disappear as reunification began to alleviate the shortage problem and the political risk of open networks.

On the demand side, these findings also provide insights into the role of employers in the changing environment. Market transitions generate a high degree of economic uncertainty and dislocation, and East Germany was no exception (Lange and Pugh 1998). This context provided many employers with both the incentive and the opportunity to actively recruit workers to fill their best jobs. As in other transition contexts, like Russia (Yakubovich 2006), employers in East Germany responded by finding candidates for highly paid positions through informal recruitment channels rather than reserving the highest-paid jobs for active searchers. As a result, economic uncertainty and the open-market environment transformed informal recruitment into a mechanism more concentrated among top employees. However, our study is unable to parse out specific employer-recruitment behaviors. Future research should consider how market institutions alter the competitive pressures employers face when seeking qualified workers. Are employers more likely to rely on social credentials when seeking highly paid workers under open environments? Would this pattern vary across sectors of the economy? Two recent studies (Chua 2011, 2014) demonstrate that the interplay between meritocratic pressures and informal job-matching dynamics vary across sectors. Chua analyzes social-capital use across public and private sectors of the economy in Singapore. In the more meritocratic state sector, where formal credentials are significantly important, active networking is not particularly impactful (Chua 2011). However, despite this apparent meritocracy in the state sector, "unmobilized" social capital, such as occurs through an unsolicited contact, is associated with higher wages (Chua 2014). Future research might investigate how these sectoral patterns vary during institutional transitions.

This study has several implications. To begin with, the results offer further illustration of the dual embeddedness approach to understanding economic behavior (McDonald, Benton, and Warner 2012). Echoing recent calls for bringing social context into the study of networks (Small 2009), this approach highlights how macro-level institutions shape network behavior. These findings should also be viewed in the context of the broader shift to precarity and insecurity (Kalleberg 2009) associated with neoliberal reforms. Market-based reforms promote bifurcated labor-market informality, such that elite workers enjoy the benefits of passive recruitment while lower-tier workers rely on formal intermediaries and “disembedded” job matches. This shift is consistent with recent arguments that economic inequality is fueled largely by the generation of employment rents for elite workers alongside rent destruction for lower-tier workers (Weeden and Grusky 2014). These implications point to the need for further research on shifts in employer recruitment strategies and passive job candidates and how these reinforce deepening inequality and precarity across institutional contexts.

Notes

1. In the labor market, stabilizing institutions include educational credentialing, labor-market intermediaries, laws, and welfare-state provisions. In their absence, participants increasingly rely on informal networks to reduce uncertainty (Yakubovich and Kozina 2000).
2. Pellizzari (2010) argues that the prevalence of informal job search in a country is linked to the efficiency of the intermediaries in place, rather than their mere existence. We concur that increases in the efficiency of formal search mechanisms should result in a reduction of informal search, yet those efficiencies may have an even greater impact on the levels of informal recruitment.
3. Our data reveal that about 40 percent of the job matches in Germany occurred through the informal recruitment channel. The GSOEP includes some additional information about passive job-match channels, and about 80 percent of the job matches in our “informal recruitment” category were purely informal, in that they involved a social tie with a friend or relative. However, job matches that “just happened” almost always involve some form of employer-activated recruitment because they do not involve a supply-side search. Research on the similar “non-search” phenomenon in the United States also supports this proposition (McDonald 2010).
4. The GSOEP retroactively adjusted all income and Consumer Price Index variables for years prior to 2001 into euros at the official exchange rate of 1 Euro = 1.95583 DM. We left these as provided by the GSOEP.
5. The analytic sample included the GSOEP’s samples A–E, which included the residents of the FRG, GDR, the oversampled foreigners in the FRG, as well as GSOEP’s 2000 “innovation” supplement sample. We controlled for the innovation subsample and the foreigner subsample membership using dummy variables.
6. We also conducted several alternative analyses and robustness tests. First, we modeled the convergence process using a linear effect for time during only the first five years after reunification. This model indicated that the job-match patterns in East and West Germany converged through a linear process. These results are consistent with what we present and are available upon request.

7. A caveat about causal effects is warranted here: while there is a well-known literature on the casual effects of job matches on wages (Mouw 2003), we are interested in simply the clustering of job matches across the wage distribution. As such, we avoid counterfactual methods.
8. The non-search question was asked in West Germany beginning in 1989, allowing only a few years of comparison. In West Germany, informal recruitment increased substantially from 1989 to 1991, prior to its precipitous decline following reunification. This pattern is consistent with the expectation that institutional shocks encouraged employers to recruit workers at the outset of the transition period but later turned toward formal means.

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